

EUROPEAN ASSOCIATION OF ARCHAEOLOGISTS

13th Annual Meeting

**Zadar, Croatia
18th – 23rd September 2007**

The 13th Annual Meeting of the European Association of Archaeologists, Zadar, Croatia, 18th – 23rd September 2007, is organised by the University of Zadar, in cooperation with the Archaeological museum in Zadar.

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EUROPEAN ASSOCIATION OF ARCHAEOLOGIST

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**ABSTRACTS BOOK
Programme and Abstracts**



**University of Zadar
Zadar, 2007**

EAA 13th Annual Meeting
Abstracts book

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PROGRAMME AND ABSTRACTS

We present in this book the abstracts of sessions, round tables and posters as delivered to us by 20th August 2007. We have done some light copy-editing, but the majority of abstracts are presented as we received them. They are arranged by day. General Sessions and Poster abstracts are given after Saturday's abstracts. Several abstracts are missing. Some changes may be done before the meeting itself.

Editorial Board

PREFACE

Dear EAA members and colleagues,

It is our great pleasure and honour to welcome you in Zadar, Croatia in occasion of the 13th Annual Meeting of European Association of Archaeologists.

In previous years, the EAA's Annual Meetings have become major archaeological events in Europe, gathering archaeologists from different national, institutional and professional areas. In this way, they have significantly shaped European archaeology for the last decade. We hope that this year EAA conference, with numerous sessions and round tables, divided in three thematic blocks, workshops and a poster session, will be a continuation and improvement of this tradition, with many occasions of discussion and debates, which would facilitate future projects and initiatives.

As usual, conference Abstract book is a part of the Delegate pack and it contains, together with abstracts of sessions, papers, round tables and posters, some basic information regarding the conference.

Certain number of speakers included in the list sent by session organizers had not registered by the deadline nor sent their abstracts. This has made it impossible to include a detailed scheduling for each session in this Programme.

Let us stress that in the main text, the identification of the session organizers and speakers has been restricted to their names, institutional affiliation and country (wherever this information was made available to us by the speakers themselves or by session organizers). A table listing all participants in alphabetic order will be included in the Delegate pack, as well as a detailed programme.

Please accept our apology in case of any mistake in this publication, which might happen due to the complexity of the organisation of the conference.

Finally, hoping that the information included here will be helpful, we wish you a fruitful conference and a pleasant stay in Zadar.

Zadar, 20th August 2007

*Prof. dr. sc. Ante Uglešić,
President of the Organising committee*

*Mr. sc. Tomislav Fabijanić,
Secretary of the Organising committee*

PROGRAMME – time table

TUESDAY, 18th September 2007

09.30 – 18.00	Meeting: EAA Executive Board	
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WEDNESDAY, 19th September 2007

09.30 – 14.00	Meeting: EAA Editorial Board	
13.00 – 19.00	Registration	
17.00 – 18.30	Opening ceremony	Grand Hall
19.00 – 21.30	Opening reception	Zadar County

THURSDAY, 20th September 2007

08.30 – 19.00	Registration	
09.00 – 18.30	Sessions and Round tables	rooms open 08.30
13.15 – 13.45	Welcome Reception for new EAA members	Room 143
20.00 – 24.00	EAA Annual Party ¹	Arsenal Club

FRIDAY, 21st September 2007

08.30 – 14.00	Registration ²	
09.00 – 18.30	Sessions and Round tables	rooms open 08.30
13.15 – 14.15	Poster Sessions ³	Grand Hall

SATURDAY, 22nd September 2007

09.00 – 16.30	Sessions and Round tables	rooms open 08.30
17.00 – 19.00	Annual Business Meeting All EAA members are invited to attend.	Grand hall
20.00	Gala dinner	Hotel Kolovare

SUNDAY, 23rd September 2007

Post conference excursions

¹ Please bring your tickets for one complimentary drink. Full bar available. Music.

² The registration desk will then be moved to the Meeting secretariat until the end of the meeting.

³ Authors of posters should attend at their posters to answer the questions.

GENERAL INFORMATION

About Zadar

Zadar is a beautiful Mediterranean city, with three millennia long history. Founded in the Early Iron Age by the Liburnians, it became a Roman colony *Iader* when its urban layout, still visible today, was first structured. Later, it became the capital city of the Byzantine province of Dalmatia. In the 7th century the Croats came to the Zadar region and very soon to the town itself.

Its rich historical and cultural heritage of world importance is evident at every step: the remains of the Roman Forum from the 1st century; the most famous early medieval church in Croatia and hallmark of the city – St. Donat's Church from the 9th century; St. Grisigono's Church from the 12th century and the St. Mary's bell tower from the year 1105; the Romanesque St. Anastasia's Cathedral from the 13th century; St. Frances church – the oldest Gothic church in Dalmatia; mighty fortification walls with Sea farer's and Land gates from the 16th century... It is also noteworthy that Zadar is surrounded by four national parks: Plitvice lakes, Kornati islands, Paklenica gorge and the river Krka.

For further information, please see leaflets in Delegates pack.

University of Zadar (www.unizd.hr)

The University of Zadar has long tradition of academic excellence. Its academic heritage incorporates the first University on Croatian soil *Universitas Iadertina*, founded in Zadar in 1396, and the Faculty of arts which was the first Croatian institution of higher education outside of Zagreb, established in 1956. Today the University has over 5000 students across 21 academic departments. Its Department of archaeology is one of the most prestigious archaeological institutions in Croatia whose academic staff and students are engaged in numerous fieldworks and scientific projects throughout the country.

Archaeological museum in Zadar

The Archaeological museum in Zadar is famous for both its 150 years long activities and for its prominent scientific and conservation achievements in documenting, researching and displaying the archaeology and monuments of the region. Important activities of the Museum include public presentations, temporary exhibitions, printing catalogues, guides and prospects... Museum's experts daily conduct numerous excavations and protective works in the town and its region that abounds in sites and findings of great historical and cultural importance.

Logo of the conference

The logo of the conference (Author: Ljubica Marčetić Marinović) is a drawing of an early medieval vessel, called Condura, found in Nin near Zadar. The town of Nin, where two such vessels were found, is situated on an islet 20 km NW from Zadar in the middle of a large bay whose entrance enjoys excellent protection. It was important Roman city called Aenona (e.g. the largest Roman temple in Dalmatia was constructed there) but it experienced its greatest flourish in the Early Medieval period when it became one of the administrative and cultural centres of Croatian state.

Two boats were discovered in 1966 at the entrance to the harbour and the site was explored by a team of the Archaeological museum in Zadar and the Museum of the city of Šibenik, headed by Zdenko Brusić. In 1974, ships were lifted from the sea bottom and transported to the Archaeological museum in Zadar. After extensive conservation efforts undertaken by Božidar Vilhar, boats were presented to the public in newly build pavilion of the Museum in Nin where they remain today. In the year 1998, two replicas were built. Quite interesting fact is that both crafts were deliberately sunk (great quantity of stones was found in them) which must have been done through the need of closing up the passage and thus making an obstacle which at a given moment prevented other ships from entering the harbour.

According to radio-carbon analyses of the wood, ships were built or sailing at the end of the 11th century and the beginning of the 12th century A.D. Because of that fact, and the fact that these ships resemble those mentioned by the Byzantine emperor Constantine VII (913-959), crafts were named – Condura Croatica. Namely, in the chapter in which the emperor describes Old Croatian navy he mentions two types of Croatian vessels – condurae and sagenae.

Venue

The EAA's 13th Annual Meeting will be held at the University of Zadar (address: Obala kralja P. Krešimira IV., 2, www.unizd.hr), in a splendid building from the early 1900s, situated in the very heart of the historic town overlooking the sea.

Registration

Registration desk will function according to the following schedule:

Wednesday (19 th Sept. 2007):	from 13.00 to 19.00
Thursday (20 th Sept. 2007):	from 8.30 to 19.00
Friday (21 st Sept. 2007):	from 8.30 to 14.00

The registration desk will then be moved to the Meeting secretariat until the end of the meeting.

The desk will have 3 separate sections:

- section for conference participants who have registered and paid in advance,
- conference registration or payment on-site, closing dinner,
- Accommodation, excursions (tourist agency "Bonaca").

Notice Board

There will be a notice board at the main entrance of the University of Zadar (on the left side), where delegates can leave messages for each other and check on the latest information provided by the local Organising Committee.

Meeting staff

English-speaking meeting staff will be available to assist in sessions. Helpers are volunteers, students of archaeology from University of Zadar. They will be easily recognized by their distinctive T-shirts. For easier identification, the volunteers and members of the local Organising committee will wear badges with a different colour from those of other delegates.

Language

The official language of Opening ceremony and EAA Annual business meeting is English. Papers in main European languages are accepted but English is preferable. There will be simultaneous translation (Croatian - English) for the Opening ceremony.

Computer facilities, Internet

LCD projectors and PCs' will be provided in all rooms. Overhead projectors and slide projectors will be available on request. Room with computers for access to the Internet will be available to the delegates.

Refreshments

Coffee and Tea Breaks: During the scheduled breaks delegates will be offered free water, coffee and tea.

Lunch break: 13.00 – 14.30

Delegates should take care of lunch at their own expense, since it is not within the organizer's responsibility. Let us just remind that there are numerous restaurants, fast food restaurants, sandwich bars close to the venue (see leaflet in the Delegate pack).

Souvenir T-shirt

Available at the Registration desk.

Posters

Please bring posters in the Grand Hall (Thursday morning, after 8.30), where volunteers will help you to hang them.

Authors of posters are requested to be present by their posters to answer any questions **on Friday, from 13.15 to 14.15.**

Exhibition

Publishers and other exhibitors will have their stands in the Grand Hall. Exhibition is open from Thursday, 8.30 till Saturday, 14.00.

Exhibitors:	Archaeopress Oxbow Books HEAcademy Cambridge University Press University of York Blackwell Publishing Routledge, Taylor and Francis Strati-Concept University of Zadar	Flyers:	Maney Publishing Intrasis SAGE Oxford University Press Berg Publishers
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Opening ceremony

Opening ceremony will take place in the Grand Hall, on Wednesday, 19th Sept. 2007, from 17.00 to 18.30.

1. Official opening
2. Welcome addresses by representatives of Croatian government and local authorities
3. Professor Anthony Harding, president of the EAA
4. Presentation of Heritage Prize
5. Keynote Lecture *Zadar and other Dalmatian cities on Traian's column*, by academician Nenad Cambi, full professor at the Department of archaeology, University of Zadar.

EAA Annual Party

The EAA Annual Party will take place in Club ARSENAL (address: Trg tri bunara 1; www.arsenalzadar.com), on Thursday, 20th Sept. 2007, from 20.00 till 24.00 o' clock.

The staff on duty will ask you to present a coupon for complimentary drink, distributed in the Delegate pack.

After the party, buses will drive back the participants to their hotels.

EAA Annual dinner and dance

Delegates are invited to attend the closing gala dinner and dance in Hotel Kolovare (address: Bože Peričića 14), on Saturday, 22nd Sept., at 20.00.

Tickets were sold with the registration, but a few tickets will be available for sale at the registration desk.

After the dinner, buses will drive back the participants to their hotels.

EAA 2007 Business Meeting

The EAA Annual Business Meeting will take place in the Grand Hall of the University of Zadar, on Saturday, September 22, at. 17.00.

All EAA members present at the Meeting are invited to attend.

Provisional Agenda of EAA 2007 Business Meeting:

1. Opening and welcome by the President of the Association
2. Annual Report by EAA General Secretary and EAA Administrator
3. Financial Report by EAA Treasurer
4. Announcements of the 2007 Elections
5. Welcome to the new Board members and thanks to the board members stepping down from the Board
6. Progress Report of EJA
7. Elections of new Nomination Committee member
8. Announcement of the EAA Student award for 2007
9. Reports from the Working parties, Committees and Round Tables
10. Announcement of the 14th Annual Meeting (Malta)
11. Any other business

Members may contribute to these items from the floor. Only full members of the Association are eligible to vote. If any member would like to add a new item to the agenda, please contact EAA General Secretary or the EAA President, by Friday, 21st Sept. 2007, 17.30 o' clock.

A summary of the Annual Business Meeting will be published in the TEA or sent by e-mail to the members.

Addresses

EAA 2007 Meeting secretariat	EAA Secretariat
University of Zadar Ulica Mihovila Pavlinovića bb HR – 23000 ZADAR, CROATIA tel.: ++385/23/200 534 fax: ++385/23/200 605 e-mail: eaazadar07@unizd.hr	EUROPEAN ASSOCIATION OF ARCHAEOLOGISTS c/o Institute of archaeology CAS Letenska 4 11801 PRAHA 1, CZECH REPUBLIC tel/fax: + 420/257 01 44 11 e-mail: eaa@arup.cas.cz

Insurance

The conference organizers or its agents accept no responsibility for any medical expenses, loss or accidents incurred during the 13th EAA Annual Meeting.

Delegates are required to arrange their own personal insurance to cover medical and other expenses including accident or loss.

Important telephone numbers

Emergency service: 112
Firemen: 93
Police: 92
Road Assistance: 987
Hospital: (+385 23) 315 677
Medical emergency: 94
Pharmacy on Duty: (+385 23) 302 920, (+385 23) 211 264
Taxi: (+385 23) 251 400
Airport: (+385 23) 313 311
Bus Station: (+385 23) 211 555

Acknowledgements

The organizers of the EAA 13th Annual Meeting, Zadar, Croatia, 2007, thank all those who made this conference possible. In particular we wish to thank all our sponsors, members of committees and volunteers.

Committees

Organising Committee

1. Professor Ante Uglešić, vice rector of the University of Zadar
Chair of the Organizing Committee
2. Dr Dražen Maršić, Head of the Archaeological Museum in Zadar
Vice-chair of the Organizing Committee
3. Dr Hrvoje Potrebica, Department of Archaeology, University of Zagreb/Head of Croatian Archaeological Society
4. Jasen Mesić, MA, deputy minister in the Ministry of Culture of the Republic of Croatia
5. Professor Brunislav Marijanović, Head of Department of Archaeology, University of Zadar
6. Tomislav Fabijanić, MA, Department of Archaeology, University of Zadar
Secretary of the Organizing Committee and Meeting Coordinator

Scientific Committee

1. Hrvoje Potrebica, Department of Archaeology, University of Zagreb/Head of Croatian Archaeological Society
2. Predrag Novaković, EAA Executive Board
3. Margaret Gowen, EAA Executive Board
4. Marko Dizdar, Institute of Archaeology, Zagreb

Sponsors

Ministry of Science, Education and Sports of Republic of Croatia
Ministry of Culture of Republic of Croatia
Municipality of Zadar
County of Zadar
Wenner-Gren foundation
Hrvatski Telekom

Volunteers

The Volunteer team, under the leadership of Tomislav Fabijanić, is comprised of students of archaeology at University of Zadar:

Ivana Anterić, Ana Bašić, Mario Bodružić, Marin Buovac, Mirna Crnković, Iskra Čataj, Stipan Dibar, Ina Divac, Petar Dozan, Luka Godina, Ilonka Gotal, Borna Gulin, Hana Ivezić, Vjekoslav Kramberger, Ivan Krmpotić, Gorana Kušić, Maja Legin, Matija Makarun, Ana Marić, Miroslav Mateša, Davorin Melih, Krešimir Mijić, Barbara Klara Olujić, Ana Opuhač, Lujana Paraman, Andrea Rimpf, Mario Sajatovski, Lana Srblin, Helena Šuderla, Dino Taras, Matilda Taraš, Bernarda Teklić, Dinko Tresić Pavičić, Eduard Visković, Ivan Volarević, Ante Vukić, Mirko Vukušić, Elvin Zejnilhodžić, Tomislav Zojčeski, Vesna Žarak.

We are very grateful to all of them.

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Thematic Blocks:

1. Archaeology and Material Culture: Interpreting the Archaeological Record
2. Archaeology and the Modern World: Theoretical and Methodological Perspectives
3. Managing the Archaeological Record and the Cultural Heritage

S = session; RT = Round table; WG = Working Group



THURSDAY



**Session title: MODELS FOR DELIVERING RESEARCH
IN EUROPEAN DEVELOPMENT-LED ARCHAEOLOGY**

Organizer: Margaret Gowen, Ireland

Time: Thursday morning

Room: 113

Session abstract:

The purpose of this proposed session is to seek discussion on how archaeological research can be effectively delivered against a backdrop of increasing development-led, commercial activity. Examples and 'case study' presentations are sought that can profile successful archaeological research models conducted in response to development impact. The session will also seek to present discursive papers that can identify issues for research and projects conducted in development-led situations and, more importantly, provide examples where opportunities have been successfully grasped and brought to a successful conclusion (i.e. publication).

The session will seek a wide geographic spread across Europe and examples of best practice that illustrate how research is currently being delivered effectively. Examples can include those that break from traditional models of research. Papers are sought that can indicate where integration and collaboration have been achieved between university/institute/museum sectors and commercial sector projects. EC-sponsored projects can be included and other models can also be presented if relevant.

As Session Organizer, I am keen to get beyond the issues of commercial archaeology and on to a focus on how the significant resources and 'spend' on commercial sector, development-led work can provide to opportunities for archaeological research. Market-led Cultural Heritage Management in Europe may become a dominant influence on the future of the profession in Europe, as it already has in many European states. Greater consideration needs to be given to ensuring that this activity provides a return to research and archaeological knowledge generally.

Paper abstracts:

COLLABORATIVE UNIVERSITY/COMMERCIAL RESEARCH. A CASE STUDY OF POLISH ARCHAEOLOGY

Arkadiusz Marciniak, Institute of Prehistory, University of Poznań, Poland

Polish archaeological rescue research refers a complex programme aim to detect, investigate, recognize and document archaeological sites threatened with potential damage by the scheduled constructions of 2300 km of highways and numerous expressways. Academic institutions, including universities, have been involved in this programme since it was launched in the second half of the 1990s.

After presenting archaeological rescue excavations in the highways development project, the paper aims to address a number of significant aspects of university/commercial collaboration within the project. In particular, it will focus on changes in the research agenda over the last decade, excavation standards, and shortcomings of commercial model as well as delivering and disseminating research results. The current rescue campaign run by Institute of Prehistory, University of Poznań will be presented as a case study of Polish collaborative university/ commercial research.

THE RESCUE EXCAVATIONS ON ALBURNUS MAIOR ANCIENT MINING SITE: CONTEMPORARY CHALLENGES FOR ARCHAEOLOGICAL MANAGEMENT

Paul Damian, Adela Bâltăc, Mihaela Simion, National History Museum of Romania, Bucharest, Romania
Corina Borș, Arheoterra Consult S.R.L., Bucharest, Romania

Alburnus Maior (Roșia Montană, Alba County, Romania) is an ancient mining site located in western Carpathians, known since 200 years ago by chance finds made in the mining galleries of a unique category

of epigraphic Roman artefacts, the wax coated tablets. Up to 2000 the area remained known only by chance finds of epigraphs and funerary architecture elements. In 2000, in the context of a private mining investment, after performing an evaluation study regarding the heritage values, was initiated a vast research programme for investigating the surface archaeological vestiges and – for the first time in Romania – the underground networks, the research programme being scheduled to continue up to 2012. Thus various heritage components of the *Alburnus Maior* ancient site were identified, considering that the site is overlapped significantly by the contemporary locality and mining operation. Up to now the discoveries allowed the outlining of certain areas with archaeological vestiges which will be preserved and integrated in a tourist circuit. Thus will be created a mining museum and an open-air exhibition presenting restored archaeological vestiges, original parts and reconstructions of the most significant historic galleries, along with future archaeological researches and the publication project for the researches' results. The paper aims to present the main features and results of the archaeological management of the research programme of an ancient mining site, proposing a public – private partnership between the mining company and the responsible authorities, with the support of the heritage specialists. From this perspective the programme represents an effort of unprecedented scale in terms of human and financial resources, managing unitarily, in an integrated manner, the archaeological researches, the interdisciplinary studies, the finds' recording system and the editorial & dissemination project.

REACHING FOR THE LOCALS /OR BEING STUDIED BY THE INDIGENOUS: MOTORWAY EXCAVATIONS AND POPULAR SCIENCE OUTPUT

Christoph Steinmann, Dresden, Germany

Large scale excavations have been conducted between 2003 and 2005 preceding the construction of the motorway B 6n in Central Germany. A group of up to 240 employees worked on 80 hectares, excavating about 30.000 features and saving nearly 1 million single finds. Right from the start it was our aim to collaborate with as many partners as possible. The development archaeology should be just a starting point for further activities. On the other hand, it was clear that the excavation work in the field should not suffer from "additional activities". Thus we had to combine daily recording pressure with the wish to present as much of it as possible to the wider public and scientific community.

Cooperation included following aspects:

- Universities: student excavations and practice; State funded research programmes; case studies on excavated materials (Dissertations, theses)
- Public and research institutes: dating (C-14); sample analysis
- Public museum: exhibition for the time of the excavation (including 4 updates)
- Local tourist office (commercial): guided tours through exhibition and across excavation
- Local schools: day visits and projects
- Local bank: funding of information booklet
- State Heritage Office: publication of popular book about the excavations and presentation of first results (300 pages)

It became clear that only large scale rescue excavation projects with a high number of employees can master such tasks. Additionally, the motivation inside the team and its wish to go beyond "the usual tasks" has been proved to be crucial. (In comparison, other teams on similar projects had more difficulties.)

The paper attempts to present the development of the excavation project itself, the internal development of the team and its subgroups and, finally, the structure and output of cooperation. It will be demonstrated how these led to outstanding project outputs: the first (!) archaeology exhibition in the Federal Ministry of Building and City Development (Berlin & Bonn) and a 300-page volume about the first excavation results.

RESCUE ARCHAEOLOGY INITIATED BY RESEARCH – A CONTRADICTION IN TERMS? THE ROLE OF THE UNIVERSITIES IN NORWEGIAN CULTURAL HERITAGE MANAGEMENT

Karl Kallhovd, Håkon Glørstad, Museum of Cultural History, University of Oslo, Norway

This paper will discuss the Norwegian system of rescue archaeology as part of the national Cultural Heritage Management. The Museum of Cultural History, University of Oslo, is one of five archaeological

museums responsible for all archaeological excavations in Norway. The country is divided in five museum regions and a museum is exclusively responsible for all excavation in such a district. The Museum of Cultural History in Oslo has since 2000 worked out a model for integration of rescue archaeological investigations in a framework of research. Target areas are defined through research programs adjusted to some of the main rescue archaeological challenges. The museum has used a large scale Stone Age excavation as a pilot project for developing the model. After the rescue archaeological part of the project was ended, the museum and the Norwegian Research Council have founded a research project in order to realise the research potential in this source material. We have also developed a feedback system where this research shall be integrated in future management and the development of target areas. This undertaking is also manifested in the organisation of the heritage management at the museum. The staff is reorganised in research teams and recruitment is based on the future challenges of the target areas.

RESEARCH PERSPECTIVES IN PREVENTIVE ARCHAEOLOGY – THE FRENCH APPROACH

Jean-Paul Demoule, Pascal Depaepe, Nathan Schlanger, INRAP – Institut national de recherches archéologiques préventives (Recherche et développement international), Paris, France

The unprecedented upsurge of archaeological activities in contemporary Europe raises particular challenges with regards to research programmes and priorities. In between the needs of building and infrastructure works and those of heritage management and protection, it can become difficult to keep in mind that archaeology is above all a scientific discipline, which develops and deploys research methods in order to gain new knowledge and understanding about the past. In France, the question of research in archaeology has been particularly topical, as reflected in the very name of the Institut national de recherches archéologiques préventives (INRAP).

Overall, decisions regarding evaluations and excavations of archaeological remains threatened by building works follow scientific (rather than economic) considerations, and likewise specific field and recovery methods are deployed by INRAP to maximize research potential. Within the Institute a substantial number of man/days are allocated for undertaking research and publications, and these initiatives are furthermore well integrated with the programmed or academic activities of the Universities and the CNRS. Of course, also in France there remain to iron out several operational and structural difficulties with the research dimension of preventive archaeology. Nevertheless, it is becoming increasingly clearer to the competent authorities, to the landowners and developers, and indeed to the population as a whole, that the acquisition of scientific knowledge about the past is an essential and integral part of the public service that archaeology provides.

CONTRACT EXCAVATIONS AND ARCHAEOLOGICAL RESEARCH IN AN EXTENSIVE DEVELOPING ENVIRONMENT – SOME CASE STUDIES FROM ISRAEL

Gideon Avni, Excavations and Surveys dept., Israel Antiquities Authority, Jerusalem, Israel

Between 1990 and 2007 more than 5000 rescue and preventive archaeological excavations were conducted in Israel, scattered randomly all over the densely populated areas of the country. These projects were triggered by an accelerated modern development process, which included large scale construction of new towns, an expanding system of highways and railways, and extensive renovations within the heart of historic cities. The main outcome of this large scale archaeological activity is a significant change in the archaeological map of Israel, highlighting new sites and periods which were not emphasized in previous researches of the Holy Land, as the late Antique, the early Islamic and the Medieval periods.

The paper will describe several large scale archaeological projects, and will evaluate the contribution of the research conducted within the framework of contract archaeology to the previous knowledge of these sites:

The excavations at the city of Ramla on the coastal plain, which flourished as the early Islamic capital of Palestine, are a typical example of urban archaeology in which contract archaeology plays a major role in creating the archaeological map of the city. More than 100 rescue excavations have been conducted in Ramla, most of them in a condensed urban surrounding. The layout and urban development of the city between the 7th and 11th century was reconstructed using the data from these excavations, establishing new paradigms for research, and changing the previous research frameworks which concentrated in a limited open areas.

The cross Israel Highway project, a major enterprise which triggered large scale excavations during the last decade within a long section crossing the country from north to south provided a unique opportunity to conduct a comprehensive archaeological research of a narrow section from the northern part of the country to the central ones. The large number of sites discovered and excavated provided a new data base for the evaluation of the historical and cultural changes in these regions throughout history.

The paper will describe the interaction between archaeologists and developers, and will evaluate the methods of research and the scientific contribution of the projects to the archaeological map of Israel.

THE EVOLUTION OF SRI PRESS

Jeffrey H. Altschul, Statistical Research, Inc., Tucson, AZ, USA

The dual issues of "gray" literature and research dissemination have plagued the cultural heritage management field in the United States since its inception in the late 1960s. Ethically, archaeologists recognize their responsibility to publish results of investigations. Commercially, however, there is no incentive to publish. In fact, government and private "consumers" of archaeological services often are put off by publication, believing that it drives costs higher. Statistical Research, Inc. (SRI), a for-profit cultural heritage management firm based in the United States, has been struggling with these issues for nearly 25 years. We have moved from an in-house publication series with limited distribution to the development of a publishing division and a partnership with the University of Arizona Press. Our experience, both positive and negative, will be discussed along with suggestions of alternative means of addressing these problems.

RESEARCH FRAMEWORKS FOR THE HISTORIC ENVIRONMENT

Kathy Perrin, Adrian Olivier, English Heritage, UK

English Heritage is committed to supporting the development of research frameworks for the Historic Environment. Our aim is to enable the varied players and stakeholders within Historic Environment management and research to develop collaborative research frameworks. This will ensure that research values are embedded in all future work, help set priorities for action and spending, encourage partnership and cooperative approaches, as well as sustaining long term objectives. The results are published and disseminated widely.

To date we have had significant successes. Support is being provided for the development of national perspectives, for the development of regional frameworks which are complete or underway in all of England's nine regions, for some World Heritage Sites, for the various recognised 'periods', and also for work which has more closely defined purposes (in local or site specific contexts). This work is being well received by the discipline which regards it as a high priority and it has attracted considerable and enthusiastic support from our partners.

The main objectives of the strategy are to assist the discipline in developing a range of dynamic and flexible research frameworks that will help ensure that appropriate research values underpin all archaeological work of whatever sort (above and below ground), whether it is development led or not.

Research framework projects will:

- underpin curatorial decisions;
- assist in setting priorities;
- sustain long-term objectives;
- ensure that the resulting frameworks are dynamic, evolving, open and non-prescriptive, and do not stifle independent or opportunistic research;
- publish and disseminate the resulting research frameworks as widely as possible in order to maximise their impact and use.

Our primary aim is to support the work of existing partners in order to create a suitable environment within which different sectors of the discipline can work together to develop for themselves a complimentary raft of resource assessments, agendas, and strategies (which together comprise a research framework) in national, regional, and local contexts.

This presentation will look at the development of the frameworks, some of the emerging results and strategies for keeping the resultant frameworks live.

AN EMERGING FRAMEWORK FOR RESEARCH IN IRELAND: RECENT DEVELOPMENTS AND A WAY FORWARD

Gabriel Cooney, School of Archaeology, University College Dublin, Ireland

Archaeology in Ireland has changed fundamentally since the early 1990s. The quickening pace of economic development and the integration of the RMP (Recorded Monuments and Places)/SMR into the planning legislation provided the platform for an explosion in development-led archaeological activity. In this paper the current delivery of archaeological research in this environment will be outlined. A number of key recent initiatives: *Archaeology: Repositioning Irish Archaeology in the Knowledge Economy* (2006), The Heritage Council's report to the Minister of the Environment, Heritage and Local Government on *A Review of Research Needs in Irish Archaeology* (2007), the *Key Recommendations* from the Royal Irish Academy Forum on *Archaeology in Ireland: A vision for the future* (2007) and the establishment of the Northern Ireland Archaeological Forum will be discussed. It will be argued that the broad engagement of and support from the archaeological profession and other key stakeholders and agencies for these initiatives indicates that with political support a new framework for archaeological work, with the explicit central aim of delivering archaeological research, can be developed.

COMPENSATION NOT MITIGATION? RETHINKING DEVELOPER-FUNDED ARCHAEOLOGY

Roger M Thomas, English Heritage, UK

'Developer-funding' of archaeological work has generally been seen as a way of mitigating the impact of development on archaeological remains – the harm to the remains is reduced by making a record of them before they are destroyed ('preservation by record' in the terminology of England). This paper will argue that developer-funding might be better seen as a form of compensation – the developer funds archaeological work which will make a socially-useful contribution to knowledge, as a way of compensating society for the loss of archaeological potential caused by the destruction of the remains themselves. This paper will explore the potential impacts on archaeological practice and outcomes of such a change of perspective.

DISCOVERING THE ARCHAEOLOGISTS OF EUROPE (INTRODUCTION TO THE DISCUSSION SESSION AT THE END OF THE DAY)

Kenneth Aitchison, Institute of Field Archaeologists, UK

Discovering the Archaeologists of Europe is a European Commission-funded project that is identifying the roles played, the responsibilities accepted and the rewards gained by archaeologists working across ten European states. As commercial archaeology becomes increasingly embedded within national systems, this is producing a comparison of the ways that archaeology is undertaken as much as it is a practical guide for archaeologists and archaeological employers who have ambitions of moving between states to work.

Session title: EXOTICA IN THE PREHISTORIC MEDITERRANEAN

Organizer: Andrea Vianello, Intute, University of Oxford, UK

Time: Thursday morning

Room: 136

Session abstract:

This session focuses on the archaeological evidence of trade in the prehistoric Mediterranean and is concerned primarily with the detection and interpretation of foreign products and materials. The first part of

the session will concentrate on approaches and techniques to detect exotica, especially (but not exclusively) consumable materials. Current approaches are based on stylistic analyses of objects. We would like to present an array of different case studies on newer approaches. For instance, studies of special sites, associated with the production of particular substances (e.g. salt, sulphur, spices, etc.) may be able to identify characteristic tools that may help in identifying similar production processes at other sites, albeit at a smaller scale. Studies of exchange networks, especially those associated with the trade of a few commodities (e.g. "amber route", Uluburun cargo) may be used to identify specific areas of production and consumption for each commodity and eventually predict what commodities at a site along such route might have been circulating. Scientific analyses can also be useful for much more than provenance studies. Archaeochemistry and residue analyses can provide a significant contribution in identifying substances that cannot be detected by traditional analyses. The aim is to bring together specialists from different disciplines and discuss the possible options to recognise as many exotica as possible from the archaeological record, possibly establishing a research portfolio of possible techniques.

The second part of this session will focus on interpretations of exotica. We welcome papers on any kind of foreign or rare material that will emphasise the recognition of any material or product as valuable. The aim is to establish a set of approaches to assess and verify the value of traded materials. Too often "exotic" equals "prestige" and "luxury" without any further thoughts, even if some exotica may be containers or accessory to other products and therefore not traded for their intrinsic value. The case studies in this section should establish the value of exotica in antiquity by constructing interpretive frameworks analysing aspects such as the fascination and fetishism towards rare materials and products; the higher quality of foreign material; rarity and the effort of procurement involved; unusual shapes, colours or textures that may set any exotica apart from similar products; the tactility of rare products; and others.

Paper abstracts:

BIRD-SHAPED PROWS OF BOATS, SEA PEOPLES AND THE PELASGIANS

Jan Bouzek, Prague

Bird-shaped prows of the Sea Peoples' boats on the Medinet Habu reliefs have parallels in the symbolic bird boats of Northern Europe. The Naue II swords, the lanceolate spearheads and the bronze sheet armour have their forerunners mainly northeast of Italy, in the eastern part of Central Europe, where also origins of the violin-bow fibula and of their descendants, the bow fibulae, most probably can be sought. The swords and lanceolate spearheads, together with the armour composed of corselet, greaves, helmet and small round shield, more apt for guerilla fights than for the great armies, as they existed in the empires of the Bronze Age Eastern Mediterranean, helped the barbarians similarly as the simplified kind of weaponry enabled success later barbarians against much larger armies.

The memory of successful seafarers of the generations of the Sea Peoples was kept in Greek historical memory in the legends on the Pelasgians, legendary founders of many cities in the Mediterranean. As mentioned by Dionysius of Halicarnassus (I, 28, 3-4), the Pelasgians were also called Pelargians, because all in them resembled the storks. The European-based armour was found useful for their opponents and also adopted and used in Greece and Cyprus; the unusual in the Mediterranean climate bronze sheet armour is still mentioned in the description of the armour of the Philistine warrior Goliath in the Old Testament. The Sea Peoples' adventurous expeditions were composed of people of different background and organized in successful collaboration of peoples of different origin, what was a very unusual phenomenon in the previous Bronze Age, in which the great kings and/or blood relations were necessary conditions for coordinate actions. The organisation of the Sea Peoples resembles the systems of the Greeks and their opponents in the Iliad. Similarly as in the Iliad, the alliance of the Sea Peoples marked the transition from the Bronze Age pyramidal structures of government with recognized semi-divine authority of the ruler towards the new Iron Age society; it was a transition from the old system to the Iron Age *Gefolgschaft*.

Similarly as the barbarian peoples of the migration period and the Vikings, the Sea Peoples were - at least partly- exotic phenomenon in the Mediterranean world and their role was similar. They helped to destroy the old political system and helped to prepare the conditions for the rise of a new age in Mediterranean history. Even some traits of the religion of the Sea Peoples, notably that of the Solar Deity and Solar Hero, left traces in the religion of the Mediterranean.

SALT PRODUCTION AND USE IN PREHISTORY: RESEARCH METHODS AND OPEN QUESTIONS.

Tomaso di Fraia, Pisa

Salt has been considered for a long time by most scholars as an archaeologically invisible substance and therefore generally neglected in research. Only in the last decade some archaeologists have devoted more attention to this topic, either in the light of new findings or by re-examining some known archaeological contexts. Today some facts about ancient salt production are well known, such as the utilization of large and prevalently conical ceramic containers for boiling the brine. These containers were made from rough ceramic, which assumed a colour from red-brown to orange after cooking. Another feature of most salt production sites is the presence of ceramic or stone bars used as supports for containers. In a few cases rock salt exploitation has also been recognized.

However, much caution is necessary in interpreting various archaeological contexts and related findings, primarily because of different production systems. These problems are discussed by examining the most important archaeological contexts that have been published recently.

The second main issue concerns possible uses of salt in prehistory. In order to research this issue, it is necessary to study carefully the ecological and economic features of each archaeological site and to utilize all our biological and ethnographic knowledge.

TRADE ROUTES AND INTERTRIBAL COMMUNICATION AMONG MBOWAMB AND AROUND MOTTEN: PARALLELS BETWEEN PREHISTORIC CENTRAL EUROPE AND ARCHAIC SOCIETIES IN CONTEMPORARY NEW GUINEA

Heinrich C. Dosedla, Germany

According to archaeological evidence there was considerable exchange or trading activity during the prehistory of Europe. Trading items of various kinds apparently originating only from distinct local sources were found in different places sometimes covering a distance of several hundred kilometres. Some ancient trade routes linking Central Europe with the Mediterranean already started in the course of the Neolithic period, as in the case of maritime shells used for decoration, but were later also frequented by other trading articles including graphite. Though a number of these trading routes and exchange systems can be reconstructed, information is still lacking concerning their conditions and social context. This paper will focus on graphite, which is an important commodity that was sourced during the Neolithic period principally from some rare deposits in the Danubian region. Graphite was employed in the manufacture of black ceramics, such as the graphite painted pottery of the Bulgarian "Mound Culture", which circulated also in Aegean Thrace. Salt was exchanged for graphite between Central Europe and an Austrian fringe region of the Southern Bohemian granite plateau. Ethno-anthropological comparisons will be attempted with similar trading systems that have been recognised among archaic tribal societies in New Guinea.

TACKLING NEOLITHIC UNCOMMON VESSELS FROM NORTHERN GREECE: FUNCTIONAL AND SYMBOLIC, FOREIGN WITH LOCAL?

Christina Marangou, Greece
Ben Stern

Possible functions of the intriguing so-called plastic vases found in Neolithic sites have often been investigated without any conclusive results, since the standpoint of the study is usually limited to description of morphology and style, information on context and traces of use being rare. Because of their striking aspect that brings them close to representational art, it has, in fact, generally been assumed that these objects were entirely symbolic and "useless" artefacts, attesting exclusively ritual and/or social activities and interactions.

Although some symbolic quality still seems to be undeniable, in the present paper we will try to approach this material, not only from a transcendental point of view, but also from a practical angle, following the results of scientific analyses of a small number of samples from Eastern Macedonia, Greece and taking into account contextual and other comparative data. Besides the seemingly double, symbolic and concrete function of the vessels, the study also shows that they would have been used in connection, not

only with local matters, but also with substances that have not, till now, been found in the region. If remote origin of contents added value to such containers, it is surprising that their appearance does not represent uncommon subjects. Possibilities of use, including of an everyday purpose of such objects is examined. It is to be hoped that further study will confirm the suggested hypotheses.

AMBER AND THE ADRIATIC SEA: RELATIONSHIPS BETWEEN THE TWO SEA-SHORES IN LATE PREHISTORIC TIME

Nuccia Negroni Catacchio, Milano

During the Bronze Age, the "routes" of amber reached the Adriatic Sea starting from the Northern European sea-shores. At first they crossed the Alps near the Resia and Brenner passes; then during the late Bronze Age a new oriental way stemmed out from the Vistula River to the Alpine passes and, via the Isonzo River, reached the northern area of the Adriatic Gulf, where the town of Monfalcone lies.

From that point the route forked, one of the branches headed for the delta of the Po River, where market places of exotic objects that would be distributed all over the Italian peninsula were placed, the other branch made for the eastern coast of the Adriatic Sea and reached the Mediterranean Sea, where the Mycenaean culture was flourishing.

This pattern remained similar during Iron Age, when many archaeological findings indicate close relationships between Italy and the Balkan Peninsula.

This paper will compare the most important amber goods, which are similar in shape and figuration, found both in Italy and in the Balkan area.

NEOLITHIC AND ENEOLITHIC SPONDYLUS GAEDEROPUS L.: FIRST RESULTS ON THE EARLIEST EUROPEAN LONG DISTANCE EXCHANGES AND THEIR ECONOMIC, SOCIAL, CULTURAL AND RELIGIOUS SIGNIFICANCES AND IMPLICATIONS

Michel Louis Sfériadès, Rennes

This paper focuses on my recent research on the astonishing Mediterranean shell, *Spondylus gaederopus* L, a spiny oyster. The shell is found across Europe, from the Aegean to the Adriatic Seas, from the Tyrrhenian Sea to the British Channel, and the North and Baltic Seas (as part of "jewels" found in settlements, hoards and graves).

Why did the shell travelled so far throughout most Europe? Why was this shell so often found (especially in graves, and often alone) in such different Neolithic and Eneolithic (Chalcolithic) cultural contexts? Can we reconstruct the ancient trading routes or their socio-economic, cultural and religious aspects such as mythology?

The European spondylus route is different (with some exceptions) from the obsidians routes (Anatolian, Aegean, Hungarian, Liparian) considering the meanings and uses of the shell. Differences can also be recognised between the spondylus trade and the trade of honey, Balkan flint, copper or gold exchanges.

The European 'spondylus route' should be best compared perhaps with the Bronze Age 'amber route', or even the Asiatic 'jade route' with its symbolic and religious value that this shell carries. According to myth, this shell has no place of origin no matter how far we are from the Mediterranean area.

Using ethnographical, social and cultural anthropological parallels, our understanding can be improved by the study of the well known Pacific Kula of the last century. Another important comparative source is the historical remembrance of the Andean Mollu from Neolithic times (III mill. B.C.) to the Inca Empire and the Spanish conquest.

OBSIDIAN IN THE CENTRAL BALKANS (SERBIA)

Boban Tripkovic, M. Milić and S. Shackley, Belgrade

Obsidian collections from the Central and Northern Balkans (Serbia) contain more than 10 000 artefacts. To date, only few pieces were characterized and these analyses point to Slovakian and Hungarian sources. This discrepancy stimulated us to initiate the Obsidian on the Margin project. The aim of the project is to

understand the pattern of southernmost distribution, which indicate intensive contacts with Carpathian communities. Sampling strategy encompassed chronological and spatial distribution of obsidian as well as macroscopic diversity in texture, transparency and colour. 185 samples from almost 30 sites were selected and treated by XRF. The results of these analyses will be discussed.

OBSIDIAN FINDS ON THE FRINGES OF THE CENTRAL MEDITERRANEAN: EXOTIC OR ECCENTRIC EXCHANGE?

Robert H. Tykot, Tampa

Long-distance trade is typically associated with rare or exotic materials, and naturally have different prestige values than at locations closer to their origins. In the prehistoric Mediterranean, obsidian is the best documented material, and shown to have been traded extensively from sources on the central Mediterranean islands of Lipari, Palmarola, Pantelleria, Sardinia, and from the Aegean islands of Melos and Giali. But relatively little study beyond sourcing has been done on obsidian artefacts found at archaeological sites far from these sources.

Far from these sources, obsidian has been found at many Neolithic sites around the Adriatic; in northern Italy, southern France, eastern Spain, and the Balearics; and in Algeria, Tunisia, and Malta. In the Copper and Bronze Ages, however, obsidian from the central Mediterranean sources has only rarely been found at faraway sites, while Aegean obsidian appears to have been used more extensively. This paper focuses on exotic obsidian finds, how such dispersals were related to economic and political changes over time, their overall sociocultural significance, and how they may be related to the exchange of other exotic or eccentric materials. In addition to integrating previous data with current research, suggestions will be made for future studies on this topic.

RECOGNISING EXOTICA IN THE ARCHAEOLOGICAL RECORD: THE CASE OF THE MYCENAEAN EXCHANGE NETWORK

Andrea Vianello, Oxford

The Late Bronze Age Mycenaean exchange network is perhaps the first pan-Mediterranean network that did not follow a specific route. Decorated pottery represents the vast majority of archaeological evidence for such trades and pottery itself has been considered to be one of the exotic commodities that were appreciated in antiquity. This paper will present and assess some methods to recognise exotica in the archaeological record using the Mycenaean trade network as case study.

Session title: INVENTED CIVILIZATIONS

Organizers: Michael Jasmin, CNRS, France; Harvard University, USA
Cornelius Holtorf, University of Lund, Sweden

Time: Thursday morning

Room: 137

Session abstract:

Western civilization has not only brought about the discipline of Archaeology but also an astonishing number of invented civilizations in the visual arts and creative fiction. Ever since the invention of Atlantis and El Dorado, it has been popular to thrive in fictitious cultures. Among the most prominent examples are J.R.R. Tolkien's Middle Earth. H.P. Lovecraft's Cthulhu mythos, C.S. Lewis' Narnia, Anne and Patrick Poirier's imaginary ruin sites, Charles Simmonds' remains of the Little People, *Civilisation Pessinoise* of Marc Pessin,

the Arenot civilizations of Beauvais Lyons, or the works of Joan Fontecuberta, and the Glozel site-civilization by Emile Fradin/Antonin Morlet. One may also think of Mu, Lemuria, Camelot, the Kingdom of Prester John, the lost civilization of Teegeeack, the Klingons in Star Trek, the Khuza culture, as well as Arcadia and the ancient gods on Mt Olympus. This session investigates the characteristics of constructed civilizations such as these. Intriguingly, there is often a great deal of documentation available in either primary or secondary literature about these invented worlds: descriptions, sketches and drawings of sites and architecture, even entire writing systems. Sometimes material culture exists too, whether bones, pots or the remains of sites.

The issues to be addressed in this session include the social reality of invented pasts, the experience of aura and authenticity, the relations between artistic freedom and scientific fraud, and new deliberations concerning art and archaeology: is there anything archaeologists can learn from the success and popularity of invented civilizations? What are these fictions telling us about the public's interest in the past or about the archaeological way of documenting and exhibiting archaeological sites and finds?

Paper abstracts:

THE PRESENCE OF PASTNESS

Cornelius Holtorf, University of Lund, Sweden

Arguably one of the reasons why invented civilizations are appealing is because they possess what might be called 'pastness'. Although an illusion, invented civilizations can genuinely emanate a sense of being ancient. I will take a short section of the B-movie "Dinotopia" (2002) as a starting point for discussing in what way 'pastness' is constructed in fictions such as this. I will argue that the experience of 'pastness' is central to any *presentation* of ancient civilizations (even those that really existed), and indeed part of the point of preserving heritage which makes 'pastness' tangible. Do we always need to know whether civilizations are invented or not?

UNEARTHING INVENTED CIVILIZATIONS

Michael Jasmin, CNRS, France; Harvard University, USA

Archaeology is much related to its practice – excavation – and for a long time it has been present in the collective imagination through literature, movies... So one can be surprised that archaeology only very recently appeared in the field of contemporary art: it is mostly since the end of the 1990s that several artists started using the excavation process in their creative practices. The use of strong symbolic archaeological practices: in-earting, excavating, and museographic *mise en scene*, are remarkable or central in the works of contemporary artists as Marc Pessin, Cho Duck-Hyun, Beauvais Lyons, Richard Purdy, John J. Leanos or Joan Fontecuberta and Mark Dion. Through these examples I will examine the artists' and public view of the archaeological procedure: from surveys to excavations to exhibition. Also considered will be scientific frauds, seen as creation, including the famous case of the Glozel fake "site-civilization" (by Emile Fradin or Antonin Morlet). These creative approaches will allow me to address several methodological problems such as:

- the analogy between artistic practices and the archaeological discipline
- "mock sciences" approaches
- artistic creation vs. scientific fake
- how artists play with exhibition rules for archaeological pieces.

MEGA-LIT: THE NEOLITHIC IN FICTION

John Robb, University of Cambridge, UK

Literary imaginings of the Neolithic have a long pedigree stretching back well into the 19th-century and encompassing authors as diverse as Hardy, Conan Doyle, Tolkien, Lewis, Le Guin, and a host of modern exponents in several distinct genres. This paper contextualises fictional treatments of the Neolithic, and particularly of megaliths, in social and cultural history, and compares them with narrative Neolithics written by professional archaeologists. As one would expect, invocation of the Neolithic as an imaginative resource is closely linked to social milieu and cultural myth and to the treatment of megaliths in media such as visual representations. It is somewhat

more surprising that the principal difference between archaeological and novelistic treatments lies in the particularity of archaeological narratives. The paper concludes with some discussion of the relations between archaeology as cultural mythology and fiction as a way of interpreting the past.

IS CIVILIZATION THE MESSAGE? INVENTED CIVILIZATIONS IN THE MEDIA

Ezra B. W. Zubrow, University at Buffalo, USA

As children how many of us have risen on Sunday morning filled with the hope that this week we will discover Narnia, Mordor, Mu or Atlantis. This study looks at the popular and social perceptions of "Invented Civilizations" and shows their relationships to "Heritage". World wide digital media (over 4500 outlets) are monitored for two sets of stories. One set discusses "Invented Civilizations"; the other "Heritage". Each set of stories are analyzed through a neural network program for underlying similarities and differences. Content does not follow form. Rather, the patterns of similarity are explained by political, cultural and social variables. For example, there are significant differences between how the industrialized nations, nations with changing governmental organizations, and newly industrialized nations perceive and conjoin "Invented Civilizations and "Heritage". Not all of these reflect their different immediate needs. We invent for we fear that both civilization is fragile.

SPECULUM FANTASIA: MIDDLE-EARTH AND DISCWORLD AS MIRRORS OF MEDIEVAL EUROPE

Mark A. Hall, Perth Museum & Art Gallery, Scotland

The invented civilisations to be sampled by this paper are J R R Tolkien's *Middle-earth* and Terry Pratchett's *Discworld*. Both are contrasting pinnacles of fantasy story-telling and both are intricately sustained creations of medieval worlds, with their imaginative landscapes firmly rooted in medieval Europe. Each is primarily a literary creation but each has achieved widespread popularity (and critical condemnation) to the extent that they have spawned various spin-offs – films (both live-action and animated), radio dramatisations, plays, music and art-work included. The two creations will be explored for their archaeological potential, for example what do they tell us about the perception of the past by authors and readers? Do they tell us anything about the real past? In exploring the answers the paper will look at imagination and authenticity, humour and gender and language, material culture and archaeological infrastructure.

HISTORIC SITES OF MIDDLE EARTH – GIVING LEGITIMACY TO THE LAND

Charlotta Hillerdal, Södertörn University College, Stockholm, Sweden

The complexity of the world created by J. R. R. Tolkien is outstanding in fantasy literature. The geography, language, history and the wealth of details all add up to the feeling of authenticity of Middle Earth. The rich history with its material traces from the past in the countryside gives us the possibility to treat this 'imagined landscape' almost as an existing one. As in 'real' cultures monuments of the past create a feeling of legitimacy. Even if one do not know the history, the ancient landmarks let you know its there. You are not treading untouched ground, but walking among the memories of great cultures lost. The idea of historical continuity is central for the construction of identity. History, tradition and heritage are concepts central to every community, and the material remains serves as a confirmation of these. From this aspect the nations of Middle Earth does not differ from the nations of reality. In this paper I intend to explore how the material remains in Middle Earth is used to create identity and legitimize the culture, and see if parallels can be found in contemporary society's use of archaeology.

ARCHAEOLOGY, MYTH AND MYSTERY IN THE FICTION OF H. P. LOVECRAFT

James Holloway, University of Cambridge, UK

American author Howard Phillips Lovecraft (1890-1937) has had a lasting impact on the literature of the fantastic. In concert with a group of writers (known collectively as the "Lovecraft Circle," and including "Conan the Barbarian" creator Robert E. Howard), Lovecraft developed an elaborate mythology which provided a context for his stories of cosmic horror. A self-taught antiquarian, Lovecraft read extensively on

history, mythology, anthropology, astronomy and linguistics. Throughout his life, he cultivated the persona of an antiquarian and a man of letters. Lovecraft's fiction seamlessly blended contemporary archaeological, anthropological and scientific thought with fictional or mythological archaeologies including Atlantis and Lemuria as well as his own creations. In addition to works of commercial fiction, Lovecraft created supporting documents such as the "History of the Necronomicon," a bibliographical essay on an imaginary book which featured in several of his stories. The impression of authenticity provided by Lovecraft's use of archaeology, ethnography and science in his fiction is a vital element of his lasting appeal.

Lovecraft's creations have had an impact far exceeding their notoriety during his lifetime. His works have been adapted into films, television programmes, rock and roll, comic books, toys, computer games, roleplaying games, and a stage musical. A number of books are available which purport to be the Necronomicon. Modern magical practitioners have even performed rituals, spells and acts of worship devoted to members of his fictional pantheon, the "Cthulhu Mythos." Some, although by no means all, of Lovecraft's admirers believe that Lovecraft was describing an existing mythology in his stories. The effect of his use of archaeology in his fiction continues to be felt, as his imaginary cultures and civilisations continue to produce very real material culture in the modern day. This paper explores the role of archaeology in Lovecraft's fiction, in particular the ways in which Lovecraft appropriated the archaeological discourse of his period to create a lasting impact for his Cthulhu Mythos. The role of the Cthulhu Mythos in post-Lovecraftian material culture will also be discussed.

THE FORBIDDEN ZONE: ARCHEOLOGY AND ARCHEOLOGISTS IN AN INVENTED CIVILIZATION (THE PLANET OF THE APES)

Michael A. Cremo, independent scholar, USA

The novel Planet of the Apes and its film adaptations depict an invented civilization that has captured the minds of people around the world, probably ranking second to Star Trek in influence. The ape inhabitants of the invented civilization, which also has a primitive human population, have a history of their relationship. Among the civilized apes are scientist apes, including an ape archaeologist named Cornelius. The arrival of human astronauts on the planet of the apes sets off a chain of events that leads Cornelius to the Forbidden Zone, where there is an archaeological site with evidence that contradicts the ape scientists' view of their history and relationship with the primitive humans on their planet. An examination of the role of archaeology and archaeologists in the invented civilization sheds light on the role of archaeology and archaeologists today, on our planet in, maintaining the authority of a socially accepted view of the past. Is there today on our planet the equivalent of a forbidden zone of archaeology which could challenge the authority of the now socially accepted view of the human past?

FROM BOSCH TO THE WIZARD OF OZ, THE TRUMAN SHOW AND THE CITY OF GOD. KINGDOMS WHERE STATE OF EMERGENCY IS THE NORM AND THE PLACE OF 'HERITAGE' IN 'RISK SOCIETY'

Stephanie Koerner, University of Manchester, UK
Joseph Koerner, Harvard University, USA

Our broad aim in this presentation is to contribute to illuminating "characteristics" of several "constructed civilisations" by comparing motifs of images dating from the times of Botticelli's illustration of Dante's Divine Comedy and Bosch's Garden of Earthly Delights to the times of such 20th century films as the Wizard of Oz, The Truman Show, Blade Runner and The City of God. In so doing we show that, while these "characteristics" do not form anything like a necessary continuum, they are not unique either. Rather much of their historical efficacy may hinge upon their central importance to paradigms, which have been assigned tasks of resolving 'crises' over pedagogical authority and political sovereignty, that: (1) reduce of existential and moral crises to 'problems of knowledge' (cf. Benjamin 1940), (2) exhibit extraordinary preoccupation with obstacles that 'public fear of contingency' and beliefs of 'others' pose for 'starting from scratch' (Toulmin 1990; J.L. Koerner 2004; Wynne 2006), (3) reduce matters of trust to issues of 'expert competence' and marginalise plurality of expressions of 'public grounds' of truth and aspirations (S. Koerner 2006). We will conclude with some suggestions about the bearing, which insights of the historical circumstances of these 'crises' and 'characteristics of invented civilisations' where 'state of emergency' (or war of 'all-against-all') is depicted as the norm may have upon challenges posed for archaeology by the place of 'cultural heritage' in what some call an age of 'risk society'.

DE GABÁIL INT SHÍDHE (THE TAKING OF THE SÍ): MYTHOLOGISING IRISH NEOLITHIC PASSAGE TOMBS

Andrew Cochrane, Cardiff University, UK

The mounds which contain passage tombs, sometimes termed *sí* in Irish, meaning mounds or the spirits that inhabit them, have stimulated interpretations and narrations since their conception. In Irish mythology and late nineteenth century scholarly accounts, tomb originators were often described as *Aes sídhe* - powerful Irish fairies or magical creations. For instance, in some early Irish manuscripts it is reported that the noble fairies, the people of the goddess Dana, were defeated by the invading sons of Mil, driving them underground and in to the mounds. From these locations they influenced the ripening of crops and milk yields – thus the deposition of appeasing gifts became a necessity, and for some this practice still exists today. By the early twentieth century, anthropology was incorporated and it was proposed by some that the fairy or magical folk were the memory or ghosts of Neolithic peoples. For instance, Alfred Haddon once argued that fairy-tales point to a clash of societies and could be regarded as stories told by people of the Iron Age of events which happened to people of the Bronze Age in their conflicts with others of the Neolithic Age. Contemporary interpretations of Irish passage tombs, such as The Mound of the Hostages, Tara and Newgrange, Boyne Valley. Co. Meath often depicts the makers of these constructions as ‘Neolithic’ people. Such people have even been further distinguished via culture-historical approaches as ‘Beaker folk’, ‘Grooved Ware’ people, passage tomb people and more recently ‘Knowthians’ and ‘Newgrangers’. Such caricatures of the builders of passage tombs are deemed more scientific or logical than the mythological accounts. Yet to what extent do they actually differ, and are current interpretations of ‘Neolithic’ peoples any more than the invention of a modern myth or civilisation? Is James Whitley correct and should we use ‘local’ folklore as well as ‘exotic’ ethnographic examples to build interpretation? This paper will tease out these threads and transcend public:academic – academic:mythological divides, without reverting to traditional dialectics, to broaden consideration of the impacts that these sites have in the constructions of worldviews .

THE ANIMAL INSIDE

László Bartosiewicz, Lorand Eotvos University Budapest, Hungary

Perceptions of animals have always determined human attitudes toward them. Whether real, imagined or invented, a variety of creatures have populated the human mindscape. Domestication, the interpretations by early naturalists, as well as design in the form of conscious animal breeding, ultimately rely on the idea of what an animal should look like, often influenced by popular appeal determined by beliefs that range from religion to social competition. While archaeozoological evidence tends to be understandably rare for this overall trend in mentality, examples will be reviewed to illustrate how osteological reality has been interwoven with creative thinking in populating our civilizations with culturally idiosyncratic animals in the past, present and possible future.

Round table title: "VISITING THE INVISIBLE?". THE PERCEPTION OF PREHISTORIC AND ROMAN SITES AND THEIR PRESENTATION TO THE PUBLIC

Organizers: David Breeze, Historic Scotland, Edinburgh, UK
 Sonja Jilek, FRE Office, Vienna, Austria
 Andreas Thiel, Deutsche Limeskommission, Saalburg/Bad Homburg, Germany

Time: Thursday morning

Room: 155

Round table abstract:

For most archaeological sites in the middle and in the north of Europe we have to face the problem that our archaeological monuments by themselves are not rather attractive. More often they are only visible as crop

marks, partly covered up or even completely invisible. Therefore we must "play" with the authenticity of the untouched, intact sites trying to get them more impressive: but re-buildings, reconstructions and other forms of visualisation easily lead to conflicts between conservation and development and presentation measures.

The nature of the presentation of archaeological monuments to the public relates closely to the individual state's views on their conservation. Many countries agree that the most important is the primacy of the archaeological remains, which should be left to speak for themselves. This is also acknowledged by UNESCO in considering potential World Heritage Sites for authenticity and integrity.

But how much intervention is acceptable to preserve and present our ancient monuments? Is it feasible to adjust the same conventions of conservation and presentation measures on the architecture of prehistoric and Roman sites in the middle and north of Europe than around the Mediterranean Sea? How to visualize the invisible? The session will try to examine this heritage management dilemma and will focus on the value and significance of the invisible architecture. Contributions are welcomed on critical assessments of present approaches.

Session title: PATHWAYS TO LANDSCAPES: THEORY AND PRACTICE IN 'LANDSCAPE ARCHAEOLOGY'

Organizers: Robert Bewley, Heritage Lottery Fund, UK
Rebecca Jones, Royal Commission on the Ancient and Historical Monuments of Scotland, Edinburgh, UK
Chris Musson, Culture 2000 Project *European Landscapes: Past, Present and Future*, UK
Włodek Rączkowski, Institute of Prehistory, Adam Mickiewicz University in Poznań, Poland

Time: Thursday all day, Friday morning

Room: 142

Session abstract:

What do we mean by 'landscape archaeology'? What are we seeking to understand about human expressions in the landscape? Traditional concepts of landscape archaeology inevitably differ from post-processual constructs. But in what ways do the different approaches throw light on one another? How can we use traditional and new methods and theories to investigate the basic evidence and to generate new ideas and understandings about the landscapes of the past? How can these new understandings be used to trigger new research, to increase public awareness and to contribute to conservation issues?

The session will aim to contrast differing theoretical approaches and to examine particular projects which impact in one way or another on the above questions, and to suggest ways in which future debate and research work could be made more fruitful.

Within the session *Pathways to Landscapes* we intend to include general approaches and case studies (e.g. Roman Frontiers, Neolithic landscapes, medieval landscapes, military landscapes, rural landscapes etc).

Contributions are invited on theoretical issues, critical assessments of past and present approaches; field observation and remote sensing; the aims and results of individual research projects; and critiques on the formulation, success and failure of conservation strategies. One of our aims is to discuss future directions in the interpretation, conservation, management and public appreciation of archaeological landscapes.

Paper abstracts:

ANCIENT LANDSCAPES AND 'TOTAL' ARCHAEOLOGY IN DAUNIA, SOUTHERN ITALY

Giuliano Volpe, University of Foggia, Italy
Roberto Goffredo, University of Foggia, Italy
A.Valentino Romano, University of Foggia, Italy

The remarkable 'cropmark' landscapes of the Tavoliere di Puglia, on the 'heel' of Italy, were first brought to prominence in the 1940s and 1950s through the pioneering air photography and fieldwork of John and

Patience Bradford. The mapping and interpretation of these multi-period landscapes in the following decades through the analysis of vertical air photography has in the past five years been supplemented by annual campaigns of reconnaissance and oblique air photography, linked in selected study areas by ground-based survey, surface collection, geophysics and small-scale excavation. It is argued that a 'global' approach to the characterisation and analysis of sites and landscapes is both possible and essential in an area as rich and complex in cultural material and 'aerial' evidence as the Tavoliere. But aggressive agricultural practices and (more recently) the proliferation of wind-powered generation projects have placed these remarkable remains at increasing risk of damage and destruction. The use of multiple investigative techniques and related analytical research, along with the creation of effective 'constraint maps' to moderate the impact of potentially damaging development projects, are seen as essential partners in the task of exploring, understanding and selectively conserving the remarkable landscape archaeology of this part of southern Italy.

ARCHAEOLOGICAL LANDSCAPES AND CULTURE CHANGE: 6000 YEARS IN LOWER BAVARIA

Matthew L. Murray, University of Mississippi, USA

In the heart of Bavaria in south-eastern Germany, a program of archaeological reconnaissance and survey has been systematically examining portions of a previously unexplored region between the Danube and Isar rivers. This project offers a small-scale "field laboratory" to investigate ideas about large-scale transformative socio-economic processes during later prehistory. In this paper, I outline what we have learned about five significant "transitional" periods: 1) colonization of the landscape by early farmers; 2) expansive settlement of developed farming communities; 3) introduction of metallurgy; 4) coalescence of late Iron Age polities; and 5) Roman conquest and cultural hegemony.

The spread of early farming communities (Linear Pottery Culture and its early Middle Neolithic derivatives) around 5800 BC was a colonization of new and unfamiliar landscapes. Early Neolithic groups established themselves in the primary streams and major tributaries and along the loess slopes of the hills and valleys. After 4000 BC changes in land use strategies and settlement patterns associated with increasing knowledge and familiarity with local environments during the later Neolithic were marked by an expansive movement into stream headwaters and out of the loess valleys onto heavier soils of the uplands. Around 2000 BC the introduction of fully developed metallurgy during the early Bronze Age was associated with a dramatic contraction of valley stream settlement in combination with the eventual establishment of burial monuments in prominent upland locations. Substantial long-term habitations do not appear to be associated with these upland mortuary locales.

During the ensuing Iron Age (ca. 800 BC) settlement continued to concentrate in specific enduring locales within the middle portions of developed stream systems, favouring broad loess terraces. At the end of the Iron Age (ca. 200 BC) a notably dense and extensive complex of occupations developed at one of these locales. By about AD 50, early Roman sites on the Danube River herald the Imperial investment of the region and the birth of the province of Raetia. However, no identifiable Roman remains have been documented in the project area, which lies between the intensively occupied Danube frontier and Roman provincial settlement along the Isar River. Our preliminary work calls into question the nature of Roman cultural hegemony in interior locations outside of the imperial infrastructure.

THE ČRNOMELJ WESTERN BYPASS SCHEME: THE ARCHAEOLOGY OF A LOWLAND KARST LANDSCAPE IN SOUTH-EASTERN SLOVENIA

Phil Mason, ZVKDS OE, Novo mesto, Slovenia

The Črnomelj Western bypass scheme presented an opportunity to examine a transect across a landscape of unknown archaeological potential in the immediate vicinity of a major multiperiod site – the town of Črnomelj in south-eastern Slovenia. The landscape in the study area is a lowland karst area with numerous swallow holes and uvalas. The field techniques employed drew on experience from the national motorway project, particularly in the upland karst in western Slovenia and experience in large-scale excavation in the covered lowland karst of central-eastern Slovenia. Fieldwork involved minimally invasive extensive and intensive surface and subsurface survey, machine trench evaluation and limited excavation

carried out in advance of construction, whilst monitoring work and further limited excavation was undertaken during construction.

These methods revealed a relatively uniform pattern that could be traced in a series of similar buried soil horizons and colluvial deposits in swallow holes and uvalas over a distance of 1.5 km. The modern karst landscape was created by a long term cycle of land use, starting with initial clearance in the Late Neolithic/ Early Eneolithic in the late 4th millennium. The late second millennium BC saw the start of a renewed cycle of clearance in the LBA, followed by grassland development, arable activity leading to intensive colluviation, short-term EIA/LIA stabilisation and grassland development, followed by renewed colluviation and a final phase of short-term Roman activity and grassland development. Evidence of similar, but less intensive, cycles of activity has been uncovered elsewhere in the lowland and covered karst of central-eastern and south-eastern Slovenia.

The paper seeks to draw attention to the importance of the potential of these lowland karst landscapes as an archaeological resource, which is subject to increasing pressure from agriculture and development.

THE CAIRO MASSIF: A CONTINGENT UPLAND LANDSCAPE

Michele Forte, University of Sheffield, UK

The present day upland landscape of the Cairo Massif in south-central Italy is replete with the material remains of a now bygone way of life. Terraced fields, threshing floors and dry stone stables are amongst the structures that bear testimony to the traditional economy of subsistence agriculture, animal husbandry and woodland exploitation which persisted in the area until the early 1970s.

Although more marginal than surrounding lower-lying areas, the Massif is certainly not remote and was not immune to the waves of socio-economic, political and technological change that characterized the last three centuries of Italian history. Identifying the effects of these wider historical processes on the economy and landscape of the Massif means looking beyond the extensive archaeological record to incorporate the widest range of archival sources and oral history. This integrated approach brings together all available strands of evidence, exploiting the strengths of each, and mitigating their limitations. The landscape archaeology lacks any real chronology but reveals the scale and location of many activities. The archival record is far from comprehensive and not always reliable but provides invaluable time depth and windows of detail, whilst the oral history offers a rich and unique insight into life on the Massif during the 20th century, and even beyond.

This paper will present the strengths and limitations of the varied strands of evidence and the methods through which they have combined to reconstruct the contingent use of the Cairo Massif between 1700 and 1970. In doing so, the value of an integrated ethno-historical and archaeological approach to recent landscapes will be highlighted.

MESOLITHIC AND NEOLITHIC HUMAN ACTIVITY AND LANDSCAPE CHANGE IN THE GOSTYNIN LAKE DISTRICT, CENTRAL POLAND

Andrzej Pelisiak, Institute of Archaeology, Rzeszów University, Poland
Małgorzata Rybicka, Institute of Archaeology, Rzeszów University, Poland
Magdalena Ralska-Jasiewiczowa, Institute of Botany, Polish Academy of Science, Krakow, Poland

Lake Gościąż in the western part of the Gostynin Lake District (central Poland) is exceptional in the European hydrographic landscape. It is one of very few lakes with annually laminated bottom sediments covering the late Glacial and Holocene sequence. These deposits constitute a unique year-on-year record of environmental changes around the lake during the last 12,860 years. Interdisciplinary research of the bottom sediments of Gościąż Lake and area around the lake was initiated in 1987. From 1991 Gostynin Lake District has become an area of research focused on settlements, economy and all aspects of activity of Mesolithic and Neolithic people. Archaeological surface and excavations research have produced important data on Mesolithic and Neolithic settlements, economies and relations between man and the natural environment. The main achievements have been: (I) discovering several hundred Mesolithic and Neolithic sites, (II) observations on the spatial arrangement of settlement sites, camp sites and single finds, (III) determining preferences in occupation and utilization of a specific environmental zones, (IV) obtaining data

related to the size of settlement sites, their spatial organization and scale of population etc., (V) collecting data related to economic issues.

In the Gostynin Lake District several hundred Mesolithic and Neolithic sites have been found. Almost thirty of them have been excavated. On the basis of palynological research several main phases of human activity have been recognized. Phases 1-3 are connected with Mesolithic man, phases 4-7 with Neolithic man, and phases 8-10 with Early and Old Bronze Age communities.

Well studied Mesolithic and Neolithic settlements, combined with precise dating of multiple sites, have opened new opportunities for correlating individual settlement phases (related to human activities) with phases of anthropogenic environmental changes identified in palynological material.

This paper discusses Mesolithic and Neolithic settlements in central Poland on the basis of archaeological and palynological evidence and data related to the geographic and social sciences. One of the important goals is the relations between prehistoric man in the area of Gostynin Lake District and its natural landscape and man's impact on the natural environment. We will focus our study on study the adaptation, organization and changing of the landscape by hunter-gatherers and early farmers according to various (eg. economic, symbolic) needs of these communities.

THE ARCHAEOLOGICAL INVESTIGATION OF BROOK VALLEYS: A CONTRIBUTION TO LANDSCAPE ARCHAEOLOGY IN THE NETHERLANDS

Eelco Rensink, National Service for Archaeology, Cultural Landscape and Built Heritage, The Netherlands

At present, landscape archaeology is a rather hot item in the Netherlands, both in the context of academic research and archaeological heritage management. Over the past four years the National Service for Archaeology, Cultural Landscape and Built Heritage has been actively involved in a project dealing with the investigation of archaeological heritage in brook valleys, taking a landscape perspective and treating these landscape sections as an integral part of past cultural landscapes. During this period new methods of desktop and field research have been developed, leading to the discovery and small scale excavation of remains of, among others, wooden bridges (Roman period and Early Medieval period), dumps of settlement waste (Late Iron Age), fishing facilities and facilities for water management (18th century). In brook valleys, such phenomena have never been investigated previously in a systematic way in Dutch archaeology. Their investigation is considered as an important contribution to the development of more landscape-oriented perspectives in archaeological heritage management.

The paper discusses the basic principles and aims of the project first. Methods and results of field research are next illustrated by some examples from brook valleys in the coversand area of the Southern Netherlands. Finally, the paper addresses the question of how to integrate theoretical concepts and field research at a landscape scale in daily heritage management practices in the Netherlands.

CHANGES IN THE LANDSCAPE OF THE VISTULA RIVER VALLEY NEAR CRACOW FROM THE PRE-ROMAN TO MEDIEVAL PERIODS: METHODOLOGICAL ASPECTS

Halina Dobrzańska, Institute of Archaeology and Ethnology, Polish Academy of Sciences, Cracow, Poland

Tomasz Kalicki, Institute of Geography and Spatial Organisation, Polish Academy of Sciences, Cracow, Poland

Bartłomiej Sz. Szmoniewski, Institute of Archaeology and Ethnology, Polish Academy of Sciences, Cracow, Poland

Years of paleogeographic studies on the evolution of the Vistula river valley downstream of Cracow, combined with archaeological investigations and interdisciplinary research conducted in the area, have created a unique opportunity to analyze landscape changes from the Pre-Roman to Medieval periods.

Two terraces covered with loess and a wide flood plain occurs in this section. Consequences of the Atlantic/Subboreal avulsions were two steps of flood plain and an incision of the river bed. River activities during the Roman flood phase were limited mainly to the lower flood plain. The Roman period settlements, with separate housing and production zones, were located near the edge of the loess terrace. Loess terraces provided the main agriculture areas. Clay and oak forests on flood plain constituted raw materials for pottery production, construction and supplied fuel for pottery kilns, bronze founding etc. Iron metallurgy based on meadow ore from the foot of the loess terrace edge was occasional. Phases of oak falling and oak germination recognized in subfossil oak collection from the alluvia were caused respectively by climatic changes and human activities.

In the Early Middle Ages there occurred a gradual increase of the river bed level and an aggradation of overbank deposits on the flood plain. Two phases of increased river activity took place in the 5th-6th centuries AD and the 9th-10th centuries AD. The embankments (floodbanks) in Cracow suburbia (Okół) were constructed in the 10th century AD. A decrease of settlement density and economic activity caused reforestation (*Betula sp.*) of the loess terraces. The birch forests were used for the production of wood tar. In the period of the 6th-10th centuries AD the settlements have been located on the edge of the loess terrace on the limits between two types of valley geosystems. From the 10th century AD settlement moved from the river valley to the slope of the Polish Upland and the Carpathians Foreland.

These landscapes changes were determined by natural processes and human activities linked with two different cultural models.

DISCOVERING LONG-TERM EXTENSIVE LANDSCAPE USE: REMAINS OF TRANSHUMANT PRACTICES IN MACEDONIA

Judith A. Rasson, Central European University, Budapest, Hungary

Transhumance (moving stock from winter lowland to summer upland pastures) is/was a way of using the landscape extensively. The associated activities of this practice leave relatively few archaeological traces, but represent a significant extension of cultural space beyond settlements that are occupied intensively all year round.

Transhumance allows herders to gain access to grass resources that they could not otherwise use; stock convert grass to milk, wool and meat that may be consumed at home or sold in the market. Little effort has been devoted to examining upland pasture sites for archaeological evidence of successive occupations. This paper reports on a survey to locate archaeological and ethno-archaeological remains of the practice of transhumance in western Macedonia in the light of considering how to integrate upland pastures into a full picture of the cultural landscape.

ROMAN MILITARY DEPLOYMENT IN ITS SETTING: SOLDIER, CIVILIAN AND TOPOGRAPHY

David J. Breeze, Historic Scotland, UK

During the course of the Roman Empire, military dispositions moved from a primary concern with advance and conquest to defence of the status quo. In both cases the fundamental relationship was between Rome and its enemies. This affected the location of military bases. Within this broad framework, topography played a role. This paper will consider the changing pattern of military deployment within its chronological and geographical framework.

A MULTIPERIOD MILITARY LANDSCAPE IN DOBROGEA, ROMANIA

Ioana Oltean, University of Exeter, UK
Bill Hanson, University of Glasgow, UK

The existence of a major linear frontier across the centre of Dobrogea, from Cernavoda on the Danube to Constanta on the Black Sea coast, has long been known. Traditionally regarded as Roman, and subsequently seen as early medieval, the monument has attracted little attention since the 1960s. This paper presents a recent re-assessment based on archival vertical photography, satellite imagery and recent aerial reconnaissance which highlights the complexity and chronological longevity of the monument and places it within its wider landscape setting.

A BIRD'S EYE VIEW OF THE WESTERN FRONT (FLANDERS): A NEW SOURCE FOR FUTURE ARCHAEOLOGY

Birger Stichelbaut, University of Ghent, Belgium
Jean Bourgeois, University of Ghent, Belgium

The material remains of the military structures of the First World War are fragile and under continual threat from modern land-use patterns. This paper describes how a specific, non-destructive, method can

give new insights into extant and destroyed archaeological remains through combining new cartographic technology (GIS) with the photographs from early aerial photography.

The main source for the research is the Royal Museum of the Armed Forces and Military History in Brussels. The museum holds an outstanding collection of more than 45,000 aerial photographs, mostly related to the Belgian frontline. The collection is archived by means of place names that were mainly used during the war (Ferme du Hangar, Trench 111, Batterie 75-05, etc). Therefore a study of trench maps was undertaken to specify these names on modern maps in order to have a clear view of the content of the collection.

Almost 6,000 aerial photographs were carefully selected in different archives (Royal Museum of the Armed Forces and Military History Brussels, Belgian Military Archives, Imperial War Museum, Central State Archives Bavaria and First Division Museum Cantigny), scanned at 400 dpi and all information was stored into a database. More than 5,000 photographs are precisely located in a Geographic Information System and are used for a very detailed inventory of all visible traces.

Using contemporary aerial photographs to investigate First World War archaeology gives accurate insights into the density, distribution and accurate location of possible material remains and is a more reliable approach than using existing trench maps. This is an important source for both the scientific study and cultural management of this heritage.

A 'PHENOMENOLOGICAL' APPROACH TO HISTORIC BATTLEFIELDS: THE WORK OF THE BLOODY MEADOWS PROJECT, UK

John Carman, Institute of Archaeology and Antiquity, University of Birmingham, UK

Patricia Carman, Institute of Archaeology and Antiquity, University of Birmingham, UK

The Bloody Meadows Project takes an international and comparative perspective on landscapes of battle across time and space. Drawing in particular on an anthropologically-informed 'phenomenological' approach to landscapes it seeks to identify what kinds of places have been chosen in different periods of the past for the activity called 'battle'. Our results so far suggest that during particular periods of history particular kinds of landscape were recognised as the 'proper' places at which to fight, and that these differ from period to period.

Development of the approach has allowed us to identify specific 'discourses' of battle peculiar to particular periods. There are also suggestions that the distinctions between battle and other forms of military activity (such as counter-insurgency operations, skirmish and siege) so often reflected in our own approaches to the management of the spaces where such activities took place, do not apply in other times. In other words, our own 21st-century 'discourse of battle' is different from that of other periods and places: but this is not only a matter of technical military development.

This paper will outline the theoretical background to the project, its methodology and how it therefore produces results different from those of other approaches to 'battlefield' or 'conflict' archaeology.

'TO HAVE COMMAND OF DEFINITION IS TO HAVE CONTROL OF DISCOURSE': THE LINGUISTICS OF LANDSCAPE

Katarzyna Bronk-Zaborowska, Institute of Archaeology, University College London, UK

Landscape has become fashionable. A Google search returns 140 million sites with 'landscape' as a keyword, while over 200,000 books in this category are offered by amazon.com alone. The popularity of this term has brought about its use as a selling feature for many books, conferences and management plans. This tendency, present also among archaeologists, poses a threat of terminological confusion and information chaos. Several attempts have been made in recent decades to define and control the meaning of landscape, not only in archaeology but also in other academic disciplines such as geography and anthropology. I would like to outline ongoing discussion in recent literature and justify my opinion about the inevitably subjective nature of the landscape.

LANDSCAPE IN PERCEPTION AND PRACTICE – SOME USES OF TOPOGRAPHY FOR LANDSCAPE ARCHAEOLOGY

Daniel Löwenborg, Uppsala University, Sweden

The concept of 'landscape' can be a powerful analytical tool for archaeological investigations since landscapes incorporate so much of human action and social relations. The physical remains of cultural

phenomena can often be studied and understood in relation to their spatial distribution. The concept of landscape also holds a certain ambiguity, and can mean different things in different contexts. The way we understand 'landscape' will influence the way we practice landscape archaeology, and therefore it is important to reflect on the way we use the concept. The evolution of the concept of landscape could be illustrated through a comparison of its meaning in English and Swedish. The Swedish 'landscape' denotes practice and belonging in addition to the emphasis on perception in the English language. As a consequence of this landscape research in Sweden has followed a different path.

As an example of Swedish landscape archaeology two cases will be presented, both taking a starting point in the use of topography in a GIS in order to achieve a better understanding of the physical landscape. In the first case it is shown how regions and territories that are known from medieval times can be seen to originate from some features of the landscape, providing the foundation for the natural development of regions around valleys and communication networks. In the second case the topography is used to strengthen the landscape component of a study of vegetation change over a period of 150 years. Thus, it is suggested that the potential for spatial analysis of topography that a GIS provides is an excellent tool in order to reinvent the way we study landscapes as both nature and culture.

CONFRONTING TERRITORIAL MODELS: FUTURE PERSPECTIVES ON THE ARCHAEOLOGICAL ANALYSIS OF TERRITORIES IN THE CANTABRIAN PALAEOLITHIC

Javier Ordoño Daubagna, University of the Basque Country, Spain

Within the last two decades the archaeological analysis of territory has undergone the traditional confrontation between processual and post-processual approaches in the study of the prehistory of the Cantabrian Region (Iberian Peninsula). Usually focused on ecological-economical (in the first approach) or symbolical perspectives (in the second), both have been applied in a different way depending on the period analysed. In consequence, a bias in the knowledge of ancient territories has been established, a fact we consider to carry some dangers.

Today's archaeologists must find (and integrate eclectically) the different tools offered by each approach, which could in their own ways contribute outstanding information to the knowledge of territories, always depending on the selected period and on the available data. In the case of the Cantabrian Palaeolithic, many of the processual and particularly post-processual proposals cannot be applied, notably due to the lack of data.

This paper analyses the applicability of these proposals and suggests, as a starting point, a new basic theoretical proposal for the study of Palaeolithic territories.

TAKING THE BROAD VIEW: MODELLING ARCHAEOLOGICAL LANDSCAPES IN EUROPE TODAY

Roger M. Thomas, English Heritage, UK

In many parts of Europe we now have an abundance of archaeological information. This exists at a variety of different scales: from 'point data' on individual finds or small monuments, through large-scale excavations (some covering many tens or even hundred of hectares) to surveys of various kinds covering whole regions or even nations. With the aid of GIS we should now be trying to use all this information to model past landscapes as a whole, rather than simply focusing on the plotting of individual 'sites'. This paper will explore some of the implications and possible benefits of such a 'landscape-based' approach – including the new significance which archaeologically 'blank' areas assume when seen from a landscape, rather than a 'site', point of view.

LANDSCAPE ARCHAEOLOGY IN TUSCANY: FROM REGIONAL SCALE TO DETAILED EVIDENCE ... WHAT WE HAVE LOST IN BETWEEN?

Stefano Campana, Department of Archaeology and the History of Arts, Landscape Archaeology, University of Siena, Italy

In recent years the University of Siena has been applying integrated prospection techniques in the study of archaeological 'landscapes', conscious that the research would initially focus on settlements rather than on

landscapes as such. Inevitably, the intensity of research would be less in the intervening spaces, which for the most part would therefore remain as 'emptinesses'.

The discussion in this paper begins at Aiali, a lowland location between the medieval and Roman towns of Grosseto and Roselle in central Italy. The archaeological potential of the area was first identified from the air in 2001 during an international research school, differential growth in the wheat revealing a complex up to 4 hectares in extent, interpreted with reasonable confidence as a Roman villa. Since then Aiali has become a key site in the work of the University's Laboratory of Landscape Archaeology and Remote Sensing, involving the collection, processing and interpretation of many different kinds of data: Quickbird-2 satellite imagery; vertical and oblique air photography from different years, seasons and lighting conditions; and field-walking survey and geophysical survey using a variety of instruments.

The Aiali project has allowed the application of the highest available level and intensity of archaeological prospection methods on a large, complex and stratified settlement site, dating from Etruscan and Roman times and on into the Middle Ages. At the same time this has become the starting point for a wider approach to the study of the landscape between Grosseto and Roselle. This is an innovative kind of project in Italy but is clearly modelled on the strategy applied for more than 30 years by Dominic Powlesland in his remarkable study of the archaeological landscapes of the Vale of Pickering in northern England.

Clearly it will never be possible to apply this approach to Tuscany as a whole – the province of Grosseto alone covers 4030 sqkm while Tuscany extends to nearly 23,000 sqkm. The objectives and outcome of the project will also have to take account of the critical impact of the *kinds* of information available for recording and assessing the potential and interpretation of the landscape. In this it will be at least as important to appreciate what is **not** visible as to know what **is** visible.

If success can be achieved in the area around Aiali through the application of the highest level of research intensity – and through conscious attempts to raise the level of visibility and therefore understanding in the 'emptinesses' between identifiable 'sites' – we will be able to make worthwhile contributions to better practice in a variety of fields:

- Conservation – increased awareness of the archaeological resource as a whole, so as to create more effective and better-adapted policies for landscape monitoring and conservation.
- The academic recognition of 'emptiness' (that is, *absence* of evidence) as an important element in the development of ideas about settlement patterns and landscape history.
- Better research strategies – raising visibility in our present 'emptinesses' so as to produce new and perhaps different kinds of data, in turn creating new kinds of feedback into the investigative and interpretative process.

TRADITIONAL LANDSCAPE ARCHAEOLOGY: THE CASE FOR THE DEFENCE

Andrew Fleming, University of Lampeter, UK

In recent times traditional landscape archaeology has come under critical and rhetorical attack. It has been accused of being over-empirical, objectivist, vision-privileging, 'Cartesian', and lacking concern with people; it is also said to be politically compromised, the word 'landscape' allegedly exposing the discipline to cultural geographers' and art historians' critiques of western ideologies developed c. 1800. New methodologies and modes of writing have also been advocated and put into practice. It is argued here that much of this critique is shallow and ill-directed, that the proposed new ways of working are highly problematic, that 'evidence and argument' approaches have much to offer, and that this fundamentally investigative discipline is not best served by choosing 'landscape' as the battlefield on which to conduct wider political and philosophical debates.

Poster abstract:

THE PERSPECTIVES OF REMOTE SENSING METHODOLOGY ON CENTRAL DALMATIAN ISLANDS

Vedran Barbarić, Maja Miše, Faculty of Philosophy, University of Split, Croatia

The remote sensing methodology, which includes aerial archaeology, application of GIS programmes and related research, that has been widely accepted and developed in Europe in recent years, has not found the way into archaeological research in Croatia. Such work on cases such as central Dalmatian islands of Brač,

Hvar, Šolta, Vis, Svetac and Palagruža mostly derived out of *Adriatic Islands project*, pointed at the perspectives of this approach applied at sites in Dalmatia.

The area that has morphologically changed a lot throughout the last three millennia requires approach that is capable of deriving vast amount of data collected mostly through numerous field surveys, in order to produce results that will set the basis for understanding the nature of the cultural landscape. Fieldwork in the area, especially on Iron Age and related Hellenistic sites, has not yet produced results that are complete enough to reveal the nature of living in this landscape in the last half of 1st millennia BC, mostly due to the insufficient and incomplete excavations. Application of remote sensing methodology on Central Dalmatian islands aims at revealing the nature of archaeological landscape as much as setting the basis for the future research.

**Session title: ARCHAEOLOGIES OF CRUSADING AND COLONISATION
IN MEDIEVAL EUROPE**

Organizers: Aleks Pluskowski, McDonald Institute for Archaeological Research, University of Cambridge
Krish Seetah, Graham Clarke Laboratory, Department of Archaeology, University of Cambridge

Time: Thursday morning

Room: 144

Session abstract:

Following on from the success of the session on the Archaeology of Crusading, Conversion and Colonisation at the 12th annual meeting of the EAA in Kraków in 2006, it seemed prudent and appropriate to consolidate what promises to be an expanding and stimulating area for future archaeological research in Europe. The crusading movement was accompanied by processes of variable colonisation at the frontiers of Europe, prompting multiple and dynamic interactions between incoming groups and indigenous populations which have left significant material traces.

Papers are warmly invited on any aspect of this process, or on comparable contexts associated with colonisation and inter-cultural exchange within and beyond medieval Europe. The aim of the session is to draw together common themes and methodologies in approaching an incredibly varied topic, to explore reasons for diversity and to seek new avenues for future research. Papers are particularly welcome on the impact of crusading and/or colonisation on settlement, resource exploitation, religion, trade, social identity, power relations, conflict as well as inter- and multi-disciplinary methodologies.

Paper abstracts:

**CRUSADING IDEOLOGY MEETS PAGAN MILITANCY: THE CONVERSION OF NORWAY SEEN
THROUGH PAGAN MATERIAL CULTURE**

Niall Armstrong

The Christianisation of Norway was probably the most important event in Norwegian History. According to tradition, Haakon the Good was Norway's first Christian king (ca. AD 930 – 950), while the country first became officially Christian after the death of the saint-king Olav in AD 1030 (The Conversion is portrayed as being the work of the Norwegian elite).

But was the transition one of a wholesale conversion of ideology? This paper argues that in one sense the conversion was the result of internal military ideological needs within Norwegian Iron-Age society. While the Conversion brought with it many overwhelming changes, to understand it we must focus on the society that preceded the transition, and explore the immediate, probably intended effects.

This study will demonstrate that in the late Iron Age, there was a move away from individualistic militancy towards one of communal militancy. Christianity provided the elites with an opportunity to acquire a monopoly over violence and also institutionalised defence. The military ideology can be studied on two scales: individual and societal. At the individual scale we will look at weapons found in graves. These show that the weapon-less Christian burials, though dissimilar to Iron Age burials, fit into a trend of disarming of graves. At the societal scale we will look at the institutions that existed to provide a – probably false – sense of security, such as the early Iron Age hill fortresses and the late Viking age system of beacons.

The recently excavated Tastarustå site, in Stavanger, south-western Norway, with its two Viking age houses and coeval Christian burial, overlooked by the adjacent Tastaveten beacon, shows a small community in the midst of the transition from pagan to Christian.

THE CHRISTIANISATION PROCESS IN EARLY MEDIEVAL ICELAND – A HYBRIDIZATION OF CULTURAL AND RELIGIOUS IDENTITIES

Steinunn Kristjánsdóttir, University of Iceland & National Museum of Iceland

According to literary sources, Iceland was colonized during late-9th century by Pagan-practising Norse Vikings, who in the year A.D. 1000 adopted Christianity as a national religion. The Conversion as a well-defined event is commonly regarded as having marked the beginning of the Christianisation process in Iceland, as a result of short but intensive missionary activity in the country. These literary conceptions have profoundly influenced the historical memory of the Icelandic nation holding a heterogenic social, cultural and political structure, as the descendants of the Norse Vikings. On the contrary, in this paper it will be suggested that Christianisation spanned a much more prolonged and ambivalent period of time, as the process must have started long before the colonization. The contacts between Norse Pagan Vikings and Christians had been going on for centuries when Iceland was settled, because of inter-cultural exchanges resulting from the Viking expansion in Northern Europe from 8th century and onwards. This view is supported by the archaeological record in Iceland, as the Pagan material dating to pre-Christian times in Iceland resembles the Norse societies in Northern Britain and Ireland more closely than those in Scandinavia. Oddly enough, the early Christian church material in Iceland in fact displays blended elements of the Christian faith, reflecting how complex, multifaceted and fluid identities can be and how they constantly interpolate with each other.

VIKING AGE METAL ORNAMENTS FROM BELARUS: SOME ASPECTS OF THE SCANDINAVIAN INFLUENCES

Siarhei Dziarnovich, Institute of History. National academy of Sciences, Minsk, Belarus

The later part of the 8th – the beginning of the 12th centuries AD, so-called the 'Viking Age', represents a special epoch in the history of Belarus. It is one of the most decisive periods and the material evidence of archaeological finds provides a great deal of information – not only about this period itself, but also about the influence of different cultures on this territory. The Scandinavian jewellery found in the Belarusian territory is distinctive. It does not have any local prototypes; its distribution and further development can be connected to arrival of Norsemen. The circle of such products includes the separated objects of a male and female costume, pagan symbols, amulets and cultic artefacts. The majority of these were brought from Scandinavia, however, it is possible to assume that some were patterned in Belarus in full or in part. Also it is necessary to take into consideration the finds of West-European origin, which were received by Scandinavians.

Analysis of jewellery found in the territory discussed here makes it possible to single out about thirty Nordic metal ornaments and their fragments dating to the Middle and Late Viking periods. This group consists of various brooches, ringed pins, pendants, arm-rings and amulets. Their distribution is concentrated in the Braslau area, the Polatsk – Vitebsk area, the Minsk area and some separate finds are known from sites in Southern Belarus. Most of them were found in the cultural layers of settlements; few artefacts were recovered from mounds or belonged to hoards.

It is very important to note that most burials which contained typical Scandinavian jewellery follow common local funerary traditions. Under these circumstances I would suggest that Nordic metal ornaments were also used in everyday life for their direct purpose. So, these artefacts were probably strongly integrated into the local culture and exemplify the blend of local and Northern cultural elements established in Belarus during the Viking Age.

ROMANIC ROTUNDAS FROM THE SOUTH OF TRANSYLVANIA

Maria-Emilia Tiplic, Romania

In the 12th and 13th century in the south of Transylvania were settled German colonists / so-called 'Transylvanian Saxons' (German: *Siebenbürger Sachsen*), but among the settlers there were not only Germans (Teutonici from Southern Germany or Saxons from Middle and Northern German), but also Romanic people from the western regions of the Holy German Empire (Flandrenses and Romanic-Walloon). They had been recruited with winning promises (lands and a lot of privileges) by the Arpadian kings. King Geysa II (1141- 1162) was especially successful in attracting German and Flemish farmers, craftsmen, traders and lower nobility. They settled in Zips (modern Slovakia) and in Transylvania (Romania). Thus, on their new land in the 12th and in the 13th centuries the German settlers started to build churches in the Romanic style.

In the south of Transylvania, the Transylvanian Saxons settlers established the Romanic basilica across a large region in the late-12th and 13th centuries. But another type of Romanic church encountered in the area of German colonisation with an earlier date (the first half of the 12th century) has a central type plan (rotunda), although without such a large radiation. In the last decade, thanks to archaeological research, another three rotundas were discovered in the south of Transylvania [Sighisoara (?), Saschiz (?) Orastie and Sibiu]. Two of them were built on at least two levels (German: *Doppelkapelle*), with a circular nave and semicircular apse (Z. K. PINTER 2003, p. 264 sqq.). The rotunda from Orastie, as well as the entire 'seat' is very interesting from many points of view, being a novelty for that period in Transylvania. It shows a strong Western influence, probably derived through a knight from Western Europe, who settled here, after he had established a relationship with the Hungarian king, Coloman the Learned, during the I Crusade (1096-1099) and obtaining important privileges, maybe even achieving the role of 'locator' in the German colonisation of the following decades.

Another type of rotunda from the south of Transylvania is the rotunda with a single level (without a crypt), also with a circular nave and semicircular apse. Examples include the rotunda at Alba-Iulia discovered at the beginning of the 20th century, and one at Geoagiu, which has been preserved over the centuries. This type of rotunda was probably built by a Hungarian nobleman.

So, this new archaeological information has improved and partially changed the traditional understanding of rotundas; two decades ago, only two rotundas were known (Alba-Iulia and Geoagiu).

THE FIRST SEASON OF THE MONTFORT CASTLE RESEARCH PROJECT

Rabei Khamese, Israel

This paper will present the aims of Montfort Castle Research Project and the work that has been carried out in its first season. The project involves an intensive structural survey of this important Teutonic castle in the western Galilee, and will in the future involve excavations and conservation work. The project aims at publishing a detailed monograph of the 13th century castle, one of the largest and best preserved Crusader castles in Israel.

Montfort was built in 1226/7 and served as the headquarters of the Teutonic Order in the Kingdom of Jerusalem. It was partially excavated in 1926 by a team from the Metropolitan Museum of New York under the direction of W.L. Calver (in the field) and Bashford Dean but, despite its importance, Montfort has never been published in detail. The new project will include in its first phase a survey and the publication of detailed plans and sections of all parts of the castle, a photographic survey and a paper detailing a plan for the preservation, development and partial restoration of the site and its surroundings.

Some of this work has already been done. Intensive surveying is underway, including the use of aerial photogrammetry and laser scanning. More than 90% of the written sources dealing with Montfort have been collected in an archive, and a paper on these sources is being prepared. A photographic survey is underway recording many extant standing architectural elements, masons' marks, fallen stones etc. We have also photographed all the sections of the castle which are in danger of collapse due to vegetation damage, fire, weathering etc.

Future seasons will complete the surveying and it is our intention, with additional financing, to carry out major excavations and the necessary conservation and restoration work of the castle and its related buildings.

KNIGHTS OF THE HOSPITAL OF ST JOHN IN NORTHWEST CROATIA: THE BELA PRECEPTORY

Juraj Belaj, Institute of Archaeology, Croatia

In northwest Croatia there once existed the great Bela Preceptory of the Knights of St John, named after Bela castle. There were other buildings in the territory of the Preceptory which also probably belonged to the Knights of St John, primarily the large fort of Gradisce as well as small castle located in today's Ivanec.

Sparse historical sources provide some information on the life of the Knights of St John in the Preceptory and their co-existence with the local population.

Archeological excavations have been conducted in several localities during the past ten years, most extensively in Ivanec where they revealed the foundations of a Renaissance town which had probably developed from the small castle of the Knights of St John. The excavations focused on the area of the Gothic church of St John which had been under the patronage of the Knights. The church is characterised by strong walls of a rectangular shrine but also by the older graves of the local population. In addition to presenting the results of the excavations at Ivanec, the site is also considered from the point of view of its neighbouring localities of Bela and Gradisce where excavations were also conducted.

Session title: TRANSITION FROM THE LATE HALLSTATT TO THE EARLY LA TÈNE PERIOD

Organizers: Hrvoje Potrebica, Department of Archaeology, University of Zagreb, Croatia
Marko Dizdar, Institute of archaeology, Croatia

Time: Thursday all day

Room: 124

Session abstract:

The transitional period from the Late Hallstatt to the Early La Tène is not just a question of chronological distinction between the Early and the Late Iron Age. It is more cultural process that in different areas of Europe followed different patterns. We are especially interested in problem of initial exposure of the Late Hallstatt communities to the La Tène cultural influences and consequent mechanisms of cultural transfer that developed in different areas, which did not necessarily include influx of new population. The aim of this colloquium is to establish diversity of such patterns on examples of several case studies and offer fresh models for interpretation of this process which is crucial for understanding of later prehistory of Europe.

Paper abstarcts:**CULTURE OR CHRONOLOGY: THE TRANSITION FROM HALLSTATT TO LA TÈNE**

John Collis

Over much of Europe the transition from Hallstatt to La Tène is linked with the 'arrival' of the Celts. In this paper I wish to question the basic concepts that lie behind this. Is the idea of a 'transition' useful? Are concepts such as Hallstatt and La Tène 'cultures' useful? Are our models of a core area in which innovation took place, and expansion from it, actually supported by the archaeological data, or should we have more flexible models with multiple centres of innovation and diffusion similar to the linguistic 'Wellen' model (as opposed to the 'Stammbaum' model)? And what, if anything, does it have to do with the Celts? I suggest it is time for a complete rethink.

A STYLE WITH NO GENESIS, OR WHERE WAS THE BIRTHPLACE OF EARLY CELTIC ART?

J.V.S. Megaw

The paper considers what is currently thought to have contributed to the genesis of early Celtic art and how it may have developed during the transition from late Hallstatt to early La Tène. The claims of various

regions - southwestern Germany, the middle Rhineland, Bohemia, parts of Austria and northeastern France - are also considered. While, as so frequently, no definitive answer can be supplied, it seems most logical to regard early Celtic art as a phenomenon which developed, not in one single zone, but in a number of different but interacting areas.

THE „FÜRSTENSITZ“-PROJECT: EARLY URBANISATION- AND CENTRALISATION-PROCESSES

Susanne Sievers

The paper will inform about the “Fürstensitz”-project, granted since 2004 by the DFG (German Research Foundation). The aim of the project is the research of early urbanisation- and centralisation-processes north of the Alps between the 7. and 4. century BC. About 7 areas in Central Europe will be studied and compared. The development of early celtic central places (“Fürstensitze”, princely sites) and the question, if those defended places are the earliest towns in Central Europe will be discussed. The paper will focus on some projects (for instance Heuneburg, Glauberg, Ipf), their aims, methods and first results.

THE HEUNEBURG MORTUARY LANDSCAPE AND THE HALLSTATT/LA TÈNE TRANSITION

Bettina Arnold

The Iron Age landscape associated with the Heuneburg hillfort on the Danube River in southwest Germany is one of the most extensively and intensively investigated site complexes in temperate Europe. The Iron Age occupation of the site is traditionally thought to have begun around 600 BC, with a destruction horizon marking the end of the mudbrick wall horizon ca. 540 BC. Significantly, the bulk of the Mediterranean imports found at the site date to the Hallstatt D2 occupation (Period III), which marks the post-mudbrick wall settlement and also ends with a destruction horizon. The final Iron Age occupation at the site dates to La Tène A, and ends with a final destructive conflagration around 400 BC. The occupational history of the hillfort has been documented by a quarter century of excavations, recent survey work within a five kilometer radius of the hillfort has generated evidence of small supporting communities, and on-going excavations in the associated outer settlement have yielded surprising new discoveries regarding the extent and nature of this sector of the site. The mortuary landscape has not been accorded as much attention apart from a period of intensive but largely unsystematic exploration in the 19th century when several large mounds in close proximity to the hillfort were investigated. This was followed by a hiatus interrupted first by the partial excavation of the Hohmichele in the 1930s and then by the excavation of another of the large mounds near the hillfort in the 1950s, with re-excavation of mound remnants near the hillfort at intervals through 1989. Until recently, the received wisdom based on the rather limited data available was that the mounds associated with the Hohmichele, and the Hohmichele itself, represented the Hallstatt D3, mudbrick wall occupation, while the four large mounds near the hillfort (and presumably two other unexcavated large mounds downstream along the bluff edge) were assumed to post-date the mudbrick wall occupation, i.e. were later than 540 BC. It was not until 1999, when the “Landscape of Ancestors” project began investigations in two mounds near the Hohmichele, that any of the mid-sized burial monuments were systematically explored. The results of those excavations have not only rewritten the history of the mortuary landscape of the Heuneburg but can also contribute to the on-going debate regarding the nature of the Hallstatt-La Tène transition in this region of southwest Germany.

FROM HALLSTATT TO THE LATÈNE IN THE NORTHERN ALPINE IRON-AGE REGIONS: TRADITIONAL AND PROGRESSIVE REGIONS IN THE LIGHT OF NEW DATA

Thomas Stöllner

New dendrochronological data from the Dürrnberg draw a new picture on the transitional period: on the contrary to older arguments the transition of Hallstatt to Latène must be sought in the 2nd quarter of the 5th century BC. Such a chronological conclusion is supported by chronological arguments that can be deduced from Etruscan and Greek amphorae and ceramics found in the stratigraphy of Bagnolo San Vito but also on a discussion of the Heuneburg-Stratigraphy north of the Alps.

It is fairly clear that the latest Hallstatt complexes of later Ha D3-horizon must be dated around BC 480/470; there is on the other hand no doubt that the earliest complexes with Early Latène-ornaments (e.g. plate-fibulas, belt-hooks, the earliest princely tombs) should be laid down not later than shortly after the mid of the 5th century BC: The problem of the birth of Early Latène will be discussed on the basis of regional developments, on the basis of Early Latène-ornaments and their connection to southern models as well as on a centre and periphery-model. Early Latène has not developed rapidly without any internal development though it took less than a generation of its creation. Many cultural conditions found in the ripe and late phases of Early Latène have derived from this transitional period: The whole fifth century therefore is understood as a formation period of an Early Latène culture. It finally has included traditional Hallstatt-elements as well as the progressive transformation of southern pictures and ideology to creating a new style. It also concerns our understanding about Celtic as a cultural construct of the Iron Age.

ÉLITE COMMUNITIES IN BOHEMIA FROM THE 6TH – 5TH CENTURY B.C. AND LONG-DISTANCE RELATIONSHIPS BETWEEN THE MEDITERRANEAN CIVILISATIONS AND CENTRAL EUROPE

Miloslav Chytráček

Whilst studying the development of the La Tène-style in Bohemia we come to the conclusion, that its foundations were already established by the beginning of the Late Hallstatt period. Not surprisingly, Central Europe came into regular contact with the Mediterranean world in this time. Southern inspiration is clear e.g. in jewellery, pottery, horse-harness, two-wheeled chariots, sculpture and in architecture (for example in the construction of temple-podia at the hillfort Závist in Bohemia). Imported Etruscan metal vessels became relatively common in Early La Tène contexts discovered in the western part of Bohemia. Attic drinking cups also found their way into Bohemian Basin, where they were further imitated. Numerous extraordinary items of Mediterranean origin distributed either in rich graves or at settlements clearly show that in the late 6th and during the 5th century B.C. several regions of Bohemia achieved important positions in the cultural and political development of Central Europe.

These observations indicate concentration of power and property in specific regions, whose advantageous geographic setting and rich resources allowed local elite to maintain long-distance connections with advanced centres of Mediterranean world. Emergent pre-oppidum centres (in Bohemia especially the hillforts Závist and Vladař) were characterised by their extremely large fortification systems and integration into regional and supra-regional transportation networks. The fortified area at the Vladař hill, located amidst rich gold resources, evidently became an important settlement agglomeration with distinctively elevated acropolis. The bronze pyxis foot dated from the 6th/5th century BC, which have been found at the acropolis, confirms that luxury goods coming from Northern Italy or Slovenia was present at the site.

It is assumed that Czech lands did not grow in importance until the beginning of the 6th century B.C. when fortified residences along the old amber road running east of the Alps were destroyed; the amber being then transported in larger quantities via routes lying further to the west. Several indices point to the fact that it was during this particular period that the Bohemian Basin experienced its rise, which most probably corresponded to considerable redirection of long-distance trade corridors in Central Europe.

IRON AGE IN EASTERN AUSTRIA – AN ERA AND AREA OF TRANSITION

Peter C. Ramsi

Eastern Austria – or better the northeastern part of Austria – is an interesting area, because of its function of transition.

This paper deals with three important moments of the Iron Age in this area:

- 1 – The late hallstatt/early latènen period with the settlement of Inzersdorf/Walpersdorf (Traisental) as a turntable from East to West
It shows the distribution of early wheel turned pottery from West and East.
- 2 – The Early Latène Periods with the important cemeteries of Pottenbrunn (Traisental) and Mannersdorf (Leithagebirge) and the phenomena of central European mobility
This point deals with costumes of female burials within the "Central European Corridor". Here we recognise again some groups, which show inter-European mobility.
- 3 – The Late Latène Period with the settlement of Pellendorf (Weinviertel) and some ideas to the transition of the "celts" to "germanics"

It asks if it is necessary to name tribes or ethnic groups or if we just see some moments of an economic and social transition.

LATE HALLSTATT/EARLY LA TENE TRANSITION IN EASTERN SLOVENIA (A CASE STUDY OF NOVO MESTO)

Borut Križ

The Late Hallstatt/Early La Tene transition in Eastern Slovenia provide outlines of a very interesting model based on notions of continuity and cultural transformation which probably could also be applied to some other areas in Europe. Cemeteries in Novo Mesto (especially site at Kapiteljska Njiva) which have recently been subject of extensive research and systematic excavation give the best insight in specific features that make region of Lower Carniola (Dolenjska) one of the most important areas for study of Ha/Lt transition in this part of Europe. This paper will present those features and suggest basic explanatory models.

PANNONS AND CELTS: NEW DATA TO THE HISTORY OF THE 5TH-4TH CENTURIES BC

Erzsebet Jerem

Recent major rescue excavations have yielded important finds from the transitional period of the Early and Late Iron Age. The analyses of these objects have considerably added to our knowledge of the period in question and have also put previous considerations into a new perspective. The rare, yet characteristic objects have been excavated from areas that were located far from the production centres or their usual areas of dispersion – this makes it possible to reconstruct the long-distance trade routes of ancient times. In the presentation I wish to give an account of the origins and dispersion of finds associated with Pannon female attire (beads, fibulae, belts and other jewellery, such as bracelets and anklets), and to highlight the close relationship that existed between the settlements in the area located between Transdanubia and the Dráva-Száva rivers during the Late Hallstatt and Early LT periods. I will aim to make a differentiation among the various relationships and their periods, and will also delineate a possible road network. Areas and sites of special topographical importance will also be placed under analysis.

SCYTHIANS AND CELTS ALONG THE UPPER TISZA

Katalin Almássy, Róbert Scholtz

Nyíri Mezőség, the territory concerned in our lecture, is a micro region of the Upper Tisza and is located near an important ford of the Tisza river. The relationship of Scythian and Celtic populations once living in this territory has already been analysed. This analysis was mostly based on one single „fortunate” site's material where the find ensembles contained objects from both populations. The analysis concluded that the cohabitation of Scythians and Celts only began in the middle of the IIIrd c. B.C. in this case. We now confront these results with the data obtained from three new rescue excavations made during the last years. Furthermore, our examination interrogates the historical-geographical properties of the given territory in the Iron Age. Our analysis leads us to assume that our earlier claims are still valid: in some parts of the Great Hungarian Plain (Alföld) the Scythians resisted Celtic influences till the Middle La Tène Period. Since the material of the new excavations is currently under processing, our allegations remain hypothetical.

LATE HALLSTATT/EARLY LA TÈNE IN THE NORTHERN CROATIA

Hrvoje Potrebica, Marko Dizdar

Scarce information on different cultural phenomena that were present in the area of the Northern Croatia in the later phase of the Early Iron Age is mostly based on a modest number settlement excavations and individual grave finds. Based on the evidence collected thus far, it seems that north-western Croatia was

closely linked with Lower Carniola in the south, while in the north we can observe the same cultural model present in neighbouring Stiria and south-western Transdanubia. Early La Tène finds are represented only by fibulae which were results of trade and exchange and were mostly discovered in the Late Hallstatt context in Sisak. In the eastern part of Northern Croatia the culture of the later phase of the Early Iron Age is different. It is a part of the southern Pannonian group that includes strong influences from the Balkans in the south and from the lower Danubian area in the east. These influences are evidenced by finds from the horse burials in Vinkovci. Most of Early La Tène finds came from female inhumation graves, such as those in Velika, Osijek, Dalj, Donja Dolina, and Bogdanovci. In these contexts, Early La Tène bronze zoomorphic fibulae of Dux and Münsingen types were discovered together with Late Hallstatt finds. They testify to the existence of trade and exchange links with the already latenized areas in northern Pannonian plain, which probably include exogamy. This period covers the first half and the beginning of the second half of the 4th century BC. The recent excavations of a Bosut Culture settlement in Ilok brought to light structures containing Early La Tène finds in the predominantly Late Hallstatt context, but also finds which indicate the existence of southern influences. The number of Early La Tène finds from the second half of the 4th century BC is significantly larger, probably due to the arrival of new population characterized by the La Tène Culture. These events are reflected in graveyards such as those at Karaburma and Pećine. All this suggests that southern Pannonia in the 4th century BC was a region of intensive cultural and economic contacts, including some migration processes which completed transition into the Late Iron Age with the formation of the Skordisci at the beginning of the 3rd century BC.

THE BELGRADE REGION IN THE LATE HALLSTATT PERIOD (SERBIA, DANUBE BASIN)

Milorad Ignjatović

This paper presents the results of the archaeological research on the Early Iron Age settlement of Karaburma near Belgrade (Danube Basin, Serbia). Ceramic material of the VI – IV Century B.C. is not chronologically indicative – vessels are simple in form and decoration is not characteristic. However, the discovery of a Certosa fibulae casting mold indicates that the settlement was occupied during the IV Century B.C. This dating enables us to draw a connection between this settlement and the earliest burials, with offerings of local manufacture, of the La Tène necropolis from the same locality.

A number of later variants of the Certosa fibulae are already known from the vicinity of Belgrade, and their numbers south of the Sava and Danube rivers are increasing. Different variants of Thracian and Early La Tène fibulae also belong to this period. Put together, these finds show that the area under discussion, with its prominent geographic location, was at the time of the end of the Hallstatt period, going through a specific cultural development with a gradual influx of the Early La Tène style.

TRANSITION FROM THE HALLSTATT PERIOD TO THE EARLY LA TÈNE PERIOD IN NORTH-WESTERN ROMANIA

Ioan Bejinariu, Horea Pop

The aim of this paper is to present the most recent findings belonging to final Hallstatt period from north-western Romania. The most important finds come from excavations of two new archaeological stations belonging to Hallstatt D period from western part of Sălaj county. Until now, in north-western Romania, this period is known, especially by funeral discoveries (cremation graves in urns) from Carei Plain. Only few discoveries come from settlements.

Both settlements in approach are located in an important passing place from Barcău river valley, between the Upper Tisza region and Transylvania.

Between 2002-2003 the settlement from Poșt „Corău” has been investigated. Two dwellings and several pits have been excavated. The majority of ceramics is represented by hand-made pottery but an exception is a fragment of wheel-made pottery from L1 dwelling. We can remark perpetuation of some pottery type of Gava tradition, like bowls with introvert rim, fragments of double-colour pots (black outside, brick colored inside), but new types like tronconical jug with high bail. The ceramics indicated analogies with Vekerzug culture discoveries from Tisza Plain. So-called „eastern-type” or „scitian type” artefacts are represented by small bronze arrow-heads with three edges. The place has been short time inhabited by a small group of inhabitants during the 2nd half of VI century B.C.

The settlement from Porț „*Palis*” is located not too far from the first one (no more than 3 km) and have been investigated in 2003 and 2006-2007 as a part of rescue excavations from „Transylvania Motorway” project. Until now (april 2007) 130 features have been excavated (defensive system, dwellings, pits and cremation graves) and it is the single fortified settlement from Late Hallstatt period in north-western Romania. The site from Porț „*Palis*” have been inhabited between the 2nd half of V century and the 1st half of IV century B.C. The wheel-made pottery has been discovered in a large amount comparatively with the settlement from „*Corău*”. Missing the artefacts by eastern type.

THE EARLY LA TÈNE AND THE IMPACT OF CELTIC COLONISATION IN TRANSYLVANIA

Aurel Rustoiu, Mariana Egri

The problem of transition from the First to the Second Iron Age in Transylvania (inner Carpathian area of Romania) is connected with the “expansion” of Celtic communities to the east. This fact can be demonstrated through the analysis of the ethnic and cultural situation from the region at the end of the First Iron Age. During this period was observed the presence of some clearly individualised cultures and cultural groups (Szentes – Vekerzug in the Western Plain, local cultural groups in Central Transylvania, Banat and Maramures). All of them experienced a series of influences and inputs from the Thracian-Illyrian space (in Banat and Transylvania), or from the northern Pontic regions (in the western and northern area). However, the elements which are specific to the La Tene cultural circle are absent.

Together with the beginning of the Celtic colonisation (at the end of LT B1 and beginning of LT B2), the general aspect of the material culture was radically modified. The newcomers imposed their own “models” and structures, but they had also cohabited with the local communities. The existence of a strong local stratum determined the apparition of a La Tene culture mixed with local elements during the Second Iron Age. This is one of the essential characteristics of the Celtic world from the eastern Carpathian Basin.

However, the Celts had not occupied whole Transylvania and in the isolated depressions from the east and west the local communities of the First Iron Age continued their evolution. These were not “contaminated” with elements belonging to the La Tene culture. Their social structures were similar to those from the regions to the east of the Carpathians, as the recent archaeological researches in the Maramures, on Upper Tisa have shown.

THE LATE BRONZE AGE – LA TÈNE TRANSITION IN IRELAND

Katharina Becker

After the occurrence of a few individual Hallstatt C artefacts in the record, it is only with the appearance of La Tène style artefacts that an Iron Age becomes recognisable in the Irish archaeological record. Recent excavation results indicate that at least in terms of settlement forms Late Bronze Age traditions continued, despite the fact that iron working technology had been adapted centuries earlier. This paper will specifically focus on the selective deposition of artefacts and discuss what it implies regarding the reception and selection processes at work in the introduction of the Iron Age to Ireland.

WESTERN AND SOUTHERN CONTACTS OF THE EARLY LA TÈNE SITE IN SZAJK (SOUTHWESTERN HUNGARY)

Gáti Csilla, Hungary

The archeological site of Szajk lies on the Southeastern part of the Hungarian Transdanubia. During the excavations in autumn 2005 a unique Iron Age site has been discovered: a great number of pits, post-hole buildings, and pit-houses.

The find material raises a lot of issues about early Iron Age chronology, ethnicity and trading contacts in the region. The most significant and valuable artefacts at our site were the ceramics. The material mostly relates to the region of the Eastern Alps, but there are also some forms connected to the Balkans. Accordingly, the pottery finds best correlate to the finds of the settlement Sopron-Krautacker as well as to those from Gomolava. The *oinochoes* are unique in our region, the best parallels are known from the central Balkans.

A great number of „Graphittonware“ and graphit-painted ware has also been found that indicates contacts to Western Europe.

About the chronology: the graphit-painted geometric motifs are typical of the Hallstatt Culture, but the stamped patterns show the presence of the Early La Tène *koiné*. We also recovered a great number of typical Celtic pottery. The lifespan of the settlement extended from the Ha D up to the La Tène B period that includes several interesting historical issues. For example, it is not evident whether our Early Celtic material belongs to a newly immigrated ethnic group or it was merely imported to the site from another location.

Session title: **ARCHAEOASTRONOMY: LOOKING AT THE ANCIENT SKIES**

Organizers: Saša Čaval, Institute of Anthropological and Spatial Studies, Scientific Research Centre of the Slovenian Academy of Sciences and Arts, Ljubljana; Slovenia
Martina Knavs, Jožef Stefan Institute, Ljubljana; Slovenia

Time: Thursday morning

Room: 203

Session abstract:

In its broadest sense archaeoastronomy is the study of ancient astronomical knowledge and practices and of the influence of astronomy on past cultures. The subject combines methods and interpretation from several humanities- and science -based disciplines such as archaeology, astronomy, anthropology, epigraphy, psychology and ethnology. The results of systematic research using archaeoastronomy can contribute important information that cannot be achieved from more traditional archaeological exploration.

The session is by definition unrestricted to a specific culture or period; it aims to encompass the diversity of archaeoastronomical practices and provide a forum within which to present new results, technical advances and methodological issue. Its purpose is to provide a wider assessment of today's archaeoastronomical studies and analysis.

Paper abstracts:

ORIENTATIONS OF ENTRANCES IN BRONZE AGE SETTLEMENTS

Petra Bulgakowski, Bulgaria
(Abstract not available)

ASTRONOMICAL SOLAR ALIGNMENTS AT THE STANDING STONES OF AVEBURY IN SOUTHERN ENGLAND: MEANING AND PURPOSE

Meaden G. Terence, Department of Continuing Education (Archaeology) and Kellogg College, Oxford University, UK

At Avebury in Wessex, southern England, standing stones were erected in the form of three stone circles and two grand avenues during the third millennium BC which is the transition period between the Neolithic and the Early Bronze Age. Significant alignments to the rising sun and setting sun are discussed for major megaliths of the southern and northern circles which had 29 and 27 perimeter stones respectively. This paper offers a new explanation as to why the sun was so important in the world of the Neolithic farmers in Britain.

The South Circle was centred by a 6-metre high megalith called the Obelisk. The stones that marked the perimeter of this circle between south-west and north-west received the shadow of the phallic Obelisk when the sun was rising over the eastern hills at specific dates of the year. Additional stones were positioned on the nearby eastern hills in such a way as to extend the line of sight from the Avebury complex to the near horizons and the corresponding sunrises. Other standing stones align to the western horizon and the setting sun. The South Circle is a giant calendar-clock. Thus, the 8 principal festival dates of the agricultural seasons

are plainly delineated, and these include the solstices, the equinoxes, May Day and other calendar dates already known to us from the much later Celtic period 2000 years afterwards. Avebury's North Circle is centred by a stone setting known as a cove, which comprises a huge middle megalith attended by one tall narrow stone at each side. This arrangement is aligned on the midsummer sunrise. The philosophy connecting the two stone circles with solar alignments is discussed in terms of astronomical-landscape symbolism involving sun and earth in a way that is appropriate to the belief system and culture of early farming peoples.

IMPORTANCE OF THE ASTRONOMICAL ORIENTATIONS IN THE EARLY CHRISTIAN ARCHITECTURE

Knave Martina, Čaval Saša

In our contribution we will present study case on archaeological site dating to the 5th and 6th centuries in a specific region. We wanted to examine the astronomical orientations of the early Christian churches. The studied site has not one but two churches and some other ecclesiastical buildings and we expected results to give us interesting information concerning archaeoastronomy. The main purpose of the analysis is to find out if and how important was the orientation of early churches and which dates or prominent horizon features were important to the society at a given time. Through that we could start more vivid debate on the subject of archaeoastronomy. We were curious also about eventual repetition of architectural issues during longer periods.

CONNECTIONS BETWEEN A SHIP BURIALS AND ASTRONOMICAL ORIENTATIONS

Oleg Painlinden, Sweden
(Abstract not available)

THE ASTRONOMICAL ORIENTATIONS OF CHURCHES ON ARCHAEOLOGICAL SITES

Čaval Saša

The results presented in this paper are preliminary outcome of the analysis on the alignment data on the Romanesque churches built on confirmed archaeological sites. The east-west axes of all the churches can be related - at least in one direction - with the points of sunrise, and occasionally sunset, on certain dates, while some of them seem to correspond to some prominent horizon features, such as hilltops. Most of studied churches are dedicated to the first martyrs, especially to those from the 3rd and 4th centuries. We will try to explain some differences between patron Saints of the churches built on the settlements and on the necropolises that appeared during the study.

ASTRONOMICAL FACTS IN MEDIEVAL FAIRYTALES

Dieter Poghfueller, Germany
(Abstract not available)

ETHNOASTRONOMICAL INTERSECTIONS

Jadran Kale, University of Zadar, Zadar, Croatia

Systematic interest in ethnoastronomical data emerged with Grimm brothers' foundation of folklore studies and their "Deutschen Mythologie" lexicon from 1835. As a self-concerned field it exists from mid-20th century on, under a number of terms: native astronomy, popular astronomy, folk astronomic, ethnoastronomy etc. A recent "culture astronomy" term intends to cover both archaeoastronomical and ethnoastronomical issues. It can be observed that ethnoastronomical studies adjusted their research objectives according to wider cultural agenda, also being influenced with a "decoding hype" after Stonehenge in 1960's. Some interesting intersections between ethnastronomical and archaeoastronomical

issues occurred in different areas of study: material remnants and symbols, calendar studies, landscape orientations. After reviewing current trends, a quest for or against common "culture astronomy" studies - made of archaeoastronomical, ethnoastronomical and history of astronomy contributions – will be analysed.

Poster abstract: ARCHAEOLOGICAL RECONNAISSANCE IN SOUTHEASTERN CAMPECHE, MEXICO

Ivan Šprajc, Aleš Maršević, Atasta Flores Esquivel, Saša Čaval
(Abstract not available)

Session title: MODERN TRENDS IN EUROPEAN EGYPTOLOGY, II

Organizer: Galina A. Belova, Centre for Egyptological Studies of the Russian Academy of Sciences, Moscow, Russia

Time: Thursday morning

Room: 213

Session abstract:

This session was started in 2001 at the 7th EEA Meeting in Esslingen. Its main goal was to introduce the experience of Egyptian archaeology, its methods and techniques to colleagues working in Europe. However warm welcome and great interest of the audience to the subject made us extend the circle of problems discussed at the session.

Since 2002, beside the aforementioned, the main subjects of the session are results of recent archaeological research in Egypt, interactions of Ancient Egyptian and European cultures, different aspects of material culture of Ancient Egypt and Egyptian collections kept in European Museums.

In connection with the former guidelines and concepts, we organize this session to discuss the following topics:

1. History of Egyptian archaeology and current archaeological research in Egypt; methods and techniques of archaeological work in Egypt.
2. Interpretation of material culture of the Ancient Egyptians.
3. Ancient Egyptian collections kept in the Museums of Europe.
4. Cultural interaction of Egypt and Europe in antiquity.

Paper abstracts (not available):

RIEC EXCAVATIONS AT MEMPHIS: SEASON 2007

Galina A. Belova, Moscow, Russia

SPREAD OF THE CULT OF SERAPIS IN GREECE

Alla B. Davydova, Moscow, Russia

TELL IBRAHIM AWAD - LAST SEASON OF EXCAVATION

Dieter Eigner, Wien, Austria

FUNERARY CONES FROM THE THEBAN TOMB 23

Sergej V. Ivanov, Moscow, Russia

ROMAN FORTS IN EGYPT: A COMPARATIVE STUDY OF ROMAN MILITARY INSTALLATIONS

Dmitry A. Karelin, Moscow, Russia

PHARAONIC RITUALS IN A CHRISTIAN GRAVE

Alexei A. Krol, Moscow, Russia

THE CACHETTE OF THE ROYAL MUMMIES DEIR EL-BAHRI

Edward R. Loring, Basel, Switzerland

**Session title: PLACE AS MATERIAL CULTURE
(MATERIALITY, METHODOLOGY & METAPHOR)**

Organizers: Dragos Gheorghiu, National University of Arts Bucharest
George Nash, University of Bristol, UK
Fabio Cavulli, University of Trento, Italy

Chair: George Dimitriadis, HERAC, Philippi and ISSEP, Sardinia, Italy

Time: Thursday all day

Room: 241

Session abstract:

This session will discuss new approaches concerning the relationship between the artefact, place and space. Within the theoretical literature the term 'space' is usually applied. However, in general terms space is a difficult concept to quantify especially when considering its role in, say, landscape studies. When human agencies are involved, space usually becomes place. The physicality of place can be considered natural which has been transformed by human agency. It can also be a natural landmark, a place with visual (and non-visual) meaning that is devoid of physical human invention (e.g. Tilley 1994). Place therefore becomes a living experience and as Bradley (2000) has remarked, near impossible to quantify archaeologically. However, natural landforms can be considered monuments in their own right. These spaces become places when human visual and physical interaction occurs. By this we mean places that become significant markers in a landscape but are not necessarily sites where human activity occurs. Mountains and dangerous foreboding landscape features could be classified in this way. Place can also be regarded as sacred and profane such as sites where the dead are buried and interred or where gods are worshiped. Place can also represent the physicality of an event. Here, place is fixed in time by human presence. Events may not, though, reveal material culture in the true sense of the word but, nonetheless, can be deemed as archaeology of experience, i.e. a sense of *being-in-the-world* (see Tilley). Place, in conventional archaeological terms can represent a living space where traditional archaeological practices can be implemented (i.e. excavation) and where there is a direct association between material culture and place.

In this session we invite participants to present papers that deal with the methodology and practice associated with the definition of place and space. What constitutes these entities? Can *place*, natural or otherwise and in terms of what Tilley and Bradley have so eloquently defined, be deemed archaeology or archaeological?

References

Bradley, R. 2000 *An Archaeology of Natural Places*. London: Routledge

Tilley, C. 1994. *A Phenomenology of Landscape: Places, Paths and Monuments*. Oxford: Berg.

Paper abstracts:**Study cases****MAMMOTH PLACES AND HUNTER-GATHERER CAMP-SITES IN THE LUP TERRITORY OF UPPER AND MIDDLE DNEPR BASIN**

L. Iakovleva, Institute of Archaeology, NAS, Kiev , Ukraine
 François Djindjian, University of Paris 1 Pantheon Sorbonne and CNRS UMR 7041, France
 (Abstract not available)

PIT-DWELLINGS AND HOUSES OF THE LINEARBANDKERAMIK: INTERPRETATIONS PAST AND PRESENT

Krisztián Oross, Archaeological Institute of the Hungarian Academy of Sciences, Budapest, Hungary

In his publication of the Köln-Lindenthal settlement of the Central European Linearbandkeramik (LBK), Werner Buttler defined various sunken features, including the longpits flanking the above-ground houses built around a framework of upright timbers as residential structures. The timber-framed structures, which Buttler interpreted as raised granaries, are now known to be typical LBK buildings.

In view of the countless studies devoted to LBK houses and buildings, the problem of pit-dwellings might no longer seem a point at issue. However, the interpretation of various settlement features as pit-dwellings crops up time and again, raising heated debates. As a matter of fact, not only above-ground, timber-framed buildings, but also pit-dwellings were routinely reconstructed on the LBK settlements in the western half of the Carpathian Basin until very recently.

This paper will examine the problem of LBK pit-dwellings in the light of the welcome increase of LBK houses uncovered during the large-scale excavations of the past fifteen years in Hungary. Included in the discussion will be the scanty archaeological evidence on the buildings of the Early Neolithic Starčevo and Körös cultures distributed in the western and central regions of the Carpathian Basin, as well as their possible relevance for the architecture of the succeeding LBK period. One problem in this respect is the identification and interpretation of the timber-framed LBK buildings, whose remains survived in differing states of preservation on various settlements, which greatly influences the potentials for reconstructing settlement structure and settlement layout.

EXPERIENCE AND PERCEPTION OF MEMORABLE PLACES: TIME-AVERAGING, LITHIC ANALYSIS AND MAPPING THE REGIONAL BRITISH NEOLITHIC

Clive Jonathon Bond, Department of Archaeology, Faculty of Social Sciences, University of Winchester, UK

Three components are critical in understanding the human experience and meaning of regionally diverse Neolithic settlement patterns: artefacts, place and space. Space can be viewed as a context - the physical - the site and landscape or as human agency, a socially constructed world (Tilley 1994). Time is also worthy of consideration when thinking about a peopled landscape. However, archaeological time may be deemed too abstract, a framework obscuring understanding. A more useful concept is generational time: the inference of people's perception of place as a signature constructed from episodic visits, abandonment and revisits over generations (Bond 2004). These themes will be addressed in this paper exploring what it meant to those who created earlier Neolithic and later Neolithic lithic scatters in two comparative regional topographies: the British Somerset Levels and the East Anglian Fen-edge. Evidence, methodology and theory are discussed. How might we best access these worlds?

References:

Bond, C. J. 2004. The supply of raw materials for later prehistoric stone tool assemblages and the maintenance of memorable places in central Somerset. In E. A. Walker, F. Wenban-Smith and Healy, F. (eds.) *Lithics in Action. Papers from the Conference Lithic Studies in the Year 2000*, 124-139. Oxford: Oxbow Books/Lithic Studies Society Occasional Paper No. 8.
 Tilley, C. 1994. *A Phenomenology of Landscape: Places, Paths and Monuments*. London: Routledge.

STONEHENGE - A PREHISTORIC PUZZLE

Emilia Pasztor, Matrica Múzeum, Hungary

Stonehenge, the world-famous prehistoric monument is found on the Salisbury Plain in the South of England. Its history reaches back into the distant past of more than five thousand years ago. On the ground plans of the excavations it can be seen quite well, how this cultic site had been used and modified during several periods. The decision to fit Stonehenge into the surrounding landscape must have based on careful thought. It cannot have been just a coincidence that it was erected on its present site.

The purpose of the presentation is to offer as many ways to study how this place became the most important in the surrounding space, as possible, although to find out what the builders believed in or what information they had about the surrounding world, we can only guess. To try to deduce those exclusively from archaeological finds might prove to be an abortive attempt.

Our mind, trained to be argumentative and rational, cannot accept anything except that can be explained rationally. We tend to forget that words and ideas mean different things for us as they did for prehistoric peoples. However, if there is a chance, that such theoretical games may lead us to guess what a cultic site might have meant for people living there and then, it is well worth the effort.

References:

CLEAL, R.M.J., WALKER, K.E. and MONTAGUE, R.1995. Stonehenge in its landscape: 6-8. London: English Heritage.

PANNIKAR, R. 1991. There Is No Outer Without Inner Space in Vatsyayan, K.(ed.) Concepts of Space Ancient and Modern. Indira Gandhi National Centre for the Arts. Abhinav Publications. 7-38

PÁSZTOR, E.-ROSLUND, C.-JUHÁSZ, Á.-DOMBI, M. 2000. Stimulation of Stonehenge. *Virtual Reality in Archaeology*. A book + CD-ROM edition Edited by J.A. Barceló, M. Forte and D. Sanders, Barcelona BAR International Series 843. 111-113.

RUGGLES, C., 1997. Astronomy and Stonehenge. Proceedings of British Academy, 92. 203-229

FROM SPACE TO PLACE: THE RITUAL OF TRANSFORMATION OF THE DWELT SPACE IN SOUTH EASTERN EUROPE CHALCOLITHIC

Dragos Gheorghiu, Department of Research, National University of Arts – Bucharest
(abstract not available)

BURNT HOUSES, CREMATED BODIES AND FIRED POTS: MATERIAL METAPHORS IN THE EARLY AND MIDDLE BRONZE AGES OF THE CARPATHIAN BASIN

Vajk Szeverényi, Archaeological Institute of the Hungarian Academy of Sciences

This paper will examine the metaphorical relationship between houses, pots and the human body through a case study from the Early and Middle Bronze Ages of the Carpathian Basin. Recently, the processes and sociological background of the formation of tell sites have been re-examined by a number of scholars, and the element of deliberate house burning has received considerable attention. These burning episodes may have been connected to the end of the lives of the inhabitants and played an important role in the creation of powerful ancestral places and in social reproduction. In the Early and Middle Bronze Ages of the Carpathian Basin, however, the element of burning is very important from another aspect as well: this the time when large communal cemeteries with hundreds of graves using exclusively cremation first appear (and probably form the basis of later developments culminating in the Central European Urnfield phenomenon). The same kind of pottery used to contain the burnt remains of the members of these communities also occurs on settlements, where they are used as storage vessels, containing the subsistence products that – through their consumption – became the building blocks of the bodies of the inhabitants. Furthermore, many of these pots are anthropomorphic – sometimes explicitly, sometimes in a more general sense – and they even bear decoration that imitate clothing or were created through the impression of textiles. Other types of decoration are identical to those that have been found – in a few lucky cases – on the plastering of houses. These phenomena suggest that there was a series of metaphorical connections between houses, pots and human bodies that seem to be united through the element of fire as a medium of transformation.

THE MOUNTAINS DURING THE BRONZE AGE IN SOUTHERN ITALY: SPACES BECOMING PLACES

Cristiana Ruggini, Valentina Copat, Università La Sapienza di Roma, Italy

At the end of the '50s, S.M. Puglisi suggested that the Bronze Age economy and society in Italy could have been better understood within the interpretative framework of pastoralism, and pointed out the importance of the Apennine mountains, not only as a space of occasional contact between the groups involved in transhumance activities, but as a place of confluence of groups belonging to the same cultural identity.

The data available for the inland Apennine areas in the Bronze Age, in particular for Southern Italy, are still quantitatively limited and not homogeneous. The hypothesis that these areas were not the space separating the Adriatic and the Tyrrhenian communities, but in fact the space where they developed the exchange network of goods and information (also in relation to subsistence activities), is today particularly meaningful.

This paper will focus on the **recognition** of specific places within the undefined space of the mountains, regarded as the routes useful for the circulation of goods and information, which could have played a role in shaping ancient landscape.

The analysis will be carried out on the base of the observation of what is documented by the archaeological record. Both the settlements and the ceramic productions, with a particular attention to stylistic features, as active vehicle of information will be taken under account. In this context the analysis of the typical "Apennine decoration" seems to be a preferential point of observation for the investigation of these themes.

HOUSE AS PLACE: THE ANTHROPOLOGY OF IRON AGE HOUSE CARVINGS IN VALCAMONICA, NORTHERN ITALY

George Nash, Department of Archaeology and Anthropology, University of Bristol, UK

The Valcamonica can be regarded as one of the core rock-art areas of Europe with over 300,000 images concentrated on the intermediate slopes and valley floor of the Valcamonica Valley. Many panels lie within the Naquane National Park at Capo di Ponte. These images date as far back as the Upper Palaeolithic, but the most numerous date to the Bronze and Iron Ages. The subject matter within later prehistory include cervids, domesticates, field systems, ploughing scenes, settlement and village scenes, and warrior and combat scenes. In amongst this imagery are carved house representations. These buildings, all depicted as free-standing are of timber and all appear to be constructed similarly. It has been proposed by local researchers that these structures are grain storage houses. Indeed, several reconstructions based on the rock-art imagery have been recently built within the National Park. However, the complexity of the carpentry and their probable size (in relation to other figures either associated with or carved next to these structures) suggests that these buildings were more than just grain storage units.

This paper will assess, based on the rock-art imagery the complexity and building ethics associated with house construction within the Alpine Iron Age. As part of this analysis, I will also discuss the ethics and techniques used in the construction of medieval timber framing traditions that are found in medieval England. It is clear from the rock-art imagery portrayed within the Valcamonica Valley that Iron Age carpenters had the technical capabilities of constructing two and three storey structures. In terms of size and complexity, these buildings may represent status dwellings; similar to their counterparts in the medieval period.

HOW NATURAL ARE NATURAL PLACES? CHALLENGING STEREOTYPES IN THE INTERPRETATION OF LANDSCAPE IN IRON AGE VENETO, ITALY

Sarah de Nardi, Institute of Archaeology UCL, London, UK

Traditionally, the material culture pertaining to the Venetic peoples of Iron Age Northeast Italy (both cult and mortuary data) has been studied in terms of artefact typologies, with little -if any- attention paid to the role of landscape and place in the assessment of cultural and social processes. The materiality of the locales

where these people lived, worked, worshipped and were buried up until -and during- Romanisation in the 2nd and 1st centuries BC has gone unnoticed, landscape almost a blank backdrop to uniform, region-wide processes. Moreover, the Classicist bias that privileged monumentalised sanctuaries and monumental cemeteries as object of archaeological study *par excellence* led to a neglect of 'relatively unaltered' locales, minor artefact scatters, archaeologically 'odd' locales and small scale or marginal places.

This paper aims to show how the culture/nature dichotomy has in fact obscured and hindered a holistic interpretation of meaningful Venetic places and landscapes and, by a number of case studies, will ask whether 'natural' places and social and structural order are in fact incompatible and mutually exclusive.. and whether this distinction is even relevant to an understanding of Venetic landscapes.

MAKING A SPECTACLE? MONUMENTALITY AND PERFORMATIVE TIME IN THE MORTUARY SPACE OF EARLY IRON AGE SOUTH-WEST GERMANY

James A. Johnson, Department of Anthropology, University of Pittsburgh
Seth Schneider, Department of Anthropology, University of Wisconsin-Milwaukee

The construction of mortuary space in socio-ideological landscapes is primarily a community endeavor incorporating matter, memory, and performance. As a result, these sites become simultaneously places of transubstantiation and memorialization. Ritual funerary events, and closely associated mnemonic devices such as burial monuments, anchor the fabricated sacrality in both space and time, allowing for future interactions of living community members, i.e., the audience(s), with the dead. Audience participation in funerary events, however, is often difficult to identify in the archaeological record. Excavations of Tumulus 17 of the Early Iron Age (750-400 BC) Speckhau mound group in southwest Germany, and the subsequent analyses of recovered material, have revealed that numerous episodic events took place on existing mound surfaces, acting as the connective tissue between primary and secondary mortuary events. These activities are evident through ceramic refits from features in the mound mantle and mound core that suggest a 150 year curation period of materials from the central interment in the mound, and which further reinforce the social nature of accretional mound construction. This paper addresses the spectacular nature of mortuary places as they are constructed, used and reused, and are indelibly situated in human social and physical interactions with the landscape, the dead, and the living.

STRATIFIED IRON AGE CHIEFTAINS' HOUSES ON THE TITELBERG

Ralph M. Rowlett, Department of Anthropology, University of Missouri—Columbia

The Iron Age and Gallo-Roman hillfort on the Titelberg in southwestern Luxemburg was occupied continuously for approximately 700 years, starting from about 300 bc. Earlier there had been sporadic occupations in the Early Bronze Age, Neolithic, Mesolithic and perhaps the Upper Palaeolithic and Mousterian. During the Iron Age/Gallo-Roman occupation within earthen and wooden ramparts, two primary sets of stratified dwellings were just barely southwest of the current apex of the 390 m. high butte of the Titelberg. These constructions were apparently the headquarters of chiefs, who had money coined here throughout late La Tene and early Gallo-Roman times. During late La Tene, LT III or LT D, there were two superimposed clay floor houses and three subjacent earth floor houses made with a light brown sediment. The tree-ring dated Green Clay floor dates to the time of Caesar's Conquest, while the four floors beneath were earlier. These were all rectangular houses with a partially sunk lower level rectangular room on the south end of the house. All of these floors were involved in coin manufacture. The walls and roofs of these buildings were apparently wattle-and-daub and thatch. The main fireplaces, both in the upper level and in the semi-subterranean cellar were carefully superimposed. The residences can be compared with other Iron Age houses on the Titelberg. The linearly seriated graves of the chiefs who maintained these buildings were excavated under the auspices of the Luxembourg State Museum at nearby village of Gablingen-Nospelt.

RELATIONSHIP BETWEEN MEN, SPACE AND PLACES DURING THE IRON AGE: EXPLOITATION OF COASTAL SPACE AND RESOURCES THROUGH THE ISLAND SETTLEMENTS IN WESTERN FRANCE

Anna Baudry, University of Rennes 1, France
Marie-Yvane Daire, CNRS, UMR 6566, Rennes, France

The Western France landscape is dominated by the oceanic influence. For the coastal and insular populations this is reflected on their environment and their living conditions. Many islands of Brittany have been settled during the Iron Age period because of their geographic position and their resources variety. The coastal human population were supposed to exploit as well as possible these various food resources (mammals, fish, shells, shellfish) existing within a reduced space delimited by natural borders.

These islands provide goods examples of places becoming spaces and also of spaces becoming places because of the dynamism of both landscape and population evolution. These sites represent an ideal framework to study the behaviours of the islands populations face with the problems of acquisition and management of meat diet.

Since twenty years very dynamic research programs on the Atlantic and Channel coasts of France involved several excavations which delivered very important quantities of animal remains preserved thanks to the dune sandy levels and the shells clusters. The realization of completes and statistically valid animals bones studies become possible.

The aim of this paper is to present a first approach concerning the modes of breeding and to show their interaction with the immediate environment of the populations, within small island, such peculiar spaces (or places?).

LOOK TO THE HILLS AND REMEMBER THE DEAD

Anna Wickholm, Department of Archaeology, University of Helsinki, Finland

The *Cremation cemetery under level ground* is the dominant burial form in Finland during Middle and Late Iron Age (ca. 550-1150 AD). What makes them special is that the cremated bones and artifacts are scattered in a random fashion into a stone-packing so that the burials becomes impossible to distinguish from each other. The only single burials derive from Merovingian period (550-800 AD) and these are almost always male weapon burials. From Viking Age (800-1050 AD) onwards, also the weapons are scattered into the cemetery making the burial custom completely collective.

As the name already says, the cemetery is under flat ground, which means that no outer grave marker, such as a cairn or a stone setting is present. This also makes the cemetery type quite difficult to detect in the terrain. However, oftentimes the cemeteries are found on top of small moraine hills or on the slopes of ridges, which make them indeed visible in the topography. Somehow the Iron Age people wanted their cemeteries to be visible or even monumental even though they buried their dead in an invisible way.

Another significant feature for this cemetery form is that they are often used for several hundreds of years; a single cemetery can be in use for over 500 years! This means that they also cover quite large areas, the largest cemeteries being over 2000 sq meters. Occasionally there are also older burials under these cemeteries. This suggests that the place of burial was important and that the cemeteries might even have functioned as sites of memory.

What makes these places so special that they are manipulated again and again over the centuries? In my paper I will suggest that the answer lies in the hills of the dead and thus in the ritual and mnemonic aspects of the landscape.

CARING FOR CREATION - A HIEROPHANY AT STRAWBERRY ISLAND

Herman E. Bender, America Septen History Company (ASHCO), Wisconsin, The Hanwakan Center for Prehistoric Astronomy, Cosmology and Cultural Landscape Studies, Inc., U.S.A.

Strawberry Island is a nearly pristine island, 21.3 acres in size, of undeveloped forested land located in the center of Flambeau Lake (from the French "flaming torch") in the Town of Flambeau, Vilas County, Wisconsin. The Chippewa (Ojibwa) name for Flambeau Lake, *Waswagoning* means "place where you fish by torchlight". Having lived here for centuries, the Lac du Flambeau band of Chippewa or Anishinaabe ("the

original people") revere Strawberry Island as a sacred place and when threatened with private development, the tribe took action. To fully understand the reasons why the native people have such a reverence and attachment to Waswagoning and Strawberry Island and in the effort to prepare for the legal battle for island's preservation, their cultural heritage, traditional belief system and concepts of the 'sacred' were examined. Insights gained after two years of intensive study backed by observation revealed that, at certain times of the year, events in the sky interacting with Strawberry Island and the surrounding landscape produced what is best described as a hierophany. The hierophany or the transformation of the landscape from the mundane to the sacred, a predicted event, was observed by many during a key moonrise. It provided not only a clue on how Strawberry Island likely received its name and established the concept of place, but helped to reestablish an almost forgotten ethos and reinforce beliefs connected to the Tribes origins.

Methodology

THE SYNTAX OF SPACE

Roberta Robin Dods, Community, Culture and Global Studies Irving K. Barber School of Arts and Science
University of British Columbia – Okanagan, Canada

In archaeology human action/interaction speaks to us through the artifact. The artifact is, essentially, Popper's third world of knowing, the world of statements or the products of the human mind. These things are the hardware remains of ancient technologies representing systems of communication of complicated ideas. In archaeology the situation of the artifact in space is important to interpretation of meaning. The 'structure' of the space in which such things are situated also communicates. Space through the actualization of human thought becomes cultural landscapes. Through the reprise of the work of Edward T. Hall this paper examines space as symbolic. And like language, as a symbolic system, it too has syntax (called by archaeologists *chaîne opératoire* for the artifact) unique to its specific cultural utterance. The shape and form of space in its specific syntax introduces us to a whole realm of meaning in which we have not been privileged to participate. We can not approach this directly through the intersubjective and the dialectic of fieldwork as the anthropologist. Nonetheless, the intersubjective is there in the situation and shape of space and its use. The role of the researcher is to un-cover, dis-cover, to 'listen in/look in' on the discourse of the past that created this record of its syntax and through reflexivity interpret its meaning.

HABITUS UNBOUND. NEW APPROACHES TO MATERIAL CULTURES OF ART, RELIGION, AND SCIENCE AND DEMOCRATISING ARCHAEOLOGIES OF EXPRESSIONS OF 'PLACES' AMONGST COMMUNITIES OF 'WE'

Stephanie Koerner, School of Arts, Histories and Cultures, University of Manchester, UK

Until quite recently, very few archaeologists are likely to have been receptive to ideas that their approaches to 'place' and 'material culture' could be enhanced (indeed transformed) by insights that go against the grain of hitherto predominant theories of religion, art, science and the 'Birth of Modernity.

The situation may be undergoing radical change. Interdisciplinary projects are illuminating hitherto unimaginable areas of overlap and clashes between the histories of religion, art and science, which go against the grain of universalising generalisations about 'modernity' and the generalisations about human agency, knowledge and cultural diversity on which these hinge (cf. Latour and Wiebel eds. 2002). Increasingly sophisticated methods have been designed for exploring patterns among religious, scientific and artistic experience, practice and media for expressing, representing and debating different points of view on what matters in the world that we occupy together. New light is being thrown on analogies that can be made between circumstances under which authoritative paradigms for research and teaching in the humanities and social sciences (1) have been structured around highly problematic dichotomies (art/science, reason/faith, experts/publics, moderns/others, nature/culture, individual agency/social structures, (2) treated trust as reducible to 'expert competence', and (3) impeded intelligible approaches to the indeterminacy of material culture expressions of 'place' of communities of 'we' (Koerner, S. 2006).

My presentation builds upon lectures of a core-course in art history and archaeology in order to illustrate the bearing of these developments upon key themes of the session. Emphasis falls upon materials that

relate to the embeddedness of conflicts over the 'materiality' of 'place' in the history of 'crises' over the pedagogical and political authority of hitherto predominant generalisations about human agency and cosmological presuppositions about: (1) the unity and diversity of the physical world (or cosmos), (2) the unity and diversity of human ways of life (or polis), (3) the scope and thresholds of human perception, understanding, and communication, (4) criteria for assessing the certainty of knowledge claims, (5) sources of uncertainty, (6) 'is and ought'.

For some, useful approaches to questions mentioned in the 'place as material culture' session abstract relate to arguments that we might be able to address many problems with 'Great Divides' differently if we recognised that we were never modern in the ways in which 'standard accounts' (or 'meta-narratives') about the Scientific Revolution and Birth of Modernity claim (Latour, 1993; Latour and Wiebel eds., 2002; J. L. Koerner, 2004; S. Koerner, 2001, 2004). But I will conclude by showing that much of the value of such insights, for instance, for opening space for democratising archaeologies of the plurality of places of 'we', hinges upon appreciating that No One was ever 'pre-modern'.

PANDORA'S HOPES FOR THE INDETERMINACY OF MATERIAL CONDITIONS FOR PLURALITY OF PLACES FOR PUBLIC GROUNDS OF TRUTH

Lorna Singleton, Stephanie Koerner, School of Arts, Histories and Cultures, University of Manchester, UK

The humanities and social sciences may be at crossroads in their roles in the dynamics of local, national, and trans-national pedagogical institutions and public affairs. In many parts of the world global media images of nature-culture, moderns – pre-moderns, experts – publics clash with complex social geographies of ecological hazard, unsustainable development, and political strife.

Research and teaching in fields developed to address what many expert agencies call 'crises' in public understanding of science, as well as in such fields as 'world heritage', 'museum studies', and 'tourism and travel' have highly institutionalized roles as sources of cultural policy authority. Globalizations traverses national borders, transforms authoritative institutions, and fortifies new social boundaries of 'otherness'. The sun never sets on metropolitan centers shimmering inequality. Super-modern urban castles and subway 'homes' of thousands of beggars have the same geographical co-ordinates. 'Elsewhere' disputes over 'destruction and conservation' of 'cultural heritage' clash with claims to the need of technological solutions to nuclear, chemical, biological hazards.

Those accustomed to the normativity of disunity paradigms are ill-prepared to challenge: (1) expectations of a unified knowledge 'currency' on the part of 'global' agencies for sustainable development and risk governance, (2) the importance of nature-culture, modern – premodern, expert – public dichotomies to agencies opening corridors of trans-national commerce and marginalizing trust and plurality of human aspirations. For some - nothing seems to change. We are always already in the **time-space** of Parmenides' world of permanence. Others say we can never be modern enough: 'state of emergency' being the norm for our **place** in the Heraclitean flux of risk society demands 'new cosmopolitan' notions of 'alternative realities'.

Yet serious reflection on this vexed option illuminates considerable problems. Wars are not fought over 'alternative realities', but different experiences of what matters in the world that we live in together. In this presentation we: (1) highlight the relevance of themes of the session to issues posed by the embeddedness of 'cultural heritage' issues in social geographies of radical inequalities respecting exposure to ecological hazard, unsustainable development and political violence, (2) consider analogous situations in antiquity and early modern times, (3) illustrate something of how these relate to themes of the session with materials on the ecological, biological, techno-economic, and cultural history northwest England's Lake District, (4) suggest how these materials relate to the importance of the indeterminacy of material culture conditions of plurality of places of public grounds of truth to 'Pandora's hopes' for democratising debating marginalised questions of what sorts of human beings we can aspire to be, and in what sort of world?

WHEN CUP-MARKS CHANGE A SPACE INTO A PLACE. LANDSCAPE ANALYSIS OF A SYMBOLIC-FUNCTIONAL PHENOMENON THROUGH TIME: THE CASE STUDY OF THE SENALES VALLEY (SOUTH TYROL, ITALY)

Fabio Cavulli, Trento University, Italy

The issue of schematic art dissociated from figurative art crops up only rarely in scientific debate for two basic reasons: one is chronological collocation and the other is related to the function of these features. The

majority of cup-marked rocks, in fact, is lacking an archaeological context and seems to have no evident function. Despite the phenomenon of cup-marks is widespread, these features present evidence which is less revealing than that found in figurative contexts.

In the Senales Valley (South Tyrol region, northern Italy) a high concentration of cup-marks may be found on irregular outcrops and rocks that are incised with a number of small shallow basins or wide, deep single holes. The most elaborate rocks feature narrow grooves or what could be solar symbols, while the overlapping of elements such as crosses indicates to the perpetration of these elements over time. The fact that such features are unevenly distributed throughout the territory leads us to believe that they are in some way linked to the frequentation of the area.

The rocks have been surveyed, their description filed in a dedicated database and their geographical position recorded. This data was then inserted into a GIS platform to be related and crossed-checked with data regarding the use of the territory. In other words the cup-marks, be they single features or in groupings, were considered as part of an ancient human landscape which is no longer visible (made up of settlements with huts, hunting and handiwork areas, pathways, reference points, places of gathering or ritual-cultural areas, etc).

The study of cup-marked rocks has become an integral part of the analysis of territory use from the Mesolithic Period up to the present and allows us to underline, through this manifestation of material culture, the continuity and discontinuity of human occupation. The paper proposes a landscape approach to a functional and symbolic phenomenon which can be understood only if it is considered as a broader system based on the different uses of the territory in time.

Furthermore, the research focuses on the perception of the territory by means of visibility analysis, demonstrating its important role in a mountain environment.

LANDSCAPE ILLUSIONS AND CULTURE MATERIAL. A COURSE OF PSYCHOLOGY CAN HELP ARCHAEOLOGISTS?

George Dimitriadis, HERAC, Philippi-Greece and ISSEP, Sardinia, Italy

In late 60s a research project was jointly carried out by anthropologists and psychologists near few non literature tribes in Africa. The point in discussion can be formulated: how ecological factors can manipulate perception of optic-geometric illusions? The question was addressed in space terms in order to verify Müller-Lyer theory. The results were too much interesting: 1. humans living in close spaces as tropical forests or in open spaces as plains are affected by horizontal/vertical illusions of space. Indeed, Zulu a South Africa war tribe living in a circular world (cf., circular structures huts; land cultivations dissemination follow circular patterns). 2. Human communities characterized by production of rectangular and square objects perceive Müller-Lyer profiles as incomplete. Both situations seem to be well tested in "primitive" land-architecture and "tribal" material culture. How landscape is embodying in material culture? How spacescape transmuted in place? The aim of the present paper is to apply such studies on archaeological material.

LANDMARKS CONSTITUTING SPACE AND SPIRITUAL SIGNIFICANCE. PARALLELS BETWEEN PREHISTORIC CENTRAL EUROPE AND ARCHAIC SOCIETIES IN INTERIOR NEW GUINEA

Henry C. Dosedla, German Museum of Agriculture/Hohenheim University, Stuttgart, Germany

Regarding the importance of significant landmarks in order to provide a substantial space concept within an archaic local group there is a typical example in the case of the Mbowamb situated in the interior highlands of Papua-New Guinea (PNG) who until recently were anthropologically classified as representing standards of a Neolithic society. It appears likely to some degree that many characteristics of the traditional Mbowamb concept of space may be compared with conditions in a special area in Central Europe where archaeological evidence as well as distinct features of contemporary folklore are indicating a quite similar situation concerning such orientation patterns. This area is located around the village of Motten on a vast granite plateau belonging to the outskirts of the Bohemian Forest at the border between northern Lower Austria and Southern Czechia with settlement traces ranging from the Palaeolithic period to medieval times within a landscape which remained in some state of remoteness until the last century.

PLACE AS MATERIAL CULTURE IN GUMUZ SETTLEMENTS (WESTERN ETHIOPIA)

Xurxo M. Ayán Vila, High Council for Scientific Research, Spain
Alfredo González Ruibal, Álvaro Falquina Aparicio, Universidad Complutense, Madrid, Spain

Archaeologists and anthropologists tend to study houses with disregard to their often chaotic materiality. The usual ethnographic procedure consists in imposing order on domestic space, bringing forward meaning and structure, in order to read society through space. In so doing, however, ethnography conceals the messy reality of artefacts, people, animals and dirt that compose any traditional home. This sanitizing and idealistic approach is quite surprising given the sheer intimacy of ethnographic research towards the subject of study – an intimacy that is generally obvious in the way particular situations, institutions and persons are deeply interwoven in narratives of nuanced detail and psychological depth.

Our study of the domesticity of the Gumuz compounds in western Ethiopia tries to convey the material richness of homes, the strong relationship between people, places, things and animals that shape the experience of the house, and the chaotic, and simultaneously ordered, nature of domestic space. At the same time, we perceive the materiality of homes as historically constituted. It is not only social norms that permeate the structure of the house, but also long-term historical events that have action in the present. Rather than viewing social and historical features as conditioning domestic space in an abstract way, we try to prove how they are intertwined in the very materiality of houses – indoors and outdoors, in structural elements as well as in artefacts – and therefore affect the daily life of the people that inhabit those spaces.

THE NEOLITHIC GREAT CURSUS AND NEARBY LONG BARROWS IN THE RE-STONEHENGE LANDSCAPE: ETTINGS, ORIENTATIONS AND INTER-RELATIONSHIPS

G. Terence Meaden, Department of Continuing Education (Archaeology) and Kellogg College, Oxford University, UK

The fourth-millennium landscape of the pre-Stonehenge era has been studied and reinterpreted for topography and the inter-alignment and inter-visibility relations between the Greater Cursus (which is an elongated tract of land 3 km long enclosed by shallow ditches and low banks) and its contemporary Neolithic monuments—most notably the numerous earthen long barrows. The correspondences are far-reaching and of such a nature as to imply that many of the long barrows are later than the cursus or would have been constructed in close conjunction with the building of the cursus. This is because the self-orientations of the majority of the long barrows are aligned on one or other terminal of this west-east cursus. This fresh approach in cognitive-archaeology recognises the influence and symbolism of 'place' and does so in conjunction with a religio-philosophical idea or motive that seems not inappropriate to the culture and Earth Mother belief system of early farming communities in Britain.

At the same time, the proposed motive may explain more generally why cursus monuments can be so immense and extra-ordinary in shape and area. Regarded this way, it may explain why cursuses can combine a high finesse in execution—of the sort that intimates fine surveying precision—with puzzling oddities of track like erratic changes of width or direction, and so resolves some of the further problems that together form the 'cursus enigma'

Poster abstracts:

SPACE OF HUMANS – PLACE OF FIRE. EXPERIMENTING ARCHAEOMETALLURGY

Marius Stroe, Catalin Oancea, Department of Research, National University of Arts – Bucharest, Romania

The relationship between artefact, place and space is the best illustrated in the case of pyrotechnologies. As human agency creates a technologic and symbolic space around the place of fire, every type of instruments determines a specific proxemics.

Our experience as metallurgists helped us to gain the living experience of the place called "fire", through the experimentation of numerous spaces created as the result of the use of various instruments, and we will illustrate the above mentioned relationship between instruments and place by presenting several experiments of metal casting, from the first stage of the building of the structures of combustion up to the moment of the end of the metal processing.

ISLANDS, ISLETS, EXPERIENCE AND IDENTITY: UNDERSTANDING PLACE AND LANDSCAPE IN THE HEBRIDEAN IRON AGE

Rebecca Rennell, Institute of Archaeology UCL

This poster presents a number of ideas relating to island experiences of the Iron Age landscapes of the Outer Hebrides, Scotland. The poster explores ways in which the island experiences of Iron Age people might have shaped their identity at varying geographical scales – from a regional island scale, looking at the Scottish Atlantic seaboard area, down to the individual Iron Age islet dwellings. It is proposed here that people's experiences of these island landscapes did shape social and cultural identities during the Outer Hebridean Iron Age, but that the island identity was multi-layered and at times seemingly incompatible – islands, and in particular islet dwellings, appear to have facilitated contact and communication whilst also enabling people to express their 'separateness'.

Session title: UNDERWATER ARCHAEOLOGY; PAST, PRESENT, FUTURE

Organizers: Irena Radić Rossi, Croatian Conservation Institute, Underwater Archaeology Department, Zagreb, Croatia
Andrej Gaspari, Military Museum of Slovenian Armed Forces, Ljubljana-Šentvid, Slovenia,
Andrzej Pydyn, Nicolaus Copernicus University, Torun, Poland

Time: Thursday all day, Friday morning

Room: 143

Session abstract:

From the first attempts in the 15th century to explore the underwater archaeological remains, through some great discoveries at the end of the 19th and the beginning of the 20th century, during last 60 years underwater archaeology has gained its position as a respectable branch of the archaeological science. The study of underwater archaeological evidence has made great progress by applying dry-land archaeological techniques and adapting them to the underwater environment. Constant improvement of the diving and underwater archaeological equipment, as well as applying the new technologies in underwater research, help archaeologists to gather more and more information that contribute to the importance of the archaeological excavations in salt and fresh water, as well as water-logged sediments. Relatively recent deep water research opened a multitude of questions about the ancient navigation and managing the underwater archaeological sites.

Specific natural conditions under water in many cases helped to preserve various organic materials from different periods of the human past, as well as many valuable works of art that could have easily perished on land. Numerous remains of shipwrecks from prehistory to modern times represent an interesting and attractive direct evidence of seafaring, trade, cultural exchange and political situations, while abundance of architectural remains and movable finds from the ancient ports or other submerged structures provide evidence for many different aspects of everyday life. They also offer useful data for the interpretation of all kind of geological and climate changes that caused notable changes of the sea-level or inland water courses. Therefore, multidisciplinary studies, becoming more and more frequent, make use of all the rich and various archaeological records provided from underwater archaeological layers and render it useful for many different purposes.

The large number of easily reachable sites, the very limited number of experts engaged in the protection of underwater cultural heritage, nearly impossible permanent control of non excavated or partly excavated sites, the lack of funding for the accurate excavations and, even more, for the long and expensive conservation processes are just some of the problems to be addressed while considering the future of underwater archaeology. On the other hand, the attractiveness of underwater archaeological research, sites and finds offer great possibilities for sustainable development based on cultural heritage that could offer bright prospects for the future work.

List of arguments to be presented and/or discussed:

- Learning from history; positive and negative experience from the past or on-going underwater archaeological projects;
- Respectable examples; presentation of underwater archaeological sites, excavations or complex projects that strike the importance of underwater archaeology and its achievements;
- Mapping of underwater cultural heritage;
- Methodology of underwater archaeological research;
- New technologies and deep water archaeological research;
- Multidisciplinary studies applied on underwater archaeological sites;
- Salt water – fresh water – water-logged environment; differences and similarities in excavation methodology and conservation processes;
- *In situ* protection of underwater cultural heritage; how to prevent the sites from constant or occasional looting;
- *In situ* presentation of underwater cultural heritage; how to manage the attractive underwater archaeological sites;
- Modern shipwrecks and sunken aircrafts - increasing problem in terms of protection
- Private collections and amateur divers; is there a possibility to organize a peaceful coexistence;
- Legislation and practice; coherence or discrepancy.

Paper abstracts:

UNDERWATER CULTURAL HERITAGE IN CROATIA AND THE IDEA OF SUSTAINABLE DEVELOPMENT

Jasen Mesić, Ministry of Culture, Zagreb, Croatia

Underwater archaeology, the discipline that studies all traces of human existence and heritage of all mankind, regardless of any state's borders, proves to be a fruitful area for the development of multicultural projects that by their nature initiate cultural co-operation in order to protect and respond to the demands of development.

Since the Greek settlements and colonization from Magna Graecia in the 3rd and 4th century BC encompassed a number of Adriatic islands, and the opulence of Roman reign demonstrated itself in many fabulous cities, the recovery of Greek statue of Apoxyomenos, recently presented in Zagreb and Florence, was somewhat expected.

The systematic underwater archeological research of the Eastern Adriatic began in the early sixties of the last century, as a reaction of local museum institutions to the plunder of underwater sites. Today, the central department for underwater archeology is inside the Croatian Conservation Institute. It is also important to mention that Croatia is one of the first countries that ratified and signed the UNESCO Convention on the Protection of the Underwater Cultural Heritage showing our commitment to promote and protect this particular heritage, as international benefit. In Croatia, there are 400 documented underwater sites, of which 100 are inscribed on the List of protected cultural heritage in Croatia.

Today, the Ministry of Culture is working to find resources for the founding of the International Euro-Mediterranean centre for underwater archeology, where co-operation with other countries is a necessity, not an option. The presentation tries to give an answer, based on the Croatian example, to the question present in all of the Mediterranean and Europe on how to find a solution not only to preserve but also to offer the models on how to use the underwater cultural heritage as a cultural resource for sustainable economical development. *In situ* presentation of underwater archeological sites in the Adriatic Sea (including archeological research in rivers and lakes) is also one of the tasks and objectives of the Centre. Now, it is possible to visit 7 sites that are protected by cages and 80 more accompanied with a supervising diver.

UNDERWATER ARCHAEOLOGY IN ESTONIA

Kristin Ilves, Tallinn University, Institute of History, Tallinn, Estonia

In the end of the year 2006 a shipwreck was found during the reconstruction works in the Tallinn Harbour. On the basis of only 4 salvaged fragmentary pieces and partly, according to their find-spot, the wreck was directly hypothesised to be a Swedish warship *Draken* from the 17th century. Without any actual

preliminary investigations of the location and/or complementary archival studies, the ship was also said to be in a totally demolished condition. The generally acknowledged expert of Estonian maritime archaeology declared that shipwrecks of this age, type and condition are not worthy of any kind of archaeological research. And the Estonian National Heritage Board agreed, even though they had earlier estimated the wreck to be a find with a high cultural value.

Several problematic issues for the more general discussions on underwater heritage emerge from the above stated example. The choice and evaluation of research material is definitely requisite in archaeology; in case of old shipwrecks, their condition, age, frequency of occurrence and general cultural and scientific importance are probably the most important criteria for evaluation. But, do 4 fragmental ship-details give any information on these matters?! Even without preliminary investigations the first step in wreck-archaeology seems always to be identifying a site, putting a name to it. Thus, why, in so many cases concerning shipwrecks, archaeological material itself is not considered important? Furthermore, statement that 17th century (and younger) shipwrecks are not of interest for the science and are suitable only if these are preserved entirely, is even more distanced and unsuitable standpoint for archaeology. Still, such declarations, more characteristic for antiquarian archaeology, occur frequently in academic maritime archaeology. And for any National Heritage Board to proceed in their decision making from plain hypotheses and from the concept according to which only "beautiful" and entirely preserved object have a value should be totally out of place in today's archaeology.

CURRENT RESEARCH IN UNDERWATER AND ARCHEOLOGY IN POLAND

Andrzej Pydyn, Nicolaus Copernicus University, Torun, Poland

Underwater archaeology has been taught at the University of Torun for almost 30 years. Despite of a long tradition achievements of this course have been hardly recognised outside of a close academic circle. Political, social, economic and technological changes that took place in Poland, and in the rest of Europe, in the last two decades introduced many new challenges for education in underwater and maritime archaeology.

On the one hand, private, well funded shipwrecks 'research' groups have been established, and they manage to capture a lot of public attention. On the other hand, broad access to the Internet made the exchange of knowledge more accessible. In response to these challenges new projects in underwater archaeology conducted by University of Torun are very open for cooperation with recreational divers and above all with local communities that often are deeply interested in their local past.

CHALLENGES FACED BY UNDERWATER ARCHAEOLOGY IN LATIN AMERICA AND THE CARIBBEAN, LEARNING FROM EXPIRENC

Tatiana Villegas Zamora, ICUCH/ICOMOS Committee, Columbia

Underwater Archeology in Latin America and the Caribbean (LAC) is at starting point. There is an enormous field of action given de Maritime History of the region, including its "discovery" and colonization by European powers.

Awareness of the existence of archaeological remains in water environments and particularly of their potential from a scientific perspective, is still a very recent subject given the relatively new access to the underwater world and to the availability of new technologies.

However, there is a long lasting popular awareness of its existence, thanks to the romantic notion of Spanish Galleons loaded with gold and precious stones as well as to the adventures of English and French pirates that have nourished the imaginations of many through literature and films.

Nevertheless, the region cannot be considered as one entity. The maritime history of the Caribbean Region is a very different one that of countries with coast lines on the Pacific or the Southern Cone.

In the Caribbean, search of historic shipwrecks by treasure hunters has been an issue for more than twenty years. Constant incursion for obtaining permits to explore, and commercially exploit, shipwrecks has put many countries of the Caribbean basin in permanent vigilance and has often been the ground for corrupt agreements within weak political structures. However, this constant presence has had at least one beneficial aspect, which is that in those countries the issue is of public knowledge, though often wrongly understood and mistaken by many as a possibility for raising money for government institutions while enriching the

pockets of a very few. Creating awareness of the real potential for a country to preserve and manage its underwater cultural heritage is more of a nature of straightening the institutional potential of research and protection of this heritage than starting from zero.

Owing to the efforts and constant work done by international bodies as UNESCO - through the Convention for the Protection of Underwater Cultural Heritage - governments in LAC are beginning to understand and value the importance of legal structures for the protection of this new heritage and of its potential for enhancing and protecting cultural identity through serious scientific research, convincing the average person of its existence is not a conflicting process.

If we analyze the cases of Colombia, Panama and Venezuela as an example of countries sharing a common past in Caribbean water and that of countries in the Southern Hemisphere as Argentina and Chile, we can see the differences in approach. It is not an exhaustive listing of but an insight into different experiences that illustrate the complex evolution of UCH protection and the aspects that have driven scientific development of Underwater Archeology in this part of the world. Political, geographical, climatic and cultural differences between these two parts of our continent can be analyzed and used to understand the complexity and maybe give an idea of a different approach to reach the goals of global protection.

THE PROJECT OF UNDERWATER ARCHAEOLOGICAL PARK IN CAVTAT

Igor Miholjek, Croatian Conservation Institute, Underwater Archaeology Department, Zagreb, Croatia

Underwater archaeological sites represent a specific matter regarding the exploration and protection of cultural heritage. As the interest for diving in Croatian Adriatic is growing every year, they can be easily included within the touristic potentials of Croatia. Abundance and diversity of underwater archaeological heritage offers many different possibilities of underwater *in situ* presentation that could attract either scientists or amateur divers.

In the Cavtat area, in the far south of Croatia, there are five underwater archaeological sites, not far away one from another. They include a shipwreck with the amphorae cargo from the 1st cent. BC, a cargo of storing vessels called *dolia* from the 1st cent. AD, a shipwreck with the amphorae cargo from the 4th cent. AD, a shipwreck from the 18th cent. and an anchorage with many different single finds. The 4th cent. site is protected by an iron cage.

The creation of an underwater archaeological park has been proposed because it would certainly make an important contribution to the existing tourist attractions of the Cavtat area.

THE ROMAN SHIPWRECK IN THE SHALLOW WATERS OF BUJE IN ISTRIA – AN EXAMPLE HOW TO MANAGE A WELL PRESERVED UNDERWATER ARCHAEOLOGICAL SITE

Mario Jurišić, Croatian Conservation Institute, Underwater Archaeology Department, Zagreb, Croatia

Thanks to a police intervention a well preserved underwater site was discovered on the shallows called Buje near the town of Umag in Istria. During the first underwater archaeological survey it was established that it belongs to the 2nd cent. BC and consists of about 150 amphorae of the so called Greco-italic type.

The best solution for its protection was the placing of the protective iron cage constructed with the removable top-side to be opened during future excavations. This sort of protection also permits the underwater presentation of the site and can serve as a good starting point for training the young archaeologists and scientific divers.

EXPERIENCE OF THE RESCUE UNDERWATER ARCHAEOLOGICAL EXCAVATION AT VRANJIC NEAR SPLIT

Irena Radić Rossi, Croatian Conservation Institute, Underwater Archaeology Department, Zagreb, Croatia

Vranjić is a charming village on a small island between the city of Split and the town of Solin. In ancient times it was situated in *Ager salonitanus* i.e. the territory of *Salona*, the ancient capital of the Roman province *Dalmatia*. Once called *Little Venice*, its image was heavily damaged by industrial progress during the second half of the 20th century.

Some important underwater archaeological finds disappeared under the modern coastal structures and reappeared after nearly one century, during the reconstruction of the western and southern bank. The medieval structures, made of Roman architectural remains provided a lot of material that indirectly confirmed the existence of the nearby Early Christian basilica and the Roman necropolis. A Greek inscription from the 4th century BC, found by an accident, raised a lot of interest as it seems to be directly associated to the period of Greek colonization of Eastern Adriatic.

The most important and unexpected discovery is represented by the potent Bronze age layer, testifying to an important settlement that was totally submerged and therefore completely unknown.

Diving and working conditions didn't permit archaeologists to work systematically on the underwater research, making the excavation and the elaboration of documentation extremely difficult. In order to identify all the cultural layers it was necessary to create 5 m high vertical profiles on the less critical points, where the danger of collapsing was reduced to a minimum. This kind of approach was needed because of the importance of the site and, in the same time, pointed out all the limitations and disadvantages of rescue excavations.

GAZETTEER OF UNDERWATER CULTURAL HERITAGE OF ISLAND OF HVAR

Marinko Petrić, Muzej hvarske baštine, Hvar, Croatia

Project of creating database on underwater cultural heritage of the island of Hvar has started in 1983 as a part of international archaeological Project Hvar. Creator of this project is Marinko Petrić, senior curator of Hvar heritage museum.

The idea has been to create a complex database of marine cultural heritage of the island of Hvar, primarily of archaeological nature, but also of maritime and ecological context. It includes collecting information from archaeological research and survey, collecting and sorting data of unpublished pieces of information from archive of Hvar Heritage Museum, evidence from public and private collections of marine cultural finds, and sampling pieces of information from local divers, fishermen, and other relevant sources.

Central part of documentation is Gazetteer of underwater sites. It consists of about 220 sites of various types and of different value, from shipwrecks to single findings of pottery shreds. Gazetteer also covers evidence from different time periods, ranging from earliest finds dating back to 5/4th c. BC, to more recent ones dating from 20th c AD. Map of sites is made in scale of 1/5000 and 1/25000.

This gazetteer, in short form, was published together with database of land archaeological sites in "Archaeological heritage of the Island of Hvar", British Archaeological Report, International Series, 660, Oxford 1997.

Although not verified in every detail, and not completely standardized in quality of data, this documentation is ground base for all future projects of research, preservation and valorisation of Hvar underwater heritage.

EXCAVATION AND *IN SITU* PROTECTION OF THE PERFORATED *DOLIA* IN THE PORT OF VIS

Mladen Pešić, Zadar, Croatia

Considering the historical context, the island of Vis is one of the most interesting islands along the Croatian coast. From the archaeological point of view its importance can be observed from prehistoric times through Hellenistic period, when the famous Greek colony of *Issa* in the Port of Vis was created, until the period of Roman domination.

An interesting group of finds from Roman period is represented by perforated *dolia*, large storage vessels that in a second moment have been used for some different purpose. The first such object has been discovered in 1985 near the old slaughterhouse known as *Macel*. During the surveys in 1992 and 2004 three more partly preserved perforated *dolia* were found near Macel and in the adjacent Bay of Stonca.

In 2005 Croatian Conservation Institute started an excavation campaign in order to get some more information about the site. Three new perforated *dolia* were discovered *in situ*. The continuation of research in 2006 added two more *dolia* to the present list, rising total number of finds to eight.

During the 2005 campaign research was based on only one *dolium*. It was established that *dolium* was buried to half of its original height in coastal bank and was surrounded by irregularly broken stones which were used to immobilize it. During the cleaning of the inside part of the *dolium* many pottery fragments,

rests of building material, mosaic cubes, glass fragments and pieces of wood were found, dating back to the first centuries AD.

The function of perforated *dolia* still remains an opened question as there are no analogies within the other Mediterranean finds. The usual explanation about their use for keeping the fish fresh is not supported by the data collected in the Port of Vis. However, as the number of sites with perforated *dolia* increases, the future archaeological research will probably lead us to the right conclusion.

SALVAGING HISTORY: INTERNATIONAL COLLABORATION AND OUTREACH IN THE NORTH BLACK SEA

John Albertson, Centre for Underwater archaeology, Kiev University, Ukraine – USA

Taras Shevchenko University of Kiev's Centre for Underwater Archeology (CUA) is a recent example of effective international teamwork with regards to underwater archeological research and innovative instruction. Founded by the Ukrainian underwater archeologist Dr. Sergiy Zelenko in 1990, the Centre has continued to grow and is now responsible for numerous projects, including the full-scale excavation of a 13th century ship-wreck begun in 1999 on the northern Black Sea shelf in the Bay of Sudak, Crimea. Since that time Dr. Zelenko has developed an international field school around the site where CUA carries out its stated aim of involving "students, amateurs, sport divers and members of the general public in maritime archeological field excavations and surveys, as well as educating them regarding this fascinating field and the preservation of underwater resources." Having borne Eurasian and Mediterranean maritime activity for the past two and a half millennia, the coastal waters of the Crimean peninsula now bear that legacy as a remarkable and largely untapped archeological resource of vast potential. CUA's research of the maritime features that lie submerged there on the northern Black Sea shelf concerns a history intrinsically and intimately interwoven with that of Europe, and benefits greatly from its teams' international backgrounds. Following such brilliant examples as those set by the United Kingdom based NAS and America and Turkey through Texas A & M's Institute of Nautical Archeology, the Centre's work in the Ukrainian waters is embracing the collaborative study of our mutual cultural heritage: it is bringing together students, professionals and amateurs alike to contribute to the research of material that inspires their interest. Today's increasingly globalized world is facilitating international cooperation in underwater archeology, which in turn facilitates priceless international perspectives on site. Working together, the underwater archeological community is salvaging our history, and indeed building the future of the field.

COLLABORATION WITH MARINE GEOLOGISTS IN SEARCHING NEW ARCHAEOLOGICAL OBJECT IN THE BLACK SEA (UKRAINE)

Yana Morosova, Centre for Underwater Archaeology, Kiev, Ukraine

The perspective way in archaeology development, in particular underwater archaeology is cooperation with the science geology, and colleagues-geologists. In Europe and worldwide this cooperation becomes common, and suit the modern requirements of Science.

In Ukraine cooperation between archaeologists and geologists can be seen only in the field of terrestrial archaeology these days. Cooperation in progress is specifically in implementing geological methods of survey and research of archaeological site.

Geography is also in on call. Wide application of GIS is getting a standard method in archaeology.

In the field of underwater archaeology it goes differently in Ukraine. Previously marine geological surveys were conducted without archaeologists. This led to significant information loss.

Since 2007 a new stage of Ukrainian UA development has begun. The Institute of Geology of Academy of Science invited underwater archaeologists from Centre for Underwater Archaeology of Kiev National University to take part in the geological marine expedition in the Black Sea. The aim of this expedition was searching and exploration of mud volcanoes and methane shows and layering.

Archaeological part of the exploration was limited on the first stage by sharing information and computer data and maps on the shelf zone of the region. The second stage is planned as participating of archaeologists divers on board of the geological vessel and work together with marine geologists on checking underwater targets in the shallow waters of the Kerch Peninsula's shelf. Also the second stage of cooperation will comprise additional research on climate changes.

The expedition is conducted on the Kerch Peninsula – the region of rich archaeological and historical sites, where the traditions of seafaring were established in the Bronze Age. The ancient and medieval periods of the maritime history of this region can be hardly hard overestimated.

UNDERWATER INTERDISCIPLINARY PROJECT IN CASKA BAY AT THE ISLAND OF PAG

Martina Čelhar, University of Zadar, Department of Archaeology, Zadar, Croatia

The theme of this report is presentation of the results of underwater archaeological excavations started in 2005 within several year long project *Research, protection and presentation of the complex archaeological site at Caska* in the organization of the Department of Underwater Archaeology of the Croatian Institute of Restoration, the Department of Archaeology and the Department of History of the University of Zadar, and Archaeological Museum in Zadar. The creation of the project was initiated by long term devastation of the archaeological finds due to negative natural factors and anthropogenic activities. Complex nature of this site imposed interdisciplinary approach of the research, therefore Croatian Geological Institute and the firms Geographica d.o.o and Georheo d.o.o were involved in the project, making geodetical and photogrammetric documentation of the archaeological remains.

Settlement at Caska near Novalja at the island of Pag presents a part of the complex comprising sites from wide chronological range, since prehistory until New Age. Ancient remains are very numerous and they show exceptional importance of this region in the first centuries AD, which is strongly confirmed by the remains of the complex water supply system Kolan – Caska – Novalja.

Exploration of the undersea at Caska revealed the remains of ancient stone breakwater which were documented. Cultural layer with archaeological material characteristic for other ancient ports from 1st to 3rd century was confirmed with several probes next to the breakwater. Wooden ancient anchor was found at the same place, preserved completely. Remains of the ancient architecture are visible on the shore, from the breakwater to the bottom of the bay. Parts of these remains are sunken because of the sea level rising. It is probable that these remains served as an inspiration for legends about the mysterious sunken town.

Integration and interpretation of the information acquired in underwater and on shore explorations, as well as the data from all other disciplines participating in the project, will offer a basis for better understanding and wider and more complete picture of the past of this important sea-oriented site. Finally, cultural heritage explored in such a way should be integrated in economic and social life of the community through quality presentation, becoming in that way one of the basis of the viable development.

KIZILBURUN SHIPWRECK EXCAVATION, TURKEY

Deborah N. Carlson, Institute of Nautical Archaeology, Texas A&M University, USA

During the summer of 2005, the Institute of Nautical Archaeology (INA) at Texas A&M University initiated the excavation of an ancient stone carrier wrecked off the Aegean coast of Turkey at Kizilburun. The stone carrier, which lies at a depth of between 42 and 45 m, is one of at least five shipwrecks in the area discovered in 1993 during one of INA's annual surveys for shipwrecks. This wreck is distinguished by a cargo of eight massive marble column drums, stacked neatly in four pairs, and topped by what appears to be an unfinished Doric capital. The drums, which measure about 1 m in height and range in diameter from 1.53 to 1.75 m, appear to comprise, with the capital, a single Doric column over 9 m tall, probably destined for the façade of a temple or other monumental building. A sample drilled from one of the drums was sent to Dr. Scott Pike of Willamette University for isotopic analysis, which revealed that the marble drum(s) likely originated in the Marmara region of Turkey.

Exploration of the sandy area adjacent to the drum pile revealed portions of the ship's secondary cargo, which is characterized by numerous large rectangular blocks that may represent architectural elements associated with the column. Other marble artifacts include two large basins (*louteria*) with pedestal bases, a roughly-worked but very fine smaller hand basin, and an unfinished headstone (*stele*). Ceramics associated with the column wreck – which include fineware pottery and transport amphoras from East Greece, the Adriatic, and even Egypt – suggest that the ship went down in the early first century B.C.

Excavation around the drums themselves yielded hundreds of nails and wood fragments, indicating that the massive size and weight of the drum cargo has preserved a substantial portion of the ship's wooden hull. One major goal of subsequent excavation seasons has been the removal of the marble drums (which are

estimated to weigh as much as seven tons a piece) in order to excavate and raise any surviving hull remains. Archaeologists know regrettably little about the construction and lading of ancient stone carriers, and preservation of the ship's longitudinal stress timbers could tell us a great deal about the construction of purpose-built vessels like the *navis lapidaria* from Kizilburun.

The presence of a Doric column on a shipwreck of the early first century B.C. is unusual inasmuch as Hellenistic architects clearly preferred the more fashionable Ionic and Corinthian orders to the rather traditional Doric. While isotopic analysis of the marble has given us a fairly sound idea of where the Kizilburun cargo originated, the process of tracing the ship's voyage and working out its final destination promises to occupy much of our future research. This paper will provide the most recent details of that ongoing research, with the recent conclusion of the third season of excavation at Kizilburun, Turkey.

THE EXPLORATION OF THE HELLENISTIC SETTLEMENT SICULI HARBOUR IN KAŠTELA BAY

Zdenko Brusić, University of Zadar, Department of Archaeology, Zadar, Croatia

The submarine findings of ceramic fragments and relief decorated Hellenistic pottery in the location of Resnik in Kaštela bay give a great importance to this settlement. On a vast stone mound and around it, a great amount of ceramic pottery has been found, varying from fine relief decorated bowls to big vine amphorae fragments. Simultaneously, on a neighbouring land, sound and systematic explorations have been taking place, and brought to light pieces of an architecture, as well as the identical Hellenistic material. The material and the findings from the harbour can be dated into the period from the end of the third to the middle of the first century BC.

The most logical attribution of the harbour area and its belonging settlement was connected to Siculi settlement, a place that was, in historical sources, mentioned by Pliny saying that Claudius colonized the settlement with veterans (Siculi, in quam locum divus Claudius veteranos misit.). Moreover, on the Peutinger map the settlement is marked by a greater vignette on the distance of nine Roman miles from Salona and five from Traugurion.

As the sources never mention Siculi settlement before the veteran colonization, the findings of Hellenistic harbour and settlement would indicate its prior existence. The two coastal settlements, Tragurion and Epetion, northwest and southeast of Siculi settlement are mentioned as the colonies of the Greek settlement of Issa. They are mentioned in the written sources in 158 BC, when those two cities were jeopardized by Delmati, an Ilirian autochthonic people that lived in the hinterland.

The analysis of the Hellenistic Siculi settlement submarine findings has shown that there was one more Hellenistic settlement – Siculi, in the specified time period. Although it wasn't mentioned in earlier sources it had developed commercial connections with its home settlement of Issa as well as with other Hellenistic centres as far as the island of Delos, the naval and commercial centre of the Eastern Mediterranean in those times.

ANCIENT PORT COMPLEX IN PAKOŠTANE NEAR ZADAR

Mato Ilkić, Mate Parica, University of Zadar, Department of Archaeology, Croatia
Marko Meštrović, Pakoštane, Croatia

Rich archaeological remains from Antiquity were discovered in underwater archaeological excavations in 2004 in Pakostane, north Dalmatian coastal settlement south of Zadar. The manager of the excavations was prof. Dr. Sc. Zdenko Brusić from the Department of Archaeology of the University of Zadar.

A port from the Roman Imperial period was discovered in the bay near Pakostane, although only a small part of the undersea was explored on that occasion. Its cultural layers revealed rich and versatile finds. Artefacts are often not fragmentary and they are well preserved. Pottery shreds are the most numerous finds: amphorae, plain kitchen pottery, *terra sigillata* and lamps. Inscriptions were found on some of the vessels. Glass bottles and glasses are also numerous, some of them appearing for the first time in the region of ancient Liburnia. Different kinds of adornments were also discovered as well as Trajan's and Antoninus Pius' coins. Numerous animal and fish bones were found, and different seeds – probably being discarded food of the sailors. Large pieces of hide, possibly used for sails, pulleys and other parts of ship's equipment were also discovered. Bricks and roof tiles, which sometimes contain stamps of the workshops, probably belonged to the port utilities. The biggest part of this archaeological material can be dated to the first and

second century AD. The port was situated on an exceptionally favourable position, next to the fresh water source, sheltered from the southern winds by breakwater. Inhabitants of Asseria and some other communities from ancient Liburnia probably used this port.

But that was not all. An exceptionally well preserved ship was discovered few hundreds of meters west from the ancient port. It is more than 20 m long. It can be dated to the Late Antiquity according to fragmented amphora, coin, shreds of north African relief pottery and radiocarbon analysis of wood samples.

Ancient salt pans were also discovered in large bay near Pakostane by members of the Department of Archaeology of the Croatian Institute for Restoration.

Undersea archaeological excavations in the bay near Pakostane resulted with the discovery of the significant port complex from Antiquity. It was probably one of the most important ports on the sea route next to Croatian coast, which was heavily traveled in Roman times.

LATE ROMAN SHIPWRECK AT PAKOŠTANE. A PRELIMINARY REPORT

Giulia Boetto, Sabrina Marlier, Centre National de la Recherche Scientifique, Centre Camille Jullian, Aix-en-Provence, France

Irena Radic Rossi, Croatian Conservation Institute, Underwater Archaeology Department, Zagreb, Croatia

Five years ago a Late Roman shipwreck was discovered within the complex archaeological site at Pakoštane near Biograd, at the average depth of 2 m. First excavation campaign in order to get the general information about the sunken vessel was organized in 2004 by professor Zdenko Brusić of the University of Zadar.

The wooden remnants of the ship's hull were found well preserved and interesting for future studies. The results of radiocarbon analysis of a part of a frame show that the wreck dates back to the 5th cent. AD. That datation was supported by some Late Roman amphorae fragments found above the hull.

The second excavation campaign was carried out in 2007 by Croatian Conservation Institute in cooperation with CNRS – Centre Camille Jullian and University of Zadar. The process of thoroughly done documentation was completed based on the part excavated in 2004 while the rest of the wooden construction was left to be explored during future campaigns.

This paper presents a preliminary report on the 2007 campaign, aimed to train a number of Croatian underwater archaeologists to nautical archaeological approach.

ROMAN *VIVARIUM* NEAR THE KUPANJE PROMONTORY NEAR POREČ

Vladimir Kovačić, Regional museum of Poreč, Poreč, Croatia

One of the greatis vivarium, third on the Mediterranean sea, which is composed of four piscine around 7.000 m² of surface and more then 5 m deep (countig from the top of the sea level to the bottom of stone level) he was producing greatis quantity of little fish to make the sauce called *garum* or perhaps large fish for the imperial dining tables. This vivarium we can date from 1st to 5th century.

THE VALUE OF HISTORIC WRECK SITES

Mark Dunkley, English Heritage, UK

English Heritage's Conservation Principles support the management of all aspects of the historic environment in a way that is clear, transparent and sustainable and identify value as being an aspect of worth or importance ascribed by people to places.

In this context, the places are our Protected Wreck Sites though recent explorations on some of England's historic wrecks have highlighted the need to identify and define the value of those sites to enable their sustainable management for all.

This paper will outline the way in which value is ascribed to Protected Wreck Sites while addressing the process of managing change in ways that will best sustain the values of a place in its contexts, and which recognises opportunities to reveal and reinforce those values.

FROM THE SHIPWRECK TO THE SHIPYARD – THE XVITH CENTURY ARADE 1 SHIPWRECK (ALGARVE/PORTUGAL) AND THE IBERIAN SHIPBUILDING TRADITIONS: A FIRST APPROACH

Vanessa Loureiro, IGESPAR – Divisão de Arqueologia Náutica e Subaquática, Lisbon, Portugal

Discovered during the dredging of the rotation basin of the River Arade in 1970, the Arade 1 was excavated between 2001 and 2005 by the underwater archaeological team from the Centro Nacional de Arqueologia Náutica e Subaquática (National Centre for Nautical and Underwater Archaeology) (CNANS - Instituto Português de Arqueologia - Portuguese Institute of Archaeology – Ministry of Culture).

The study of the data showed there to be numerous architectural similarities between the Arade 1 and the Iberian naval architecture of the XVIth and XVIIth centuries and between this ship and the set of vessels from the Iberian-Atlantic tradition dating from the same era. However, the Arade 1 has some primary architectural characteristics which appear to be original, according to the same written and archaeological sources, and which may correspond to construction techniques of the region.

The naval architecture treaties established indeed general rules which were susceptible to not being respected by all shipyards in the kingdom, especially private shipyards set aside for the construction of merchant ships.

The differences between the theoretical principles (process of construction and method of construction) stated in the naval construction treaties and the practices of the naval shipyards of the era, as shown by the diverse archaeological remains of ships, may enable the identification of specific cultural zones with regional architectural traditions within the core of the Iberian-Atlantic tradition.

AN EXAMPLE OF APPLYING THE SIDE-SCAN SONAR IN DOCUMENTING MODERN SHIPWRECKS

Krunoslav Zubčić, Croatian Conservation Institute, Underwater Archaeology Department, Zagreb, Croatia

The paper considers the applying of Side-scan sonar in the underwater research of a group of sunken ships from the World War I and II near the island of Pag. Six wrecks were found at the depth of 60 to 80 m, that doesn't permit long and extensive divers. Therefore, in collaboration with the Croatian Hydrographic Institute from Split, a Side-scan sonar has been applied to establish the state of preservation of every single wreck in order to facilitate the organization of future diving.

Some significant examples are shown to illustrate the 2006 documentation campaign. In the forthcoming years the use of Multi-beam sonar will lead to the elaboration of the 3D representations of the wrecks in their present state of conservation.

COMPARISON BETWEEN USING A SINGLE BEAM SONAR AND A MULTI BEAM SONAR IN ARCHAEOLOGICAL FIELDWORK

Sašo Poglajen, Harpha sea d.o.o., Koper, Slovenia

The contribution presents a practical account of the techniques and procedures for bathymetric measurements, which can be applied for the benefit of underwater archaeological investigations. The procedure for measuring using a single beam sonar is technically much simpler than the more advanced procedure based on measuring with a multi beam sonar. A comparison of the two procedures will be presented as applied on measurements of select Roman underwater structures along the coastline of the Slovenian shore. The underwater structures at Jernejev zaliv and at Fazine near Portorož were measured using a single beam sonar. The Roman pier at Simonov zaliv and structures at Jernejev zaliv were documented using a multi beam sonar. The latter facilitates a more precise bathymetric system, which at small depths enables an impressive encompassment of details from which maps can then be compiled. This system certainly proffers the best solution for documenting underwater structures, however due to the advanced technology it necessitates and the fact that it needs to be mounted on a larger vessel, it is not always accessible or appropriate for use in shallow, shoreline waters, which is where the majority of underwater Roman structures are positioned. The single beam sonar, which is mounted on a smaller vessel and which allows for recordings to reach all to the coastline, is almost ideal for bathymetric measurements of the shoreline tract.

EVALUATING THE ARCHAEOLOGICAL IMPACT ON INLAND WATERS AND WET SITES: A PROPOSAL OF INTERDISCIPLINARY METHOD. A CASE-STUDY IN THE VENICE LAGOON

Carlo Beltrame
Alberto Lezziero
Claudia Pizzinato
ARCHEOTEMA, Venezia, Italy

A new law has been introduced in the Italian legislation on Cultural Heritage. This obliges both the private companies and the institutions to ask either a professional archaeologist or an institute of archaeology an evaluation about the archaeological impact on the territory where a public work is in program.

This law has not been already applied in every region and not all its indications are already followed.

In any case, this kind of study is currently asked by the local Superintendency of the Venetian lagoon. To answer to this request a proposal of study is in experimentation, considering that the protocol provided by the law cannot be applied on underwater sites.

Often the study of the archaeological impact in lagoon has to consider both underwater, wet and dry sites. The last ones are not cultivated lands and are often very populated so they are not easily "visible". This means that ordinary surveys are seldom possible in this territory.

Great attention is given to the historical sources which, from the XIII century, are quite rich and that can advise about possible archaeological presences. Special attention must be paid to airphotographs analysis and geomorphological studies.

FRESHWATER ARCHAEOLOGY: SLOVENIAN EXPERIENCE

Andrej Gaspari, Military Museum of Slovenian Armed Forces, Ljubljana-Šentvid, Slovenia
Miran Erić, Institute for the Protection of Cultural Heritage of Slovenia, Ljubljana, Slovenia

During 10 years of fieldwork the Group for Underwater Archaeology (from 2002 embodied within the public Institute for the Protection of Cultural Heritage of Slovenia) successfully conducted a series of preventive surveys as well as preliminary scientific investigations of underwater sites in the Slovenia's mainland rivers and lakes. The presentation focuses on three different aquatic environments, leading to particular methodological approaches.

The remains of the Mesolithic hunter's camp of Zalog near Verd (ca. 7500 cal BC), one of the oldest known sites on the Ljubljana Moor (central Slovenia) were documented and partially recovered during preventive investigations of the Ljubija Stream, tributary of the Ljubljanica River. Total station survey, combined with hand drawing, was used to record the geomorphologic features, concentrations of resedimented objects and stratigraphic/contextual evidence in the exposed part of the site.

Much more difficult proved to be the research in the gorge of the Sava River between Zidani most and Krško (south-eastern Slovenia), a critical part of the major communication route toward Danubian Regions from the Late Prehistory onwards. A number of rope techniques and metal detector survey were used and combined in the rock and pebble-based riverbed with prevailing bad visibility, the substantial depths and strong currents. The research which took place prior to power plant construction revealed a number of finds from Roman Period, middle Ages and modern times.

The survey of the planned sewage system line led to the confirmation of the supposed Bronze Age cult site on the outflow of the Lake Bled near Mlino (Gorenjska, northwestern Slovenia). Its existence was indicated by undamaged bronze sword from 14th /13th Centuries BC, discovered by an amateur diver in 1979, and strengthened by the recovery of a contemporary sword during the investigations in 2006. Favorable public response to the presentation campaign, focusing to the underwater cultural heritage in the lake, led to the launch of a financially well supported project, encompassing multi-beam sonar bathymetric measurement, magnetometer and sub-bottom profiler survey, interdisciplinary analyses of the sediment sequence and probe trenching or limited excavations of the identified archaeological sites.

The presentation also addresses our experience in the effects of media presence, widening public awareness and some background issues of institutional response, professional ethics and relation towards amateur divers and private collectors.

TRAJAN'S BRIDGE OVER THE DANUBE. UP TO DATE RESULTS OF UNDERWATER ARCHAEOLOGICAL INVESTIGATIONS

Gordana Karović, Museum of Science and Technology, Beograd, Serbia

Massive remains of the approaching piers of the Emperor Trajan's famous bridge over the Danube, built to assist the Roman invasion of Dacia, today could be seen at village Kostol on the Serbian and at the city of Turnu Severin on the Romanian side of the Danube.

In mid September of 2003, exactly 19 centuries after the building of the bridge had started, began the first phase of underwater archaeological investigations of its remains, financed by the Ministry of culture of the Republic of Serbia. The aim was to gather as much information as possible by applying non-destructive methods. Hydrographic measurements using multibeam sonar were performed in the zone of the remains on the whole section of the bridge, while visual diving prospection, video and foto documenting and geophysical investigations using motphometric, seizmometric and magnetometric methods on the water, were localized just on the Serbian side of the river. Also, experiments were made for finding out the best methodological approach for photogrammetric measuring of remains of the bridge situated in this specific underwater conditions.

This paper will present results obtained till now by using all these different non-destructive methods of investigation of this worldwide known masterpiece of Roman architecture.

ENGAGING AUDIENCES WITH MARITIME ARCHAEOLOGY THROUGH EDUCATION

Alison Hamer, Hampshire and Wight Trust for Maritime Archaeology, UK

The Hampshire and Wight Trust for Maritime Archaeology have been involved in maritime archaeology education for the last fifteen years. The last three years have seen HWTMA become a leader in maritime archaeology education with a number of highly successful initiatives designed to engage and enthuse children with the past. HWTMA have developed many educational materials, organised maritime themed events, run workshops for other education professionals wishing to use maritime archaeology as an educational tool and along the way inspired many children. Most recent work has been supported by the Aggregates Levy Sustainability Fund through English Heritage. This paper will explore the development of the HWTMA education programme and show how maritime archaeology can be used to make a real difference to the experiences of children both in school and out of school and across a broad public audience.

PERSPECTIVES FOR DEVELOPMENT OF TEACHING OF UNDERWATER ARCHAEOLOGY AND MARITIME HISTORY IN BULGARIAN UNIVERSITIES – PRESENT CHALLENGES AND INTERDISCIPLINARY RELATIONS

Stiliyan Stanimirov, Central Archaeological Council, Bulgaria

Underwater archaeology has long traditions in Bulgarian archaeological studying. Western Black Sea coast has been center of many civilizations for high antiquity.

The knowledge about the maritime history and underwater archaeology is very important for every professional archaeologist.

What are the motivation and the perspective for such specialized education? Has it to be as a discipline in the Archaeology or it has to be a specialized course in a high educational level/degree – for example as a master program?

These two systems are available in the Bulgarian universities – maritime history as a discipline and as a master program. Why?

Is the university training of underwater archaeologist and maritime specialists enough for present tendencies of underwater archaeological investigation with use of interdisciplinary methods?

Which are the main universities, institutions and private organizations managing the underwater archaeological researches? What kind of difficulties do they have while they organize the cooperation – low, financial secure, material equipment, time of specialist etc?

Priority of international times – an interesting understanding.

Do any changes have to be done in education of the Bulgarian universities?

TEACHING MARITIME ARCHAEOLOGY: A PRACTICAL APPROACH

Jens Auer, University of Southern Denmark, Esbjerg

After the closure of the maritime archaeology programme in Copenhagen and the archaeological research centre in Roskilde, a new masters programme in maritime archaeology was established at Esbjerg to continue the Danish tradition of underwater archaeological research.

As the small field of maritime archaeology only offers limited job opportunities worldwide, a new approach to the planning of the masters course was taken. The course structure is centred on the employability of the future maritime archaeologists. Prior to course planning, a review of the skills necessary for different applications of the subject was undertaken.

This led to a very practical and method oriented course which among others includes management training and a commercial SCUBA diving qualification approved by the Danish maritime authority and recognised by the British HSE. A co-operation with consultancy companies also allows students to gather experience and practice in the world of development led archaeology and planning.

This paper will present the "practical approach" to the teaching of maritime archaeology that the University of Southern Denmark has taken in Esbjerg and at the same time raise the question whether such an approach is suitable for the discipline of maritime archaeology and helps to improve the employability of future graduates.

Session title: SPACE FOR PEOPLE AND THEIR STUFF: INTRA-SITE SPATIAL ANALYSIS OF SETTLEMENT

Organizers: Ulrike Sommer, Institute of Archaeology, UCL London, UK
Petr Kvetina, Institute of Archaeology, Czech Academy of Sciences, Praha, Czech Republic

Time: Thursday morning

Room: 223

Session abstract:

The aim of the session is to describe different theoretical foundations and methodological approaches used in the research of the internal structure of prehistoric settlements.

Although human settlement remains represent the basic source of understanding the economic and social units of past societies, synthetic concept of their research does not exist. It is usual to proceed from the primary or evident problems to the more complicated or latent questions.

To the first level of topics studied in relation with the settlement context may belong: 1) settlement chronology and changes of settlement patterns in time; 2) structure of settlement space (types of buildings and other features and their distribution; 3) activity definition and their localization (tool production, raw material processing, subsistence and storage facilities identification, detection of sacred activities etc.); 4) palaeoenvironmental evidence and reconstruction.

The other sphere of issues concerns 5) formation of archaeological material both from the viewpoint of refuse management at a live settlement and the post-deposition processes. Profound study of these processes may subsequently significantly influence and change the original interpretation of settlement activities.

This study of taphonomic processes should be the first step in any analysis of distribution patterns, in order to: a) differentiate between anthropogenic and biological/geological processes; b) find out at which level of deposition human behavior occurs: are artifacts, refuse or sediments deposited, shifted and trampled etc. The distribution of artifacts also contains a type of "stylistic" information which can be understood as 6) the symbolic communication between individuals and groups. This means that differences in shape or decoration of artifacts are not connected with their primary function or chronologic variability, but with style which is considered as a strong vehicle of social information.

"Structured deposition" has been a buzz-word in recent years. It has been used to describe both the deposition of artifacts and of "settlement refuse" or "feasting remains". But the criteria to distinguish between "normal" settlement refuse and formal deposition have never been made very clear, and the deposit of artifacts and of refuse should clearly be kept apart, even if we accept that our modern concept of "rubbish" may not be applicable in a pre-modern context.

While presenting different approaches to the depositional and post-depositional processes, the goal of the session is to arrive at a firmer methodology for interpretation.

Paper abstracts:

MAPPING OF POTTERY ASSEMBLAGE FROM A NEOLITHIC VILLAGE

Petr Květina, Institute of Archeology, Prague, Czech Republic

The aim of the contribution is to map the pottery assemblage from a Linear pottery culture Neolithic settlement. Structure of the pottery complex changed in time and also with respect to the spatial distribution of its separate parts. Chronological and spatial changes of Neolithic pottery relate to different meanings that artifacts assume during their existence in systemic and archaeological contexts. Changes of style in time could be linked with fashion trends within the population; they could document the change of artifact's function or indicate the change of identity of material culture bearers. Spatial distribution of pottery could also be linked with its function but first of all it apparently reflects the ways of refuse management. Hypothetically, the divergences in spatial structure of pottery assemblage could be related with different definitions of individual and group identities within the settlement. Chronological and spatial changes of pottery are observed on the example of the Bylany site (Czech Republic), because long term excavations there provided sufficient data set.

TAPHONOMY AND SITE STRUCTURE: CERAMICS FROM A CULTURAL LAYER OF A LINEAR POTTERY CULTURE SETTLEMENT

Sabine Wolfram, Universität Leipzig, Germany

Within Linear Pottery culture research the study of formation processes of pottery assemblages, of the abrasion of pottery from different contexts and the spatial analysis of taphonomic attributes play hardly any role. This is surprisingly so, as such analyses can provide insights into the intra-site spatial organisation (living spaces, work places, refuse areas). The Linear Pottery culture settlement of Hanau-Klein-Auheim (Germany) offered the unique opportunity to study depositional, taphonomical and spatial aspect of decorated pottery from a cultural layer, i. e. walking surface. Beyond presenting a case study this paper will also try to overcome the distinction between 'refuse' and 'structured deposition'.

THE PREHISTORIC SETTLEMENT PATTERN AT HALASARNA, KOS: SOME PRELIMINARY RESULTS OF THE HALASARNA SURVEY PROJECT

Merkouris Georgiadis, University of Nottingham, UK

In this paper the results of the prehistoric settlement pattern from the Halasarna Survey Project will be presented. The aim is twofold, on the one hand the role of the palaeoenvironment in this survey will be highlighted and on the other the diachronic character of the prehistoric settlement pattern will be discussed. The occupation of the Halasarna region from the Late Neolithic period (i.e. 5th millennium BC) until the end of the Late Bronze Age (i.e. the end of the 2nd millennium BC), is a long period during which many changes occurred. Thus, it will become possible to demonstrate how the prehistoric people used the landscape in different socio-economic phases and what their main concerns were at those times. Additionally, it will become clear the extent of information that can be provided by the application of an organised survey with a clear methodology in contrast to earlier chance finds.

READING THE NEOLITHIC SITE. INTRA-SITE SPATIAL ANALYSIS OF FUNNEL BEAKER CULTURE SETTLEMENTS FROM CENTRAL POLAND

Andrzej Pelisiak, Institute of Archaeology Rzeszów University, Poland

The aim of this paper is to analyze sites of Funnel Beaker culture people from central Poland on their settlement patterns, social organization, decision making units and demography.

Interdisciplinary (archaeological, palynological, paleogeographical) studies are conducted in two regions of central Poland: in Grabia river basin from 1982 and in Gostynin Lake district from 1991. In results of multiple systematic surface survey most of 120 settlements and camp sites of FBC were found, and 27 of the have been excavated (some to its limits).

Research has been conducted on four levels:

- (1) individual structures and zones of various human activity inside a household and settlement;
- (2) individual household;
- (3) individual settlement;
- (4) settlements located within a region.

An important part of the study was identification and interpretation of empty areas (zones where no artifacts were found) on the settlements.

The study concerns permanently occupied relatively small (to 1 hectare in size) sites settled from several to about 50 years. Such settlements are one of most typical Funnel Beaker culture sites in Polish Lowland. My paper will be focused on the intra-site spatial analysis, and methods of such analysis, of the Funnel Beaker culture sites from the period between ca. 3700-3300 BC (so called Wiorek phase of this culture in Polish Lowland). Results of them will be the base of the reconstruction of spatial organization of settlements and organization of Funnel Beaker culture communities from central Poland.

THE SOCIAL CONTEXT OF SPACE AND THE INTERPRETATION OF INTRA-SITE ANALYSIS. THE CASE STUDY OF A 13TH C. AD CASTLE

Benjamin Štular, Institute of Archaeology at ZRC SAZU, Slovenia

Mali grad in Kamnik (Slovenia) called *castrum inferior* was built around 1100. It was rebuilt to twice its original size during the last decades of the 12th century. Written sources inform us of the castle's hey-days between 1208 and 1228 when the castle was the seat of the most powerful lord in the country, the count Henrik IV. of Andechs-Meranier. However, the majority of archaeological data derives from the second half of the 13th century when a part of the castle was burnt down and never rebuilt.

The distribution of finds from the layers formed on the pavement prior to the fire and from the layers formed by the fire is very informative. Due to the small sample of metal finds and the raw scale of documentation regarding the pottery distribution a simple method was used. However, in my opinion the interpretation of the finds can be instructive beyond the mere interpretation of the site itself.

A well preserved stratigraphy enabled us to reconstruct the use of at least two floors beside the ground floor of the main building, the *palatium*. The kitchen and working space were situated on the ground floor, the granary on the first floor and the living quarters most likely on the third floor. The taphonomy of the pottery enables us to differentiate between the finds broken during the fire and those broken prior to this event.

The distribution of keys, parts of locks and bolts found *in situ* are a strong indicator of restricted movement within the castle.

It is the latter combined with the location of the granary in the most important building of the castle that drew our attention. One can not predict such a situation based on any written sources, at least that we know of. In fact this is somewhat contradictory with the existing written sources for this castle. At the time – 2nd half of the 13th c. – the castle was the site of local feudal lords and some other *castelani* with unknown functions. However, we do know that all of them served the same regional lord. The internal control of the food resources within the castle and therefore among the servants of the same regional lord comes as a surprise and therefore calls for a detailed regional study.

Methodologically, this case study is far from cutting-the-edge technology, for the quality of the data did not allow such an approach. Rather, this case study shows the importance of the social context of space in intra-site analysis and its archaeological interpretation. The definitions of such spatial social contexts are far more difficult to recognize in most of the prehistoric settlement sites. Perhaps this is the importance of the case study with the given social dimension (the castle – *palatium*) for the session. It can point towards the questions one can pose.

**Session title: THE MASTER OF ANIMALS IN OLD WORLD
ICONOGRAPHY**

Organizers: Bettina Arnold, Department of Anthropology, University of Wisconsin, Milwaukee,
Derek Counts (Principal Organizer), Department of Art History, University of Wisconsin,
Milwaukee

Time: Thursday afternoon

Room: 113

Session abstract:

According to Genesis 1:26-28, the Old Testament God gave humans dominion over the animals, although some scholars have argued that this term implies stewardship rather than dominance. Less well-known is the fact that symbolic representations of human-animal relationships, whether in the form of mastery, symbiosis or hybrid identities, are found in numerous prehistoric and ancient societies of the Old World at least as early as the Neolithic period. While an adversarial relationship is often made explicit, manifested in the well-known heraldic compositions featuring a central figure grasping beasts to either side, more implicit expressions of mastery over, or symbiosis with, animals may be represented by zoomorphic attributes, (horns, headdresses, skins, etc.). Oddly enough, given the geographic and temporal range of this symbolic complex, such images are often studied in isolation, preventing the formation of broader, more far-reaching research questions. From Gilgamesh to the Good Shepherd, this session assembles the archaeological, iconographical, and literary evidence for the 'Master of Animals' materialized within a variety of cultural contexts and disparate chronological horizons. Our goal is not simply to demonstrate relatedness between different manifestations of this figure, even though some are clearly ontologically (and geographically) linked, but rather to deconstruct the interpretations of his role within each cultural context. In doing so, we hope to create a forum for scholars confronting similar symbolic paradigms across the Old World landscape that foregrounds comparative interpretation in diverse ritual and socio-political environments. We are particularly interested in theoretical perspectives grounded in cognitive and social archaeology; however, other approaches will be considered assuming they are consistent with the theme of the session.

Paper abstracts:**THE BIG NOWHERE: A MISTRESS OF ANIMALS IN THE THRONE ROOM AT KNOSSOS?**

Bettina Arnold, Derek B. Counts, University of Wisconsin-Milwaukee
J-L. Le Quellec, Émile-Cartailhac Center, University of Toulouse-Le-Mirail
Louise A. Hitchcock, University of Melbourne

The most widely accepted interpretation of the famous throne room at Knossos, regards the throne as occupied by a priestess flanked by griffins, and assuming the role of a goddess impersonator, enacting an epiphany. Whether the occupant of the throne was male or female, the resulting arrangement is blending of human actors and iconography to create a master or mistress of animals. This interpretation is based on several factors: many known examples of the master/mistress of animals motif in Aegean iconography, the mythical nature of griffins which places the throne in the realm of the supernatural, and the frequent association of females with griffins indicating that the occupant of the throne was female. Based on the frequent occurrence of aniconic elements occupying the central position in the antithetic group in Aegean iconography, a variation on the 'master of animals' motif, an alternate suggestion can be proposed: that the throne was not occupied at all, but instead served as an aniconic element, representing a divinity in the master of animals position. Aniconism is a religious practice where a divine image as the central cultic symbol is lacking. It formed a strong component in Aegean, Canaanite, Cypriot religious practice. It was a distinguishing element in early Israelite religion where an empty throne symbolized the 'sacred emptiness'—one category of aniconism. Based on this concept, my paper reinterprets the throne as an aniconic symbol and the room as the Daedalaion, a shrine of Daedalus mentioned in Linear B tablets from Knossos and alluded to in the Ugaritic epic of Baal.

MINOAN ANIMAL-HUMAN HYBRIDITY

Anna Simandiraki, University of Bath

Following a familiar motif in the prehistoric Eastern Mediterranean, Minoan material culture has yielded a number of representations of animal-human hybridity. This is encountered predominantly in seals and sealings, but also in the use of animal parts or imitations to define the human body. Different kinds and degrees of hybridity appear in this materiality. For example, the instances of half-humans half-animals predominantly depict animals from the waist up and humans from the waist down, therefore representing complete and distinct fusion. Conversely, animal parts adorn the body on or across its different parts, therefore representing partial, indistinct and perhaps tokenistic fusion. What might these diverse fusions reveal concerning the mastery of human over animal or, indeed, of animal over human? This hybridity, especially when juxtaposed to human-only mastery of animals, raises further issues about bodily liminality, incorporation, transfiguration, gender and possession. This paper, drawing on Minoan materiality and some parallels from the Prehistoric Aegean, will explore this human-animal hybridity and its significance for cosmological, ritual and bodily perceptions. I will also analyse this phenomenon as an integral part of complex social processes in Crete throughout Minoan times.

“POTNIOS” THERON: THERIOMORPHIC DIVINITIES AND RITUAL PRACTICE IN CYPRUS

Derek B. Counts, University of Wisconsin, Milwaukee

The divine concept of animal mastery and related theriomorphic rituals in Cyprus traces its roots back at least to the Late Bronze Age; moreover, vestiges of this same ideological construct are later witnessed in early Christian conceptions of Christ as the Good Shepherd. For the first millennium B.C.E., images of a male god represented as the Master of Animals, or «*potnios*» *theron*, occupy a central place in the divine iconography of urban and extra-urban sanctuaries in the agriculturally-rich plains of central Cyprus. Most commonly associated with lions, rams, and goats, the mastery of animals is realized through a variety of explicit and implicit iconographical techniques: combat imagery, hierarchical positioning, and animal attributes such as skins, headdresses and horns. Furthermore, the discovery of worked bull crania and representations of human figures wearing animal masks suggests that this divine iconography was complemented by ritual activity involving the epiphany of the god through priestly intermediaries. The preference for animal mastery in divine iconography and its association with a general control over natural forces is related to perceived benefits in the divine spheres of protection and economic production. On the surface representations of the Master of Animals betray diverse geographical origins (e.g., Greece, Phoenicia, and Egypt) and the interpretation of such images has often been isolated as evidence of cultural heterogeneity across the religious landscape of Cyprus during this period. Nevertheless, the translation and recombination of ‘foreign’ symbols into local, novel identities, which are at once recognizable, yet equally incommensurable, exemplifies the process of visual hybridization that characterizes Cypriote cult during this period. The paper will explore the Master of Animals and visual hybridity during the first millennium B.C.E. in the context of cult and the formation of a Cypriote cultural identity, while also considering the potential relationship to elite manipulation of cult and the propagation of divinely-mandated authority among the island’s peer polities.

MISTRESS AND MASTER: POLITICAL ICONOGRAPHY IN EARLY URBAN ITALY

Anthony Tuck, University of Massachusetts-Amherst

The emergence of territorially defined city states in Central Italy from the 8th through the 6th centuries also sees the widespread adaptation of images inspired by Eastern Mediterranean iconography. Among the myriad eastern motifs and images incorporated by Etruscan artisans, representations of an Astarte- like fertility goddess are certainly among the most common. Whether in religious, political or funerary contexts, the incorporation of the concept of this divinity into the Etruscan material world reflects the concerns of the nascent political aristocracy of the region – lineage and propagation. Although far less common, a male consort also finds expression in this early iconography. Whether represented as a ‘Master of the Animals’ or, more commonly as a male figure eaten by the feline familiars of his Mistress, this consort figure reveals a

remarkably nuanced Italic understanding of the practical uses of this eastern inspired iconography. Indeed, the Etruscan adaptation of this imagery reflects the native requirements of a developing political environment concerned with the representation of long standing, divinely sanctioned political and religious leadership.

GORGIO AS A MISTRESS OF ANIMALS: SOME THOUGHTS ON THE ROLE OF THE GODDESS AS AN INTERMEDIARY BETWEEN GREEKS AND NON-GREEKS IN MAGNA GRAECIA AND BEYOND

Martin Guggisberg, University of Basel

A long-neglected Graeco-Etruscan bronze figure of Gorgio riding on a deer from a Roman context in Switzerland is the starting point of this paper dealing with the iconography and significance of Gorgio and its iconographic counterpart, the Mistress of Animals, within the context of Greek colonization in Magna Graecia and further north. Gorgio and the Mistress of Animals are not only among the deities depicted on some of the earliest imports from the Aegean world but they also appear in a privileged position on goods produced by local artists in the colonies. Moreover, depictions of the two goddesses are to be found at a very early date on prestigious goods in indigenous contexts in the hinterland, suggesting that the symbolic and religious concept related to the iconographic scheme of the Mistress of Animals was used deliberately as a means of cultural and ideological exchange between the elites of the Greek and the non-Greek world. As a second step the question of how this ideological concept also influenced the contacts between the Greek settlers and their neighbours further north will be considered.

"AHUNTING WE WILL GO": THE FELLBACH-SCHMIDEN TRIPTYCH AND ELITE HUNTING IN IRON AGE EUROPE

Bettina Arnold, University of Wisconsin-Milwaukee

Triune figures consisting of a centrally positioned human form flanked by animals are known from various contexts in Iron Age Europe. The wooden figurines found in the late Iron Age *Viereckschanze* of Fellbach-Schmiden are a particularly interesting example. Excavated between 1977 and 1980 by Dieter Planck, the most prominent feature at the site was a 20m deep shaft. Near the bottom of this were found a pair of rampant rams with vestigial human hands around their waists where a presumably seated figure once completed the triptych. A third broken figure, representing a horned stag, was also found. Horned human figures of late Iron Age date, sometimes also positioned between animals, are frequently shown wearing or holding the elite status marker known as the torc. The animals over which the human or theriomorphic human figure is presumably displaying mastery are most often male and frequently undomesticated. By the early Iron Age, hunting wild game had ceased to be a subsistence activity, as is indicated by the faunal remains from settlements of this period. Hunting gear in the form of bows and arrows is restricted to elite burials, suggesting a shift from an economic to a primarily ideo-political activity. This paper will explore the possible symbolic link between these early Iron Age "hunting" burials and the "Master of Animals" representations of the late Iron Age from the perspective of possible sumptuary restrictions associated with feasting and personal ornament also referenced in the later Celtic literature.

"CARIBOU HOUSES": ANTLERED BEINGS AS MASTERS (OR SERVANTS) IN THE TRANSFORMATIONAL COSMOLOGIES OF IRON AGE EUROPE

Miranda Green, University of Wales, Cardiff

The Caribou House belongs to Inuit cosmology. It is the place where shamans go to negotiate with the spirits of the caribou so that the herds will always return to be hunted. The relationship between humans and animals depends upon a balanced reciprocity, wherein the animals are accorded respect and special rites are associated with hunting in order to expiate the violation of killing and maintain the balance of control between human, animal and spirit worlds. This paper explores a very specific group of iconographic representations that occur in north-western Europe during the Iron Age and Roman periods, namely the image of a human wearing the antlers of a red deer. Such depictions occur in the rock-art of Camonica

Valley in northern Italy, in Gaul and Britain and, perhaps most famously of all, on the Danish Gundestrup cauldron. These images are generally interpreted as those of divinities, lords of animals and, certainly, the Gundestrup scene, including the antlered being seated in the yogic position, his hand caressing a stag and surrounded by other beasts, appears to endorse the 'Master of Animals' theme. Even so, it is possible to challenge and modify this model in so far as an increasing body of scholarship suggests that such antlered images might, instead, be shamans, whose relationship with their animal-spirit helpers is certainly not that of human master and animal subordinate but rather the converse. Just as hunter-herder communities, such as the Inuit, are dependent on animals for their physical survival, so the shaman can only liaise with the spirit-world on behalf of his or her community – to heal, practice divination or otherwise seek spiritual aid – with the help of specific animals, who act as essential conduits between earthworld and the supernatural layer of the cosmos. The antlers worn by humans in later prehistoric Europe should perhaps be interpreted as the headdresses of shamans who sought to engage with the spirit world by 'becoming' animals during out-of-body experiences induced by trance, such transformational donning of animal costumes serving to allow the shaman to travel between worlds.

AGENCY, HYBRIDITY & TRANSMUTATION: HUMAN-ANIMAL SYMBOLISM AMONG EURASIAN STEPPE SOCIETIES

Bryan Hanks, University of Pittsburgh

The iconography connected with the "Master of Animals" theme is widespread in many parts of the Old World but is for the most part absent from the Eurasian steppe region. Therefore, a dichotomy appears to exist in both the form and cultural context of animal symbolism and iconography among settled agriculturalist societies of Europe and Asia and the northern mobile pastoralist groups of the Eurasian steppe region. This paper focuses on the key themes connected with the use of animal symbolism in the steppe, such as early anthropomorphic standing stones, predator-prey compositions, and active themes such as hybridity and transmutation that are commonly found within steppe animal style art. Through a discussion of diachronic change, emphasizing new frameworks of social practice and materiality connected with the Bronze to Iron Age transition, it will be argued that the use of animal style iconography contributed significantly to new social conditions of internecine violence and personal display inherent in the rise of mounted warfare in the Early Iron Age. Such a discussion will provide an important comparative context for evaluating the nature of diffusion and contextual variation associated with the "Master of Animals" theme among Old World cultures.

THE PHRYGIAN MOTHER-GODDESS AND HER ANIMAL ASSOCIATES

Maya Vassileva, Bulgarian Academy of Sciences

The Phrygian Goddess was usually referred to as Mother (*matar/mater*) in the Old-Phrygian inscriptions, and was known to the Greeks as Kybele. She was worshipped for a long time in an aniconic form while her anthropomorphic representations appeared in the 7th century BC. Not many of her sculptured images, rock-cut or in stone relief, survived. It is generally accepted that lions were Kybele's traditional animal companions, because of the later Greek iconography. In Phrygia the Goddess was only rarely portrayed with lions. However, some of the preserved examples may offer useful insights into her cult. Lions might have been related to her functions and powers in funerary and mystery contexts. Both literary and archaeological evidence suggests that the Phrygian king was intimately involved in Kybele's cult, while the lion's royal association had a long history in the ancient Near East. Thus, lions in Phrygia possibly marked the special ritual status of the king as an initiate, a servant and a high priest of the Mother-Goddess. In line with Phrygian royal ideology she was a Mistress of Animals, taming the lions and being king's patron deity. In Phrygia yet another animal had possibly had royal symbolism: the donkey. Misinterpretation of an old Anatolian royal sign leads to the Greeks depictions of King Midas with ass's ears. A small relief of the Goddess could have told another story. There she is depicted next to a bull. In Anatolia the Storm God had been represented and worshipped as a bull for millennia. Might this have been a unique representation of a Phrygian male god?

Session title: NEOLITHIC - ENEOLITHIC TRANSITION IN THE AREA BETWEEN LAKE BALATON AND THE SAVA-MURA REGION (SOPOT/LENGYEL, BALATON/LASINJA CULTURES)

Organizers: Eszter Bánffy, Archaeological Institute, HAS, Budapest, Hungary
Jacqueline Balen, Archaeological Museum in Zagreb, Croatia

Time: Thursday afternoon

Room: 136

Session abstract:

The Middle and Late Neolithic period in the above mentioned area of Pannonian plain was marked by the Sopot and Lengyel Cultures. Despite a number of variants of both cultures it seems that there are several important common features indicating that both cultures are in fact part of a unique cultural complex with dynamic internal relations. Processes of interchange and communication within that complex took different forms and were reflected in transfer of material goods as well as of ideas. This proposal raises several questions:

- in what extent were these processes connected with mobility of groups and individuals, reflected in distribution of specific features of material culture as well as raw materials
- can social dynamics of individual communities, which is reflected in settlement structures, be seen as local manifestations of phenomenon present on a much larger scale

One of important chronological issues that has to be addressed in that context is revision of relative chronologies of the Sopot and Lengyel Cultures based on absolute dates obtained in last few decades as well as comparative chronological study of individual cultural phenomena within the Sopot – Lengyel complex. This is especially important for the last phases of these cultures that were traditionally connected to the Neolithic.

The other important questions concern the rise of the Lasinja – Balaton Culture in former Sopot – Lengyel areas, and the nature of that transition. The recent field research, as well as data obtained from different analyses and revised material, indicate that at least in some areas, there might have been a certain continuity. It would be important to establish if that transition was specific for individual areas and/or communities, or it was more general process with common features that could be identified in the whole area.

The aim of this session is to discuss recent individual research results in order to define common cultural and chronological features of this area and to provide insight in the above mentioned problems beyond the scope of national archaeologies and different methodological and chronological approaches related to them.

Paper abstracts:

RELATIONSHIP BETWEEN SOCIETIES DURING THE MIDDLE AND LATE NEOLITHIC IN TRANSDANUBIA, HUNGARY

Attila Kreiter, Eszter Kreiter, Mária Zita Tokai, Zala County Museum, Zalaegerszeg, Hungary

This paper examines the relationship between Middle and Late Neolithic communities in Transdanubia, Hungary, in particular a relationship between Transdanubian Linear Pottery, Sopot and Malo Korenovo communities is assessed. Recent large-scale rescue excavations in Hungary made it possible to survey extensive areas, which has not been possible previously. In south-west Hungary, within Zala county, large-scale excavations revealed four Middle and Late Neolithic settlements with particularly rich material culture. One of these settlements is Becsehely-Bükkaljai dűlő (5260-4800 BC, 5040-4610 BC). Becsehely was inhabited by the Linear Pottery culture followed by the Sopot culture. Becsehely also exhibits the most Malo Korenovo type pottery found in Hungary.

Through a case study of Becsehely it is aimed to assess how these communities interacted with each other. The nature and extent of their relationship is examined within the settlement of Becsehely and their relationship is also outlined within a larger geographical area. An overview of local Transdanubian Linear

Pottery groups is provided together with the emergence of Malo Korenovo type pottery between the rivers of Drava and Sava and its relationship with Transdanubia. The characteristics of Sopot settlements within the examined region are also outlined. The nature and extent of the relationship between the examined communities is assessed through settlement structures and ceramic technological investigations.

THE LATE NEOLITHIC SITE OF SOPOT, VINKOVCI: RESULTS OF THE SITE STRATIGRAPHY, C14 DATES, AND THE PRELIMINARY ANALYSIS OF ARCHAEOBOTANICAL AND OSTEOLOGICAL REMAINS

Maja Krznarić Škrivanko, Vinkovci, Croatia
Kelly Reed, London, UK
Damir Mihelić, Zagreb, Croatia

First systematic excavations of eponymous Sopot site started in 1996. Excavations to date reveal over 35 meters of the site in cross section, starting from furthestmost southwest point where the ditch was discovered, along with canals and postholes. One phase of the settlement, dating to c.5000 B.C, revealed a series of five houses covering the ditch. On the inner side of the ditch canal remains were found of a fortification wall. For 15 meters no house remains were found, just pits, postholes and canals travelling in the same direction as the ditch. Once the highest point of settlement was reached a series of nine houses were found in one living horizon. The distance between these nine houses was smaller and repairs occurred more frequently. Following the destruction layers of these houses a series of pits, postholes and canals were dug into the remains. The dating of these nine houses produced the youngest phase of the site, the IVth phase of Sopot culture.

This paper will present the results of a series of C14 dates from the site, the analysis of the animal bones and a preliminary report on the archaeobotanical remains. The analysis of the animal bones was conducted by Prof. Dr. Damir Mihelić, chairman of Department of anatomy on Veterinary faculty of Zagreb University. Kelly Reed from the Institute of Archaeology at University College London conducted the analysis on the plant remains.

ARCHAEOLOGICAL SITE SLAVČA-NOVA GRADIŠKA

Marija Mihaljević, Nova Gradiška, Croatia

Ongoing archaeological excavations of Slavča-Nova Gradiška began in 1997. The systematic excavations of Slavča-Nova Gradiška revealed the following living horizons: Sopot, Lasinja, Kostolac and Vučedol culture.

This paper will present excavation results of the Sopot living horizon. Excavations so far determined the existence of several types of pit features (house pits, working pits and waste pits), with major amounts of archaeological material. The material has been preliminarily dated to the end of I. - B/II. (Brezovljani type of Sopot culture), III., and possibly phase IV.

Along with the stratigraphy and settlement features the paper will present results of a series of C14 dates and the analysis of animal bone remains (bone remains were analysed by Kazimir Miculinić Department of paleontology and geology of kvartar in Croatian academy of arts and sciences (HAZU)).

FIGURINES IN THE TRANSITIONAL PERIOD FROM THE MIDDLE TO THE LATE NEOLITHIC IN TRANSDANUBIA, HUNGARY

Judit P. Barna, Balatoni Museum, Keszthely, Hungary
Eszter Kreiter, Zala County Museum, Zalaegerszeg, Hungary

Figurines form a characteristic part of the material culture of both the Middle and the Late Neolithic in Hungary. These periods in south-west Hungary are represented by the Sopot and Lengyel (first third of the 5th millennium BC) cultural groups. In recent years extensive excavations provided considerable material culture and also figurines of these cultural groups. These well documented excavations allow us to assess the precise context of figurines and compare their characteristics through the Middle and Late Neolithic. The Sopot and Lengyel cultural groups show cultural relationships with each other in terms of their material

culture. The figurines of the two periods, however, show distinct features. In the Sopot culture figurines are mainly seated without decoration or representation of cloths. Lengyel figurines, on the other hand, represent standing, always steatopygic females with painting and elaborate decoration that represent costumes, jewellery and hair style. In this paper the characteristics of Sopot and Lengyel figurines are assessed, that help us to better understand their meanings and the way they may have been used.

CHANGES OF LAKE BALATON USING ENVIRONMENTAL HISTORICAL DATA

Pál Sümegi, Sándor Gulyás, University of Szeged, Department of Geology and Paleontology - Hungary
Gusztáv Jakab, Sámuel Tessedik College of Agriculture, Hungary
Gábor Serlegi, Eszter Bánffy, Archaeological Institute, Hungarian Academy of Sciences, Hungary

This paper presents the findings of a complex environmental historical analysis implemented on samples taken from the Szigliget embayment of Lake Balaton. (Borehole Balatonederics I.). Based on complex sedimentological, paleoecological investigations, the following evolutionary history could have been drawn for the studied area: sediment accumulation initiated in the Szigliget Basin as early as 16790-16390 cal BP years starting with the deposition of coarse grained sequences of gravel, and pebbly coarse sands and yielding a continuous uninterrupted sequence from the Late Glacial to the Early Holocene. This is highly unique for this part of Lake Balaton. At the opening of the Late Glacial, following the birth of the neotectonic basin around 16,000 BP years, a vegetation characteristic of the taiga tundra interface appeared in the area as a result of a cold-wave, whose climatic conditions were preserved locally in the basin. During the second half of the Late Glacial, a marshland of brown mosses developed in the basin mingled with mixed taiga arboreal elements and pines. Both vegetation types were characterized by cold-loving and cold-resistant mollusk faunas. The lowest water levels for the lake were found at 14000 cal BP (Bølling interstadial), with the highest levels recorded at 12000 cal BP (Dryas III. chronozone) during the Late Glacial. The warmer interstadials enjoying more precipitation were all characterized by a low stand.

The presence of mollusks preferring moving water conditions at the Pleistocene/Holocene boundary indicate some changes in the energy conditions, either as a result of the development of a wave zone, or the discharge of a larger creek to the area of the basin. This also poses some taphonomic problems in the interpretation of plant materials for this interval. Several cyclical water level fluctuations could have been interpreted for the Holocene as well. High stands were characterized by *Chara* fields dwelling at the basin's bottom, while low stands were generally marked by a reed vegetation. Several high and lowstands were recorded for the studied period of the Holocene. However, the younger Holocene deposits are completely missing from the sequence. The morphological conditions of the discharge area, reflected in such components as the span of the permafrost, plus the vegetation cover, and the rate of evaporation must have been the most important components influencing water level fluctuations in the basin in contrast to the annual amount of rainfall. The lowest water levels during the Holocene were interpreted for the opening of the period (10400 cal BP years), and for the second half of the Atlantic (7000 cal BP). The highest water levels must have emerged only after 5100 cal BP in the basin. (Subboreal). The interpreted fluctuation of the water level for Lake Balaton was congruent with those characteristic of the lakes of the Balkans for the Late Glacial and the Early Holocene. Conversely, it followed a pathway somewhat similar to the lakes of Northern Europe from the Middle Holocene onwards, with one exception. The Holocene history of Lake Balaton is characterized by the development of several low stands, which must be attributed to the emergence of a Continental (Boreal) and later on a Submediterranean (Atlantic) climatic influence in the area. Changes observed in the pollen material are suitable for the characterization of the vegetation changes for a larger area only. However, the findings were comparable with those observed in the Slovenian and Western European profiles of similar age.

BÁTASZÉK, SETTLEMENT AND GRAVES OF THE LENGYEL CULTURE AT ALSÓNYÉK

Anett Oszrás, University of Szeged, Department of Geology and Paleontology, Hungary

Alsónyék is located about 100 kilometres south-east of Lake Balaton, in County Tolna. The rescue excavation was necessary because of the construction of the M6 motorway (our exploration area is 38000 m² at present, and the survey is still going on). Since last May some graves and a large settlement of late neolithic Lengyel Culture came to light. The settlement lies at the fringes of a hilly landscape, on a plain, close to the Danube.

The Lengyel Culture is represented by a lot of large-sized long houses with posthole structures, with big refuse pits connected to them. On the settlement we have found 350 contracted burials, which came to light in several groups. The structure of settlement features reveals a high-levelled social organization. The measure of the site and the quantity of artifacts (varied bone and stone tools, painted pottery, animal bones, cult objects) as well as traces of long-distance trade refer to a continuous settled lifestyle of a fairly large population for a long time in this region. Beside this new phenomenon the other unique discovery are the graves with posthole structures.

Because of the ongoing research work we cannot define the exact chronological situation of this site, but we can date it at the onset of the Lengyel II phase.

BAPSKA-GRADAC. A LATE NEOLITHIC SITE IN EASTERN CROATIA. A NEW PROJECT

Marcel Burić, Univesity of Zagreb, Croatia

The Gradac site is located on the edge of the western slopes of the Fruška gora mountain, at the eastern border of Croatia, some 4,5 kms south of the river Danube.

After two test excavations that took place in the last century (1938/39. and 1964.), multilayer Neolithic settlement in Bapska will be object of a new, long-period archaeological project. Due to intense agricultural works on the top of the site and already partly destroyed upper cultural layers, the site will be excavated in segments by 400 m² trenches.

In 2006 Department of archaeology, University of Zagreb performed basic preparations for a large scale field work. This paper will present the methods that are and will be included in the project, plan of archaeological works, "post production" (presentations, *in situ* reconstructions etc.), present interpretation of the layers, (from old excavations) and maybe the most important, to invite all interested parties to join in.

SOME ASPECTS OF THE LATE NEOLITHIC, EARLY COPPER AGE ON TRANSDANUBIA, NORTH OF LAKE BALATON

Judit Regenye, Laczkó Dezső Museum, Veszprém, Hungary

In Transdanubia, the Lengyel culture represents the late Neolithic and the Early Copper Age, that is the period from 4900 to 4200 BC. The date 4500 BC marks a definite boundary within this period. The late Lengyel period after this boundary is significantly different from the early and the classical Lengyel phases. The Lengyel culture offers an excellent opportunity to the observation of the transition from the late Neolithic to the early Copper Age on the research territory north of the Balaton owing to the fact that the changes in the material culture are apparent due to the site concentration found in the region of the Tűzköves hill at Szentgál.

The late Lengyel period, similarly to any transitional period, shows remarkable characteristics of both continuity and change. Dramatic changes took place in the eastern part of the Carpathian Basin and the evolving Copper Age was sharply different from the Neolithic: material culture became uniform, the settlement pattern changed, the number of sites grew, the commercial contacts and the burial rites changed, while cultural and ideological continuity could also be observed. The situation was contrary in Transdanubia: continuity was more conspicuous, while the traces of social changes could be discovered in the background. The listing of the main characteristics of the late Lengyel period helps us to better understand the road that led to the evolution of Copper Age. The main characteristics of the late Lengyel period are as follows: expansive feature, increasing intensity of stone yielding, permanent contact system, standardization of the ceramics, changes in the material culture, changes in the rite, permanence of the structured settlement pattern, and survival of the Neolithic lifestyle.

We can divide the listed characteristics in two groups. One group contains the traits that reflect Neolithic features (the unchanged settlement structure and Neolithic lifestyle, contact system), while the other group contains general features that were also valid elsewhere in the early Copper Age (the expansion of the culture, the uniformity of the material culture, the rarity of ceramic ornamentation, the lack of idols). This dichotomy tells us that the processes that led to the appearance of the Copper Age culture in Transdanubia in the middle Copper Age were present and gradually became dominant in the background of the stabile social structure reflected in the stabile settlement pattern that indicated the survival of the Neolithic lifestyle.

NEOLITHIC – ENEOLITHIC TRANSITION IN THE NORTHERN PART OF CROATIA

Jacqueline Balen, Zagreb, Croatia
 Ana Solter, Zagreb, Croatia

The Late Neolithic and Early Eneolithic periods in the northern Croatia were marked by the Sopot and Lasinja Cultures. The aim of this paper is to use recently obtained radiocarbon dates from recent field research to shed some light on the development and the time span of those two cultures in northern Croatia.

**Session title: WHAT IS AN ARCHAEOLOGICAL CULTURE?
 APPROACHING CULTURAL TRANSMISSION AND
 VARIATION**

Organizers: Ben Roberts, Department of Prehistory and Europe, British Museum, UK
 Marc Vander Linden, Cambridge Archaeological Unit, University of Cambridge, UK

Time: Thursday afternoon

Room: 137

Session abstract:

The idea of an archaeological culture as a definable entity in space and time has survived the onslaughts of several generations of theoretically inclined archaeologists. Cultures have been deconstructed, re-formulated, re-named and simply ignored but have refused to be consigned to the dustbin of archaeological research. Whether they are employed as a background to regional or local investigations or provide the central focus for research, they show no signs of going away. Does this mean that they have a certain validity? How therefore should we analyse and interpret distinct similarities in burials, settlements, technology or material culture? Perhaps our starting point should be the broad diversity of chronological and geographical scales through which archaeological regularities and variations exist. From this point of view, we must not expect straightforward correlations in the evidence as culture is not a bounded entity. What might be important is the nature of the connections where cultural transmission occurs and cultural variation is created.

Paper abstracts:

**CULTURE IN THE LOWER PALAEOLITHIC? A CRITICAL LOOK AT EXPLANATIONS FOR
 TECHNOLOGICAL VARIABILITY IN MIDDLE PLEISTOCENE EUROPE.**

Hannah Fluck, University of Southampton, UK

The search for archaeological cultures is not restricted to the more recent archaeologies of *Homo sapiens*. For at least a century Palaeolithic archaeologists have been grappling with the idea of culture. Many of the terms in common use in the discipline today such as Acheulean, Oldowan, Micoquian, Mousterian were introduced to describe phenomenon that were considered to represent different cultural groups of Palaeolithic peoples. These cultural groups were also hierarchically organised to express notions of evolutionary advancement. Although this cultural approach was reacted against in the Palaeolithic archaeology of the later 20th century the labels remained to be used *simply* to describe different tool types that occur in combination. However, the issue of culture in the Palaeolithic has not gone away. In fact a new wave of archaeological research, spurred on by theoretical shifts in other periods of archaeology focussing on identity and materiality, has begun to reconsider whether it is possible to recognise culturally distinct behaviour in Palaeolithic archaeology.

This paper will critically explore some of the evidence for cultural groups in the Lower Palaeolithic, with particular reference to the non-biface assemblages of Europe. It will consider the problems with defining and identifying cultures in this period and look at some of the consequences of doing so, issues that perhaps say as much about the different cultures of the Palaeolithic archaeologists themselves as the Palaeolithic societies we seek to understand.

STEPS TOWARDS OPERATIONALIZING AN EVOLUTIONARY ARCHAEOLOGICAL DEFINITION OF CULTURE

Felix Reide, University of Cambridge, UK

This paper will examine the definition of archaeological cultures/techno-complexes from an evolutionary perspective, in which culture is defined as a system of social information transmission (Boyd and Richerson, 1985; Shennan, 1989; 2005; Wells et al., 2006). A formal methodology will be presented through which the concept of a culture can be operationalized, at least within this approach. Exactly 20 years ago, Rob Foley (1987) argued that in order to study material culture evolution in a manner similar to how palaeontologists study biological change over time, we need explicitly constructed 'archaeological taxonomic units' (ATUs). In palaeontology, the definition of such taxonomic units – most commonly species – is highly controversial, so no readily adoptable methodology exists. Gamble et al. (2005) have recently reiterated Foley's appeal, but have, in their own study, failed to provide a satisfactory solution.

Here it is argued that 'culture' however defined is a phenomenon that emerges through the actions of individuals. In order to identify 'cultures', we must therefore construct them from the bottom up, beginning with individual actions. *Chaîne opératoire* research, combined with the formal and quantitative identification of variability in individual material culture behaviour allows those traits critical in the social transmission of cultural information to be identified. Once such traits are identified, quantitative, so-called phylogenetic methods can be used to track material culture change over time. Phylogenetic methods produce nested hierarchies of increasingly exclusive groupings, reflecting descent with modification within lineages of social information transmission. Once such nested hierarchies are constructed, it is possible to define an archaeological culture at any given point in this hierarchy, depending on the scale of analysis. A brief example from the Late Glacial in Southern Scandinavia is presented and it is shown that this approach can be used to operationalize an evolutionary definition of 'culture' and that it improves upon traditional, typologically defined techno-complexes.

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THE CULTURE OF HUMANITY AND ITS TRANSFORMATION IN EUROPEAN PREHISTORY

John Barrett, University of Sheffield, UK

Cultural analysis was questioned in the archaeology of the 1960s because it failed to deliver an adequate means of explaining change. It was accepted that cultural conventions have always existed among societies, but that these were not essential to the mechanisms of social and economic change. Twenty years later cultures re-emerged as a priority in the explanations of social change when they were presented as the

outward expressions of conceptual schemes of order, where such schemes operated to legitimate particular forms of political and economic authority.

This paper will argue, contrary to convention, that culture should not be treated as a form of representation, either as a representation of social norms, nor as a representation of cognitive schemes (cosmologies). Instead a cultural order, that is accepted regularities in the creation of material conditions, can be regarded as having three roles. First to secure routine performance as expressive of humanity. Second as enabling humanity to locate itself in the world. Third as extending the reach of humanity. In each of these humanity is treated as a system of values that are essential for the recognition of a right to exist.

The case will be illustrated by the argument that the distinction, broadly, between the European Neolithic and Bronze Age is one that marks a stage in human evolution.

TOWARDS A POSTHUMANOCENTRIC "MAYA CULTURE"

Johan Normark, Göteborg University, Sweden

Mel Gibson's movie *Apocalypto* describes the "Maya culture" on the brink of collapse, a brutal society dwelling in human sacrifice. This depiction has upset most of the Mayanist community. However, if one ignore the many inaccuracies in the movie, Gibson's violent Maya is basically a stereotyped and exaggerated view of the Maya culture that one find in many Mayanists' own archaeological research. Both Gibson's and the Mayanists' view rely on an idea that there is an essential Maya culture that in Gibson's case was brutal and had to end. For the majority of Mayanists, this essential culture continues to exist as a transcendent organism beyond the scope of the individual human agents and materialities.

Current archaeological culture concepts are founded in humanocentric and arbolic (treelike) models. These are used to describe an essential and hierarchical culture which branches into smaller segments, from the abstract and all encompassing transcendent culture assumed to be shared by human agents, down to the single artefact. The artefact is interpreted from an already established and static scheme. The artefact is secondary and is only used to confirm a generalized and essential human culture. I propose that materialities shall primarily be analyzed from a posthumanocentric perspective. In order to do this, a rhizomatic view of materialities needs to be developed. The rhizome is a heterarchical form which has no centre or origin. The artefact does not follow predefined human or cultural patterns. In this paper, interaction beyond humanocentric concepts such as ethnicity, politics and economy are sought.

ARCHAEOLOGICAL CULTURES AND THE SPREAD OF THE NEOLITHIC IN THE NEAR EAST AND IN EUROPE

Marc Vander Linden, Cambridge University, UK

Archaeological cultures are — preferably migrating — prehistoric tribes; material culture forms a complex web of interwoven interaction networks. Are both sentences two caricatured ways to say the same thing? Probably! Their juxtaposition only aims at expressing an underlying tension in the archaeological discourse of the past 4 decades. On one side, we all know that 'archaeological cultures as tribes' is an unsatisfactory notion to describe the complexity of the past, but, on the other side, we all use on a daily basis 'archaeological cultures' to account for that same past. Are archaeologists unable to get rid of the comfortable but useless concept of 'archaeological cultures' or do 'archaeological cultures' still have some value?

The spread of the Neolithic in the Near East and in Europe provides a perfect case-study to address this question. Indeed, in both cases, the early stages of the Neolithic are associated with 'real' large-scale archaeological cultures exhibiting strong material homogeneity in all material culture (e.g. PPNB, LBK), followed by episodes of increased regionalization and less homogenous archaeological cultures (e.g. Yarmoukian, Michelsberg, TRBK). This paper will explore the implications of these similarities (or coincidences?) for our understanding of the neolithisation process and our ability to speak of the human beings behind the archaeological cultures.

CREATING COMMUNITIES: LBK BURIAL PRACTICES AND CULTURAL VARIATION

Daniela Hoffman, Penny Bickle, Cardiff University, UK

Diversity in the Linearbandkeramik (LBK) culture of central Europe has long been acknowledged, especially where material culture is concerned, but archaeologists still tend to treat the LBK as a unified phenomenon when referring to questions such as social structure or social change. The problem is how to move from the scale of small face-to-face interaction to broader regional exchanges of cultural practice. In this paper we will argue that the term 'culture' only remains useful for archaeologists if it can help us to explore the entanglement of relationships in the past. We explore the burial practices of the LBK through notions of community and identity. Through comparing burial practices from Lower Bavaria and the Paris Basin, we demonstrate how the performances of burial becomes a more useful way of contrasting senses of shared identity and cultural similarity with distinctive regional concerns and sequences.

CULTURES, PHENOMENA AND TECHNO-COMPLEXES: ANALYSING AND INTERPRETING BROAD SCALE PATTERNS IN PREHISTORY

Ben Roberts, British Museum, UK

The analysis of the broader scale in European prehistory is structured by archaeological 'cultures'. The majority of these were proposed by scholars in the early-mid 20th century often only on the basis of several sites. The vast increase in the available ideas, methodologies and data during the late 20th century seems only to have enhanced the established cultural frameworks. However, what an archaeological culture actually represents remains very unclear thus reducing it to a vague descriptive term rather than a defined analytical approach. The situation is not helped by the strong trend towards exploring local and regional perspectives at the expense of the broader scale. The key problem is how we understand the dynamics of cultural transmission and the creation of cultural similarities and variations through time and space. This paper seeks to explore these issues by examining the appearance and early development of metal objects and metalworking practices in different regions of Europe.

CULTURAL COMPLEXITY AND BRONZE AGE INSTITUTIONS

Kristian Kristiansen, University of Göteborg, Sweden

During the Bronze Age a complex pattern of cultural distribution emerge. While earlier research mapped such distributions in an attempt to characterise cultures – and sometimes succeeded - there remained and large number of unexplained distributions which did not 'fit'. By applying a theoretical framework of social institutions and their different roles in reproducing society it is possible to link together these regional and interregional distributions into a single historical framework of interacting elites, where ritual chiefs, warriors and traders played different yet complementary roles. This created a special dynamic, sometimes tensions, between warriors and ritual chiefs, manifest in dual leadership, whose historical role will be discussed in conclusion.

ABOUT CULTURAL-HISTORICAL APPROACH IN RUSSIAN ARCHAEOLOGY AND NOT ONLY...

Ludmila Koryakova, Institute of History and Archaeology Russian Academy of Sciences Ekaterinburg, Russia

The concept of archaeological culture has no luck in modern archaeology. Collisions, emerging in archaeology with regards of this concept, are conditioned by the polysemy of the term 'culture' and by the fact that a term denoted only on the homonym level is subconsciously charged by various research levels. This concept was 'born' for the sake of understanding the multiplicity of a past human culture. It passed through very dramatic moments in its history from full belief in its connection with certain ethnic groups until its full denial. AC is a basic concept of culture history approach which is very popular in the Russian archaeological tradition. It is believed that archaeological culture as a heuristic archaeological device, that is to say, as a marker of similarity and patterning given by archaeological material has a reason to exist. Denying the strict correlations between certain archaeological and particular social entities; we, however,

cannot deny the fact that archaeological patterns give insights to the cumulative image of spatially expressed human experience (human culture), which was realized at certain time in certain territory and related to a certain group of people.

In this paper I am going to expand on these statements and show how the culture history approach developed in Russian archaeology and compare this process with some other research traditions.

THE PIT GRAVE CULTURE: CONTRASTING ARCHAEOLOGICAL AND CULTURAL DIMENSIONS OF EURASIA IN LATER PREHISTORY

Lolita Nikolova, University of Utah, USA

Svetlana Ivanova, Institute of Archaeology, Odessa, Ukraine

Archaeological culture is one of the most important concepts in science, while the debates and its pitfalls in the archaeological science are due to the absence of steady criteria and some theoretical limitations of the concept itself and of the investigators.

Recent investigations have shown simultaneous and early formation of the Pit Grave Culture in the North Pontic region (except for the territory between the Dnieper and Southern Bug Rivers). This fact makes out of date the monocentric view on the culture which origin was located between the Volga and Ural Rivers, on the coast of the Azov Sea and lower Don, near the northern Prut (the so-called "the core of the culture"). S. Ivanova will propose and argue various roots of the Pit Grave culture and suggest that considerable differences in material culture of the local versions and groups indicate that the basis of the cultural unity of the whole area was mostly the common view on the world. Then, S. Ivanova doubts the existence of the Pit Grave culture as such in terms of archaeological culture.

L. Nikolova will analyze the peculiarities of the Pit Grave Culture in the Balkan region from the its beginning in the latest fourth millennium cal BCE as a result of migration from the Northwest Pontic Region till about the mid of the third millennium cal BCE. The concept of the archaeological culture will be tested against the data about the variety of the Pit Grave culture in the different microregion of the Balkans. The term Pit Grave Culture as an archaeological culture will be argued pointing to the existed different local groups (Plachidol, Gorna-Slatina, Turnava, etc.). The theoretical background for such view is the understanding that the archaeological culture categorizes in one and the same framework those cultural units that consists of a combination of common and interrelated typological characteristics. We believe they were a result of steady tendencies of reproduction of the similarity and of specific social filters with corresponding strategies of the different communities (e.g. towards innovation and interactions).

In summary, the presentation will contrast two views on the Pit Grave Culture: non-archaeological culture nature of the Pit Grave Culture (because of the different ancestral roots and missing proved origin in one small area and following migration in the North Pontic region) and the Pit Grave culture as a unique global archaeological culture in Eurasia, that was distributed over huge areas keeping some main characteristics from the Ural to the Tisza and from the North Pontic Region to Thrace.

CERAMIC STYLES AND CERAMIC TECHNOLOGIES: "CULTURES" AND IDENTITIES IN BRONZE AGE HUNGARY

Attila Kreiter, Zala County Museum, Hungary

Vajk Szeverényi, Archaeological Institute of the Hungarian Academy of Sciences

Research on the Bronze Age in Hungary is still dominated by a traditional approach with the concept of "archaeological cultures" at its heart. Despite all theoretical attacks against it, this construct is still the basic analytical unit of traditional research and has not been given up. Most of these "cultures" are delineated based on pottery styles (although occasionally with the inclusion of other classes of archaeological remains). There have, however, been very few attempts at deconstructing this concept through a thorough study of the spatial distribution of the stylistic elements that form the basis of such categorizations. In this paper we would like to present the results of such an investigation and thereby try to refute the existence of bounded stylistic units in the material with the very means of traditional typology. In the second part we will compare the outcome with the results of technological studies on Bronze Age ceramics in Hungary. Recent investigations have demonstrated that ceramic technological traditions remained unchanged for a long period, suggesting that the production of material culture and the reproduction of traditions were organized

through similar social networks in the various consecutive periods. Furthermore, comparative ceramic technological studies both within and between “cultures” indicate that potters made similar technological choices diachronically, and the reproduction of technological traditions was remarkable throughout the Early and Middle Bronze Ages. These similarities and relationships again call into question the existence of bounded archaeological cultures as defined traditionally. Still, some kind of social meaning probably can be attached to these elements, and the elaboration of these should be an important task of archaeologists.

**BRONZE HOARDS, MASCULINITY AND THE GEERTZIAN CONCEPT OF CULTURE.
A COMPARISON BETWEEN THREE LATE BRONZE AGE ARCHAEOLOGICAL CULTURES FROM THE
CARPATHIAN BASIN**

Nona Palincas, Institute of Archaeology, Bucharest, Romania

The three archaeological cultures to be analyzed are one from northern Romania – the so-called Suci Culture – and two from southern Romania – Gârla Mare-Žuto Brdo, spread along the Middle Danube, and Fundeni-Govora from the Lower Danube. They all date into approximately the same period (16th-14th century BC), and there are elements that show that they must have been in a certain kind of contact, that between Gârla Mare-Žuto Brdo and Fundeni-Govora Cultures being more intense.

These three cultures are very easily distinguishable in traditional Childean sense of the term, first of all from the point of view of their **different** pottery repertoire and burial ritual.

There are though some **common elements** of these three archaeological cultures, and the analysis starts from these:

- the solar cult;
- the naturalistic representation of parts of human body on pottery – female breasts and phalli;
- the use of at least one common type of vessel (shape and decoration) in ritual.

Some characteristics occupy an **intermediary position**, being common only for the two neighboring cultures along the Danube:

- the lack of any naturalistically represented parts of the male body - they only appear on the Suci pottery;
- the rarity of bronze hoards, in contrast with their frequency in the Suci area.

Starting from the assumption that the representation of female breasts and phalli can be considered as symbols for the female and the male gender, respectively, the paper analyzes the different meaning of the masculine and the feminine in the distribution areas of these three *archaeological cultures*, more precisely the way these social categories are related to different elements of the material culture. Among others, it aims to show that the different meaning of the masculine is the reason for the presence and absence, respectively of the bronze hoards in those areas. It also shows that despite obvious differences in the traditionally considered elements of the material culture, from the point of view of the meaning of gender categories, the two neighboring cultures along the Danube cannot be distinguished. Since gender is a total social category, differences in conceiving gender is relevant for distinguishing between cultures. This means that where one can see three cultures in the Childean sense of the term, there are only two in the Geertzian sense: Suci on the one hand, Gârla Mare-Žuto Brdo and Fundeni-Govora, on the other.

Session title: SOCIAL DIMENSIONS OF TECHNOLOGICAL CHANGE

Organizers: Lise Bender Jørgensen, Dept. of Archaeology & Religious Studies, Norwegian University of Science & Technology, Trondheim, Norway
Deborah Olausson, Dept. of Archaeology and Ancient History, University of Lund, Sweden

Time: Thursday afternoon

Room: 144

Session abstract:

We live in a world of rapid technological change. Globalisation, the Internet, and mobile telephones have made worldwide communication part of daily life and we experience that the pace of technological change is

accelerating. If we are to understand and deal with technological changes we need to investigate their causes, both now and in the past. According to one model, changes in technology can be linked to selection pressure: the technology which “works” best will be chosen above those which work less well. But how are competing technological systems evaluated? Is it possible to set up some cross-cultural definition which would enable us to determine which technology “works” best? Do we tacitly assume that the success of an artefact explains technological development? Still, technological development is rarely linear but rather full of failures, dead-ends and alternative solutions, most of which end up on museum shelves. To explain why this is so we need to study the social contexts in which all technologies are situated. Our starting point is thus the conviction that transformation of society is not due to technological change but rather the reverse; technological changes are themselves part of the sticky web of social interaction with which we surround ourselves. We perceive change as mediated by internal dynamics within society. Technology change is one aspect of this, neither linear nor irreversible.

The session arises from the wish to establish a European research programme on Social Dimensions of Technological Change. The project aims at exploring the relationship between technological change and society by focusing on aspects like tacit knowledge, the creative freedom of the craftsman, technology as a driving force or as a response, and cognition in the process of creation. Initiated by a group of scholars in Scandinavia, we hope that the session will attract speakers and participants from other parts of Europe, in particular eastern and southern Europe.

Paper abstracts:

"WEAVING A GREAT PURPLE WEB". TEXTILE PRODUCTION AND SOCIAL CHANGES IN TROY VI

Eva Andersson, Center for Textile Research, Copenhagen, Denmark
Ralf Becks, Troia Project, Tuebingen University, Germany
Marta Guzowska, Institute of Archaeology, Warsaw University, Poland

The beginning of Troy VI period (ca. 1700 B.C.) marked at Troy a period of major cultural break. It can be observed in fortification and domestic architecture, in pottery (of the 98 different shapes used during the Troy VI, 90 are new in that period), in the faunal assemblage (with the appearance of the horse), in various categories of miscellaneous finds. Some archaeologists, including Carl Blegen argued, that the dramatic alteration of material culture must mirror an important social change,

The authors of the paper undertook the task, in frames of the programme „Tools and Textiles, Text and Context” carried out since 2005 at the Copenhagen “Center for Textile Research”, to examine the textile production tools (mainly spindle whorls and loomweights) at Troy in different periods. Such diachronic analysis can provide invaluable information about changing of the modes of textile production in Troia on the background of social changes. The aim of the presented paper is to examine the technological changes in textile production in relation to the social change which took place in Troia VI.

ARENAS OF SKILL: LEARNING STRATEGIES AND SOCIAL RELATIONS IN THE EARLY TO LATE MIDDLE BRONZE AGE IN HUNGARY

Sandy Budden, University of Southampton, UK

Understanding skill is seen as a key mechanism through which the articulation of cultural and social dynamics may be viewed. Skill is the foundation on which the renewal or reinvention of material categories depends. Material categories are, in turn, deeply enmeshed in the constant negotiation and renegotiation of identity and social relations. The way in which societies choose to pass on skill is seen as determined through socially sanctioned institutionalised practices. Moreover, societies are seen as constituted through numerous cross cutting institutions with both vertical and horizontal relationships. The social nature of skill acquisition, through specific learning strategies, means that the way in which skill is acquired, and then deployed, may be argued to reflect the nature of the practices related to these institutions.

Using a newly formed skills methodology it has been possible to suggest that during the Early to Late Middle Bronze Age in Hungary, skill associated with pottery manufacture was acquired and deployed through two contrasting social arenas linked to different institutionalised practices. These two arenas of skill shed light on different aspects of the social dynamics being played out within a highly stratified and structured society.

HORSE IN PREHISTORY EURASIA: THE COST OF FRIENDSHIP (ANCIENT TECHNOLOGIES OF OBEDIENCE)

Igor V. Chechushkov, Institute of history and archaeology of the Ural Branch of RAS, Ekaterinburg, Russia

Domestication of a horse became the major stage in historical development of a civilization. The world has changed, when the man has subordinated a horse: henceforth and is a lot of centuries forward its force and beauty set trends of social development. However cunning and forces of the man was insufficiently for domestication and technological innovations have gone to a course.

Eurasia earlier evidence of use of draft force of a horse connected with a bronze age. In steppes of Eurasia in second millennium two-wheeled vehicles – chariots, and special control facilities a horse – check-pieces become known. Discussion about an origin of these innovations is wide and difficult, however undoubtedly one – during an epoch of bronze these technologies have widely extended in Eurasia and became determining in social history of an antiquity. Approximately during one time horse-drawn chariots have appeared on fields of battles of the Near East, Egypt, and also in tombs of leaders of people of the Euroasian steppe. The horse chariot became dominating military means down to occurrence of saddle horse as arms of the service. Besides a horse and a horse chariot since then became one of the main images of indoeuropenean mythology that is connected with their enormous social importance. In myths the horse from the servant has turned to the friend of a man and similar representation dominates over public consciousness up to the modern. However the essence of «friendship» is an operation of one essence by another, and submission is constructed on physical suffering. The apogee, absurdity and a shame of this «friendship» has reached in modern «equestrian sport».

Thus, technological innovations – a two-wheeled vehicle and control facilities упряжной a horse – steel one of key factors of social development.

FROM STONE TO COPPER: TECHNOLOGICAL CHANGE AND THE ESTABLISHMENT OF MEANING IN PREHISTORIC CENTRAL ITALY

Andrea Dolfini, University of Cambridge, UK

A long-standing tradition of studies claims that metal was universally adopted by prehistoric communities in Europe thanks to its superior technological properties and its inherent economic value. However, recent research shows that the spread of metallurgy throughout Europe was a three-millennia long process, and early copper artefacts had often poorer mechanical properties than their stone counterparts. Moreover, as convincingly argued by Appadurai, economic value of commodities, if any, may stem from the very acts of circulation and exchange rather than from their intrinsic characteristics. Major technological changes such as the adoption of metallurgy are thus to be interpreted as socially-driven, culture-specific phenomena, whose outcome is never determined by the alleged superiority of new materials or new artefacts. This paper explores how early metal artefacts were first introduced and then incorporated into society in central Italy during the Later Neolithic and the Copper Age (c. 4500 to 2200 cal. BC). It is argued that new meanings and cultural values had to be negotiated and agreed upon over the novel metal objects in order to accept them within the existing social milieu. Among the processes through which new meanings were established for metals, categorisation played a key role. While melted metal could take numerous shapes, in fact only a few, well-defined and repetitive classes of artefacts were produced for more than two-thousand years. The definition and construction of these categories of objects is informative about the social conditions and the agency of early metal consumption in prehistoric central Italy.

HOW CRAFTSMEN DANCE WITH THEIR TOOL ABOUT RHYTHM, TOOL MARKS AND WORKING PROCESS

Harald Høgseth, Sør-Trøndelag University College, Trondheim

Tool marks in timbers from archaeological sites tell us story's about the craftsman's know-how. The work consists of a series of actions and abstractions. Not all of these are manual. Before he starts a project, the craftsman has to decide on how his product is going to look, how to make it and how it works. This is a

process based on his insight and experience in a range of features such as the properties and possibilities of tools and materials. All this is a long and winding process. His work is "gestaltende"⁴.

The knowledge is based on four components; time, physical objects (e.g. environment, nature), manual movements and skill (e.g. cultural community, society). I have restricted this lecture to concentrate upon on of them; the craftsman's manual movements and rhythm in the working process. The rhythm has effect on difficult tasks, hard or monotonous work. The rhythm makes the toil easier. The rhythm gives the craftsman a feeling of flow! The component integrates as a whole. The rhythm which I focus on exists as tool marks in wooden building remains from 1000 A.D. in Trondheim, Norway. The marks express the craftsman's flow and working rhythm. A flow based on the experience and knowledge of materials, tools and techniques, and procedures. "Only a craftsman knows that sharp tools are needed if you love materials".

WEAVING CHANGE

Lise Bender Jørgensen, Norwegian University of Science & Technology, Norway

Throughout Prehistory and Antiquity, many changes in textile technology have occurred. Bast fibres have been replaced by flax and/or wool as preferred raw materials; and yarn types, weaving techniques, and tools such as spindles or looms have appeared, disappeared, cohabited or even exchanged places. Some of these changes seem functional, others do not. Why did the people of Early Iron Age Scandinavia prefer s-twisted yarns to z-twisted, and why did they change their mind during the Roman Iron Age? Why did the two-beam loom replace the warp-weighted loom in many parts of the Roman world? What kinds of impact did such changes have on the format and properties of textiles and clothing, and on human relations? The paper explores changes in textile technology in Europe and around the Mediterranean during the first half of the first Millennium AD.

TECHNOLOGICAL COMMUNITIES OF PRACTICE – VARIABILITY WITHIN STRUCTURE

Sheila Kohring, University of Cambridge, UK

This paper explores how communities of practice (per Wenger 1999) structure technological knowledge and impact on which visual characteristics or steps in a *chaîne opératoire* are more or less open to individual expression. It is argued that technological knowledge is conceptual and practical, acting as a reservoir of potential technical expressions. Members within a community structure this expression through practical applications during production events, while being structured by existing social relationships and meanings already established within the society. Hence, technological knowledge is linked to other social and ideological knowledge systems. The community of practice is the arena in which these converge and create a sense of what is appropriate technical practice, depending on contextual relationships and uses. Specific examples are given regarding the visual variability and arenas of expression seen in a community-specific assemblage of pottery during the Late Copper Age period in Spain.

CERAMICS AND THE ETHNOGRAPHIC PRESENT: CERAMIC MANUFACTURING TECHNIQUES IN SOUTHERN AFRICA

Anders Lindahl, Innocent Pikirayi, University of Lund, Sweden

Pottery is one of the most common finds at archaeological excavations and it is used to answer research questions about chronology, culture definition and migrations of people. In southern African Iron Age archaeology ethnographic models have been used in the interpretation of farming communities of the last 2000 years. However, in many ways archaeologists have failed to address the usage and sociological context of pottery and the use of typology in defining ceramic style and human group identities remains controversial. While acknowledging that archaeological pottery is a vital artifact and that its study leads towards the understanding of the people who made it, this perception is flawed because it unconsciously

⁴ Tempte 1982

detaches the pottery from its social context. The limited typological approaches in most archaeological reports arise from the treatment of pottery as "text" - that is as something that can be read and decoded for chronology and ethnic identity - and the general construction of knowledge from ceramics, which deviate from cultural 'reality.'

The aim of this project is to investigate modern ceramic manufacturing techniques among selected ethnic groups in northern and eastern South Africa. The objective is to understand cultural processes and human group identities of some later Iron Age communities found in these areas. This will be achieved by examining aspects such as ceramic production and technology, the role of women in the production process, seasonality and scheduling of the production process, trade and exchange, and the relations between ceramics and ethnicity. The data generated will be used as feedback into the prehistoric Iron Age data particularly on social aspects of ceramics.

To understand pottery is to understand society.

TECHNOLOGICAL CHANGE AT THE THRESHOLD OF THE METAL AGE; OR: WHEN DOES THE STONE AGE END AND THE BRONZE AGE BEGIN?

Deborah Olausson, University of Lund

If we expect technology to follow an evolutionary path then we see a development from stone to bronze as "natural". Bronze tools are adaptationally superior; therefore Stone Age people recognized the necessity of getting on the Bronze Age bandwagon as quickly as possible. Because Scandinavia lacks sources of copper and tin it played a peripheral role in relation to the earliest centers of metallurgy. There was a protracted period during which imported metal objects, in small numbers, circulated in otherwise Stone Age contexts. During this time we also see numerous examples of skeuomorphs, that is, pairs of morphologically similar objects made of stone imitating objects of copper or bronze. According to the adaptational model, lithic skeuomorphs are viewed as attempts on the part of copper- and tin-poor northerners to "fool" themselves and others into believing that they were participating in the Bronze Age sphere, albeit with their own homegrown stone tools. I believe we should not see lithic skeuomorphs as making-do until enough bronze could be obtained to make real swords. Rather they represent a gradual process of acculturation into a Bronze Age way of life. A society's response to imports or innovation is not merely a passive and automatic acceptance of something that we perceive as being better in some Darwinian sense. Social changes are not *due* to technological changes but rather the reverse: actors are making technological choices and these choices are grounded in social agents.

WHEEL-THROWN POTTERY AND SOCIAL CHANGE IN MEDIEVAL SLOVENIA

Benjamin Stular, The Slovenian Academy of Sciences and Arts, Slovenia

Wheel-thrown pottery has been emerging and re-emerging in different parts of the world since the Neolithic period. Especially in the event of a co-existence of wheel-thrown pottery and hand made pottery one can observe the association of both with different levels of social organisation.

From the Neolithic period to modern day ethnological examples, wheel-thrown pottery is linked to specialised potters. This specialisation is necessary due to the slow and time-consuming learning curve. Such specialists can exist only in societies with a certain level of complexity and division of labour. However, discovering which came first - social or technological change - is not a straightforward matter.

One such instance is the example of 13th c. AD pottery in the central European context of the Kamnik castle, Slovenia. Unexpectedly, the late 13th c. pottery is predominantly hand made. There is certain evidence that connects a few shards of wheel-thrown pottery with the higher status quarters of the castle.

On the other hand, the ethnographic and historic sources enable us to trace early 20th c. wheel-thrown pottery production in the region back to the 14th c. This production can be directly linked to the guilds. In the nearby region, hand made pottery was produced in the early-medieval tradition until the 1910s by the Uskok people that were exempt from feudal laws in exchange for their military services.

Observing the historical differences between the mentioned regions in post-medieval times enables us to draw a direct link between the medieval guilds and the production of wheel-thrown pottery. Therefore, the production of wheel-thrown pottery in Medieval Slovenia clearly followed the introduction of guilds. Social change was a prerequisite for a technological change.

CHANGING MATERIAL IDENTITIES

Julia Wiecken, University of Exeter, UK

The inherent social aspects in technology have become more and more recognised within the discipline of archaeology in the last 30 or so years. The chaîne opératoire approach has helped to reconstruct the technical as well as the social issues in production technologies. Flint knapping especially has seen some great applications of this methodology, teasing human stories out of the archaeological record. In metallurgy such direct extrapolations from the data is not always possible. However, using a combination of experimental methods and traditional analysis the individual can be put back into metallurgy. As technological change can be understood as the outcome of millions of individuals, acting according to their world view and expressing the constant changes happening around them, it is vital to understand the social aspects of production technologies. Using interdisciplinary literature on technology and technological change, as well as the results from personal experimental research, this paper will try to highlight the limitations and possibilities of a more holistic approach to the study of technological change.

Session title: IS INVENTION THE MOTHER OF NECESSITY?

Organizer: Geoff Carver

Time: Thursday afternoon

Room: 155

Session abstract:

Sometimes it seems like all the recent developments in computer applications for archaeology are technology-driven: increasingly realistic graphics, higher resolution cameras and scanners, new uses for existing software, etc.

At its worst, this approach can result in technology for its own sake: cool innovations that might impress the “geeks” and “nerds,” but don’t seem to take the real needs of archaeologists into consideration.

This session aims to turn things around by discussing not just what we can do with computers in archaeology, but what we would like to do, if the technology should someday become available. We want to discuss why we use computers – our aims and goals – and why some of us feel threatened not just by the machines we use, but also by the jargon that surrounds them.

Ultimately, the goal is to begin addressing the apparent paradox that – although in some ways archaeologists escape the modern world by retreating into the past – we still study the past largely in terms of technological changes (stone, bronze, iron ages, etc.), without necessarily understanding the relationships between technology and modern archaeology.

Paper abstracts:

WHAT WILL BE FUNDED?

Harrison Eiteljorg

When an institution needs to raise money, funds will naturally be sought from sources deemed likely to respond favorably. Unfortunately, that often means that a request will reflect the desires of the potential donor(s) as much or more than the true needs of the institution. Those responsible for museums or universities will admit, often reluctantly, that it is much easier to raise money for a new wing or building than to renovate or upgrade an existing structure. Similarly, it has always been easier to raise money for an excavation than for publishing the results, curating the objects, or preserving the site. Donors are more likely to give for new buildings and excavations for the natural reason that the results are more visible and more impressive.

When archaeologists use new technologies, the same rules apply. That which is most impressive is the easiest thing to fund, whether or not it is most useful or important to the project. Whereas money may be

obtained for a 3D reconstruction with the latest hardware and software, it is much harder to raise smaller amounts if the results will be models that do not display some new techno-wizardry. It is easy to criticize the donors for this, but they are, after all, donors – whether individuals, institutions, or governments. We who must request their support can only acquiesce and seek help where it may be found – and be grateful for it.

It is possible, however, that we scholars are underestimating our audience of potential donors. I believe that, properly presented, scholarly uses of the technology will be funded. The key lies in the two words, "properly presented." Donors are rarely naive, but we too often assume that they are. So we offer the wizardry and the flash, rather than the substance, on the assumption that more substantial but less flashy technology will sell. It may be harder to sell more basic technologies, but that does not mean it is impossible.

WHY WAS THE ROMAN WATCHTOWER IN KONSTANZ SCANNED? WHAT WAS DONE WITH THE RESULT OF THE SCAN?

David Bibby

In summer 2003 at the very start of the excavations on the Münsterplatz in Konstanz/Bodensee (Cathedral Square, Constance/Lake Constance, SW Germany) the remains of a strongly built, polygonal late Roman watch tower and almost 30 m of defensive wall were uncovered. By late summer 2004 the remains, of extreme importance for the history of the city of Konstanz, had been uncovered to a depth of two meters and seen to be in an excellent state of preservation.

The question immediately arose as to the best recording method for these important objects and the decision was quickly made to scan them. This decision was positively influenced by the continuous development of the program "Aspect3D" by Arctron Ltd, which allows analytical work on the 3D model and enables a 3D stone-for-stone transformation of the scan results into the CAD-environment inhabited by the rest of the excavation recording.

This paper also briefly discusses further scientific, financial and display aspects and museum usage of the methods. One result of the scan is an animated reconstruction of the watchtower created for a special exhibition in the Konstanz branch of the Baden-Württemberg State Archaeological Museum. A reconstruction virtually built, as it were, on firm foundations.

ARCHAEOLOGICAL KNOWLEDGE REPRESENTATION IN THE DIGITAL ERA; OR: HOW WE KNOW WHAT WE KNOW IN ARCHAEOLOGY

Sorin Hermon

Traditional archaeological background research was mainly oriented towards examination of artefacts collections stored in deposits (either earlier published or not) or consultation of scientific publications in libraries, mainly focusing on presenting summaries and conclusions of the scientific work and documentation of the process/methodologies employed. In both cases there is an obvious lack of accessible information: while objects in deposits are obviously de-contextualized (often the archaeological site being destroyed, or at least the provenance layer of the artefacts under analysis), scientific papers present only relevant (in the author's opinion) primary data investigated. With the revolution of the Internet, access to data and information should have (in theory) solve this problematic (access to primary archaeological data).

However, given the fact that there are several archaeological documentation standards and there is yet to define a shared thesaurus of archaeological terms, searching the available digital information may lead to meagre results (without mentioning the willingness of researchers/institutions to make available primary archaeological data). The paper will present a methodology for solving some of the mentioned problems, on one hand by mapping existing formats into an internationally approved standard (CIDOC – CRM), without changing the original structure of the data, and on the other hand by allowing a throughout (internet based) search and management of conceptually different databases.

BEYOND THE PARAGONE: ADDRESSABILITY AND ACCESS

Maximilian Schich

If we take a look at archaeological research since the Renaissance, two phenomena strike the eye: On the one hand there is a more or less clear definition of the scientific process that delivers the necessary common ground for the community of researchers.

On the other hand there is a 'paragone', i.e. a fight concerning methods of representation and reconstruction, which is observable at all times. As a consequence old research seems less good than new research. This is especially paradoxical in Archaeology, as its objects of investigation are subject to continuous degeneration in the same time.

Recently the 'paragone' seems especially strong, as the common ground within the arena of computational research is not so well defined – yet(?). Consequently the scholarly discussion sometimes gets stuck in the trenches. Instead of talking about our research topic, we tend to discuss periphery technological issues – like 'relational vs. object oriented' or 'free vs. commercial'.

My paper will discuss the integration of very old, old, new and very new sources into one single research process, which is not dependent on any of the regular trenches of the 'paragone'. I will discuss the integration of yesterdays data (standards) into modern research including the avoidance of their distortion. In particular I will address the question of how to integrate a Renaissance Codex, modern geographical data, a 1940s card index, a relational database, and data from the Semantic Web into one investigation without distorting one of them. The main conclusion is that very few of the existing or proposed data standards are really needed to establish a common ground for further research – as long as there is addressability and (open) access.

DIGITIZATION OF ARCHAEOLOGY – IS IT WORTH THE TROUBLE?

Jon Holmen

The last 15 years the Unit for Digital Documentation at the University of Oslo has carried out several national digitizing and software development projects with the objectives to improve archaeological surveys in Norway. The list of projects comprises digital event based topographical archives (presented at CAA and EAA in 1999), XML-encoding of archaeological find catalogues, relational databases (presented at CAA 1996 and CAA 2004), the creation of large image databases for both objects as well as sites and a number of GIS based excavation projects.

Has this massive efforts been worth the trouble and has the users benefited? To answer these questions we are doing a survey among a group of Norwegian archaeologists. We asked them in what way this various databases and applications has influenced the way they work and if they think archaeology itself has benefited from this. The paper will present the result of this survey.

IS INVENTION THE MOTHER OF NECESSITY?

Geoff Carver

This presentation will try to respond to the rest of the papers presented in this session, as well as attempt to lead the way into a wider discussion. It will attempt to address the reasons for having this session in the first place, as a reaction against all the other technology-heavy sessions and conferences dealing with computers and archaeology that many archaeologists find alienating.

Session title: MOUNTAINS – LIMIT OF HUMAN ACTIVITY?

Organizers: Tomasz Kalicki, Institute of Geography and Spatial Organization, Polish Academy of Sciences, Cracow
Bartłomiej Sz. Szmoniewski, Institute of Archaeology and Ethnology, Polish Academy of Sciences, Cracow

Time: Thursday afternoon

Room: 203

Session abstract:

Mountains are characterized by specific features of natural environment and one of the most important are vertical zones of all components. Relief, climate, hydrological conditions, types of soils, vegetation cover

make difficulties for availability and human activity. Therefore the mountains were long time regard both as an aoenocumene and as limits between various settlement regions (archaeological cultures). New studies have proved these areas were penetrated and settled since Paleolithic until modern and natural resources of mountain geosystems were exploited. Even subnival and nival vertical zones were in a range of human activity because mountains function as Sacrum area i.e. votive finds from Peru.

Main topic of the session will be creation of economic conditions of the society since Paleolithic till now:

- analyse of role of mountain ranges (i.e. Carpathians, Alps, Ural) in settlement processes,
- trade roads across the mountains,
- human occupation and exploitation in different type of mountains (low, middle, high),
- distinguish types of mountain geosystems which have been preferred by various archaeological cultures,
- recognition of Sacrum places in Euro-Asiatic mountains.

Paper abstracts:

UPPER PALAEOLITHIC SITE AT ANDORNAKTÁLYA (BUKK MOUNTAIN, HUNGARY) IN THE LIGHT OF ARCHAEOLOGICAL, SEDIMENTOLOGICAL AND MICROMORPHOLOGICAL STUDIES

Anna Budek, Tomasz Kalicki, Institute of Geography and Spatial Organisation Polish Academy of Sciences, Cracow, Poland

Janusz K. Kozłowski, Institute of Archaeology, Jagiellonian University, Cracow, Poland

Zsolt Mester, Department of Prehistory and Ancient History, University of Miskolc, Miskolc, Hungary

Study area is located on southern slope of Bukk Mountain, on the left side of the Eger valley few kilometres downstream of Eger city. Three members in the profile can be distinguished: ploughing layer of present soil in the upper part (I), buried soil (II) and weathering cover of the Pannonian sandy loam (III) in the lower part.

The traces of ice wedges in the bottom of T11th profile indicated cold stage before soil formation. There were filled by secondary calcium carbonate during formation of the Interpleniglacial soil (30 180±330 BP). The micromorphological structures, especially biofeatures, channels, bow-like structures after earthworms proved of an existence of the Interpleniglacial pedogenesis. Yellow fine deposits filled channels were incorporated into older soil. They has not traces of an illuviation processes. The Interpleniglacial soil was covered with slope deposits during maximum of last glaciation (LGM). The ploughing disturbed natural structure of these uppermost members therefore can not be studied in detail.

Two archaeological levels has been registered, both attributed to the Aurignacian tradition. Lower archaeological layer occurs in the Interpleniglacial soil, representing relatively scarce lithic remains probably linked with Hernad (Barca) group of the Centraleuropean Aurignacian. Upper archaeological level appears above the Interpleniglacial soil in stratigraphic unit 1. This is a rich assemblage which can be attributed to the recent phase of the Aurignacian, with analogies to the Moravian and Lower Austrian Epiaurignacian; like these industries the assemblage from Andornaktalya shows common morpho-technological features with some "aurignacoid" Epigravettian (recently distinguished as Kasovian). All mentioned units are chronologically close to the LGM; in this chronological horizon it is interesting to note the relatively high ratio of imported transcarpathian flints (23%) used in the upper level of Andornaktalya.

ACROSS CRAGGY HORIZONS: THE REAL INCIDENCE OF MOUNTAIN RANGES IN THE ESTABLISHMENT OF TERRITORIES IN THE CANTABRIAN UPPER PALAEOLITHIC

Javier Ordoño, University of the Basque Country, Spain

When Karl W. Butzer tried on 1986 to determine models of spatial organization within the Upper Palaeolithic societies of the Cantabrian Region (Spain), he selected mountains as the strongest determinant in the delimitation of ancient territories, so that valleys constituted the ideal unit to explain settlement dynamics. This theory was not far from the one widespread in the core of the Prehistorical research until the last fifteen years.

Nowadays, we know that the real incidence of mountains in the delimitation of Cantabrian Upper Palaeolithic territories is not so outstanding. Recent research has showed us the existence of settlements in the south part of Cantabrian Range during certain periods of the UP, probably communicated with those of the north part by trade roads across the range. As well, and more commonly, there have been identified long-distance cultural relations between different valleys. These facts have been confirmed by many studies as the one of raw material supplying, industrial and faunal remains, the analysis of parallels in artistic or symbolic manifestations.

The present contribution will analyze the economic and cultural factors observed through the archaeological record that let us know the way in which mountains condition the setting of territories within the particular geographical context of Spanish Cantabrian Region.

THE LATE GLACIAL OCCUPATION OF THE ALPINE REGION OF NORTHEASTERN ITALY

Marco Peresani, Dipartimento delle Risorse Naturali e Culturali, Università di Ferrara
Nellie Phoca-Cosmetatou, Keble College, University of Oxford

The Alpine region of Northeastern Italy has yielded a large number of Late Upper Palaeolithic sites, as a result of intensive survey and excavation over thirty years. These include rock-shelter and open air sites, ranging in altitude from 100m to 1500m. Following the depopulation of the area during the Last Glacial Maximum (c. 25,000- 18,000 BP), due to the extended snow cover and displacement of tree-line, they bear testimony to the considerable penetration of the mountainous zone by people during the Alpine deglaciation and the late-glacial interstadial as a consequence of the submersion of the Great Adriatic Plain.

Mountains may test the limits of human perseverance, but they provide great variability in ecozones and resources across short distances, if traversed in altitudinal terms. It is the effect of these conditions for past mobility and resource exploitation that will be explored through the study of lithic and faunal remains, and settlement patterns, from various sites. The timing and pattern of human infiltration and the effect of climatic fluctuations on resource availability and on people's past movements will be discussed.

It will be proposed that during deglaciation not only do we witness a large scale movement into the mountains, as indicated by the larger number of sites discovered, but a settlement system which involved increased mobility, greater variability in on-site activities coupled with a less structured and patterned use of the landscape.

USE OF CAVES IN THE MOUNTAINS: A VIEW FROM THE SHEEPFOLD

Sinisa Radović, S. Forenbaher, D. Brajković, J. Mauch Lenardić, V. Malez, P. T. Miracle
Institute for Quaternary Paleontology and Geology, Croatian Academy of Sciences and Arts

Učka mountain (1401 m a.s.l.) stands out between the interior of the Istrian peninsula and both its North-Eastern continental hinterland and the Adriatic coast, and at least since the Roman period this clearly defined frontier served as an administrative border. Recent work by the Pupićina Cave Project (1995–2002) has extended our understanding of the human use of this mountain back into the Late Glacial period. This paper presents a case study of Vela Cave, a deeply stratified rockshelter site, located in the immediate vicinity of Pupićina Cave, the main focus of the project (Miracle and Forenbaher 2005, 2006). Vela Cave was periodically visited ever since the Late Pleistocene, occupation becoming more intensive in more recent prehistoric periods. The recovered evidence suggests that Vela Cave was a "satellite site" of Pupićina, and that it was used by Neolithic and Bronze Age herders primarily as a pen for keeping herds of sheep and goats. This case study provides one window onto the changing human use of mountain landscapes in the Northern Adriatic region.

CARPATHIAN NEOLITHIC AND THE SALT

Andrzej Pelisiak, Institute of Archaeology Rzeszów University, Poland

This paper contains preliminary results of research on the Neolithic settlements on the area of the Carpathians and North Carpathians Forelands (south-east Poland, north-west Ukraine). During the last two

decades an archaeological, palynological and geomorphological research were carried out on this area. Systematic archaeological surface surveys resulted in discoveries of more than 4 thousand Neolithic and Early Bronze Age sites: settlements, camps, stone processing sites, single finds of stone (including flint) artefacts and cemetery (mostly barrows and groups of barrows). Several sites were excavated. First palynological analysis of organic deposits from north Carpathians were published already 40 years ago (eg. palynological diagram from Tarnawa Wyzna). During the last years several new palynological diagrams from SE Poland and NW Ukraine were analysed and published. Archaeological data and results of palynological analysis as well as geomorphological information are a strong base for reconstruction of settlement preferences, study on various aspects of human activity (e.g. economy), interactions between Neolithic man and natural environment, and anthropogenic changes of environment first of all of natural vegetation.

Results of archaeological studies suggest that the subsistence strategies of the Late Neolithic people in SE Poland and NW Ukraine have been based, to large extent, on breeding. Palynological studies confirm it. Livestock (cattle and sheep) needs a salt. Results of spatial analysis of Funnel Beaker and Corded Ware cultures sites and analysis of settlements in relation to the natural environment on the area of North Carpathians and North Carpathians Forelands suggests that the salt and salt water springs may have attracted a special attention of communities of these cultures.

SALT SPRINGS IN MOLDAVIAN PRE-CARPATHIAN PREHISTORIC LIFE: ANALYSES AND SPATIAL MODELS

Olivier Weller¹, Robin Brigand, Laure Nuninger, Gheorghe Dumitroaia
¹CNRS - UMR 6565 Laboratoire de Chrono-Ecologie

This French-Romanian project, established at the end of 2003, aims to study the dynamics and interactions between human settlements and occurrence of salt springs. The Oriental Carpathians in Moldavia offers a primary research site for studying the continued exploitations of salt springs from Neolithic times to the present day. In this paper, the focus is on the nature of the prehistoric occupation –from Neolithic to Chalcolithic (6000-3500 BC), in the region of Neamt.

Aiming at understanding the social impact of salt as a resource on environmental changes, our approach includes social science perspectives (archaeology and ethnology) and natural science perspectives (geoarchaeology, palinology and anthracology). Choosing spatial performance, such as GIS, as an analytical tool, involves doing fieldwork and multiple GPS readings. Our approach benefits from satellite images and a high resolution digital model of the terrain (25 m) conceptualised by our Slovenian colleagues (Centre for Spatial Studies – ZRC). Refining the inventory of archaeological sites, notably our mapping of salt fountains, has enabled us to establish archaeological geo-referential indicators (255 sites) and mineral springs (75 which 54 are salty).

Our application of a multi-perspective analytical model has enabled us to approach the spatial dynamism of prehistoric human settlements: mapping the fields of vision visible from the point of view of the archaeological sites allows us to understand the dynamics of these settlements. Based on numerous examples, notably within the chronological framework of the Cucuteni culture (4600-3500 BC) within the Chalcolithic period, we underline the voluntary control of the territories at the foot of the mountains. Before this period, the Neolithic archaeological sites had inscribed the main lines that were further developed during the Chalcolithic demographic development. It is this latter development that is used to explain the powerful link between the hierarchical human settlements and the salt springs.

SETTLEMENT OF CRETE MOUNTAINS IN BRONZE AGE AND THE PHENOMENON OF FORTIFIED SITES

Tomas Alusik, Municipality of Prague; Culture, Monument Care and Tourism Department, Prague, Czech Republic

Crete is very mountainous island with four main mountain systems. Since the beginning of human occupation here the people settled and exploited mountains and high-situated places (often in almost inaccessible locations). There are three types of sites with traces of any kind of human activity - 1) sites with traces of habitation (defensible and/or fortified sites), 2) sites with traces of economy/agriculture/exploitation (farmsteads, small sites or structures for shepherds and wood exploitation)

and 3) sites with traces of religious activity (sacred caves, enclosures and so-called peak sanctuaries). Some examples of these sites will be presented.

During my PhD-studies I collected more than 200 sites with more or less probable examples of defensive architecture; most of them is situated in the mountains, often in locations that were very difficult to access. The focus of my paper is the following of the phenomenon of "highland" fortified sites/sites with defensive architecture. The "colonization" and settlement of Cretan mountains due to defensive reasons dates back to the Final Neolithic/Early Bronze (Minoan) Age and is continuous throughout the whole Bronze Age - many sites were settled repeatedly in dangerous or crucial periods of island's history. In the end, one very interesting fact will be shown - defensive function of Cretan prehistoric sites situated in the mountains is often doubled: many sites or structures served for religious (peak sanctuaries) and/or economic/exploitation (e.g. so-called guard houses) purposes at the same time.

Round table title: "KEEP WALKING ON THE WILD SIDE". DARK PATHS IN EUROPEAN ARCHAEOLOGY: POINT OUT AND THERAPY

Organizer: Pietro Villari, Istituto Italiano di Archeologia Sperimentale, Genoa, Italy

Time: Thursday afternoon

Room: 156

Round table abstract:

The aims of this session are to point out the impact of the so called "white collars crimes" on the European archaeological heritage and to propose solutions.

Destruction of relevant archaeological sites or evidences during excavations carried out by not well trained archaeologists and criminal associations of public officers with purposes of corruption and fraud to the European Community, are between the topics that will be debated. Magistrates, lawyers and police officers are invited to join to the group.

The session is also dedicate to the set-up of an European "first aid" team of archaeologists, a kind of archaeological task force composed of specialists that can be at the disposal of the European Community Authorities in any case of archaeological disasters, caused by natural or human events.

IS THE EUROPEAN COMMUNITY PREPARED TO FACE ARCHAEOLOGICAL DISASASTERS ?

Pietro Villari

The report is dedicated to point out problems arising in case of archaeological disasters, caused by natural or human events. A table of possible causes and effects is also analyzed. On the grounds of the research, it is manifest how the European Community is not yet prepared to face these kinds of traumatic events often affecting the archaeological heritage. The institution of European Archaeological Rescue Squads, composed by trained specialists, is the proposed solution. The project is to set up a squad in strategic E.U. areas, subordinated to a Central Bureau directly under the European Parliament commands.

PHOENIX: ARCHAEOLOGY AND DISABILITY IN LOCRI EPIZEFIRI (CALABRIA, ITALY)

Domenico Falcone, Francesca Miliano

The objective of the Phoenix Project (University of Messina) is to realize an experimental program of supportability for the valorization and fruition of the archaeological patrimony of Locri Epizefiri (Calabria, Italy). It would like to see "everybody" as protagonists, included those categories of persons who more than

others need an approach "dedicated" to the fall of architectural, social, cultural, communicative, juridical and economic barriers.

The aim is to reflect on the possibility to assign a different value in the interaction between person and archaeology -rich of sensory spur- able to reveal research guiding. This in according to a format that will be taken advantage from innovative technologies (also autonomously elaborated from the group of research) flexible to several types of requirements. At practical level, thread conductor of the program is the realization of an tourist-archaeological itinerary, compatible with the environment through the location of some operating traces prepared by a specific research group. These last ones would represent the base for the elaboration, the interpretation and the devising of social, environmental, cultural and economic pointers. This base to be able to detect a criterion of local supportability of an area that for many time has known visibility only for report facts, and that instead of it is a casket that encloses a millenarian patrimony of natural and cultural assets all still to discover and to value.

ARCHAEOLOGISTS AND THEIR SOCIAL RESPONSIBILITY: NOTES ON ETHICS AND VALUES

Karolina Ploska, Cardiff University, UK

Archaeological heritage is a vital part of the European identity. It is also a non-renewable resource under the intense threat caused by the expansion of roads, housing and industrial building, degradation of the environment, massive tourism and looting. Some recent cases of controversial development-driven excavations, rushed investment projects, questionable 'naïve' reconstructions or involvement of some corrupt archaeologists in shadowy business deals demonstrate that the danger may come from yet another – the least expected – source.

Experience proves that even the most modern and restrictive legal framework and policies do not work without the public acceptance and support. Heritage regulations and export bans can always be evaded, planning policies bent, law enforcement authorities outsmarted. Therefore, archaeologists have a special role to play in the protection of the cultural heritage. Monuments and sites, antiquities and major discoveries attract general attention. So do the archaeologists themselves. Being under the public scrutiny they are perceived not only as professional consultants and providers of scientific data but above all as generators of values. If we are to succeed in our struggle to halt the increasing destruction of the cultural heritage, as archaeologists we must not only use our authority as experts and the trust placed on us by society, but also accept the responsibility of role models.

This paper deals with the ethics and values underpinning the archaeological research and approaches to the archaeological heritage management. It will examine the ways in which archeologists can improve their social authority and public status and help to decrease threats to the European cultural property.

Archaeologist and lawyer, for a couple of years worked both academically and professionally in the fields of archaeology, law and conservation. In 2006 commenced PhD studies at Cardiff University carrying out a comparative research on the protection and preservation of the archaeological heritage, conservation policies and methods implemented in legal systems and archaeological practise of various European countries (e.g. regulations related to the protection of sites endangered by the advancing development, illicit excavations or cultural landscape).

My research project aims to present main threats to the European cultural heritage, to analyse differences between national heritage systems, their strengths and weaknesses – and finally – to indicate the most effective solutions worth applying on a larger, pan-European scale.

Session title: ROCK-ART AS SOCIAL STATEMENTS

Organizers: George Nash, Department of Archaeology and Anthropology, University of Bristol & SLR Consulting, Shrewsbury, England

Time: Thursday afternoon

Room: 213

Session abstract:

There has been a long held view that prehistoric rock-art is associated with symbolic and ritual practices, sometimes linked to death, burial and ritual. However, there are many thousands of sites that are located in

open landscapes that portray little evidence of these activities. The subject matter from many of the rock-art core areas of Europe usually display mundane activities such as gender relations, herding, hunting and warfare. Based on what is portrayed can these activities constitute symbolic and ritual meaning?

In this session, participants will describe, discuss and argue various aspects of this enormous enigmatic assemblage. It is clear from the anthropological record that the *mundane* and *symbolic* are indelibly linked. Therefore, can the same case be put forward for rock-art that was produced by prehistoric societies?

Following the session an open forum will take the arguments part forward into what should be a healthy and worthwhile debate.

Paper abstracts:

TOWARDS A PHILOSOPHY OF DWELLING: A COMPARATIVE ANALYSIS BETWEEN TIMBER FRAMED TRADITIONS OF THE IRON AGE AND THE MEDIEVAL PERIODS

George Nash, Department of Archaeology and Anthropology, University of Bristol, England

This paper will focus on new research on rock-art within the Valcamonica, Lombardy in Northern Italy. The Valcamonica is an N-S oriented valley forming part of the Italian Alps and boasts between 140,000 and 300,000 engravings; of these 1,570 images are interpreted as buildings or structures. These buildings are usually associated with field systems and enclosures, what Fossati and Arcà refer to as topographic imagery (2002 & 2004).

The timber-framed buildings depicted on open air panels offer a unique insight to economic, political and social organisation during the Iron Age. The use of these buildings though, is not clear and interpretation has ranged from grain stores, dwellings to temples (e.g. Aniti 1994). However, their location on the rock-art panel, the way they were carved and the detail of each structure gives the specialist an insight to construction methodology, scale and social and political organisation. Despite their age, there appears to be some parallels with the timber-framed traditions in medieval Europe, in particular England. This unique and well-represented and documented archaeological resource potentially offers further insight to the prehistoric timber-framed traditions that are represented on the rock canvases in the Valcamonica. It would appear that both data sets are working from a series of tried and tested architectural blueprints. Despite this however, no two carved images are the same, suggesting that a series of local and district traditions are in place.

This paper will assess the common links between the two traditions and suggest that the social and political infrastructure around the Valcamonica was indeed complex and that certain philosophical rules concerning building methodology and carpentry detail were strictly observed. Further, I will compare these images with high status buildings in medieval England and suggest that a hierarchical system of building was present during the Iron Age and in the Valcamonica.

References:

- ANATI, E. 1994. *Valcamonica Rock Art: A New History for Europe*. (Studi Camuni Volume XIII). Capo di Ponte (BS), Edizioni del Centro.
- ARCÀ, A. 2004. The topographic engravings of Alpine rock-art: fields, settlements, and agricultural landscapes. In CHIPPINDALE, C. & NASH, G. (eds.) *The Figured Landscapes of Rock-Art: Looking at Pictures in Place*, Cambridge, Cambridge University Press. 318-350.
- FOSSATI, A. 2002. Landscape representations on boulders and menhirs in the Valcamonica-Valtellina area, Alpine Italy. In NASH, G. & CHIPPINDALE, C. (eds.) *European Landscapes of Rock-Art*, London, Routledge. 93-115.

A REASSESSMENT OF THE HUNTER'S PERSPECTIVE OF ROCK-ART: ROCK-ART PAINTINGS IN CENTRAL NORWAY

May-Tove Smiseth, Norges Teknisk-Naturvitenskapelige Universitet (NTNU), Norway

From recent discussions on landscape and rock-art, I wish to shed light on an aspect that I feel has been missing from this debate. I have no intention on omitting the ethnic groups of both Norway or rest of the world, but instead I will focus on the local hunters that still use this landscape to hunt the animals depicted on rock-art in these certain areas. I am interested in understanding how they perceive their landscape and could perception be related to hunting art in northern Scandinavia. The paintings discussed are situated on the archipelago of Tingvoll in the county of Møre and Romsdal, on the west coast of Norway.

MINERALS IN PIGMENTS AND THEIR IMPLICATIONS TO THE ORIGIN AND CONSERVATION OF SAN ROCK-ART (SOUTH AFRICA)

Joselito M. Arocena, Kevin Hall, Ian Meiklejohn, Canada Research Chair-Soil and Environmental Sciences, University of Northern British Columbia, Prince George, BC, Canada

Minerals such as iron oxides and clays are principal components of pigments because of their wide range of colours and high tinting strength. In San rock-art of southern Africa, recent studies recognise the role of minerals in regulating the thermal and moisture transfer in pigments and hence, its influence in chemical weathering of the rock-art. The influence of minerals in thermal and other properties of pigments emphasise the need for information on the mineral composition of pigments. In this study, we present new information on the mineral composition of pigments from samples of San rock-art. Samples of pigments were collected from the 'Main Caves at Giants Castle Nature Reserve and Battle Cave at Injisuthi Nature Reserve in the uKhahlamba-Drakensberg Park region of South Africa. We used X-ray diffraction and scanning electron microscopic analyses to determine the mineral composition and micromorphology of the pigment. Results showed that the major minerals in pigments in San rock-art are whewellite, quartz, gypsum, hematite and various aluminosilicate minerals. The red hue in the pigment is due to the presence of hematite; gypsum and clays provide the white coloration in pigments while black might be due to organic or amorphous inorganic matter in the pigment. We believe that whewellite was extracted from plant sap (e.g. aloe Vera) and added into the pigment, perhaps as binder, extender or whitener. Whewellite was also present in cracks that developed in pigments and indicated an earlier stage of deterioration of the rock-art. We propose that conservationists should seriously evaluate any change in the environmental conditions at the art site (e.g., removal of vegetation to improve touristic view) because such changes might significantly increase thermal fluctuations in pigments and promote crack formation and hence the decay of the San rock-art.

THE ROCK-ART - SETTLEMENT RELATIONS: ARTIC ROCK-ART ON AVERØY, MID NORWAY, IN LIGHT OF SURROUNDING SETTLEMENTS

Thea Sørensen, Norges Teknisk-Naturvitenskapelige Universitet (NTNU), Norway

The Arctic rock-art of Scandinavia is seldom interpreted in relation to settlement, despite the fact that artefacts and traces of Stone Age settlements often occur in the same environments. This paper is an attempt to approach such an interpretation. A survey of late stone age materials surrounding two Arctic rock-art sites on Averøy, mid-Norway sheds light on the relationship between rock-art, landscapes and hunter-gatherer patterns of settlement. I suggest that a complex grammar is in operation in which settlement and rock-art are indelibly linked.

THE GRANDIOSE, THE MUNDANE AND THE SACRED: IMAGERY IN THE ROCK-ENGRAVINGS OF MONT BEGO IN THE HIGH FRENCH ALPS

Christopher Chippindale, Museum of Archaeology & Anthropology, University of Cambridge, England

Many thousand rock-engravings, largely of Bronze Age date, scatter the brightly coloured schist rocks of Mont Bego, in the high Alps on the France-Italy border. Their repertoire is repetitive and restricted: daggers and sometimes halberds, oxen sometimes with the ploughs they draw; geometric forms which may be some kind of topographic record of farmed land; other geometric forms whose representation we do not grasp. Of the rest of Bronze Age life - nothing! So Mont Bego clearly shows the importance of metal weapons, of oxen, of the things which oxen do - in a pattern which repeats so often in later European prehistory it is easy to forget how singular and selective it is.

Aboriginal Australia, although a hunter-gatherer rather than a farming and metal-using society, has long and rightly been used as a point of reference and exemplar found relevant to archaic Europe. It can helpfully be used again. Immigrant Europeans, as they overwhelmed the indigenous Australian people, came with the common western framework of the mundane and functional versus the religious and sacred. One of the many factors creating the gaps in understanding between the two cultures was the lack of this distinction in Aboriginal society, where the whole landscape and everything on it could be seen as sacred, where there

were «Dreamings» - origin places - for tiresome nuisances like mosquitoes, and for feared and poisonous brown snakes, alongside the more 'reasonable' origin-places for fire and water.

The last decades of research into the Neolithic, especially in Britain and the English-language literature, have developed the notions that the non-mundane and the non-functional are the key elements to Neolithic society and to our understanding of Neolithic society today. The time has come to see the more general pattern, that utilitarian ideas are not the central key to understanding later prehistoric European societies.

BEYOND LEVANTINE ROCK-ART SCENES: NARRATIVE EXPRESSIONS OR SYMBOLIC MANIFESTATIONS?

Esther López-Montalvo, Departament de Prehistòria i Arqueologia, Universitat de València, Spain

One of the traditional arguments concerning the chronology of the paintings of the Spanish Levant has been the thematic content of the scenes. The economic and social scenes that are produced appear to reflect idiosyncratic changes to local customs and manners. However, the variety of themes represented does not appear to be constant, therefore expressing regional change over time. The consideration of these representations as purely narrative or symbolic mechanisms continues to be debated. Consensus amongst scholars suggests that these paintings form part of the complex process of Neolithisation that swept across the Iberian Peninsula.

In this paper, we will discuss the analysis from a series of thematic scenes in eastern Spain. We consider the stylistic variables that will indicate elements of change. These changes arguably show probable breaks within a long artistic tradition. Broadly speaking the changes in theme may also reflect deeper and meaningful changes in the archaeological record of eastern Spain.

HORSES AND PICTURES OF HORSES: A STUDY OF THE HORSE MOTIFS IN BRONZE AGE ROCK-ART IN CENTRAL NORWAY

Yvonne Olsen, Norges Teknisk-Naturvitenskapelige Universitet (NTNU), Norway

In this paper I wish to discuss horse representations of Bronze Age rock-art, in particular their role in as symbols of fertility and in warfare. In the past representative rock-art such as warriors, boat and horses have been interpreted as strictly functional. However, it is known that during the Bronze Age (if not earlier) horses are domesticated and become important symbols of power and based on the rock-art are used for a variety of purposes such as war and display. Their potency is certainly expressed on the rock-art. However, beyond these functions, horses have never been considered symbols of fertility. This paper will explore the underlying ideology of these enigmatic beasts and suggest that their function in terms of rock-art is multi-faceted.

Session title: CONSUMING FLESH: CANNIBALISM, CONTEXT AND MEANING

Organizers: Anthony Harding, University of Exeter
Karina Croucher, University of Liverpool

Time: Thursday afternoon

Room: 223

Session abstract:

Diet and consumption are key aspects of archaeological investigation. However, one aspect of consumption is repeatedly viewed as 'taboo' – cannibalism. Possibilities of the consumption of human flesh

are approached with scepticism – often regarded as sensationalist and unjustifiable. However, our modern conceptions of the practice should not exclude the feasibility of cannibalism in the past and its legitimate study in the present. In this session examples of archaeological evidence and the identification of cannibalism are discussed, alongside the consideration of social contexts and possible meanings of the practice.

Paper abstracts:

CANNIBALISM: CHANGING PARADIGMS

Timothy Taylor, University of Bradford, UK

There has been a recent increase in both the amount of archaeological evidence congruent with cannibalism and in the number of scholars willing to make the inference that some form of cannibalism has taken place on the basis of such evidence. This marks a shift in the 'dimensions of the plausible', the reasons for which are complex. This paper examines contrasting concepts of parsimony in the three paradigmatic areas first defined by Masterman, construct, metaphysical, and sociological. I will try to show that it is the latter that has provided an ethnocentric and modernist brake on various kinds of cannibalism interpretation for prehistoric cultures. Reasons for a continuing shift in the sociological paradigm are examined in the light of empirical evidence from the author's own on-going multi-period cave excavations.

FRAGMENTATION OF THE BODY: COMESTIBLES, COMPOST, OR CUSTOMARY RITE?

Christopher J. Knüsel, University of Bradford
Alan K. Outram, University of Exeter, UK

Although seen as an abject act in many societies today, there is little doubt that cannibalism remained an accepted practice in the recent and ethnohistoric past. It has been attested, for example, in life-threatening circumstances, as a part of mortuary rites, and in the denigration of the living and the deceased. From the patterning and appearance of often heavily fragmented remains, cannibalism has also been identified in the archaeological record in widely dispersed places and times. Unravelling the taphonomic history of heavily fragmented bone assemblages can be an extremely difficult task due to equifinality- that is, when different processes produce apparently similar patterns. In cases where human remains have become heavily fragmented and mixed with apparently similarly fragmented animal remains, interpretations could range widely from suspected cases of cannibalism, through to unusual or non-normative burial, to post-depositional disturbance and natural processes. Robust protocols, drawing on both zooarchaeological and bio-anthropological approaches, and with due consideration of the archaeological context in which such remains occur, are essential in order to assess and interpret such assemblages, as well as to begin to comprehend their cultural, social, and political significance. This contribution examines an example of this approach applied to the Late Bronze Age site of Velim Skalka, Czech Republic.

CANNIBALISM IN BRONZE AGE EUROPE?

Anthony Harding, University of Exeter

Cannibalism has been claimed in a number of instances in Bronze Age Europe, as well as in other periods. Among the sites involved is Velim, Czech Republic, the subject of detailed consideration by Knüsel and Outram, who have made it clear that human bone was treated in different ways from animal, and, therefore, not likely to have been the object of cannibalism. In this paper I will look at some other claimed instances from around Europe and suggest a model of ritualised behaviour that provides a more satisfactory solution to the problem.

THE POWER OF THE OUTSIDER: CANNIBALS AND WITCHES

Nick Thorpe, University of Winchester

Much of the debate about cannibalism has related to attempts to establish whether or not cannibalism was an established cultural practice in particular societies. Less attention has been given to the power seen as residing in human flesh, seen for example in the demand in post-medieval Europe for the bodily substances of those executed. Human flesh may have been seen as doubly powerful when its consumption was a deliberate transgression of social accepted practice either between or within societies. Historical examples of cannibalism from the classical world to Africa to the southwest United States show the power this was believed to provide, and the frequent association between cannibalism and witches, because of the superhuman power the consumption of other people this was believed to provide to those seen as placing themselves beyond and outside society. Should we expect to find evidence for such practices in prehistoric Europe?

CONSUMPTION AND THE DEATH PIT

Stuart Campbell, University of Manchester and Karina Croucher, University of Liverpool

The remains of at least 37 people, disarticulated and further fragmented, were recovered from the 'Death Pit' at Domuztepe, a site dating to the 6th Millennium BC in SE Anatolia. With Domuztepe as a case-study, this paper discusses the social implications of the practice of consumption of the deceased in the mortuary arena, asking what the practice can reveal about social relationships, and attitudes to food, the body, and identities. Emphasis is placed on the extent to which the consumption of human remains can and should be placed within a wider context of past social practices to understand its cultural significance.

SEVERED HEADS AND BROKEN POTS

Sarah Ralph, Cambridge University, Network Archaeology Ltd

The magical and social use of heads is widespread, both in space and time. Both literary and archaeological evidence would suggest that the human head was held in high regard in Iron Age society. The importance placed upon the head is detailed in classical literary descriptions of headhunting among the 'Celts'. During the Iron Age there is a profusion of skeletal evidence for the special treatment of the head, often in the context of complex post-mortem treatments of the body. In some instances, these deposits are associated with the remains of 'decapitated' amphorae. There is a fundamental and close connection between pottery vessels and the human body. Pots are vehicles, which provide two of the essential requirements of human life, food and water, and these are in turn introduced into the body itself. The breaking of amphora by 'severing', witnessed by the discovery of corked necks and the impacts from a blade, evokes a symbolic decapitation ritual of the vessel. In certain sanctuaries, neck bones and skulls from a decapitated body were found in association with a decapitated amphora. There are frequent associations of severed amphorae necks and these particular parts of animals and humans. In some cases humans and amphorae were given the same form of decapitation.

Embodied material culture is a special class of material objects produced specifically for immediate destruction, but destruction through consumption by ingestion into the human body. This paper considers the importance of the head in Iron Age Europe (800 BC to AD 100), the contexts in which they appear and their association with feasting paraphernalia, in order to understand the representation of the body, and how it was approached and manipulated.

DISMEMBERING AND REMEMBERING: CANNIBALISM AND THE PLAY OF SYMBOLS IN CONSTRUCTIONS OF SOCIAL MEMORY IN LOWLAND SOUTH AMERICA

Beth A. Conklin, Vanderbilt University

As the most direct representation of an individual life and identity, the corpse and images of corpses are prime venues to convey cultural messages about death and new relations with the deceased. In twentieth

century Amazonia, the shock of watching a loved one's body be dismembered and transformed (by burning, rotting, cooking or eating) was a powerful element in mortuary rituals aimed at shaping mourners' subjective responses and distancing the living from the dead. This paper examines how native Amazonian funerary cannibalism mobilized overlapping symbolic domains related to kinship, food, hunting and human relations with animals to construct new, radically transformed memory-relations with the dead.

CANNIBALISM IN PERUVIAN PREHISTORY

Erica Hill, University of Alaska Southeast

Both exocannibalism and endocannibalism have been documented ethnographically in the Amazon region of South America. Knowledge of this evidence has influenced reconstructions of ritual behavior in Peruvian prehistory, including that of the complex societies of Moche and Nasca. Iconographic and chemical evidence from Moche is suggestive of human blood consumption; however, the presence of cannibalism in the Amazon has perhaps unduly led researchers to postulate cannibalism as an explanation for archaeological patterns when other, less sensational explanations exist. Here I evaluate the data for cannibalism among the Moche of the Peruvian North Coast and suggest alternative explanations for the evidence.



FRIDAY



**Session title: FIELDWORK IN AN INTERPRETIVE WORLD:
RECONSIDERING THE ON-SITE RELATIONSHIPS
BETWEEN SUBJECT, OBJECT, THEORY AND PRACTICE**

Organizers: Oliver Harris, Cara Jones, CFA Archaeology Ltd, UK
Phil Richardson, University of Newcastle, UK

Time: Friday morning

Room: 136

Session abstract:

This session is concerned with archaeological practice: more than this, we are concerned with how it is we come to know what we know. What is at issue is the relationship between what we call fieldwork and the interpretative strategies we deploy in order to understand what it is we have 'found'. Traditionally archaeological excavation has been perceived as simply purely a process of objectively recording the nature and extent of archaeological layers and deposits, simply a means of data collection, where the material uncovered and the record produced by individual excavators is seen as being equivalent. Recent critiques have suggested that post-processual archaeology has had little impact on data acquisition and thus, the concept of an objective past, being 'out there' to be found, still underlies our methodologies when we enter the field. Perhaps this should not be too surprising, a fundamental element of modernity, upon which the archaeological method was based, has been to construct representational systems that attempt to obscure or even hide the subjectivity of physical encounters. By thrusting the observer and embodied nature of knowledge and practice into the background a false objectivity has been constructed, which creates and enforces the subject versus object dichotomy. The physically embodied practice of excavation becomes increasingly abstracted and transformed into both text and distanced, visually acquired, knowledge. As John Barrett has argued the relationship between these understandings is considered to be a matter of method at one level, and yet of interpretation at another; the former of these presumed to be secure, the latter less so. Digging, recording and writing are some of the practices that interweave between the scales of analysis we examine, yet their relationships are rarely considered critically. Modernity too rests on the construction of multiple methodologies which disguise their own point of origin. By exploring archaeological practice it is possible to consider the construction of archaeological method and how this contributes to the ontological security of both the discipline and modernity at large. In this sense traditional techniques can be seen as a way of rendering a site familiar by transforming it into something we are used to encountering, such as a trench, rather than unfamiliar material remains of the past. This is the default position which defers our need to confront this unfamiliarity, until, or perhaps beyond, the point of interpretation. Work on site informs the end product, it is this process of talking about the features of the site whilst on the site, social interaction, reflexivity and multivocality that enable us to structure and empower our interpretation of the past. Is it the 'performance' of the dig that is perhaps more important than the end product, the standardized site report? While such discussions have taken place within archaeological theory, we are yet to examine fully how this may work and manifest itself when we enter the field. Do we then have a situation where post-processual archaeology has left everything related to field practice in place or at least has done little to deconstruct our strategies or the concepts used to express them? If fieldwork is performed by people who, acknowledged or not, have very different approaches to the past, how does this limit what we can say? It is curious that many interpretive accounts have drawn on excavation reports written from very different theoretical positions, without considering how this has dramatically altered the written archaeology they are confronted with.

This session welcomes papers that attempt to consider how the practice of fieldwork itself dictates the questions that can be asked of the material recovered, and limits and controls the interpretations that can be made. Speakers are also encouraged to consider how other forms of digging, recording and presenting archaeology can allow a truly multivocal approach to emerge. We also recognise that the varying concerns of processual and interpretive archaeologies are local in their dimension, yet archaeology is a global enterprise. Thus papers would also be welcome from outside the Anglo-American sphere that may offer other perspectives on the relationship between field practice and interpretation.

Paper abstracts:

AN ARCHAEOLOGY OF MANY STEPS

Marianne Lönn, National Board of Antiquities, Sweden

This paper discusses how to make the gap between field-work and theoretical approaches in general a bit smaller. The basis is construction archaeology and focus is laid on analyzing field-work and interpretations in themselves. This means that I do not start with a theoretical approach and ask what material I can use to answer my questions. Instead I start with the material, the working process and special conditions of field-work, the principle process of growth of knowledge and necessity of experience and ask what steps are necessary to take – if any – in order to reach a point where theoretical discussions are most useful. It is my opinion that understanding field-work principally is the key to combining archaeological material and theory.

CLOSE READING REPORTS - THE CASE OF GLASINAC

Staša Babić, Dept. of Archaeology, Faculty of Philosophy, University of Belgrade, Belgrade, Serbia

The intention of the proposed contribution is to elaborate on the remark in the session abstract, that “many interpretive accounts have drawn on excavation reports written from very different theoretical positions”. In the process of reconsidering some of the givens that we work with, such as *cultural groups*, we need to get back to the initial presentation of the pertinent material, more often than not excavated and published a couple of decades ago. These accounts are of course laden with the theoretical implications, and the reconstruction of the original context involves a kind of *close reading* of the reports, bearing in mind their linguistic, semantic, structural and cultural idiosyncrasies. The particular case will be investigated of the so-called Glasinac group, one of the major themes of the Central Balkan archaeology, defined primarily on the grounds of the excavations undertaken by the end of the 19th century.

STEPPING INTO COMFORTABLE OLD SHOES: ‘ARCHAEOLOGICAL COMFORTABILITY’

Phil Richardson, Cara Jones

This paper takes as its starting point a comment made by Baines and Brophy concerning the ways in which archaeologists in the field render the unfamiliar deposits we encounter familiar or ‘comfortable’ through the very methods and practices they use. In a sense this concerns the epistemology of archaeological knowledge. It is our contention that these issues can be explored further and that this ‘comfortability’ is prevalent throughout all aspects of archaeological investigation. Here comfortable is defined as:

- Free from vexation or doubt (*comfortable* assumptions)
- Free from stress or tension (a *comfortable* routine)
- Applies to anything that encourages serenity, well-being, or complacency as well as physical ease (started feeling *comfortable* in our new surroundings)

All three of these definitions are a regular occurrence in the archaeological process as we attempt to fit the evidence of past into a world we can understand. Whether that be classifying a monument or making sense of a feature in the field. It seems that we only tell each other what we already know, or at least what we believe we know i.e. you often find artefacts in ditch terminals but what is rarely considered is the epistemological basis of this ‘knowledge’. Does this reflect any kind of past reality or is it merely a case that since archaeologists believe this more care is taken excavating terminals than other parts of ditches? Thus, by rendering the site, the feature, indeed the past ‘comfortable’ do we restrict our narratives to concerns that we feel ‘comfortable’ with or confident in? Is it a case then that this ‘comfortability’ is a product of our discourse where the stories we construct about the past can only be modern? Perhaps this is why the archaeologists of any ideological flavour, processual, interpretative etc rarely consider the use of excavation reports as the basis for their own interests as problematic.

HOW TO ARCHAEOLOGIZE WITH A HAMMER

Geoff Carver, University at Buffalo

This paper adopts a multi-cultural, multi-disciplinary stance to consider the complex web of relationships between archaeological theory, excavation methodologies, and the technologies available to document our excavations. The starting point is the observation that archaeology has continued to use a static, geological model of stratigraphy largely because traditional documentation methods were not capable of recording evidence for post-depositional transformations of the archaeological assemblage. These practices were justified - in turn - by a "creation myth" that strongly linked archaeology's origins as a science to geology (largely in the person of Charles Lyell), and an ideological framework which tends to discourage close examination of the problems of data collection (field methodologies).

The problems of overcoming the technological and social obstacles to recording an alternative - pedological - stratigraphy are considered, as are the overall aims of doing archaeology of archaeology.

WALKING THE LINE BETWEEN PAST AND PRESENT: 'DOING' PHENOMENOLOGY ON HISTORIC BATTLEFIELDS

John Carman and Patricia Carman, Bloody Meadows Project, Institute of Archaeology and Antiquity, University of Birmingham

Ideas derived from phenomenological approaches to 'place' have largely been applied in studying prehistory. The Bloody Meadows Project brings this approach into historical times as part of a comparative approach to studying sites of conflict. We start from the conventional anthropological position that understanding 'place' is a contingent, culturally-constructed set of practices, and that these will vary across time and space. In studying historic battlefields, we abandon the idea that we understand the cognitive processes of soldiers in the past, and instead attempt to gain an insight into their culturally-informed reading of space by examining their use of landscape.

In looking at such sites as landscapes, we are interested especially in what kinds of places they are; we believe that choices of locations to fight battles and how they are used can inform us of attitudes to space and place that are different from our own. In doing so we apply what we call 'the archaeologist's eye': the capacity of an archaeologist to 'read' and interpret space in a particular way. Our modern readings and expectations of place can be compared with the activities of others there in the past, highlighting differences in such understandings.

WHERE THE RUBBER HITS THE ROAD: A CRITICAL EVALUATION OF ARCHAEOLOGICAL DECISION-MAKING ON IRISH ROAD SCHEMES

Brendon Wilkins, University of Bradford, UK, and Headland Archaeology Ltd, Ireland

With an annual budget of €1.5bn, the road building programme in the Republic of Ireland has initiated some of the largest infrastructural archaeology projects ever undertaken in Europe. A committed legal framework underwrites all decisions that may potentially impact on the archaeological heritage, and any proposed development must be preceded by full, 100% excavation of all sites and features (DoAHGI 1999:25). This methodology of total archaeology contrasts with highways projects in Northern Ireland where the mitigation of construction impact is controlled through planning guidance, and a problem-orientated methodology of sample excavation is practiced to filter the irrelevant. Media generated public concerns in the Republic of Ireland have politicised archaeological highways projects, leading to calls for sample excavation, research frameworks, and site grading systems as a measurable way of achieving archaeological quality and delivering value. This paper aims to critically evaluate total and sample excavation methodologies with a focus on how archaeologists make on-site decisions, and how this determines the range of possible interpretations that can be made of the evidence. To explore these issues at testing or evaluation stage, two case studies will be used from both sides of the border: the N9/N10 Kilcullen to Waterford scheme in the Republic of Ireland and the A1 Newry Bypass in Northern Ireland. The effectiveness of centre-line trenching will be compared with targeted trenching and watching briefs to determine whether different sampling strategies impose limits on the type of archaeology identified, and therefore narrow the potential

interpretations of the available data. An analysis of how these issues work at excavation stage will be undertaken with an in-depth study of Newrath, an alluvial and estuarine wetland site excavated on the N25 Waterford Bypass. Although this debate has a resource and financial implication, the commercial imperative is distorted by a focus on *quality* rather than *quantity*, a question often posed in purely theoretical and epistemological terms. This paper argues that the methodological limitations of what might be called a 'commercial paradigm' have to be acknowledged if a system designed to deliver quality management of archaeology for the customer (time-bound and within budget) is enabled to find new, secure knowledge of the past for the betterment of society as a whole.

Department of Arts, Heritage, Gaeltacht and the Islands. 1999. *Framework and Principles for the Protection of the Archaeological Heritage*. Dublin: Stationary Office.

THE STRUGGLE WITHIN: BEING MODERN IN ARDNAMURCHAN

By members of the Ardnamurchan Transitions Project Team

'Reaching out for something you've got to feel while clutching to what you had thought was real'

The above quote is taken from the Metallica song *The Struggle Within*, taken from their self-titled album. The song concerns a person who is suffering from a self-defeating personality. In many ways this quote exemplifies both the potentials and pitfalls of the interpretative strategy being developed and implemented by The Ardnamurchan Transitions Project. The struggle within being the need to fully record the archaeological deposits encountered and also to convince our peers of our findings, but perhaps more importantly challenging our taken for granted assumptions concerning the nature of fieldwork. In this paper members of the team aim to explore the basis and results of the wide range of strategies employed during the excavation of the chambered cairn Cladh Aindreis. Strategies that are intended to break down the object subject dichotomy by challenging members of the team to fully appreciate the entirely interpretative nature of archaeological fieldwork and to face up to this struggle within. Building upon earlier projects the ATP intends to posit a radical archaeology, which places the observer in the foreground, highlighting the reflective, plural nature of fieldwork. This paper will show how this pilot season (2007) has thrown up more questions that were perhaps expected. As we begin to challenge our methods and categories the potential for different pasts becomes apparent, yet the consequences of *Being Modern* lurk in the background and needs to be fully explored.

Session title: **LARGE SCALE TERRITORIAL DEVELOPMENT AND CONNECTED ARCHAEOLOGICAL INVESTIGATIONS: METHODOLOGY AND SCIENTIFIC OUTCOME**

Organizers: G. Blancquaert, François Malrain, National Institute of Preventive Archaeological Research (INRAP), France
J. Vanmoerkerke, Regional Service of Archaeology Champagne-Ardenne, France
H. Stäuble, Heritage Management Office of Saxony, Germany
P. Brun, CNRS-Archéologie et Sciences de l'Antiquité, Nanterre, France

Time: Friday morning

Room: 137

Session abstract:

Following the European Directive (97/11/EC) implementing environmental impact assessment (EIA), the Valetta convention as a document supporting cultural heritage -and archaeological remains- as a non renewable resource and the French law of 2001 on preventive archaeology, several topics will be highlighted through the spectrum of large scale operations and the adding up of small size projects in a given area:

1. from the point of view of managing:
 - The place taken by archaeological investigations in advance to development and their methodological expressions in different European countries
 - The confrontation of the results obtained by fieldwork, in particular by excavating, and the research framework elaborated prior to these investigations.
2. from the point of view of research:
 - The exhaustive study of huge areas suit to representative samples of the reality from the past and is consequently appropriate to scientific approach.
 - The addition of the data from several smaller parts becomes also representative in relation to the landscape by quantification and by the signification of blanks (a period or type of settlement).
 - The scientific results authorize a much better understanding of the societies of the past and their link with ancient landscapes and natural environment.
 - The scale of field investigation makes available a global archaeology (in opposition to outstanding archaeology).

Dealing with the irreversible destruction of archaeological remains by major development works, the traditional survey approaches (aerial photography, field walking, desktop based assessment...) becomes outmoded as archaeologists need to answer urgently to provide solid information to fit in the decision making process. On the other hand these so called "non-destructive" methods are very costly regarding the final result, which is by far very reliable in the results. As new, often less documented rural areas, are involved, the intrusive trial trenching method seems to be the most successful and cost-effective practice. Applied systematically on large scale projects, as well as on minor development works, the data of trial trenching allow decision making to either preserve the remains *in situ* or to excavate. Promoting mechanical large stripping off and a 100% approach (as near as possible) offers the opportunity to test new digging techniques, coincides with fundamental changes in the record, the quantification and interpretation of the archaeological data and allows spatial analysis on different levels and as such improve the knowledge of ancient societies. Large scale excavations, as well as the accumulation of several areas of lesser size dug in a given area, can illustrate these purposes.

The focal point of the session try to reach the real balance of advantage and risk of the mechanization in preventive archaeology, to put forward that the quantification of archaeological data stimulate a more systematic and comparative approach of the archaeological features and that large scale excavations changes considerably our comprehension of the past devastating received ideas.

Paper abstracts:

LARGE SCALE ARCHAEOLOGICAL OPERATION: A HISTORICAL OVERVIEW FOR EUROPE.

H. Stäuble, Germany
J. Vanmoerkerke France

In the early years of archeology, large scale investigation is not related with territorial development works, as it is generally today. From the eighteenth century on, large scale, often state-funded excavations were organized to answer specific questions. Their organization was possible through the direct or indirect influence of important politicians or very rich persons. The large scale research on the late Iron Age and the roman conquest in France (Napoleon III) or at Pompeii and Herculaneum are very typical examples. The notion of salvage is rarely used in these cases as archeological traces weren't yet considered to be rare and meriting conservation.

In the second half of the nineteenth century, important public works, notably railways, resulted in a lot of discoveries but examples of coordinated approaches of these excavations are still very rare. Discoveries seem to be numerous simply because earth-moving work was entirely manual.

In the beginning of the twentieth century, more and more excavations are rescue interventions but without a real preventative approach, nor a specific methodology. Often, reports don't even mention explicitly that the site was investigated in a rescue context. Some huge projects as Bersu's Goldberg excavations (1911-24) are still research (and state funded) projects.

Between the world wars, saving archeological monuments as an argument for excavation is progressively getting more important; more and more professional or non-professional archeologists are using destruction, to justify excavation or to get finances for it; archeologists in general are pointing the destruction of sites as a problem.

In the thirties, German archeology organized some of the first large scale rescue excavations. Hitler's national roadways provoked a lot of excavations, as the one from Hamburg to Lubeck, one of the earliest examples, which led to the study of tens of prehistoric sites. Before the Second World War, similar examples from other countries seem to be rare.

After the Second World War, the situation changed profoundly in northwestern Europe; the reconstruction of Dutch, English and German cities led to the first large urban excavations and some years later, in the fifties and the sixties, large quarries, industrial works, roads, were excavated, mostly in difficult conditions.

Parallel development of more theoretical questions of the human occupation patterns and the interaction man- environment led to research frameworks which integrated these big rescues in regional projects. The German *Aldenhovener Platte* or Dutch *Wijk bij Duurstede* projects are some examples where general theoretical questions were formulated before, or at least, during the excavations.

State funding was still a general rule and till the eighties, the contribution of the developer was at best a technical one (machines, etc.).

In this rapid post-war development, France and other southern countries stayed behind and a project as the Aisne-valley, the first similar project in France, only started in the seventies.

From the end of the eighties till today, the development of this large scale archeology has been very quick and most countries have nowadays sectors where hundreds, or even thousands of hectares, have been studied intensively. The development of new detection and evaluation techniques, particularly trial trenching, has been fundamental. Already in the seventies, the *Aldenhovener* project showed that "classical" non-intrusive methods (field walking, aerial and geophysical survey) revealed only 15 % of all sites discovered after stripping off the whole area. These approaches however couldn't be generalized to industrial or construction projects and trial trenching revealed to be the most effective solution.

The last years, the scientific exploitation of these projects progressed; aspects as representativeness, quantification of occupations, relation between sites, non-site, are getting a more important place.

«PARC LOGISTIQUE DE L'AUBE» AT BUCHÈRES: MECHANICAL EXCAVATION AND WHY IT WORKS!

V. Riquier, J. Grisard, Inrap, France

The building project of the "*Parc Logistique de l'Aube*", located in the district of Buchères, (Champagne-Ardenne) enabled a large-scale investigation of this area. Several operations of systematic mechanical sampling, carried out between 2004 and 2006, were necessary to cover 266 hectares out of the preliminary draft. Surprisingly, these operations revealed that this district used to be highly occupied by all civilizations known in the North-East of France, from the origin of ancient Neolithic up to medieval times. This geographical area is part of what is called "*la plaine de Troyes*", which, from an archaeological point of view, turns out to be a very rich area. Based on both conclusions of sampling's campaigns and archaeological results of the previous excavation (2005), the latest excavation of 2006 aimed at studying a complex series of human sites and agricultural settlements within the protohistorical period. Specific problems related to these periods (structuring of sites, density of remains, conditions of preservation, etc) needed to excavate widely in order to determine and specify the various detected settlements more accurately. But the decision of a large-scale excavation was faced with two major problems. The first one depended on time spent at digging which could not exceed 4 months, as per delivery terms negotiated with the developer in order to investigate an area of roughly 16 hectares. The second one was linked to budget and required a global mechanization of the archaeological process to avoid an expensive campaign through a manual digging of thousands of archaeological remains, which would have to be added to the enormous cost of the previous extensive excavation. Due to the needed mechanization, archaeological operations had necessarily to cope with many changes during this campaign. Technically, the operational process was characterized by a systematic mechanical excavation of each archaeological structure and by a systematic sieving. The development and the application of this new method turned out to be the only realistic solution to comply with the whole scientific and technical requirements and to solve the two problems above mentioned.

These various operations carried out in Champagne area implied to review the presupposed archaeological ideas. They brought to light a new and, as of today, unsuspected (unexpected) archaeological potential. The synthesis of both latest operations and the coming ones should enable to have a better foreseen in the evolution of this specific land through several millennia (settlements, cemeteries, etc) and, more particularly, to reconsider and update our understanding of population in the late Bronze Age and early Iron Age in the North-East of France.

THE METHODOLOGY OF RESCUE EXCAVATIONS ON LARGE AREA AND LINEAR CONSTRUCTION PROJECTS IN MORAVIA.

Jaroslav Peška, Vendula Vránová, Archaeological Centre Olomouc, Czech republic

Practically on the entire area of the Czech Republic, the endless construction boom results in the necessity to conduct dozens of rescue archaeological excavations each year, especially during large investment projects. Therefore, a functional system of archaeological research and preservation has been established within a past few years, based on a mutual consensus of relevant authorities. In the Czech Republic, the system is based generally on the establishment and work of Regional Archaeological Committees as voluntary coordination bodies, i.e. archaeological institutes mutually coordinate their activities, especially as concerns preservation of archaeological cultural heritage.

This system is also applied in the region of Central Moravia where the Archaeological Institute of Olomouc is active. The focus of its activities is on rescue archaeological research during various linear or large area construction projects in the region.

A rescue archaeological project of the Archaeological Institute of Olomouc may be divided into three stages comprising individual phases, or activities.

At first, it is the demanding **preparation stage** concerning *preparation of the actual construction project*. At this stage, the archaeological research includes careful combined non-destructive research of the course of the future construction. Results are summarized in a comprehensive Territorial Archaeological Survey which specifies the character, structure and size of the settlement which will be directly disrupted by the construction. After that, actual archaeogeophysical research is conducted on selected areas and based on the research results, a strategy for the rescue research is developed

The main focus of the **project execution** is, naturally, on the actual archaeological research preceded by professional supervision of *fieldwork*. Actual *excavations* comprise field research, laboratory works, expert opinions, preliminary assessment of findings and compilation of a site report. Within each project active and complex multidisciplinary cooperation (including anthropology, palaeozoology, palaeobotany, palaeometallurgy, petroarchaeology, absolute chronology, environmental archaeology, palynology, etc.) is developed.

The **post-excavations stage** includes, among others, permanent deposition of the excavated material in a relevant museum as well as *public relations* activities. Publication (articles, studies, books) and presentation (expositions) activities present a logical assessment and synthesis of acquired knowledge and achieved results.

INTRODUCTION TO CASE STUDIES FROM SAXONY: SOME GENERAL ASPECTS ON THE SCIENTIFIC IMPORTANCE AND THE UNIQUE POSSIBILITIES OF LARGE SCALE PROJECTS FOR ARCHAEOLOGY

H. Stäuble, Germany

Like many countries of the former "Eastern Bloc", Saxony had to cope with huge changes since 1990, which also affected the archaeological heritage management.

Because of the many lignite as well as sand and gravel deposits, numerous archaeological projects were conducted in open cast mines and quarries. Apart from these, an exploding number of pipelines and other trajectories required excavation beforehand, and in many cases these linear projects form connections between other large excavation areas. Meanwhile, the huge number of prehistoric sites in microregions is an opportunity to study the archaeology of entire regions in a much more detailed manner.

The saxonian heritage management law from 1993 and substantial political backup gives us a good platform in cooperating with the building companies and investors. Thus all large scale projects can be planned and conducted without great difficulties.

Until the 1990s there was not as much knowledge about prehistoric landscapes in Saxony. This is why we decided not to protect the few known sites on behalf of many unknown ones.

Non-destructive prospection methods are not reliable and especially in this context not worth the money they cost. We decided to always use the destructive method of large scale trial trenching, called "hard prospection", in order to locate sites and assess their extent, before the actual excavation is started. This was not regarded as an unacademic procedure, but as a unique chance for landscape archaeology on the one hand and the basics for theoretical predictive methods. For large scale excavations, trial trenching must be, and if not, must become the random sampling technique of prehistoric archaeology.

HOW TO KNOW? THE MOTORWAY A17 DRESDEN-PRAGUE AND THE INFORMATIVE VALUE OF SYSTEMATIC TRIAL TRENCHING IN COMPARISON WITH NON-INTRUSIVE METHODS

P. deVries, Germany

Preceding the construction of a motorway from Dresden to Prague, three archaeological studies were conducted. In 1996 a predictive model was developed, to assess the archaeological relevance of the trajectory. The following year a survey was conducted which demonstrated the existence of several areas with high archaeological relevance. From 1999 to 2003 the full length of the trajectory was prospected by trial trenching, in order to assess the precise location and extent of archaeological sites. Subsequently, all sites were excavated. During the following research project the results of these studies were compared and two predictive models were used to develop new predictive maps for the trajectory and the Dresden Elbe Valley. In this paper the focus lies on the results of the survey compared with the results of the excavations and the former knowledge about presumably present sites within the motorway trajectory. The results of the survey matched the subsequently excavated sites only in some cases. Trial trenching proved to be a relatively low-cost and relatively little time-consuming method to assess site location and extent in large-scale projects.

LIKE PEARLS ON A STRING: NEW RESULTS FROM PIPELINE AND MOTORWAY PROJECTS IN NORTHWEST SAXONY

Ch. Steinmann, Heritage Management Office of Saxony, Germany

Saxony witnessed an impressive increase of industrial and logistic building activities over the recent decade. Several routes crisscrossed its northwest which belongs to the archaeologically richest areas of Central Germany. Although the region is comparatively well researched, the increase of prehistoric sites after investigation and excavation reaches the factor five and, in some cases, even more. Site maps appear to show a meander of pearls on a string. The presentation of examples will demonstrate, on the one hand, how known patterns of settlement activities are knitted tighter. On the other hand, completely new archaeological contexts emerge within the landscape. These aspects include so far unknown types of sites like circular enclosures – usually known from the Early Neolithic – dating to the Early Iron Age. Other examples focus on comparatively sparse Middle Neolithic evidence. These aspects will underline the appropriate methodology used and its important scientific outcome.

PRAE- AND PROTO-HISTORIC SETTLEMENT SHAPES IN THE NORMANDY'S COUNTRYSIDE : THE EXAMPLE OF THE PREVENTIVE EXCAVATIONS IN THE PERIPHERY OF CAEN.

C. Marcigny, C.-C. Besnard, Inrap, France, B. Van Den Bossche, France

The suburb of the actual city of Caen (Calvados, Lower Normandy) is the subject, over the last fifteen years, of increasing development works. Those constructions have, systematically, been preceded by archaeological investigations, diagnosis or excavations, often on surfaces of several hectares. The area of about 1 400 hectares, of which 500 ha have been studied, seems as such a privileged field of research to characterise the methods of spatial organization on a long term. The presentation focuses on a G.I.S. program recording and mapping over 7 500 features dated from the Bronze and Iron Ages.

The chronological determination of phases of expansion and of decrease from rural settlements is the major topic of the analysis. The quantification of those phenomena has also been tested. If the confrontation of the data for each period approves a global trend for the intensification of the settlements, the fact isn't linear. Two elementary events have been identified. The first one is situated at the transition Middle/Late Bronze Age (between the 15th and 12th century BC) and correspond with the outbreak of massive domestic enclosures. Such settlements are submitted to regular shifting in an already opened territory. The second occurrence started probably during the second half of the 5th century BC, reaching amplification in the 3rd century. It's matching with important modifications in developing the environment and in the production schemes. The expanding of "native farms" is associated with a geometrical subdivision of space, a functional differentiation of settlements and a pronouncement of prosperous landowners.

These results will be completed with the data concerning spatial organisation of the Mondeville plateau at the 1st century BC. This rural area is clearly structured and supported by closely linked agricultural settlements regularly spaced out and mutually dependant.

ASSESSING THE ARCHAEOLOGICAL LANDSCAPE IN DEVELOPMENT-LEAD RESEARCH. THE FLEMISH HARBOUR DEVELOPMENT ARCHAEOLOGY (BELGIUM)

Ph. Crombé, P. Laloo, Y. Perdaen, M. Bats, W. De Clercq, University of Gent, Belgium

By the extension of the main Flemish marine harbors at Antwerp, Zeebrugge and Ghent, large archaeological landscapes are threatened. Following the main guiding principles of the Valette Convention, harbor authorities and Flemish government are willing to organize preventive archaeological research and pay for the costs of the archaeological research. The results of this ongoing research are fundamentally changing our ideas of human occupation during the prehistoric and (early-historic) times. Moreover, these projects have important methodological implications towards evaluation strategies and selection criteria. By means of two cases (Ghent-Harbor and Antwerp-Harbor), it is demonstrated how the combined use of augering and trial-trenching produces best results in evaluating prehistoric and (early-) historic occupation. Applying augering, especially in wetland-areas is crucial for the detection of paleo- and mesolithic sites. Test are done for assessing the best augering-grid and diameters in order to produce the most reliable data for evaluation. In test-pitting, it has been demonstrated that for detecting low-density featured sites, such as most protohistoric to early-medieval complexes in northern Flanders, a maximum trench distance of 15m should be applied. Enlarging the evaluation space by connecting trial-trenches and making preliminary sections is an essential element in the decision process and should be applied more regularly in Flemish archaeology. Moreover, possible excavations should not solely be limited to the areas with higher feature density in the trial trenches since also zones with a low feature-density are an essential part of these rural complexes. It has been demonstrated that areas with very low archaeological potential in SMR-records and predictive modeling, produce totally new, unexpected and therefore important scientific results.

EXCAVATION, SAMPLING, AND RESEARCH STRATEGIES: CASE STUDIES FROM TRANSPORTATION PROJECTS IN THE AMERICAN SOUTHWEST

R. Ciolek-Torrello R. Wegener, R. Vanderpot, SRI, USA

Statistical Research, Inc., a private research firm, has conducted archaeological investigations for large-scale transportation projects for 20 years. These projects have included the excavation of single large sites and long, linear projects involving dozens of sites extending over diverse regions. Consequently, SRI has developed an approach for the efficient identification and recovery of data from thousands of archaeological features at hundreds of sites. SRI's approach involves the use of exploratory mechanical trenches, followed by mechanical stripping, and then a variety of hand-excavation techniques and non-destructive documentation methods such as three-dimensional LIDAR and aerial photogrammetry. This proven approach allows judicious sampling of the entire archaeological record at a given study locale. To illustrate SRI's approach, we summarize the results of several highway development projects in the Southwestern United States.

DRIVING THROUGH TIME: IRISH ARCHAEOLOGY AND NATIONAL ROAD SCHEMES

S. Joubert, Ireland

The road-building programme in Ireland has a major impact on the archaeological landscape. Due to the increase in the scale of road development works, a Code of Practice was agreed in 2000 between the then Minister for Arts, Heritage, Gaeltacht and the Islands and the National Roads Authority (NRA). This resulted in the appointment of Archaeologists and Assistant Archaeologists in various National Road Design Offices throughout the country working on the national roads programme.

When developing the route of a new road, archaeology is an integral part of the Planning Process and the NRA Archaeologist works in collaboration with the design team. He/she has to assess the archaeological

implications of the scheme from Constraint Studies and Route Selection Stages to Environmental Report/EIS and has to ensure that there are no major cultural heritage constraints impacted upon.

A variety of intensive prospecting and investigation techniques are used to identify the zones of archaeological potential in advance of road works. The results from the testing and prospecting techniques will then direct appropriate mitigation strategies. If the archaeological sites cannot be preserved *in situ*, then all sites are recorded through archaeological excavations.

In addition to all the post-excavation studies and reports, the National Roads Authority is developing major archaeological research frameworks. The new archaeological sites discovered along road schemes will be placed in a wider context so as to maximise the archaeological knowledge.

Increasing the level of publication and dissemination of information is also a major goal for the project archaeologists and since their appointment; leaflets, posters, monographs and articles have been published by the Local Authorities/NRA.

Using various case studies from road schemes in Ireland, this session will describe how archaeology is managed from design stages to publication, while taking into account all the problems that could arise during all of the different stages.

LARGE SCALE PROJECTS AND MANAGEMENT OF ARCHAEOLOGICAL INVESTIGATIONS: CONSTRAINTS, STAKES AND MAIN RESULTS THROUGH TWO MOTORWAY PROJECTS IN THE REGION OF CENTRE (FRANCE) AND THE SCIENTIFIC OUTCOME FROM THE SUBLAINES EXCAVATION

T. Guiot, E. Frénée, Inrap, France

The current French laws take cultural heritage into account when it is threatened of destruction by a development work. That's why archaeological works are included in the process of projects and particularly in the case of large scale ones. Archaeological investigations on large scale territorial development (linear or wide areas) apply to areas of hundreds or thousands hectares and have involved a large part of diagnostic and rescue excavations in France for the last 15 years.

The division of these large scale projects on the territory is not uniform and concentrates on some regions that experience a large development in commercial and industrial structures, but also on some rural and deserted zones crossed by long linear projects. The Region of Centre (6 departments, 39150 km²) has known an expansion of the numbers of commercial zones and a definite development of the motorway network (about 350 km in 10 years).

This paper intends to deal with the diverse questions of management, stakes and results of archaeological investigations on large scale projects, in studying the two recent motorway projects in the Region of Centre (A85 and A19: 240 km / 3000 hectares). These archaeological cases are complicated seen from the administrative angle as well as from the scientific one. For the regional archaeological service of the Culture ministry in charge of defining the archaeological zones of interventions, these projects account for each of the last years for more than twice the surface per year in the matter of diagnostic work and rescue excavations. These territorial developments imply that the State makes decisions and follows through: the work schedule concerning the building and the putting into service of the motorway is very tight and it sets a race against the clock for archaeologists when the potential of sites is high. Motorways also create many closely related projects of various sizes (quarries, material factories, roads, commercial zones), themselves producing diagnostic and excavation works.

Archaeological investigations are organized in three main phases. Firstly, the information retrievals are realized by studying archives, old cadastral maps, aerial photos and field walking results. This study applies to a rural region or a large area around a large scale project and the results are often known a long time before the beginning of the fieldwork. They also may determine the location of the project. Secondly, when the location of the project is decided, the diagnostic work can begin: it starts the countdown for archaeological work within the allotted time. The systematic test trenching work targets as close as possible to 100% of the project parcels. It allows the analysis of topsoil stripping on at least 10% of each parcel with a particular attention on previously identified sites (around 20% or more if a site is discovered). Thirdly, the rescue excavations are decided by the regional archaeological service according to the results of the sites evaluation and their significance. So they are carried on on sites of various sizes and sometimes on many hectares in order to study either an entire ancient settlement and its context or many ancient settlements on a large area.

In the regions with a high potential, archaeological work on large scale project produces a huge quantity of information: 120 sites were discovered on the layout of the A.19 and the quarries around. The

management of this archaeological information requires a special research framework, adapted tools and methodology in order to exploit the results in short time and to respect standards of quality (that are defined by a ministerial order for diagnostic or excavation reports). Moreover, the management of many simultaneous rescue excavations (14 sites and 160 persons on A.19) requires an important logistic and human mobilization going beyond the regional usual resources.

The time limit for archaeological fieldwork is nevertheless insufficient because of the number of sites and it has imposed on the regional archaeological service not to decide the rescue excavations of some interesting sites. Large scale territorial developments can't suffer to be delayed because they are political, economic and social sensitive projects. The developers are compelled to pay for rescue excavations so they play their role when they put pressure on archaeologists to excavate as quickly as they can, and for the lowest cost.

However, archaeological investigations on these two motorways have allowed the discovery of 230 sites among which 85 have been excavated. Many exhaustive and extensive excavations made it possible through their study to rescue major interesting sites of various periods and will lead to the development of new axes of research. The rescue excavation led on the multi period site of Sublaines (A85) is one example.

The second part of this paper describes the results of six months rescue excavation undertaken at Sublaines, site 47/51, prior to the construction of the A85 motorway. The site is situated 19 km east of Tours in the centre of France and only 5 km south of the river Le Cher. It stands on calcareous substratum and it rises to a height of 101 m which is high level for this part of the local area.

The archaeological significance of Sublaines has been known for several decades especially with the excavations carried out by G. Cordier (CNRS) in the seventies. What is more, the study of the documents and the fieldwork conducted along this part of the motorway course shows a significant density of human settlements. Archaeological research on the A85 led to the excavation and discovery of fifteen other sites in the area surrounding Sublaines which in turn brought to light new elements regarding the ancient occupation of this zone.

The excavation of Sublaines began with the removal of 20 ha of the topsoil showing almost 3000 post holes and other features of this kind.

The remains can be classified in three principal periods. The first one is the Neolithic with a large enclosure and a rare concentration of tombs and artefacts. The second concerns several occupations of the middle and late Bronze Age and the last one encompasses houses and a cemetery in the outer settlement.

The Neolithic enclosure runs for almost 600 m of length with a double line of 620 post-holes. The construction of this enclosure which has been dated to around 4900 BC, is rare for this period, only one other example is known from aerial photography in the region of Bourgogne. Nothing was found in the inner area.

The Neolithic burials are not especially spectacular but they are from the Chambon culture, around 3500 BC, and few are known from this culture.

The middle Bronze Age is also very rare in this region. Two post hole structures and two large pits were found. The ceramics are related to the Duffaits culture.

The Later Bronze Age occupation is defined by several pits and post hole structures. But the ambiguities with the undated structures and the domestic buildings of the Iron Age pose a problem to the general understanding of the site.

It's at the beginning of the second Iron Age that the site experienced its greatest development. 39 storages pits, a large number of post holes representing 80 timber-built houses, and 300 m to the east a necropolis was located with 12 square ditched enclosures from the beginning of La Tène culture.

The final development of this site is indicated by roman field systems with linear ditches and the use of the necropolis between the 1st and the 3rd centuries AD.

The majority of the region is under cultivation, although due to the erosion of the soil year after year it is rare to find such a site. It is also unusual to find such a dense occupation zone but this was due to the fact that the regional archaeological service decided to excavate and study such a wide area.

LARGE SCALE AND LINEAR DEVELOPMENT PROJECTS: WHAT KIND OF SCIENTIFIC OUTCOME? FOCUS ON THE SECOND PART OF THE IRON AGE.

F. Malrain, G. Blancquaert, Inrap, France

Through several examples of archaeological survey on main territorial development works as minerals planning (sand extraction) and speedways, the methodological evolution of detection and excavation will be highlighted and scientific progress illustrated with results obtained from Iron Age settlements.

The archaeological research program of the sand quarries in the middle valley of the Oise (Picardy) has been engaged, from 1987 till the end of 2000 in order to restrain massive and uncontrolled destruction of remains of the past. A micro region of about 600ha has been entirely uncovered. Among the hundred sites excavated, thirty seven belongs to the second Iron Age totalizing fifty one occupations submitted to exhaustive excavation. Once the documentation standardized and thematic studies realized the organization of the rural La Tène society can finally be attempt (Malrain et Pinard 2006).

The A29 highway, linking Le Havre in Normandy to the city of Saint-Quentin in Picardy, has been managed in a different, less homogeneous, way during a period going from 1991 on to 2002. Nevertheless, comparing archaeological knowledge of existing desk-based information with the acquired concrete data after intrusive assessment and excavation, some major topics emerge: new geographical areas (plateau) are explored and information about the archaeological and natural environment recorded. As such, new territories are "archaeologically" opened up and even the "truncated" images and partially analyzed "sites" offers a first scientific approach of the remains.

If the results of both types of investigation can hardly been compared, their confrontation ascertains nevertheless different levels of use and of spatial analysis. Scattered information or representative samples, the first offers a suggestion of the potentialities, the second a more accurate interpretation of human implementation and networks.

Malrain F. et Pinard E., 2006 : Les sites laténiens de la moyenne vallée de l'Oise du Ve au Ier s. avant notre ère. Contribution à l'Histoire de la société gauloise. *Revue Archéologique de Picardie*, n° special 23, 2006, 268 p.

THE NEOLITHIC AND EARLY BRONZE AGE IN LORRAINE (FRANCE). A CONTRIBUTION OF LARGE SCALE PREVENTATIVE ARCHEOLOGY

V. Blouet, SRA Lorraine, France.

Between 1990 and 2005, more than 10 000 hectares have been trial-trenched in the Moselle Basin, between Nancy and Thionville, in the central part of Lorraine. More than 300 hectares were excavated. Although these surfaces aren't continuous, they allow constituting a statistically sufficient large probe of human occupation in this area.

In this communication, we will particularly develop the potential of the analysis of that sort of data to the study of Neolithic and early Bronze Age period in this region. A more detailed analysis of some sites and contexts helps to interpret the very important differences in density and types of sites for every phase.

Session title: CENTRAL PLACES AND THEIR HINTERLAND

Organizers: Maria Hajnalova, Archaeological Institute of Slovak Academy of Sciences, Nitra; Slovak Republic
Jan Marik, Archaeological Institute of Czech Academy of Sciences, Prague; Czech Republic

Time: Friday morning

Room: 144

Session abstract:

Strongholds, hillforts, and fortified settlements were centres of political power, administration, trade, cult, military organization, etc. These multi-functional centres were supposed to be a great consumers of food, human labour, raw materials and their existence was inevitably connected with surrounding hinterland. Although the hinterland and its varying mutual interrelation with the centre is usually studied separately, bounded in the limits of chronology, there are several topics common both for La Tène Oppida and Early Medieval emporium:

- Micro-regional investigations of individual settlement structures;
- Demography (social stratigraphy, population size, etc.);
- Ability of hinterland to satisfy centres' needs for food and raw materials;
- Human impact on natural environment within centres' hinterland;
- Production and trade in the centres.

Thus, studies of such diversified issue as the hinterland and its relation to the centre enable us to incorporate a number of different approaches within the archaeological background. The session's main aim is to present and discuss methods and methodological approaches, mostly using GIS, palaeo-environmental, palaeoeconomic ethnographic data, that can contribute to solve those questions. It is probably needless to stress here the fact that the topics mentioned above encompass only a small portion of them; however, nobody knows...

Paper abstracts:

EXPLOATATION OF THE CENTRAL SETTLEMENT IN THE TRANS-URALS FOREST STEPP ZONE

Natalia Matveeva, Tyumen state university, Russia

Fortified settlements of Sargatka culture were nucleuses of inhabitations of half-nomadic and half-settled cattle breeders. It's were centres, which often left and renewed on the profitable parts of area near the main rivers. In early Iron Age stable inhabitancy system were formed and consisted same size societies. They exploited same territories by extensive way many ages and changed loadings on the concrete resources zones. The fortified settlements were built for defence elite groups from aggression on the high capes with using wood and ground blocks, but they couldn't stand long-time siege. Majority of population lived at the villages front the walls and around centre in 10-15 km radius. Numerous of population were fixed as 400-550 people. Pressure man on the nature was found as at the square of settlements and on the nearest periphery, for example, exhaustion pastures and cutting down forests. Specialization of labours and handicrafts were developed, but work loadings were large and constant, work time took hole light day. If we took into consideration expenditures on the economic activity, cult ceremonies, trade operations and war situations, we can say on the people excessive overstrain as one of the factors unfavourable influence on the health.

OSOR (APSORUS) AND SURROUNDING AREA

Bartul Šiljeg, Institute of Archaeology, Croatia

Plinius mentions the islands of Cres and Lošinj by the name of Apsyrtydes, after Medeja's brother. Although it might be difficult to discern a real truth behind the myth, it nevertheless points to the importance of Osor (Apsorus). Until the 15th century the city was the most important island centre and a significant maritime centre of the North Adriatic. Hillforts registered on both islands, including those that have been identified by the method of remote sensing, give an insight into the system that enabled the functioning of the city. With the use of remote sensing as well as archaeological and historic research, an attempt to reconstruct a more complete picture of the area in the Bronze Age, Copper Age, Antiquity as well as medieval period has been made.

THE PREHISTORIC SETTLEMENT PATTERN AT HALASARNA, KOS: SOME PRELIMINARY RESULTS OF THE HALASARNA SURVEY PROJECT

Merkouri Georgiadis

In this paper the results of the prehistoric settlement pattern from the Halasarna Survey Project will be presented. The aim is twofold, on the one hand the role of the palaeoenvironment in this survey will be highlighted and on the other the diachronic character of the prehistoric settlement pattern will be discussed. The occupation of the Halasarna region from the Late Neolithic period (i.e. 5th millennium BC) until the end

of the Late Bronze Age (i.e. the end of the 2nd millennium BC), is a long period during which many changes occurred. Thus, it will become possible to demonstrate how the prehistoric people used the landscape in different socio-economic phases and what their main concerns were at those times. Additionally, it will become clear the extent of information that can be provided by the application of an organised survey with a clear methodology in contrast to earlier chance finds.

A CASE STUDY IN CENTRAL ITALY: FERMO AND ITS TERRITORY BETWEEN THE PICENE AND THE ROMANS

Maria Raffaella Ciuccarelli, Dipartimento di Scienze storiche del Mondo antico, Università di Pisa

My paper will investigate the multifunctional relationship between the site of Fermo (Marche region, central Italy) and its territory between the Iron Age and the complete Romanisation (VI - I B.C.). Fermo was an important Iron Age site in a land conquered by the Romans in 268 B.C.; a Latin colony was placed in this site in 264 B.C. Assuming Fermo as a central place, I will consider topics concerning settlement patterns, political ties among the power élites, production and trade trends and religion role under this view. Finally I will show the evolution of this particular central place through various centuries as to continuity/discontinuity dynamics.

CENTRAL PLACES AND THEIR HINTERLAND – "PRINCELY SITES" & ENVIRONS

Axel Posluschny, Roman-Germanic Commission of the German Archaeological Institute

The emergence of the so called Early Celtic "Fuerstensitze" ("Princely Sites") in the Early Iron Age in Middle Europe and their (social) meaning have been the subject of intensive debate in archaeology. Undoubtedly these special sites reflect a change in settlement behaviour, perhaps also in the social and cultural basis of the proto-Celtic societies. Fortified settlements on prominent hill tops with rich ("princely") burials in their vicinity and with finds of Mediterranean import (Greek goblets, amphorae and cauldrons, Etrurian jugs ["Schnabelkannen"], ...) symbolize the emergence of a rich and maybe powerful social class. The "Fuerstensitz"-phenomenon appears at the end of the Hallstatt period (ca. 600 BC) and disappears at the end of the Early Latene period (ca. 300 BC) and is spread from Burgundy over southern Germany to Bohemia (cf. J. FRIEDERICH, The "Fuerstensitz"-project of the Deutsche Forschungsgemeinschaft in Germany. In: J. Bourgeois/G. De Mulder/J.-L. Putman [red.], *De Kemmelberg en verwante elitesites in Centraal en West-Europa [6de-5de eeuw]: perspectieven voor toekomstig onderzoek*, 27–30; B. ARNOLD/D. B. GIBSON (eds.), *Celtic chieftdom, Celtic state. The evolution of complex social systems in prehistoric Europe* [Cambridge 1995]).

The project '>Princely sites' & Environs< (www.fuerstensitze.de/1121, as part of the research programme of the German Research Foundation dealing with the Early Celtic "Fürstensitze" [www.fuerstensitze.de]) investigates different types of settlements (open settlements, hill forts, ditch enclosures, "princely sites") and burials from the preceding period (Urnfield period; about 1200–750 BC) to the end of the Early Iron Age, (ca. 300 BC) from different regions of research. The areas of ca. 50 x 50 km are located around some of the famous "Fuerstensitze" like the Late Hallstatt Heuneburg (Swabia), the Hallstatt/Early Latene Ipf (Ries Basin), the Early Latene Glauberg (Wetterau, Hesse), the Late Hallstatt Breisach Muensterberg (Upper Rhine valley) or in areas without a classical "Fuerstensitz" but with several fortified hill forts (Vladaø in Western Bohemia) or with several ditch enclosures ("Herrenhoeft" in Lower Bavaria).

Environmental factors like terrain (height, slope, aspect, terrain, morphometric feature types, ...), water supply, soil quality, climate as well as the distance to other sites (settlements and burial sites) are the basis of every day life, of economy and of social, cultural and religious activities. These aspects of the natural environment will be analysed in an interregional and diachronic comparative way using tools of Geographic Information Systems. In addition to the sites themselves and their location regarding the environmental factors we examine their hinterland as a basis of human activities, using site catchment analyses both for surrounding areas with a regular Eukclidean distance and for those with a cost surface dependent distance to the site.

The modelling of territories and of lines of communication using site distances, viewshed and prominence analyses (M. LLOBERA, *Building Past Landscape Perception With GIS: Understanding*

Topographic Prominence. Journ. Arch. Science 28, 2001, 1005–1014) and cost surface models is used to reconstruct the potential meaning of each "Fuerstensitz" in its region; the detailed analysis of visibilities (viewsheds of individual sites, cumulative viewsheds of the investigated areas and their settlements, line of sight to other sites, landmarks or astronomic fixed points) can provide an indication of how prehistoric peoples realized their surroundings and how this perception of space was connected to sites like the "Fuerstensitze" and their possible meaning as places of power and control (cf. P. M. VAN LEUSEN, Pattern to process: methodological investigations into the formation and interpretation of spatial patterns in archaeological landscapes. Diss. Univ. Groningen 2002. <http://irs.ub.rug.nl/ppn/239009177> [07.11.2006]).

First analyses have shown that the "Fuerstensitz"-phenomenon which seems to be of a very homogenous appearance at first glance is pretty much more heterogeneous than expected. The preferences for varying environmental factors appear to be different in different areas but they always reflect the need and the possibility to cope with the existing environment to minimize economical risks by adapting to the given resources. Some sites seem to be of a special meaning, e.g. the investigations of the Glauberg site and its surroundings have shown that it is not the prominent position of the "Fuerstensitz" or a situation on a junction of supraregional traffic routes but the importance of some special features around the "princely" grave mound on the southeastern flank of the settlement hill which can be interpreted as calendar building for short and long term observations (A. POSLUSCHNY, From Landscape Archaeology to Social Archaeology. Finding patterns to explain the development of Early Celtic "Princely Sites" in Middle Europe. In: Digital Discovery – Exploring New Frontiers in Human Heritage. Proceedings CAA conference 2006, Fargo/ND [USA] [in print]).

The paper will focus on the theoretical and methodological background of the investigation and will also present some of the results of the first years of research.

HOW TO CONSTRUCT INDUSTRIAL HINTERLAND OF A CELTIC OPPIDUM: MODELLING ECONOMIC AND ENVIRONMENTAL POTENTIAL ON A REGIONAL SCALE

Dagmar Dreslerová, Natálie Venclová, Institute of Archaeology, Czech Academy of Sciences, Prague, Czech republic

The model of production of iron and its environmental impact was created on the basis of settlement and economic structure of the Říčany region, central Bohemia. This area might be a part of an economic hinterland of the La Tène *oppidum* of Závist (3rd-1st cent. BC).

The evidence for the production of iron, e.g. iron smelting installations and waste (slag) were recorded in the study area both by excavation and surface survey, and possible iron ore sources were documented. Strong correlations of iron smelting evidence and the La Tène period settlement activities were found, less pronounced to the Roman period (1st-2nd cent. AD). The overall extent of iron smelting for the whole region was counted considering an estimation of minimal iron consumption of individual communities. The impact of local iron production, mainly of its wood consumption, on the environment was assessed and visualised using GIS. The results point to the potential of the region whose resources were far from being exhausted and would allow much higher extent of iron production than just for covering local needs. Hypothetically, the study region (among others) could be considered as a supply area for an iron working centre. The nearest central place with a number of smithing workshops – the oppidum of Závist could be mentioned in this connection, although direct relations cannot be proved as yet.

THE HINTERLAND OF THE OPPIDUM STARÉ HRADISKO (MORAVIA). GIS AND ENVIRONMENTAL APPROACH

Alžběta Danielisová, Institute of Archaeology, Czech Academy of Sciences, Prague, Czech Republic
Mária Hajnalová, Archaeological Institute of Slovak Academy of Sciences, Nitra; Slovak Republic

The contribution is dealing with the subsistence strategies and the economical background of the oppida in central Europe. According to their location and chronological range of material it is presumed that they were being established during the 2nd cent. BC due to the local economic development connected to the redistribution of goods and probably the new system of a distance trade formerly carried out rather at the open agglomerations in the lowlands. The distinct intensification of settlement pattern during the late La Tène period accompanied by the specialised activities and the trade possibly involved the founding of the

fortified agglomerations out of the traditional settlement zones, and such phenomenon was probably influenced by the higher demand for the primary resources (e.g. forests). The economic potential of the oppida was so far tested mainly from the industrial or commercial base, but practically not from the ecological point of view. Their agricultural potential has been challenged in many publications both for specific locations, that were not directly in the primary agricultural settlement zone (the fertile lowlands), and for the material collection which usually lacks the tools used for ploughing. However, the structure of the sites reveals the evidence of the traditional agricultural household units and together with the evidence of breeding the livestock the subsistence requirements should presuppose at least minimal human factor dedicated to the agricultural work. Special attention will be also paid to the whole region, with the network of open sites, and environmental variables which can possibly reflect the economical potential of the landscape itself and could help to resolve why the *oppida* were founded at such specific locations and whether and how they were as much the "central" sites as it was stressed many times at the thematic literature.

BETWEEN THE STRONGHOLD AND THE MEDIEVAL TOWN – *ANTIQUA CIVITAS* IN KALISZ

Tadeusz Baranowski, Institute of Archaeology and Ethnology, Polish Academy of Sciences; Association of Polish Archaeologists

The relations between a centre of power and its background are one of the fields of the archaeological studies which embraces a range of problems of the Early Medieval period in Poland. The second fortified settlement (stronghold) in Kalisz (Zawodzie) was founded in the 9th century. Comprehensive studies of the natural environment have accompanied archaeological work carried out in the valley of the Prosna especially on an Early Medieval complex in Kalisz. According to the new perspective on the spatial transformations of the whole complex in the 11th century the artisans' workshops were removed from the area of the stronghold and transferred to the settlements in contiguity of stronghold or to the service settlements around Kalisz, outside the centre of secular and ecclesiastical power. The artefacts discovered during the excavations, including numerous weights of different shapes, are a proof of the economic activity of the Early Medieval inhabitants of Kalisz and of the existence of a market place located at the outskirts of the settlement. The archaeozoological analyses of animal bones (the consumption leftovers) have revealed that the inhabitants of the settlement at the Old Town ate different food than the inhabitants of the nearby fortified centre.

The Early Medieval settlement of the Old Town of Kalisz, situated not far from the stronghold did not become a Medieval town only because of some unfavourable changes in the natural environment.

ANALYSIS OF ARCHAEOLOGICAL FIELD PROSPECTION IN THE HINTERLAND OF THE EARLY MEDIEVAL CENTRE POHANSKO NEAR BŘECLAV

Petr Dresler, Department of Archaeology and Museology, Faculty of Arts, Masaryk University, Brno, Czech Republic

In the year 2003 created J. Golan predictive archeological model for the early medieval settlement between Morava and Dyje rivers (south Morava). In the lowlands of this two rivers are situated two of the most important central fortified sites (Pohansko near Břeclav and Valy near Mikulčice) surrounded with many rural settlement in their hinterland. The predictive model shows that those rural settlements have relations with natural background and also with central places. The final result of this predictive modelling was a collection of maps with three different zones of archaeological potentation. These results have been validated by the archaeological field prospection.

After two seasons (2004, 2005) we have applied statistical approach for testing J.Golan's predictive model with datas collected by archeological field prospection. The result was that Golan's predictive model is valid and useful for the archaeological analysis. We have created new two predictive models for larger area. The first of them is based only on natural variables (local relief, distance to water, soil type etc), and the second on natural variables combined with time distance to the central fortified places.

Next two seasons (spring 2006, spring 2007) we did large scale archaeological field prospection in the areas of high potential acquired from the first predictive model. By now we have finished field prospection and collected material and datas are analyzed. Beside „extensive“ field prospection we did „intensive“ field

prospection of the three sites (2 polycultural, 1 la-téne site). From two sites of them were collected data and later compared with geophysical magnetometric prospection.

HINTERLAND OF EARLY MEDIEVAL STRONGHOLD OF LIBICE. INSIDE VIEW

Jan Mařík, Institute of Archaeology, Czech Academy of Sciences, Prague, Czech republic

The stronghold of Libice is situated 60 km east of Prague on the confluence of the rivers Labe and Cidlina in the eastern part of Central Bohemia. The site played an important role in the process of formation of the Early Medieval Czech state. Libice due to the high density of archaeological trenches among one of the best archaeologically explored Early Medieval centres in the Czech Republic.

In the first part of the paper will focus on the strongholds' agglomeration from the point of view of its needs and production capabilities. The agglomeration includes both the fortified enclosure and the non-fortified area with traces of human activities, especially settlement and burial grounds. Calculations of requirements of the agglomeration are based on estimates of population size. It ranged between 600–900 inhabitants while a distinct change has been recorded in the later phase when the population decreased to 300–370 inhabitants. Further calculations of requirements are centred on estimated amount of arable land and timber requirements needed to ensure the subsistence of the agglomeration. However, due to the absence of sufficient data any estimation excludes a few figure for pastures or volume of wood needed for the pottery firing and metallurgy. For visualization the agglomeration requirements, spatial models have been produced showing the maximum and the minimum territory. The maximalist model covers an area as far as 4,2 km behind the fortification. None of the applied models is meant as a reconstruction of a past reality, but as an attempt of defining the limits of further research about economical structures of the stronghold.

In the second part results of the above mentioned spatial models will be compared with the settlement structure in wider surrounding (500 km²) of the site. It has been taken into consideration not only the settlement around Libice itself, but the region has been also evaluated according to the natural environment and the potential hinterlands of other centres of similar importance. The comparison will show that an essential part of the economical hinterland of Libice probably did not exceed distance of 6 kilometres. Traces of similar economical systems are reflected in the princely donation to ecclesiastic institutions founded on former strongholds in the 10th-11th century. Most of the donations were situated within the range of 8 km.

THE COST OF KEEPING ARMED TROOPS – THE ECONOMIC HINTERLAND OF MEDIEVAL CASTLES IN MORAVIA

Jana Krejzová, Department of Archaeology and Museology, Faculty of Arts, Masaryk University, Brno, Czech Republic

The defence of a castle depends on its disposition and on providing it with a garrison, which in the case of the site Rokštejn (Bohemian-Moravian Highlands, Moravia) can be reconstructed on the basis of written and archaeological sources. The proper reconstruction of the number of men at arms and their activities during the last phase of the Rokštejn castle (early 15th century until max. 1432), when it was property of the Valdštejn family, unfolds from written sources of juridical (execution records) and property-legal nature (impeachment books). Entries about assaults and thefts in the surroundings of the royal town Jihlava together with rides to some more remote regions show evidence of one of the subsistence sources at the castle. The other ones are documented through archaeological excavations presenting the subsistence mode of the castle as follows: 1. food and water (game, domestic animals, agricultural products – their storage; the problem of a drinking water source within the castle area); Existence of a pond as a very profitable economic activity and at the same time a defensive element of the castle. Housekeeping structures as a storage element of the castle. 2. dependence on trade and crafts – common objects of daily use – pottery, glass, clothes, weapons a. o. 3. certain rate of independence on trade and crafts – castle smithy (output orientation), timber, stone a. o.

Session title: ARCHITECTURE AS MATERIAL CULTURE AND SOCIAL PROCESS: BEYOND THE PHENOMENOLOGICAL

Organizers: Benjamin Edwards, Department of Archaeology, University of Durham, England
Rachel Pope, Department of Archaeology, University of Cambridge, England

Time: Friday morning

Room: 155

Session abstract:

This session seeks to re-examine the role of architecture in the constitution of social life in prehistory. By architecture we mean any aspect of the built or *apprehended* human environment, from the most ephemeral Mesolithic shelter to the structured understanding of entire landscapes. More than this, we want to investigate the processes of creating such architecture, how the engagement of people with their environment produced both contingent and structured built spaces. Architecture is not just a passive backdrop to the play of agency or the reproduction of society because it was created by people, the process of the creation must, in turn, have formed the people themselves. This session wishes to promote a more open-ended view of architecture and one that recognises that all structures had to be *built*, so that our entire constructed environment from earliest prehistory is the product of a series of human choices, before they ever reached a recognisably 'completed' form, if such a thing even exists.

Post-processualists, such as Shanks and Tilley in their seminal paper on the burial monuments of Wessex and Sweden, were quick to criticise the old structuralist order of architectural interpretation. Yet this session asks the question: in the twenty years since then have we *really* developed a more reflexive approach? Our interpretations of the built environment still focus on finished form, on the 'obvious' functionality of spaces, and from a simplistic view of meaningful symbolism. More recent approaches are just as guilty as their functionalist and structuralist antecedents in failing to see architecture as a process of creation, just as inherently biographical and contingent as the artefacts whose materiality is constantly stressed. This influence of phenomenology in many accounts is more pervasive and subtle than is often realised, but it cannot account for the dynamic role of architecture because it cannot directly apprehend architecture's coming-to-be; any study that focuses on the embodied role of the individual, where that role is filled by a contemporary observer, cannot but view the past built environment as a finished static product. Likewise, social accounts that stress architectural form as representative of the *axis mundi* are often guilty of, and indeed forced to, consider only architecture-as-product, as a template onto which symbolic understandings are then grafted. How similar are these approaches to the structuralism many would claim to deplore?

Innovative papers are invited from all theoretical persuasions, time-periods and geographical areas of the prehistoric or pre-literate world, especially those that seek to address difficult questions. If landscape architecture is an extension of sociality into the environment, can we question the dichotomy of space and place? If we stress the contingent process of architecture, must we seek a more nuanced approach to its interpretation? If architecture is the result of human engagement embedded in the world, is it a necessary characteristic of our existence: is it another form of material culture?

Paper abstracts:

MARKING TIME: THE HOUSE AND SOCIETY IN EARLY NEOLITHIC IRELAND

Jessica Smyth, University College Dublin, Ireland

The Neolithic has traditionally been viewed as a period in which humans first radically transformed their environment, harnessing the power of nature and natural places through the erection of megalithic structures, earthen mounds and timber palisades, and the working of deep mine shafts and steep mountainsides. Early prehistoric houses or 'domestic' architecture have generally been left on the margins of this 'Neolithising' process, particularly in those parts of Europe where house remains are more ephemeral or less monumental. This is in spite of numerous anthropological studies which have demonstrated that houses can be an important social medium, embedded in the culture of many contemporary traditional

societies, raised out of and reflecting back certain shared social values and attitudes. The premise of this paper is that houses had a similar role in Irish early Neolithic society, and that the context of certain objects and materials within them may provide clues to both the meanings ascribed to these buildings and the beliefs of their builders/occupants. Far from being mere shelters and storehouses, they should be seen as powerful transforming agents, their functions likely overlapping with those suggested for more overtly 'ritual' monuments.

"A MONSTER OF DEGENERACY". SOCIAL CONTINGENCY IN THE CONSTRUCTION OF NEOLITHIC LONG CAIRNS IN NORTH-EAST ENGLAND

Benjamin Edwards , University of Durham, England

The title quote is taken from Nancy Newbigin's report on the excavation of Bellshiel Law Long Cairn in Northumberland, England in 1935. It followed a tirade against the lack of any clear mortuary, morphological or structural evidence from the cairn. She had compared it against the classic Neolithic chambered tombs of the Cotswolds, and Bellshiel had been found wanting. Paradigms have changed, but the Neolithic long cairns of north-east England still pose interesting problems for those seeking a social interpretation of their architecture. Long mounds in many parts of the United Kingdom can be grouped into recognisable morphological types, however this is not true of the incredibly heterogeneous long cairns of Northumberland and County Durham. Here, the 'social archaeologist' is faced with incredible differences in monument form, burial rite, method of construction and landscape position.

This paper will attempt a plausible explanation for the variety expressed in the architecture of the tombs, stressing the extremely contingent and complicated sequence of acts in the process of their creation. It is believed that the biography of this architecture, perhaps most clearly apprehended through its existence as material culture, has the potential to produce a new kind of social narrative. A narrative that emphasises the difficulties of interpreting the 'meaning' of the built environment, and instead stresses how it came about through a complex web of individual and community practice. This is the 'coming-to-be' of architecture and an attempt not to focus on finished form or one-dimensional symbolic meaning.

THE SOCIAL SIGNIFICANCE OF ARTEFACTS WITHIN ARCHITECTURE: EVIDENCE FROM IRISH BRONZE AGE SETTLEMENTS

Kerri Cleary, University College Cork, Ireland

The importance of exploring the life histories of material culture is well attested to in the archaeological record. This paper attempts to incorporate this strand of research with an examination of the biographies of architecture, itself another form of material culture. The context of recovery and the condition of artefacts may suggest a deliberate incorporation into the structural elements of a building, perhaps emphasising an important point in the lifecycle of the structure. This link between time and space may have resulted in the intentional use of particular types of material culture to portray specific meanings or symbolise a range of elements, from individual 'personalities' to the maintenance of social relations. This meaningful use of artefacts within architecture will be explored with specific reference to Bronze Age settlements in Ireland.

MIDDLE BRONZE AGE BUILDING TECHNOLOGIES IN GREAT BRITAIN AND IRELAND

Paola A.E. Bianchi, Università di Roma 'La Sapienza' / Museo Archeologico Nazionale di Parma, Italy

This paper examines architectural models and strategies of constructions of domestic and craft areas between 1500-1200/1150 BC in Great Britain and Ireland. The variability and use of 'round house' typology is analysed in its local context and chronological evolution. The existence of contemporary house shapes (oval, U-shaped, rectangular) suggests planned choices relating to social and economic factors. Architectural models are considered alongside building techniques, as well as the role of spatial organisation and finds association.

BRITISH HILLFORTS: SOCIAL ARCHITECTURE, LANDSCAPE ART

Rachel Pope, University of Cambridge, England

With the critique regarding the defensive and elite nature of Iron Age hilltop enclosures now well-developed in Britain, this paper seeks instead to bring a landscape perspective to the study of this type of prehistoric site. The paper will discover the Bronze Age origins to hilltop enclosures – using examples from the Scottish Borders and northern Wales – and discuss their new role in the social landscapes of Bronze Age Britain. It will be demonstrated that hilltop enclosures were occupied seasonally, that they were central to new communal farming systems, and that – through their architecture – they actively created social cohesion in the wake of serious climatic change. Having established their social origins, the paper will move on to consider the developed hillforts of southern England, with the idea of hillforts as monuments, as landscape architecture and as social project in a post 400 BC world.

BREAKING THE BONDS OF HISTORY

Kate MacDonald, University of Sheffield, UK

The past is a powerful social force: it can divide communities that cling to long-standing differences, or it can unify by emphasizing a common heritage that fosters a sense of social cohesion. The workings of historical consciousness have been denied a place in our interpretations of 'prehistoric' society, based on the erroneous assumption that oral histories are constrained by the inability to permanently record events. However, the perpetuation of an oral culture demands the constant repetition and re-working of memories and traditions, producing histories that are marked by their conservatism, not their transience.

Genealogies have a crucial role in the active remembrance of the past in oral societies, preserving knowledge of historical relationships, and providing the framework for the social bonds that exist within and between communities. The funerary monuments that dominated the Neolithic landscape in Britain would have acted as the repositories for each community's history, as successive generations continued to place their dead alongside the remains of their forebears. However, these links to the past were severed during the Bronze Age, and by the beginning of the 1st millennium BC people were no longer creating visible monuments to their dead. This represents a transformation in the factors that were fundamental to defining and maintaining the social order in later 'prehistoric' Britain, which can only be understood with reference to the dynamic role of history in oral culture.

LANDSCAPE, MATERIAL CULTURE AND SOCIAL PROCESS ALONG GALICIAN IRON AGE: THE ARCHITECTURE OF CASTROS DE NEIXÓN (GALICE, SPAIN)

Xurxo M. Ayán Vila, High Council for Scientific Research, Spain

Our communication tries to offer a review of the Iron Age architecture of the Northwestern Iberian Iron Age. We develop an archaeological analysis of the architectonical record of hillforts of Neixón (Boiro, A Coruña) that lets us propose new interpretative models about the way of conceptualising space and cultural landscape built by the Castros Culture. In this respect, from Landscape Archaeology, we defend that hillforts are not reduced to merely architectonic objects, conditioned by a material context: on the contrary, they should be analysed as a living entity which carried out an active role in the social constitution of the archaeological reality. From this perspective it is possible to explore the social and symbolic undercurrents beneath the model of spatiality reflected in walled enclosures. During the second phase of the "Castreño" or hillfort period, which has conventionally been dated back to between the fifth and fourth centuries B.C., there was a process of artificialization and monumentalization of the settlement domestic area. The hillforts of Neixón are a good example of this architecturalization process. The settlements were located on the old Phoenician and Punic trade circuits and they experienced an important economic development (mostly due to the gradual development of trade relationships) and an outstanding demographic increase. We are just beginning to discern in these hillforts a process of proto-urbanization. They became the centre of the region and were used to distribute the goods coming from these trade circuits. Also, structures were built to keep the farming surpluses inside walled enclosures. The convergence of these aspects may explain the complex architectural morphology that these sites show. On one hand, Neixón reflects clearly a social process: the

increase of farming exploitation during this period, cause and consequence of the consolidation process of a peasant society and economy. On another hand, Neixón’s architecture is a scenography which contributes to consolidate and renegotiate the group identity and to reinterpret the foreing (mediteranean) material culture. In this context, the monumental southeastern access to the hillfort of *Castro Grande de Neixón* shows the dynamic role of this architecture and its multi-functional nature. Enclosures are meaningful constituted. Ditches act as a defensive structure, as a liminal space, as a symbolic place where different materials are deposited, etc...

Certainly, hillfort architecture is another form of material culture.

Session title: 'FRINGE' ARCHAEOLOGIES: 'THE OTHER' PAST

Organizers: Eleni Stefanou, University of Southampton, UK
Anna Simandiraki, University of Bath; Universities of Oxford, Cambridge, Bristol and Reading, UK

Time: Friday all day

Room: 124

Session abstract:

The relationship between archaeology and the public has become the subject of increasing analysis and debate in recent decades, especially as far as museums, education, heritage ownership and nationalism are concerned. However, there has been only a small amount of systematic research on “alternative” uses of “mainstream” archaeology.

Alternative discourses of archaeology may stereotypically advocate state or worldwide archaeological/ cultural/ religious/ governmental supremacy and conspiracies, even extraterrestrial interference with past material culture. This may overlap with related international discourses, but also and perhaps ironically have particularly local motifs and aspirations. This session will explore some alternative uses of the past by various social actors who raise a different voice towards established archaeological discourses, a voice that is used to fulfil cult/ fringe/ fundamentalist/ extremist ideological tendencies.

However, are there clear-cut limits between what is and is not acceptable as valid and constructive uses of archaeological materiality and ideas? Who are the actors and who are the audience of this interplay? For example, how do these proponents identify themselves through established national symbols that mean different things to different social actors? How do they differentiate themselves from other fellow citizens through a common archaeological past? What are the agendas behind the representation and edification of some pasts and not others? Consequently, how is identity performed through such uses of archaeology that go beyond a simple visit/pilgrimage to reveal more complex embodied experiences and performances?

Session papers will present critical, culturally diverse case studies which illustrate wider issues, debates and concerns about alternative archaeologies, on the part of archaeologists and non-archaeologists alike. These will include, but may not be limited to, representation, disenfranchisement, ownership and political uses of archaeology.

Paper abstracts:

'FRINGE' ARCHAEOLOGIES: THEMES, CHALLENGES AND BORDERS OF THE 'OTHER' PAST

Eleni Stefanou, Anna Simandiraki
(Abstract not available)

BAD ARCHAEOLOGY: AMUSING DIVERSION OR CULTURAL TERRORISM?

Keith J. Fitzpatrick-Matthews, North Hertfordshire Museums, UK

Popular culture holds that the Egyptian pyramids could not have been built by Copper Age Egyptians, that there once existed a mid-Atlantic continent (Atlantis) that was the source of all civilisation, that Britain is

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crossed by lines of mysterious energy marked by ancient tracks, stones and churches and that archaeologists are too entrenched in their orthodoxy to look at these radical ideas. But how radical are they? Why do archaeologists ignore them? And what is their deeper cultural significance?

Whilst many might regard these fringe ideas as misguided, eccentric or, at worst, dishonest, I believe that there is a deeper agenda with its roots in the late nineteenth century. The so-called Occult Revival sought to undermine the rationality of Late Victorian intellectualism, to return spirituality and magic to everyday life, even to make it part of the academic mainstream. Although the Revival failed, its legacy continues, sometimes in surprising quarters.

This paper seeks to expose the undercurrents in the explicitly Bad Archaeology perpetrated by fringe authors and to explain why it has such popular appeal.

AN INSIDER'S VIEW OF AN ALTERNATIVE ARCHEOLOGY

Michael Cremo, Bhaktivedanta Institute, USA

Since 1984, I have been developing an approach to archeology and history of archeology with roots in a perspective on human origins and antiquity derived from the Puranas, the historical writings of ancient India. The Puranas present a picture of extreme human antiquity, incompatible with current mainstream theories. In my project, I have made use of mainstream archeological materiality. In the paper I will explore how and why I have done that. I will also describe the various audiences for my alternative archeological perspective: mainstream archeologists, Christian creationists, intelligent design theories, conspiracy theorists, ancient astronaut theories, New age and spiritual seekers, Hindu nationalists, alternative science researchers, historians of science, educators. I will also explore the various methods of communication I use to reach these various audiences (papers presented at mainstream science conferences, mainstream science publications, lectures at mainstream science institutions and universities, lectures at alternative science conferences, UFO conferences, New Age conferences, yoga societies, religious organizations, the web, radio interviews, television shows, newspaper and magazine articles, etc. in countries around the world (my books are now in 20 languages). I will also explore my motivations and agenda. My motives are to introduce into archeology, and science generally, a perspective on human origins and antiquity with roots in an ontology that includes nonmaterial substances, intelligence, and agency. The perspective is meant to transcend nationalism, race, gender, etc. I will offer some suggestions as to how alternative perspectives like mine should be accommodated in state supported education systems, state supported research institutions, and state supported museums.

"THE BIBLE IN STONE": PYRAMIDS, PROPHECIES AND LOST TRIBES

Gabriel Moshenska, UCL Institute of Archaeology

The Great Pyramid of Giza has been the focus of various alternative archaeological theories over several centuries, including the pseudo-science of pyramidology which claims to derive significant numbers, dates and prophecies from the internal and external dimensions of the structure. This paper examines the role of the religious-nationalist 'British Israelite' movement in the development of pyramidology in the nineteenth and early twentieth century, as well as the central importance of the Great Pyramid in British Israelite theology.

The British Israelites claim that the Anglo Saxon race are the literal descendents of the ten lost tribes of Israel, and that the British are therefore God's chosen people. The British Israelite beliefs were reinforced by questionable scriptural, linguistic and archaeological evidence, including pyramidology.

In the course of this paper I will trace the origins and growth of British Israelite pyramidology from the 1860s, focusing on the key personalities, their use and abuse of the Great Pyramid, their responses to major historical events such as the two world wars, and some of the more bizarre conclusions they came to. Overall, I will attempt to place this particular alternative archaeology within its historical, social and political context of an increasingly insecure imperial nation.

THE 'OTHERNESS' OF EARLY EDUCATION AND SCIENTIFIC CONSTRUCTS IN IDENTITY FORMATION PROCESSES

Anna Izabella Zalewska, Maria Curie-Skłodowska University, Poland

The role of early education in identity formation is this paper's broader context which seeks to demonstrate how school textbooks and direct contacts with archaeological and historical sites and monuments actively sustain national pride and social memory. After analyzing the ways Biskupin – the oldest prehistoric site in Poland with the results of organized research on a vast scale – was and continues to be presented to the youngest group of general public over the past 70 years, it is clear that various social actors use(d) and abuse(d) archaeological discourses to achieve their own goals.

I begin by arguing that the problem of 'ethnic myths' (seen here from the micro-scale) should be treated as one of the most intriguing problems that fields of science face – appealing to both the imagination and emotions – and needs to be discussed more systematically. The case study analyzed and presented here gives not only a huge potential for observing the long term results of exercising "factual gaps" in knowledge about the past, but also exposes the legibility and illegibility of scientific versus popular constructs in history and archaeology.

ALL SHADES OF GRAY: THE CASE OF "VINČA SCRIPT"

Aleksandar Palavestra, Belgrade University, Serbia

The problematic term *the Vinča script* denotes a number of incised ornaments and signs on the surface of the pottery of the Vinča culture – one of the most important "cultures" of the South Eastern European Neolithic. The modes of use and abuse of this phenomenon and the very term *the Vinča script* have changed through time, eloquently testifying about the paradigm shifts in European archaeology, at the same time indicating dangerous contaminations of archaeology by pseudo-archaeological ideas. During the 19th and first half of the 20th century, the idea of a script in the Neolithic cultures of South Eastern Europe surfaced occasionally as an argument for the short "historical" chronology and Near Eastern influences. This interpretive paradigm has been completely refuted by the new C 14 chronology. During the 1980s, the idea of *the Vinča script* emerges again in Serbia, this time from the pseudo-scholar circles, and is massively supported by the media. *The Vinča script* becomes the central motif of a much larger pseudo-scholar movement: the invention of script is linked to the prehistory of South Eastern Europe, allegedly from Palaeolithic, Mesolithic, Lepenski Vir, over the Etruscan, Lydian and other scripts, down to Cyrillic and Latin letters. Naturally, the so-called *Vinča script*, during the turbulent times of the destabilized ethnic identities and political turmoil in the Balkans, develops into a flagrant example of abuse of the past for the current political purposes. Unfortunately, over the last few years the term *the Vinča script* – falsely represented by the media as a new and equally valid interpretive paradigm – seeps into the general public discourse, and even into archaeology itself.

VISUAL COLLISION: A NON-STEREOTYPICAL APPROACH TO THE INTERPRETATION OF ROCK ART

Fay Stevens, Institute of Archaeology and The Centre for the Advancement of Learning and Teaching, University College London, UK

The aim of this paper is to present an 'alternative' view to the possible reasons and motivations behind the production of rock-art images. Fusing together a palimpsest of rock art imagery from a volcanic site in Armenia (currently a contested landscape that emerges out of its political and cultural history, centered around theories of national identity formation and nationalism e.g. Panossian 2006), and the production of so-called anarchist art (e.g. the work of the graffiti artist Banksy 2006), notions such as the possible rationale behind the production of these images and how they reflect the textures of social relationships (as defined for example by Gell 1988) will be considered. I will explore, through the varying presentations of these 'other' images, how the material production of imagery presents an ontological interplay between the possible flux or stability (depending on one's perspective) of the world people live/d in. Pels *et al* (2002, 13) for example have noted how people perform objects, but that these objects also perform people by

constraining their movements and by suggesting particular encounters between them and others. This perspective allows a route into the consideration of the creation of place, ideas of the construction of self (at both a collective and individual level), boundary making (and contesting) and visual materiality expressed (perhaps) as an interest in making sense of the world through the production of imagery. As such, what defines a boundary? (e.g. who sets the parameters?) are images representative of anarchy, supremacy, cooperation or propaganda? and is it possible to extrapolate an acceptance, or not, of these social structures will be explored.

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LAKE STORIES

Anastasia Chourmouziadi, Aristotle University of Thessaloniki, Greece

Since 1992 a Neolithic lake-side settlement is being excavated at Dispilio, a village in Northern Greece. From the very beginning, the archaeological team was determined to keep the laboratory's doors open and was willing to disseminate the *scientific* results in every affordable way. Having ensured the local authorities support, a small exhibition with original finds next to the excavation site was possible as early as in 1996 and three years later the President of the Hellenic Republic inaugurated an open-air reproduction of the Neolithic village which is attracting a great number of visitors.

As the number of visitors was increasing, every year, and as the locals were getting used to the presence of the archaeological team in their neighborhood, for a moment, we had the illusion that the communication network was functioning and that all three –archaeologists, locals and visitors- we were sharing a charming adventure pursuing the past. Soon, we realized that nothing was less true. The oral comments of the visitors, their impressions “officially” written down in the Visitors Book, the many discussions with the villagers showed us that our modest exhibition and the more impressive model of the Neolithic village are actually triggering jingoistic interpretations that have nothing to do with our archaeological conclusions or our own general ideological viewpoint.

This paper will discuss the local and foreign visitors' perceptions, largely based on their written comments, and the archaeologists' contribution to the making of the communication gap.

“TOO INACCURATE OR ACCEPTABLE?” REPRESENTATIONS OF THE PAST IN THE MASS MEDIA

Diane Scherzler, Suedwestrundfunk

Discussing (un)acceptable representations of the past in the mass media means talking about twilight areas and varying opinions: how archaeology is portrayed in a news article, in a radio documentary, or in a film may satisfy the journalist. The archaeologist, however, regularly notices omissions, mistakes, exaggeration, stereotypes, and distortions. For the journalist, the narrative style of a text contributes to its quality and should make it easier to grasp; for the scientist, it often means nothing other than fantasy and commercialising the past.

The archaeologists' complaints about the media's inaccuracy and sensationalism characterize much of the profession's attitude towards communicating with journalists. Archaeologists often see the power of the media in influencing the masses as a threat to their authority of interpreting the past. The journalist, they think, is the translator of their message to the general audience. How the past is represented should therefore depend on the archaeologist, be it the short article in a newspaper or a blockbuster like Mel Gibson's "Apocalypto".

On the other hand, a scientist's attention to detail and his or her prosaic way of narrating is an unacceptable representation of the past for many journalists. Their first priority is to be understood by the reader, the listener or the viewer. Editorial departments are using their own criteria for selecting topics, and these criteria follow different rules to those of science. Most journalists do not consider it as their task to portray archaeology and its view of the past in an exact manner and insist on creating their own reality.

The paper examines the facets of a strained controversy that lasts for decades. It attempts to find a basis for a more constructive interaction of archaeology and the mass media.

FRINGES OF THE MEXICAN CULTURAL POLICIES: DIVEST OF THE OTHER'S CULTURE BY THE MEXICAN ARCHAEOLOGY

Lilia Lizama, University of Yucatan, EMCSA, Mexico
Israel Herrera, University of Amsterdam, EMCSA, Mexico

Public archaeology is part of a global and diverse system, actual discussions of which have not yet reached or been applied to Mexico.

In general, Mexican cultural policies are based on depriving of cultural heritage. The other or the others –the citizen, the indigenous- is that person who doesn't have enough formal knowledge or education to preserve their heritage, their patrimony, to transmit it or to update it. The others, who do not belong to the system, are excluded and despised from the tasks of conservation and protection of their own heritage. Mexican archaeology seems to be disassociated from who produces an artifact, a relic, a piece of art, and who locks it into a museum, in a national exposition or sends it outside the country.

The conventional Mexican archaeology shows us a narrative where exists a fringe that restricts the participation of private organizations, professional and general public in the activities of conservation and protection.

This proposal explores aspects of current Mexican archaeology in relation to the "others" (the citizen, the indigenous), and the proposal of private organizations and the creation of more flexible and alternative systems, which consider "the others" as a part of the alternative way for the protection and conservation of their heritage.

COLLISION OF CULTURES. RELIGION, POLITICS, AND IDENTITY IN THE CONTEMPORARY US SEEN THROUGH THE LENS OF THE KENNEWICK MAN / ANCIENT ONE

Liv Nilsson Stutz, Lund University, Emory University, Sweden

The relationship between professional archaeologists and other stakeholders with an interest and investment in the past is changing all over the world today. Where archaeologists and anthropologists could previously maintain a monopoly of the interpretation of the past, the playing field is now levelled as other stakeholders are becoming active parties in the process of negotiation. This is especially clear in the increasing number of repatriation cases, where the actual ownership of the cultural heritage is transferred to groups who, in one way or another, can prove their affiliation to the material remains of the past (artifacts, places and human remains). While many archaeologists today recognize that repatriation is part of a positive and democratic development in a post-colonial world, many also feel that it presents some significant challenges. In the negotiations, archaeologists have to be willing and able to engage with a discourse based on religious faith. We also face the processes of how the material remains of the past are used in active identity processes, potentially reaching from revitalization movements to ethno-nationalism.

In this paper I will engage with all these levels of the problem by looking closely at one of the most publicized cases of a repatriation dispute, the Kennewick case. Through an analysis of the debate on behalf of all the stakeholders, the local Native American Tribes, the scientists and the Astru Folk Assembly, this paper discusses the role of cultural heritage in an ongoing debate about religion, science, identity and race in contemporary United States. The paper also raises questions about the responsibility and role of archaeology and archaeologists in this unfolding relationship.

PLAYING THE RIGHT NOTES BUT MISSING THE MUSIC? PROBLEMS WITH PROGRAMMES FOR EXPERT-PUBLIC DIALOGUES IN LAKE DISTRICT 'LIVING HERITAGE'

Lorna Singleton, Stephanie Koerner, University of Manchester, UK

The humanities and social sciences may be at crossroads in their roles in the dynamics of local, national, and trans-national pedagogical institutions and public affairs. Today, fields dealing with risk (nuclear, chemical, and biological hazard), as well as cultural resources management, have highly institutionalised roles as cultural policy authorities. Global media images of nature-culture, moderns – pre-moderns, experts

– publics, tangible – intangible heritage clash with social geographies of ecological hazard, unsustainable development, and political strife. 'Risk-governance' functions as *lingua franca* across interstices of academic fields of science, technology and society and cultural heritage, operating in what some call 'global realms' of contemporary human affairs.

It is a mainstream international commitment to promote expert-public dialogue - a commitment often treated as strategy to address supposed problems of 'deficits of public trust and/or understanding'. The session organizers rightly note the centrality of relationships between archaeology and the public. This contribution illustrates problems new 'deficit' models pose for 'hearing' anyone with materials on problematic expert - public relationships in the ecological, biological, and cultural heritage of England's Lake District. The correct notes may be played, but the music fails to appear (Wynne 2001, 2006). Conclusions centre on replacing 'managing cultural property risks' by concerns with the plurality of 'lived heritage' is highlighted.

**Session Title: RECONSTRUCTING PAST CULTURAL LANDSCAPES:
METHODOLOGIES FOR INVESTIGATING AND MODELLING
SUBSURFACE ENVIRONMENTS**

Organizers: Mark Kinsey, Chris Carey, Keith Challis, HP Vista Centre, Birmingham Archaeology,
University of Birmingham, Edgbaston, Birmingham, UK
Andy Howard, Institute of Archaeology and Antiquity, University of Birmingham, Edgbaston,
Birmingham, UK

Time: Friday all day

Room: 223

Session Abstract:

The reconstruction of past environmental conditions allows for the broader landscape contextualisation of cultural archaeological sites and assemblages. This environmental stage can provide insights into human interactions with the landscape, both in terms of the impact of natural environmental change on cultural behaviour and with evidence for landscape change forced through human agency. The type of geomorphological environment encountered will clearly have a significant impact on the preservation potential of the archaeological resource, but it will also affect the suitability of different methods of subsurface investigation. The methodologies available for studying and modelling subsurface environments have developed significantly in recent years. The application of environmental remote sensing techniques, such as airborne lidar and multispectral imaging, have the potential to provide palaeoenvironmental data at a landscape scale. In addition, more advanced methods of ground-based geophysical survey are now more frequently combined with intensive sediment coring and absolute dating sequences, allowing the detailed recording of subsurface sediment architecture and the subsequent reconstruction of palaeoenvironmental landscapes. This session invites papers that describe research in the investigation, modelling and visualisation of subsurface environments, particularly when the research represents new methodological or theoretical developments in this field.

Paper Abstracts:

**A GENERIC METHODOLOGY FOR THE INVESTIGATION OF THE GEOARCHAEOLOGICAL
RESOURCE WITHIN ALLUVIAL ENVIRONMENTS: GEOPROSPECTION, CHRONOLOGY,
GEOARCHAEOLOGICAL POTENTIAL**

Chris Carey, Keith Challis, Andy Howard, Mark Kinsey, Emma Tetlow, Birmingham Archaeology/IAA,
University of Birmingham, UK
Tony Brown, University of Southampton, UK

Alluvial environments are known to contain extremely important geoarchaeological records, from both cultural and palaeoecological components of the geoarchaeological resource. The importance of these two

geoarchaeological components is a function of the preservation potential of the sediment architecture and stratigraphy of alluvial sequences, allowing the creation of waterlogged, anaerobic environments, suitable for the preservation of organic remains. There is a well attested relationship between geomorphology and the geoarchaeological resource in alluvial environments, through mechanisms of floodplain development creating different preservation regimes. Through understanding floodplain development, alluvial stratigraphy and sediment architecture it is possible to identify these areas of high potential, where palaeoecological and cultural materials are liable to be preserved.

This paper presents a generic methodology for the investigation of the alluvial geoarchaeological resource through understanding the subsurface environment, tested on the confluence of the rivers Trent and Soar, East Midlands, U.K. A series of geophysical techniques are presented combined with remote sensing approaches to provide an understanding of the sub surface environment. This is integrated within an extensive dating programme of geomorphological units within the study area, to produce a model of floodplain development relating to the geoarchaeological resource. By understanding the dominant mechanism of floodplain development combined with knowledge of sediment stratigraphy, it is possible to identify the potential of the geoarchaeological resource within different parts of the study area. It is argued that this is a generic methodology that can be used in advance of destruction of the geoarchaeological resource within alluvial environments in Europe, creating important baseline information to allow effective management and investigation of both palaeoecological and cultural archaeological remains.

ASSESSING THE EFFECTIVENESS OF GEOPHYSICAL SURVEY FOR ARCHAEOLOGICAL SITE PROSPECTION IN THE TRENT AND NENE VALLEYS, ENGLAND

David Knight, Trent & Peak Archaeology, University of Nottingham, UK
Mark Pearce, Department of Archaeology, University of Nottingham, UK

A definitive report is presented of a project aimed at investigating the effectiveness of geophysical survey as an archaeological prospecting technique in an area of the English Midlands extending between the Rivers Trent and Nene. The project was funded by the Aggregates Levy Sustainability Fund, distributed by English Heritage on behalf of Defra, and grew from curatorial concerns regarding the poor performance of geophysical survey in archaeological evaluations conducted in the Trent Valley. It was expanded eventually to include a much larger area of the English Midlands that would permit comparison between the Trent and Nene Valleys. These river valleys are two of the most productive areas for sand and gravel extraction in the UK, and it was felt that detailed analysis of the variable performance of geophysical survey in these challenging riverine environments would contribute usefully to assessment of the role of geophysics in archaeological evaluation. Analysis of the effectiveness of geophysical survey was based upon studies of 2,882 survey events recorded in reports deposited in County Historic Environment Records.

This project has enhanced significantly our understanding of the effectiveness of different geophysical techniques and spatial variability in their performance, and has provided a valuable foundation for further field-based research. This includes another Aggregates Levy project, involving English Heritage, the Universities of Leicester, Nottingham and Birmingham, the British Geological Survey and Lafarge Aggregates Ltd, aimed at investigating how the combination of multi-sensor geophysical survey platform and airborne remotely sensed data may assist early integration of ground investigations for mineral assessment and evaluation of the buried cultural resource of the Trent Valley.

A WHOLE-SITE FIRST-ASSESSMENT TOOLKIT FOR COMBINED MINERAL RESOURCE AND ARCHAEOLOGICAL ASSESSMENT IN SAND AND GRAVEL DEPOSITS

Ian Hill, University of Leicester, UK.
Keith Challis, University of Birmingham, UK.
Kip Jeffrey, University of Leicester, UK.
Neil Linford, English Heritage, UK.
David Knight, University of Nottingham, UK.
Barry Smith, British Geological Survey, UK.

This is an interim report of an ongoing project whose main aim is to create an evidence base to demonstrate the advantages of integration of first-assessment ground investigations for both Mineral

Assessment and Archaeological evaluation, using a combination of rapid survey methods. Developing technology is producing novel, precise, densely sampled data through airborne survey (notably LIDAR and hyper-spectral methods) and ground-based follow-up using a multi-sensor geophysical survey platform.

The advantage of this approach is the ability to cover large areas and assess the different data sets rapidly, providing information early in the development cycle to mitigate the impact of mineral extraction on the historic environment. Furthermore, the project will investigate how the detailed early assessment of a site allows issues such as geodiversity, habitat, maintenance of soil function, flood risk, and groundwater resource, to be addressed in a development project in the interests of both planning authority and developer.

The project has identified two sites in the Trent valley, UK, where there is a combination of sand and gravel mineral resource and archaeological remains which are proved by conventional direct sampling. All available existing data sources such as surface mapping, topography, geology, conventional aerial photography, and direct sampling have been compiled into a GIS database. During summer 2007 Lidar, hyperspectral imaging and multisensor surface geophysics will be acquired and added to this database. An initial view of the data compilation will be presented illustrating some of the emerging insights into the effectiveness of the combination of densely sampled remote sensing data, in comparison to the established features of each site.

THE APPLICATION OF LIDAR IN THE STUDY OF PAST CULTURAL LANDSCAPES – KRAS CASE STUDY

Krištof Oštir, Žiga Kokalj, Ivan Šprajc, ZRC SAZU, Institute of Anthropological and Spatial Studies, Ljubljana, Slovenia.

Snežana Tecco Hvala, ZRC SAZU, Institute of Archaeology, Ljubljana, Slovenia.

Andrej Kobler, Slovenian Forestry Institute, Ljubljana, Slovenia.

In the studies of human past – both recent and ancient, and irrespective of the narrower research topic – the spatial aspect is extremely important. The elements of cultural landscape can be recorded by field surveying, which continues to be inevitable for obtaining some detailed data. Remote sensing techniques, however, enable a much faster and more systematic information acquisition, and frequently also the recognition of features that, due to their configuration or environmental peculiarities, cannot be detected with traditional field reconnaissance techniques. However, the use of optical remote sensing, e.g. aerial photo interpretation, is very limited because many elements of past cultural landscapes are overgrown with forests. This is especially true for Slovenia where forests currently cover more than 60% of the territory. Consequently, there has been a growing interest in lidar remote sensing, a technique with proven potentials in archaeological applications. Lidar, with its ability to penetrate vegetation, presents the only available possibility to directly observe historical modifications of natural environment, including archaeological sites, under forest canopy.

Lidar data contains a wealth of information that has to be extracted from point cloud data before interpretation, yet lidar applications, especially in archaeology, commonly do not include point cloud data processing, but are rather limited to the use of products – mainly raster digital elevation and surface models – provided by lidar operators. This means that a substantial amount of information contained in the raw lidar point cloud data is not considered. Bearing this in mind, a special algorithm, the so called repetitive interpolation (REIN), has been developed, enabling all the necessary data manipulation with regard to specific interests. The experiences obtained should enable us to enhance the processing methods and assess the suitability of particular procedures for recognition of specific cultural elements in a variety of environmental circumstances.

The Slovenian karstic plateau of Kras has been culturally very dynamic due to its strategic location, hence it is known for its archaeological wealth, but also for its high rate of afforestation in the present and is therefore an ideal test polygon. We have focused on archaeological features, whose chronological and cultural affiliation was determined from existing sources (bibliography, Archaeological Sites and Monuments Records of Slovenia – ARKAS, etc.). Based on lidar data interpretation, the recorded information about the extent and configuration of archaeological sites was corrected and complemented, if necessary, while the previously unknown elements were identified with field verifications, which also determined the accuracy and resolution of lidar surveys. Several known and unknown archaeological sites have been located and mapped in the case study, for example Gradišče hill fort near Kobdilj, first mentioned and described by Marchesetti in 1903, however never thoroughly mapped. It is beyond doubt that lidar can be of immense help in the

detection of past landscapes, however, we should also be able to answer the questions to what extent, for what kinds of objects and in which natural conditions lidar can replace traditional and time-consuming topographic surveying of archaeological sites.

DETECTION AND EVALUATION OF ARTEFACT ASSEMBLAGES IN BURIED LANDSCAPES

Machteld Bats, University of Ghent

In many cases, the only surviving remains of prehistoric hunter-gatherer communities are artefact clusters and latent features (such as surface hearth). Other structures (e.g. hearth pits, dwelling structures ...) only survive in exceptional circumstances.

Many hunter-gatherer sites are detected by means of field walking. The artefacts are mainly collected from the plough zone or eroded areas, which means that the sites are at least partially affected. Excavation of these surface sites yields only limited scientific information and therefore we need better preserved locations for further research (Crombé 2006).

Such locations may be encountered in covered landscapes, e.g. in floodplains where river sediments are deposited on the past surface. The alluvial cover and wet conditions can provide excellent conditions for good preservation of archaeological sites but will also hide the archaeology from view. Rescue excavations have already demonstrated the high value of wetlands. For systematic scientific study of these sites, a reliable prospection technique is needed. To detect covered artefact clusters, field walking is not appropriate. Other survey techniques often applied in alluvial archaeology, such as geophysical survey, are generally based on the detection of structural features or the reconstruction of the buried landscape. Test pitting and trial trenching on the other hand are expensive and destructive. Therefore other methods are required to detect and to evaluate artefact clusters.

A survey technique of systematic sampling through augering, as described by B. Groenewoudt, is now frequently applied in the Low Countries. In a first stage, the buried landscape is explored with a gauge auger. Based on these results, areas with high potential for archaeological remains are defined. With a larger Dutch auger, samples are collected within these marked out areas in a fixed, staggered grid and subsequently sieved. This technique proves effective for the detection of buried assemblages, but some refinement and standardization of the method is needed. Tests are done on three important factors that highly influence the survey results: the auger diameter, the sample grid and the sieving meshes. Test cases are situated in the Belgian Scheldt River area, where different types of buried landscapes are present and the thickness of the alluvial sediment layer is variable.

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VALLEY BOTTOM MORPHOLOGY AND SEDIMENT DIFFERENTIATION AS THE RECORD OF HUMAN IMPACT (NASIELNA RIVER VALLEY BOTTOM IN NASIELSK CASE STUDY)

Mariusz Błoński, Institute of Archaeology and Ethnology, Polish Academy of Science, Warsaw, Poland.
Piotr Szwarczewski, Department of Geomorphology, Faculty of Geography and Regional Studies, University of Warsaw, Poland.

The aim of the study carried out in Nasielna river valley in Nasielsk (central Poland, some 50 km north of Warsaw) was the recognition of the valley bottom geology and geomorphology. There has been also examined whether the origin of the sediments filling the valley bottom, in the vicinity of the medieval stronghold, is connected with natural processes or former human activity in this area.

The valley bottom in the vicinity of the stronghold is built of organic sediments. Total thickness of peat and gyttia (lacustrine sediment) reach some 1,2-1,8 m. A detailed field study in the valley bottom neighboring with the stronghold consisted of some 50 drillings and sediment differentiation assessments.

The organic sediments occur in the examined valley bottom and make the surface flatter than it used to be formerly.

Facial differentiation of the organic sediments in the Nasielna valley bottom points out for repeating operation of mill ponds in this area – it is also expressed either in the historical data, in the archeological findings or in the radiocarbon dating – the ages of two levels of gythia are as follows 860±105 BP (IGSB-1264) (990-1310 cal AD, 1360-1380 cal AD) and 1010±90 (822-838 cal AD, 868-1244 cal AD). The palynological data prove human presence since the beginning of organic matter formation. Archaeological data analyses and radiocarbon dating together with general geomorphological situation indicate for relatively young age of these sediments – organic matter sedimentation started in this area some 1470±75 BP (IGSB-1262).

All these mentioned data indicate that during the creation of the stronghold in Middle Ages the river valley was deeper (i.e. not filled with the organic sediments) and the rampart of the stronghold was relatively higher than it is today. The rough estimation gives some 1 m difference between the former and present time denivelation – at present it is 2 m while formerly it was 3 m high.

WHAT LIES BENEATH: STUDYING GEOLOGICAL FEATURES WITH AN ARCHAEOLOGICAL VALUE IN A BURIED LANDSCAPE

Inger Woltinge, University of Groningen, Groningen Institute of Archaeology, The Netherlands.

In the North of the Netherlands, a number of landscape elements derive from the ice ages. Of particular interest among these are so-called pingo scars. These periglacial relics tend to be regarded as potentially good habitational locations for hunter-gatherers, because there would have been dry places to live on (the rampart), water near by (inside the pingo scar) and a hinterland to hunt in. Most pingo scars have been filled with organic sediments since then. This particular fact makes them extremely valuable as a cache possibility for pollen and therefore, environment reconstruction.

The current fashion in the Netherlands is to dig these organic sediments out in order to create ponds to change the fauna and flora of an area. In earlier stages, most ramparts have been flattened to facilitate farming. Because of the lack of accurate knowledge about the archaeological value of these features, potential sources of information are being destroyed or have already been lost.

The study of known pingo scars is difficult due to the fact that most have been disturbed by man in recent years and on top of that, most are water-filled these days. There are, however, pingo scars in landscapes that have been covered in marine sediments since their development and possible subsequent use by prehistoric man. This paper proposes a new way of studying these buried landscape features, based on an old idea. A project in which GIS, ground penetrating radar and sediment coring will be combined to map the buried landscape and the pingo scars (as well as other archaeologically relevant features) in it has just been started in collaboration with several archaeologists, geologists and specialists in GIS and GPR techniques. In this paper, the project's framework and results thus far will be presented.

MULTIDISCIPLINARY ANALYSIS OF AN ARCHAEOLOGICAL SITE BASED ON ARCHAEOLOGICAL AND GEOMORPHOLOGICAL INVESTIGATIONS AND OPTICALLY STIMULATED LUMINESCENCE (OSL) DATING AT KISKUNHALAS ON THE DANUBE-TISZA INTERFLUVE, HUNGARY

Diána Nyári, Szabolcs Rosta, Tímea Kiss, University of Szeged, Hungary.

In the paper a multidisciplinary analysis of an archaeological excavation in Central Hungary near Kiskunhalas will be presented. The 580 m long and 6 m wide excavation is located along a future pipeline at the middle of the Danube-Tisza Interfluvium. The area around the site is characterised by Pleistocene stabilised blown sand features.

The aims of the study were (1) to identify the different culture layers; (2) to reconstruct the land surfaces at different historical periods; (3) to map the geomorphological setting of the archaeological site; (4) to determine the periods of sand remobilisation during historical times; (5) to identify the possible types of human activities enabling aeolian activity and (6) to specify the spatial extension of sand movements. To reconstruct the spatial characteristic of sand layers and paleosoils a 3D model of the deposits at the archaeological site was created using theodolite measurements and Surfer 8.0 software. In order to determine the exact time of blown-sand movement OSL measurements (6) were applied.

Based on the results, OSL yielded a Pleistocene age (14156 ± 1372 BP) for the lowermost sandy-loess layer, on which sequences of paleosoils and blown-sand layers were formed in the Holocene. The spatial extension of the paleosoils and sandy layers suggest that the landsurface during different historical times was not the same as today.

Until the first centuries AD a blowout depression was located at the excavated area. Its altitude varied between 122-124 m asl. and a very thick soil was developed on the surface. The blowout depression was periodically flooded by water. Southeast from the blowout depression a higher parabolic sand dune was situated, which is still visible today. During the 1 - 4th c. AD Sarmatians inhabited the territory, who were engaged in agriculture and kept large livestock on the pastures. The excavated Sarmatian trenches, wells and animal foot prints indicate that the excavated, low-lying, wet area of the blowout depression was used for watering, while the further higher surfaces might have been pastures or ploughed fields. Sarmatian animal breeders and farmers with large population meant an intensive burden on the environment. The chance for wind erosion increased on bare surfaces caused by over-grazing or ploughing. Due to these reasons aeolian activity appeared on the territory in the 3rd century (OSL: 1739 ± 201 BP) and the area of the blowout depression was covered by sand sheet. Later, between the 4 - 12th c. subsequent aeolian activities were detected, as it was proven by the 1-7 paleosoils and the OSL ages. Thus, roughness of the blowout depression disappeared and a slightly more homogenous surface was developed on 123,5 -124 m asl. The bedding of the sand layer refers to the repeated activation of aeolian activity. Periods with and without sand movement alternated, which is signed by poorly developed soils and thin sand sheets.

People settled down on the fixed blown sand surface in the Árpád Age, 12-13th c. AD. On the evidence of a tilling remains stretching from North to South, along 60 m, we concluded, that the area functioned as a plough-land in the 12th c. and a 20-30 cm anthropogenic layer was formed. Subsequently it was left as fallow land, and then in the 13-14th century it might have been used for animal husbandry as well as for living according to the founded stock-yards and house remains. On the top of this paleosol two sand layers can be found, which differ in their spatial extension. One of these was formed in the 12th century AD (OSL: 831 ± 83 BP) and it stretches above the ploughed layer at the fore-part of the site, along 340 m from Northwest to Southeast. On the middle of the site the ploughed layer and sand sheet ends and a layer from the 13-14th century is stretching from that point to the end of the site, along 115 m. This layer is also covered by another sand sheet which was formed after the 13th century according to remains of pots and bones from the turning of 13-14th centuries, which were found on the top of the anthropogenic layer under the sand sheet. The aeolian activities were probably caused by anthropogenic disturbance. Thus the aeolian activity levelled the land surface on the altitude of 124 m asl., which can be seen today.

As a conclusion we stated that the former Pleistocene landscape has been changed mostly because of the human impact on the environment. Blown-sand movements in historical times aggraded the blowout depression. The sand sheets reshaped the original morphology and the conditions of soil properties. Today the surface is higher and more even, dry and weakly humic sandy soil covers the site of the former low-lying and wet blowout depression which was filled by thick sediment and soil.

ENVIRONMENT RECONSTRUCTION BY MEANS OF GIS IN THE AREA OF THE SÁRRÉT FROM 11600-800 CAL BC (TRANSDANUBIA, HUNGARY)

Gergő Persaits, Pál Sümegi, University of Szeged, Department of Geology and Paleontology, Szeged, Hungary.

The purpose of our work is the presentation of an evolutionary history of the Sárrét basin from the viewpoint of the former human community. We summarized the available geological, palaeontological, geomorphological, archaeological data in a GIS-database. These data were collectively evaluated in a GIS system, yielding new information about the study area. We present the different states of the evolutionary history of the environment in different archaeological ages. The connections between man and environment were evaluated in depth. We will show how the environment influenced the life of humans, and how humans changed their natural environment.

ASSESSING THE LATER PREHISTORIC ENVIRONMENTAL ARCHAEOLOGY AND LANDSCAPE DEVELOPMENT OF THE CETINA VALLEY, CROATIA

Andy Howard, Vince Gaffney, Ben Gearey, David Smith, IAA, University of Birmingham, UK.
Darja Grossman, Department of Archaeology, Ljubljana, Slovenia.
Ante Milošević, Muzei Hrvatskih Arheoloških Spomenika, Split, Croatia.
Krištof Oštir, Tomaš Podobnikar, Institute of Anthropological and Spatial Studies, Scientific Research Centre of Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia.

Two seasons of fieldwork and associated environmental assessment suggest that the Cetina Valley in Croatia contains significant multi-period cultural and environmental archaeological remains, much of it buried within waterlogged sediments blanketing the valley floor. This landscape offers the potential to address many local and regional questions concerning landscape, subsistence and environmental change. One pressing issue is how to prospect for both cultural and environmental archaeological deposits within this landscape, especially since little baseline data exists. This paper outlines a multi-prospection approach to identifying archaeologically significant deposits.

PREHISTORIC CULTURAL LANDSCAPE IN THE NEIGHBOURHOOD OF BUDAPEST, HUNGARY

Katalin Herbich, University of Szeged, Department of Geology and Palaeontology, Szeged, Hungary.
Róbert Patay, Árpád Museum, Ráckeve, Hungary.

Archaeological investigations were conducted on the outskirts of Budapest between 2001 and 2006 preceding the construction of the south-eastern section of the motorway bypassing the city. Forty-six sites were identified along a 30 km long section. Forty sites were excavated: *ca.* 40.000 archaeological features were uncovered over a 972.000 m² large area. In the prehistoric times we uncovered settlements in Copper Age, Bronze Age and Iron Age on the sites of Ecser, Gyál, Maglód, Üllő.

The aim of our work was to do an environmental reconstruction for the prehistoric times. So we collected samples from different prehistoric features and daubs with imprints and the noticeable organic materials. To find direct organic residues we used water-sieving technique on the samples. For the sake of easier determination of the indirect remains we made silicon rubber molds from the imprints of the daubs. Based on the identified charred seeds and imprints, mainly einkorn (*Triticum monococcum*) and emmer (*Triticum dicoccon*) were grown. Among the weeds traces of rye brome (*Bromus secalinus*), common meadow fescue (*Festuca pratensis*) and feather grass (*Stipa sp.*) were found.

PREHISTORIC LANDSCAPE EVOLUTION OF AN ALLUVIAL ISLAND FROM NORTH EASTERN HUNGARY

Marianna Imre, Pál Sümegi, Gergő Persaits, University of Szeged, Department of Geology and Palaeontology, Szeged, Hungary.

Our study region, the archaeological site of Polgár is situated at the northeastern corner of the Great Hungarian Plains next to the river Tisza within the Carpathian Basin. It constitutes a complex archaeological site, involving traces of settlement from the Neolithic to the Bronze Age. At that time a relatively elevated complex surface developed in the area corresponding to an alluvial fan. The settlements of the archaeological site were occupying a large, sandy area covered with alluvial loess, forming a wide levee, an "alluvial island".

The aim of our work was to examine the environmental conditions of the archaeological site to clarify how the different cultures settled on this site influenced the development of the ancient landscape. For this purpose we reconstructed the Late Neolithic and Bronze Age paleogeography for the examined area on the basis of sedimentological, pedological, micromorphological and geochemical measurements. We made investigations of the Late-Neolithic settlement Ferenci Hill and the Bronze Age Csőszhalom tell within the site. In the course of our work we drilled boreholes and took samples from the different parts of the site. Samples were taken from the centre of the settlements, and the surrounding ditches. We analyzed the sediments, described the soil profiles, measured the content and distribution of grain size, the content of

organic matter and carbonate, and took undisturbed samples for soil micromorphological analysis in thin section.

The correlations of our details and the archaeological artefacts were studied and we attempted to reconstruct the original landscape of the area. On the basis of our research and the results of the latest archaeological data (Raczky et al. 1994) a model was proposed for the development of the landscape in the Neolithic and Bronze Age in the studied region.

INTEGRATED METHODOLOGICAL APPROACHES FOR THE ANALYSIS OF COMPLEX ARCHAEOLOGICAL CONTEXTS: THE CASE-STUDY OF THE "BURNUM PROJECT" (CROATIA-ITALY) AND ITS SUMMER SCHOOL "SEEING BENEATH THE SOIL"

Erika Vecchietti, University of Bologna, Italy

This paper presents the first significant results of an international collaboration (2005-2007) between Croatia (University of Zadar, Civic Museum of Drnis) and Italy (University of Bologna) focused on the experimentation of integrate methods for preventive archaeology, scientific documentation and valorisation. Case-study is the archaeological site of *Burnum* (Drnis), a roman military settlement turned in a *municipium* during the second century AD.

In 2007 (27th May-10th June) the "*Burnum* Project" has become an international Summer School for not intrusive investigation methodologies and diagnostics for archaeology: *Seeing beneath the soil* (www.groma.info/summerschool).

The methodological frame in which the "*Burnum* Project" takes place is based on the following points:

- many archaeological sites in the Adriatic basin have been excavated in the past and not properly documented;
- the archaeological structures and remains are often till today exposed to degradation;
- nowadays the non intrusive methods of investigation in archaeology allow a deeper knowledge of the archaeological evidence without exposing it to the risk of damages;
- a deeper knowledge and documentation of the archaeological heritage is the basis for planning proper interventions of preservation, conservation and valorisation.

The guidelines followed in the *Seeing beneath the soil* Summer School integrate different methods of non-intrusive investigations for the knowledge and valorisation of archaeological heritage:

- new documentation of old excavations,
- aerial, satellite, kite photos analysis;
- geophysical perspections (radar, magnetic, electric);
- topographic survey (with different levels of detail: GPS, Total Station, mono/stereoscopic Photogrammetry);
- data-collection from archive sources (textual and photographic);
- restoration diagnostics;
- virtual archaeology and valorisation through web.

This paper aims at presenting the results of this multidisciplinary educational approach in order to:

- evaluate the on-field reliability of not intrusive approaches in the study of complex archaeological contexts and the possibility to apply such kind of methodology in other different case-studies;
- test the educational impact of learning different technologies and methodologies of archaeological research and diagnostics.

Session title: ENVIRONMENTAL MONITORING OF CULTURAL HERITAGE – HOW AND WHY?

Organizer: Birgitte Skar, Norwegian Institute for Cultural Heritage Research – NIKU, Oslo, Norway

Time: Friday morning

Room: 213

Session abstract:

Definitions:

- Environmental Monitoring is a program with the scope to assess the state of cultural heritage and cultural environments *through regular and systematic inspection*. Monitoring is a basic element in establishing a preservation strategy for the most important cultural heritage values.
- Common for all monitoring programs is the documentation of changes by *comparing the state of cultural heritage before and now*.
- Monitoring can underpin the positive effects of a management strategy. It can also uncover undesired development, erosion, decomposition and hazards for the cultural heritage. An important aspect of monitoring is the potential *to identify problems before they are too widespread –i.e. early warning systems*.

The Status within Monitoring of Cultural heritage

Monitoring plays a central role in modern planning in societies where the principle of sustainability is an overall aim (Botequilha Leitão and Ahern 2002). Monitoring offers the opportunity to control quality and results of planning processes related to the actual changes in the landscape. It is likewise a crucial element in understanding and documenting environmental effects linked to other man-made and natural impacts, as a background for better decision-making. Monitoring is therefore potentially a back bone for modern sustainable management of cultural heritage as well as natural resources.

Large scale monitoring of cultural heritage on site is a relatively weakly developed field of research throughout the world, no international standards exist as of today.

In the absence of a common international methodology for monitoring cultural heritage sites that meets a certain set of standards, uncertainty remains about various types of natural and man-made impacts, and it remains difficult to outline a management strategy that is in line with international charters on cultural heritage sustainability.

A number of projects have for the past 10 years taken on to develop techniques and methodology for monitoring cultural heritage objects and measuring the effects of various destructive impacts, often related to pollution (a forthcoming publication on cultural heritage research funded by the EU FP5 will illustrate this). Very often monitoring is a costly effort and only implemented towards the most prominent monuments such as The Acropolis in Athens or Trajan`s column in Rome. Assessing the general preservation situation is often difficult based on a case by case approach. The threats to cultural heritage are in reality often related to spatial issues of change in land-use, urbanisation, infrastructure development, tourism and nature disasters and effects on a detailed scale will often be related to such factors. The challenge remains to include the cultural heritage aspect to more comprehensive and integrated systems that also comprise landscape development trends (Skar 2006).

The scope of the session will be to bring together the research environments within archaeology that work within the widespread and fragmented field of monitoring in order to exchange experience, information and research results.

It will be relevant to organize the session in relation to the most prominent thematic areas of monitoring:

- Management needs
- Monitoring of cultural deposits – city scapes and challenges
- Monitoring of cultural deposits –rural challenges
- Monitoring of individual cultural heritage objects
- Monitoring of cultural environments and landscapes

Paper abstracts:**DEMOTEC – A TOOLBOX FOR MONITORING CULTURAL HERITAGE.**

Birgitte Skar, NIKU

DEMOTEC is a research project that aims to establish a network of experts and users to discuss and outline a concept for a European observation system for large scale comparative assessment of the state of preservation of cultural heritage. The project involves discussions of standards related to techniques, methodology, threshold values and reporting as well as how to structure a pathway towards the community in order to create better awareness.

The project approach is two – sided: 1) Investigation and discussion of management needs and practice and 2) Development of a concept for a pilot model based on data from a case area. DEMOTEC has a common workshop area in Nemi, Italy, which is under the influence of Rome`s rapid expansion. Later Norwegian case areas have been integrated in the project, the project works among other places in the world heritage site of Røros and Vestre Slidre. Data obtained from these areas are used for demonstration and testing of methodology throughout the project. As in many near urban areas and areas exposed to tourism, cultural heritage suffers from various types of pressure, like urbanisation, pollution, degradation, due to lack of integration and decay as the the heritage values are either over used or not integrated in modern planning. On the brink of the rural landscape, the cultural heritage environments are left to natural degradation, overgrowing and loss of meaning, also due to effects of changing agricultural policy. These landscape and social development trends represent serious challenges to cultural heritage management throughout Europe.

Scientific Objectives and Approach

DEMOTEC aims to initiate the development of a European monitoring concept that establishes links between the various scales of monitoring today. These scales most often are a landscape level, a monument level and a detailed level (example: decorated surfaces). The basic innovative idea of the project is to develop a better understanding of how data obtained in different scales relate to each other and how data from different disciplines can be integrated into one monitoring system of inherent information at a reasonable prize. This includes interpretation of remote sensing data, orthophotos based on aerial photography, traditional registration, monitoring and condition assessment in the fields of archaeology, architecture /engineering and conservation combined with geographic information systems (GIS). GIS secures efficient application of integrated geographic and statistical analysis to large sets of data. The following themes will be discussed: management needs and practice, participatory approach, how to make a demand specification, pilot modelling, documentation standards, a toolbox for monitoring.

**CULTURAL HERITAGE AND CLIMATE CHANGE.
ADAPTATION TO CLIMATE CHANGE IN NORWEGIAN MUNICIPALITIES**

Thomas Risan, NIKU

The current and predicted changes in climate are expected to have impact on a global scale, but significant differences are also expected at national, regional, and local levels. The paper presents the Cultural Heritage (CH) aspects of an ongoing multidisciplinary project (CLIMATE: Adapting to extreme weather in municipalities: what how and why) where the main objective is to develop a manual to aid municipal managers and policy makers in facing the challenges of extreme climate-driven weather events. The project is a co-operation between seven Norwegian research institutes. Ongoing monitoring of CH sites in a municipality in central parts of Norway has already seen an increase (in the period between 1999-2005 compared to 1972-1999) in climate related damages on the CH sites. Climate scenarios indicates that the weather will change significantly in our near to middle-near future, thus the need for contingency planning is present at all scale levels from the global down to the municipality level. The impact on CH sites and Cultural Landscapes can come directly from the climate change itself, but it can also be a secondary effect of other measures originating in implementation of contingency plans to save human lives, infrastructure, drinking water supply or the natural environment.

WHO DONE IT? THE NATURE AND EXTENT OF DAMAGE INFLICTED ON PROTECTED ARCHAEOLOGICAL SITES AND MONUMENTS IN NORWAY

May-Liss Bøe Sollund, Inger Marie Holm-Olsen, Norway

In Norway the first Cultural Heritage Act dates back to 1905. Through the years the Cultural Heritage Act has been revised several times, and today all archaeological sites and monuments predating 1537 AD, and in the case of Sámi sites and monuments, older than 100 years, are protected.

A national archaeological registration survey started in 1963 and was concluded in 1991. This survey produced both a verbal description of each site, and mapping of the site. Today the Norwegian National Sites and Monuments Record is a GIS-based database, holding in excess of 150 000 sites and monuments.

As the national survey was nearing conclusion, several studies utilized the survey data to assess the state of the archaeological heritage. For many regions the conclusion was that, despite the strong legal protection of archaeological sites in Norway, the loss appeared to be substantial. In 1997 the Directorate for Cultural Heritage started a new programme aimed at monitoring and documenting the condition of the sites and monuments recorded by the 1963 – 1991 national survey. Sixteen municipalities are included this ongoing monitoring activity, and a renewed survey is planned for these municipalities every fifth year. In this paper we present the results from the first round.

MANAGING AN ICON: A CASE STUDY IN THE MANAGEMENT OF A NATIONAL MONUMENT IN A KARSTIC LIMESTONE ENVIRONMENT.

Ann Lynch, National Monuments Service, Dublin, Ireland

The graceful proportions and dramatic profile of Poulinabrone Portal Tomb, coupled with its location on the stark limestone pavement in the Burren region of County Clare, have given the tomb a significance that transcends purely archaeological and antiquarian interest. It has become an icon for Ireland's prehistoric past.

In 1985 a serious crack was noted in one of the portal stones which supported the capstone. This triggered a sequence of events including conservation, excavation and restoration, culminating in the state's purchase of the monument and 6.6 hectares of surrounding land. A Conservation Plan prepared for the site quantified its archaeological and ecological significance and also had regard to its visual / aesthetic, symbolic and economic values. A number of key threats to the site's significance were identified and conservation policies were recommended to conserve the integrity of the site and the spiritual quality of the landscape in its entirety. Over the past few years these policies have been gradually implemented. As the site lies within the Moneem Mountain Special Area of Conservation (SAC) which affords it protection under Annex 1 of the EU Habitats Directive, any management regime will have to have regard to its ecological and geomorphological attributes. To this end, a holistic approach has been taken to the long-term management of the site, which has included a baseline survey of its flora and on-going monitoring of the impact of the various elements of the management regime.

In addition to this case study, a brief summary will be provided of the 'Monitoring of Archaeological Monuments Programme' (MAMP) in Ireland. The objectives of MAMP are:

1. To establish a stratified and reliable baseline against which future condition and survival of the recorded archaeological resource can be monitored at both national and county levels, at appropriate intervals.
2. To determine the levels of risk to monuments in general.
3. To provide a sampling protocol for future programmes.

A pilot monitoring programme has just commenced to estimate the random variation for the criteria that are of importance (e.g. the level of destruction of monuments) and to test all operational aspects before MAMP goes 'live' on a national level.

THE LOST ARCHAEOLOGICAL SITES OF ALBANIA; DIGITIZING THE ARCHAEOLOGICAL DATA, IS IT A FICTION OR A REALITY? RECORDING THE PAST IN THE PAST ...ALBANIAN NATIONAL SITES AND MONUMENTS RECORDS

Ardit Miti, Eglanina Serjani, International Centre for Albanian Archaeology

In Albanian the concept of a national sites and monuments record is a relatively new idea. The first steps were taken at the end of 19th century when the two Austrian archaeologists Arnold Schober and Camilo

Prachniker recorded the remains of the archaeological data observed on their itinerary around Albania. Other foreign archaeologists of the 19th and 20th centuries, Francois Pouqueville, William Martin Leake, Leon Rey, and Luigi Ugolini, all made contributions to recording Albanian archaeological data but these were non-national initiatives rather than an established institutional process. It was only after the creation of the Albanian communist government in 1945 that the national archaeological heritage became part of the governmental institutional mechanism. At this time the record of the country's archaeology was the responsibility of different institutions; the Institute of Archaeology, Institute of Cultural Monuments, a number of regional offices and the museums. Their first objective, besides others, was the creation and maintenance of the paper record, based around a paper information card of the monuments. The goal was to create an institutional system for the documentation of national monuments. Nevertheless the potency of the recorded data from the sites, to survive over time was conditioned by the legislation and the basic instruments in use.

The fragile data inherited from the past and the turbulent transition period after the fall of communism in 1990s has created a wholly new series of challenges to efforts to record the Albanian national cultural heritage.

Building a National digitized archive of Albanian sites and monuments

It is since two years now since the Future of Albania's Past (FoAP) project, situated within the International Centre for Albanian Archaeology, began compiling the first national digitized archive of Albania's sites and monuments. This database has been created with off-the-shelf components, and is Microsoft Access based. Work on inputting the available data from the existing series of paper based records is already well advanced. The future development of this programme is to some degree limited by the real situation of the country.

Existing Albanian cultural heritage legislation does not include specific articles that favour the existence and development of a national archive. Their contribution on this matter can be considered a handicap rather than supporting the continued development of the database. It is thus, like the early researches, a non governmental initiative despite the contribution that cultural heritage is making to the development of modern Albania.

Furthermore Albanian infrastructure does not offer many possibilities for facilitating the process of data collection. The territory of Albania contain a rich and varied archaeological heritage but the monitoring of this and even the major national monuments is hindered by the undeveloped infrastructure.

The FoAP project is run by a staff of two archaeologists. A series of trial surveys in various regions of the country have revealed the vital importance of improving the rate of data collection, and the potential for the discovery of new and unknown sites. Many of these latter are under increasing threat. This process is labour intensive and in the absence of substantial funding it must be carried through by collaborative efforts with existing institutions.

The future of the project –fiction or reality?

Albania's past, like that of most of European countries, has been constructed in the past for particular social and political purposes. The context and criteria in which this was done are now redundant and yet Albania's national archaeological sector remains rooted in the fictions and circumstances of another age. To make this past, a new past, or indeed any past serve the present the potential of archaeology as one element in a constellation of cultural heritage projects must be understood at a political and legislative level and for this a proper understanding of the nature and development of Albania's archaeology it's necessary. This is the reality:

- A proper legislative framework is necessary to support the development of the archaeological cultural heritage recourses.
- Any further development of the project, the extension of the programme, the integration of various institution structures, etc, requires the changing of the nature of the archaeological environment of Albania.
- A regular programme of reinvestment for the management of the archaeological resource from the income needs to be developed.

PRECITY -ENVIRONMENTAL MONITORING AND CULTURAL HERITAGE MANAGEMENT OF URBAN ANTHROPOGENIC DEPOSITS IN THE UNSATURATED ZONE

Vibeke Martens, NIKU

The paper will discuss the effects on cultural deposits of urbanization processes, the effects of development projects on the landscape and its natural and cultural values in the towns an on the fringes of

towns; the effects of global environmental development; seminatural eco-systems; the development of a sustainable yet affordable management of cultural heritage; development of mapping methods and vulnerability assessment on archaeological remains in or near towns; development of tools and mitigation strategies to secure and preserve archaeological deposits and the eco- and artefacts within them.

The Norwegian Directorate for Cultural heritage has proposed that it will in future primarily undertake its statutory duty of preserving the national heritage by seeking to preserve archaeological sites *in situ* rather than excavating them. Consequently the national strategy for dealing with urban archaeological sites is now primarily one of preservation *in situ* wherever possible. There is thus a strong need for practical knowledge as a basis for actions in management.

The concept of *in situ* preservation implies that the deposits remain unchanged for ever. We have little or no baseline data which can contribute to our understanding of those natural processes of degradation which do occur within the archaeological deposits.

The papers deals with a proposed project aiming at identifying the environmental and societal parameters affecting the preservation conditions in urban anthropogenic deposits above the groundwater level (unsaturated zone), and thereby give a better basis for the protection of the cultural heritage represented by these deposits.

In the project we aim to:

- understand how societal activities, e.g. urbanization, might affect preservation conditions at cultural heritage sites.
- derive knowledge about temporal and spatial changes of environmental conditions in anthropogenic deposits.
- identify reliable and reproducible descriptive parameters for assessment of preservation conditions and threshold levels for anthropogenic deposits.
- develop mitigation strategies and remedial actions for preservation of archaeological deposits if or when threshold levels are reached.
- work towards a sustainable and affordable management of archaeological remains.

Session title: HAND-MADE PEOPLE: ANTHROPOMORPHIC FIGURINES IN EURASIA AND MESOAMERICA: CHRONOLOGY, FUNCTION, ICONOGRAPHY AND CONTEXT

Organizers: Dragos Gheorghiu, National University of Arts, Bucharest
Ann Cyphers, Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México
Simon Kaner, Sainsbury Institute for the Study of Japanese Arts and Cultures, UK

Time: Friday all day

Room: 241

Session abstract:

The scale of anthropomorphic figurines contrasts with the complex functions they fulfilled in ancient times. Over the years, their study has progressed from classifications and chronologies to the interpretation of their possible uses and meanings in ancient societies. The implementation of varying approaches, such as formal studies and chronological, contextual and thematic analyses, contributes to understanding figurines in their social context. The present symposium intends to bring together a wide range of scholars for a comparative study of the methodologies and interpretations applied to anthropomorphic figurines in specific case studies from Europe, East Asia, and Mesoamerica.

INTRODUCTION – WHY A COMPARATIVE APPROACH?
(Session's organizers)

EUROPE AND THE MIDDLE EAST

BEYOND "VENUS" FIGURINES: TECHNICAL PRODUCTION AND SOCIAL PRACTICE IN PAVLOVIAN PORTABLE ART

Rebecca Farbstein

Production processes and material choices reveal much about the social composition and technology of a group but remain difficult to identify in the fragmentary archaeological record. Archaeologists studying prehistoric art often focus instead on style or iconography to try to link objects to one another and understand their meaning in a cultural context. While such approaches are crucial foundations to the study of art, they provide an incomplete understanding of social and technical practices underlying surviving material culture. Significant insights can be gained from expanded emphasis on choice and manipulation of materials used for portable art.

A diverse corpus of art survives from the Pavlovian culture of Central Europe, c. 28-23,000 BP, and presents a case study for revealing social and technical production in the Palaeolithic. Variability and technical virtuosity apparent in Pavlovian material culture facilitate a contextual study of production choices in art. Attention to issues including material acquisition, technical choice, and production sequences enables reconstruction of both social and technical *chaînes opératoires* for specific assemblages, materials and sites. Re-examining familiar pieces like grave goods from the Brno II burial as well as less famous objects like non-figurative art from Pavlov I demonstrates the wealth of social and technical information gained using this approach. These insights reveal feasible intra- and inter-site patterns of production. This approach highlights fascinating similarities and differences in production and decision-making in Pavlovian portable art and builds a more complete picture of daily social practices in the Palaeolithic.

PPNB AND LATER FIGURINES IN ANATOLIA AND EASTERN (TURKISH) THRACE

Mehmet Ozdogan
(Abstract not available)

FIGURINES IN THE SOUTHERN LEVANTINE CHALCOLITHIC: FECUNDITY, MORTALITY AND MYTHOLOGICAL NARRATIVE

David Ilan, Glueck School of Biblical Archaeology-Hebrew Union College
Yorke Rowan, Department of Anthropology, Smithsonian Institution

Figurines in the Levantine Chalcolithic take on a variety of forms and are manufactured from a variety of materials: stone, terra-cotta and ivory, in order of frequency. The great majority of the figurines are anthropomorphic and female; these can be divided into naturalistic and abstract classes. The few known anthropomorphic male figurines are all naturalistic. The zoomorphic figurines are much less frequent than the anthropomorphic and also tend toward the naturalistic. This paper will present a breakdown of the different classes of figurine and their archaeological contexts. Utilizing this classification as a foundation we will discuss Chalcolithic figurines' possible functions and symbolic meanings and how these may have changed over time.

PREDYNASTIC AND DYNASTIC FIGURINES IN ANCIENT EGYPT

Aloisia de Trafford, UCL Institute of Archaeology, London, UK

Ancient Egypt is one of the few areas where it is possible to see an unbroken line of cultural continuity, development and evolution from Prehistory (Predynastic Period, c. 4000-3100 BC) into the historical period (The Dynastic Period, c. 3100-1069 BC). A wide range of anthropomorphic figurines, were produced throughout this time.

This paper will situate itself in relation to some of the most recent studies of Egyptian figurines which have treated topics such as symbolism, metaphorical meanings, materiality, gender and archaeological and

social context. This will be set against a background review of the history of figurine studies focusing on the Egyptian case, from the early studies that focused on the notion of a Mother Goddess to those which sought to organise knowledge of these artifacts by classifying them and creating typologies.

This paper will look at several different groups of figurines from various periods (ranging from Predynastic nude, so-called 'fertility' figurines, to the Ushabtis, also called funerary figurines, common throughout most of the Dynastic Period) for the purpose of revealing the continuities, developments and changes that took place in the manufacture, symbolism and use of these artifacts.

The focus of this paper will be the use of figurines in ritual spheres which in ancient Egypt spanned a vast range of situations from pregnancy and birth, to protection, healing and death and the afterlife. Figurines played central roles in ritual performances in which they often represented those who were not present at the administering of the ritual (e.g. a deity, the king, the deceased, the sick or even the enemy). In this sense they were attributed with a particular agency and symbolism. In interpreting the figurines, this paper will take into account not only their specific archaeological context, but will also seek to understand them in relation to a broader constellation of other related items of material culture found in those contexts (including texts), from which the figurines cannot be completely disassociated from if their social context, purpose and meaning are to be thoroughly investigated.

The meanings of certain figurines will also be explored in relation to other classes of artifacts which may, in certain contexts or certain time periods, have performed roles which share similarities with those of figurines. I refer here to artifacts that were capable of depicting the subjects that are represented in figurines, e.g. amulets, statues, models, wall reliefs and paintings, and carvings/paintings on particular artifacts.

COLOURED BODIES: CRAFT PRODUCTION AND SOCIAL MEANINGS IN NEOLITHIC THESSALY FIGURINES, GREECE

Kostas Gallis, University of Thrace, Greece
Georgia Kourtessi-Philippakis, University of Paris I and UMR 7041, CNRS, France

According anthropological approach, human body and its representation is a biosociocultural production. Thereby, the use of colors in the process of making anthropomorphic neolithic figurines, linked to available pigments and technological skills, express also both social meanings and symbols.

The aim of this contribution is to examine how raw materials and techniques, pigments and decorative patterns take part in the process of human representation in the agro-pastoral neolithic societies of Greece. Figurines will be considered in the sphere of craft production in order to explore their relation to other coloured finds (pottery, miniatures...) and, therefore, discuss their use and function. This study is based on archaeological material from the region of Thessaly, Central Greece.

PROBLEMS OF IDENTITY FOR MYCENAEAN FIGURINES

Andrea Vianello, INTUTE, University of Oxford, UK

Mycenaean figurines are the most characteristic material evidence of Mycenaean religion. They appear to have been standardised and have been found in most places where Mycenaean products arrived. Mycenaean figurines did not represent a unique and characterised divinity, and because they appear to have been used by other cultures, it is possible that they were a material tool built to embody the abstract, symbolic meanings attributed to them by their users. Such meanings might have been several and different. Their relative standardisation and anonymity must be interpreted in front of the impossibility to recognise homogeneity of cult within the Mycenaean world. There is no evident continuity or borrowing from the Minoan tradition, just some influences. As the Mycenaean had built a broad exchange network, where different religious symbols and cultural identities must have come in contact frequently and globalisation processes started to take place, the figurines probably were a solution to find unity in the difference. This paper will consider the figurines in the light of the Mycenaean exchange networks and especially address the possibility that their ambiguous identity may mirror problems of identity within the broad community of consumers of Mycenaean material products.

FIGURINES FROM THE MINOAN PEAK SANCTUARIES

Alan Peatfield, University College Dublin, Ireland
Christine Morris, Trinity College Dublin, Ireland

The clay figurines from the Minoan peak sanctuaries number in their thousands. Yet they remain one of the understudied, even undervalued, resources for the study of Minoan religion and society. In broad terms the main three types of figurines are familiar to scholars – animal figurines (domestic types: sheep, goats, cattle), human figurines (male and female), and detached anatomical models, termed votive limbs. Lacking any consistent publications of the corpus of the figurines, especially the human examples, what is lacking in Minoan scholarship is a full understanding of the range of the features of these figurines, in relation to gender, dress and hairstyle, posture/gesture, stylistic variation, etc. We have tried to remedy this lack through our study and publication preparation of the figurines from the Atsipadhes peak sanctuary. The more interesting aspect of the peak sanctuary figurines however, to emerge from the Atsipadhes study, is the significance of the contextualisation, i.e. the distribution of posture, gender etc., in relation to the interpretation and usage of the peak sanctuary. In this paper therefore we shall review the methodologies and results from the Atsipadhes excavation, particularly in relation to the interpretation of peak sanctuary cult practices, and test the implication of our results in relation to other peak sanctuary studies.

WHY ARE FIGURINES HETEROGENEOUS? COMMUNITIES OF RITUAL PRACTICE AND THE REPRODUCTION OF KNOWLEDGE IN NEOLITHIC ITALY

John Robb, Department of Archaeology, Cambridge University, UK

Why do figurines sometimes conform to well-defined types and other times display a bewildering variety of form? Unlike the situation in the Balkans or elsewhere, the figurines of Neolithic Italy defy attempts to typologise them, with almost no two examples alike, even from the same site. Such variety does not make sense in terms of use as a widespread cult image, nor in terms of the expression of individuality. This research approaches the problem in terms of Barth's anthropological theory of the reproduction of knowledge. The roots of Neolithic Italian figurine variability lie in the scale of social relations and figurine use, the intersection of figurine production and other technologies, and the social organisation of communities of ritual practice

Why are figurines heterogeneous? Communities of ritual practice and the reproduction of knowledge in Neolithic Italy John Robb Department of Archaeology, Cambridge University Jer39@cam.ac.uk Why do figurines sometimes conform to well-defined types and other times display a bewildering variety of form? Unlike the situation in the Balkans or elsewhere, the figurines of Neolithic Italy defy attempts to typologise them, with almost no two examples alike, even from the same site. Such variety does not make sense in terms of use as a widespread cult image, nor in terms of the expression of individuality. This research approaches the problem in terms of Barth's anthropological theory of the reproduction of knowledge. The roots of Neolithic Italian figurine variability lie in the scale of social relations and figurine use, the intersection of figurine production and other technologies, and the social organisation of communities of ritual practice

SMALL BREASTS - BIG BUTTOCKS: SEXUAL DETERMINATION OF THE NEOLITHIC FIGURINES FROM THE BALKANS

Goce Naumov, University of Skopje, Institute for History of Art and Archaeology, Macedonia

Recently often there were discussions about the sexual characteristics of the Neolithic figurines. Archaeologists and theoreticians from the middle of XXth century, due to the definition of the Neolithic as an age of feminine domination i.e. matriarchate, assigned a vast number of ceramic figurines as feminine and even named them as "goddesses". On this so called indisputable or "romantic feminization" of the Neolithic sculpture there was reaction by the scholars of the new generation, which deny or question the quantity of feminine sculptures and the absolute sexual determination of the figurines. The absence of concrete sexual

features leads these scholars to define these figurines as Neolithic representations of people seen as sexless ancestors, effigies or toys. But are they right?

In the great number of Neolithic settlements excavated in the Balkans there are figurines with emphasized feminine sexual characteristics which outnumber those with male genitalia. On the other hand, the figurines with emphasized feminine genitalia, almost always have small breasts and large hips usually absent among the male representations.

Therefore this paper aims to establish typology which will point on the general features of male and feminine representations in the Neolithic Balkans. Thus several sites will be used in order to ascertain if or which sex dominates on the figurines from those settlements and how they correlate between Neolithic cognition and modern interpretation.

NEOLITHIC CERAMIC FIGURINES IN THE SHAPE OF WOMAN – HOUSE FROM THE REPUBLIC OF MACEDONIA

Nikos Chausidis, University of Skopje, Institute for History of Art and Archaeology, Macedonia

In the last fifty years there are around one hundred complete or fragmented ceramic cultic objects, modeled in the shape of stylized house, found in Neolithic settlements from Macedonia. Over the roof of the represented house, human head or woman figure is always raised, more often with pointed sexual characteristics. Parts of these objects are already presented in the archaeological publications, usually named as “altars” which represent the “Great Mother” or the “Mother Earth”. This kind of objects is not recently found outside the territory of the Republic of Macedonia, which points out their specification for the Central Balkan region.

In this paper we primarily present the system of categorization of these objects and we also attempt the connection of the different types and subtypes into unique system where their mutual genetic relations will be defined. In spite the absence of immediate parallels, there’s also an attempt of comparing this finds with similar objects of this period (ceramic models of houses from the South – East Europe and Near East).

Due to the symbolic and iconographic analysis we define this finds as cult objects of “Mother – House” type. We consider that they represent deified and personalized house which symbolizes several categories and functions which are typical for it (the power to give birth – to produce, to protect, to feed i.e. the maintenance of life, to gather and organize people, to operate community and probably to reproduce – resurrect the deceased).

The meaning and cultic use of these objects are revealed with comparative method and especially with its synchronic and diachronic aspects. The parallels for the symbolic relation of “woman – house” or its wider meaning “woman – dwelling”, is found in several classical cultures and especially in folklore traditions in several populations from European and Asian regions, and even abroad. Due to the analysis of the objects, the general symbolic meaning of some of the house elements and comparative material, we propose several hypothesis for the concrete cultic use of presented Neolithic objects from the Republic of Macedonia: - as objects where libation or lighting of some materials was made; - as objects where imitative magic was inserted i.e. carrying of certain objects (icon lamp, grain, bread, milk etc.), so that in the real house *“the hearth is forever active”* and plenty of food to be stored.

PREHISTORIC CYPRIOT FIGURINES-GENDER, IDENTITY AND SEXUALITY

Bernard Knapp

Shared social practices - imprinted in materials such as figurines, bodily ornaments, weapons, terracottas, utensils and tools - can be actively involved in expressing social identity and gender. Symbolically and materially, representations of people, divine beings, plants, animals and much more come together in archaeological contexts that conjoin architecture, ritual imagery, belief systems and gender constructs. The abstractions and representations of prehistoric people were not separate and intangible but rather formed an integral part of the material aspects of their everyday life.

Using a selection of Late Bronze Age Cypriot female figurines whose iconography, form and function are quite different from those of their earlier Bronze Age or Chalcolithic counterparts, I consider the link between gendered representations, sexuality and social identity. As long as archaeologists continue to insist that these figurines represent deities, we shall never be able to consider alternative interpretations. In this study,

I consider whether these representations have anything to do with a deity rather than with other people-mothers, priestess, dancers or celebrants-who lived and worked on prehistoric Cyprus.

RETHINKING THE GOD-DOLLY FROM THE SOMERSET LEVELS, UK. CONTEXT, PLACE AND TRACING WET AND DRY COSMOLOGIES

Clive Bond, Department of Archaeology, Faculty of Social Sciences, The University of Winchester

Since the 1966 excavation of this ambiguous figurine (Coles 1968), recovered head downwards between two wooden tracks, its interpretation has been fraught. The excavators' reported later, 'was it a joke, a lost toy or a carefully deposited ritual object?' (Coles and Coles 1986, 81). This paper explores the ritual interpretation of this ash wood object, appearing to be carved roughly, but arguably deposited intentionally between two track structures, Bell A and B, both on the same alignment. Was this a long know path across the raised bog, re-used, then changed by events evoking supernatural agents? What might a more contextualised approach combining figurine, tracks and the moor/island interface offer by way of explanation? Did the beliefs that lead to the deposition of the God-dolly originate from earlier practices and cosmologies such as those established in the earlier Neolithic (*cf.* Bond 2004)?

Discussant: Dr. John Robb

SIBERIA AND JAPAN

PREHISTORIC FIGURINES IN THE SOUTHERN PART OF RUSSIAN FAR EAST

David L. Brodyansky, Far Eastern National University, Vladivostok, Russia

In the southern part of the Russian Far East, in Primorye and Priamurye, a number of works of art have been discovered which date from the Mesolithic to the Early Iron Age. These include portable and monumental petroglyphs, sculpture, small plastic items, and reliefs on ceramics and bone. In Primorye a considerable proportion of the finds comprises "cupuleous" stone-petroglyphs. Human forms are depicted, as are masks (faces), animal figures and plants. The Boisman II site produced layers containing shells deposits from the Boisman culture, Burial grounds and ritual complexes are especially rich in the Boisman culture. In this culture appear depictions of a series of personages that perhaps relate to the myth about the Raven that was written down by peoples of the North, Chukotka and Alaska, and which seems to have resonances among the people who created the Boisman culture, probably Arctic Mongoloids who settled along the the coast of Primorye 6000 years ago.

Animalistic sculptures and petroglyphs represent more than 60 species of birds, land and sea animals. Figures of tortoises evoke myths about the solar married couple, which is widespread through the Korean peninsula, the Japanese archipelago, and the Russian Far East. As images of pine-tree branches and oak leaves on ceramic vessels are found in the early farming cultures in the region, the author connects these representations with agricultural rituals. The author further suggests a relationship between the high level of Jomon art with the presence of a very productive economy, including some form of agriculture and aquaculture.

PREHISTORIC FIGURINES IN EAST ASIA: WHY SO MANY IN JAPAN AND SO FEW ELSEWHERE?

Simon Kaner, Sainsbury Institute for the Study of Japanese Arts and Cultures, UK

The Jomon figurine database held at the National Museum of Japanese History holds details of more than 15,000 ceramic figurines and figurine fragments dating to the Jomon period of Japanese prehistory (c. 14,000 cal BC - c. 500 cal BC). These ceramic figurines are just one, albeit impressive and evocative, aspect of the representation of the human form from the early occupation of the Japanese archipelago. Other manifestations include clay masks, stone figurines, anthropomorphic designs on pottery vessels, and various representations interpreted as human genitalia, perhaps most notably stone bars or rods of various proportions. Sometimes these objects are found in isolation, occasionally in well-defined archaeological contexts. A small number of Jomon settlement sites have produced very large numbers of these figurines,

while most produce at most just a few. While they are normally found broken into fragments, a small number of complete figurines have been found. There is great interest in these figurines, the 'finest' examples of which are designated Important Cultural Properties, or even National Treasures, testimony to the significance placed on these ancient artifacts in contemporary Japan. The tradition of making ceramic figurines comes to an abrupt end in most of the archipelago with the advent of rice agriculture, although echoes and resonances occur in later Yayoi (c. 500 cal BC - c. AD 300) and Kofun (c. AD 300 - 710) contexts, in particular the anthropomorphic 'haniwa' terracotta figures which surround the mounded tombs of eastern Honshu during the period of the expansion of the first Japanese state.

In contrast, the early prehistory of China and the Korean peninsula is marked by an absence of large numbers of anthropomorphic representations. This paper will explore the significance of this difference for understanding broad-scale cultural processes in early prehistoric East Asia. It will discuss how this reflects on the different processes of the construction, transmission and reproduction of traditions of ritual practice and knowledge in what are becoming known as transegalitarian societies in the region, and consider how variations in the 'representation of the divine' through anthropomorphism relate to current perceptions of environmental stress.

A COGNITIVE APPROACH TO THE VARIETY IN FACIAL AND BODILY FEATURES OF PREHISTORIC JAPANESE FIGURINES

Naoko Matsumoto, Okayama University, Japan

Clay figurines from the Jomon period of prehistoric Japanese Archipelago show astonishing variety in their facial and bodily features. In this presentation, it will be discussed how we can understand their meanings from a point of human cognitive universality and socio-cultural context.

The range of variation, deformation and abstraction in the representation of Jomon figurines is striking when we remember that it is always easy to find a model to make an anthropomorphic figurine. It vividly shows that the way the body is understood, represented and experienced should vary according to cognitive schemas in particular social situations, and the meaning of clay figurines was diverse even among the Jomon societies. To understand the diversity, it is critical to sort out universal factors and context-specific diversity concerning the production and interpretation of anthropomorphic artifacts. The ability to recognize faces and read their emotion is one of such universal human cognition. As a preliminary approach from this perspective, the results of psychological experiment of the facial expressions of Jomon figurines will be presented, and how we could interpret the differences between naturalistic, abstract, stylized and deformed representations will be discussed. Bodily features of the figurines and other archaeological data will also be taken into consideration to understand the facial variation in socio-cultural contexts.

Discussant: Simon Kaner

MESOAMERICA

STYLE, SUBJECT MATTER, AND THE SIGNIFICATION OF FIGURINES: A CASE STUDY FROM FORMATIVE CENTRAL MEXICO

Richard Lesure, Department of Anthropology, University of California, Los Angeles, USA

The early scholarship on Formative figurines of the Central Mexican highlands emphasized typology and classification. The results have been resilient: types formulated in the first decades of the 20th century are still in use today. Still, while fascination with figurines has burgeoned in recent years -- along with interest in ambitious interpretive frameworks touching on gender, materiality, and the hegemony of everyday life -- typological work has increasingly seemed like a stale endeavor. Analysis focuses on subject matter and context to the exclusion of style. I argue that stylistic analysis instead constitutes an essential domain for exploring the signification of figurines. In a case study from Central Mexico, I trace the relationship between subject matter and style by comparing contemporaneous figurines from two areas some 80 km apart: a recently excavated collection from central Tlaxcala and an assemblage from the Basin of Mexico that was the basis for the traditional regional typology (Zacatenco, El Arbolillo). The relations between subject matter and style prove to be unstable and patterned at multiple scales. From those observations I draw out suggestions concerning the original signification of the figurines.

TIME, GENDER AND MEANING IN TEOTIHUACAN FIGURINES

Warren T.D. Barbour, University at Buffalo, SUNY USA

This paper explores reasons for the roughly equal numbers of figurines representing males and females in Ancient Teotihuacan, Mexico. This ratio differs greatly from the previous formative period and the epiclassic period following the fall of Teotihuacan when roughly eighty percent of the figurines represented females. An analysis of the specific contexts of Teotihuacan figurines in domestic ritual, public ritual and foreign ritual give direct clues to the social hierarchy within the ancient city, as well as why female representation increased after the fall of Teotihuacan.

FROM VILLAGE TO CITY: THE HUMAN IMAGE AND THE EMERGENCE OF URBAN SOCIETY

Gabriela Uruñuela and Patricia Plunkett, Universidad de las Américas, Puebla

Robert Redfield's folk-urban continuum contrasted the "Little Tradition" of villages with the "Great Tradition" of cosmopolitan urban settings. Here we use this concept in a chronological sense, and compare the nature of human representation in village settings just prior to the beginnings of city life with those recovered from early urban contexts in Cholula, Puebla, Mexico. We explore the transformations in human representation as the roles and statuses recognized at the village level were altered by the emergence of a more complex and heterogeneous society during the first century AD.

MIDDLE PRECLASSIC OLMEC FIGURINES

Ann Cyphers, Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, Mexico

The transition from the Early to Middle Preclassic in Mexico's Gulf Coast region involves dramatic changes in anthropomorphic figurines, particularly as regards head and facial traits. These stylistic changes are coincident with shifts in power between the major Olmec capitals of San Lorenzo and La Venta. This paper will explore possible social meanings related to the adoption of new figurine styles.

FIGURINES IN THE HEART OF THE AZTEC EMPIRE

Cynthia Otis Charlton and Thomas H. Charlton, USA

Sometime in the early part of the Tlamimilolpa period (AD 250-450) at the city of Teotihuacan in the greater Basin of Mexico in the Mexican Central Highlands, figurines began to be produced and reproduced through the use of molds. Once developed, molding became the primary means of figurine production for all succeeding civilizations arising in this great central area and figurines were a highly visible and important part of the material culture of all of them. The Aztecs were the final and most extensive Central Highland civilization, their empire ending abruptly with the Spanish Conquest. Figurines in the Aztec Empire will be discussed from the perspectives of Tenochtitlan/Tlatelolco at the center of the Aztec Empire, from the Otompan city-state which included ceramic figurine workshops, and from sites outside of the Basin itself. Changes in figurine "culture", production and use after the Conquest will also be discussed in terms of what this may reflect about prehispanic figurine use.

FIGURINE ANALYSIS AND THE BEGINNINGS OF THE TOLTEC STATE

Robert Cobean, Direccion de Estudios Arqueologicos-INAH, Lic. Verdad Num. 3-Colonia Centro Mexico, Mexico

By 900 A.D. Tula, Hidalgo, Mexico constituted one of the largest prehispanic cities in Mesoamerica, with an urban area of at least twelve square kilometers and a population in the tens of thousands. This paper will examine correlations between the cultural traditions of several types of clay figurines and key processes in the growth of the Toltec city between its founding circa 650 A.D. and its apogee around 1000 A.D.

TERRACOTTA AND STONE FIGURINES OF THE BOLAÑOS CULTURE, JALISCO, MEXICO

María Tereza Cabrero, Instituto de Investigaciones Antropológicas, Universidad Nacional Autónoma de México, Mexico

In the Bolaños culture that emerged in the northern part of the state of Jalisco, Mexico, terracotta and stone figurines played a very important role that may be understood through the implementation of a social and ideological approach. We will study the artifacts deriving from systematic archaeological excavations at two main sites which dominated the regional political and economic domains.

“MASKS, MULLETS AND SOMBREROS: REFLECTIONS OF FIGURINES ALONG THE USUMACINTA DRAINAGE”

Erin L. Sears, Department of Anthropology, University of Kentucky, Lexington, KY, USA

Maya ceramic figurines reflect intersecting spheres of technological, stylistic and contextual patterned relationships. These relationships are illustrated with figurines originating from several Late Classic settlements located near or next to the Usumacinta/Pasión Rivers. By focusing on sites along connecting waterways, I attempt to discern directions of influence and change with regard to figurine use patterns. Traditional archaeological criteria, obtained from the study of figurine materials from several archaeological and museum contexts, are supplemented by an intensive use of chemical data obtained by neutron activation analysis. These combined data sets assist in forming interpretations that incorporate figurines as part of the archaeological record.

HAIRSTYLES AND HEADDRESSES IN EARLY PRECLASSIC MESOAMERICAN FIGURINES

Alejandro Hernández

Early Preclassic (1150-850 B.C.) terracotta figurines from Mesoamerica show great variation in hairstyles and headdresses, which may be very simple or quite complex. This variation merits study and interpretation since it likely has social connotations. Nonetheless, the uniqueness of these adornments make classification difficult such that their formal analysis is an indispensable first step in understanding the complexity that is observed. The present paper will examine the challenges faced in their classification and a preliminary interregional comparison of hairstyles and headdresses from Central Mexico, Oaxaca and the Gulf Coast.

Discussant: Richard Lesure

Session title: MAKING AND UNMAKING HOMES: DOMESTIC PRACTICE AND MATERIALITY

Organizers: Per Cornell & Tove Hjørungdal

Time: Friday all day

Room: 203

Session abstract:

The concept of home is related both to palpable daily life experiences and a complex metaphor, often used when addressing large virtual entities, eg. the home of the nation. Home may be about the cosy and secure, but may also be related to traumatic and terrible experiences. Addressing the making and unmaking

of homes concerns the creation of a structural internal/external divide, a part of a process of subjectivation. In such a process the members –or supposed members- of a home to be are involved, but also other actors, with an interest of sustaining or destroying homes. In making and unmaking homes, materiality plays an important role. Part of the home is material, “heavy materiality”, and plays an important role in maintaining the home.

There are, probably, no universal material features for the home. But certain activities, like eating, are often related to daily life homes. The relative importance of particular features is an interesting issue. Archaeologists have often focused on the house and related buildings, but at times the hearth has been the most popular indicator, despite the evident problems involved.

There is often a cyclical element in the creation and dissolution of homes, related to the human lifespan. In such cases, there is often a corresponding accumulation of objects, and at times a successive spatial re-arrangement and spatial extension. At times, specific traditions, like the *casser maison* ritual in France, in which some people, with the coming of age choose to dissolve their homes and move elsewhere, often to an institution for elderly people. This is a kind of re- construction of Self by emptying the home and placing material things among kin and friends.

But there are also other reasons for dissolving homes, such as ruptures among the co-habitants (notably by divorce). Not least important in dissolving homes are acts from “external” actors, such as large scale infrastructure re-arrangements, or direct destruction of certain areas (often slum dwellings). Such large scale interventions are at times called a makeover, which hides the complex, partially brutal effects of such projects.

The aim of this session is to address home as an archaeological object of study, in particular in relation to making and unmaking of homes, and the material dimensions involved.

Paper abstracts:

MAKING AND UMAKING HOMES

Per Cornell, Tove Hjørungdal, Sweden

The concept of home is related both to palpable daily life experiences and a complex metaphor, often used when addressing large virtual entities, eg. the home of the nation. Home may be about the cosy and secure, but may also be related to traumatic and terrible experiences. Addressing the making and unmaking of homes concerns the creation of a structural internal/external divide, a part of a process of subjectivation. In such a process the members –or supposed members- of a home to be are involved, but also other actors, with an interest of sustaining or destroying homes. In making and unmaking homes, materiality plays an important role. Part of the home is material, “heavy materiality”, and plays an important role in maintaining the home.

HOME: A COMPLEX CONCEPT AND PHENOMENA

Ida Wentzel Winther, Denmark

It is a contemporary assertion that it has become a condition for modern people at the end of the 20th and in the beginning of the 21st Century to be ‘on the move’ (Bauman 1998, Rushdie 1995, Diken 1998). We move physically, mentally and, especially, virtually. New communication systems make new demands and invade us. We can be in the global space, even though we simultaneously sit behind a locked door in front of a screen, or while we are in circulation in the social traffic mobile phone in hand. We can be said to ‘stay at home’, ‘go places’ and be ‘NoWhere’, almost at the same time. ‘Now here’ and ‘no where’ are no places, all places and exactly this place in one and the same moment. The new global space and the use of new technologies undermine the old conception of Home. It has become problematic to refer to ‘Heimat’ (the untranslatable, but essential German word for home and belonging), rooting or the immobile as starting point for doings and beings. Transition and change have become indisputable conditions. We live in a society characterized by busyness. And in Denmark from quite a young age we move in different arenas and mix with many people.

There are many homes and ways ‘to home’ oneself nowadays. NB: ‘To home’ and “homing’ are active verb forms. Today it is possible to feel at home in many different places but perhaps the hardest at home,

while home is a concept and a phenomenon wrapped in idealized backward-projections that seem conventional and something to be taken for granted, because being and feeling at home seem to be well-known. Recently, home has become a dominant object of display and discourse. Home is something we write about; home is used as a referent for security; and home is displayed in nostalgic country style in various housing magazines. Today, home as lifestyle is riding high, though in a schizophrenic kind of way. We spend a lot of money on 'making home' but we dwell there so rarely. These years, we create heavy and expensive homes. We construct buildings that get inscribed in a home discourse and a home ideology. The overloaded homes subscribe to a civilization process but stand in glaring contrast to our late-modern, flexible and mobile life. There is an idealization and a re-territorialization of domestic life taking place, even though the potential inhabitants quite often dwell in other places than at home (at the work place, in the day-care centre, in school, doing leisure activities and so on).

The aim of this paper is to make a deconstruction of the plus-word 'home'. I crystallize it into four categories: a) *Home (as idea)*, b) *The Home as a tactile place*, c) *To feel at home*, and d) *To home oneself*.

HOME AND LIFE STORY

Kerstin Gunnemark, Sweden

A house can not be a home before it is equipped with furniture and other belongings. However, the materiality is not enough to make a home; the members of the households must also create a feeling and make up in their minds, their attitudes towards the dwelling. Even if people talk about their new apartments, which they recently moved in to, as their home, they also use to compare with the house where they lived before. In these comparisons the former place to a larger extent has legitimacy of home. Anyhow, the feeling of belonging to houses and places is not constant during the whole life time. The changes are regarded to activities as processes in everyday life. In this transformations the materiality, all belongings which the individual choose to bring from one place to another also facilitate the possibility to create the home within a new house, in a new city or other part of the country. Nowadays many people have experiences of moving shorter or longer distances for educations and incomes. Moving is also connected with different phases of life and constellations of households.

When a household is moving the members have to consider which artefacts are necessary to keep, which are possible to sell or throw away. It is rather common to save things in attics and cellars which have not been used for many years but they would follow their owners from one place to another. It can also be very difficult to get rid of other artefacts and furniture when they are reminiscence of the owners' life histories.

The aim with this paper is to discuss the relationships between individuals and their belongings with their opportunities to create the feeling of home with retrospective reflexions on their own lives. I have in different projects developed a method for the purpose to encourage people to describe their life stories and give special consideration to the materiality. This kind of autobiographies can also be useful within the Sector of Culture Heritage. I would like to illustrate this statement for creation of museum collections with descriptions of materiality within life stories and references to the actor – network – theory by Bruno Latour.

HABITUS UNBOUND: NEW DIRECTIONS IN 'HOUSEHOLD' ARCHAEOLOGY AND 'HISTORICAL ARCHAEOLOGIES' OF 'RISK SOCIETY' AND 'REFLEXIVE MODERNITY'

Lorna Singleton, Stephanie Koerner, England

Our aims with this presentation respond to such themes reflected in the session abstract as the following:

- (a) the materiality of entities and processes that anthropologists have by now long summarised with expressions like: the 'domestic cycle' and patterns of 'custom and conflict',
- (b) the 'domestic modes of production', 'household archaeology' and challenges of replacing 'top down' by 'bottom up' approaches to the social, economic and ideological aspects of 'urbanisation and state formation',
- (c) the modern - pre-modern dichotomy and historical archaeology's difficult encounter with new social boundaries', modes of objectifying 'otherness' and 'individualising' processes under conditions of 'risk society',

(d) 'new cosmopolitan' approaches to aesthetic and moral (not only the economic) aspects of globalisation and changes in interpersonal relations, for instance, of the 'home'.

In this presentation we will: (1) develop a framework to explore interrelations between these themes, and (2) illustrate something of the relevancy of 'household archaeologies' centring on the aesthetic and moral dimensions of trust for bringing light to widening gaps between rich and poor in local contexts of 'globalisation' with case studies documenting the changing nature and consequences of threats to existential conditions of possibility for the everyday wellbeing of communities living in what might be useful to call 'factory towns' and districts. To these aims we draw from research on 19th century factory towns, mining communities, and urban and rural factory districts in North America and England. Relating to our research on paradoxes involved in the ways in which 'cultural heritage' claims are embedded in changing social geographies of environmental hazard, unsustainable development and political conflict, we focus particular attention on materials on communities exposed to chemical and nuclear energy industrial hazards and social marginalisation.

We will conclude with suggestions of what these materials indicate about the light that household archaeologies of the existential conditions of possibility for moral qualities of 'home' in communities (which are at once subordinated, exploited and marginalised by dominant sectors of what some call contemporary 'risk society') can throw on radical inequalities respecting the impacts on 'citizenship' of several recent trends respecting roles that trans-national industries and agencies are assigning to 'science and technology' as 'public' policy authority.

ARCHAEOLOGICAL HOME-MAKING IN THE ERA OF MODERNITY – EXAMPLES FROM THE WRITINGS OF HANNA RYDH

Elisabeth Arwill-Nordbladh, Sweden

Archaeological discussions of home and home-making can benefit from several kinds of evidence. In this paper, the topic will be focused on the writings of the Swedish archaeologist and feminist Hanna Rydh (1891-1964). Special attention will be directed towards various analytical concepts related to notions of home, femininity and women's roles. The point of departure will be, among other things, some early Swedish sources related to modernity and feminism. The empirical material is found in Rydh's travel writings from journeys in Latin America, the Middle East and India as well as her interpretations of prehistoric homes, especially visible in her writings directed towards children.

THE SPATIAL IS THE SOCIAL: DAILY PRACTICE AND THE FORMATION OF HOUSEHOLD IDENTITY IN ANCIENT YUCATAN

Scott R. Hutson, Kentucky, USA

Mapping, excavation, paleobotany, and soil chemical analyses within houselots at Chunchucmil, an Early Classic (400-600 A.D.) urban center in Yucatan, Mexico, enable detailed reconstructions of daily practices and the use of space. As the social groups occupying these houselots grew, new structures were built and the spatial contexts of practice were transformed. In this paper, I interpret these changes in the locations of activities from a dwelling perspective. This perspective assumes that a subject's identity is formed through relations to other people, places and things. Since these relations come into being through daily activities, changes in the context of these activities instigate new social relations and changes in identity. This paper describes the transformations in social relations that resulted from transformations to the built environment. The paper also discusses the ways that circulation among public spaces such as alleyways shaped relationships between households.

NOT ONLY THE HOME OF THE RAIN GOD – MAYA CAVES AND THE COLONIAL MAKEOVER

Johan Normark, Sweden

In Mayanist research, the cave is the centre of cosmos and the home of the rain god. It is a dominant symbol that is seen as an example of cultural continuity for millennia. Undoubtedly, the cave was important

to most Prehispanic settlements since sites usually were located around, near or on any form of cave. However, most Mayanist cave research focuses on rituals and cosmological models where current practices are projected into the distant past as if the caves have always had the same meaning. This direct historical approach is a standard procedure and researchers do not even see the Spanish conquest as a problem, probably because most of the research is performed in areas far from the Colonial control.

From the Coahuah region in southern Mexico, it is evident that the settlement congregated around caves during primarily two periods, the Late Formative and the Terminal Classic. Both periods are considered to be very dry but the caves and other damp depressions conserved moisture for agriculture. When the Spaniards came they congregated the settlements to water filled caves and the church condemned the use of all other caves as pagan. No longer were there any settlements near the caves, although the caves continued to be used, but only for rituals hidden from the church, not for conserving water to support an adjacent population. Droughts during the Colonial period were severe and the result of unintended consequences of a settlement makeover. This change in the use of the cave must be understood instead of uncritically project ethnographic data into the past.

ALWAYS COMING HOME? WHAT WAS "HOME" IN THE NEOLITHIC DINARIDES?

Dimitrij Mlekuz, Slovenia

The paper tackles the creation and maintenance of "home" among the Neolithic societies in the east Adriatic. Those groups were highly mobile and left no features that are conventionally associated with "homes" (such as houses).

I am interested in the diverse ways people 'do' and feel home (rather than think about home) through dynamic processes and negotiations that transform places into "homes" in the context of everyday life. These temporal processes include routinized activities (cooking and sleeping but also other of less "domestic" nature) and cyclical events (such as cleaning of the "living floors" and burning the occupational debris). Home is therefore grounded less in place than in diverse activities (not necessary "domestic" in the conventional sense) that occur in place. Another aspect of the concept of "home" I am going to pursue is relation between "home", identity and the concept of self. I am especially interested in the ways attending others (family, household or herd of animals) through "domestic" activities create and re-produce sense of identity and being "at home".

UNMAKING HOMES: A TOPOANALYSIS OF MEMORY AND FORGETTING IN THE CONTEXT OF ABANDONED DOMESTIC SPACES (WITH CASE STUDIES FROM PREHISTORIC CYPRUS)

Sorina Spanou, Scotland

The recognition that houses are dynamic entities playing an active part in the creation of social continuity and memory is an important one in archaeological theory and method; for it opens up the possibility of exploring prehistoric domestic architecture as *lived* space rather than as a typological and functional category of material culture. Methodologically, the key to understanding how architectural spaces of everyday life would have created a memory of place is to approach their life histories in a way that reveals the stages of their transformation, such as construction, renovations, replacement, decay and abandonment; the relationships of the life cycles of the physical structures with the developmental cycle of the domestic group; the recognition that generations of houses and biological generations lead parallel lives. From a biographical point of view, each stage, as representing the complex relationship between time and materiality, helps us to understand the various ways that prehistoric houses and homes would have embodied the collective memory, stories and heirlooms of their inhabitants. Therefore, it is the temporal depth that is of interest here as opposed to a horizontal spatial analysis.

Numerous anthropological examples illustrate how, in many societies, houses are regarded as 'living' entities; as active social agents; or as human bodies that are born, age, mature and die. This paper focuses on the late stages within the life of domestic buildings: collapse/destruction/post-abandonment. What then happens when houses lose their 'vital force' (Waterson 1990)? If space is transformed into place and a house into a home through the accumulation of experiences, memories and events, does the site of an abandoned house revert into undifferentiated space again? Or do remembered or forgotten houses continue to contribute to the histories of successive generations and groups?

In stratigraphic terms, the episodes of post-abandonment are usually described in terms of the 'disturbance' to what archaeologists consider the most valuable artefact: the floor. Little attention is paid to

their connection to the abandoned house as an integral part of its history whilst artefactual assemblages are often dismissed since they are of low contextual value, for dating purposes, or for assessing the function of spaces. The failure to incorporate post-abandonment episodes into the story of a building or a settlement, it is argued here, stems from an adherence to the concept of use-life of material culture according to Western economic principles of rationalism. Case studies from prehistoric Cyprus reveal interesting glimpses into how houses were treated after they were abandoned ranging from leaving them to decay, making use of their ruins as dumping grounds, dismantling their structural materials that will become active parts in another house, to using the accumulated fills in their shells as burial grounds. All of the above process and many more scenarios tell us something about attitudes towards *place-making* in the past.

BUILDING A HOME: AN ANIMAL PERSPECTIVE ON SOUTHERN SCANDINAVIAN LATE BRONZE AGE HOUSES

Kristin A. Oma, Norway

Building homes consist of a wide array of, simultaneously, building techniques and ritual practices steeped in beliefs aimed to accommodate and secure the co-habitants of the house. In some well-preserved Late Bronze Age houses in southern Scandinavia, the life-space of the home was in many cases shared between human and animal agents. These houses were organised according to meeting points where humans and animals intersected. Particular configurations of practices led to a development of patterns of flow of action pertaining to all sorts of activities within the house. Archaeologically, activities connected to steps of becoming seen in various materialities are most readily studied. However, issues of growth and togetherness shared between agents that ultimately lead to mutual becomings, and also abandonment and death, should be considered as key to the understanding of a house as a home. Foundation deposits containing animal parts at the "birth" of the house, and sealing deposits at its "death" are informative regarding the lived reality of the house, associated with metaphorical ideas surrounding home-making. Other houses were human-only zones, in which very different configurations of practices are seen. This paper aims at exploring the impact of animals on the sense of "home" as experienced by the inhabitants of these houses, and seeks to explore notions of affiliation and membership between gendered and animal agents as this was experienced and expressed through the spatial organisation of architectural features and the distribution of objects.

RECONSTRUCTING DOMESTIC SPACES: LIFE, WORK, AND DEATH IN THE PECH MAHO OPPIDUM (SIGEAN, WESTERN LANGUEDOC, FRANCE)

M. Carme Belarte, Jordi Principal, Catalunya

The aim of this paper is to put forward the reinterpretation of several complex domestic units of the pre-Roman *oppidum* of Pech Maho (Sigean, Western Languedoc, France), dated VI to III cent. BCE.

Characterization of spaces, contextualization of activities and construction of identities within the domestic area, as well as their diachronic evolution are considered from the complementary study of the features and artefacts representing the idea of house for each particular study case.

The long life of the site implied several rebuilding of houses, including re-thinking of their conception and use. In many cases, apparent incoherency between features and artefacts can be interpreted as a reflection of those changes. At the final period of the settlement, a drastic change in the use of certain buildings hints at the complete dissolution of several domestic units, before their final destruction by a fire in the context of the Roman conquest.

HOUSE BIOGRAPHIES: A METHODOLOGICAL TOOL TO INTEGRATE LIFEHISTORIES OF MATERIAL CULTURE AND SOCIAL PRACTICE

Christian Mühlenbock, Sweden

The excavations on the hilltop Mt. Polizzo Western Sicily, has revealed a number of structures dated to the 6th century BC. The current paper will present the available material from these excavations to discuss

issues around identity and social practice. The architecture and the rich find material encountered, has revealed a variety of archaeological contexts. Contexts which offer an insight into the dynamic and often contradictory practices that were performed inside the houses, practices which often demand a rather fine-tuned discussion about the integration of “traditional” elements and foreign input within an indigenous society. The concept of House biographies will be used in order to avoid simple explanatory models where change is explained by simple expressions such as acculturation. The concept integrates the “totality” of the find material as architectural features, finds as categories and “individualized” objects, together with the rich results from natural sciences. The current interpretations shows that “new” imported objects are integrated into existing structures, where the foreign objects often are used to create and channel new relations within the society as well as between contemporary societies in the Mediterranean. An explicit focus will be put on “openness” as opposed of conflict in order to explain how a traditional and rigid society managed to create a platform for the integration of foreign objects and ideas.

MICROHISTORY OF DOMESTIC PRACTICE: RE-ARRANGEMENTS AND LIVE-CYCLES OF HOUSES IN GALICIAN IRON AGE (NORTHWESTERN OF SPAIN)

Xurxo M. Ayán Vila, Spain

Space is not a static reality of physical and environmental nature. Space is a social construct, imaginary, in continuous movement and deeply rooted in culture, with a close structural relationship in the strategies of appropriating space between thought, social organisation, subsistence and conception-utilisation of the environment. Landscape, conceived as the objectivisation of material and imaginary social practises, is formed by three different dimensions or levels: landscape as physical, social and symbolic surroundings. In the same way, architectonic space is essentially a social space which is constructed culturally, a cultural landscape which fully participates in the construction of symbolic apparatus, of the collective imagination and the ritual practices of the community which builds it and inhabits it. Here, for example, architectonic forms appear to be interrelated with sociological variables such as the family, lifestyle, intergroup solidarity or the system of power. Architectonic form may be defined as a human product which uses a given reality (or physical space) to create a new reality: inhabited space, which is therefore social, which is given a symbolic meaning. In this respect, hillfort dwellings are not reduced to merely architectonic objects, conditioned by a material context: on the contrary, they should be analysed as a living entity across time which carried out an active role in the social constitution of the archaeological reality.

From the point of view of Archaeology of Architecture we will show in this paper how the domestic architecture from the Iron Age in north-western Iberia, and the spatial organisation which it caused, is the result of a cultural tradition which establishes a very uniform constructive model. It is a type of architecture built by all, with practically only one type of dwelling, with no place for originality or innovation; this strong conservative feeling made practically all hillfort dwellings the same, and meant that the architecture from the second Iron Age has a practically non-chronological nature. This architectonic model only started to undergo significant changes (V-IV centuries BC) with the gradual process of the intensification of agricultural exploitation at this time, the cause and consequence of the consolidation of a peasant economy and society. Within this context, the stability of the model may explain the need to legitimise this continuity within the settlement; the repetition of the type of dwelling would be one of the architectonic ‘tools’ used to legitimise a continuity of inhabitation in a time characterised by an increase in social competitiveness. In this way the individualisation of the family units and the continuous re-arrangements of houses, remark the role of the home itself as a point of reference which created a social identity.

The arrival of Roman culture (from 19 B.C) breaks the rules and values of daily life and domestic practice within the community. New re-arrangements of houses underline the gradual configuration of a new model of spatiality within hillfort settlements which were still inhabited when the Galaico-Roman society was being formed.

SETTLEMENT CHANGE AND THE CONCEPT OF HOME – EARLY IRON AGE IN CENTRAL SWEDEN

Linda Lindwall, Sweden

In this paper I will propose that the processes of change can be used as a basis for the understanding and interpretation of the concept of home in prehistoric times. At the early Iron age settlement sites of

central Sweden the processes of change may be described as a steady and repeated building of new and abandonment of old farmsteads and houses over centuries. This has earlier been interpreted in terms of a mobile settlement structure where the farmsteads were moved to different locations in the landscape, an interpretation which implies a restructuring of the settlements from time to time. A different interpretation of the processes of change at these settlements suggests a more continuous and gradual pattern of change in which the building of new houses not necessarily is related to the abandonment of the old. Instead the building of new farms can be described as the establishment of new households emanating from the old ones, and new and old may continue in use side by side for a period of time before the old household comes to an end.

These different interpretations of change affect how we interpret the concept of home at the settlement sites. Why and in which social context the houses and farmsteads are built and abandoned are, for example, highly relevant for the understanding of the making and unmaking of homes.

SACRIFICE MAKES HOME

Justyna Baron, Wrocław, Poland

Foundation rites represent the most important activities related to house construction. They appear on each stage of the construction process: from setting out the place for a new built house, up to moving into it. Making the foundation offering was undoubtedly a crucial moment of the whole rite. The foundation offerings are recorded worldwide in various cultural traditions. Despite enormous variety of offered symbols and procedures, the basic sense of the rite remains the same: the offering values the space, distinguishes an area of the highest sacral significance, purifies it and allows initiating the construction, thus, erection of a house is directly connected with the offering that was made.

My paper discusses the meaning of selected ritual offerings discovered in Central Europe and dated back from the Neolithic up to the early Middle Ages. I try to answer the questions why such deposits are recorded only in some houses. Were those buildings of a special importance? Why some actions required using animal skulls while for other situations a few pots, probably containing honey or cereals were enough to sacralize domestic space? I want to present some examples showing the particular importance of offering deposits in creating the domestic space both at the level of an individual house as well as a settlement.

THE INDIVIDUAL AND THE SOCIAL: PEASANTS IN ICELAND IN THE 17TH CENTURY

Kristján Mímisson, Iceland

The main aim of my research project is to explore theories about the individual within the archaeological record and to apply methods which have been developed to detect individuals by analysing material culture. Consequently, the project addresses issues such as the dichotomy between the individual and the social, the material expression of the self and the consideration of material culture as personal sources. Furthermore, the project emphasizes the confounding roles of subjects and objects as seen through the mutual interaction between people and things, eventually leading towards a coherent theory of the materiality of the individual.

The final aim is to write a factionary life history of a particular peasant from the mid 17th century by using archaeological data. The data includes the remains of the abandoned farmstead at Budarabakki near the estuary of the rivers Budara and Hvita in the highland pasture of Hrunamannahreppur and the material culture which the archaeological excavation of the farmstead reveals. The project essentially deals with the material engagement of a single individual with his nearest surrounding in his personal approach to create himself a "*home*". According to the written sources about this particular individual his life seems to have involved around the making and unmaking of homes as he is supposed to have lived at 27 different places, of which 4 are known.

In my contribution to the session I would like to take on a theoretical debate on the concept of privacy in the past (title: *The Privacy of the Past*), both considering the issues of private space and private life with the emphasis on materializing individuality and intimacy as well as from the vantage point of academic ethics. Can the Past as an imaginary fixed entity stake a claim to privacy? This is a well known and much discussed problem when dealing with burials and the physical remains of human beings. But how about the '*material privacy*' of past individuals and people? Does that exist? and if so - how does the current archaeological practice deal with past households and homes in that perspective?

THE RECONSTRUCTION OF EVERYDAY LIFE IN THE EARLY IRON AGE ON THE BASIS OF AN EXPERIMENT CONDUCTED IN BISKUPIN (POLAND)

Aleksandra Siemaszko, Poland

Experimental archaeology plays a significant role in investigating the prehistory of mankind. Valuable and often surprising results concerning the past occupations of men may be obtained through experiments. However, if we only analyze different crafts in alienation, we don't have a chance to create a full image of ancient life. In July 2006 Warsaw University students belonging to Experimental Archaeology Research Club (whose president is the author of the paper) decided to occupy themselves with this matter and tried to reconstruct all the aspects of everyday life of a chosen prehistoric society. For this reason they have moved to a reconstructed settlement from the Hallstatt period in the famous archaeological open air museum in Biskupin where they have lived for two weeks in conditions equivalent to those from the Early Iron Age. Individual research concerning different activities like preserving food, weaving, dying with natural dye-stuff etc. went together with general observations regarding the organization of time, arrangement of space or the way people function in group. The project resulted in many interesting remarks and conclusions which encouraged the authors to develop this field of study in future.

INSIDE A MEDIEVAL AND POST-MEDIEVAL TOWN HOUSE . NEW RESEARCH DIRECTIONS

Robina McNeil, England

This paper focuses on how we can look at the archaeology of internal comfort in different ways and articulate a story about it. It will consider the importance of the social logic of space and access to that space as one way to identify the uses of different spaces and how they are decorated. A number of examples will illustrate displays of ostentation, where status, one-upmanship and visible demonstrations of wealth demonstrate the significance of attractive surroundings in the medieval and post-medieval urban historic environment. Mortimer Wheeler wrote archaeology is about people and the paper will also explore alternative ways of presenting their narratives through the use of models and cartoons. Finally the paper will examine how we can assess the importance of buildings by looking at age, condition and rarity.

INVESTIGATING IMDAI: FURNISHING THE EARLY MEDIEVAL IRISH ROUNDHOUSE

Iestyn Jones, Wales

Past attempts to visualise the interior of Irish early medieval houses have centred on the interpretation of literary sources such as the Irish Laws, poetry and hagiographies. One of the legal texts, *Críth Gablach*, probably written in the 8th century A.D., refers to features within houses described as *imdail*, translated as 'room, couch, bench or bed'. Indeed features within later so-called Hiberno-Norse Type 1 houses in urbanised Dublin have also been linked with the term.

Excavations in Northern Ireland and the Republic have, however, begun to add to our knowledge about the way that space may have been arranged within some of these native structures.

Sites with exceptional preservation conditions, such as Deer Park Farms in County Antrim, present an ideal opportunity to investigate the portability or otherwise of fixed- or semi-fixed featured elements such as furniture within domestic settings. Were there *imdai* within these structures? Can the Deer Park Farms model be used to interpret other excavated structures in other parts of Ireland? If so what may this tell us about the way that space was arranged within these houses in terms of status, gender and systems of settings in early medieval Irish houses?

The aim of this presentation will be to evaluate archaeology's contribution to the task of furnishing the early medieval roundhouses of Ireland.

"NOMADIC HOMES" ON THE MOVE: A CASE STUDY OF THE BRONZE AGE EURASIAN STEPPES

N. Shishlina, Russia

Earliest Eurasian Steppe pastoralists are characterized by a nomadic mode of life. This mode of life was stimulated by invention of a new type of dwelling. Such dwelling had to match a rather uncomfortable

environment of the steppe and semi-desert landscapes and at the same time it had to be mobile as pastoralists themselves. Since no settlements with remains of dwellings have been found, reconstruction of this invention is possible only in doing analysis of grave interior decorations.

Thick plant mats, wooden shields, wattle fences coated with clay could be used as parts of dismountable dwellings. There are traces of small holes in the corners and along the walls in some burial pits that were made by stakes installed to support wooden roofing covered by mats. These mats could be sewn together. Plant mats were quite long and thick. This design could look like a shelter made of branches. The interior of primitive "houses" could consist of numerous mats and pillows, plank-made platforms or shields were used to keep the floor warm. All these items have been found in burial pits. Steppe population could use light framework dwellings, which were easily and quickly disassembled and transported to any distance on pack animals the way it was done by nomadic Kalmyks, Mongols, and Kazakhs. If we compare the walls and the floor, the roofing of burial pits with these dwellings, we can assume that the walls of such dwellings were made of mats or light framework walls were covered and shielded with braided mats, coarse cloths, felt covers or simply by leather pieces the way walls of a grave were covered. Grave roofing imitating a dwelling roof was often covered by mats. It is quite possible that roofs of dismountable dwellings were covered by reed mats as well.

Wooden wagons with wide platforms, the size of which could be 1.75 x 2.20 m is the second type of mobile dwelling. Up to three people could live in such a small "house".

Analysis of planigraphy of kurgan burial grounds indicates that small clusters of kurgans could be identified as family necropolis. Pastoral groups consisted either of males (teenagers and adults) or small families (men, women of all ages including *senilis*, and children) up to two generations. Hence, mobile disassembled dwellings or dwellings on the wheel, i.e. wagons, provided interior living space where man was born, lived and where he died.

Universality of this new type of dwelling helped it survive throughout ages and continue to be used by many nomads of Eurasia.

EATING AND DRINKING IN BELARUSIAN CASTLES: CONSIDERING THE ARCHAEOLOGICAL EVIDENCE ARCHAEOLOGICAL SOURCES INVENTORY

Iryna Hanetskaya, Belarusia

Archaeological sources being accurately considered give varied and sometimes quite original evidence for reconstruction of men's life in different periods. Production, processing and consummation of food have always been and still are among the most important segments of people's preoccupations. Eating was also a very significant social activity. The problem can be analyzed in several aspects: obtaining, composition of products, storage and preservation, cooking, and consummation. In the light of archaeology nourishing may be characterized through different kinds of artifacts. The remains of food itself – seeds, nut and egg shell, bones, fish scales – speak by themselves. Tools sometimes give the evidence of what was produced. From the sheds of tare ware we may know what kind of products they must have contained (especially it's informative for imported products). Fragments of kitchen utensils and sometimes the condition of bones show the ways of food preparation. Findings of crockery and cutlery reveal what people ate, how they ate and sometimes how they cooked. Where the food supplies were obtained from? A good deal of food supplies were produced at the castles' manors. Agriculture; cattle breeding; bee breeding; gardening were intended for that. Though not typical for castles but in some cases we have findings of agricultural tools such as sickle or colter (all of them are mostly connected with the period of 12th—13th centuries). Spades and hoes were used in gardening. Bones of domestic animals gives the evidence of cattle breeding and poultry. Considering the species we may know what kinds of food products were obtained. Partly food was taken from nature. As the archaeo-zoological study of bones shows, hunting and fowling were a significant source of meat for nobility. All the castles in Belarus were situated on the rivers or near the lakes, so fishing much contributed to their dwellers' diet too. The artifacts confirm it entirely – fish bones and scales, fishing implements are common in the castles' layers. Forest gave some useful products as well. The remnants of mushrooms were discovered only once – in the 12th century layer. The seeds of wild berries are also an exclusive finding. In some castles hazelnuts and their shells were found. Finally, in all periods a wide range of food products (both local and from abroad) were available at the market. What did they eat? Food included various kinds of products. The structure of the diet wasn't steady and changed in time. There's no doubt that grain occupied a very important place. Grains themselves were found only in isolated cases. All the findings are connected with an earlier period due to a better preservation of organic remains deep in the soil. Rye, barley,

buckwheat and millet were mostly spread. Grain was usually made into bread (especially rye). Such objects for making grain into flour as millstones can be found on the castles though not so often. Meat was obtained both from domestic animals (usually 60—70%) and from hunting and fowling (normally 30—40%, on some castles reaching 70%). Bones of cattle (on average 70—75%), pigs (20—25%), sheep (4—5%) and goats (2—3%) constitute a major part in osteological collections. Poultry brought meat and eggs. The discovered remnants of shell belonged both to raw and boiled eggs. Elk, red deer and boar were the most popular objects for hunting. Bison, hare and beaver were hunted for meat too. Dairy and dairy products made up another important segment of the diet in all periods. Milk was served in jugs and ceramic mugs. Those kinds of earthenware are common in the castles' layers. Cow's and goat's milk were also used to make butter and cheese consumed as accompaniment to bread. Parts of wooden ware involved in the process can be found in some cases. Ceramic sieves could be good in making soft cheese. Fish gave a good opportunity to vary the menu. River fish belonging to the families of Carp, Perch, Pike and Sheat-fish was well represented in the diet. Sturgeon and salmon were quite rare. Every castle had its own garden to grow vegetables and herbs. Some kinds of vegetable were available at the market. Orchards were not typical till the late 17th century. The estates supplied castle dwellers with those products as well. Fruit and berries were taken from nature as a rule or can be bought (especially exotic species). The artifacts revealing that part of the old diet are extremely poor. We only have some findings of seeds (raspberries, elder-berries, poppy-seed). Spices were used in cookery at that time. Some of them were grown as herbs in the gardens (but have no archaeological evidence of that) and the others one could buy at the market. The imported spices were very expensive. We reveal their traces in the diet through the findings of special small pots. It is much easier to discover the evidence concerning drinks consumed in every period due to the fact that the range of drinking vessels was highly developed. Different kinds of vessels represent different drinks: mugs and tankards for beer; tumblers and small cups for strong alcohols; ceramic or glass bottles and jugs together with wine-glasses, goblets and beakers for wine; jugs and pitchers, ceramic cups and beakers for herbal tea, juice, stewed fruit and kissel; ceramic and faience teapots and cups for tea and coffee (in the 18th century). Liqueur was not only imported but also produced from local sorts of berries. We know that not only from the written sources: seeds of raspberries or elder-berries were found in a pot among other kitchen wastes; large glass jars and bottles were used for the same purpose. How did they cook? Different kinds of kitchenware and sometimes the condition of bones may say about the way of preparing of food. Fragments of all sort of pots, pans, frying pans, etc. give the evidence of the food being boiled, stewed, roasted and fried both in open fire and on the oven. Mixing bowls were used for grinding, mixing of food products and for making pastry. How did they eat? Variety of crockery and cutlery fragments has been discovered on every castle in the course of excavations. We have enough findings of bowls, plates, jugs, mugs, cups, beakers, goblets, glasses, spoons, knives, forks, etc. to reconstruct the way of eating for every period. The development of the range of crockery shows the increasing specialization in sorts of dishes and therefore more and more refined etiquette of food consummation from period to period. So, for the period of the 12th—18th centuries the archeological evidence of food and drink can be hardly regarded as comprehensive, nevertheless, they are a pretty supplement to the written sources giving us a good opportunity to touch the world of eating and drinking of the past ages.

**Session title: TEN CENTURIES OF TRADE AND TRADE ROUTES IN THE
BYZANTINE EMPIRE AND ITS PROVINCES
(5th – 15th CENT. AD)**

Organizers: Sergiy Zelenko, Yana Morozova, Centre for Underwater Archaeology of National Taras Shevchenko University of Kiev, Kiev, Ukraine

Time: Friday all day

Room: 113

Session abstract:

In the Byzantine Times the exchange relationships, interregional commerce and travel between countries of the Mediterranean and Black Sea Zones were at their height. During this period the large Mediterranean

market was established, stretching from The Black Sea to Catalonia and eastwards to Egypt, where the Adriatic region played the most significant role. The EAA 13 Conference will be held in Croatia, once the ancient Dalmatia which played such an important role in Medieval European history and Byzantine history in particular. This Market was closely related had been allied to the Central European and Northern ones, and there was excellent exchange between them. Although ships were the main means of transport regarding travel and trade, overland transport was significant as well. Medieval travelers --merchants and craftsmen - brought religions, fashion, the traditions of craftsmen, pieces of art and written documents (books, acts, correspondence) from one country to another. Their activity and journeys contributed to the mutual enrichment of the cultures, creating a certain integration and unity of European medieval cultures.

A typical variety of medieval traveler was the merchant. Armed against the dangers of the wilderness he delivered goods, both the luxury items of the wealthy and common wares for the lower classes, by land and sea. Due to efforts of the medieval traders and travelers civilizations and communities were bridged. In this way the mutual exchange of information, a *conditio sine qua non* of societal development was propagated. At the same time, on the edge of the Byzantine Ecumene, the original variegated forms of states and societies emerged. Due to diffusion and interaction the European Culture became more complicated and "heterogeneous". Nowadays, one turns to archaeology, numismatics, history and the history of art in order to tell about a medieval pioneer-merchantman. These disciplines help us to classify and study the signs left by medieval people as well as their goods, materials and their places of production and transaction. Thus the study and classification of goods and the composition of cargoes, as well as that of excavated archaeological materials from places of trade, store houses and workshops provide us with significant information on the social and economical structure of medieval Society, and particularly that of the Byzantine Empire and its Provinces. This area of research has great potential if disciplines concerned with materiality and the theory of trade focus on but are not limited by historical and archaeological perspectives. The perspectives of designers, artists, economists and many other disciplines may be usefully involved in the research of trade, particularly Byzantine trade. The proposed session covers aspects of maritime and over-land trade, travel and commerce in the Byzantine Empire and outside. It also considers contacts with "strangers" and locals, goods and spirits, religious aspects of travel and trade in their archaeological and historical perspectives. It aims to bring together primarily historians and archaeologists, and to create a stimulating environment for the different traditions to present their ideas and share their knowledge on any of suggested themes to a wider audience. This will promote the Byzantine studies and improve contacts between disparate researchers from the "Byzantine World" Countries and beyond.

Paper abstracts:

SUPPLYING WITH WINE AND OLIVE OIL A REMOTE SETTLEMENT OF THE CHERSONESAN CHORA DURING THE LATE ROMAN AND EARLY BYZANTINE TIMES

Andrei Opait, ICA Texas, Romania

On the eastern margin of the chora of ancient Chersonesos in the Crimea, occupying a strategic, hill-top position lies an ancient site called by locals Bezymyannaya ("No Name" Hill). Since 1997 the site has been jointly excavated by a team of the Chersonesos museum, represented by G. Nikolaenko, and the Institute of Classical Archaeology of the University of Texas at Austin, directed by Professor Joseph Carter. The excavation was made possible by generous grants from the Packard Humanities Institute and private donors.

A large variety of amphora types of local, regional and extra-regional origin from Hellenistic to Byzantine times have been identified at Bezymyannaya. In order to fit into the chronological frame of this conference we will present only the late Roman and early Byzantine amphoras.

The late Roman and early Byzantine epochs (4th-6th c. A.D.) witnessed the production of an abundance of local containers, while large quantities of regional commodities arrived from the southern and eastern Black Sea in Sinopean, Herakleian and Colchian/pseudo-Colchian amphoras. These were supplemented by East Mediterranean amphoras such as LRA1, LRA2, LRA3 and LRA4.

The general trends of Bezymyannaya's economic life suggest that the local market was heavily dominated by commodities produced locally or obtained from the neighbouring area during all the period of the site's existence. To this local and provincial trade we must add the continuous presence of interregional trade in commodities with the southern and eastern Black Sea area. This interregional trade had doubtlessly existed since the foundation of Chersonesos and its chora in the fifth century BC. Perhaps this trade was able to satisfy all the basic alimentary needs of this small community except those of the upper class.

This sketchy presentation of some of the most important amphora types discovered at Bezmyannaya indicates the strong eclecticism of this site, a reflection of the general attitude of the North Pontic area from Classic times to the Byzantine period. It was perhaps slightly attenuated during the Roman era when this region, due to a controlled policy, was much more incorporated into the general economic circuit of the Roman Empire. When the Empire was forced to abandon this policy together with some of its eastern provinces in the seventh century, the Crimea and the whole Black Sea became a closed world. Although it was isolated, it was united in its isolation. This unity helped it to survive and prosper during a time when the rest of the Europe was experiencing its "Dark Age."

GENOESSES COLONIES IN BLACK SEA AREA AND THEIR ROLE IN THE TRANSFER OF REGIONAL PRODUCTS IN THE LATE MIDDLE AGES (14TH-15TH CENTURIES)

Rafał Hryszko, Institute of History, Jagiellonian University, Krakow, Poland

This paper has addressed the problem of the economic presence of the Genoese merchants on the north-west coast of the Black Sea in the times of the weakening economic ties of the region with the Far East, and the simultaneous enlivening of the trade with the areas close to the Black Sea coast. The work outlines diverse aspects of Genoese activity in the Black Sea region in reference to its economic and transporting conditions, as well as the aspects concerning organisation of trade.

The paper approaches the problem of development of the Genoese regional trade, concentrated in Crimean Caffa. It depicts the policy of exchange between Caffa and other regions, emphasising the mutual relationships of Crimean colonies with trade centres on the Danube. The role of particular goods and resources exported from the Black Sea outposts has been described (silk, cotton, spices, fish, salt, wax, hides, furs and corn among others).

Presenting the scale of the Genoese merchants' involvement in trade activity in the Black Sea region was to provide a wider context for the economic activity of the citizens of the merchant Republic, concentrated on the Pontus areas in the late Middle Ages.

MORE PRECIOUS THAN A GOLD. SPICES FROM THE EDGES OF THE WORLD IN THE MEDITERRANEAN KITCHEN IN LATE ANTIQUITY AND EARLY BYZANTINE TIMES

Marta Zuchowska, Institute of Archeology Warsaw University, Warsaw, Poland

Robert Zukowski, Institute of Archaeology and Ethnology, Polish Academy of Sciences, Warsaw, Poland

Historical sources for both Late Roman and Early Byzantine periods testify the abundance of spices used for cooking. Our speech is focused on the problems of origins of these spices (we will touch upon such questions as endemic character of some plants and geographical dispersion of various cultures of spices) and the possible trade routes used for such import - main roads of communication between Byzantine Empire and Indian Subcontinent as well as Far East.

We will also try to precise, what was the level of knowledge in these subjects, that the inhabitants of Byzantine Empire and their closest neighbors disposed of.

THE TRADE ROUTS OF BEADS IN V-X CENT. A.D. IN CAUCASUS AND EASTERN EUROPE

Vera Kovalevskaya, Institute of Archaeology of Russian Academy of Sciences, Moscow, Russia.

Glass articles, beads in particular, being the most widely spread excavated artifacts of the 1st mil. A.D., are indicative of a number of ethno-cultural and historical processes. The uniqueness of beads consists in their being the most widely spread artifacts, easy to computerize.

They are incorporated in an archaeological geographical database of Eastern Europe named BUS (97 sites – 311 types – 3 chronological layers – 48881 copies of beads and pendants and an atlas of 335 electronic maps).

The challenge was to extract from the DB the maximum of information on the spatial distribution and chronology of the artifacts in question and, consequently, on cultural links between different areas, because the beads true are chronicle of events of investigated time, determining the direction of trade routs, the

intensity of their use and implicitly those historical events, which characterized political and historical cultural life. With the growth of the database with aid of programs GGMag and Map Developer Studio one will be able to trace trade routs and inter-regional cultural relations, the sequence of techniques and unknown workshops as well as to date more accurately both the funerary complexes and the artifacts proper.

The analyses of morphology, color, technology and recipe of glass give us the possibility of distinguish the beads from Brisanse East Mediterranean and Egypt. A comparison of more then 400 analytical, complex and scientific electronic maps are outlines the respective role of the Pontic maritime route leading to Constantinople and Asia Miner, the Misimian and Dara branches of the Great Silk Road traversing the western part of the Greater Caucasus, the Svan-Balkar, Dar-i-Alan, Kakhetiya-Dagestan and Caspian shore roads. The steppe, valley and highland roads running parallel to the Greater Caucasus on its north side can be traced. These data, compared with those of written sources of the 5th-9th centuries A.D., enable us to amplify and verify the available information through an unbiased quantities approach.

The work was carried out within the framework of RFBR project 06-06-80041a, and RFFH project 06-01-00011a.

GNEZDOVO ON THE «ROUTE FROM THE VARANGIANS TO THE GREEKS AND FROM THE GREEKS...»

Veronika Murasheva, Svetlana Avdusina, State Historical Museum, Moscow, Russia

1. The Byzantine Empire was a major centre of attraction for the 10th – 11th centuries Barbarian world. It was the most civilized state of both Europe and the Near East and the magnificence of Constantinople fascinated every foreigner. Great Byzantine riches, luxurious clothes and exquisite food were lusted for in the northern Barbarian periphery linked to Byzantium by the Volkhov-Dnieper waterway called «the route from the Varangians to the Greeks...».

2. The analysis of written sources (Litavrin, 1999) is indicative of strong trade links between the Rus and Chersonese, the centre of Byzantine possessions in the Crimea. The Pechenegs acted as intermediaries in this trade whose pattern had taken shape as early as in the first half of the 10th century. However, it was the capital of the empire, Constantinople, that became the main target of the military, trading and political activity of the Rus. According to Litavrin's estimate, every year no fewer than a thousand of the Rus, both from the Middle Dnieper basin and from the north-eastern Rus, arrived in the city.

3. Strange as it may seem, given such active links, well-recorded in written sources, the archaeological record documenting the Rus-Byzantine relations is rather scarce. I am going to analyze finds of Byzantine origin from the excavations of well-stratified occupation deposit in the flood-plain part of the Gnezdovo site, which are few in number yet quite significant. The early urban centre of Gnezdovo in the upper reaches of the Dnieper was a key point on the trans-European route «from the Varangians to the Greeks.» Numerous finds of trade implements, such as weights and fragments of scales, encountered both in the occupation deposit and in burials are indicative of the participation of the local population in international trade.

4. The oldest structures of the investigated part of the settlement yielded Byzantine Chersonese coins, extremely rare in Early Rus, i. e. a *folles* of Justin I (518-527) and that of Basil I (867-886). These finds testify to the relations of Early Rus with the Crimean domains of the empire. The unique character of the finds and their archaeological context enables one to suggest that they were found in cult structures and regarded as souvenirs rather than as currency.

5. The number of finds documenting the Rus-Byzantine relations increases considerably in the post-950s layer deposited when the Kievan influence in the Upper Dnieper basin became stronger. Among them are fragments of glass vessels and clay amphorae, a glass draught and a finger-ring featuring a bird. A relative variety of artifacts pertaining to Byzantium testifies to the widening of the relations of the Rus settled in the Upper Dnieper basin with the empire. The trade character of those relations is implied primarily by the finds of amphora fragments since other artifacts could have been war booties. It is worth noting that some artifacts could have originated not from the metropolis but from the territories strongly influenced by Byzantium, for instance from the Danubian Bulgaria as some analogies seem to indicate.

6. Thus, the archaeological evidence from the settlement occupation deposit gives us an insight into the nature and evolution of Russian-Byzantine relations, although an adequate reconstruction of their history would require analyzing the whole gamut of historical sources.

BYZANTINE TRADE AND TRADE ROUTES ALONG THE NORTH TYRRHENIAN COASTS (5TH -8TH CENTURY AD)

Marinella Pasquinucci, Simonetta Menchelli, Dipartimento di Scienze Storiche del Mondo Antico, Pisa University, Italy

Remarkable quantity of Eastern pottery, amphoras and coins found along the Tuscan coasts documents that this region was fully involved in the Bizantine trade routes. The main North Tuscan Harbours (*Luna*, *Portus Pisanus*, *Vada Volaterrana*) seem to have played an important role in the Byzantine political and economic strategies, especially during the Graeco-Ghotic war and after the Lombard invasion of the region. Free traffics run by *Eastern transmarini negotiatores* and the Byzantine military *annona*-trade continued to be intertwined in the North Tyrrhenian sea-routes up to the mid 7th century. After the whole conquest of Liguria by the King Rotari (643 AD), the Tuscan harbours were no more involved in the Byzantine military plans, but during the early Medieval times they continued to be touched by the Eastern commercial flows.

SAILING THE EARLY MEDIEVAL EUROPEAN TRADE: THE MEDITERRANEAN *EMPORIUM* OF COMACCHIO (6TH – 10TH CENTURY AD)

Sauro Gelichi, Claudio Negrelli, Diego Calaon, Elena Grandi, Dipartimento di Scienze dell'Antichità e del Vicino Oriente, Ca' Foscari University, Venice, Italy

Recent researches have demonstrated both from the archaeological and historical point of view the belonging of Comacchio (Ferrara, Italy) to the mostly unknown picture of the formation and development of new settlements that characterize the upper Adriatic Sea between the 6th and 10th century AD. The importance of Comacchio as a new town, able to take a fundamental role in the management of the trading relationships on a Mediterranean scale, has to be analysed in connection with the birth of other new urban settlements. Comacchio, as Venice (Torcello, Rialto, Olivolo and Malamocco), Cittanova, Grado and Caorle, is an extraordinary element of novelty and vivacity in an historical period traditionally considered critical and recessing.

The main feature of these new towns is, apart from their topographic localization in a marshy environment, the enhanced ability of promoting wide range commercial activities based on the incomes coming from the exploitation of the local resources (salt production and fishing). The commercial activities relate to the development of a strong local seamanship able to provide constant and efficient transports on the shallow waters of rivers and lagoons. The new "emerging centers", often competing against each other, are localized in a political territory that can be considered as a border between the eastern/Byzantine world and the Western Lombard/Carolingian world. The ability to differentiate their relationship with Constantinople or with the élite of the continental kingdoms provides their fortune in becoming true emporia.

POTTERY FROM CRUSADER ACRE AS EVIDENCE OF CONNECTIONS BETWEEN POTTERY REDISTRIBUTION AND MEDIEVAL MEDITERRANEAN TRADE ROUTES

Edna J. Stern, Antiquities Authority and University of Haifa, Israel

The Mediterranean city of Acre ('Akko) was one of the main ports of the Crusader Kingdom of Jerusalem (1099-1291) and evolved into a thriving maritime commercial center, playing an important role in the trade between Europe, the Crusader Principalities in the East, the Byzantine Empire and the Moslem states.

The pottery presented here was revealed in large-scale excavations carried out by the Israel Antiquities Authority in Acre since the early 1990's. Most of the pottery imported to Acre consisted of various types of mainly glazed plates and bowls dating to the twelfth and thirteenth centuries. Provenience analyses of the finds from Acre show that ceramics were imported from throughout the Mediterranean: Lebanon, Syria, Asia Minor, Cyprus, Greece, northern and southern Italy, Sicily, southern France, Catalonia in Spain, North Africa and China.

Categorizing the ceramics found in the excavations at Acre by origin assist in focusing on provenience and seeking a correlation with maritime trade routes. Since similar types of pottery types are found in Acre, in the main Mediterranean ports, and also in Mediterranean and Black sea shipwrecks containing homogeneous types of pottery as cargoes, it is assumed that the pottery served for the most part as 'salable space fillers' or 'salable ballast', and its sale could have provided extra income along the route for the ship master or sailors. It was transported, and occasionally redistributed, by ships involved in short- and long-

distance trade to and among the main port cities as a secondary item and as a consequence of trade of more valuable goods.

The origin of the ceramics and the areas to where they were redistributed was found to reflect the Mediterranean maritime trade routes of the twelfth to thirteenth centuries and major ports.

IMPORTED CERAMICS OF THE 13th CENTURY EXCAVATED AT THE TAURIC CHERSONESOS IN 2004-2006

Larisa Sedikova, National Preserve of Tauric Chersonesos, Sevastopol, Ukraine
Adam Rabinowitz, Institute of Classical Archaeology, University of Texas at Austin, USA

This report deals with a group of imported ceramics excavated in the dwelling *insula* at the Southern Region of Chersonesos, and studied by a joint expedition of the Institute of Classical Archaeology of the University of Texas at Austin (USA) and the National Preserve of Tauric Chersonesos (Ukraine), sponsored by the Packard's Humanities Institute (USA).

Groups of both local and imported containers and tableware are distinguished within a large assemblage of ceramic finds from the destruction layer of the 13th century. These are amphorae of Günsenin 3 and Günsenin 4 Types. Types of glazed ware: Zeuxippos Ware, Slip-painted Ware, Incised Sgraffito Ware, Champlevè ware, Glazed White Ware IV, etc. Proceeding from the correlation of the literary and archaeological sources, the *insula* ceased to exist as a result of Tatar and Mongol expansion.

Despite of the fact that by the 13th century Chersonesos had already lost its significance as a large transit trade center at the Black Sea North Littoral, finds of ceramic import testify that it had preserved its connections with many centers of the Black Sea and Mediterranean world.

EARLY BYZANTINE MARITIME ROUTE ALONGSIDE THE EASTERN ADRIATIC COAST IN THE LIGHT OF ARCHAEOLOGICAL EVIDENCES

Tomislav Fabijanić, Department of archaeology, University of Zadar, Croatia

Eastern Adriatic coast, due to its geographical characteristics, had exceptional value for navigation during all historical periods when navigational routes were situated close to the coastline. In prehistory, Antique times and great part of the middle ages the navigation was possible almost only in warm months, during the day along the well established routes that relied heavily upon prominent landmarks. Of utmost importance were bays and coves on the islands and coastline that could be used as shelters during the night or bad weather or even for extended winter sojourns. Eastern Adriatic coast with numerous islands and well-indented coast offered almost ideal conditions for this type of navigation.

During the period when Roman authority over Adriatic was undisputed, after the complete conquest of Illyricum and destruction of Adriatic piracy, there was no need to secure the maritime route. However, in the late Antiquity the process of castrization started on the coast and islands. Its main purpose was to ensure safe passage towards the northern Adriatic ports of Aquileia, Ravenna and Venice in the time when land-based communication network was almost completely destroyed. Castrization influenced the existing settlements, even large towns, but also many new fortifications were built on the islands, alongside the coast and in the hinterland. Although, some of them had been built probably in the 4th and 5th century, the majority was constructed during the reign of Justinian I. Together with the existing fortresses, they formed co-called "maritime *limes*" extending from Corfu to the Eastern coast of Istria. Alongside the Croatian coast there are several dozens of sites with remains of Justinian forts. Besides, there are certain number of sites where the existence of early Byzantine fortifications is highly probable according to historical circumstances and archaeological and toponimic indications. Some of these fortresses had exclusively military purpose (e.g. observation points), but in some instances they were probably refugiums for the population that lived in their surroundings.

The maritime route is attested also by early Christian churches that were erected mainly on those sites that had become meeting places of sailors, merchants, pilgrims etc. The maintenance of these religious structures was probably related to vows, bequests and donations given by passengers. It is worth mentioning that a number of churches was built in close vicinity of the forts or even inside of them.

There are other finds that can illustrate the early Byzantine maritime route alongside the eastern Adriatic. Of special importance are shipwrecks and ship cargo (e.g. amphorae), but also some categories of

artes minores like belt buckles of "Syracuse", "Corinth" and "Bologna/Balgota" types. These types are, as a rule, found along the maritime route especially on the islands and major towns on the coast (*Iader, Salona*). In this context, it is interesting to note the existence of particular variant of "Bologna/Balgota" belt buckles found in the southern Italy and alongside the southern Adriatic coast. In the light of results of numerous archaeological and multidisciplinary researches, they attest that in early Byzantine times the Adriatic Sea actually connected rather than divided the two shores.

Finally, it is important to stress that the maritime route alongside the eastern Adriatic coast survived through later centuries in spite of changed historical circumstances. Namely, in the 7th century the Slavs settled in the hinterland and very soon alongside the coastline, but Byzantine Dalmatia, although on a reduced territory, survived thanks to the sea, as it was explicitly attested by the words of the emperor Constantine VII in the 10th century.

Poster abstracts:

THE MAIN DIRECTIONS OF IMPORT OF GLAZED CERAMICS TO THE CRIMEA IN THE 14–15TH CENTURIES

Irina Teslenko, Archeological Institute, Crimean Branch of Ukrainian Academy of Sciences, Alushta, AR Crimea, Ukraine

The Crimean glazed pottery of the 14–15th centuries are represented by the local and imported materials. Sometimes it isn't possible to define an origin of same groups of pottery but there are few sources of ceramics imports to speak with confidence.

In the 14th – first half of the 15th centuries there were Byzantine centers (elaborate incised ware), Italy (proto-maiolica and red clay glazed ware), Spain (ceramics with luster decoration), Golden Horde and Central Asia (wares with molded decoration and soft-paste bowls), China (celadon) and probably Egypt or Iran (soft-paste wares with turquoise glaze – so called pseudo-celadon) among them. The assortment of import was reduced after Timur's and Ottoman's conquests. Stable trading communications have been broken. Some productions centers have stopped the existence. At the same time the new kinds of ceramics appear and start to dominate in the market.

The potteries of Turkish manufacture were prevailing among import in the Crimean complexes in the middle – second half of the 15th century. There are a lot of containers, simple pots and jugs on a number with glazed tableware production («Miletus ware») among them. Except for that the import of ceramics from Spain (lusterware), Italy (Renaissance maiolica), Egypt and (or) Iran (?) (pseudo-celadon) were continued.

AMPHORAE OF PARTENIT

Olena Parshina, Archaeology and Anthropology Society of National Taras Shevchenko University of Kiev, Kiev, Ukraine

The ancient Partenits, who's name is preserved in the name of the old Partenit village and the contemporary settlement occupied the south-eastern part of the homonymous basin of the Crimean south coast. Information concerning existing of the ancient Partenits in Tavrida are known from the written sources of the seventh century AD

In 1985-1988 salvage excavations were carried out in Partenit due to resort construction works on one of the hill terraces of the Tepsen' mountain massif. On the area of 1200 square meters reminiscence of multi-layer medieval buildings were found. 17 households of various times were studied fully or partially as well as the relevant cultural levels. Capacity of those consists 3.0-3.5 to 5 meters. Archeological materials – results of the diggings are diverse – ceramics, goods made from metal, bone and glass.

Fourteen types of amphorae are identified in the Partenit collection. The early period is represented by amphorae from VI-VIII centuries and guttered amphorae VII-VIII centuries. There is also a substantial number of VIII-IX century amphorae. The period of XIII-XIX centuries is represented by spin formed amphorae. Inscription and signs on the amphorae – incised graffiti or painted dipinti represent in fact a special type of written sources – these are monuments of living language from different areas of human life: domestic, economic spiritual.

Systematization of graffiti according to the type of amphorae and the region will allow to identify exporters and importers, localize certain categories of graffiti and identify their semantics more accurately.

BYZANTINE SEALS FROM THE MEDIEVAL PORT SUDAK

Oleksandr Farbey, Vasilij Kuz'minov, Museum "Sudak Fortress", Sudak, AR Crimea, Ukraine

The medieval city-port Sudak was a well-known in the system of Byzantine commercial relationships in the Black Sea. It was mentioned very often in written sources of that time. Archaeological excavations on land and under water of this site provide researchers with new scientific material. Investigations in the harbor part of the city became the most important on for the history of Sudak. This research has been continued from the ninetieth of the 20 century up to nowadays. Archaeological find have been found in the layers of the sixth-sixteenth centuries AD and anchorage places have been examined in this area.

Archaeological material from underwater excavations consists of findings related to the cargo shipping, control and maintenance: lead rings, stamps, seals, balance weights, and fragments of weight-scales, etc. A lot of items related to the everyday life at the anchorage places have been found as well: buttons, rings, beads, crosslets, liturgical books' clasps. The collection of Byzantine seals of the sixth-sixteenth centuries AD contains the most valuable information.

MEDIEVAL AMPHORA CONTAINERS IN THE CRIMEAN AND MEDITERRANEAN TRADE CONTACTS

Sergiy Zelenko, Centre for Underwater Archaeology of National Taras Shevchenko University of Kiev, Kiev, Ukraine

In Ukrainian territorial waters there are underwater archaeological sites that have historical significance and belong to the world's cultural heritage. Exploring the underwater archaeological materials discovered during investigation of sixth - twelfth century shipwrecks is of great importance for the further study of maritime commercial seafaring in the history of mankind. The Centre for Underwater Archaeology of Kyiv National University has currently discovered and surveyed five shipwreck sites of the Byzantine period near the Rocks of Adalary, the Cape of Plaka, in the Koktebel and Sudak Bays, by the Cape of Meganom, and submerged port areas of the ancient and medieval settlement of Lampados - part of the low-lying area of the medieval settlement, which is considered to be the site of the famous city of Phully.

An essential aspect of the complete analysis of trade contacts involving archaeological sources consists of distinguishing between local and imported storage vessels such as amphorae, which are the most common class of pottery retrieved from underwater archaeological sites. Based on amphorae finds the precise geographic areas involved in sea trade between the Tauric region and Mediterranean can be identified.

Collation of archaeological material of the medieval period which has been discovered in archaeological sites in the Crimea, allows us to identify 10 essential types among the most common and bulk amphorae finds. Several different types of these may have been carried on a ship in the same cargo from different ports or producing centres in the Black and Mediterranean Seas. This fact can be deduced from the containers stowed in the hull, when amphorae were stacked upon each other from different staging ports along the ship's route.

Determining the provenience of amphorae is usually complicated and unclear. The crossing trade routes between centres have been one of the reasons for the difficulty in the attribution of vessels to the workshops of production. Discovering a ceramic workshop is of great importance and has always been a topic of great interest for researchers studying the Black Sea maritime trade. The production centres are known only for a couple of types that occur in the Crimean Black Sea region; Sinop in the Black Sea for the "carrot-shaped" type and Ganos in the Sea of Marmara for the "spherical" type.

Determining the contents of amphorae can also be a difficult task. It is well known that wine, olive oil, raw oil (naphtha) and grain products were once transported in these vessels. This is also true for the examined Crimean shipwrecks' amphorae.

Some samples of graffiti were found on the vessels' surfaces. These scratched signs can be divided into three related groups: letters and their conjunctions, words or phrases, and geometric figures. Stamps appear on vessels of the sixth – twelfth centuries only quite rarely.

Further underwater research on the archaeological sites in the Black Sea mentioned above will provide archaeologists and historians with new data and enrich our knowledge with regard to trade and cultural interactions in the Black Sea Basin during the Byzantine period.

Session title: PROBLEMS OF THE SOCIAL REPRODUCTION AND OF THE VISIBLE AND INVISIBLE SOCIAL POWERS IN PREHISTORIC EURASIA (HOW WERE THE ADVANCEMENT AND THE SOCIAL ASTUTENESS FUELLED IN PREHISTORY?)

Organizers: Lolita Nikolova, Bulgaria/USA
Marco Merlini, Italy

Time: Friday all day

Room: 156

Session abstract:

Prehistory has been occupying more and more pages in the textbooks of the cultural anthropology since it comprises in fact the longest period of history of the human society and provides the science with most of the fundamental records to explain the emergence and early evolution of the human culture. This fact in turn requires development of the record base and a strong methodology of the prehistoric cultural anthropology. While the interpretation of the prehistoric material evidence was in Past usually final and in many cases intuitive considerations of the field archaeologists, today it is mostly a fundamental framework and a scope of research of the relatively independent and still young humanistic field of research . the prehistoric cultural anthropology.

Problems of the behavioral, contextual and selfreflexive status of social astuteness in Prehistory will be discussed in this session in the context of the general problems of the social reproduction and of the visible and invisible social powers in Prehistory. Case studied from Eurasian Prehistory and cross-cultural synchronic and diachronic analyses will respond to questions of the emergence of archaic writing systems in particular and its acceptance or rejection by the descendents, the distribution of prestige items and of innovations, the role of education in the reproduction of the households, the variety of social skills that were embedded in the visible and invisible social powers, the dynamics of the diet, the accumulation of wealth and the prehistoric cultural pattern, the shamanism, etc. A special topic will be the talent and its constructive role in the history of human culture. It had most probably diverse and not always rewarding function in Prehistory. We will describe the talent as the skeleton of the human culture, as something with absolute values, that was beyond the political, ideological, religious and entertainment functions of the culture, and as culture.s most valuable reproductive component. We will contrast the prehistoric talent as oriented mostly to the elementary household and small communities social units, to the contemporary talent, which expression has more global anduniversal character.

The social astuteness is one of the key dimensions of human skills but the anthropology of everydayness shows diverse social practices of the microsocial groups in which the ideals and social norms depended on subjective and not objective criteria. In many cases the prehistoric social groups have been studied for instance, as depending on the environment or on the favorite

approach of the researcher, as victims of aggressions or as poor migrants without a clear social motivation why they had to change the place of residence, why they accepted or rejected certain innovations, etc. Our prehistoric ancestors have been very often describing as unfortunate followers of traditions just because the last was recognized as the most successful social reproduction means of evolution of the human culture.

Discussant: Diana Gergova, National Institute of Archaeology, Sofia, Bulgaria
Introduction: Lolita Nikolova, Bulgaria/USA & Marco Merlini, Italy

Paper abstracts:**FIGURATIVE AND ABSTRACT THEMES IN MOBILIAR ART OF THE GROTTA DELLE SETTECANNELLE (VITERBO - ITALY). IMPLICATIONS AND INTERPRETATIONS WITHIN THE CONTEXT OF LATE PALEOLITHIC CULTURE**

Paola Gnesutta, Dipartimento di Scienze Archeologiche. Università di Pisa, Pisa, Italy

The Epigravettian layers of Grotta delle Settecannelle, a cave situated near Viterbo in Northern Latium, have yielded about 40 engraved objects discovered in *situ*, with flint instruments and faunal remains, in connection with fireplaces. Few of these incised artifacts come from the level of Evolved Epigravettian, dated to 15.700 BP, while the majority of mobilier art was found in levels of Final Epigravettian, dated between 12700 and 12000 BP, and of late Epigravettian, dated 10.700 BP.

Two pebbles used as retouchers have engraved animal figures. The other finds, stone and bone tools, non-utilitarian objects and body ornaments are decorated with abstracts and geometric patterns that appear at a relatively early stage at Grotta delle Settecannelle.

From archaeological evidences, it is possible to assume that and religious ceremonies, were not performed in special and secret sites, but took place in the same space where daily activity was practised, as observed in "open air sanctuaries" of France and of Spain. The presence of body ornaments indicates differences of status and role inside the human group.

Technological and stylistical analysis of the engravings and of the themes represented has pointed out similarities between Settecannelle art and contemporary manifestations discovered in Italian and European sites and reveals the emergence of new spiritual conceptions, common to a large part of Europe in Tardiglacial age.

HOW TO INTERPRET THE NEOLITHIC SOCIAL PERSONALITY?

Lolita Nikolova, University of Utah & International Institute of Anthropology, Salt Lake city, Utah

My approach will try to construct a framework for the interpretation of the prehistoric social personality in terms of the already obtained results and perspectives of research. Placing the concepts of R. Tringham, J. Chapman and D. Bailey in the context of the modern understanding of the social personality, we will try mostly to point to some similarities and differences among the regional cultures in the Balkans that may have been a result of social practices related to specific concepts of social identity. We will also discuss the role of the archaic mythology and the handcraft for the reproduction of the certain concepts of social personality in the different regions of the Balkans. Finally, we will point to misuse of the Neolithic in the contemporary hypocrite literature on Prehistory.

DID SOUTHEASTERN EUROPE DEVELOP A RUDIMENTARY SYSTEM OF WRITING IN NEO-ENEOLITHIC TIMES?

Marco Merlini, Global Prehistory Consortium at EURO INNOVANET, Rome, Italy & Institute of Archaeomythology, Sebastopol, California, USA

The presentation inspects the internal structuring of the sign system developed in Neo-Eneolithic times in the Danube basin exploring a database that accounts more than 3000 signs from 647 inscribed objects and 756 inscriptions according to 118 variables. The statistics from the database give new information to verify whether these cultures might have expressed an early form of writing (i.e. the so-called "Danube script") and to investigate the organizing principles of this possible system of writing. A specific notice will be done on the overall composition of the sign inventory utilized by the communities of the prehistoric Danube civilization attempting to answer the questions How many hundreds of signs were in use?, and Which were they? The investigation of sign employment on objects according to their typology (i.e. figurines, pots cult vessels, mignon altars, spindle whorls etc.), and the frequency of sign use with the regional differences and the time frame will be also discussed in broader social and cultural context according to the topic of the session.

THE ORIGINS OF CHINESE WRITING: SIGNS AND SYMBOLS IN ARCHAEOLOGICAL CONTEXT

Paola Demattè, Chinese art and archaeology, Rhode Island School of Design, Providence, USA & Cotsen Institute of Archaeology, University of California. Los Angeles, USA

The earliest deciphered and widely accepted form of writing from China is the late Shang dynasty oracle bones inscriptions (ca. 1300 cal bce). While some scholars believe a number of inscriptions carved on ritual bronze vessels, pottery, or jade may be slightly earlier (middle Shang, ca. 1500 bce), Chinese writing is generally said to have begun in the Shang dynastic period (ca. 1600-1300 bce) during the Middle Bronze Age.

This understanding of the origins of Chinese writing is based on a purely linguistic analysis of the writing phenomenon, which ignores the archaeological context and associated socio-political evidence. As a result of this linguist approach signs such as pot-marks, single graphs, indecipherable inscriptions, and pottery decorations which existed before the Shang period but whose exact linguistic value is still uncertain, are ignored. However, these Late Neolithic or early Bronze Age (ca. 3500-2000 bce) signs suggest that signing activities were well developed before full blown writing became widespread during the Shang period. In addition, archaeological evidence indicates that mature writing evolved from these earlier signing systems as a result of the increasing social and political complexity of the societies of the Late Neolithic.

This paper will analyze a number of early signing systems which may have led to the mature Chinese writing of the Shang oracle bone inscriptions, and will argue that non-linguistic visual signing (from pot-marks to pottery decorations or rock art) play a role in the development of writing systems.

ORNAMENT AS A SYMBOLIC AND SOCIAL COMMUNICATION MEAN (STRUCTURE, RHYTHM AND MEANING)

Stefan Stamenov, Sofia, Bulgaria

The analysis of the ornament requires deconstructing two categories – composition and rhythm. The former is connected with the category of space, and the latter with the concept of time. It is well known that we have structure (or composition) in every picture. It is not so with the rhythm, which is considered specific for the art of ornament.

Investigating the structure of the ornament we can use the classical three hierarchical levels – composition, motive, element. If the ornament is geometrical the elements are represented by geometrical figures. Almost every one of them has its meaning, considered as symbolic meaning. An attempt to divide the elements to their presumable parts will lead to appearing of meaningless strokes and curves. This can be an argument that there is some level at which an image is able to transmit information. At the same time, composing a motive or group of motives shows that the location of the ornamental elements on the field forms patterns, that has geometrical shapes, which is an argument that the composition itself can't be meaningless. It is also an argument that the ornamental structure consists of two parts. First part is compounded of the motives and elements that are painted on the surface. Second part consists of the composition itself, the arrangement of the motives and elements on the surface that forms shapes too, although not painted. The problem, which arises here is about the arrangement of the ornamental elements. Can we discover some rules that will predict this arrangement?

The other category, the rhythm, as it was mentioned is connected with time. The main question here is how an unmoving picture can express time. The widespread conception is that the rhythm, being repetition of similar elements has connection with the time category, which can be presented as a repetition of similar events (natural or cultural). But is every repetition able to create rhythm? In my opinion it is not, because the rhythm needs some regularity. Although the rhythm may be of the so-called irregular type, it is in some way regular. And since the ornament is a visual art, another question arises. Is the rhythm connected with the shape of the elements and the composition of the ornamental picture. I will try to argue that it is, and that this connection along with the logic of building ornamental structure can give us clue to the meaning of the ornamental picture.

The ornament was one of the strongest symbolic and social communication means in Prehistory when it functioned to connect communities and generations through reproduction of specific traditions or innovations and was used for distribution even of coded messages.

SYMBOLS OF POWER IN THE PREHISTORIC SOCIETY (ACCORDING TO THE ARCHAEOLOGICAL FINDINGS FROM THE VARNA ENEOLITHIC NECROPOLIS)

Stiliyan Stanimirov, Central Archaeological Council – Bulgaria, Zlatica, Bulgaria

The Varna Eneolithic Necropolis is a lurid science discovery which significance exceeds the limits of the Prehistory of modern Bulgaria.

The finds from the Necropolis have been curated in the Archaeological museum in Varna city where they are arranged in three exhibit halls. The larger part of the gold objects, as well as the most representative other types of the findings belong to three graves only. The staffs or the sceptres – a symbol of the temporal power or religious authority are a distinguishing feature mark of those graves. Another group of three graves have been represented by sculptures of human faces from clay (by one in each grave). Gold subjects have been appliquéd on the distinctive points of the face - the forehead, the eyes, the mouth and the ears, as symbols of social power.

The discovered gold objects are more from 3,000 and are with a common weight of over 6 kilograms. Unusually, their kind is over 38 different types. There are a great number of the findings of the other materials. Copper findings are over 160, flint - over 230, and near 90 objects are made of rock and marble. A multitude of nearly 1,100 ornaments - bracelets, beads and appliqués made of Mediterranean molluscs' shells were found. The chinaware is quite frequently found among the grave inventory, too – over 650 earthen vessels.

The findings as type, placement and a quantity, the types of graves of the Varna necropolis, the large complex of sunk settlements, and another facts give reason as well it is accepted that in the Varna lakes region was born the first European civilisation. It seems that the settlements near the Varna lakes have been a centre of a big region.

The graves from the Varna necropolis illustrate a range of social otherness in reference to the material status, the temporal power or religious authority.

THE CERAMIC JEWELRY IN THE FIFTH MILLENNIUM CAL BCE

Alenka Tomaž, Institute for Mediterranean Heritage, Science and Research Center Koper, University of Primorska, Slovenia

Decorating the human body with different colours or ornamental items such as jewellery has been one of the most common practices since the earliest stage of the human civilization. We could say that it is old as are the human beings themselves. The oldest examples of small artificial personal ornaments were made from stones, shells, bones, antlers, etc. However, with the boom of pottery production, one of the most important technological innovations in the Neolithic period, and its wide use in the everyday life, the production of adornments took a new turn. Personal ornaments made of fired clay are relatively rare discovered from in the Neolithic period and therefore deserve a special attention; especially because they exhibit a series of elements, which can help us reconstruct some specific social and cultural aspects of past.

At Čatež-Sredno polje, which is located beside the Sava River in southern Slovenia, small personal ornaments and other parts of ceramic jewelry were discovered in settlement contexts dated from the first half of the fifth millennium cal BCE. Beads of different shapes made from fired clay, as well as perforated ceramic discs made from broken pots can be recognized as parts of jewelry. In our approach we are introducing some aspects of their production, use and distribution. And most importantly we are exploring a range of possible visible and invisible elements of social powers that make the personal ornaments what they are, embodying something individual on the one hand, and something social, on the other hand.

SOCIAL DIFFERENTIATION IN THE BRONZE AGE OF ROMANIA. AN ANTHROPOLOGICAL APPROACH.

Alexandra Comşa, Institute of Archaeology – Center of Thracology, Bucharest, Romania

The territory of Romania was an area of major changes during the Bronze Age and that was due to the significant population movements which occurred at that time. They resulted in more intense mixtures among the local and allogeneous communities, but also in relative changes of the funerary rituals or the appearance of new ones. Besides, in some cases, we consider that even the rite employed could be a rank

mark of the individual, of course, when considering the archaeological context. Sometimes, the large families were grouped together; sometimes there were other criteria for burials.

In our paper, we try to use data regarding the sex or age category of the individuals, but also funerary aspects of ritual and rite, in order to point out the existence of a certain social stratification in the material cultures of the Bronze Age in Romania.

THE SOCIAL STRUCTURE OF THE COMMUNITIES, AS RENDERED BY THE BRONZE AGE CEMETERIES IN SOUTHERN ROMANIA

Cristian Schuster, Institute of Archaeology – Center of Thracology, Bucharest, Romania

It is, generally, considered that, the funerary monuments from the prehistorical communities on the Lower Danube would reflect the social stratigraphy in its various moments. This is the case of the cemeteries, of the isolated Neolithic and Eneolithic burials. Subsequently, during the transitional period to the Bronze Age, the situation was rather different in this regard and not only. A cultural „crumble” could be detected, being also reflected by the inventory of the burials. Many of the funerary monuments lack the inventory. It is evident that the social structure faced changes, determined by the intense mobility of the populations (movements from the east to the west), of their economical life (a sudden decrease in the plant cultivation and increase of the cattle breeding activities) and of the religious beliefs.

These trends were also maintained in many of the cultural manifestations of the Bronze Age. For the beginning of the Early Bronze Age (the Zimnicea-Mlăjet group) a slight social differentiation could be observed in the case of the funerary monuments, as examples being relevant the necropolises from Zimnicea (Romania) and Batin (Bulgaria). Later on, during the Glina culture, they completely disappeared. The situation was somewhat identical in the Middle Bronze Age (during the Tei and Verbicioara cultures), but the social stratification became evident and nuanced especially in the Late Bronze Age (during the Gârla Mare culture).

Of course, the possible and probable social stratification which could be detected by the use of the funerary monuments, should have been corroborated with their traces in the habitat forms, namely: the features of the settlements, their distribution upon a certain territory, their architecture. The civilian and /or military constructions should be helpful in this sense, the same like those with religious character.

In the analysis regarding the social structure of the communities in the Bronze Age on the Lower Danube, the demographic dynamics, the proportion between the „vernaculars” and the alogeneous, the cultural influence directly or indirectly induced from the neighboring or remote areas (northern Black Sea, Greece, Anatolia, Central Europe) could not be neglected.

MUSICAL INSTRUMENTS OF THE BRONZE AGE EUROPE: SOUNDS AND PRESTIGE

Tinaig Clodore-Tissot, UMR 7041 ArScAn 'Protohistoire européenne', Maison de l'archéologie et de l'ethnologie, Nanterre, France

Sounding artefacts and musical instruments have been found in Europe (Central Europe, Scandinavia, and Occidental Europe) in different archaeological contexts, for the Bronze Age period (2300/2100 B.C.- 750 B.C). Most of these instruments are similar to the sounding instruments of the Paleolithic and Neolithic periods, but for the very first time musical instruments made of bronze do their apparition, in the Bronze Age. Most of these bronze musical instruments are considered as prestige goods. Archaeological analysis of the main sites categories and the discovery contexts, in which these instruments have been found, added to ethnological comparisons helped us to understand the musical thought, the significance of sounds and their uses during these periods.

I will present the sounds of a selection of instruments excavated in Europe, such as bone flutes and whistles, clay rattles, clay and bronze horns...

PROBLEMS OF THE SOCIAL REPRODUCTION IN THE PIT GRAVE CULTURE COMMUNITIES

Svetlana V. Ivanova, Institute of Archaeology, Odessa, Ukraine

The long history of the Kurgan communities from the Early Bronze Age of Northwest Pontic and respectively the traditions of the kurgan burials provide a rich database for a detailed analysis of different

aspects of the social reproduction of the prehistoric population of Eurasia. As a result of the study of the burial goods and changing dimensions of the tombs, we will offer some criteria to distinguish social status from and within sex and age groups.

We will point to the fact that the ritual burial goods and adornments are linked with children, adolescents and young males. The data show that the most various burial goods were deposited in male burials - implements made of flint, stone, bone; metal knives, awls, weapons (darts, bone and flint arrows), ritual burial goods (fragments of axes, astragals), adornments (silver spirals, compound copper bracelets). Implements, weapons and anthropomorphic steles are related to male burials of mature and senile age. Some categories of burial goods are common for males, females and children. As for chariots, their distribution relates to all age groups.

The presence of children's burials with specific categories of burial goods perhaps testifies some aspects of inheritance of the social status; though we believe that the social status was not steady in the Pit Grave society and it varies through ages. Based upon the data from the Pit Grave Culture, we will also discuss some opportunities to differentiate an inherent and attained social status in Prehistory.

SHAMANISM THROUGH THE BALKANS AREA DURING THE NEOLITHIC, ENEOLITHIC AND EARLY BRONZE AGE

Michel Séfériades, France, Laboratoire d'Anthropologie, Université de Rennes 1, France

The focus of the presentation are old and recent data related generally to the ancient religions and old ways of thinking (1962, Levi-Strauss "*La pensée sauvage*") of the Balkan area from the beginning of the Neolithic period till the dawn of the Bronze Age. Most of them allow a variety of interpretations while we will test selected data against the concept of shamanism in Antiquity.

From the Late Palaeolithic Anietovka 2 on the Bug, green polished Mushrooms (probably hallucinogen?) stones from Vinca, the well known Otzaki Proto-Sesklo sherd (dancing shamans), the Gomolava and Szentes-Ilonopart dancing shamans from Serbia and Southern Hungary etc, to the Serbian and Bulgarian contemporary folk customs, such as the Sourvaraki in Pernik district, we can trace shamanistic behaviours reproduced as relics in the folklore of the South-Eastern Europe cultural heritage.

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Session title: INVESTIGATING ARCHAEOLOGICAL SURVEY

Organizer: Kate Page-Smith

Time: Friday afternoon

Room: 136

Session abstract:

With a tradition stretching back over 300 years, archaeological survey and investigation deserves a definitive place within archaeological and historical research. Its multi-disciplinary approach not only provides greater understanding of sites and their landscapes, but it also offers a comprehensive and cost-effective evaluation for projects. However, despite the recognised value of landscape archaeology within the heritage sector, this valuable and versatile specialism is often overlooked.

For this session I would like to invite individuals to come and promote this unique discipline and its contribution towards archaeological research. With increasing emphasis upon landscape approaches and non-intrusive techniques, earthwork survey and interpretation has the potential to become a fundamental method within archaeological practice and enter the mainstream. With the help of case studies, large and small, this session intends to facilitate the liberation of archaeological survey from the margins of research and advocate its importance to an international audience. There will also be added emphasis upon international contributions for it is currently believed that this specialism is essentially a British contribution towards archaeological research. Hopefully this session will either dispel the myth or encourage its expansion outside of the UK.

Whether you specialise in intrusive or non-intrusive techniques, academia or commercial archaeology, this session is intended to appeal to all. Its focus upon holistic approaches should encourage a healthy dialogue between different disciplines and specialists.

Paper abstracts:

INTERPRETATION AT THE END OF THE TAPE MEASURE: THE PRACTICE OF ARCHAEOLOGICAL SURVEY AND HISTORIC LANDSCAPE ANALYSIS TODAY

Mark Bowden, English Heritage

This paper will be introduced by a brief history of archaeological survey in Britain. It will present a view of the current state of archaeological earthwork survey and historic landscape analysis in England, illustrated by some recent case studies.

It is now widely accepted in excavation that ideally interpretation happens 'at the point of the trowel'. It will be argued here that equally in non-intrusive archaeological research, interpretation is an integral part of the fieldwork process, building a multi-period landscape history. From this stance, the paper will address some of the issues raised in the Session Abstract regarding the marginal position of survey even within its supposed homeland in the British Isles.

Earthworks and other historic landscape features are often under-valued, even by archaeologists. It is necessary to demonstrate that earthworks are part of the beauty and fascination of the landscape, that they are valuable visual markers and that they are crucial to a proper archaeological understanding of landscape history. In order to do this we have to build and maintain the skills to record, analyse and understand these features. It will be suggested that these skills can be developed in the hands of independent and amateur practitioners, as well as more widely in the world of professional archaeology.

THE ORIGINS OF ARCHAEOLOGICAL SURVEY IN SPAIN

Margarita Díaz-Andreu

Until very recently most archaeologists in Spain equated archaeology with excavation. It was assumed that this partly derived from the relative isolation in which Spanish archaeology developed after the Spanish Civil War, during the Francoist regime (1936/39-1975). The study of the Pericot Archive, however, shows that this was not the case. There was an influential group of Spanish archaeologists who had regular contact with both the U.K. and the U.S.A. Despite this, Spain was unmoved by some of the developments in these countries. This paper will analyse the situation and try to explain why archaeological practice did not change much during the period under study.

LANDSCAPE ARCHAEOLOGY AND PREDICTIVE MODELING WITHIN DUTCH ARCHAEOLOGY: SOME TRENDS

H.M. van der Velde, Archeologisch Diensten Centrum, Netherlands

Since the beginning of the 20th century Dutch archaeology was closely connected to archaeological trends within Germany from which it derived most of the field techniques. Also the paleo-ecological background of one of the fathers of modern Dutch archaeology (Van Giffen) led to the development of a

more environmental approach to the discipline. His followers (e.g. Waterbolk and Van Es) developed a kind of settlement archaeology within regional projects. In the 70's and 80's a lot of large scale excavations started in order to understand the development of settlements and cemeteries from a cultural and environmental point of view. The same years witnessed the birth of theoretical archaeology within these large scale excavations. From the 90's onwards the focuses gradually changed towards the cosmological interpretation of landscape, the archaeology of the periphery and the so-called cultural biography of landscape (e.g. Roymans and Gerritsen). Some regions within the Netherlands are the most thoroughly researched landscapes of Northwestern Europe and hundred of hectares have been excavated. In fact on this very moment ADC-Archeoprojecten (the biggest commercial firm within the Netherlands) is excavating roughly 25 hectares in Boxmeer (within the time span of 9 months).

Because of the way the Dutch archaeological monument act was working only a few institutions were permitted to undertake excavations. That's why in 1986 an unemployment project (RAAP) started of as an commercial firm doing non-destructive prospective archaeology. This early start of commercial prospective archaeology together with the implementation of the Malta treaty in the mid 90's led to a rapid development of this branch of archaeology. Not only RAAP, but nowadays every Dutch commercial firm is employing archaeologists specializing in landscape development and prospective archaeology. At the same time the Dutch state service shifted it's focus towards cultural heritage and in it's slip stream non-destructive archaeology. They started projects like ARCHIS which led to the development of a database comprising information about every excavation and find locations in the Netherlands. In recent years this databases have been modeled into GIS leading to archaeological value maps. The value-interpretations are mainly based on geological maps. Still little has been undertaken to interpret and value historical landscapes using modern archaeological theories. Because of this, Dutch archaeology shows an overrepresentation of settlement areas and maps have become very static. Cemeteries and shifting choices of location are not very often highlighted. This contribution deals with some recent projects undertaken by ADC. They are an example of shifting focus towards modern predictive modeling.

The first project deals with the Actual Height Measurement-maps which have been made for the Netherlands and their possibilities for landscape archaeology. The second project involves some major excavations in the Dutch province of Limburg searching for archaeological answers in the periphery of settlements. The third project is about an archaeological value map of a local town in the East of the Netherlands. Close collaboration between archaeology, paleo-ecology and historical-geography led to new models about shifting location choices.

THE INTERDISCIPLINARY CULTURAL LANDSCAPE.

Søren Diinhoff

The study of the relationship between man and nature is a central issue in archaeological science. That is probably due to a basic wish, to understand how human culture is established in a dialectic interaction between cultural, ecological and geophysical conditions. Still since the childhood of archaeological science back in the nineteenth century it has been an established fact that archaeology can not explain this relation by itself. The study of culture and nature is by definition an interdisciplinary project.

Throughout the story of archaeological science the study of man and landscape has gone through a distinct development. In general we have gained better knowledge and though the development has not been linear, it has been promoted by a continual accumulation of knowledge through time, an establishing of scientific schools and organisations, by politically governed financial support, new theoretical thinking and development of new field and analytical methods. In recent years the archaeology of South Scandinavia has experienced cultural, political and economic attention. Several comprehensive interdisciplinary projects have been launched, all focusing on the cultural landscape.

A case study – the research project "*Land use and plant diversity*"

This article is partly based on my own experiences as a participant in the interdisciplinary research project *Land Use and Plant Diversity*. This is one of several large projects initiated by the Research Council of Denmark in the middle of the 1990's. The project operates within a budget of approximately 10 million Danish kroner, with a staff of more than a dozen researchers picked from archaeology, history, genetics and botany.

The project is an offshoot to the “*Rio Conference*” objective, to strengthen preservation and research into biological diversity. Man influences environment and this has consequences for the biological diversity of the earth. The question is how to secure a viable development. Our project is built up of several sub projects, which in an integrated corporation seeks to reveal the conditions of present botanical diversity. The research focuses on selected landscapes, influenced differently by human activity. Hence it is possible to study how botanical diversity has developed in respectively intensively and extensively exploited landscapes. It is a study of the variation of species in present physical botanical environments seen through 2500 years of cultural history.

The project has chosen two Danish research areas. One area is in the western part of Zealand; the other is the district of Himmerland to the southeast of Limfjorden in Northern Jutland. We shall take a look at the latter. Himmerland covers an area of 2372 km², and it holds 2105 Iron Age features at 1541 different sites (fig. 1). Site information has been recorded at the archives and collections of the National Museum in Copenhagen (NMI) and the two local museums in Aalborg (ÅHM) and Aars (VMÅ).

To establish a meaningful link between the information of archaeological data and the overall objective of the project, it is important that some basic agreement exist between the participating researchers. Basically one must approve that:

- A connection existed in prehistory between human culture and the ecological and geophysical conditions of the landscape.
- This relation can be tested in a modern landscape and it can be mapped for analysis.
- Furthermore if the project is to be realistically practicable - whether it is an interdisciplinary or a multidisciplinary organisation – it is important that:
- Consensus exists about the overall objective. The project must be meaningful to all participants.
- Agreement exists to some degree about the applied scientific methods, and it is possible to compare and test the different results within the project.

As an archaeologist one soon realizes how difficult it is to *calibrate* humanistic research into a common testable scientific language, and one may question if it in fact really is possible or even desirable. The chosen method is called *landscape archaeology*. The method is a combination of traditional settlement archaeology, cultural geography and Site Catchment Analysis. The analysis deals with comprehensive cultural and geophysical data, why use of digital mapping and GIS is indispensable. In many ways the method can be compared to the concept of *predicative modelling* (Kohler 1988).

The distribution maps

The distribution maps are the main tools for analysing and presenting the archaeological finds. The question is whether the produced find maps really are representative of the prehistoric settlement pattern (assuming it actually is possible to recognize patterns in the find material). To answer the question a number of statistical analyses have been carried out. A few examples will be shown here and briefly commented.

The composition of find types and year of retrieval

Archaeological finds need to be retrieved and throughout the decades of archaeological history different find types have turned up very unevenly as shown in figure 2. Depending on the year of observation, the find picture will vary and will accordingly show different settlement patterns.

Museological or amateur excavations

Some find types are difficult to recognize and demand a higher professional competence while other are easier. The find picture will be influenced whether the museological readiness is built up by amateurs or by a professional trained staff. Earlier amateur excavations were frequent but in the last decades professional curators have taken over the majority (fig. 3). The composition of the museological readiness will influence the settlement pattern.

Find density and the archaeological readiness

In areas nearby the two local museums and near enterprising amateurs the find density turns out to be high (fig. 4). Especially earlier the factor of distance played an important role but that is not the only explanation. Areas with a high find density seem to attract both professional and amateur archaeologists attention beyond the average readiness.

Archaeological finds need to be retrieved.

Finds need to be found. Normally some kind of modern activity in the landscape expose the prehistoric site before it comes to our attention. It turns out that different activities reveal different find types (fig 5).

Peat cutting results in bog finds, metal detectors in trade posts and landing places etc. Different activities will produce different find distributions.

Conclusion: representative analysis

The district of Himmerland probably offers one of the best Iron Age find contexts in Denmark, but still the data is insufficient and difficult. The find distribution is not directly identical to the prehistoric settlement pattern. Several conditions determine what we have knowledge about. A few of these have been presented above.

The topographical analysis

Parallel to the representative analysis runs a topographical analysis. Several types of geophysical and historical maps have been produced for analysis. A few examples will be shown. Himmerland is geographic clear-cut, it is bounded by sea and fjords to the west, north and east and by waste wetlands to the south. The district fully meets the methodical demand for a geographic and cultural unit (Roberts 1996:8). Himmerland is by no mean flat, it is a varying hilly and undulated landscape traversed by rivers and wetlands. In many ways the district is a perfect object of study.

A wide range of geophysical conditions have been analysed, such as the example shown in figure 6. The figure analyses the relation between soil type and settlement. This analysis and many more have shown how the Iron Age settlements are located mainly on the rim of sandy undulated hills at a near distance to water and pasture. This placing secures ample supply of cattle feed and drainable soil for grain-growing.

Another type of map analysis is the use of historic maps such as the one shown in figure 7. This map is a digital reproduction of maps produced around the year 1800 by *The Royal Commission of Sciences*. The map presents the relationship between the historic landscape and the Iron Age settlement, thus indicating a higher likeness between the two. There is a clear tendency that the Iron Age settlements are located in the same landscapes as the historic villages and that they both tend to avoid the meagre heaths. The presumed relationship between historic and Iron Age settlement seems to be clear especially in the Late Iron Age.

Concluding remarks

The main conclusion is that the *landscape archaeological* analysis is a useful and gives good potential for further research. There are great difficulties related to this method, even when using a find material as comprehensive as that of Himmerland. In a regional perspective, the find distribution does express cultural patterns and a relation between the settlement and the geophysical conditions of the landscape. However if one changes the scale of research from the perspective of the regional settlement pattern to a local analysis of single farms, the pattern is no longer clear and uniform. In densely populated areas some farms are located on barren soil while in adjoining areas with no or only sporadic settlement there may be plenty of vacant fertile land. The overall regional pattern does not explain the local settlements, why is that?

Answer 1): The settlement is in respect to economic strategy related to the extent and quality of the surrounding area, to the soil type, the hydrographics, and to the flora and fauna of the environment. Though the geomorphology and ecology of the landscape set certain limitations - and therefore are determinant conditions - the choice of economical strategy and the location of the settlement itself is basically governed by cultural conditions. A landscape may be barren in respect to agriculture, but rich in respect to for example pastoral economy, fishing or iron production. Whether a landscape should be characterized as a marginal area all depends on the chosen economic strategy. The physical conditions of the landscape must therefore be seen through a cultural filter, put together by the cultural and political organisation of the society, the economic strategy, technology and demography. Divergences in the *landscape archaeological* analysis may be caused by insufficient knowledge about the means of production of the prehistoric society in question.

Answer 2): The method of *predicative modelling* analyses the archaeological find as a single basic unit and compares it to different ecological and geophysical conditions, as if every unit existed in a closed system. Our knowledge about the Iron Age settlements however shows how settlements are connected into cultural and economic networks with some kind of central management of production.

Answer 3): The human spatial organisation in the landscape is not only physically conditioned and the landscape is not only a three-dimensional container wherein finds are put to order. To the Iron Age farmer the land was more than the sum of its physical components. It was the land of the forefathers and the lineage and their history was inscribed in the myths of the landscape. The cultivated land, the graves on the hill all reminded the farmer, that this was the home of his kin. The Iron Age society was organised within a logocentric time and space perception of the landscape. The cultural landscape is not only a landscape with culture in it. It is landscapes organised in correspondence with cultural standards in a cognitive space.

Landscape archaeology and *predicative modelling* do not really explain or understand in details the complex interaction between culture and nature regarding prehistoric settlement. It is not possible to weight the different variables being analysed. The archaeologist faces a serious problem, should the *predicative model* be abandoned or should one try to "supplement" it. The later solution is the better. The inductive map analysis of the *predicative model* ought to be followed up by explaining cultural models and deductive hypothesis in order to make the results archaeological viable (Kvamme 1992). Doing this the analysis is no longer testable "hard science" as prescribed and this could be a problem for the interdisciplinary project, where the standard of reference is a measure of success.

Participation in a project is a social process in many ways. The granting authorities seek to secure that the project is practicable within time limits - the researchers seek consensus about the overall objective, and perhaps sometimes the will to success and agreement is more explicit, than what is realistic. Maybe sometimes the different results in an interdisciplinary project cannot really be compared and tested, and the only glue linking it together is the imported cultural model. We study at the same universities, we read the same books, and maybe this tends to result in a certain conformity in ways of thinking, making way for consensus where none should have been found. The social processes of participating in a research project can hinder natural discrepancies to be outspoken.

At this point one may conclude that *landscape archaeology* and *predicative modelling* have gotten a foothold and are still spreading out. In short term perspective this is positive, we now have the means to test descriptive models dealing with cultural development in a regional perspective. In a long term perspective we should develop a more humanistic approach and superstructure.

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Kvamme, K. L. 1992: A Predicative Site Location Model on the High Plains: an Example with an Independent Test. *Plains Anthropologist* 37. p. 19-41.

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DIGGING IS NOT THE ONLY ARCHAEOLOGY – THE SOMETIMES TURBULENT RELATIONSHIPS BETWEEN FIELD SURVEY AND EXCAVATION

Paul Belford, Ironbridge Gorge Museum Trust, UK

In the UK more than 90% of archaeological fieldwork is undertaken in a commercial, planning-focused context. Most of this comprises excavation of one form or another, ranging from small test pits and trial holes to large open area excavations. Very little field survey is undertaken at all, and, where it is done, the motive is usually to locate the results of other work (such as geophysics or excavation) rather than to provide a landscape analysis in its own right. By far the majority of field survey is undertaken by a very small minority of publicly-funded bodies such as English Heritage, National Parks and local authorities. As a consequence, many archaeologists in the UK are unaware of the potential benefits that can accrue from close integration of field survey and intrusive fieldwork.

This paper will survey several examples of research-led and commercial work to show how landscape survey has, or has not, been incorporated and into archaeological studies. These examples will focus on the medieval, post-medieval and industrial periods, which have seen an unprecedented growth in research interest and theoretical development over the last decade. Field survey has been usefully deployed in classic upland and rural environments, but urban or semi-urban landscapes have been sadly neglected. Case studies will include mining landscapes, military earthworks, industrial watercourses and picturesque landscapes of pleasure. The paper will seek to investigate ways in which landscape survey can be integrated into more difficult areas such as urban and 'brownfield' archaeology, with attention particularly focussed on developing field survey in the flourishing commercial sector.

THE RELATION BETWEEN FIELD SURVEY CARRIED OUT BY PRIVATE COLLECTORS S OF THE EARLY 20TH CENTURY AND THE ARCHAEOLOGICAL FIELD SURVEYING OF TODAY. JOHANNES CARLÅHS, A CASE STUDY

Oscar Ortman, The County Museum of Bohuslän, Uddevalla, Sweden

In connection with the prospectation of a new motorway through central Bohuslän the county museum of Bohuslän and the central board of antiquities UV-Väst carried out excavations of prehistoric sites and monuments. The sites in question, located north of Uddevalla, were examined in the years 2002 and 2003.

In connection with this project I have studied how the archaeological perception of the area evolved through several years of field surveys carried out by a small group of devoted amateur archaeologists.

These amateur archaeologists were active between 1910's and 1960's. The area which was covered by their work came to be a key area in the discussion of the chronology of early Mesolithic throughout the 20th century.

My case study has given me the opportunity to study how the conception of the early Mesolithic changed during the first part of the 20th century. I could also see how the relationship changed during this period between private collectors, such as Johannes Carlåhs and his brothers Oscar and Amandus Johansson, and semi-professional archaeologists, such as Johan Alin and Axel Stene.

I was also able to discuss the relationship between the field surveys of the 1920's and 1930's on the one hand and the excavation of the same site in 2002 on the other hand.

Another conclusion which can be drawn from the study is that the history of a site can be understood better, if we pay more attention to how the site has been examined throughout the years.

MAPPING KALAWAO: TWO SEASONS OF INTENSIVE SURVEY IN AN EARLY HAWAIIAN LEPROSARIUM

James L. Flexner, University of California, Berkeley

Many early treatises on archaeological fieldwork treat survey as a necessary first step towards the meat of any archaeological project, excavation. Initial research design for a historical archaeology project in Kalaupapa National Historical Park, Moloka'i, Hawaii reflected such a bias, despite the strong tradition of settlement pattern studies in Polynesia. Survey was intended to identify late-19th century house sites suitable for excavation. These houses are to be studied as loci where deeper cultural beliefs and social structures were created and transformed through daily practices. However, two years of surface survey in Kalawao have revealed that the surface remains in the area can tell us far more than simply where to dig. The project's developing survey methodology, which includes the creation of detailed maps of the research area's stone architecture, helps to inform a developing theoretical emphasis on space and place. This paper will examine the value of maps created during archaeological survey as an analytical tool. This approach is especially useful given Kalawao's history as a place of exile for inhabitants of the Hawaiian Islands who were diagnosed with Hansen's disease (commonly known as leprosy) between 1865 and 1900. Scholars have often noted the spatial manifestation of power in institutions such as leprosaria. Thus, looking to the surface in Kalawao can provide a window into the ways in which power was experienced and enacted by people living in the past.

Session title: WORKING IN THE FIELD, LEARNING IN THE FIELD: EXPLORING THE RELATIONSHIP BETWEEN ARCHAEOLOGICAL FIELDWORK AND EDUCATION

Organizers: Karina Croucher, University of Liverpool, UK
Hannah Cobb, University of Manchester, UK

Time: Friday afternoon

Room: 137

Session abstract:

Experiences of archaeological practice, excavation and interpretation are key to an understanding of the construction of knowledge about the past and thus are crucial for students of archaeology in Higher Education. Additionally, archaeological fieldwork has been shown to have a positive role to play in other levels of education. As such, this session will seek to investigate the role between fieldwork and learning. We

hope to bring together an inspirational and exciting range of accounts of recent projects and research discussing a variety of issues, including the experiences and expectations of students, lecturers and excavators on training excavations, and examples of good practice that have sought to integrate fieldwork into wider degree programmes. We also intend that the session addresses some of the challenges faced, such as assessment, archaeology as a finite resource, time and research issues, and the 'student experience'. Fieldwork also has a crucial role to play in broadening the diversity and inclusivity of the discipline through widening participation and community projects, something which is of growing importance to the sustainability of the discipline within Higher Education. We invite papers on any of these aspects, with an aim to share experiences, successes and challenges in an area of fundamental importance to the discipline.

Paper abstracts:

DIGGING DEEP: ARCHAEOLOGICAL FIELDWORK IN THE UK UNDERGRADUATE DEGREE

Ange Brennan, Hannah Cobb, University of Manchester
Karina Croucher, University of Liverpool

Between 2004 and 2006 the Higher Education Academy undertook an extensive survey into the role and provision of fieldwork in UK academic institutions. This examined student and staff experiences and expectations of fieldwork within the undergraduate degree. Whilst this is an area that has often been discussed in theory, our study sought to examine the reality of such provision, investigating problematic areas, and highlighting examples of good practice. Following a detailed and comprehensive collation of these results, and in advance of the publication of these, we look forward to presenting to the EAA 2007 our major findings and conclusions on this critical subject.

PUTTING THE THEORY INTO PRACTICE: EXPLORING THE RELATIONSHIP BETWEEN ACADEMIC LEARNING AND PRACTICAL FIELDWORK SKILLS

Kate Welham, Bournemouth University

Structured integration of fieldwork skills into archaeology degree programmes promotes broader academic confidence and competence in students. The focus of fieldwork elements on undergraduate archaeology programmes has traditionally been on meeting professional and technical requirements. However, perhaps the most significant benefit observed from recent studies of teaching fieldwork at Bournemouth University has been the overall impact that this has on students' ability to take control of their learning. This has been accomplished by providing an academic framework that encourages students to see progression and recognise their own achievement of intended learning outcomes. The different managed fieldwork elements of the degree encouraged students to adopt deep learning, by using problem solving skills, and to take ownership of their own educational needs. The variability of materials within the unit also allowed for students' different learning styles. The learning outcomes were partly assessed through reflective diaries, which revealed students had enjoyed the sessions, and felt they had a better understanding of fieldwork skills and broader academic skills, with one student noting that she appreciated the 'hands on' approach to learning. By using these alternative approaches students have not only obtained competencies in key archaeological field skills, but have also gained confidence early on in their University careers which had made a positive impact on their performance across their degrees.

REFLECTIVE PEDAGOGIES: PROMOTING REFLEXIVE PRACTICE IN ARCHAEOLOGICAL FIELDTRIPS

Stuart Brookes and Fay Stevens, Institute of Archaeology, University College London

Fieldtrips (excursions, museum visits) are an integral part of most continuing and higher undergraduate programmes in Archaeology. For these programmes, fieldtrips are regarded as key contexts in which

students learn both how to engage with and think about physical archaeological data, and 'act' as archaeologists in the field.

Despite the ubiquity of fieldtrips as a teaching method in archaeology, little work to date has considered the pedagogic role of fieldtrips. This paper presents the preliminary outcomes of a Higher Education Academy funded teaching developing project which aims to critically evaluate the learning experience of archaeological fieldtrips undertaken by a cohort of adult learners during the 2005-7 semesters. Building on previous collaborative work that has taken place over the past two years, the research documents and discusses the critical reflections of participants and tutors on their experience of several fieldtrips, thus providing an important contribution to teaching development in higher education by addressing this fundamental, yet neglected, topic.

ARCHAEOLOGICAL FIELDWORK IN THE SCOTTISH CURRICULUM: MORE THAN JUST TICKING BOXES!

Sarah Phillips, UCL

In Scotland the National Curriculum takes the form of National Guidelines, rather than a statutory curriculum, which potentially allows teachers more flexibility in their classroom practice than other countries. The newly developing Curriculum for Excellence has four key aims; to produce Successful Learners, Confident Individuals, Responsible Citizens and Effective Contributors. These aims suggest, what most teachers already know, that learning is more than simply ticking off boxes. Many archaeologists, for example Henson et al (2004) have noted the potential of archaeology and archaeological fieldwork to achieve curriculum objectives. But can it achieve more? This paper presents a research project which, using educational research techniques, explores how primary school children engage with active elements of an archaeology fieldwork workshop based on Constructivist learning theories. Museum research has presented Constructivist learning approaches as an effective way of communicating representations of the past to the public, for example Hein (1998). This paper suggests that archaeological fieldwork provides a successful environment for a constructivist teaching approach that can achieve curriculum requirements relating to the study of the historic environment. This exploratory study is interested in what the children themselves got out of the project over and above traditional learning outcomes that may enable the wider aims of the Scottish Curriculum of Excellence. The paper intends to outline some of the issues arising from the undertaking of this workshop and how this may affect future curriculum practice and highlight possible avenues for future research.

References:

Hein, G. E. (1998), *Learning in the Museum*. London and New York: Routledge

Henson D. et al (eds) (2004), *Education and the Historic Environment*. London and New York: Routledge.

FIELDWORK AND THE COMMUNITY

Don Henson and Dan Hull, Council for British Archaeology

Archaeology has been a volunteer-led activity for far longer than it has been a paid profession. The excavations of the early antiquarians was followed by the work of county societies in the 19th century, followed after the 2nd World War by more localised societies and field clubs, and more recently by often intensely local heritage groups based around active investigation of particular sites.

The voluntary sector of society-based and independent archaeologists still make a tremendous contribution to archaeological fieldwork in the United Kingdom. Unlike many other countries, the right to carry out archaeological investigations in Britain has never been restricted to a closed shop. The Heritage Lottery Fund and the, now sadly defunct, Local Heritage Initiative have enabled local people to gain access to the funding they need to carry out their own research into the heritage that is important to them. The CBA has a mission to enable archaeology for all, and has recently launched its Community Archaeology Forum on the Internet, as a space for community groups to share their results and exchange advice. This talk will highlight the role and advantages of voluntary sector archaeology, with case studies of good practice from around the UK.

DIVING INTO MARINE ARCHAEOLOGY OF THE SOLENT: EDUCATION THROUGH INVOLVEMENT

Julie Satchell, Hampshire & Wight Trust for Maritime Archaeology

The Hampshire and Wight Trust for Maritime Archaeology has been undertaking research led fieldwork in the Solent area of the UK for the past 15 years. This work has involved the investigation of a wide range of sites underwater and in the inter-tidal zone, which range from submerged prehistoric occupation sites through to remains of World War two vessels on the foreshore. All of these activities have involved teams which mix professional archaeologists with volunteers and students.

This paper will explore the HWTMA experience of providing hands-on opportunities for public involvement in maritime archaeology. A number of case study projects will be presented including the HLF funded 'Recording Archaeological Remains on the River Hamble Project', Bouldnor Cliff submerged Mesolithic landscapes and diving investigation of historic shipwrecks. These will be used to examine issues including balancing archaeological results with the 'volunteer experience', involving volunteers in diving archaeology and getting stuck into inter-tidal archaeology.

THE HIGHER EDUCATION FIELD ACADEMY: COMBINING RESEARCH WITH WIDENING PARTICIPATION

Carenza Lewis, Cambridge University

This paper will summarise the aims, methods and achievements of the Higher Education Field Academy (HEFA) project, developed and run by Carenza Lewis (well-known to millions from Channel 4's Time Team long-running television series) of the Department of Archaeology in the University of Cambridge, England. This innovative project combines cutting-edge new research into a hitherto neglected area of study - currently-occupied rural settlements - with an ambitious widening-participation programme aimed at increasing progression rates to Higher Education amongst currently under-represented sectors. This paper will outline the aims and methods of the HEFA project, detail evidence showing the impact HEFA participation has on the young people (mostly aged 14-15), and present some of the more significant archaeological results to date.

'YOU CAN'T INTERPRET ANYTHING UNTIL YOU'VE DONE THE ARCHAEOLOGY': A STUDY OF THE BARRIERS TO PUBLIC INTERPRETATION AT ACTIVE EXCAVATION SITES IN CAMBRIDGESHIRE.

Hannah Guthrie, Newcastle University

Many authors extol the virtues of increased public understanding of the past and archaeological method and process. However, translating these theoretical musings into practice is not always easy or straightforward. It is increasingly common to see sites open to the public—complete with interpretation panels—after they have been excavated, with all the artefacts safely deposited in a museum, but these sites are often hard to interpret and can be, frankly, disappointing. This paper explores the public presentation of archaeology whilst the excavations are occurring. It aims to establish the practical barriers to public interpretation of excavation faced by two archaeological units in Cambridgeshire, UK. In analysing these barriers and how these units, and others, have tried to overcome them, this paper presents a potential model for other units.

"I CAN'T THINK OF ANYWHERE I'D RATHER BE": INTEGRATING A FIELDWORK PROGRAMME INTO A HIGHER EDUCATION PROGRAMME FOR NON-TRADITIONAL STUDENTS

Paul C Tubb, University of Bristol

The part-time HNC in Field Archaeology (Salisbury College 2000-2004) was designed to provide students with a suite of practical skills delivered through regular fieldwork practice set within the framework of professional practice. Aimed at non-traditional learners, the intention of the course was to provide students with both the skills and knowledge to either pursue their studies further or make a meaningful contribution

to fieldwork programmes. As such students of this course received far more practical experience than traditional full-time undergraduates.

It was a steep learning curve for all concerned; working in the potentially dangerous environment of a military training area, accounting for disabilities and accessibility issues; assessing the practical element of students’ learning and finding additional time within a busy Further Education teaching week to undertake all the finds processing presented challenges that were, by and large, successfully overcome.

A number of themes from the success of the HNC in Field Archaeology will be discussed: the use of weekends for fieldwork, the value of using professionals as lecturers, Health & Safety and the underlying aims of Higher Education programmes in Archaeology.

WORKING, LEARNING, QUALIFYING: A VOCATIONAL QUALIFICATION IN ARCHAEOLOGICAL PRACTICE

Kenneth Aitchison, Institute of Field Archaeologists

The Institute of Field Archaeologists has developed a new qualification for archaeologists. This is a vocational qualification, purely based upon professional competence as demonstrated in the workplace. It has been designed by practising archaeologists to address the recognised skills needs of the profession in the UK. This new qualification is also assessed in an innovative way - candidates compile evidence of themselves undertaking particular work tasks, such as written testimonies, witness statements, images or video footage, and upload these to dedicated webspace. This evidence is then scrutinised online by assessors, who can either approve the evidence or ask for more information. Progress is achieved through accomplishing the requirements of a series of core units - in areas such as health and safety and professional development - and alternative routes, such as fieldwork, information processing or finds work. This allows candidates to steadily build up their portfolio of evidence towards the qualification, which is presently available at levels 3 (roughly equivalent in terms of intellectual engagement to professional entry level / undergraduate degree) and 4 (roughly equivalent to an experienced practitioner / Masters degree). With this innovative delivery and assessment mechanism, access to the qualification will not be limited to UK archaeologists and students; it will be available and applicable anywhere in the world.

FRIDAY

Round table title: DOES THE 'ARCHAEOLOGY OF EUROPE' EXIST? AN ARCHAEOLOGICAL DIALOGUE

Organizers: Sarah Tarlow, University of Leicester, UK
Alexander Gramsch, Freiburg i. Br., Germany

Sponsored by Archaeological Dialogues

Time: Friday afternoon

Room: 155

Round table abstract:

While there seems to be an agreement among archaeologists today that archaeology is about understanding contemporary societies we nevertheless have to question the ways in which archaeological knowledge is used in the construction of modern identities. In the last decade there appears to be a shift from archaeologies of nations to an archaeology of Europe, from nationalism to Europeanism. Is there anything coherently 'European' about European archaeology - or rather: about the 'Archaeology of Europe' - or is it simply a modern political construct with no meaning in the ancient past? To what degree is archaeology used in the project of creating an integrative European identity in the contemporary world? The existence of EAA itself, as well as various funding initiatives from the European Union and sweeping international exhibitions, suppose that there is some value in examining similarities in our data and

approaches across the continent, but is this attempt to be inclusive actually exclusive by focusing on a bounded (non-Asian, non-African) 'Europe'? Does it help our understanding of the prehistoric and/or historic past to think about 'Europe' as a unified area? If so, do the significant unities relate to data, to theory, or to the politics of the modern world? Moreover, on what grounds is this body called 'Europe' created - economy, culture, religion, geography? For example, does the ongoing reference to the (Latin) Christian occident exclude some European culture areas? Does the 'Archaeology of Europe' cover Europe in its full geographical definition?

This Round Table will address these and related questions. Sponsored by the journal *Archaeological Dialogues*, the session will take the form of a position paper from Prof. Kristian Kristiansen, first president of the European Association of Archaeologists among other distinctions, and comments from a number of invited speakers from a range of different countries and theoretical positions. After the presented papers the discussion will be thrown open to the floor. In the tradition of the journal we hope that a theoretically-informed and wide-ranging dialogue will ensue.

Keynote Speaker: Kristian Kristiansen (University of Göteborg, Sweden)

Session title: FINDING NOTHING: ARCHAEOLOGICAL "HIATUS"

Organizers: Geoff Carver
Philippe Della Casa
Laurent Olivier
Constanze Witt

Time: Friday afternoon

Room: 137

Session abstract:

In archaeological excavation reports, and their interpretations, we often read of a discontinuity or "hiatus" in the human occupation of the site. The site in question is usually a settlement or city, but may also be a cemetery, cave. This session invites papers that explore the following questions:

- a) the various types of "hiatus" one might find at a site complete devastation and "salting of the earth", relocation of population on a temporary or permanent basis, relocation to another area of the site, etc.;
- b) the various types of archaeological determinations that must be made to arrive at a diagnosis of "silencio arqueológico" or true cultural hiatus; how archaeologists deal with the issue of arguing ex silencio;
- c) how such an hiatus is to be dated and with what degree of certainty;
- d) climate, geography, biology, demography, technology, politics, economy, war, and other factors that might account for certain instances of archaeological "hiatus".
- e) Theoretical issues that arise in the contemplation of the concept of "hiatus"; distinguishing "archaeological hiatus" from "cultural hiatus"; the modern insinuation of the anticipatory connotations of the term; and the various forms in which "hiatus" can best be represented and communicated.

For the purposes of this session, normal abandonment of a site in the course of transhumance or nomadism will not be considered "hiatus".

Paper abstracts:

TRACES, PRINTS AND PALIMPSESTS: THE PAST IS FULL OF HOLES

Laurent Olivier, Musée d'Archéologie nationale, St-Germain-en-Laye, France

Since its beginnings as a discipline in the XVIIIth Century, the role of archaeology has been to fill the terrifying gap that the discovery of a remote and dark past – located far beyond the clear and immediate past of classical Antiquity – had opened in Time. Again and again, generations of archaeologists have been trying to extract from broken and mute archaeological remains a continuous narrative, that would transform

the unconscious past of unknown Prehistory into some sort of "pre-antiquity": an archaeological past in which a new history of cultures and civilisations would succeed to the traditional history of cities, kingdoms and empires.

There is no space in the archaeological discourse for lack of evidence, absence or disappearance, since the continuity of material evidence that the archaeological remains consist of is seen as equivalent to the supposed continuity of historical time. Typo-chronology is explicitly based on that idea. Gaps are acceptable only if they are the signature of events: such accidents are called *hiatus*.

But gaps and fragments are everywhere within the archaeological record, that is, in fact, essentially partial. There is no continuity in the archaeological evidence and we can't fill the black hole of past times. Archaeological evidence works as a palimpsest. The remains of the past are a product of Memory and not of History.

UNCONFORMITIES – RUPTURES – HIATUS

Geoff Carver, University of Buffalo, USA

There seems to be a long tradition in finding boundaries in the archaeological tradition: the "unconformities" of Hutton's geology, Foucault's "ruptures," Harris' "interfaces" and – at a larger scale – the cultural "hiatus."

This trend becomes especially marked when contrasted with the medieval worldview, where the microcosm was harmoniously reflected in the macrocosm.

And this in turn raises questions about the degree to which such boundaries are a "modern" reaction against medieval thought. To what extent do we see boundaries where they don't exist, simply because we want them to be there, or as an artifact of the classification process?

This paper examines archaeological boundaries at a number of scales, from the micro to the macro.

TIME AWAY?

Constanze Witt, University of Texas, Austin, USA

An archaeologist determines that "hiatus" has taken place by the presence of absence. Evidence of destruction, disruption in an otherwise orderly stratigraphy and/or seriation, literary or historical records of desertion, and many other clues contribute to the impression of a hiatus, but the only decisive factor can be the evidence of lack of evidence. Settlements may be rebuilt immediately after destruction by fire, earthquake or war, while others lie abandoned for decades or centuries. A sanctuary may be forgotten for generations, only to be rediscovered and gain a new existence in different hands. The temporal dimension appears to be key. A people may be settled en masse from one polity to another, ruthlessly wiping out the traces of those who came before; the temporal existence of the previous population has effectively been rewound. Has hiatus taken place?

At a site, pottery production appears to putter along for generations at a stately, predictable pace, according to a rigid taxonomy; however, once ceramics begin to be accrue external and absolute dates, it becomes clear that innovations in style and shape appear in clusters and rapid spurts, while there are fallow periods where nothing appears to be produced at all. Must we speak of hiatus or "breaks," or is this not the natural rhythm of artistic creativity?

Coming out of the disciplines of history and the natural sciences, we are uncomfortable with the notion of discontinuities -- with the idea that "nothing happens." We feel that we have to account for "missing" strata, "gaps" in a stylistic development, "silences" in narratives: all manner of "missing links." However, our parent disciplines teach us that, in historical narratives, there are in fact quite long stretches in certain places where nothing much happens. And in the geosciences, strata are not laid down in predictable intervals at predictable depths -- many eras left no traces, and some have been erased. As far as our beloved metaphor, evolution, goes, there of course we are finding that the predictable mutational clock is a convenient fiction -- useful perhaps on a macro scale, but certainly not finely granulated. Archaeolinguists are discovering the same phenomenon to be true of the development of languages.

Thus, when an archaeologist is faced with evidence of nothing, she can embrace the void as a salutary shift from the spatial into the temporal dimension that will help inform her explanatory narrative as a whole.

THE INTERPRETATION OF NEGATIVE EVIDENCE IN LARGE SCALE WORK

Jan Vanmoerkerke, Direction régionale des affaires culturelles de Champagne-Ardenne, France

The use of negative evidence in archeology has largely been criticized. Since the early years of archeology, examples of interpretation of "gaps" as discontinuity generally revealed to be wrong. New discoveries, results of better excavation techniques, dating methods and stratigraphical analysis, are often in contradiction with the interpretation as discontinuity.

Since the eighties, increasing large scale archaeological investigations, systematic environmental analysis and absolute dating seem to offer reliable guarantees that absences of certain phases or sites are not simply a reflection of the quality (or the poverty) of our approaches. In this communication, we will try to demonstrate, with some case studies from Champagne, that the combination of several methods, allows well-founded interpretation of "lacks".

Large scale work is the first condition to assess negative evidence. In ancient rural societies, the density of occupation can be very low. Intensive fieldwork on several thousands of hectares is necessary to argument factual absence.

The second condition is the parallel work on taphonomy. Varied landscapes, with multiple places where stratigraphical accumulation is possible give much higher guarantees. In the chalk plain of Champagne, about every 50 m, paleosoils are conserved and can be studied. That sort of conservation is particularly needed for the phases without archeological features dug into the soil.

Independently, absolute dating, of all traces, even those which don't seem to be related to human occupation, is another condition. For several landscapes and phases, it has been demonstrated that human incidence is only indirectly proven by series of C^{14} dating on charcoal from paleosoils or windfalls.

Environmental studies are particularly important for hiatus interpretations. In fact, these are the only studies which can positively demonstrate absence. Several classical disciplines as palynology can be mentioned, but we'll put emphasis on examples from dendrology. Dendrological analysis on large series of wood allow to proof absence of human influence in the forest, which is a very strong argument for hiatus.

A LATE GLACIAL NO-MAN'S LAND? THE ERUPTION OF THE LAACHER SEE VOLCANO 12,920 BP AND THE ABANDONMENT OF NORTH EUROPEAN LANDSCAPES

Felix Riede, University of Cambridge, UK

Around 13,000 years ago, the Laacher See (LS) volcano, located in present day western Germany erupted catastrophically. Ash from this eruption was deposited over many parts of Europe in three main fans, a westerly, a southerly and a north-easterly. Over the last few decades an increasing number of stratified archaeological sites under the north-easterly fan have become known, and at these sites, human settlement appears to cease at the LS eruption and not to commence until much later in the Holocene.

As one moves further north onto the North European Plain the resolution of the archaeological record diminishes due to a dearth of stratified sites, but the effects of the eruption on settlement patterns and technology become increasingly more pronounced. A joined investigation of site stratigraphies, calibrated radiocarbon dates, settlement patterns and technology leads to the suggestion that the areas affected by LS ash fall-out became depopulated, creating a genuine hiatus: a Late Glacial 'no-man's land' in parts of central and north-eastern Germany and western Poland. It is argued that the large, but hitherto largely ignored eruption of the Laacher See volcano constituted an important culture-historical caesura for the Late Glacial. This unique event instigated a number of demographic fluctuations, which in turn led to material culture changes documented in the archaeological record, including the abandonment of large tracts of land.

A number of middle-range links between this volcanic event and its effects on faunal, floral and forager communities are suggested. It is argued that it was in part the uniqueness of the Laacher See event, which made it difficult for Late Glacial societies, especially those living on the periphery of the occupied territories, to adequately adapt economically and socially to the changed landscapes. In light of these findings, it may be interesting to investigate comparatively the archaeological sequences of the regions under the westerly and southerly fans.

THE MESOLITHIC-NEOLITHIC 'TRANSITION' IN ISTRIA: CONTINUITY OR HIATUS? PROPOSAL FOR A MODEL OF 'SIMILARITY WITHOUT CONTACT'

Andrea L. Balbo & Preston T. Miracle, University of Cambridge, UK

The lack of Mesolithic assemblages has been observed on both sides of the Adriatic, leading scholars to hypothesise the existence of a Mesolithic gap: a hiatus in the occupation of the region during the early Holocene (Biagi and Spataro, 2001; Inga, 2003; Skeates, 2003). In the Balkan Peninsula Mesolithic sites have been defined as virtually invisible outside of a few hot spots like the Danube gorges (Inga, 2003). Some authors (e.g. Runnels et al., 2004) attribute the rarity of sites to the lack of systematic research; others (e.g. Biagi, 2003) believe it to be the consequence of abandonment and/or submersion following the Holocene sea-level rise.

In Istria, 11 (15%) of the 74 archaeological cave sites recorded so far have given evidence of Mesolithic occupation. However, a gap of more than 1000 years is documented between the latest Mesolithic and the earliest Neolithic sites in the region (Miracle and Forenbaher, 2000, 2006c). This generalised lack of late Mesolithic sites remains unexplained (Forenbaher and Miracle, 2005). The nature of this archaeological hiatus is analyzed here through the comparison of available and newly acquired archaeological and palaeoenvironmental records from Istria and the wider region. On these bases, a possible link between the lack of Mesolithic archaeological record and sudden volcanic and tectonic events around the Adriatic is proposed, claiming that the Mesolithic gap observed in Istria and in other circum-Adriatic regions could be related to sudden (and perhaps catastrophic) environmental changes taking place in the early Holocene.

THE 10th TO 8th CENTURY BC SETTLEMENT HIATUS IN THE ALPS – WHAT REALLY HAPPENED...

Philippe Della Casa, University of Zurich, Switzerland

A major break in the Alpine chronological sequence occurs around the 10th to 8th century BC. This break is marked by the abandonment of nearly all known LBA settlements, and a general scarcity, if not total lack, of any archaeological material within the central Alpine range.

At least for the 9th/8th century, this break in the sequence is concurrent with a period of climatic deterioration and lake level transgression that led to the abandonment of known BA lakeside settlements at the transition to the EIA, though other types of settlement as well as graves show no interruption.

The transition LAB–EIA and the climatic impact are often regarded as interlinked phenomena of one of the major cultural shifts in European prehistory, a « hiatus » on environmental, economical, and political scales. But what did really happen ? What effects did it have on the Alpine populations of the LBA installed in the Alpine valleys for at least half a millenium ? And why are we lacking archaeological information ?

This paper seeks to investigate the different approaches – ecological, economical, cultural – capable of shedding some light onto an intriguing « hiatus » of which we do not really know whether it ever has existed.

'STIGMATA', BREAKS IN THE 'CIRCLE OF SUFFICIENT REASON', 'HIATUS' IN 'RISK SOCIETY'?

Stephanie Koerner, University of Manchester, UK
Brian Wynne, Lancaster University, UK

Until recently, very few archaeologists are likely to have been receptive to suggestions that insights of aspects of the histories of the art, religion, and science, which have been eclipsed by 'standard meta-narratives' about the 'Scientific Revolution' and 'Birth of Modernity' might enhance (indeed transform) their orientations towards the history and current sites of the field's participation in the dynamics of pedagogical institutions and public affairs.

That the situation may be changing shows in several themes of the 'Finding Nothing' session made possible by such shifts in orientations as those:

- (a) from debates over the universality of 'facts' ('typologies') to concerns with practices, instruments, cycles of credibility involved in knowledge production,
- (b) from preoccupation with explaining disagreement and conflict – (as though normativity were given by some form of necessity) – to trying to understand how consensus is possible,
- (c) from ideas that 'science' is one sort of 'given thing' to concerns with what sorts of things have been grouped under the headings, science, art, religion, and 'objectivity'.

Our presentation builds upon research on situations in the histories of art, religion and science that form the roots of the currently expanding roles of science-knowledge agencies in human affairs. This, not only with regards to roles in advising policies (on issues ranging from climate change, nuclear energy, hazardous chemical and biological waste issues to genetic engineering and 'risks to cultural heritage'), but in determining what the issues that matter to authoritative policy makers should be (Koerner and Wynne 2007). We focus on situations that show how themes of this session go against the grain of the images of 'objectivity', which render invisible the importance to many such developments of:

- (a) reducing existential and moral crises to problems of knowledge
- (b) claims to the necessity for the 'common good' of starting with a 'clean slate'
- (c) marginalising the innovations local communities of 'we' on the basis of 'deficit models' of 'public perceptions' of 'expert knowledge competence'.

Session title: *SPONDYLUS* IN EUROPEAN PREHISTORY: NEW DATA AND APPROACHES

Organizers: Fotis Ifantidis, Aristotle University of Thessaloniki, Greece
Marianna Nikolaidou, Cotsen Institute of Archaeology at UCLA, USA

Time: Friday afternoon

Room: 142

Session abstract:

This session seeks to discuss thoroughly the *Spondylus* 'phenomenon' in European prehistoric contexts. It brings together new archaeological data, methodological advances, and current interpretations for the study of this important material. Further understanding comes from *Spondylus* comparanda in other parts of the world and from the wider context of ancient shell technologies.

The papers and posters to be presented bring discussion to topics such as:

- New excavated data or syntheses of older material
- Laboratory analyses of raw material source and procurement
- *Spondylus* distributions, inter- and intra-site
- Fragmentation / re-fitting studies of *Spondylus* ornaments
- The biographical approach: procuring, crafting, using, recycling, destroying and hoarding *Spondylus*
- Symbolic, ritual, and social aspects of shell technologies
- Dietary and non-dietary uses of *Spondylus*
- *Spondylus* 'mythologies' world-wide: ancient and modern

Paper abstracts:

SPONDYLUS IN ROMANIA: OLD AND NEW DATA

Cristian Schuster, Romania

The presence of some items made of *Spondylus* found in burials, but also in settlements of the Neolithic and transitional period to the Bronze Age, has stirred and still stirs a great interest among the specialists. In this context, attempts have been made, in order to establish the provenance site of the objects or/and raw materials, if the various artifacts have been made in the local environment, or 'imported' in their final form, the cultural milieus where they could be identified, the temporal sequence of their distribution on the territory of Romania, the item categories, their social, cultural and religious significance.

In order to establish their provenance, two hypotheses have been outlined: the one of the import from the Adriatic Sea, respectively the one of collecting the shells from the Black Sea. As concerns the place of their processing, it seems that specialized workshops existed, like the one from Hârşova; to work on this raw material it was a delicate activity and not anyone could make a diversity of items.

The typology of the artifacts was not too wide. Out of the adornments, a significant sample was represented by bracelets. Yet, there were identified pendants, rings, pearls, anthropomorphic idols. Items of *Spondylus* were part of the inventory of the burials, either being of children, women or men, but some, evidently in small number, have been also identified in the settlements.

Starting with the Criș Neolithic culture from Romania, it could be discussed about the presence of the *Spondylus* artifacts. Subsequently, such items have been identified in the Dudești, Hamangia, Boian, Gumelnița, Vinča, Cernavodă I, Cernavodă II milieus. The large number of *Spondylus* finds was concentrated in the area of the Danube River, or its major tributaries. This fact is reconfirmed by the latest archaeological investigations (2005-2006).

RECONSIDERATION OF SPONDYLUS USAGE IN THE MIDDLE AND LATE NEOLITHIC CARPATHIAN BASIN

Zsuzsanna Siklósi, Piroska Csengeri, Hungary

It is a generally accepted view that there was a considerable social and economic change between the Middle and Late Neolithic in the Carpathian Basin. An increase in vertical social differences is believed to occur by the Late Neolithic compared to earlier periods that can be proven also by the greater variability, wealth and prestige goods of burials.

One of the most significant prestige raw materials of the Carpathian Basin in the Neolithic was *Spondylus*. During the time of Linear Pottery Culture heavy *Spondylus* ornaments were used (pendants, wide bracelets, large beads), while in the Late Neolithic a large amount of thin, finely worked ornaments appeared (bracelets and small beads).

The aim of our presentation is the comparison of *Spondylus* usage of the two periods and the analysis of the types and amount of *Spondylus* ornaments found in graves. On the basis of this analysis we would like to contribute to the interpretation of *Spondylus* usage and social change between the Middle and Late Neolithic.

SPONDYLUS ORNAMENTS OF THE EARLY NEOLITHIC FOUND IN TRANSYLVANIA AND BANAT

Corneliu Beldiman, Diana-Maria Sztancs, Romania

This paper proposes the analysis carried out on some of the most rare ornaments dated on the Early Neolithic of Romania (the cultures of Starčevo-Criș -phases IC - IV and Vinča, phase A), discovered during the last half-century in the area of Transylvania and Banat.

The ornaments consist of 15 pieces (5 bracelets and 10 pearls) worked on fragments of *Spondylus* shell valves. Without being exhaustive (especially concerning the Vinča culture, phase A), the repertory includes some of the oldest known artifacts of this type until now on the territory of the country. A special attention is given into the aspects of paleotechnology (issues of manufacture and use) on the basis of analysis of the specific traces.

The dates on these pieces are spread out in the following table.

Type	Site	Culture/ Phase	No	State of conservation	Researcher(s)/publication date
Bracelet	Cerișor- Peștera Cauce	Starčevo-Criș IC- IIA	1	Fragment	Luca S.A., Roman Cr., Diaconescu Dr. 2005
Bracelet	Cluj-Napoca – Gura Baciului	Starčevo-Criș IB	1	Fragment	Vlassa N. 1976
Bracelet	Drobeta Tr. Severin – Schela Cladovei	Starčevo-Criș III- IV	1	Fragment	Boroneanț V. 1980
Bracelet	Gornea- Locurile Lungi	Starčevo-Criș IIB-IIIB	1	Fragment	Luca S. A., Dragomir I. 1985
Bracelet	Gornea- Căunița de Sus	Vinča A	1	Intact	Lazarovici Gh. 1979
Bead	Ohaba-Ponor – Peștera din Bordu Mare	Starčevo-Criș III-IV	1	Intact	Nicolăescu-Plopșor C. S. 1955
Beads	Dubova- Cuina Turcului	Starčevo-Criș III-IV	9	Intact	Păunescu Al. 1978

The southernmost provenance of these artifacts in the areas of Transylvania and Banat is largely accepted followed by exchanges or immigration of population groups originating in the South of Balkans.

Finally one can underline the scarcity of these artifact types, as well as their strong documentary potential in aspects such as the paleotechnology of animal raw materials, the symbolic manifestations of the behavior system and the relations of exchanges/immigration between the Southern areas of the Danube and the North in the course of neolithisation. At the same time, one can envisage their probable role as markers of social status and as 'fossil indicators' for the Early Neolithic period in this part of the continent.

THE OBJECTS FROM SPONDYLUS IN HAMANGIA CIVILIZATION

Valentina Voinea, George Neagu, Romania

On the western coast of the Black Sea during the Neo-Eneolithic period the *Spondylus* shell represented the raw material for different symbolic objects. In the Hamangia civilization, its distinct character is more visible than in other communities.

The present study tries to clear up some of the aspects of this shell use, taking into consideration more direction more directions of analysis: the first one can be the availability of these shells and their intrinsic value given to their rarity or the gathering conditions of the raw material. The second direction can be a morphologic analysis of the artifacts, doubled by an analysis of the traces left on these artifacts. The third direction would be to follow the archaeological contexts in which the analyzed objects appear, their association with other elements of material culture, or the attempt to understand the using rules. The last direction of analysis would be to follow the modes of use of this kind of shell objects in the contemporary traditional societies, starting with the results of some ethnographic and ethno-archaeological studies.

STATUS OF SPONDYLUS ARTEFACTS WITHIN THE LBK GRAVE GOODS

Jan John, Czech Republic

Some of the LBK cemeteries in Central Europe are remarkably 'rich' in artefacts made from imported *Spondylus* shells. There is no doubt that presence of these artefacts in graves reflects social, gender or chronological structures.

This paper focuses on the structure of burial goods within the Neolithic LBK Culture cemeteries in Bavaria and Moravia using a statistical method (factor analysis). While some *Spondylus* artefacts are clearly connected only with male or female graves, other are independent of gender.

SPONDYLUS OBJECTS FROM THEOPETRA CAVE IN THESSALY: IMPORTED OR LOCAL PRODUCTION ?

Nina Kyparissi, Greece

Theopetra Cave is located at the westernmost edge of the Thessalic plain, very close to Pindus Mountains, some 100 kms. far from the closest sea shore. In layers of the Late and Final Neolithic a number of *Spondylus* objects (beads, bracelets and pendants) were found. Of them, some belong to common types known from other excavations near the eastern shores of Thessaly (i.e. Dimini, Pevkakia) while some others (a certain type of beads) are not known from the above inventory and seem to have been made locally. Despite the long distance of the site from the sea, was there such an experience? And for what purpose? What is our experience from the rest of the mainland sites in Thessaly? The paper will try to give answers to the above questions.

SPONDYLUS AND GLYCIMERIS PERSONAL ADORNMENT STORIES AT NEOLITHIC DISPILIO, GREECE

Fotis Ifantidis, Greece

Alteration, reparation, recycling and hoarding actions can be observed in the personal ornament *corpus* of the lakeside Neolithic settlement of Dispilio, Greece. In this paper emphasis is given to the *Spondylus* and *Glycimeris* shell jewelry (bracelets, beads, pendants and belt-hooks).

Using the data derived from the analysis of their quantitative and qualitative properties and from the traces of use-wear and manufacture, in relation to the chronological, spatial and other contextual information, it is possible in some cases to narrate -if not the whole 'biographies'- at least some stories, inscribed and hidden in perforations, grooves and abrasions.

SPONDYLUS GAEDEROPUS TOOLS AND MEALS IN CENTRAL GREECE FROM THE 3RD TO THE EARLY 1ST MILLENNIUM BC

Rena Veropoulidou, Greece

This paper discusses the *Spondylus gaederopus* shells from two sites on the North Euboean Gulf in Central Greece. These are the Early Bronze Age settlement of Proskinas, situated 2 km from the coast and the Middle Bronze Age to Early Iron Age site of Mitrou, a small tidal islet in the Bay of Atalanti. The quantitative and qualitative study of the many molluscan species showed that shells were gathered for different purposes, i.e. food, purple-dye production, jewelry and tools. There was a special preference in the gathering of *Spondylus gaederopus*, however, for eating and for tool making.

At the site of Proskynas, *Spondylus* not only forms the main species of the assemblage (316 out of 784 shells), but there is also clear evidence that it was gathered beach-worn to serve as scraping, scaling or percussion implement. The situation is different at the site of Mitrou; there, *Spondylus* is in quantity the third species in the assemblage (749 out of 6325), but was primarily gathered for food and was only secondarily used as a tool. The paper explores the chronological and spatial data of the two sites, which indicate the differences in *Spondylus gaederopus* usage. It will also try to pinpoint differences in the perception and use of *Spondylus* between the Neolithic and Bronze Age and between Central and Northern Greece.

CRAFTING SHELL FOR ADORNMENT: A RITUALIZED TECHNOLOGY IN THE NEOLITHIC AEGEAN?

Marianna Nikolaidou, USA

This paper considers the technologies of adornment as promising fields of ritually encoded action, open to archaeological exploration. I focus on the rich record of shell ornaments in the Late and Final Neolithic communities of the Aegean, with special emphasis on *Spondylus* artifacts. In the absence of rigidly codified hierarchies and beliefs from these societies, I propose that social and cultural knowledge was inscribed into the manufacture and use of important artifacts, such as shell ornaments, and that such practices might have been elevated to ritual status. The archaeological record suggests that the *chaînes opératoires* of production and consumption provided also contexts of symbolic negotiation for power and identity.

LOCAL SHELL ORNAMENT PRODUCTION IN SOUTH EAST BULGARIA

John Chapman, Bissarka Gaydarska, Ruslan Kostov, Ana Raduntcheva, Irko Petrov,UK & Bulgaria

The rarity of on-site evidence for the local production of shell ornaments, not least *Spondylus* rings, in the Balkans zone North of the shores of the Aegean, has been a striking regularity over the last three decades of research into *Spondylus* exchange networks. This absence of evidence is often interpreted as an indication that most of the *Spondylus* ornaments found in the Balkans, Central and indeed Western and Northern Europe were made in what may be termed an 'Aegean Production Zone' and exchanged as complete objects Northwards and Westwards.

However, as we know, absence of evidence cannot be taken as reliable evidence of absence and we now have new data for local ornament production from the Orlovo settlement, in South East Bulgaria. The data consists of nine species of marine mollusc, each with a varied *chaîne opératoire*, but in some cases including raw lumps of shell as well as complete and fragmentary ornaments. There are also several bead blanks showing local production, in volcanic tuff, marble and turquoise as well as in shell.

The extraordinary aspect of the ornament assemblage is that it constitutes a surface collection by a local village amateur, who has also discovered large numbers of anthropomorphic fired clay figurines and polished stone 'display' axes and axe-amulets. Thus, while it is currently impossible to provide a firm context and date

for the Orlovo shell assemblage, the dating of the majority of the other types of surface material would support a date in the Chalcolithic (5th millennium Cal BC) rather than in the Late Neolithic (6th MBC).

In conclusion, the social implications of the Orlovo finds are set in the context of other recent research into *Spondylus* ornaments of the Bulgarian Late Chalcolithic, including analyses of shell assemblages from the Omurtag hoard and the Durankulak and Varna cemeteries.

THE SPONDYLUS FINDS AS PRESTIGE ITEMS

Florin Drăgoveanu, Romania
(Abstract not available)

SHELLS IN PREHISTORIC SOCIETIES. FROM WEST TO EAST: A PRELIMINARY APPROACH

Lilian Karali, Greece

In our modern world, the era of technology, the search and reconstruction of past cultures is more than precious to the human being. They help to understand the parallelism in thinking and creating as a response to the environmental stress. From the mollusk shells discovered at archaeological sites, related to fishing activities and food production, knowledge can be obtained about the ecological environment, the level of technological know-how, the economy and the way of life of the community.

Shells of many species and indeed in large quantities are known from the Paleolithic Age, in Europe, Africa, Asia, and other parts of the world. In the Aegean region in Greece, mollusks are reported from most sites, especially coastal and riparian settlements. The Aegean people's involvement with the sea has a long and fascinating history. There is abundant malacological material in Greece, mainly on account of its geographical location. Mollusks played an important role in the life of Neolithic man as food and as bait, as ornaments and as tools. Shell tools occur throughout the Neolithic Age, but mainly in Middle Neolithic and markedly in the Late Neolithic, when many worked shells are noted. Worked and unworked shells are the main items of jewellery in Neolithic Macedonia, Thessaly and the Aegean islands. They are beads, pendants and bracelets primarily of *Spondylus gaederopus* L. and *Glycymeris glycymeris* L.

Despite the significant distance between Japan and Greece there are common geomorphologic features, as both countries are surrounded sea, there is a rich biodiversity in terms of sea species and there are endemic land species. Each country has several islands that communicate more or less easily. This results to the creation of various island civilizations.

Japan, the same as Greece, has created two very important Neolithic civilizations, known as the Jomon and Yayoi cultures. The inhabitants of the Japanese islands lived in organized villages and they have left among other important finds many shells. Mollusks were used in Prehistoric Japan, not only as a food supplement, but also as tools and ornaments, as it is evidenced by the shell mounds and moated circular settlements discovered in many prehistoric locations of the country. The contents of the shell mounds show that a high percentage of people's daily diet used to come from the ocean and many artifacts were worked out of shells. Ornaments out of shells mainly of *Strombus (Tricornis) latissimus* L., *Conus (Lithoconus) litteratus* L., *Turbo (Lunatica) marmorata* L., *Arca* sp., *Glycymeris* sp., *Luria* sp. and *Dentalium* sp. have been found in most of the prehistoric sites indicating an extended exchange-trade system.

The archaeological parallel of shell working and trading in prehistoric Japan offers new possibilities in understanding shell use in prehistoric Greece. We should review our theories about symbolic and exchangeable goods. In the prehistoric Aegean civilizations the contribution of beef meat in the diet, around 4.500 years ago and the increased use of metals, from around 5.000 years ago diminished the importance of shell ornaments quite early, as well as their economic and symbolic value. The same phenomenon, but in a much smaller scale, is observed in Japan during the Kofun period. The shape of the shell bracelets is imitated in the new precious material, metal, until they disappear. In both countries shells are always present. In this purpose the archaeo-malacological data from Neolithic Aegean will be compared to data from the Neolithic sites of Japan in order to evaluate the trade-exchange similarities between the prehistoric communities of those two countries.

THE PREHISPANIC SPONDYLUS SHELL GARMENT FROM TULA, MEXICO

Adrián Velázquez, Zúñiga Arellano & Valentín Maldonado, Mexico

In the year of 1993 in the ancient city of Tula de Allende, Mexico, two offerings were found in the building known as 'Palacio Quemado'. One of them (the number 2) contained mostly marine materials as chorals, mollusks shells (*Spondylus princeps*, *S. calcifer* and *Chama echinata*) and a garment and a necklace, made of 1415 and 245 pieces of shell, respectively. In a preliminary analysis *Spondylus princeps* shell was identified as the material predominantly used to make the garment and the necklace, though recent studies have allowed to identify other species, which main characteristic is to be red. Also recently it has been possible to know the techniques used to manufacture these two pieces, due to an experimental archaeology project and the study of the manufacture traces using scanning electron microscopy. As in the year 2000 a replica of these two pieces was commissioned to the authors of this lines for the Toltec room of the National Museum of Anthropology, Mexico, it was possible to know other interesting aspects as the problems involved in the collection of the shells, the number of them used, and the difficulties in the planning of the garment. In the present paper these new data are summarized, which allows to understand one of the most impressive archaeological shell findings of Prehispanic Mexico.

Posters:

RE-FITTING SPONDYLUS SHELL RING FRAGMENTS AT LATE NEOLITHIC DIMINI: BIOGRAPHICAL TALES AND SOCIAL CONSEQUENCES

Bisserka Gaydarska, Evangelia Skafida, Stella Souvatzi & John Chapman, UK & Greece

In this poster, we hope to capture the diverse arguments and positions maintained in the debate over the interpretation of the *Spondylus* shell assemblage at the Late Neolithic hill-top site of Dimini, Thessaly, Central Greece. After an introductory panel setting the site and its excavations in context, we offer a second panel showing the contexts (houses, other structures, open areas, etc.) in which the shell ring fragments have been deposited. In Panels 3 and 4, we summarize the positions of four of the main players in the debate –Hourmouziades, Tsuneki, Halstead and Kyparissi-Apostolika– as well as the arguments in favour of, and against, their respective positions. In Panel 5, we present the results and implications of our shell ring re-fitting studies at Dimini, while the results of the biographical approach and its social implications are summarised in Panel 6. These new results have serious consequences for all of the alternative explanations of the shell ring assemblage. We hope that the poster presentation will spark off a renewed debate about the meaning of the Dimini shell ring assemblage and the methodology of fragmentation studies for *Spondylus* shell rings.

WHY DO WE LOVE SPONDYLUS? A GLOBAL VIEW FROM SOUTH AMERICA

Benjamin P. Carter, USA

Spondylus and artifacts made from its colorful shell have played important social, religious, and economic roles throughout much of the world. Even today, artisans in diverse parts of the world continue to make wonderful objects from *Spondylus*. In South America, as in many places, hypotheses have been proposed as to why we love this shellfish so much. These come from a variety of theoretical perspectives, but are mainly based in environmental and biological attributes of *Spondylus*. These include hypotheses that suggest that *Spondylus* was socially and ritually significant because its presence on the shores of Peru is linked with the arrival of the warm waters of an El Niño event and the accompanying destruction, the ability of *Spondylus* to 'see' with their pallial eyes and even the possibility that *Spondylus* infected with harmful algae was eaten in order to induce paralytic shellfish poisoning that can yield hallucinatory visions.

These and other hypotheses will be critically analyzed from a global perspective. While many may be possible it appears that in many parts of the world, including South America, the main reasons that *Spondylus* was so valuable lies within attributes of the shell itself. It seems likely that in many places, *Spondylus* was valuable because of it colorful shell and the workability and durability of the raw material itself. The vibrant colors, including red, purple and orange, are especially relevant as these same colors often represent important people and/or ideas; consider, for example, royal purple and the 'red carpet'. On the other hand, the hardness of *Spondylus* makes it more like a semiprecious stone than many other shellfish and the difficulty of working it and the durability of the finished product add both labor and longevity to its value.

THE SPONDYLUS FINDS FROM KARGADUR/ISTRIA

Darko Komšo, Croatia
(Abstract not available)

VISUALIZING SPONDYLUS: AN ATTEMPT OF VISUAL INTERPLAY OF SPONDYLUS DISPLAYS IN THE ARCHAEOLOGICA (AND OTHER) SCRIPTA

Fotis Ifantidis, Greece
(Abstract not available)

Session title: MANAGEMENT AND INVESTIGATION OF MARINE, COASTAL AND INTERTIDAL PREHISTORIC ARCHAEOLOGY; DEVELOPING A RESEARCH AGENDA

Organizers: Vince Gaffney The Institute of Archaeology and Antiquity, The University of Birmingham, UK
Simon Fitch, The Institute of Archaeology and Antiquity, The University of Birmingham, UK
Emma Tetlow, Birmingham Archaeo-Environmental, The Institute of Archaeology and Antiquity, The University of Birmingham, UK.

Time: Friday afternoon

Room: 143

Session abstract:

The coastal and intertidal zone has long been recognised as one of Europe's richest stores of cultural and archaeo-/palaeoenvironmental evidence. The constant threat to this valuable resource from diverse factors such as biogenic activity and natural erosion to more anthropogenic factors such as aggregate extraction, windfarm construction and tourism is considerable. The Archaeology in these submerged and coastal environment produces a significant diversity of material such as finds as small as microburins to entire vessels and their cargo. The environmental record enjoys similar diversity from the ephemeral footprints of our ancestors to entire landscapes submerged beneath the waters of the North Sea. The rigours of research, excavation, preservation and management in this difficult and challenging environment place particular demands on researchers, archaeologists, heritage managers and curatorial staff not normally experienced in 'traditional' archaeology.

This session aims to bring archaeologists, working in these environments together to discuss a variety of issues associated with research, management and preservation. It is hoped that discussion will centre upon:

- The challenges presented by managing cultural heritage in an intrinsically dynamic environment.
- The diversity of the archaeological record and the issues associated with preservation strategy.
- The implementation of a more integrated approach to archaeological exploration in the marine and coastal zone.

Paper abstracts:

MUDDY HERITAGE MANAGEMENT: APPROACHES TO THE INTERTIDAL MESOLITHIC-NEOLITHIC LANDSCAPES IN THE FLEVOLAND POLDERS (THE NETHERLANDS)

Hans Peeters, National Service for Archaeology, Cultural Landscapes and Built Heritage (RACM), the Netherlands

The Netherlands have a long tradition in maritime archaeology in the North Sea area. Research and management of the maritime heritage has, however, primarily focussed at historical times. It is only recently that the submerged prehistoric landscapes are attracting serious attention of professional archaeologists

working in the field of heritage management. Significantly, a joint initiative to develop an integral research and management framework for prehistoric landscapes in the southern North Sea has been taken by English Heritage and the National Service for Archaeology, Cultural Landscapes and Built Heritage in the Netherlands. On both sides of the North Sea it is felt that there is need for a reference framework for research and heritage management projects that are (to be) conducted in this area, where many intrinsic uncertainties with regard to the presence, nature and quality of archaeological landscapes, combined with methodological constraints, continue to frustrate an effective approach to this heritage.

This paper proposes to look at some of the key problems for research and management of submerged and deep buried prehistoric landscapes, departing from a study on Mesolithic-Neolithic land use dynamics in the Dutch Flevoland Polders. Underneath the former seabed, an accumulation of Early Holocene intertidal palaeolandscapes is present, hosting a rich body of archaeological and palaeoenvironmental information sources. Many of the characteristics of the archaeological landscape and the related problems also apply to the marine and coastal zones. The problems are primarily related to the following aspects:

- (1) the generally low resolution and high variability of archaeological manifestations of hunter-gatherer land use (problems of detection and recognition);
- (2) the scale of investigation and assessment (site vs. landscape approaches);
- (3) the representation of hunter-gatherer landscapes (static vs. dynamic).

The approach developed for the Flevoland Polders involves several steps of modelling in order to gain insight into the relationships between landscape and land use dynamics on the one hand, and the character (composition, structure) of the archaeological landscape on the other. These characteristics are next translated into a research and management approach which is primarily landscape-oriented instead of site-oriented. This landscape approach does not only better fit the nature of Early Holocene archaeological landscapes, but also does better right to the full range of evidence on hunter-gatherer behaviour and hunter-gatherer landscapes in a broader sense.

CHALLENGES PRESENTED BY THE INVESTIGATION OF THE INTERTIDAL RESOURCE AT SAN NICOLAS ISLAND, CALIFORNIA, USA.

Victoria Stosel, Department of Anthropology, California State University, Los Angeles, USA

This paper analyzes faunal remains from two contiguous sites, CA-SNI 102 and CA-SNI-106, on San Nicolas Island for evidence of possible inter-site variation in patterns of environmental exploitation. The sites had access to similar resources and contain many of the same species but differences in the relative importance of fish, black abalone (*Haliotis cracherodii*) and sea urchin (*Strongylocentrotus* sp) indicate that the indigenous population, selected different species for consumption. Radiocarbon dates show that occupation of the sites was contemporaneous. A simple examination of minimum number of individuals (MNI) fails to accurately reflect the relative importance of species of the diet. Formulas based on bone to meat weight and shell to meat weight ratios permit the calculation of meat and protein yields. These better reflect the nutritional importance of the marine resources used on San Nicolas Island. Variation in faunal remains indicates that the diet differed substantially. In CA-SNI-102 black abalone provided twice the meat and protein yield as compared to CA-SNI-106. While at CA-SNI-106 Fish made up 70 and 75% of the meat and protein yields respectively as opposed to 54 and 58 percent at CA-SNI-102. Sea urchin made up 20 percent at CA-SNI-102 but only 8 percent at CA-SNI-106.

TRACES OF A SUBMERGED WORLD – INVESTIGATIONS ON SUBMARINE STONE AGE SITES ON THE SOUTH-WESTERN BALTIC OF MECKLENBURG-VORPOMMERN, GERMANY.

Harald Lübke, Roman-Germanic Commission of the German Archaeological Institute, Germany

The potential of submerged prehistoric sites on the German Baltic coast for cultural and archaeo-/palaeoenvironmental studies were scarcely noticed until the last decade of the last century. In Mecklenburg-Vorpommern a systematic research, excavation and management of submarine Stone Age sites of the former State Authority for Archaeological Heritage started in 1998 in a close cooperation with marine geologists of the Baltic Sea Research Institute Warnemünde. The investigations were mainly supported by the German Research Council (DFG) as one part of the interdisciplinary DFG Research Unit "Sincos" (www.sincos.org). Since 2007 they are continued under the leadership of the Roman-Germanic Commission of the German Archaeological Institute in cooperation with the State Authority and the Baltic Sea Research Institute.

One of the main regions of investigations is Wismar Bay in western Mecklenburg-Vorpommern. Several stone age sites were located during surveys with research vessels using geoscientific equipment, such as sidescan sonar, multibeam and sediment echo sounder, and remotely controlled underwater video camera, in up to 11 m deep water north off Poel Island. The sites are belonging to different phases of the Late Mesolithic and the Early Final Mesolithic between 6.500 and 5000 BC – a time period which is up to now not really known in Northern Germany due to the lack of stratified sites. The investigations of the sites will give us answers to the questions, 1. whether the Late Mesolithic at the German Baltic Coast are belonging to the Kongemose Culture like in Denmark or to a Trapeze Mesolithic like in the Interior of Middle Europe, and 2. about the genesis of the Final Mesolithic Ertebølle-Culture in the South-western Baltic.

Further sites of 5th and the 4th millennium BC were discovered in up to 5 m deep water off the western Island Poel. The excellent preservation of organic material of a middle and a younger phase of the Ertebølle-Culture allows detailed archaeological and scientific studies about settlement structures, economy and ecology of the latest hunter-gatherer-societies at the German Baltic coast before they were superseded by the early Neolithic Funnelbeaker Culture around 4100-4000 cal BC.

But the conducted research not only extend our knowledge of the archaeological settlement history, it is also important for the marine geological research concerning the Litorina transgression on the German Baltic coast.

"ALERT" COASTAL PROJECT: AN UNDER CONSTRUCTION ANSWER TO THE REGIONAL SCALE CONSEQUENCES OF A UNIVERSAL THREAT

Marie-Yvane Daire, Elias Lopez-Romero et Collaborateurs, Université de Rennes, France

Climatic changes and anthropic pressure today increasingly affect the coastal zones as a whole; hundreds of archaeological sites in France on the Channel and the Atlantic seaboard are thus threatened by more or less rapid destruction, accelerated by the relative rise of the sea level, erosion and certain anthropic modifications of the environment.

The "ALERT" ("Archéosciences, Littoral Et Rechauffement Terrestre") project implements a multi-disciplinary approach to consider the vulnerability of this heritage, covering the West of France (Lower Normandy, Brittany and Pays de la Loire), corresponding to 2 974 km of coastline (69% of the total French coast) bordering the Channel and the Atlantic ocean.

Born in 2006 within the "Coastal archaeology" research line of the UMR 6566 "Civilisations atlantiques et Archéosciences", this project is set out according to several themes: - an inventory of the coastal archaeological heritage (between 1 000 and 2 000 sites in the zone considered); - the construction of a vulnerability model for this heritage in terms of the nature of the environment and the dynamic indicators of its evolution (past and future, on a timescale of the next 20 to 30 years); - assessment of the strategies for research and action adapted to the various scales involved (regional, local and specific); – drawing up maps of the levels of vulnerability of this coastal heritage, which will not only provide research tools for scientists (paleoecology, climatology, sedimentary geology, anthropology, etc.) but also assist the integrated management of coastal zones.

INVESTIGATING AND MANAGING THE COASTAL ARCHAEOLOGICAL RESOURCE FOR A SUSTAINABLE FUTURE; LESSONS FROM THE SEVERN ESTUARY, WALES AND ENGLAND

Martin Bell, Department of Archaeology, School of Human and Environmental Science, The University of Reading, UK

This paper identifies the range of contexts in the intertidal and coastal zone in which archaeological sites are encountered. It considers the types of evidence found in these contexts and the effects of context type on the classes of archaeological evidence which survive from specific contexts and periods. The Severn Estuary has a Holocene sediment sequence of up to 15m and an exceptionally high tidal range of 14.8m. Sites in the mid- to low-tidal range cannot generally be protected from the destructive effects of erosion. Hence a need to develop appropriate methods for surveying, recording and strategic keyhole excavation of eroding sites. Equally necessary is the monitoring and recording of sites as they erode. At sites high within the tidal range, eg at the edges of bedrock rises, it is sometimes possible to slow or halt erosion but first we need to evaluate sites to establish which justify the resources required.

Inevitably any form of management increasingly involves balancing the interests of heritage and nature conservation. Increasingly nature conservation involves creating lakes, saltwater lagoons and more ambitious schemes such as managed retreat. The last replaces saltmarsh habitats which are diminishing rapidly as a result of 'coastal squeeze' between eroding foreshores and existing sea defences. Any activity which involves digging, or can lead to erosion, in coastal wetlands may potentially impact on archaeological remains. However, if appropriately planned, nature conservation led schemes can also offer significant gains to archaeology: in protecting key areas from future development, raising and maintaining watertables and providing outreach opportunities where information about the heritage can be communicated to a wider public. It is argued that future agendas should involve the development of effective alliances between heritage managers and nature conservation interests. The objective should be to develop an understanding of what sustainability means and how it can be implemented in coastal environments which are often highly dynamic and vulnerable.

INVESTIGATING AND EXCAVATING THE UNDERWATER LANDSCAPE IN THE SOLENT; ASSESSING THE POTENTIAL AS AN AID TO MANAGEMENT

Garry Momber, Hampshire and Wight Trust for Maritime Archaeology, Southampton, UK

Where did we come from and how did we get here? Many of the clues that could tell us about the first people to occupy Britain 10 000 years ago now lie underwater. Analysis of archaeological sites stratified within marine sediments can open a window to cultures that are now lost between the waves. These sites and their environmental context harbour a resource that can also provide index points for sea level rise during a period of acute climate change. A decade of archaeological investigations in the western Solent by the Hampshire and Wight Trust for Maritime Archaeology, utilising divers and geophysical survey data, has led to the discovery of Mesolithic sites within submerged landscapes. They lie between 6.5m and 11.5m below British Ordnance Datum. However, the discovery of these delicate and vulnerable sites is presenting new challenges to the maritime archaeologist. The need to record, rescue and interpret the remains underwater is necessitating the development of new underwater sampling techniques. This paper will look at the discoveries made within the submerged landscape of the Solent and the methods used to extract the information.

MAPPING DOGGERLAND: THE MESOLITHIC LANDSCAPES OF THE SOUTHERN NORTH SEA

Vince Gaffney & Simon Fitch, The Institute of Archaeology and Antiquity, The University of Birmingham, UK

The North Sea has long been known by archaeologists as an area of Mesolithic occupation, and has even been argued as the heartland of the Mesolithic in North Western Europe. Yet this area remains effectively *terra incognita* to archaeologists, and the nature of its occupation, tantalisingly elusive. The submergence of this landscape has therefore effectively hindered archaeological research into this vitally important region. Recent work performed by the North Sea Palaeolandscapes Project which mapped more than 23,000 square kilometres of Holocene land surfaces, submerged in the North Sea has illustrated that through the utilisation of spatially extensive oil industry data, the recovery information pertaining to the such landscapes is now possible.

The scale of the work and the fact that the landscape transcends national boundaries ensures that, aside from primary archaeological or geomorphological output, the implications of the results are of international significance in terms of heritage management at the very least. It has been presumed, for nearly a century, that the North Sea contained a significant archaeological record but it has always been a challenge to manage a resource that was largely inaccessible, entirely unpredictable and, essentially, a hypothetical construct. The results presented here suggest that this record may now be traced, in part, through the recreation of the topographic context of the region.

As a consequence of this, the heritage agencies of countries bounding the North Sea may well have to re-assess their marine management strategies in the light of this information. For although this landscape appears to preserved in places, the archaeology of the region is as fragile as any terrestrial correlate. This fragility contrasts with the North Sea basin's position as a strategic resource in terms of mineral and natural wealth to the United Kingdom and all the countries that surround it. Furthermore, its geographical position ensures that the region functions as a key infrastructural and communications locus, the area is therefore

under intensive developmental pressure from a range of threats. In this context the steps toward a historic landscape characterisation methodology are described as a possible step towards the large scale management of such problematic landscapes.

MANAGING THE COASTAL HISTORIC ENVIRONMENT

Mark Dunkley, English Heritage, Fort Cumberland, Portsmouth, UK

Climatically-driven coastal change will have severe effects on the coastal historic environment in the 21st century, but in the shorter term the impacts of coastal management policies will be of greater significance. This presentation will begin with a short review of coastal historic assets in England, followed by an outline of coastal/maritime legislation, planning guidance and regulation, focusing on the process of Shoreline Management Plan review. In order to provide the evidence base for informed management of the historic environment, English Heritage is undertaking a national programme of Rapid Coastal Zone Assessment Surveys, and progress will be outlined. Finally, possible approaches to mitigation at specific threatened sites will be considered.

Session title: LBK DIALOGUES CONTINUE: VIEWS FROM THE FRONTIERS

Organizer: Alena Lukes, Marek Zvelebil, Paul Pettitt, University of Sheffield, UK

Time: Friday afternoon

Room: 144

Session abstract:

To explore recent developments in research and fieldwork focused on LBK origin amongst the broader archaeological community, specifically highlighting the indigenous versus migrationist origin debate.

The session will have three aims: (1) to explore and discuss new research (2) to explore the earliest LBK cultural tradition and current understanding of lifeways as they may have been before its emergence and 3) theoretical constraints affecting the understanding of LBK origin.

Paper abstracts:

THE EMERGENCE OF THE LBK – A CASE STUDY IN CULTURAL AND GENETIC TRANSMISSION

Marek Zvelebil, Alena Lukes, Paul Pettitt

In this presentation, we review the progress made through research into the origins of the LBK culture since the EAA meeting in Thessaloniki in 2003, when our first session about the emergence of the LBK took place. We go on to argue that the interactions between the First Balkan Neolithic cultures of south-east Europe (Karanovo-Starcevo-Cris-Koros) and the indigenous hunter-gatherers of the Middle Danube basin (the Beuronian culture in western Hungary, eastern Austria, and southern Slovakia and Moravia) resulted in the emergence of the LBK. We explore the processes of genetic and cultural transmission that arose from contact and interaction between these two populations, and consider the social, historical and environmental conditions that have facilitated the constitution of the new cultural tradition – the LBK. We introduce a particular case study – the settlement and cemetery at Vedrovice, southern Moravia, as a regional example of such interactive processes. In conclusion, we consider the impact of the LBK reconsidered as a social tradition arising from the several cultural and genetic sources (the local Mesolithic and the First Balkan Neolithic at minimum) within the broader context of Neolithic studies in Europe.

DIET AND HEALTH AT THE TRANSITION TO AGRICULTURE

Malcolm Lillie

This paper will consider the nature of the transition to agriculture from the perspective of the impacts that this event has on human health. In particular, a consideration of hunter-gatherer versus farmer rates of pathology and indicators of dietary stress will be evaluated for a range of locations in Europe; the evidence for any shifts in expression of pathology will be assessed; and an evaluation of the impact of any dietary transition will attempted.

The study will place an emphasis on the evidence obtained from a recent study of the nature of pathology in evidence at the earlier LBK cemetery site of Vedrovice, Znojmo district, Moravia, and consider this against the available evidence considered in the wider regional survey. Inferences on disease expression and prevalence, and the possible consequences of this in terms of health status will be drawn for the LBK, and from the wider regional study.

EXPLORING THE DIET OF THE PEOPLE FROM AN EARLY LKB CEMETERY SITE IN MORAVIA, THE CZECH REPUBLIC, USING DENTAL MICROWEAR ANALYSIS.

Pia Nystrom

The question of how and when the practice of agriculture spread through out Europe is fundamental as it reflects one of the most significant transitions undergone by human societies. In this study, the diet adaptation of a population from the early LBK site of Vedrovice, located in southern Moravia in the Czech Republic, is examined. Of the 85 individuals available from the cemetery, 32 yielded replicas of sufficient quality to be analysed. High resolution replicas were made of facet 9 on the second molar. These samples were examined with a high resolution scanning electron microscope at 500x. From digital images dental microwear features (pits and striations) were recorded using a semi-automated image analysis system.

The results suggest that the Vedrovice people had a very 'soft' diet, with little evidence of exogenous abrasives, such as grit, ingested with the food. All the examined individuals showed a preponderance of striations, which is commensurate with a highly processed diet. Quite a few individuals had teeth where the occlusal enamel showed a curious etched appearance, where sharp dental microwear features could not be observed. There are two possible explanations for this appearance. The teeth may have been exposed to post-mortem modifications, possibly due to acidic solution used to clean the teeth. Alternatively, these individuals consumed a highly acidic diet, possibly a fermented food staple.

DIETARY INFERENCES USING BUCCAL MICROWEAR ANALYSIS ON THE LBK POPULATION FROM VEDROVICE, CZECH REPUBLIC

Ivana Jarošová

Dental microwear analyses reflect important information concerning diet in bioarchaeological populations. Dietary trends can be reconstructed by quantifying enamel microwear patterns and assuming a correlation between ingested diet and microwear patterns on the enamel surface of teeth.

A study of buccal dental microwear patterns was carried out on individuals from the Vedrovice site, Znojmo district, Czech Republic, dated to Neolithic period, specifically the Linearbandkeramik (LBK) phase of the cemetery.

For each individual negative replicas of the buccal surface were obtained using polyvinylsiloxane Affinis Regular Body (Coltène®). Bicomponent polyurethane resin Feroxa Ferropur PR-55 was applied to make positive moulds. Only molars or premolars that showed clear microwear patterns were analyzed using scanning electron microscopy. Finally, SigmaScan Pro 5.0, image analysis software, was used to quantify microwear patterns for length, orientation and number of all observed striations in a 0.56 mm² square surface area. Obtained results were compared with published datasets acquired from studying various modern hunters-gatherer, pastoralist, and agriculturists with different dietary habits (Lalueza et al. 1996).

The analysis yielded a distinct microwear pattern for the Vedrovice sample. The density and the length of microstriations showed inter-group sex and age related variability, which presumably resulted from a different ratio of meat intake versus plant foods. Moreover, observed differences in the amount of abrasive particles in the diet might have originated from food preparation technology associated with early agriculturalist techniques.

DIET AND MIGRATION AT THE CEMETERY SITE OF VEDROVICE, CZECH REPUBLIC: A REPORT ON ISOTOPE ANALYSES OF HUMAN REMAINS

Vaughan Grimes, Janet Montgomery, Olaf Nehlich, Michael Richards

The early LBK "Siroka u Lesa" cemetery site of Vedrovice, Czech Republic plays a key role in the ongoing debate over the development and spread of agricultural practices into central Europe during the Mesolithic/Neolithic transition. Fundamental to these issues is whether the expansion of agriculture was a product of intra-regional developments or occurred as a result of interaction with migrants bringing with them a new way of life, i.e. the 'Neolithic package'. Here we present the results from recent isotope analyses conducted on human remains from Vedrovice to help elucidate aspects of migratory behaviour and diet within the context of this significant event. Dental enamel samples from 23 individuals were obtained and analyzed for strontium isotope ratios ($^{87}\text{Sr}/^{86}\text{Sr}$) while a subset (7 teeth) also had strontium, lead and barium concentrations analyzed. Additionally, we analyzed carbon ($\delta^{13}\text{C}$), nitrogen ($\delta^{15}\text{N}$) and sulphur ($\delta^{34}\text{S}$) isotopes in bone collagen to directly obtain dietary information. Most of the samples have $^{87}\text{Sr}/^{86}\text{Sr}$ values consistent with originating from the same place. This may represent the local Vedrovice area, however, the absence of 'local' biosphere $^{87}\text{Sr}/^{86}\text{Sr}$ data makes this conclusion tentative. We suggest that 3 (possibly) 4 of the individuals sampled may have originated outside of the Vedrovice area. Regarding diet, there was significant similarity between the individuals and indicated a dependence on C_3 rather than C_4 (i.e. millet) foodstuffs. Through comparison with $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ data from later (Iron Age) Czech sites, it appears the Vedrovice humans derived most of their protein from animal (herbivore) sources. Analysis of $\delta^{34}\text{S}$ in bone collagen from the same samples is forthcoming and will also be discussed.

DIETARY TRENDS, ENVIRONMENT AND MOBILITY FROM CHEMICAL BONE ANALYSES OF LBK POPULATION VEDROVICE, CZECH REPUBLIC

Václav Smrčka, Martin Mihaljevič, Vojtěch Erban, František Bůžek

Human skeletal remains from early Neolithic graves in Vedrovice, the Czech Republic were analyzed for information on human diet and mobility. Samples of ribs were used for the analysis of carbon and nitrogen isotopes from organic part of collagen.

Results from the analysis of 17 LBK individuals indicated that human skeletons ($N = 17$) at the Vedrovice cemetery have the following range of constant isotopes of nitrogen in the bone collagen ($\delta^{15}\text{N} + 9.10$ up to 10.9 ‰ with an average of 10.14 ‰) and constant isotopes of carbon ($\delta^{13}\text{C} -19.94$ up to -22.4 ‰, with an average of -21.30 ‰).

The constant isotopes of nitrogen ($\delta^{15}\text{N}$) in six males (10.52 ± 0.5 ‰) are higher than in six females (9.90 ± 0.6 ‰) ($p=0.099$). Constant isotopes of carbon ($\delta^{13}\text{C}$) in six males (-20.86 ± 0.54 ‰) are also higher than in six females (-21.67 ± 0.5 ‰) ($p=0.050$).

The population from the Vedrovice cemetery was dependent on terrestrial plants of the type of photosynthesis C_3 (wheat).

Strontium isotope ratios were measured in bone and tooth enamel to determine if these individuals had changed "geological" residence during their lifetime. Tooth enamel does not change during early childhood. Bone changes continually through life. The difference in the strontium isotope ratio between bone and enamel in the same individual indicates change in residence. Biological migration indicated by the analysis of Sr in the dental enamel and skeletal remains was compared with migration determined by petrographic analysis from Neolithic pottery differentiating imported pottery from local products. Six imports – and potential non-locals, were petrographically determined from the set of 27 graves comprising ceramic vessels (27/76, 37/76, 66/78, 70/ 79, 79/79, 83/80) i.e. 22 % migration was determined by this method. The analyses were performed by Dr. Hložek and Doc. Grégrová from the Faculty of Natural Sciences in Brno. Seven graves (81a/79, 70/79, 69/78, 36/76, 27/76, 19/75, 18/75) were simultaneously submitted to the analyses by means of both methods i.e. by Sr analysis from the skeletons and by petrographic analyses of pottery. At the same time, non-locals were independently determined in four graves (81a/ 79, 70/ 79, 69/78 and 67/78) and by Sr analysis, in two graves (70/79, 69/ 78) by petrographic analysis of pottery. A young female in grave 27/76 was determined as non-local only petrographically.

TWO PRINCIPAL WAVES OF NEOLITHIZATION: THE LBK DEVELOPMENT IN TRANSDANUBIA

Eszter Bánffy, Krisztián Oross

In the past fifteen years a more and more detailed picture of the formative phase of the LBK has been observed and described in Transdanubia. It can be bolstered by a series of arguments that the Neolithic transition of this period meant but a basically still Mesolithic subsistence, completed with some elements of the Neolithic package. A majority of small sites were located in marshy areas, favourable for fishing, hunting and gathering, but meanwhile unsuitable for food production as a basis of subsistence.

As a sharp contrast, from the beginning of the Keszthely and Notenkopf phases, larger communities settled on arable loess plateaus and began to exclusively live on agriculture. Over 20 sites are known to date, where the remains of above ground posthole-framed LBK houses were uncovered. New evidence e.g. from Balatonszárszó-Kis-erdei-dűlő denote revolutionary changes in the scale and structure of settlements and further on also in subsistence strategies. The beginning of the younger LBK phases lies by 5300 cal BC according to the available radiocarbon dates. The aim of the paper is to present the dynamics of the LBK development in Western Hungary.

PRENEOLITHIC IMPACT ON THE SEDIMENT SEQUENCE OF THE PEAT BOG AT NAGYBÁRKÁNY (N HUNGARY)

Péter Majkut, Mariann Imre, Pál Sümegi¹

Nowadays the peat bog at Nagybárkány called „Nádas-tó” (Reedy Lake) is a basin mostly covered with an association consisting of species of Sphagnum, Phragmites, Carex and Salix. It is situated in northwestern Hungary in the Cserhát mountains, on the northwestern slope of mountain Hármashatár-hegy. The depression is less than 200 meters in diameter, therefore, according to examinations accomplished in the past, it can be considered an ideal catchment basin that reflects effects and changes of local environment that be either natural or anthropogenic. An undisturbed and uninterrupted sample of 3.4 meters was taken using the Russian-head corer that is a well-known and widely used boring tool in the fieldwork of geoarchaeological examinations. The undisturbed and uninterrupted sample was cut into two halves lengthwise and was sliced to 4-8 cm subsamples. Sedimentary examinations were based on organic matter and carbonate content that had been gained using the method of material loss on ignition and on data concerning concentration of certain chemical elements gained by means of atomic absorption spectrophotometry. Chronology was based on 5 radiocarbon dates. As a result of our examinations we could find out that the sediment collecting basin formed due to a landslide probably on the turn of the 11th and 10th millennia before Christ. In this basin a shallow oligotrophic-mesotrophic pond developed, then at the end of the 10th millennia before Christ sphagnum and reed started to spread, the water level slowly decreased and the lake gradually turned into a peat bog. This process might have culminated by the 5th millennia before Christ, when, according to a peak in organic matter the whole basin might have been covered with vegetation. Unfortunately, only a few catchment basins can be found in Hungary that contains the Mesolithic/Neolithic transition layers in their sediment sequences. One of the best can be seen in the core sequence of the Reedy Lake in N Hungary. Therefore, the Mesolithic and Neolithic environs can be drawn based on the geoarchaeological analyses. Clear Preneolithic impact can be detected on the Late Mesolithic layers of the sequence (about 7000 cal BC). After this Preneolithic impact a strong human impact can be drawn which correlates (between 5000-5300 cal BC) with Neolithisation process according to emergence of cereals pollen and microcharcoal maximum.

LBK LIFEWAYS AND THE INDEGENOUS VS. MIGRATIONIST ORIGIN DEBATE. A CASE OF THE NORTH EUROPEAN PLAIN LBK COMMUNITIES

Arkadiusz Marciniak

The LBK phenomenon on the North European Plain is often linked with early farmers' rapid colonization of new territory. Emergence of the early Neolithic groups in this new territory is believed to make possible contacts with the local hunter-gatherers that inhabited some areas in the Northern European Plain prior to their arrival. These contacts supposedly led, in the long run, to the acculturation of the indigenous population. This largely normative narrative has been considerably biased towards the emergence of food production.

The paper aims to discuss interactions between the Linear Band Pottery farmers and hunter-gatherers on the North European Plain with an explicit aim to challenge this long-term temporal perspective and model relating to adaptation, subsistence and nutrition. These relations should be addressed at the level of everyday activities aimed at creating and maintaining the group's stability and identity. The paper will also debate a feasibility of the 'Neolithic package' to capture the character of LBK communities in the North European Plain. In particular, it will explore the earliest tradition and lifeways of this segment of the LBK population such as social arrangements, spatial embeddedness as well as food related practices to interrogate the indigenous vs. migrationist origin debate from a hitherto unexplored perspective.

DRAWING A LINE IN THE SAND? TECHNO-TYPOLOGIES, CULTURAL TRANSMISSION PROCESSES, AND MODELING CONTACT ACROSS LBK 'FRONTIERS': A VIEW FROM THE SCHELDT BASIN (BELGIUM)

Erick N. Robinson, Philippe Crombé, Joris Sergeant

Recent work in the Scheldt basin (Belgium) has noted the occurrence of LBK lithic industry guide artifacts and technologies beyond the traditionally demarcated frontiers of LBK landscapes within the middle Belgian loess belt. The primary question arising from these occurrences centre on their resolution for interpreting possible contact and cultural transmission between LBK and indigenous hunting-fishing-gathering populations. While suggestive of contact, the appearance of armatures and core-reduction technologies similar to those of the LBK in association with later Mesolithic settlement zones and guide artifacts is still little understood in terms of explaining the significant loci of cultural transmission during neolithisation processes in this region. This presentation explores the various prospects and problems for using lithic guide artifacts and technologies to explain cultural transmission processes during the neolithisation of the Scheldt basin. The primary aim of this presentation is to present preliminary conclusions on the relational significance of techno-typological resemblance to the construction of cultural frontiers during the Early Neolithic.

LBK BURIALS

Zdenek Cizmar
(Abstract not available)

Poster:

FLINT DISTRIBUTION DURING THE LBK PERIOD IN WESTERN EUROPE

Pierre Allard
(Abstract not available)

Round table title: CERAMIC PRODUCTION CENTRES IN EUROPE

Organizer: Derek Hall, CPCE, Perth, Scotland

Time: Friday afternoon

Room: 213

Round table abstract:

The aim of this project is to create a five-language web-based database of pottery production centres across Europe (this includes both kilns and findspots of kiln waste), for the historic time-range AD 400 to 2000, linked to a suite of maps.

Following an initial meeting at EAA in St Petersburg in 2003 and Round Tables at EAA meetings in Lyons, Cork and Krakow (2004, 2005 and 2006) a project design and funding bid was submitted in 2005 to *econtentplus* by the nine countries of England, Scotland, Wales, Ireland, France, Italy, Spain, Germany and Poland. The bid to *econtentplus* was unsuccessful and the project working party is now considering other alternatives including Culture 2007.

This Round Table intends to focus on identifying a group of countries who would be prepared to submit a bid for funds to Culture 2007 and the organizers are particularly interested in attracting further representatives from Eastern Europe. This round table is open to all those interested, in particular colleagues in the ceramic field who would like to be involved in this pan-European initiative and may be aware of other potential funding sources.

FRIDAY



SATURDAY



**Session title: ASPECTS OF CHRISTIANISATION
IN THE MEDITERRANEAN, IV-VI CENTURY**

Organizers: Josipa Baraka, Igor Borzić, Department of archaeology University of Zadar, Zadar, Croatia

Time: Saturday all day

Room: 113

Session abstract:

The aim of this session is to give an overview of the Christianization of the Mediterranean in the period from the 4th to the 6th century. The region that will be discussed encompasses those territories that have gravitated toward the Mediterranean Sea (*Mare Nostrum*) throughout the history until the present time because of their natural, geographic and social conditions. The Mediterranean sea have always played important role in connecting vast areas, thus forming civilization circumstances that had reached its peak during the Roman times.

The time span between the 4th and the 6th centuries is chosen because that is the time in which Christianity developed from peripheral and unsuitable religion into official, soon to become the only religion in the Empire. That particular process is possible to follow by study written sources and material remains. Thus, it is our intention to gather scientists that can, using existing knowledge combined with modern approach, help define similarities and differences contained within the process of Christianization in the Mediterranean basin.

Paper abstracts:

**A CONTRIBUTION TO THE CHRISTIANIZATION OF THE MEDITERRANEAN – THE
ARCHAEOLOGICAL HERITAGE OF JUSTINIAN'S EPOCH ON THE EASTERN ADRIATIC COAST**

Željko Tomičić, Institute of Archaeology, Croatia

The archipelago alongside the eastern coast of the Ionian Bay (the Adriatic), Dalmatia, Liburnia, and Histria, along with the hinterland up to the mountain range of the Dinarides, as well as the area of Ancient Pannonia in the north, were all parts of a grand European historical scene in which, particularly in the mid-sixth century A.D., complex and vital historical events took place. It was one of the main battlegrounds surrounding the northernmost bay of the Mediterranean, which played a part in the broader historical process known as Justinian's reconquest.

In this brief overview, we attempt to give a summarized presentation of the main categories of sacral and profane archaeological monuments of Justinian's epoch, a period that, arguably, represents one of the crucial and inescapable European bridges between Antiquity and the Early Middle Ages. This bridge determined the historical processes and changes for many centuries to come, and has played a vital role in the shaping of the overall picture of contemporary Europe.

**THE CHRISTIANIZATION OF THE NECROPOLIS AT PONTE DELLA LAMA
(CANOSA, APULIA, ITALY)**

D. Nuzzo, University of Bari, Italy
P. De Sanctis, University of Bari, Italy

A systematic study of some funerary areas of Apulia to locate and to analyze the settlements, with special attention for the sepultures of Canosa di Puglia (BA), is in progress by the Dipartimento di Studi classici e cristiani (University of Bari) since 2004. By the excavations of these funerary settlements we have found a very extended cemetery and catacombs dated from II to VI century. The cemetery was used from the Christian community beginning from the second half of IV century. Here there is the most ancient Christian cemetery in Apulia, according with the historical sources, which attest in Canosa the mention of a bishop (Stercorius) in the year 343.

HISTORY AND TOPOGRAPHY OF THE CATACOMBS IN SYRACUSE

M. Sgarlata, Università degli Studi di Cassino, Italia

Our aim is to trace the outlines for an initial study of how the suburb of Akradina in Syracuse was transformed over time. Over a long period that goes from the classical period to the Late Antiquity and Early Middle Ages the area underwent interesting and important changes. Over centuries the area underwent changes that modified its original destination. In fact there is unique evidence of *latomia*, city water systems (cisterns and aqueducts), handcraft work shops from the IV / III B C, Hellenistic *sacella* and burial remains belonging to the beginning and the middle of the Roman Empire. The cemeteries of Syracuse were therefore installed in an area that for at least two centuries had no longer been part of the town and where there were already consolidated cemetery services. With the creation of isolated *hypogea* and cemeteries the whole area underwent a transformation from being part of the city to becoming a suburban area. From the VI A C to the VII A C the entire area doesn't seem to undergo an important state of abandonment.

Between the origin and the development of Vigna Cassia, S. Lucia and S. Giovanni catacombs there are evidence of the evolution of some important burial inspired by the roman examples of the pope Damaso.

At the beginning of the VI it seems that the burial sites were out of use: the last burial of Goti at S. Giovanni belongs to this period. This catacomb is of particular interest because it is the only one that has not undergone modifications that would have changed its original form. In the nearby crypt of S. Marciano and the two cemeteries of Vigna Cassia and S. Lucia the areas that were reserved for important burial were transformed into places for religious ceremonies and devotion, for a very long period.

CHRISTIANIZATION OF THE KORČULA ISLAND

Igor Borzić, University of Zadar, Croatia

Position of the Korčula island on the Adriatic maritime route, played an important role in development of many historical and social processes within island population, so as in the Christianization. Since Romans occupied island in 35-33 BC, population density corresponds to the principles of inhabitation of Roman rural ambient based on settlements of the *villa rustica* types. Registered pagan cults of *Liber Torclensis* and *Venus Pelagia* show great correspondents between rural ambient, economy and religion.

It is a case that on the both sites (Potirna-Mirje and Žrnovo) where the mentioned pagan cults are registered, were found Early Christian archeological finds, which, together with seven more sites testify process of the Christianization of the Korčula island in period IVth - VIth century. According to principles of inhabitation, early Christian finds are registered on rural estates with long-lasting continuity of life. Most important site is rural estate on little island of Majsan, where a monastery were founded during the IVth century AD, and which had a strong impact on Christianization of the neighboring area (Early Christian churches on Gubavac, Lučnjak and Sutvara islands).

Despite very weakly archeological excavations, on the basis of topographical data it is possible to conclude that Christianization of the Korčula island went together with other parts of the Dalmatian coast and that her principles correspondent to one rural ambient with monastery in the focus of Christianity.

AN ARCHAEOLOGY OF RESPONSE: EARLY CHRISTIAN DESTRUCTION AND MUTILATION OF 'PAGAN' IMAGES

T. M. Kristensen, University of Aarhus, Denmark

This paper examines destruction and mutilation as a particular kind of Christian response to 'pagan' images in the eastern Mediterranean between the 4th and 6th centuries AD. It will be shown that systematic destruction of 'pagan' statuary, never advocated by imperial legislation, was rarely practised. Rather, a picture emerges of selective destruction, both of the monuments targeted and the different ways they were treated. Through archaeological case studies, the meanings and motives behind such attacks on statues and reliefs will be explored. Lastly, I will put the violent responses of some Christian groups to statuary into the wider context of the social and religious changes that took place over the course of the Christianization of the Roman world.

THE EARLY CHRISTIAN BASILICA IN THE TEMPLE OF JUPITER – BAAL

Ch. Fayad, Beirut, Lebanon

The ancient city of Heliopolis (Baalbek), situated in the valley between Lebanon and Antilebanon mountains, gained in importance during Hellenistic and Roman period. The peak of its development occurred at the end of II and beginning of III century AD. The real beauty of this typical ancient city were complexes of temples, especially the Temple dedicated to Jupiter-Baal built on the *te//* in the I century AD which indicates the antiquity of this settlement. This city was the monument of Roman glory and power in orient provinces.

The Christianity in Baalbek had to face the resistance of paganism which continued till VI century AD. The final victory of Christianity is manifested in the construction of Christian basilica inside the mentioned Jupiter-Baal temple. The temple's architectonic material was completely reused for this new construction. The basilica, in the first phase, had three apses and three naves divided by pillars. Later, in the second phase, the basilica completely changed the orientation and the new polygonal apse was built on the eastern side. The dating of this two successive constructive phases still remains the argument open for discussion.

This Early Christian basilica represents the typical and fundamental example for understanding the transition from paganism to Christianity in Lebanon.

PAGAN AND CHRISTIAN RELIGIOUS PLACES IN ROME DURING LATE ANTIQUITY

L. Acampora, Museo Nazionale Romano, Roma, Italy

This paper would try to restore the religious settlement of the city of Rome from 3rd to 5th century, by verifying the history of each temple and place generically defined as "non-christian", because in studies about city during Late Antiquity, christianization and persistence of pagan places have often been studied separately, and not in a common point of view.

Every temple, mithraeum, serapeum... has been studied in its forms of persistence, through archaeological evidences, literary and juridic sources and other kind of documents; the diachronical and topographical analyses seem to show how, above all in 3rd and 4th century, the city still looks unchanged, as several pagan temples, for different reasons, continue their life, in spite of the progressive construction of christian churches, first in the *suburbium* and then within the walls.

During the 5th century, the situation is going to change: there's an "explosion" of christian buildings in almost every part of the city, though there are particular and significant situations in which pagan religious buildings still stay active, sometimes with different functions, showing a very composite and variegated urban tissue

MEMENTO MORI - INSCRIPTIONS ON THE MOSAIC PAVEMENTS AND THEIR MESSAGES IN LATE ANTIQUITY

Anita Vasilkova, F.Y.R. Macedonia

*memento mei Deus meus pro hoc
et ne deleas miserationes meas quas feci
in domo Dei mei et in caerimoniis eius*
(Nehemiah 13:14)

The aim of the title is to represent mosaics OF FYR Macedonia in their social context as "contributors" of the religious and social life. Certainly, they are "mirrors" of Early Christian art and therefore, the scholarly approach to the problem of the message written into the mosaic pavement shows a variety of paths and questions. The mosaic inscriptions from the region of FYR Macedonia can be divided in two groups: votive inscriptions and sacred messages. Most of them are found in sacred buildings and they usually recorded the name(s) of the commissioner(s) or some quotations from biblical texts. The main interest will be focused on the social context of the inscription and the desire of the commissioner to record his/her donation and two main questions will be examined:

1. Where is the humbleness and modesty and where is the desire to receive mercy and forgiveness on the Judging day?
2. What is the main aim of the inscriptions: please do not forget me or please remember me?

Both questions open the problem of memory in late antiquity and both questions show strong connection between art and social meaning of memory in the world when primal birth of the early Christian art happened.

Creation of a mosaic was an expensive and a luxurious action. Therefore, they served to show not only the wealth of the donor but also the artistic ability of the *pictor*. Unfortunately, attempts to attribute mosaics to specific historical figure have been controversial and usually unproductive. A certain number of inscription attest to the activity of the patrons responsible for the creation of mosaics. Most of them come from public or semi-public circles and their principal function is to record the generosity and spirit of the donors and to satisfy their desire for long-term memory.

CHRISTIAN GRAFFITI: OBSERVATIONS ABOUT MARTYRS'S VENERATION AND THE PHENOMENON OF PILGRIMAGE DURING THE LATE ANTIQUITY THROUGH WRITTEN TESTIMONIES NEAR REVERED SANCTUARIES"

E. Maiani, Roma, Italy

The paper treats about the graffiti left by Christian *viatores* in the proximity to revered places, which constitute an interesting testimony of the phenomenon of pilgrimages during the late antiquity.

Starting from the personal experience of relief and study of the graffiti in the *iter ad sanctos* to the sanctuary of the ss. Marcellino and Pietro, in the homonym roman catacomb, the speaker will put in evidence, through a series of examples from various sites of the *orbis christianus antiquus*, the role that such epigraphic category has within archaeological investigation, as it, besides furnishing interesting data about the origin and the religious feelings of pilgrims, can constitute a fundamental test for the identification of a martyr's sepulchre.

The paper will deal with the problem related to the chronology of such texts, a very complex matter, as the graffiti, both from the point of view of the graphic types and of the executive technique, practically result unchanged during centuries.

Another difficulty is represented by the variety of the graphic types contemporarily used inside a same text or even in a single word (atypical capital, uncial or cursive letters) and by the different forms that letters of a same graphic type can assume, making reading and interpretation rather complicated, above all when – fact that often happens- inscriptions overlap the one to the others.

The end of the paper is reserved to show some examples about the technique of relief of graffiti engraved on the walls and to talk about the most proper materials for the purpose.

EARLY CHRISTIAN ARCHITECTURE OF CYPRUS FROM 4TH – 7TH CENTURY: STRUCTURE AND LITURGICAL FURNISHINGS OF THE CYPRIOT BASILICAS

D. Nicolau, Nicosia, Cyprus

My presentation attempts to explore the ecclesiastical architecture of Cyprus from the 4th to the 7th century. The discussion concentrates on the architectural analysis in order to clear up their different structural phases and to demonstrate the evolution of their liturgical structures in the first Christian era. A wide range of issues is being taken into consideration, including architecture, architectural and liturgical sculpture and ornamentation. The more complex subject of liturgy is also being dealt with.

My investigation analytically focuses on the period from the 4th century, when the first traces of Christianization can be archaeologically proved on the island, until the second half of the 7th century.

The main part is being based on the architectural examination of the churches built during this era. Every single building has its own record with all the information necessary for a detailed study. The liturgical furnishings are included in every record (altars, canopies, *ciborium*, ambons, presbyterial chancel). This evidence is being critically analyzed providing a thorough synthesis.

This research aims to contribute to our understanding of the Early Christian architecture of Cyprus by examining the evolution of the structure and liturgical furnishings of the cult buildings in close association with the development of the liturgy itself during the four centuries after Constantine's legalization of Christianity.

REPRESENTATION OF THE CROSS ON CLAY LAMPS FROM 4TH UNTIL 6TH CENTURY

D. Damijanović, Catholic Faculty of Theology, University of Osijek J. J. Strossmayer, Croatia

This work will try to present different typology of crosses on Christian clay lamps in the period from 4th until 6th century, and development of iconography of the cross in the same period, through many known representative works. The goal is to review a development of his representation on clay lamps in Dalmatia and to do a parallel comparison with its development in other Mediterranean areas. Special focus is put on origins and development of typology of cross, and his meaning and symbolism in early Christian world. Finally, as a conclusion, we will see if there really is a development of typology of the cross, and if so, can it be determinate with certainty.

FIGURES OF FEMALE SAINTS INCISED ON GOLD SANDWICHED GLASS OF FOURTH CENTURY A.D.

Yasuko Fujii, Tokyo, Japan

This presentation focuses on figures of female saints on gold sandwiched glass ("vetri dorati") of fourth century A.D. All of the figures are stereotyped; they are assumed young dressed-up women of "Orans" (with their arms stretching out for pray and their palms opening to the heaven) standing between trees or the columns with pigeons. We can find similar types of female figures on the frescos and sarcophagi of Catacombs, deceased in the haven. Therefore distinguishing the figures of female saints from those simply deceased seems difficult unless names and signs are added beside them. However it is fortunate that most figures on gold sandwiched glass bear their names in Latin inscriptions and so we can identify each of their figures as St. Agnes, Virgin Mary and Peregrina, although it is difficult to find the name of Peregrina in any literary sources referring her as a saint. In addition, some of them carry nimbus behind their heads. Studying those figures by comparing with other sources would bring clear images as to how Romans in those days adore female saints.

Session title: CERAMIC THROUGH THE MILLENNIA: METHODS, APPROACHES, RESULTS

Organizers: Oleg Mochalov, Samara State Pedagogical University, Institute for History and Archaeology of Volga region, Russia
Taras Tkachuk, National Preserve of monuments "Ancient Galich", Halich, Ukraine

Time: Saturday all day

Room: 136

Session abstract:

The session is devoted to the all aspects of ceramic studies from methods of recovery and preservation to experimental archaeology, from ethnoarchaeological research to new forms of analysis. Temporally, we will deal with archaeologists who deal with the first appearance of clay vessels up to the Iron Age. We are interested in inviting scholars who wish to discuss different methods (including statistical methods) for researching ceramic artifacts and the history of the different methods used around the world. Studies that look at differences in shape, ornamentation, production, and function are particularly welcome. We would also like to look at the ways in which ethnographic and ethnoarchaeological analyses enhance our understanding of past ceramic production and consumption. Our main emphasis, however, will be on look at how ceramic analysis can help us to better understand societies and cultures of Europe and neighboring territories in the past. It is our hope that this session can address common methodological problems that we all face. We also wish to discuss how differences in ceramic production, form, and style can help us

understand archaeological cultures, the migration of ancient groups, and past cultural interaction. Can ceramic artifacts reflect culture contact? Do center/periphery models help us understand the consumption and distribution of ceramics in the past? Is ceramic trade linked to innovations in metallurgy? Is ceramic technology linked with social development? We hope to address many of these questions in our session. In addition, we would like to invite participants who work with ceramic artifacts in many contexts from burials to settlements, unusual ceramic items, and/or unique decorative styles.

Paper abstracts:

MISTERIOUS POTTERY FROM THE EAST IN THE NEOLITHIC OF THE POLISH PLAIN: VARIOUS INTERPRETATIONS OF ITS ORIGIN AND CHRONOLOGY

Danuta Prinke, Poland

Pottery mentioned in the title represents quite „another world” in the Neolithic of Poland as far as form, ornamentation and technology is concerned. Its main concentration was discovered in the Kuiavia (Midwestern Poland), while its origin and chronology belongs to the most discussed problems of the Neolithic of the Polish Lowlands during last 25 years. While archaeologists generally agree that this feature has an East European origin, however it could not so far be synchronized with any of the chronologically and/or genetically defined impulses from this direction although it has been first identified as long ago as 1936. In the following interpretations of its presence in the Vistula area the following aspects have been stressed:

- its “foreign” origin, but also some links to the local Funnel Beaker Culture (1936 – as so called Band-and-Comb Pottery)
- its SE European roots as a result of the selective transformation of the patterns of the Trypolian Culture assimilated in the environment of the local Funnel Beaker Culture (1981 – so called Mątwy Pottery and Mątwy Cultural Group of the Funnel Beaker Culture in Kuiavia)
- its NE European origin as a result of the chronological and territorial contact of the Narva Culture and Funnel Beaker Culture (1987 - NE Poland)
- necessity of analysing this pottery phenomenon independently from the Funnel Beaker Culture (1999, 2001)
- possibility of explanation of its presence in the frames of the concept of local origin in conjunction with the Funnel Beaker Culture (2003 – N Kuiavia).

The aim of the paper will be the critical analysis of the above mentioned concepts from the perspective of the newer research and the next attempt to find a place in chronology and geography of the Polish Neolithic for this mysterious pottery.

SHAPES OF NEOLITHIC CERAMIC VESSELS IN CULTURAL PERSPECTIVE

Radosław Szczodrowski, Bydgoszcz, Poland

The archeological classification of shapes or forms of ceramic vessels is often very technical to fulfill needs of complicated typology. On the other side, the archeologists use contemporary, ordinary words to describe diversity forms of vessels. Many archeological cultures have names descending from shapes or forms of vessels or their elements.

This paper tries to take hold of relations between archeological and cultural perspective in research connected with shapes of Neolithic ceramic vessels. We think that archaic cultures had their own way to classify their objects and forms of them, different from classical archeological attitude. We will be searching for origins of forms of vessels, links between shape and function, ornamentation, size. Forms of vessels or their elements will be analysed in symbolic and ritual perspective.

This paper is based on archeological finds from Neolithic period from Central and East Europe, particularly from Globular Amphora Culture.

"WAVE OF ADVANCE" MODEL AND DEVELOPMENT OF THE CERAMIC DESIGN OF THE CUCUTENI-TRYPILLYA CULTURE

Tkachuk Taras, National Preserve of Monuments "Ancient Galich", Ukraine

A. J. Ammerman and L. L. Cavalli-Sforza have proposed model for process of neolithization in which cultural gains and traditions are distributed and connect with migration of the people for not long distances from the center of the culture. It is thought that every generation (25 years) advances 18 km.

In our presentation, we will attempt to show how his model plays a role in the development of the ceramic design of the Cucuteni-Trypillya culture. We will propose an exploration for instabilities in the pottery design of east and west areas of culture in the B I stage, as well as the difference of relative chronology for the western and eastern ceramic complexes of Cucuteni-Tripillya local groups (B II-C II stages).

MINERALOGICAL AND PETROGRAPHICAL ANALYSIS IN THE STUDY OF ANCIENT CERAMIC. LATE ENEOLITHIC CERAMICS FROM KOČÍN (SW SLOVAKIA): A CASE STUDY

Miloš Gregor, Jana Šuteková, Bratislava, Slovakia

The Late Eneolithic cultural development is not clear in Central Europe till now. During the Postbaden period, under discussion here, the observed region of Western Slovakia, Moravia and Lower Austria were settled by the postbaden Bošáca group and Jevišovice culture in general. Only one extensive territory, the Danubian Plain was considered to be deserted in this period, as a result of the dry climate at the end of the Baden Culture.

But these facts have turned out to be very questionable over the past years, after excavation of the settlement site at Kočín (Piešťany) in SW Slovakia. Kočín is the first settlement of "true" Jevišovice culture east of Malé Karpaty Mts. and Biele Karpaty Mts in Slovakia. After ceramic typological analysis, it looks more like a secondary expansion of the Jevišovice culture from the primary center in Lower Austria, or Moravia.

Except the archaeological analysis (typology; ceramic decoration etc.), we have to use other interdisciplinary methods as possible. One of them is the mineralogical and petrographical analysis. For instance it could help us to verify the origin of ceramic raw materials, so the autochthonic or far-fetched ware; technology of making vessels etc.

The analyzed samples represent pottery fragments from the site at Kočín. For this study were chosen ten, most representative ceramic fragments. Shards were studied by optical microscopy (OM), X-ray powder analysis (PXRD) and by scanning electron microscopy (SEM) in order to identify the mineralogical and petrographical composition of analysed shards. The apparent porosity was measured according to Shepard method (1976). Based on the obtained data from mentioned analysis, the firing conditions of ceramic (firing temperature and atmosphere) and possible styles of creation of the vessels have been characterised as well as possible raw material sources have been proposed.

THE METROLOGICAL SYSTEM OF THE CORDED WARE POTTERY IN CENTRAL GERMANY

Aleksandr Dzbynskiy, Zeshov, Poland

On the basis of Corded Pottery material from Central Germany this contribution presents several reconstructions of the metrological system of the Corded Pottery Culture in Central Europe.

To this end measurements of the pottery vessels of the Corded Pottery Culture were undertaken (amphorae and beakers). For the main analyses the vessels were measured with coudous. The analyses were carried out with the help of two explorative procedures applied in parallel: histograms and the kernell estimate.

Following the metrological structures of the Corded Ware Culture a reconstruction of the numerical systems of the Corded Ware Culture is proposed. Result: From the distribution patterns of the Corded Pottery vessels' volume a characteristic metrological structure can be demonstrated, which is based on the principle of doubling a unit. This unit is interpreted as a portion which takes different values for the beakers and amphorae.

Further, the metrological structures of the Corded Pottery Culture allow a quadruple system to be deduced.

The process of measurement is explained here as a cognitive capacity, which influences the rational basis of human perception and understanding. Both the cultural historical approach from the Near East as well as the socio-scientific epistemology support the thesis, that metrological abilities enable new social structures and technologies to be secured and managed within a society. Herewith the prerequisites for economic development with the help of a standardized medium of exchange for science, law and script development are established. Metrological systems are therefore a constitutive element of the civilization process. Their emergence and development surely takes place in the Neolithic, of which the metrological system of the Corded Pottery Culture presented here represents the first complete example. It is assumed here that this is the beginning of a new branch of research which for the Neolithic in Europe requires both extensive material research and an underlying theory and discussion.

CERAMIC OF YAMNAJA CULTURE ON THE PRUT-DNISTRIAN TERRITORY (EARLY BRONZE AGE)

Evgeniy Jarovoi, Moscow, Russia)

Monuments of Yamnaja (Pit Grave) Culture on the Prut-Dnistran territory, in just place, are notable for their original ceramic. It occurs almost in every seventh burial and composes about 40% of funeral inventory of this culture. All ceramic – modeled, flat-bottomed, is burned irregularly and has different admixtures in paste. Its surface sometimes is decorated with string ornament. The analysis of 255 vessels, allow to mark out following seven steady series, which include almost 90% of local ceramic.

1. **Pots** (77 or 35% from common number of ceramics).
2. **Jars on circular pallets** (28 or 12%) with grips different shapes.
3. **Jars without pallets** (25 or 11%) with grips different shapes. In comparison with previous series it has 30% less of ornamental ceramics.
4. **Cups** (26 or 11%).
5. **Bowls** (16 or 7%).
6. **Ovoid amphoras** (14 or 6%) of big and medium sizes with grips different shapes.
7. **Amphoras of small sizes** (15 or 6%). Its have different varieties

Two last series are the most typical for the local ceramic.

The rest 10% of ceramics are presented with 8 small series. These are **biconical vessels** (5), **jars** (6), **globular amphoras** (4), **funnels** (3), **round bottomed vessels** (2), **jugs** (3), **asks** (2) and **dishes** (2).

The ceramic of Prut-Dnistran territory testify to both of local traditions of Yamnaja populations of this region, and about its ties with the closest and distant neighbouring tribes.

CULTURAL NETWORKS: TRADITIONS AND INNOVATIONS IN THE BEGINNING OF THE BRONZE AGE IN THE CARPATHIAN BASIN

Gabriella Kulcsár, Archaeological Institute of the Hungarian Academy of Sciences, Budapest

At the end of the Late Copper Age and in the beginning of the Early Bronze Age both in the Carpathian basin and in Central Europe, from the northern and southern regions of the Balkan to Little Poland similar changes started. At the same time, in the middle third of the third millennia BC cultures maintaining and due to various impacts also transforming Late Vučedol traditions emerge in significant areas of the Carpathian basin.

Based on archaeological evidence, the beginning of the Bronze Age, the Late Vučedol and Post Vučedol period can be characterized with constant changes fueled by the spreading metallurgical knowledge. The similar metal objects (hole axes and chisels) and the pottery (e.g. internally decorated bowls) appearing almost at the same time and in similar form in various cultures confirm long range cultural interaction. The changes were powered by the transition followed by the disintegration of the earlier Vučedol culture. The connections towards the south (internal regions and the Adriatic coast of the Balkan Peninsula and Albania–Macedonia–Thessalia) and the east (Moldova, Ukraine) awakened. The interaction and movement of the Central European (South German, Silezian, Czech and Morva) and Eastern Central European (Little Poland and Ukraine) Corded Ware culture groups also played seminal part in the changes. In this period, slightly following the earlier Late Copper Age relationship network, several group and culture formed. These groups

and cultures were similar in many aspects (pottery, metallurgy). These similarities led to the former name of "Late Eneolithic Culture Complex" of this period. Today, the usage of this name is unacceptable due to the old meaning, however, via filling the name with new content, its usage can be justified. Our presentation looks for the explanation of this complex phenomenon.

THE ORIGIN OF SINTASHTA CULTURE CERAMIC

Oleg Mochalov, Samara, Russia

Sintashta culture is one of the famous and richest cultures of Northern Eurasia located on South steppe Ural during the transitional period between MBA and LBA. To mind of many scholars this culture was the center of LBA culture genesis in South - Eastern Europe.

Ceramic reflects multi – component base of pottery traditions including local elements and out impacts. Meanwhile ceramic had certain standard got in the process of changes. Local base is very insignificant and represents by some technological traits and ornamental motives transited from latest eneolithic tribes of Ural and near territories. Many shapes and ornaments had Eastern European MBA origin – steppe (Poltavka culture) Volga region and forest-steppe (Abashevo culture). Links with catacomb areas from Dnieper to Volga where sporadic but from both sides and played role generally only in decor. Some ornament traits let us to link Sintashta with north-west forest Fatyanovo culture. At present the study of the links with far south regions of Caucasus, Trans Caucasus and Middle Asia has real perspectives. South Ural and mentioned region was connected before. In EBA the ceramic of Pit-grave culture (Volga-Ural interfluves) is known in Zarevshan area Middle Asia. Constructively difficult Sintashta shapes (beaker-liked with separated flat bottom) and specific ornaments are distributed only on south territories. It means that Sintashta cattle-keepers had links with south agricultural and other population and it was serious and progressive impact for ceramic changes. Later in LBA in Andronovo time these links increased and became more stable.

This paper was prepared under support of RHSF, project # 06-01-91100 a/U.

CERAMIC VARIABILITY AND CULTURAL PROCESSES IN THE IRON AGE TRANS-URALS: THE CASE STUDY

Sofya Panteleeva, Institute of History and Archaeology, Russian Academy of Sciences, Ural Branch

Multi-settled sites, containing remains of various cultural traditions, dominate in the Trans-Uralian forest-steppe. The Pavlinovo fortress, situated in the basin of the Iset River, is one of such settlements. Two stages of occupation had been determined inside the citadel and dated to the 400-300 Cal BC and 200-100 Cal BC. Ceramics of the Gorokhovo type constitute the considerable part of pottery assemblages of both chronological periods.

The aim of the present study is to compare two main typological subgroups of the Gorokhovo pottery (with incised and comb stamp ornamentation) and to give possible explanation of existence of two decorative traditions within one cultural complex.

As a result of the undertaken analysis it was determined that the Gorokhovo ceramics with incised and comb stamp decoration differ considerably. Moreover, it was traced likeness in morphology and ornamentation between stamped Gorokhovo pottery and ceramics of the Vorobievo type. It is inevitably lead to the problem of correlation of Vorobievo and Gorokhovo cultural traditions, which is being discussed for a long time. Some scholars suppose that both nomads of South Urals and certain groups of the local (including Vorobievo) population took part in the formation of the Gorokhovo culture (Mogilnikov, Koryakova). Matveyeva considers sites with Gorokhovo and Vorobievo pottery as two chronological stages of one culture.

Materials of the Pavlinovo fortress don't allow to amalgamate Vorobievo and Gorokhovo ceramics to one cultural complex. Typological features of these pottery groups are very distinctive, and transitional types, which took up intermediate chronological position, are not found. Gorokhovo ware with comb stamp ornamentation, so similar to Vorobievo ones, didn't precede to incised Gorokhovo vessels. An analysis of artifact distribution in the layer of the Pavlinovo fortress had testified that both decorative traditions existed simultaneously.

Obviously, the appearance of the new ceramic tradition (with incised ornaments) was caused by penetration of Gorokhovo groups on the Middle Tobol River. Evidently, the part of aborigines was joined to the new cultural formation, and it was reflected on the complex of the Gorokhovo pottery, consisted of two

components. Probably, some inhabitants of the Pavlinovo fortress, who were genetically connected with representatives of the Vorobievo cultural tradition, were continuing to produce vessels of the traditional appearance (with comb stamp ornamentation). Interosculation of two cultural groups had left traces on the pottery morphology – so-called “mixed” signs.

This work has been undertaken within RFH-project 07-01-83108a/U.

TAXONOMY OF ROMAN LIGHT-CLAY NARROW-NECKED AMPHORAE OF TYPE D FROM TANAIS

Vodolazhskiy D.I., Vodolazhskaya L.N., Russia

Amphorae used for the transport and storage of oil, wine and fish, are a valuable source of information in research on economic and theoretical archaeology. The Roman light-clay narrow-necked amphorae of type D are one of the most widespread types of amphorae in territory of the northern Black Sea coast. The greatest amount of these vessels was typically for Tanais of the middle of IIIrd century A.D. Complexes of Tanais constructions were lost at a fire in the middle of III century AD. In them a plenty of such vessels was revealed.

The purpose of the paper is to describe taxonomy of light-clay narrow-necked amphorae of type D of IIIrd century A.D. from Tanais.

Statistical methods, the method of numerical taxonomy, the method of amphorae volume calculation on mathematical model of light-clay narrow-necked amphorae type D, as composite solid of revolution consisting of three simple solids of revolution, generated by lines of the second order (conics), method of measurement of key parameters on amphorae profile portrayals in scale 1:1, method of measurement by millet and water of volume of amphorae were used.

Taxons based on standards of the light-clay narrow-necked amphorae of IIIrd century A.D. of type D from Tanais are offered in the paper. High standardization and large number of the light-clay narrow-necked amphorae of type D has allowed to make correct statistical research by definition of amphorae standards.

The description of process of standards calculation on the basis of variational interval series of the measured and calculated amphorae volumes and the description of parameters of amphorae standards are resulted in the paper.

The sample has consisted of Roman amphorae from collection of the Archaeological Museum - Reserve "Tanais" (Russia).

The received result testifies that in taxonomy of amphorae there are two equal in rights dominating taxons. All light-clay narrow-necked amphorae of type D from Tanais can be attributed or to dominating taxons, or to intertaxons space, or to space of random deviations from taxon each of standards.

Taxonomy approach gives the new tool of the analysis of the big and homogeneous array of the light-clay narrow-necked amphorae of type D. This approach will allow to receive additional information on the accompanying the light-clay narrow-necked amphorae of type D on excavation archeological artefacts too.

RITUAL VESSELS: SHAPES AND SIZES

Karlene Jones-Bley, University of California, Los Angeles, USA

Ritual is a part of numerous aspects of life but particularly religious aspects. Frequently ritual involves the consumption of a liquid such as wine as seen in many modern Christian ceremonies. The vessel that holds the wine can also take on importance and this is often manifest in elaborately decorated vessels such as the Irish Ardagh Chalice, which is made of gold and inset with precious stones. Earlier ritual vessels were made of clay but were frequently elaborately decorated with symbols (symbolic) ornaments, or are made in a special form that suggests the vessel was not used for ordinary purposes. This paper will discuss two types of these vessels, the first are vessels of unusual shape that are frequently completely decorated and have evidence of burning, and the second, vessels which are of a more ordinary shape but that have specified decorations placed on the outside bottom of the vessels. These latter vessels suggest that they held some sort of liquid that was drunk or used as libation and that the bottom decoration indicated to the observers of the ritual that the vessel had been emptied.

NATURAL ORNAMENTATION IMPLEMENTS: MATTER OF REVEALING AND INTERPRETATION.

Ekaterina Dubovsteva, Ekaterinburg, Russia

Pottery is the vastest material extracted by the archeological excavations of the Neolithic period and later epochs. So it is really surprising that the instruments being used in pottery production are found so rarely. What are the reasons for this? Is it determined by low rate of preservation of the artifacts or there can be any other explanation?

Natural forms are known by the ethnographers to be used in different technological operations. They served also as ornamentation tools. It was in the early XX century, when an assumption that different natural objects could be used as the pottery design implements occurred. Though being rather widely spread in Neolithic cultures of the Eurasia tools of this kind haven't been investigated properly till nowadays. Some types of the natural ornamentation tools such as animal jaws and bones, fossil mollusks, diverse plants were revealed due to the trace science achievements and experimental reconstruction of the ancient ornaments. This survey is dedicated basically to the issues of the animal's jaws and bones as the ornamentation tools for the Neolithic pottery in West-Siberian area (Bystrinskaya and Sumpanjinskaya cultures).

It is rather difficult to interpret patterns of this kind. Often happens that different traces (pits, grooves, scratched lines) made by animal's bones are not recognized as an ornament and therefore they forfeit their significance (their symbolic function). Russian archeologists are still trying to find a method to decode these patterns using function-and-technology approach. [Kalinina. 1995] The semantic content belongs in this case not to the representation but to the implement it was made by. From one standpoint it might be viewed as a magic technological operation, but from the other one – as an interrelation between decoration process and the ancient man's totemic beliefs.

References:

Kalinina I.V. Printsipy funktsional'no-tekhnologicheskogo podkhoda v semanticheskikh issledovaniiah// ASGE, Vyp. 32. SPb, 1995. S. 7

PONTIC SIGILLATA: REGIONAL PHENOMENON AND SOME PROBLEMS OF INTEGRATION IN THE ROMAN PERIOD

Denis Zhuravlev, Moscow, Russia

The most popular group of Roman table ware in the Northern Black Sea littoral was so called Pontic sigillata. We cannot be sure about the exact center (or centers) of production of Pontic sigillata. That must have been a city (or, more probably, a group of cities) with developed ceramic production, supplying with pottery almost the whole North Black Sea Area. Basing on investigations of red slip pottery from different regions of the Northern Black Sea Area I managed to distinguished three main groups of this pottery, which got literal designations – A, B and C. We do not have any reasons to affirm that these three groups correspond only to three production centers – they must have been much more, but it is impossible to distinguish them now.

Today we can note about 50 forms of Pontic sigillata, spread from the 2nd quarter of the 1st till the mid 3rd century AD. It is rather possible that Italian craftsmen were among organizers of Pontic sigillata production, at least this might be truth for the beginning of this process. In this case it is easy enough to understand some borrowings that can be noticed in production of Pontic potters – vessel shapes, elements of decoration and character of stamping. Main ways of ornamentation also came from Italy, however sometimes through other groups of Eastern sigillata, mainly ESB. Large group of red slip pottery imitate other Italian vessels widely spread in Mediterranean. That is the so called thin ware or *pareti sottili*.

Some shapes of Pontic vessels are very similar to ones from the workshop Butovo discovered in Bulgaria, but they dated to the later period.

Several finds of Pontic sigillata are also known in the Mediterranean – in Asia Minor, Corinth, Rome and even North Africa. Probably it reached these places occasionally, only as a part of a ship cargo.

Session title: IDENTITIES OF THE EARLY NEOLITHIC BALKANS

Organizers: Dušan Borić
Maria Gurova
Preston Miracle

Time: Saturday all day

Room: 142

Session abstract:

The circumstances that brought the beginnings of the Early Neolithic in the Balkans and a rather rapid spread of farming/agricultural societies from the Aegean up to the northern fringes of the Great Hungarian Plain in the last centuries of the 7th millennium BC remain enigmatic despite years of intensive research. The apparent paucity of Mesolithic settlements across the region has favoured migrationist models in which farmers from Anatolia and/or the Levant were the primary agents of change. Nonetheless, patches of strong and 'complex' Mesolithic presences as well as the existence of local routes for the acquisition of obsidian and flint have also been identified in the Balkans and may speak in favour of the active involvement of local foragers in these changing historical circumstances. Yet, identities seen as "forager" and "farmer" are complex and often instable constructs that probably over-simplify any situations in the past.

Along which axes were identities defined in this 'new world' of the Neolithic: the mode of production (i.e. foraging vs. farming), pottery style, symbolism, beliefs, language, and/or something else? How fixed or permeable were the boundaries between different identities? Finally, was it the identity and individuality that mattered or relationality and dividuality? Hence, we need to test whether our reliance on pottery or mode of production supports definitions of specific culture groups that we have inherited from culture historical approaches. Were there ever unifying 'Mesolithic' or 'Neolithic' ways of being? We invite contributors to this session to consider how we might identify and theorize different types of coexisting and overlapping identities and modes of being, and the application of such insights to case studies from the Balkans. We thus hope to move beyond theoretical proxies and orthodoxies of inherited scholarly debates.

Paper abstract:

BORDERS OF IDENTITIES. ANCESTRY AND TRADITIONS IN THE NEOLITHIC OF GREECE

Kostas Kotsakis, Thessaloniki, Greece

The conventional wisdom construes the Neolithic of Greece as a phenomenon of migration of farmers from the Near East or Anatolia. Consequently, the cultural aspects of the Neolithic tend to be considered as a version of the original culture. While the mobility of people and therefore of some cultural traits cannot be directly denied, the immovability of content of these traits is highly debatable. Interesting differences within the Neolithic cultures recognized by current research can identify diverse overlapping traditions, which probably have a longer lineage than that usually presumed in the relevant literature. Pottery and its uses offer a revealing example, in that being a cultural trait pertaining to variable social domains, creates a privileged area of communality and conflict. It therefore allows us retrospectively to cast a glance on the ancestry of the conflicting and coexisting traditions of the Greek Neolithic.

THE IDENTITY OF THE EARLY NEOLITHIC IN THESSALY, GREECE

Nina Kyparissi-Apostolika, Athens, Greece

Thessaly is recognised as the birthplace of the Neolithic in Greece. Most of the initial settlements of this period seem to have been founded at its western part, in mainland Thessaly, at an extended plain surrounded by mountains. In Theopetra Cave, at the westernmost edge of this plain, remains of the very initial phase of the Neolithic were found, while some other settlements are located at the neighbouring prefectures of Trikala and Karditsa. Until the beginning of the Late Neolithic, almost exclusively this part of

Thessaly attracted the Neolithic population. Afterwards, it seems that the population moved eastwards near the sea (Pagasitikos Golf). Settlement remains indicate a rather well organised life, with a large number of domesticated animals, as well as a good percentage of hunting activities, well fitted to the mountainous surroundings, to support the nutritional habits of the population. Plant remains suggest a well organised cultivation too. Wild species of some of these plants were also found in Theopetra Cave, allowing one to speculate about indigenous domestication of plants. Pottery seems to have been quickly taken up, while a number of “precious” objects, possibly for decoration, appeared very early. In the Late Neolithic, these objects became the topic of organised commerce that reached central Europe. The role of clay figurines is still debatable since in certain cases a figurine type is found only in one settlement, while in other cases there are several different types of figurines that communicate among settlements. Architectural remains indicate that the natural material sources were exploited and very early houses were well constructed and decorated. In some of them people were buried, while no organised big cemeteries, like in the Balkans, are known. The population seems to have grown gradually reaching its peak in the Middle Neolithic when a real explosion of new settlements must have taken place in the area.

BEYOND THE AEGEAN: THE EARLY NEOLITHIC PERSPECTIVE FROM THE IONIAN ISLANDS, WESTERN GREECE

Georgia Kourtessi-Phillipakis, Paris, France

Discussion about the Neolithisation in Greece has principally been focused on the Aegean considered as a key-area on the path of human migrations and cultural diffusion from the Near East to South-East Europe. The object of this contribution is to raise the interest in western Greece and particularly the Ionian islands where a Mesolithic background is obviously present. Available data from this region will be considered in their wider geographical context with the aim at understanding the circumstances that brought the Early Neolithic mode of production in this area and to outline some principle activities as the exploitation of natural resources and the organization of subsistence and craft production. Finally, we will try to emphasise particularities of emerging identities of these Early Neolithic societies in such an insular environment.

MODERN QUESTS AND PAST IDENTITIES: THE CASE OF THE START OF THE NEOLITHIC IN THE BALKANS

Zoï Tsirtsoni, Paris, France

The question of the start of the Neolithic period is one of the most debated in the archaeological literature of the Balkans from the very beginnings of the discipline. The reason is probably that the first permanent habitation in the region (or at least what is usually thought to be so) is considered by many not only as the first decisive step towards “civilised life”, but also as the first chapter of modern states’ history. Contrary to what one might believe, this is far from being just the product of local scholars—Greeks, Bulgarians, Yugoslavs, Albanians or Romanians. Indeed, not only have foreign, Western scholars been directly implicated in the research of the early periods (from Heurtley and Rodden to Perlès and Bailey), but Western theoretical schools and methodological trends have affected more or less directly (and for more or less noble motifs) the local developments. So, the present debate about the identity, or the identities of the first Neolithic inhabitants of the Balkans, cannot be fully understood — and even less tried to be answered — without taking into consideration those that preceded it. For it seems to me that, in spite of the change in our vocabulary, the true issues remain very much the same. The “local Mesolithic forager” model as opposed to that of the “exogenous Neolithic farmers” could thus be the latest version of a long lasting debate, which concerns the question of supremacy in modern rather than in prehistoric Europe.

NEW EVIDENCE ON THE EARLY NEOLITHIC CULTURE IN THE UPPER THRACE

Krassimir Leshtakov, Sofia, Bulgaria

The data from several Early Neolithic sites in south-east Bulgaria are considered in the report. The site Yabalkovo is situated in the central part of the Upper Thrace, in the very valley of the Maritsa River. Since

2000 we have carried out rescue excavations at the site and revealed the outline of a big open-air settlement with very rich materials. The other two open-air sites discussed are situated in the East Rhodopes. The excavations there have been carried out some decades ago but the artefacts have not been discussed in detail. On the basis of the presented evidence an effort is made to characterize the local cultural features as well as to outline the common Anatolian heritage in the pottery-shapes, tools, figurines, etc. At the same time, some differences in cultural traits seen in Thracian tells are discussed with regard to the differentiation in supplying strategies and economic models.

WHITE PAINTED DECORATION: STYLISTIC DIFFUSION AND DEVELOPMENT OF LOCAL IDENTITIES

Goce Naumov, Skopje, Macedonia

White painted decoration has been seen as the most characteristic feature of the earliest Neolithic groups across the Republic of Macedonia. However, there have not been attempts to analyse such motifs with regard to the regional specificities of the white painted decoration. First, this paper analyzes the patterning of specific white painted motifs that have direct analogies in decorative motifs found in Anatolia. The compositional structure of decorative motifs is analyzed as well as a spatial homogeneity of visual decorative patterns across Anatolia, the Aegean and Macedonia. Second, the analysis proceeds to local decorative features that developed into unique styles of particular areas in later phases of the Neolithic.

LANGUAGE OF ARTEFACTS: THE EARLIEST NEOLITHIC IN THE CENTRAL PART OF NORTHERN BULGARIA

Nedko Elenski, Sofia, Bulgaria

The present article examines the question of the cultural identity of the settlements dated to the earliest phases of the Neolithic that are situated along the basin of the Yantra and Russenski Lom rivers. These sites are Beliakovetz, Djulinitza, Koprivetz, Orlovetz, Pomoshtitza, and Hotnitza-“The Cave”, all dated in the third quarter of 7th millennium BC. Particular artefacts from these sites and their traits are compatible with the Anatolian and the Mesopotamian traditions of the Early Neolithic. Apart from these characteristics, there are elements that can also connect these sites to Balkan traditions. The probable reason for this relates to a process of taming of and acquainting with new environments, which lead to a new definition of communities. The Early Neolithic was the time of both unique and common identities.

THE LATEST NEWS ABOUT THE EARLY NEOLITHIC IN NORTH-WESTERN BULGARIA

Georges Ganetsovski, Sofia, Bulgaria

An Early Neolithic settlement was found in 1994 in the area of Valoga (also known as Dolnite Laki). It is situated 1,5 km to the north-east from the village of Ohoden, Vratsa region, on the left bank of Skat River. Systematic archaeological explorations of the settlement over the area of 235 m² were carried out from 2002 to 2006. The exploration was focused on a dug-in structure (a dwelling) filled with a large number of pottery, flint artefacts, animal bones, charcoal, and burned materials from the destruction of the destroyed walls and roof. The stratigraphy, construction and inner organisation of the dwelling was defined. The dwelling has an oval shape with E-W orientation. It was dug in 0,4 and 0,6 meters. Typical tunnel-like and tube-like handles were found. Among numerous flint artefacts there were ‘microlithic’ tools – segments, trapezes and chisels.

From 2004 to 2006 explorations of a facility situated about 25-30 meters north-east of the Early Neolithic dwelling were carried out. This feature was dug into the ground and one of its part had a ditch-like shape (resembling a corridor) and was oriented north-south. It was dug into the ground about 0,30 – 0,40 m and was 14 m long. A line of three columns was recognized in its northern part. A grave of a female individual (of about 25 – 30 years of age) was placed in a left-sided foetal position in the central part of this feature. Traces of “cult feasts” (ashes, broken pots and burned animal bones) were found. A second grave with a skeleton of a child (around 5 years old) was found in a right-sided foetal position in the southern part of the structure. These field

observations give us reasons to assume that the structure was a sacral facility built for burials and rituals connected to them.

Data show that the dwelling, the burial facility and the two graves belonged to the end of the "Monochrome Neolithic" or the beginning of the 6th millennium BC. The cultural-chronological belonging of the structures can be dated to the second period of the Proto-Starcevo.

This is the first thorough exploration of a well preserved dug-in dwelling and intramural burial facility containing foetal-positioned burials in a burial pit with archaeological context and archaeological records from the period of the Monochrome Neolithic on the territory of north-western Bulgaria.

MESOLITHIC TRACES IN EARLY NEOLITHIC CULTURES OF SERBIA

Dragana Antonović, Belgrade, Serbia

The territory of Serbia was densely inhabited from the very beginning of the Neolithic. A relatively large number of Early Neolithic settlements across the region implies that the same territory almost certainly was similarly settled during the Mesolithic. The large number of Early Neolithic settlements implies the continuity from the previous period – the Mesolithic. In spite of the fact that very few Mesolithic settlements were recorded on the territory of Serbia, it is possible to record Mesolithic traces in the Neolithic cultures, which testify the cultural continuity between the Mesolithic and the Neolithic. Mesolithic traces are visible in several aspects of Neolithic cultures in Serbia: single-layered settlements, the predominance of foraging, and, especially, on the basis of the characteristics of stone industries. It seems that the beginnings of the Starčevo culture represented the initial phase of a somewhat autochthonous Neolithisation of the Mesolithic milieu.

PREHISTORIC POPULATION DYNAMICS IN THE DANUBE GORGE: A CASE OF LOCAL CONTINUITY, REPLACEMENT OR ADMIXTURE?

Ron Pinhasi, London, UK

During the Late Glacial Maximum (LGM) the Danube Gorge acted as a major refugium to various biotic species, including humans. Early Mesolithic populations from this region were therefore isolated during a long time span from other contemporaneous European populations. Several millennia later, the first Neolithic cultures appear in this region. Archaeological studies of these cultures highlight the complexity of the Mesolithic-Neolithic transition in this region as they point to a myriad of cultural and biological processes that interacted in the formation of the Danube Gorge Neolithic. The extent to which the neolithisation process in the region involved the influx of exogenous populations or was mainly a local biological process of transition remains a highly disputed issue.

In this paper, we address the issue of population replacement, admixture and local continuity in the Danube Gorge region by investigating intra and inter regional craniometric population affinities. The craniometric dimensions of Mesolithic and Neolithic skeletons from the Danube Gorge are assessed in relation to those of various European Mesolithic and Neolithic specimens from neighbouring regions. Results indicate a complex sex-specific pattern with varying degrees of differentiation between Mesolithic and Neolithic crania.

THE TIME SPAN OF THE STARČEVO CULTURE IN NORTHERN CROATIA

Jacqueline Balen, Katarina Gerometta, Marcel Burić, Zagreb, Croatia

The Starčevo culture characterizes the Early Neolithic period and the neolithisation process in northern Croatia. Its developmental phases were determined mostly by typological and stylistic characteristics of pottery. However, flaws in such definitions of developmental stages have become obvious since some pottery forms and ornaments do not fit into generally accepted chronological schemes. The aim of this paper is to use recently obtained radiocarbon dates to shed some light on the development and the time span of the Starčevo culture in northern Croatia.

THE CREATION OF IDENTITIES AT THE MESOLITHIC–NEOLITHIC TRANSITION IN SOUTH-EAST EUROPE: A MULTI-PROXY APPROACH

Clive Bonsall, Edinburgh, UK
Robert Payton, László Bartosiewicz, Budapest, Hungary
Dimitrij Mlekuž, Ljubljana, Slovenia

The rapid expansion of farming from the Aegean to the Hungarian Plain favours monocausal explanations polarised around the local adoption/migration dichotomy. However, there is now emerging evidence that different (historical) processes lay behind this seemingly uniform expansion. What were those processes? How are different identities of Early Neolithic groups (pastoralists, village farmers, hunters ...) related to those processes and how were they created? We make use of various lines of evidence — archaeological, chronometric, edaphic, genetic, palaeoclimatic, and taphonomic — to investigate this problem.

WHAT KINDS OF PERSONS CREATED THEMSELVES IN THE EARLY NEOLITHIC?

John Chapman, Bissierka Gaydarska, Durham, UK

When we conceptualise the emergence of the Neolithic, we tend to think of innovations in behaviour, whether symbolic and place-based (the domus – agrios structure) or grounded in material culture (widespread innovations in sets of artifacts). It is only recently that prehistorians such as Chris Fowler and Andy Jones have started to grapple with the emergence of different kinds of personhood dependent upon such changes. We would like to go a little further by suggesting that new places and things could not possibly have been created without the reflexive emergence of new kinds of person – people whose skills were never seen before because they did not exist before.

During these generations, new types of person were created, in particular the 'farmer' and the 'herder' but also the 'potter', the 'polished stone tool-maker' and perhaps the 'brewer'. These new types of person co-emerged with new foodstuffs and objects, such as flour, bread, lamb chops, barley beer, fine and coarse pottery and gleaming axes – the one could not have occurred without the other. Notions of personhood would have been influenced by the wide range of new relations, not least gendered relations, based upon these identities, as well as by their interplay with traditional types of person – 'hunter', 'shellfish-collector', 'flint-knapper' and 'leather-worker'. The communal values of the new products went hand in hand with the status of their creators. The discovery of secondary products would have ushered in still more episodes of person-creation, seemingly beginning in the Early Neolithic, with 'dairy producers' producing milk, cheese and yoghurt, while 'ploughmen' harnessed animal traction. The values assigned to the new things transformed the traditional system of communal values, itself confirming new statuses for these new types of person.

In this paper, we seek to stimulate a debate over the terminology proposed here, thereby exploring the consequences of a vivid new world itself created by the interactions of a wider variety of persons than had ever been seen before.

INVESTIGATING THE DEVELOPMENT OF FARMING IN THE ADRIATIC: NEW EXCAVATIONS AT THE NEOLITHIC SITES OF DANILO AND POKROVNIK IN CROATIA

Andrew Moore, Rit, USA
Marko Menđušić, Ministry Of Culture, Croatia
Emil Podrug, Šibenik Museum, Croatia
Joško Zaninović, Drniš Museum, Croatia

The "Early Farming in Dalmatia" project is illuminating the processes by which farming spread from Western Asia to Southern Europe, and the subsequent development of this economic system there. Excavations at two village sites near the Dalmatian coast, Danilo and Pokrovnik, have yielded significant samples of plant remains and animal bones, as well as artifacts. These data provide evidence for the economies of Danilo and Pokrovnik during the Early and Middle Neolithic. AMS dates on charred seeds and bones provide a basic chronology for both sites, as well as for the inception of farming in the Adriatic region.

Studies of the modern landscape, including geomorphology, vegetation, and site catchment, expand the perspectives gained from the archaeological evidence. Interviews with local farmers yield insights on traditional agricultural practices that illuminate ecological factors operating in the past and the present. Preliminary results of our research indicate that the inhabitants of Danilo were full-time farmer-herders; that agriculture reached Dalmatia as a full-formed, comprehensive system; and that the impact of this new way of life on the landscape would have been profound at the regional scale.

Session title: BURIAL MOUND PEOPLE

Organizer: Hrvoje Potrebica

Time: Saturday all day

Room: 124

Session abstract:

This session follows four previous sessions organized with subject of funerary practices with special concern to archaeology of burial mounds. So far, we were mostly discussing different approaches to burial mounds as special category of monuments, including their spatial and social aspects, as well as monumentality. This time we will turn to their “human content”, or “actual inhabitants” of burial mounds, and go back to the fundamental question: “Who were people buried in burial mounds?” The session will therefore discuss problems related to different expressions of identity of buried individuals related to the community they are part of and which is in a way represented by their burial monuments. Some of aspects which will be addressed in papers within this session are:

1. personal identity - naming the dead: individuality vs. symbolic representation
 - what features identify the dead as an individual (if any):
 - within the grave
 - mound construction
2. group identity - relation to the groups within the community
 - clustering of individual burial mounds or multiple burials
 - whom do they belong to?
 - clan/family vs. individual
 - gender
 - class
3. identification of status
 - can we identify social status that buried individual had within the community or any group within that community and how?
 - in what extent burials reflect status of the deceased vs. status of the individual/group/community which is performing burial and building the mound itself?
4. communal identity - “us and them”

Paper abstracts:

EARLIEST BURIAL MOUND IN THE BLACK SEA STEPPE: THE BEGINNING OF TRADITION

Rassamakin Yuri

In the beginning of the Eneolithic (the Middle of the V. Mill. BC) the new burial tradition occurred in the Black Sea steppe zone. In contrast to the collective Neolithic flat cemeteries with skeletons in an extended supine position, it were the individual burials in an flexed position and in separate pits. This burials were covered on the surface by the small mounds from stones or/and soil. It was the beginning of the so-called „kurgan tradition“.

SATURDAY

The basic question is: why changed the burial rite during this time. For answer on this question we must study the problem in context of the development of the Early Eneolithic pastoral population between two early agricultural worlds. The first is presented by the Balkan- Carpathian cultures (Karanovo VI-Gumelnița-Varna and also Cucuteni-Trypillia); the second is the Northern Caucasian Premaikop culture. In this context we have some basic aspects to investigate:

- 1 – economic relations between different cultural worlds as development of the prestige exchange (gold, copper, flint etc.);
- 2 – changes in the social structure of the steppe population, the origin of the steppe elite groups as active power in the long distance prestige exchange with both agricultural worlds (the prestige burial assemblages show this clear);
- 3 – „Ideological” changes in the steppe elite groups under influences of the agricultural sacred traditions (individual burial rite in a flexed position, vessels in the graves).

We can propose, that a new burial tradition under mounds in the beginning its development was an social adoption of some steppe elite groups in the new cultural and economic reality.

Later, in the Middle Eneolithic, the development of the mound tradition connected to the steppe - Cucuteni-Trypillia - Maikop relations. In this period we have real cult monumental construction with soil, stone circles and ditches which covered the steppe burials of the different cultures.

ARE CHILDREN MORE IMPORTANT THAN THE ADULTS? CHILD BURIALS IN EARLY INDO-EUROPEAN MOUNDS

Berseneva Natalia

Although the universal importance of gender is well known, gender relations in Trans-Uralian and Western Siberian societies still remain absolutely unexplored. The contribution children made to past societies has largely been ignored. My goal is to begin filling this gap because my study focuses on "archaeology of children" and it concerns the burials of the Sintashta cultural groups.

The sites of the Sintashta culture are currently dated to the 19th – 17th centuries BC (Middle Bronze Age). The settlements and cemeteries of the Sintashta type are concentrated in the northern steppe of the southern Trans-Urals. The monumental system of fortifications at the settlements that are organized into regular blocks of houses, the communal mortuary rituals that include an abundance of sacrificed animals and grave goods, the appearance of wheeled transport all suggest evidence of an early complex society. Nowadays, many scholars believe that the Sintashta population was one of oldest Indo-Iranian speaking groups and Sintashta antiquities are closely related to Indo-European problems.

Sintashta cemeteries are represented by burial mounds. Only one flat grave cemetery is known. Each mound contains from 1-2 to 30-35 burials, both individual and collective. The deceased were placed on the left (rarely on the right) side in a contracted position with hands near the face. There are distinctions in the position of male/female/children within the grave and in the regularity in animal sacrifices: a horse usually accompanied a man; children and young woman were usually given small horned animals and dogs. A small number of Sintashta graves contained couples: a man and woman lying in a position facing each other; sometimes a child was buried along with such couple. In Sintashta cemeteries, child burials are represented in extremely large numbers for prehistoric mortuary sites (up to 70% of all the dead!). This unique material gives the excellent ground for gender investigations.

This paper has several purposes. The first is to define symbolic markers of age and, possibly, gender for sub-adult burials. Can we determine the gender identity of Sintashta children? The second is to try to explain the phenomenal multiplicity of child burials in Sintashta mortuary sites.

SOCIAL DYNAMICS IN A MIRROR OF FUNERAL CEREMONIALISM: THE BRONZE AGE OF THE SOUTHERN URALS

Epimakhov A. V.

The Bronze Age is presented in the Southern Urals by some archeological cultures. The uniting attribute is the tradition of burial mound cemeteries. However there are numerous variations. This contrasts sharply with relative stability of the life-support system (animal husbandry and metallurgy).

The earliest period (the Pit-grave culture) is known exclusively thanks to individual burials. 2/3 of the dead concerned to adult man. The part of the defunct is supplied by metal products or monumental burrow

constructions. The following Abashevo-Sintashta period is characterized by change of principles of the funeral space organization (opposition of the center and periphery). There are barrows with a lot of tombs, the part from which contained up to 8 people. All categories are presented in the ceremonial, but the quantity of the dead mismatches scale of settlements. Structure of stock allows considering these necropolises as elite. The Timber-Grave-Andronovo period is the time of the most mass distribution of a burial mound variant of inhumation. The tradition of multi-grave constructions was kept but elite attributes disappear completely. Unification of funeral practice is observed. For final centuries of the Bronze Epoch usual picture is individual or pair barrows with the minimal expenditures of labor.

It took place full or partial interruption of tradition in some cases probably. But the experts consider that the most of periods is connected genetically. An alternative explanation is relative independence of ideological (funeral) sphere from realities of economy and social attitudes. The burial grounds were formed according to a selective principle (quantities buried less numbers died obviously). A ceremonial practice has "embodied" the most vital for society myth and social relations for each of the periods - a military complex, family-marriage sphere, etc. Other was latent though existed in a reality. Thus a key problem of social dynamics estimation is reconstruction of principles of social portraiture.

PRESTIGE GOODS AND SOCIAL RELATIONSHIPS IN IRON AGE SOCIETIES OF THE TRANS-URALS

Sharapova Svetlana

Funerary remains are the most valuable source for archaeological study of virtually every aspects of human life. The closed context of burials reflects intricate nature of past social relations. It is generally accepted that among range of artifacts deposited with the dead certain ones will symbolize social status.

Throughout much of northern Eurasia there are single discoveries of rich graves, both men and women having elements in common with the royal burials. Within the Sargat society grave goods indicate much variation in wealth and status. The majority have few if any artifacts, usually just "horse bit – sword – bow" or similar personal items like pots, but a few notable examples are exceptionally wealthy. This notion is informed with recent paleodemographic study on the Sargat society's burial mounds, which is being undertaken by our team. The taphonomic evidence indicates group of the people buried under the mound, which had been deliberately and socially selected and belonged to elite stratum of ancient nobility. From social point of view, the burials displayed distinctive elements of a system of prestige goods – weaponry and imported luxury items. With the questioning of the concept of identity the paper will examine social relationships and evaluate some elements of prestige economy derived from burial mounds' data.

DEATH BE NOT PROUD? MONUMENTALITY AND THE LIVING DEAD IN IRON AGE STEPPE AND FOREST-STEPPE MORTUARY PROGRAMS

Johnson James A.

In the following paper, Iron Age funerary monuments from the Pontic steppe region (modern day Ukraine) are presented as staging areas for the "living" dead as well as possible locales for socio-political performances meant to manipulate the dead to produce, reproduce and reinforce social identities. Analyses of mound construction and grave good assemblages reveal acts of conspicuous consumption that signaled a wide range of social messages to various audiences, including the dead and local and non-local communities. These messages in turn affected both local identities and the possible formation of regional, hybrid identities. Particular attention is paid to burial mound clusters around the fortified settlements located in the forest-steppe/steppe border zone.

THE RITES OF IMMORTALIZATION IN ANCIENT THRACE (I ST MILL. BC)

Gergova Diana

Intensive archaeological research in Bulgaria enlarges considerably the quality and quantity of the archaeological sources about the Thracian burial rites during the I st mill. BC , their systematization and outlining of their most characteristic aspects.

The general term "rites of immortalization" has been proposed for the complex and diverse burial practices on the territory of Thrace .

The paper discusses the planning of the royal, aristocratic and other tumular necropolises, the megalithic, tombs' and graves architecture, (Strandza, Trebenishte, Duvanli, Sveshtari, Kazanlak, etc.) the diversity of the burial rites (inhumation, sitting deceased, cremation, partial cremation, reburial, etc.) and rituals and their persistence through all the Iron Age (1st mill. BC), and proposes a correlation between the social hierarchy and the types of burials in the frame of the Thracian society.

The ideological base of the complicated system of the rites of the immortalization will be also discussed.

PHRYGIAN "ROYAL" TOMBS: IN PHRYGIA AND BEYOND

Vassileva Maya

Around 85 tumuli are situated in the immediate vicinity of the Phrygian capital city of Gordion. Over 30 of them have been excavated and 23 published. Most of the tumuli hosted wooden chamber tombs with rich grave goods, although not a single object of precious metal was discovered in the early tumuli. The biggest tumulus which hid the most exquisite tomb construction with the richest burial was nicknamed 'Midas Mound'. Soon it was realized on chronological grounds that this cannot be Midas' burial chamber. Again, not a single gold object was found there, despite the Greek legend about Midas' 'golden touch'. The great number of tumuli and the furnishings of the tombs pose the question of who was buried there. Are all these kings? Very unlikely. But definitely these represent elite burials. The elite status was rather related to the ritual status of the deceased than to mere riches.

Phrygian tumuli were found far from the heartland of Phrygia proper. A cremation burial was plundered near Kaynarca, eastern Turkey. Typical Phrygian grave goods among which a bronze belt and bronze vessels were found. Scholars tend to deny the presence of a Phrygian population there. However, we know from the Assyrian documents of Sargon II that Mita of the Mushki was very active in the area in the late 8th century BC. Old-Phrygian inscriptions were found in Tyana. Should this burial be assigned to incidental contact, diplomatic relations or Phrygians living there?

Similar questions are posed by the Phrygian tumuli at Bayındır, Lycia. Some scholars tend to see more Ionian influence in the finds than Phrygian. These tombs however are a good example of cultural interactions and of multicultural identities. Again, it was rather the cult affiliation that defined the type of grave goods (for example, the ivory figurine of a Goddess, the silver belt of a typical Phrygian design and graffiti in Phrygian on the silver vessels) than anything else.

WHO WERE PEOPLE BURIED IN THE BURIAL MOUNDS IN MAKEDONIA?

Dragi Mitrevski
(Abstract not available)

THE BEGINNING OF BARROW CONSTRUCTION IN NOVO MESTO - SLOVENIA

Borut Križ

In the last 24 years of intensive excavations 30 Early Iron Age barrows with almost 800 skeleton graves and more than 200 Urnfield cremation graves have been researched in Kapiteljska njiva cemetery in Novo mesto.

These rescue excavations show relations between Early Iron age skeleton graves and Late Bronze Age cremation graves, which were all the same with only one exception. Cremation graves of the flat cemetery belong to Ha B3 Period and the Early Iron Age graves in barrows belong to the Period between Ha C1 and Ha D3. The exception is the central grave in Barrow XVIII where very early built stone chamber with Early Iron Age grave goods has been damaged by gravecut of the "Late Bronze Age" urn grave.

This paper will give some general notions about the origin and structure of »clan tumuli« in Novo Mesto and suggest an explanation why the »Urnfield population« change their burial ritual and grave construction without actually changing the material inventory of the graves.

BUDINJAK – AN EARLY IRON AGE NECROPOLIS (A CASE STUDY IN “FAMILY TUMULI”)

Želimir Škoberne

The archaeological site Budinjak is located in the central area of the Žumberak Hills 740 m above the sea level and about 50 km west from Zagreb. Geodetic survey established 141 tumuli on the necropolis which covers the area of 60,000 m² in the Budinjak Field in immediate vicinity, north of the settlement. The size of tumuli varies between 5 – 20 m, and height between 0,50 – 2,20 m. Most of the grave inventory of those tumuli belongs to the Early Iron Age while only smaller number of finds can be attributed to the end of the Late Bronze Age.

Budinjak was by all means large regional centre which had big and probably even dominant role in development of cultural identity of the whole region. Many years of systematic research enabled division of burials at this necropolis (inside or outside tumuli) in ten groups regarding the burial custom and grave architecture. Diameter of the most of the tumuli is less than 10 m and number of burials which vary between 2 and 6, suggest their family character. Only princely tumulus 3 contained 10 burials, while one of the largest tumuli on the necropolis, princely tumulus 139 also had only 6 burials. Although majority of discovered material is still being analysed, we cannot be conclusive, but at this stage we can identify basic elements of social structure, as well as some features related to social status of those buried at the Budinjak necropolis. In some cases there are also indications of their professions or possible family connections.

INDIVIDUAL VS. COMMUNAL IDENTITY – INDIVIDUAL TUMULI BURIALS IN THE EASTERN HALLSTATT CIRCLE

Hrvoje Potrebica

Most of the cultural groups that belong to the complex that we call “Eastern Hallstatt Circle” practice tumuli burials. With notable exception of groups such as Dolenjska or Budinjak, where multiple burials are more rule than the exception, in most cases such tumuli contain single burial. In most of the cases category of “single” was identified with “individual” burials and elements of the grave inventory in such units were interpreted as related to individual identity of a deceased person. In cases like Kleinklein where large number of burials testify that majority of population was buried under tumuli, following more or less same ritual, that identification may seem plausible. However, on many sites number of burials under tumuli is obviously much smaller than general population of the community in question, and that disproportion suggests that burials under tumuli must have been, at least in some part, determined by elements related more to the identity of the community than to the identity of the buried individuals.

AMBIGUOUS AFFILIATIONS - VARYING RELATIONS BETWEEN BURIAL MOUNDS AND BURIED INDIVIDUALS IN THE SOUTH SCANDINAVIAN BRONZE AGE

Mads Holst

In the first centuries of the second millennium BC a number of changes occurred in the burial mound practices in South Scandinavia. Larger monuments were now constructed and an increased variation in the grave inventory emerged. This is generally assumed to reflect a more distinct expression of individual identity and a diversification of social roles and status in the Bronze Age society. These monumental barrows are traditionally considered a direct representation of the position and influence of the deceased individual. There are, however, a number of finds, which suggest an ambiguous interplay between the significance of the mound and the significance of the dead. There are examples of a break-up of the individual burial custom, and occasionally also of the individual body. There are complex relations between the burial inventories, the burial structure, and the size and history of the monument, and there appears to be an emerging emphasis on a communal expression in the location of the barrows in the landscape and in the organization of the construction procedures. This complexity probably reflects differing conceptions of the meaning of the burial custom, the barrows and their dead, and the varied agendas which unfolded around them.

**SOME FORM OF INDIVIDUALITY? :
REASSESSING THE TYLOS PERIOD BURIAL MOUNDS FROM BAHRAIN**

Daems Aurelie

Over the past fifteen years there has been an increased interest by foreign archaeologists to dig up Tylos period (300 BC – 600 BC) burial mounds on the Arabian Island of Bahrain. These excavations have enlightened us on burial techniques, burial practices and burial gifts, which at times provide good indications for social status and rank. Additionally, intense studies effectuated on skeletal material remains by Judith Littleton (e.g. 1998 and 2000) have provided valuable data on prevailing health conditions amongst some of the Bahrain population during the Tylos period. Because of their high visibility in the landscape however, a substantial number of these burial mounds were looted in the past. Excavations effectuated by a Belgian team in 2000 has nevertheless shown that –although plundered- some characteristics of Tylos period tombs can nevertheless still hint at expressions of individuality and social rank, tangible beyond the lifetime of the deceased via e.g. grave dimensions and finish. Drawing on previous work effectuated by e.g. Littleton, Herling and Toft Jensen, this lecture will also propose a *status quaestionis* of our knowledge of these impressive burial mounds post 2000.

SUPERNATURAL BURIAL MOUND PEOPLE – BETWEEN THIS AND OTHER WORLD

Slupecki Leszek

The paper will examine the question of beliefs connected to burial mounds, existing in reality or in imagination only, concerning supernatural dwellers of mounds. The paper will focus on the following questions:

1. Beliefs in afterlife of dead persons buried in mounds and dwelling there for shorter or longer time, continuing there a kind of life as “defuncti vivi” - in friendly or hostile relation to their living neighbours. Among examined examples will be the story from Poetic Edda (Helgakvidha Hundingsbanna onnor) about the last night, that Sigrun (still alive) spend in bed with her lover, Helgi Hundingsbani (already dead in battle) in his burial mound. Also the examples of hostile behavior of persons buried in mounds will be quoted here, mostly from the Old Icelandic saga literature.
2. The other question to examine in the paper is the very special power of burial mound dwellers. They posses sometimes valuable or magic tools the living request, as for example Hervor in Hervarar saga. This brave lady obtain from her dead father Angantyr (still present in mound) his magic but cursed sword Tyrping. The burial mound dweller posses however especially a knowledge about the destiny and were asked for oracles. The Old Norse examples of that kind of divinations on the mound will be quoted.
3. At the end of the paper a very special status of such supernatural burial mounds dwellers will be suggested, as they – in my opinion – were described in written sources mostly as dead members of royal families, heroes, sorcerers or even supernatural beings (like gods or giants). The strong connections between burial mounds and Elves will be here quoted especially.

Finally, the conclusion will be proposed, suggesting that the supernatural burial mounds dwellers occupied in beliefs a middle and eventually intermediary position between this and other world.

Poster abstracts:

RECENT EXCAVATIONS OF PREHISTORIC BURIAL MOUNDS IN CZECH REPUBLIC

Petr Kristuf, Ladislav Rytir, Tereza Kovarova, Ladislav Smejda

This poster presents several projects aimed at empirical study of burial mounds, wich have been recently carried out in the South-West part of the Czech Republic. Diverse methods of archaeological prospection and excavation have been applied, following specific theoretical questions and conditions related to individual

sites. Our research targeted exclusively mounds showing modern disturbances or those excavated incompletely in the course of the 19th or the first half of the 20th century.

RECENT NON-DESTRUCTIVE SURVEY OF BURIAL MOUNDS IN THE PISEK DISTRICT, SOUTH BOHEMIA

Petr Kristuf, Ladislav Rytir

This poster reports on non-destructive approaches to the recording of standing and levelled burial mounds, as used currently in the Pisek District, South Bohemia. A specific methodology of visual survey and recording of burial mounds has been developed within this current project, which follows the settlement patterns in the district of Pisek. The main emphasis is given to the surveying of the exact location of the barrow cemetery, recording of spatial relations of individual mounds, their dimensions and last but not least the state of their preservation. This information also allows an effective heritage management of such funerary areas.

Round table title: BURIAL MOUND PROTOCOL

Organizers: Hrvoje Potrebica
Henrik Thrane
Ladislav Smejda

Chair: Henrik Thrane

Round table abstract:

Four years passed since J. Turek and L. Smejda organized the session called The Archaeology of Burial Mounds in St. Petersburg. That session aimed to become an introductory meeting of the work-group of international specialists dealing with this specific type of archaeological monument. It was already preceded by a session on funerary monuments in Thessaloniki and followed by sessions on similar subjects in Cork, Krakow, and finally here in Zadar. Such activity indicates that their initial plan was very successful. After five sessions on the subject we can say that we know a lot more on different aspects of burial mounds spanning from specific excavation techniques to different interpretation approaches. Taking that in consideration, perhaps the time has come to increase our collaboration to a more formal level through work on the burial mound protocol.

The burial mound protocol would be something like guide to positive practice related to investigation, interpretation, protection, and management of burial mounds as archaeological and cultural monuments.

Burial mounds are distributed throughout most of continents from the earliest times of human history to almost modern days. Their world-wide distribution and visibility as one of the main features always raised interest of communities living around them wandering about their contents and origin from antiquity onwards.

Since archaeological excavation is fundamentally destructive research method; we have to advocate priority from a vast range of non-destructive methods that are available to modern archaeology. Having that in mind, we have to ask ourselves *when* and *why* we should excavate burial mounds in the first place. The answer to that question depends on many complex and intricate factors, but our protocol should give general guidelines from all possible aspects, ranging from scientific importance to sheer protection strategy and salvage archaeology.

The purpose of the burial mound protocol should be to gather information from all parts of the world and all archaeological traditions with the final aim of forming a catalogue of non-destructive investigation methods as well as excavation techniques and field record systems which would be generally applicable in burial mound research. The catalogue should also include sampling strategies. The aim of this catalogue is mainly descriptive and not prescriptive, and should guide instead of limit investigators in their work.

The long standing interest and activity related to burial mounds has resulted in different research and interpretative traditions, which make communication and the sharing of information and ideas among the experts dealing with them more difficult. On the interpretative level, the burial mound protocol should give some sort of minimal requirements and general documentation standards which will inevitably lead to a classification of burial mounds and the creation of some kind of a generally accepted terminology related to such monuments.

Unfortunately, the consequences of this long tradition of interest in burial mounds have been devastating for those monuments. In more densely populated, or more developed areas burial mounds were destroyed, damaged or at least their archaeological record was contaminated by intrusions of different kinds. Today, we witness the same process rapidly taking place in other countries and areas where the legal framework as well as heritage management and protection cannot match the current intensive economic development and dynamic political scene. The burial mound protocol should also serve as a means of transfer and sharing of valuable and positive experiences regarding the management of burial mounds as specific monuments that are part of our cultural heritage as well as the contemporary landscape. An important segment of this should be the reconstruction of burial mounds and their presentation in different contexts.

The aim of this round table is to establish solid framework and a team of experts who will coordinate work on such protocol.

NON-DESTRUCTIVE SURVEY OF BURIAL MOUNDS: AIMS, METHODS, AND RESULTS

Smejda Ladislav et al

This contribution presents an overview of non-destructive approaches to recording of standing and levelled burial mounds, as used today in the Czech Republic. There are two main goals we address: the future management of cultural heritage and academic research. We intend to list and describe a selection of methods, which have yielded positive results in the conditions of our field projects. These include the study of aerial photographs and archival documents including maps; topographical survey and mapping with the aid of GPS and EDM/total station; geophysical survey; data evidence and processing in databases and geographic information systems; plus several ways of results presentation. Our experience has certainly some counterparts in other regions and we believe that a general discussion can identify strong and weak points of individual approaches.

Session title: THE ROMAN EMPIRE AND BEYOND II: COMMUNICATION AND EXCHANGE OF MATERIAL AND IDEAS

Organizers: Eric C. De Sena, John Cabot University, Rome, Italy
Halina Dobrzanska, Institute of Archaeology and Ethnology, Polish Academy of Sciences, Cracow, Poland

Time: Saturday morning

Room: 137

Session abstract:

The last decade has witnessed a growing interest in the socio-economic realities of the "East European" region of the Roman Empire and the neighboring territories of "Barbaricum". While important issues concerning the Roman army are still being investigated, questions pertaining to urban history and daily life in Rome's East European provinces as well as the complex relationship with "Barbaricum" are of increasing concern. In their investigations, scholars working on both sides of the Roman *limes* are relying upon a variety of methodologies and bodies of evidence: regional surveys, archaeological excavation, study of artifact/ecofact assemblages, art historical analyses and the study of ancient texts. This session continues a discourse begun at the 12th Annual Meetings of the EAA in Cracow. Papers are invited from researchers

working in Eastern Europe on sites that are contemporary with the Roman Imperial period. Questions to consider may be related but not limited to how the “Romans” and “barbarians” perceived each other, landscape and natural resources, economic exchange, influence of art/craft production, influence of Roman urban and social structure on the “barbarians”. Consider shifts in the limits of the Roman Empire (e.g. pre-Roman, Roman and post-Roman Dacia).

Paper abstracts:

BEING ROMAN IN POST-ROMAN DACIA: EVIDENCE FROM THE POROLISSUM FORUM PROJECT

Eric C. De Sena, John Cabot University, Italy
Alexandru V. Matei, Zalău County Museum of History and Art

One of the objectives of the Porolissum Forum Project is to consider daily life in post-Roman Dacia. As is commonly known, Dacia is a unique case since the province was released from Roman authority in AD 271, two hundred years prior to the fall of the Empire. Archaeologists working in Romania have demonstrated that there was a strong connection between post-Roman Dacia and the Roman Empire; however, scholars are still pondering the extent of contact.

After three field seasons, team members of the Porolissum Forum Project are beginning to understand how the area of the Roman forum was used and transformed following the late third century. A sequence of deposits excavated in summer 2007 contained a large amount of materials dating to the fourth century which indicate that the post-Roman city of Porolissum maintained strong ties with the Roman Empire for at least a century. Evidence is in the form of Christian items and symbols and a relationship between the regionally manufactured sigillata Porolissensis and African red-slip C and D forms and decoration. While significantly more information is required before we fully comprehend lifeways in post-Roman Porolissum, this evidence lends further proof, in addition to coins and an early Christian church, that contact was regular and profound rather than sporadic.

WHEEL-MADE POTTERY MANUFACTURING IN EUROPEAN *BARBARICUM*: HOW AND WHY?

Halina Dobrzańska, Institute of Archaeology and Ethnology, Polish Academy of Sciences, Kraków Branch

In the area of the Central and Eastern Europe wheel-made grey pottery was produced from the 1st century AD to the 5th century AD. The scope of this paper is mainly concerned with vessel building technics and technology of the grey ceramics. Due to a shortage of archaeological evidence for kiln structures in the study area comparing with high frequency of the grey pottery on sites the possibility of use of bonfires is also discussed. The properties of the grey vessels fired in reducing atmosphere are presented as well.

The study is supported by the results of the laboratory testing, firing experiments and ethnographic observations. It will also contribute to our understanding of the Hellenistic and La Tène traditions and the relations between Roman and *barbaric* cultures in the realm of the grey pottery manufacturing.

THE LINKS BETWEEN THE PROVINCE OF DALMATIA AND THE PROVINCES OF THRACIA AND MOESIA IN THE 1ST CENTURY AD BASED ON THE AUCISSA FIBULAE TYPE

Anna Haralambieva, Rimski Terzi, Varna, Bulgaria

The Province of Dalmatia was founded in the 2nd century BC and was the immediate neighbor of the Roman Republic on the Adriatic coast. It started to play an important role in the conquest of Macedonia and later on the lands on the south and north banks of the river Danube and in the formation of the provinces of Moesia and Thracia in the 1st century AD and Dacia in the beginning of the 2nd century AD. The military expansion of Rome is attested by the numerous early Roman fibulae found in those provinces, which were part of the uniform of the Roman legionaries. Among them figure the brooches of the type Aucissa. In some of the cases they bear the sign of the *optionum* (the aid of the centurion). The location of the finds of such brooches, which were pinned to the upper garments of the legionaries, marks the centers of their production

in and outside Italy – in Dalmatia, as well as the route of their distribution along the rivers Sava and the Middle and the Lower Danube.

Similar fibulae were found in the Roman camps south of the Lower Danube and in the towns of Thracia where the legions and their supporting staff were located. Their functional qualities and beautiful appearance made these small metal items prone to mass imitation as part of the military uniforms and the costumes of civilians in the first and second centuries AD.

ROMANS AND BARBARIANS: CULTURE CONTACT, INFLUENCE AND MATERIAL CULTURE

Eduard Krekovič, FF Univerzity Komenskeho, Bratislava, Slovakia

The author deals with the terms „contact“ and „influence“ and their meaning in concrete circumstances of Roman – barbarian relations. Some varieties of Roman wares in the barbarian milieu indicate that other archaeologically invisible products were also exported beyond the Roman frontier – for example wine or cosmetics. It seems the distribution of Roman wares was to some degree accidental – especially in peripheral regions. Some types were produced primarily for the barbarian market.

THE CULTURAL IDENTITY OF THE INTERACTION ZONES OVER THE FRONTIERS OF THE ROMAN DACIA

Coriolan Horatiu Oprean, Institute of Archaeology and History, Cluj-Napoca, Romanian Academy

From the beginnings, the Roman province of Dacia created by Trajan, had a main strategic role: to separate the barbarian world and to stop possible dangerous alliances. Trajan's Dacia was reorganized by Hadrian, after the crisis of AD 117-119. The strategic essence of his decision represented a new concept of the defense of the province. To the North-West the main problem was to control the three important passages to the Transylvanian plateau, watching the movements of the barbarians, mainly the Iazyges.

The South-East section of the frontier, facing the Wallachian plain, was based on a military road running from South-East Transylvania to the Danube, in Lower Moesia. The plain was protected against the Roxolani mainly by the army from the Danube line.

Ancient written sources attest also the “free Dacians”, as the Costoboci and other tribes, living to the North-East and to the North till the Northern Carpathians in Southern Ukraine and Poland. In the time of the Marcomannic wars the Vandal tribes coming from the Przeworsk culture area advanced closer and closer to the North-Western border of Dacia Porolissensis.

War was often combined with Roman diplomacy. The new diplomatic relations established by the Empire to the Barbarian world after the Marcomannic wars, were going on till the middle of the 3rd century AD. The defeated Germanic tribes of the Buri and several thousands of the “free Dacians” were allowed to live in the vicinity of the Roman frontier. Some barbarian groups were also settled, by *receptio*, in the territory of Roman Dacia. The new situation determined the growing of the trade contacts between the province and the barbarian world. Along the main roads that enter Dacia from the west and north-west appeared the interaction zones. Here many barbarian settlements were set up, where Roman goods (pottery, brooches and coins) arrived, as a consequence of the frontier trade. Soon, barbarian workshops imitating Roman products emerged, as the pottery workshops.

Recent archaeological research in the barbarian settlements and cemeteries situated inside the interaction zone from North-West Romania permitted a better knowledge of the chronology and the cultural identity of the region. There are known 296 finds. The chronology can be followed between stages B2 - C3/D1. The cultural identity of the finds show that the Przeworsk culture populations advanced over the Northern Carpathians, starting with the stage C1a. The presence of the Dacian pottery proves that the Przeworsk groups of warriors were mixed with Dacian elements, probably, even before their arrival in the neighbourhood of Roman Dacia. It is possible that the Dacian component of the newcomers to be very strong or, it is also possible that free Dacian groups brought from the Tisa region have been settled by the Romans together with the Przeworsk tribes. Under the strong Roman cultural influence an interesting acculturation process has taken place in the area. In the second layer of the settlements (stages C1b-C2), the Przeworsk culture elements disappeared almost totally and a new material culture with Dacian characteristics and strong Roman influence was identified. It was the so-called Blazice-Bereg culture. It was this period when the province of Dacia was abandoned by the Roman authorities and army. It is very

probable that Roman craftsmen from Dacia flew in Barbaricum after AD 271, joining the barbarian communities which needed their technological knowledge.

THE SOUTHERNMOST FIND OF FIBULA TYPE ALMGREN 43

Hrvoje Vulić, Vinkovci, Croatia

In 1992 and 1993, twelve Roman fibulae were brought to the Municipal Museum of Vinkovci. The finder, Z. Harhaj, found them while field walking on a registered archaeological site, Plandište, near Cerić village in the vicinity of Vinkovci. Archaeologists have discovered finds dating between the eneolithic and Roman periods at this site.

One fibula (inv. no. A-2112) captured special attention due to its unusual shape. Upon further study it was identified as type known as Almgren 43, one of the products typical of the Przeworsk culture. This type is usually found in the area of Poland, the Czech Republic and Slovakia and even in these regions it is relatively rare. To date 70 examples are known of which only three have been discovered on the Roman side of the limes. Of the fibulae found in Roman territory, two are from Hungary, published by E. Patek, and one is from Romania, published by S. Cociş. The one found at Plandište is the first ever to have been discovered in Croatia and is, so far, the example found farthest south.

Another interesting attribute is a noticeably different leg and needle holder than what is usual within this type. Namely, in the case of plate fibulae, the leg is at the same time the needle holder. It is rectangular and elongated. In the fibula presented on this poster, the leg is completely different. It is triangular in shape, elongated, narrows towards end. It ends with a faceted button. The needle holder is rectangular and elongated. It seems that after the original needle holder was broken, it was replaced by the complete new leg.

The very presence of this type is interesting and raises many questions. How it is to be dated? If we compare it with other material from the site dated between the second and fourth centuries, it should dated to the end of second century. This correlates with the general chronology of the type from the end of the phase B2 (80-160AD) to the end of stage B2/C1 (second half of the second century to beginning of the third century AD) of the Przeworsk Culture. If we take into consideration the fact that it differs from the usual shape, could it date outside this frame? Who was the bearer of the type? It is usually attributed to the Przeworsk Culture, but the question regarding the bearers has not yet been answered. Were they Viktovals or Vandals? Tribes mentioned are also Hasdings, Langobards or Obi. Who wore the fibula, men or women? So far it has been usually found in female graves, but also in few male graves. It is also most usually found in graves, but a certain number have also been found in settlements. Considering the presence of bearers of Przeworsk culture in the area of the middle Danube and the Upper Tisza basin (far from their homeland) in the second century and first half of the third century AD, is it possible to consider a group of people or just one individual living in the discussed area? Or if the fibula is just a trade good, why is it not found outside the areas under the influence of the Przeworsk Culture?

HUMANIZING THE LANDSCAPE: ECONOMY AND COMMUNITY IN THE TUNISIAN HIGH STEPPE IN THE FIRST TO SEVENTH CENTURIES

Robert Wanner, University of Leicester, UK

Studies of economy and community have taken a prominent role in archaeological research of the ancient Mediterranean world, but they are generally considered separate topics because of the different types of evidence they use. The construction of economic histories generally draws from settlement data in archaeological surveys and numismatics. A common choice in Mediterranean survey archaeology has been to rely on literary sources to attribute regions to ethnicities, but this approach undermines economic models put forward because many of the complex social relations are lost.

Though attention is constantly focused on information from new surveys, careful examination of older ones leads to new insights. The Kasserine Survey serves as an excellent example of how a more focused study of communities can be applied to landscapes that have already been extensively studied in economic terms. Using survey data with inscriptions and historical texts, I show how the study of communities in landscape archaeology can better our understanding of processes of change in agricultural, pastoral, and industrial activity over the *longue durée*.

Concepts of community, control, and economic community played important roles in the rural economy of ancient North Africa, but they have not figured prominently into previous economic models of the Tunisian High Steppe. The processes prompted by both Roman administration and the local population both restructured communities and constructed new ones.

THE EDGE OF EMPIRE, A SOCIO-ECONOMIC CENTER: THE ROMAN FORT OF POROLISSUM IN THE CONTEXT OF ITS SURROUNDINGS

Daniel S. Weiss, University of Virginia, USA

In AD 106, immediately following the Roman success in the Dacian Wars, several strongholds were established in the new province. Most notable of these are Ulpia Traiana (Sarmizegethusa), Apulum, Napoca and Porolissum. While there are certainly others, these four are evenly spaced locations on a major road extending from the center of Roman Dacia to the northwest *limes*. Porolissum is the terminus of this major Roman road and its structures are integrated with the border defense system. Many maps of the province which illustrate the Roman roads misleadingly end this highway at Porolissum. While it is technically correct, that the Roman road ended at the border, the route continued beyond (While no archaeological excavations have been carried out beyond the sanctuary terrace, the topographical analysis of the region indicates that the road continued into the draw that flanks Magura hill to the west. See N. Gudea, 1998, *Porolissum: Ausschnitte aus dem Leben einer dakisch-römischen Grenzsiedlung aus dem Nordwesten der Provinz Dacia Porolissensis*, Amsterdam: Hakkert. pl. II.3). The road is somewhat symbolic of the scholarship concerning the region, especially by Westerners. Despite the interesting history of the Dacian region, it has been largely neglected for various reasons. Lack of funding, the effects of Communism and the instability following the revolution of 1989 all contributed to inaccessibility to the region and a decline in emphasis on cultural sites. Studies that have been conducted tend to stop at the border, examining the province itself and not the intricacies of relationships with neighboring settlements. This paper extends the study of Roman Dacia beyond its borders. I will examine the systems of interconnection in a region that straddles the Roman border in an effort to determine the nature and range of communication and the patterns thereof as well as determining the level of porosity of the *limes* in northwestern Dacia.

Modern Romania is now divided into counties and the county museums are responsible for the publication of the archaeological material. Porolissum is located in Salaj County which straddles the old Roman border. The present day boundaries may be indicative of the natural regional mentality in antiquity. A topographical study of the county may help determine what role the natural boundaries played in determining the borders established by the Romans as well as those in use today.

Two constructed features at the walls of Porolissum indicate not only that the road continued on, but that it was a major entry point into the Empire. The first of these is a large area enclosed by walls which has been identified as a detaining area for incoming traffic. Whether or not the identification of this space is correct, the second structure, a customs station on the west side of the road, further attests to the fact that Porolissum was not merely an end, but also a point of entry. The full realization of the site as an entry point cannot be assessed in a monograph-type study as has been the trend. Only through a regional study can Porolissum be truly placed into its proper context.

Primary components of the region which would have naturally determined traffic and trade in the Roman period are the ridges and rivers. Both determine the most efficient route by obstruction by the former, conductivity by the latter. A simple overview of the geography reveals that there are several rivers in northwest Transylvania, most notably the Mureş and the Someş. Water transportation was quicker and less expensive than land transportation in Antiquity and the hilly region around the *limes* only makes that efficiency more emphatic.

However, the available maps of the region are limited in the information they give. Maps that focus on geography often do not label sites, nor is there enough detail on them to evaluate the viable avenues of approach. In order to comprehend the traffic and trade patterns in Antiquity, it is necessary to travel the region with quality topographical maps. Such an exercise will reveal the less prominent terrain that shapes the region. Once the avenues are determined in conjunction with the physical evidence from the sites, it will be possible to surmise what arrived where and how it got there. One obvious example is the corpus of Roman finds in Arad, near the Hungarian border. This barbarian settlement is directly linked to Deva on the Roman border by the Mureş River. A large quantity of *terra sigillata* has been found in the region just below and along the river (P. Hugel, and M. Barbu, 1997, "Die Arader Ebene im 2-4 Jh. N. Chr." in N. Gudea, ed. 1997, *Römer und Barbaren an den Grenzen des römischen Daciens: Acta Musei Porolissensis* 21. Zalău:

Museum of History and Art. 1997: 567-568). Just as in Pannonia where the major cities grew up along the Danube, with materials arriving in large quantities along the river from Gaul and Germania, the lesser rivers in Romania no doubt played a large part in the growth and communication of the barbarian communities.

Not only does this research aim to improve the corpus of Dacian studies and make the information more accessible to a western audience, it also applies to research outside of Dacia, primarily in the areas of trade and frontier studies. In the absence of physical material, it is often necessary to apply models from other regions. After the models are adapted to the specific conditions of northwest Dacia, then a greater understanding of Roman relations along *all* borders may be reached.

In 1979, Edward N. Luttwak proposed that there existed a 'Grand Strategy' to the growth and defense of the Roman Empire (E.N. Luttwak, 1979, *The Grand Strategy of the Roman Empire*, Baltimore: John Hopkins University Press). The idea of an overarching strategy for the entire empire has since been criticized. However, the concept has forced scholars to think critically about the nature of the frontiers. Theories have ranged from the largely economical to the strictly military. The customs building at Porolissum strongly suggests an economic purpose to the site, but the presence of multiple auxiliary units cannot be ignored. Each frontier region is unique and does not represent imperial foreign policy as a whole. It is best, therefore, to examine the peculiarities of each region as they exist within their own parameters.

The Roman fort at Porolissum is indicative of the continuing debate in the field of Roman Frontier Studies. In the wider scope of the field, the military functions of the borders cannot be forsaken for the economic, nor vice-versa. Likewise, all aspects of Porolissum's interaction with the immediate region as well as the empire as a whole must be examined in tandem. While the site was certainly a terminus of the imperial road at the limits of the empire, those limits were not as concretely defined as previously thought and this paper examines the details of that flexibility.

Round table title: BILATERAL AGREEMENTS ON ARCHAEOLOGICAL STANDARDS AND ETHICS

Organizers: Jeffrey H. Altschul, USA

Time: Saturday morning

Room: 155

Round table abstract

Archaeological ethics and standards of research performance that govern professional conduct are generally the result of the historical evolution of the discipline within a country. While codes covering ethics and standards may sound similar from country to country, the interpretation of ethical statements can vary widely. Over the last two years, the Register of Professional Archaeologists and the Colegio Profesional de Arqueólogos del Peru negotiated a Memorandum of Understanding designed to provide expanded opportunities for archaeologists of Peru and North America (U.S. and Canada). At the heart of the negotiations was reconciling not only the educational and experience requirements, but also ensuring that the codes of conduct, standards of research performance, and grievance procedures of the two organizations were compatible and defining when the code of one or the other of the organizations would be operable. The lessons of this bilateral agreement are instructive and can be used to guide similar agreements between professional organizations, such as the Institute of Field Archaeologists, the Institute of Archaeologists of Ireland, the Dutch Association of Archaeologists, and others. This round table will provide a forum for open discussion on the topic of ethics and standards, particularly as it relates to foreign archaeologists working in host countries.

SATURDAY

'A STANDARD AND GUIDANCE FOR STEWARDSHIP OF THE HISTORIC ENVIRONMENT IN THE UK'

David Baker, MIFA, IHBC Consultant - Historic Environment Conservation

Bi- or multi-laterality can be needed even within one nation. This contribution draws on the experience of drafting and consulting on the adoption of a Standard and Guidance intended to apply to all four UK countries and to the members of three professional organisations, prepared at a time of significant change and development in attitudes and policies towards conservation.

Session title: READING TELLS – SETTLEMENT PRACTICE DURING THE EUROPEAN LATE NEOLITHIC AND BRONZE AGES

Organizers: Attila Gyucha, Munkácsy Mihály Museum, Békéscsaba, Hungary
Roderick B. Salisbury, University of Buffalo, USA

Time: Saturday all day

Room: 144

Session abstract:

Tells are a common macro-tradition in Neolithic and Bronze Age landscapes in Eastern and Central Europe. Within this macro-tradition there is variation in regional settlement patterns, in tells constructed during different periods, and in the layout of individual tells. The development and dissolution of tell-focused settlement patterns speaks to issues of integration and fragmentation, social memory, social identity, the creation and recreation of place, and changes in socio-political and socio-economic organisation. These changes are reflected not only in tells themselves, but in every observable social unit, including off-tell settlements, households, neighborhoods, settlements, and "culture-areas". Examination of these phenomena before, during, and after the tell-periods at different regional and temporal scales enables consideration of the complex social, political, and economic transformations that are associated with the rise and fall of tell communities.

In this session, we wish to emphasize variations during the creation and termination period of tells, and encourage discourse on a range of methods and interpretations of these variations. For instance, what did the settlement network look like before the appearance of tells, and how did it change after their termination? What are the factors relating to these changes that we identify in material remains? What explanations can we propose through examination of local trajectories? Regional and temporal variations in the cultural practices of tell construction and configuration within the larger settlement context is explored, and both social and environmental considerations for settlement integration and disintegration are addressed.

Paper abstracts:

TELLS: THE ROOTS OF FORMATION OF EARLY TOWNS

Ferenc Horváth, University of Szeged, Hungary

Attempts to define the concept 'tell' are nearly as old as archaeology itself. These have led to the currently accepted archaeological model equating multi-stratified mound sites with tells. This presentation focuses on causes; the climatic, environmental, economic and social roots of the formation of multi-stratified sites from beginnings of the settled way of life until the appearance of early towns. At the same time it deals with those problematic trials which have attempted to categorise multi-stratified sites on the basis of physical and morphological criteria of the site itself, rather than on paleo-environmental and archaeological

data. The author examines the question of the ‘tells’ in the periods of the Neolithic and of the Bronze Age Carpathian Basin in detail.

A TALE OF TWO SITES: TELLS AND NON TELLS IN THE GREEK NEOLITHIC

Kostas Kotsakis, Aristotle University of Thessaloniki, Greece

The emergence of Neolithic landscapes in Greece was largely dominated by the appearance of tells. However, recent research has proved that tells represent a distinct phenomenon, and that the population of large regions, especially in Northern Greece, inhabited extensive open settlements, surrounded by ditches and spotted with dispersed dwellings. The trajectories of two typical sites, Sesklo and Makriyalos, are presented. Each one of these sites, located in two distinct regions of Northern Greece, correspond to a different type of settlement, and seem to correspond to two diverging cultural traditions. The material culture and social practices, so far as they can be assessed by recent archaeological analysis, seem also to diverge consistently on many different levels. The comparison between the two sites therefore clarifies their differences and offers an explanation for the eventual domination of tells during the subsequent Bronze Age.

THE EMERGENCE AND DEVELOPMENT OF TELLS IN BANAT.

Florin Draşovean, The Museum of Banat, Timișoara, Romania
(Abstract not available)

ARCHAEOLOGICAL DATA FOR THE USE OF SPACE IN A TELL-LIKE SETTLEMENT OF THE TISZA CULTURE: NEW RESULTS FROM ÖCSÖD-KOVÁSHALOM

Pál Raczky, Eötvös Loránd University, Budapest, Hungary

Öcsöd-Kováshalom lies on the former bank of the Körös River in the southern part of the Great Hungarian Plain. The site has long been known in the prehistoric research. Finds of the Tisza culture and settlement remains were found to be scattered over an area of 21 ha. Systematic investigations revealed that this settlement consists of 3 larger and two smaller discrete residential foci, and these originally covered only about 3-5 ha. Subsurface borings indicated that the central and the permanent settlement nuclei on three smaller elevation had been separated by seasonal watercourses. It also became clear that the layer thickness of the three residential foci forming the central part of the settlement ranged between 40-160 cm. The subsurface probes suggested that one of these settlement nuclei, covering less than 1 ha, had been the central part of the Öcsöd settlement, and had also been occupied for the longest duration. The settlement of Öcsöd-Kováshalom is an example of two coexistent settlement types: a central tell-like mound flanked by horizontal, single-layer settlement. The excavations opened in this central part of the complex settlement structure allowed the division of six superimposed levels into two main phases. These phases represented two successive house levels in the life of the Öcsöd settlement, and at the same time two phases within the Tisza culture (Tisza I-II). Following the excavation on the main area we have a fairly clear picture of the spatial organisation of this tell-like settlement. In the center of the low mound a fence system was identified, which enclosed a 35 x 42 m rectangular area. Taking the number of houses in contemporary use as 4-6, and assuming that there were five occupants to a building, we arrive at a general population of 20-30 souls. If we taking into consideration of the five settlement loci of Öcsöd, in that case we can calculate 20-30 houses and a population number of 100-150 persons for the site. A three-fold organisation of space observed in the area enclosed by the fence (houses-working area-pits) could be noted. The construction of the Öcsöd houses undoubtedly required a large measure of cooperation between the inhabitants. In spite of heavy erosion, remains of open-air ovens, refuse deposits, and traces indicative of on-site stone and bone working were noted in the open area enclosing the house cluster. Material remains of sacred beliefs permeating various aspects of everyday life have also come to light in the context of the houses and pits. A total of 44 graves were uncovered in the main excavation area between houses and in the open area surrounding them, implying that settlement and burials were still strongly linked. On the basis of the archaeological information, the patterned arrangement of the archaeological features and

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directionality of loci associated with activities, as well as the spatial distribution of certain artefact types, define a regulated sub-division of physical space by the people of Öcsöd-Kováshalom.

ANIMAL HUSBANDRY AND HUNTING OF A LATE NEOLITHIC TELL-LIKE SETTLEMENT IN THE GREAT HUNGARIAN PLAIN (CASE STUDY OF ÖCSÖD-KOVÁSHALOM)

Zsófia Eszter Kovács, Univeristy of Debrecen, Hungary

This paper presents the analysis of animal remains of a tell-like settlement called Öcsöd-Kováshalom in South-East of Hungary near the Körös river. The faunal remains identified give information concerning hunting and production practices as well as the mode of consumption of the inhabitants. A total of 20,344 bone fragments were identified from the central part of the settlement (1470 m² area). The considerable fragmentation of the specimens suggests that this material mostly come from kitchen refuse. Domesticated animals were more frequent in this settlement (10,135 specimens, 77%) than wild animals (2997 specimens, 23%). This rate reflects well-developed animal husbandry and the important role of domesticated animals for nutrition, which is typical in late Neolithic settlements. Cattle (*Bos taurus*) was absolutely dominant in this sample (6320 specimens), pigs (*Sus domesticus*) stood in the second place (2466 specimens), preceding caprines (*Ovis aries*/*Capra hircus*) (1163 specimens). Over 50% of the killed cattle and caprines were adults, which might indicate the secondary use of these species. Among the wild animals large game was more frequent than the smaller (fur-bearing) animals suggesting that the main purpose of hunting was to obtain meat. Two time phases (earlier and late Tisza-culture) are compared from the viewpoint of species composition. In addition, samples from different parts of the site (houses - places between houses - pits) are compared.

LIFE AFTER THE TELLS: THE GREAT HUNGARIAN PLAIN IN THE EARLY COPPER AGE

Attila Gyucha, Munkácsy Mihály Museum, Békéscsaba, Hungary
William A. Parkinson, Florida State University, USA
Roderick B. Salisbury, University of Buffalo, USA

The Neolithic to Copper Age transition on the Great Hungarian Plain is marked by significant transformations in nearly all aspects of life. These changes fundamentally altered the characteristics of social networks and settlements as well as the mortuary customs and trade networks. These transformations have been generally suggested in the archaeological literature. However, prior to the 21st century, datasets allowing scholars to explain and interpret these changes were not available due to the lack of systematic research at Early Copper Age settlements.

The research conducted by the Hungarian-American Körös Regional Archaeological Project at several Early Copper Age sites in the Körös Valley of southeastern Hungary during the past few years yielded a great quantity and variety of data regarding this transitional period. Evaluating these data, along with some additional relevant data from the region, provides a better understanding of the how and why these transformations took place. This paper discusses the constraints and opportunities arising from interpretation of paleoenvironmental, material culture, economic and social organisation data from the region in the transitional period. We also provide a model to explain the changes occurring on the Great Hungarian Plain around 4500 BC.

INTERPRETATION POSSIBILITIES OF THE BRONZE AGE TELLS SITES IN THE CARPATHIAN BASIN

Klára P. Fischl, Herman Ottó Museum, Miskolc, Hungary
László Reményi, Budapest History Museum, Hungary

A *tell* as a kind of settlement cannot be studied in itself, but only as a part of a broader economic, social and settlement organization system, which also involves climatic conditions and microenvironment as other significant factors. According to the Hungarian chronology, the Bronze Age tell sites in the Carpathian Basin were occupied from the second part of the Early Bronze Age to the end of the Middle Bronze Age, which can

be dated back to approximately 2100-1500 BC. As only vertical test excavations have been carried out in many of the tell sites located in Hungary, we do not have enough information on the inner structure of the settlements. However, the central settlement can be studied from different perspectives, considered together with flat, dispersed sites and burial grounds. The aim of this study is to show examples of the different possible interpretations from sites of the Nagyrév, Vátya, Hatvan, Füzesabony, Gyulavarsány and Szőreg-Perjámos cultures. During the presentation of social and economic relations connected to tell sites, we demonstrate that the subsystems linked to this settlement form constitute a complex but unstable structure in which – because of the close interactions between the parts – changes occurring in the stated subsystems had deep influence on the sustainability of the structure. In fact, the structure carried within it the potential of its own eventual destruction.

COMPLEXITY IN ABUNDANCE: UNDERSTANDING THE BRONZE AGE TELL SETTLEMENTS OF THE LOWER MAROS/MUREŞ

John O'Shea, University of Michigan, USA

The tell settlements of the eastern Carpathian Basin have long been a focus of archaeological interest. Much of this interest has derived from their potential for yielding a diachronic understanding of the past, both by providing an ordered sequence of change in artifact styles and settlement organization, and as a basis for establishing regional chronologies. Yet, the Maros/Mureş tells present extremely complex patterns of construction, deposition, renovation, and modification that are anything but straight forward to 'read'. This paper draws on examples from the contemporary Bronze Age tell settlements at Pecica Şanţul Mare and Klárafalva Hajdova to consider both the difficulties and potentials that such tell sites present.

HOUSES – HOUSEHOLDS AND WHAT THEY REVEAL

Magdolna Vicze, Matrica Museum, Százhalombatta, Hungary

The paper demonstrates how much has been done in the Hungarian Bronze Age in respect of house-forms, house- and settlement structures, and also how little in the interpretation of households. One of the several reasons for lack of complex interpretation is the lack of established theoretical background. The data is exceptionally rich, and therefore good-practice examples are needed to complement the data. One such example is the Százhalombatta Project where the proto-urban social organisation of a Bronze Age tell forming society is studied. Tells are extremely important for understanding the socio-political developments and emergence of European prehistoric communities. Studying Bronze Age households is one of the primary necessities in understanding Bronze Age society.

GIS AIDED INTERPRETATION OF POST AND STAKE HOLES ON A BRONZE AGE TELL SETTLEMENT: SZÁZHALOMBATTA FÖLDVÁR

Dániel Füköh, Matrica Muzeum, Százhalombatta, Hungary

Postholes and stake holes on prehistoric sites clearly indicate a sort of superstructure. The definition of stratigraphic and contextual position of post and stake holes on multiple layered sites is a complex problem, not just because of the volume, but also from the fact that these objects cut through several layers. The posts, which have clear spatial relations (belong to a wall, or form a persistent pattern) can be easily be seen as part of structures. However, most of these features have no clear context, or have no context at all. With the support of a digital database and the data manipulation engagement of GIS, structured and classified spatial data can be provided by querying statistical attribute data (diameter depth, elevation, shape) concerning the post and stake holes in question. The structured spatial data can then be used to set up groups of features, using different analytical aspects.

The basis of this analysis is the supposition that buildings on the Százhalombatta Földvár Bronze Age tell settlement had traditional frames for different functions in a structured architectural environment. With the analysis of the patterns that emerge on the basis of the spatial parameters of structured statistical data, it is possible to set up models of buildings or even to trace out the settlement structure.

TELLS OF THE BRONZE AGE KÖRÖS: A TEST OF THE STAPLE FINANCE MODEL

Paul R. Duffy, University of Michigan, USA

This paper explores land use constraints and social relationships between tell and off-tell sites in the Körös area of southeastern Hungary during the Early and Middle Bronze Age. Micro-environmental information is combined with food productive estimates of pre-industrialized farming techniques to reconstruct land use potential. Specific hypotheses derived from the archaeological literature on chiefdoms are tested, evaluating whether populations at the tells were larger than the food productive capacity in the immediate environment could provide for. Recent data from the excavations of Gyepesi Átkelő, an off-tell site downriver of Békés-Várdomb, are briefly discussed in light of the results.

TELL ŽIDOVAR AND THE VATIN CULTURE

Miloš Jevtić, Faculty of Philosophy, Belgrade, Serbia

The most important segment in the study of stratigraphy at the multilayered prehistoric settlement Židovar near Vršac concerns the investigation of the Vatin culture with over 3 meters thick cultural layer. Particularly interesting are the results obtained in the course of recent excavations of the stratigraphic trench at the Židovar tell that make possible somewhat different understanding of the evolution of the Vatin culture. It seems that many successively built settlements of the Vatin culture at this tell, with interesting new architectural forms, make possible the drawing of more reliable conclusions about its origin, evolution and disappearance in the region of the south Banat. These results differ considerably from earlier interpretations taking into account Feudvar near Mošorin, one of the most thoroughly investigated settlements of the Bronze Age, and the Vatin culture in our territory. Small-scale off-tell investigations in a suburban area of some kind, along with the beginning of systematic site survey of the immediate surroundings of Židovar, also yielded interesting results concerning the relations between the Late Vatin culture and other Late Bronze Age cultures in the area of the south Carpathian basin and the Serbian Danube valley.

GEOARCHAEOLOGICAL INVESTIGATIONS OF A MIDDLE BRONZE AGE TELL IN NORTH-HUNGARY

Gábor Bácsmegi, Kubinyi Ferenc Museum, Szécsény, Hungary
Pál Sümegi, University of Szeged, Hungary

In the year 2003, with the support of the Ministry of National Cultural Heritage and the National Office of Cultural Heritage, we had the possibility to perform geoarchaeological investigations on the tell site belonging to the Hatvan culture near Héhalom. The tell is relatively unexcavated. A part of the tell is still in use as a modern cemetery, thus our research was confined to limited area.

Geoarchaeological studies unambiguously prove that the tell, formerly considered to be of half hectare extension, was in fact a much larger fortified settlement dissected by two circular ditches, having an extent of 6-7 hectares by the beginning of the Middle Bronze Age. Around the tell, we can suppose the existence of several smaller satellite settlements. The life of the people living on the tell concentrated into the 5-6 hectare large strip of land between the external and the internal ditch, while on the black soil ring between the core of the tell and the internal ring-form ditch the livestock was probably placed. The internal core of the tell was inhabited only periodically or only populated by a limited number of people (leaders or military aristocracy?). Apart from the inner ring-form ditch there was an external, deeper ditch reaching down occasionally to 4 metres, formed of dry valleys in a sickle-shape form that had an unambiguous protective function. Together with the satellite settlements, the fortified Bronze Age settlement concentrated a significant human community. At the feet of the North-Hungarian Mid-Mountain range, on the North-Hungarian Plain detrital cone it was part of the chain of tell settlements formed by the Hatvan culture along the border between the Hungarian Plain and the Carpathians. The immediate surroundings of the tell comprised pastures and tillage, while remains of the original forest cover remained only in the valley and the distant hills.

DATA TO THE RESEARCH OF THE OTOMANI CULTURE HABITAT IN THE CAREI PLAIN AND THE ERIU VALLEY

Zsolt Molnár-Kovács, Babes-Bolyai University, Cluj-Napoca, Romania

From a cultural point of view, the Carpathian Basin during the Middle Bronze Age resembles a mosaic. Despite the fact that every community had developed a specific material culture in this chronological sequence, we may still talk about so-called 'tell society' based on the social and economic macro features. The aim of this study is to present a hypothetical image of the Middle Bronze Age landscape of the Carei Plain and the valley of the Eriu River. The starting point was the exhaustive recording of the Otomani settlements (mapping, visiting and photographing each site, analyzing archeological evidence). 80 settlements have been identified in this area. The list of sites is far from complete, but it does reflect the actual state of research.

The study of the settlement systems and networks of interacting polities is a window on the historical development of social complexity and hierarchy. The evolution of Middle Bronze Age complex and hierarchical societies from north-west Romania and the analysis of their social-political system are presented from a comparative core-periphery-systems perspective. The idea of core/periphery hierarchy was originally developed to describe the stratified relations of power and dependency among societies in the modern world-system. The new comparative perspective of the world-systems approach developed by scholars like A. Harding can be used properly for the political-social system of the Otomani communities from the Romanian lowlands, where the Middle Bronze Age chiefdoms are strongly linked by local and interregional (cross-cultural) social systems and luxury and barter-goods trade networks.

Estimating the territorial sizes and boundaries of the Otomani chiefdoms from north-western Romania is very difficult. Therefore, the present study had applied the methods of the XTENT-models, Thiessen-poligons and Central Place theory, archaeological data, mathematic calculations and geo-informatics programs. Knowing the environmental background of the Carei Plain and Eriu Valley, the sizes of settlements and the approximate territorial area controlled by them, an interesting (but hypothetical) picture of the political and social development of the Otomani communities can be drawn.

THE SOCIAL AND ECONOMICAL FUNCTIONS OF THE BRONZE AGE TELLS IN THE CARPATHIAN BASIN

Florin Gogâltan, Babes-Bolyai University, Cluj-Napoca, Romania

On this occasion I would like to discuss some aspects related to the level of the social organization and the economic function of the Bronze Age tells in the Carpathian Basin. As a starting point I consider it necessary to present some theoretical models applied to the so-called 'classical' tells from Orient and southern and eastern Europe in order to be able to expand the discussion to our area of interest – the south-eastern regions of Central Europe.

This subject was highly debated in the literature especially after V.G. Childe published his article about the 'urban revolution' in the beginning of the 20th century. The problem of the appearance of the towns in the south-eastern part of Europe is equally complex. The hypothesis that at the beginning of the Bronze Age there existed in Greece towns, quasi-towns or proto-towns remains, like in the case of Orient, uncertain. Moreover, some specialists argued that the proto-urban organization existed already in Neo- Eneolithic times. H. Parzinger believes that in the Balkan region one may talk about a 'Vor-Urban' and a 'Früh-Urban' period. The pre-urban situation is supposed in the case of the tells of Muntenia and Bulgaria in the period of the 8th horizon proposed by Parzinger (Gumelnița-Karanovo VI-Kodžaderman) but without characterizing the realities of the Carpathian Basin. According to N. Kalicz, the Late Neolithic tells of Hungary, representing the highest level of development of the Neolithic settlement in the south-eastern regions of Central Europe, cannot be interpreted as being a stage in the proto-urban development. These functioned only as autarchic economic units but without having a major political role and I agree with his opinion. B. Hänsel's conclusions presented with the occasion of the XIIIth Congress of pre- and proto-history at Forlì are extremely important for the theme of the present paper.

However, the appearance of the urban conception in the Bronze Age settlements of the Carpathian Basin has to be more largely approached. The analysis of the fortification system, the way the constructions were structured inside the settlement, the economic activities that took place in the settlement etc, point out that these settlements were on the way of becoming proto-urban entities. In his last synthesis concerning the

Bronze Age society in Europe, A. Harding was against this theory. He believed that only at the end of the Bronze Age period one may talk about a type of organization that could be termed as 'proto-urban'. The complex way in which the habitat has been organised within the settlements – the future tells – clearly demonstrates that they are different from those with only one cultural layer and modest constructions, such as the pit houses. The central position of these settlements is proved, first of all, by the elements of fortification. A political authority controls a well delimited territory. This presumes the presence of agricultural areas, pastures, lumber works and clay sources, but also the control of the main routes, etc. The limited space on which the large majority of tells are based make us presume that the main economical activities (agriculture, animal breeding) did not occur here but within the so-called 'satellite' settlements. The latter were protected by the fortified centres, the tells, which at the same time held a major place regarding the production of items made of metal and bone. In the same time, it can be added that these tells also performed a religious function for these communities.

The question addressed is whether the Bronze Age tells of the Carpathian Basin should be considered only proto-urban or already urban settlements? It is obvious that the tells held the highest position in the development of the prehistoric habitat in this area. Therefore, as K. Kristiansen underlined, the tells must be regarded through their main function as centres of production, distribution and trade, as well as residences for the society elites. They should not be automatically compared with similar types of settlements from other periods or geographical areas.

Session title: ARCHAEOLOGICAL FUTURES: HERITAGE AS RADICAL HISTORY-MAKING

Organizers: Lindsay Weiss, Carolyn Nakamura, Coulmbia University, USA

Discussant/Keynote: Cornelius Holtorf, University of Lund, Sweden

Time: Saturday all day

Room: 213

Session abstract:

In the act of heritage-making, a certain anxiety has emerged, one that centers around temporal chauvinism and the sense that it carries with it a certain moral disposition towards the past and a consequent predictability in the range of forms and narratives. This realization compels us to consider increasingly radical forms of history-making, narrative structures and discursive spaces that may, in turn, open up possibilities for new solidarities and political concerns that might better encompass ever-shifting historical terrains.

As heritage policy and practice is typically bound to state and market derived categories, it often produces a rather predictable set of dualisms, such as indigenous/intrusive, natural/cultural, and tangible/intangible—as well as a fairly predictable set of watchwords: sustainability, inclusivity, and futurity. But even as it is being formed, heritage discourse produces something else, something in excess of these predictable categories, constantly rendering even more vulnerable individuals, practices, events and concepts in its wake. Those who cannot even claim membership in the most marginalized aspects of political life or whose disrupted histories fail to lend themselves to easy narration proliferate at the margins of heritage discourse. They consequently remain un-thought (or at the very least devalued) by virtue of tacit assumptions about who or what may enter into the annals of heritage. In this way, well-intentioned but narrow-sighted heritage covenants and registries threaten to consume that which they should seek to safeguard: diverse modes of thoughtful and generative engagement with our local and global pasts.

It is our provocation here to suggest that Other histories should be brought into the fold of heritage work, not because they locate something to be commemorated or celebrated, but because they present important opportunities for active engagement with the historical formations that orient and transfigure the possibilities of human life, past, present and future. Such a project then demands both a critical appraisal of the institutional bodies and global categories that have come to preside over the forms and conventions of

heritage practice, and a deliberate move towards pursuing heritage as a form of radical history-making. We therefore seek out contributions that explore the diverse ways in which heritage may be critically and creatively thought and practiced, for instance, as a way of making things public (Latour) or as an archiving process (Foucault, Derrida). What are the interfaces, networks, mediations that have allowed pasts, events and things to be made public under current heritage conventions and how might we imagine this work differently? For instance, how might artists and artistic forms be brought into the orbit of heritage practice in the difficult task of introducing and circulating more fluid and accessible (rather than petrified and removed) heritage forms to and within a diverse public constituency? The collaboration between art and heritage might work to de-alienate people who would otherwise perpetuate a solemn break between art (as subjective experience) and history (as scientific objective knowledge) in their understanding of various cultural forms. How might this relationship productively refigure concepts of preservation, mobilization, education and community in heritage contexts?

Paper abstracts:

CULTURAL HERITAGE IN KOSOVO/A AND THE LANDSCAPE OF EXCLUSIONS

Ana Bezic, Stanford University, California, USA

The conceptualization of cultural heritage and its protection has undergone a fundamental transformation in the policy world of UNESCO since the 1970s. Integration of cultural heritage protection and rehabilitation into comprehensive planning and legislative projects has since moved discourse of heritage from knowledge, esthetic pleasure and economic value into the language of property. Within multiculturalists discourse, the term cultural property has only reaffirmed notions of 'resources', 'corporeality', thereby privileging one characteristic of the object often to the detriment of others.

The enduring force of such a discourse is aggressively shaping the landscape in Kosovo/a today. Grasped between international organizations development mechanisms and local government reticence cultural heritage has come to operate as a verb in Kosovo/a's landscape of recognition, democracy, tolerance and human rights. This paper traces the policy work of cultural heritage in Kosovo/a in the last decade and the alternative scene composed of artists and academics that is emerging in the midst of the status negotiations whose interventions activate heritage ethics and articulate culture as a process not a policy.

COULD A BRAND-NEW HOUSE BE THE PRESERVED FORM OF OLD HOUSE?

Gen Fujii, University College London, UK

Gjirokastra, a World Heritage city in southern Albania famous for its Ottoman built environment, has been facing severe problems in the preservation scheme. As a result of land restitution, more and more dwellers are constructing new houses closer to the new economic centre where they have repossessed the land confiscated during socialist period, leaving unconventional vernacular houses and let it deteriorating. On the contrary to the disappearance of physical reference point, the cultural and social authenticity as autochthonous inhabitants amongst the local people seems to be maintained if not increasing. Instead of preserving the original built structure, they enhance their reference point of authenticity in reproducing the 'traditional space' by duplicating certain physical features of the motherhouses into the new houses.

The objectivist norm of universal recognisability has been the major criticism towards the promotion of heritage industry (Rowlands 2002; Brown 1998; Hall 2000; Lowenthal 1996; 1998). My argument tackles this issue by asking whether the socially and culturally embedded notion of authenticity can be recognised without preserving the original built structure, but transcending it to newly constructed houses. I regard this transcendental notion of authenticity amongst the people in Gjirokastra as *longue duree* by applying Alfred Gell's concept of 'distributed objects' (1996) where, like the notion of *oeuvre*, the changes and manipulations have always reference points in the past and the present status is always pointing towards the future.

CULTURAL RESOURCE MANAGEMENT IN SOUTHEAST EUROPE: THE EXAMPLE OF ALBANIA

Michael Galaty, Millsaps College, Mississippi, USA
Ols Lafe, Albanian Institute of Archaeology

As a small, developing nation, Albania faces huge challenges in terms of managing its cultural resources. Threats to the archaeological record include unregulated development, landscape degradation, and looting. Some of these threats are being met, but protection of archaeological resources is, by and large, uneven. There is the need (and the potential), though, for Albania to improve its system of cultural resource management, and thereby set a positive example for the rest of South East Europe, in particular because the country is becoming more dependent on tourism, including cultural and historical tourism. In this paper we cite examples from southern and northern Albania, and focus on cultural resource management in one high mountain valley, that of Shala in the Albanian Alps.

THE NORTHERN CITY EXHIBITION: PERCEPTIONS OF THE HISTORIC ENVIRONMENT IN POST-DEVOLUTION SCOTLAND

Angela McClanahan, University of Glasgow, Scotland, UK

The conservation and interpretation of historic remains has become widely viewed as a set of highly constructed cultural practices that are worthy of ethnographic scrutiny. However, much heritage management literature continues to present the relationship between identity and 'heritage' as self-evident, intrinsic and unproblematic. This paper aims to demonstrate how visual culture can be used by ethnographers to gain insight into how people perceive and understand the historic environment as embodied beings, and the role of the material past in the production of place and identity.

The Northern City exhibition, commissioned by the Glasgow-based design museum and gallery The Lighthouse, is comprised of four mixed and multi-media installation pieces that focus on the historic city centre of Edinburgh. All of the works provide visual critiques of the 'stable' surface appearances of the city, a 'World Heritage Site' that is subject to strict conservation and planning policies based on 'the picturesque', and the 'anxious' social relationships and cultural practices that underpin everyday life. The exhibition thus highlights the complex and seemingly contradictory nature of 'seeing' and experiencing a built environment that is legitimated and presented on the one hand as 'authentic' and unchanging, and on the other, a contemporary city 'on the move', and subject to the tensions and struggles of 21st century 'globalised' society.

FIGURING/FIGURINE WORK AS A RADICAL HERITAGE FORM

Carolyn Nakamura, Columbia University, New York, USA

This paper considers the possibilities of a thinking heritage practice differently, using the specific example of figurine work. I submit that if heritage is to mediate a truly sustainable and open relationship between pasts, presents and futures, then it must embrace more radical notions of what and how it conserves, articulates and mobilizes. Instead of pursuing heritage practices as grounded in the linear model of historical fact and narrative and state-derived covenants, what if we pursued these forms as grounded in the more reticular and specular, and indeed personal, modes of magic and art? Both magic and art serve to remember and refigure both esteemed and abject cultural formations. And I argue that there is great potential in explicitly articulating these kinds of 'logics' and practitioners with heritage work, especially in their ability to preserve, mobilize and communicate various historical ideas and forms while variously engaging the subjective experience and collective memory of the heritage viewer/consumer.

I explore the possibilities and consequences of such a project using the example of figuring/figurine work. While the figurine form is well-known to most groups, its social status and salience are always culturally specific and often diversely constituted. I consider Antony Gormley's Turner prize winning "Field" installation (1991, 35,000 clay figures made with the Texca family of bricklayers in San Matias, Cholula, Mexico) in relation to the ideas outlined above. Through this analysis, I gesture towards a radical heritage practice that embraces both the traditional (e.g., monuments, natural and cultural resources) and non-traditional (e.g., commodity histories, marginalized groups, organs) in its work.

DIAMOND FEVER

Lindsay Weiss, Columbia University, New York, UK

This paper discusses the heritage of the diamond. The story of the South African diamond rush is a story that has typically been passed down to us primarily through the lens of Marxist historiography. These historians described the diamond fields of the late 19th century as a story of proletarianization and cheap labor, marking the imperial policies of late colonialism. Today, debates on the nature of the extralegal and seemingly supra-political reach of global corporate networks call for a reexamination of these global events of the late 19th century, and it is arguably by tracing the material routes of the diamond, both licit and illicit that best capture the political and social dynamics at work. Specifically, this paper centers on the possibility of establishing the cartography of the diamond as an extra-national and global form of heritage-making, one that seeks to better articulate the interstices of materiality, political communities and globalization.

ABOUT THE MEANING OF GAPS, DISINFORMATION AND ABSENCES IN COGNIZANCE

Anna Zalewska, Archaeological Institute, Maria Curie-Skłodowska University, Poland

In analyzing examples of reasoning in knowledge construction, the ways in which the “unknown” is explored, exposed or/ and hidden are worth attention when considering archaeological futures. When some artifacts or events are encountered as unknown, then their “unknownness” is liable to be an experiential problem, but, if having some “percept”, the “inability” to present the clear picture of the past can be both fruitful or fruitless (depending on social use).

I risk assumption that the past can be compared to the “half open being” where the “condition of being” is shaped not only by the natural post depositional processes but also by sometimes hidden agendas of contemporary circumstances. In my paper [using, among others, the specific examples of exploring national(istic) functioning of some historical places and presenting to the general public opinion intellectual constructs/ myths about Slavs’ “ethnic identification”] - the phenomenon created by an imbalance between the observable and unobservable, between experiential and the cognitive, between scientific and commercial will be discussed. The mechanisms traced within local scale and case studies will be compared to the more general tendencies that allow “pasts, events and things to be made public under current heritage conventions”. The guiding principle in the choice of the content worth discussion is for me the assumption that we should start from ourselves, from the world in which we live; and only so far as we have a certain grasp of that can we hope to grasp the truth of anything in he past.

Title (not available)

Vojislav Filipovic, Archaeological Institute, Belgrade, Serbia
Slobodan Mitrovic, Graduate Center CUNY, New York, USA

This paper presents a survey of a heavily looted area and documents changes in people’s perception of sacred places and cultural heritage in general over the period of twenty years.In eastern Serbia, on archaeological sites that do not have visible architectural remains, traces of illicit work by people who own metal detectors are clearly visible. Literally all eighty surveyed sites were pitted. Many crevices in rocks and caves are considered to be the “pointers” to hidden treasure, and these are frequently blasted with dynamite, or worked on with bulldozers and backhoes. Abandoned churches, as well as the ones still in use, old church-schools, votive crosses, old mills, and old oak trees are all the target of self proclaimed “goldsmiths” of the region. In particular, the area of Svrljig (pronounced Svehr-liegg) attracts looters from places further away, as it is the most poor and depopulated. These institutionalized goldsmiths even see archaeologists as colleagues, and offer their help and partnership.

Reverence for sacred places, local mythologies, oral histories, and plain fear kept people away from looting, and many accounts suggest that looters were banned from Svrljig villages prior to the 1990s. Recent wars in the Balkans, poverty-stricken villages that are dying out, perilous lack of regulations, demand for antiquities from abroad, and heavy institutional corruption opened the whole area of eastern Serbia to looters who work in well organized teams, defy local authorities or simply work together with them.

INVESTIGATING PERCEPTIONS OF HERITAGE ACROSS THE GLOBAL LANDSCAPE: AN ANALYSIS OF CASE STUDIES FROM FIVE CONTINENTS

Ezra B.W. Zubrow et al., University at Buffalo, The State University of New York, USA

Heritage is a universal. People from many cultures across the world share an interest in their past. However, the meaning varies by time and by place. For example, in some places the past is owned by the individual as private property; in others, heritage belongs to the community. For still others, heritage belongs to the national state in forms of public property. Finally, there are some populations that believe heritage need not belong to anyone but belongs to the humanity as a whole. Confrontation over heritage often shows the infinite resilience that people are able to bring to bear when articulating their support or opposition to the established order.

This study examined every story from newspapers, radio, television, and blogs concerning heritage from 4500 media outlets from around the world for four months. A neural network program was used to analyze the patterns of concepts of heritage in all of these stories. This study reports the different patterns by continent, by type of nation, and by level of economic development, as well as by a range of social and cultural variables.

MULTIPLE IDENTITIES; MULTIPLE BELONGINGS, CHALLENGES FOR THE FUTURE OF SHARED PASTS

Carsten Paludan-Müller: Director General NIKU, Norwegian Institute for Cultural Heritage Research

Modern history (archaeology included) is born out of the modern state and its need to legitimize its own existence if not least in the configuration of the nation state. Today, it has become increasingly necessary to question the adequacy of the nation state as the organizing principle of societies where multiple identities are meant to cohabitate.

Such an inquiry must necessarily also have implications for the way we work with the historic dimension. Three types of implications will be addressed here.

- Firstly, I will look on the political and ideological construction and expansion of the nation state and its physical manifestations.
- Secondly, I will look at the logics of competing historic narratives as drivers of conflicts past and present.
- Thirdly I will present suggestions as to what types of values could be retrieved from the past as founding principles of a contemporary society with citizens of multiple identities.

TRANSITIONAL ARCHAEOLOGY IN TRANSITIONAL COUNTRY

Dimitrovska Vasilka, Macedonia

The independence of Macedonia after the dissolution of Yugoslavia has contributed for political reality to reflect in many fields, including archaeology. The break-up with the tradition to which Macedonian archaeology was linked both methodologically and conceptually for almost 50 years made it necessary for it to become self-reliant. Lacking experts, unable to produce new professionals, or introduce new traditions, in a region marked by conflict due to its multi-ethnic nature, the results reflected in Macedonian archaeology in terms of a lack of basic excavations, as well as in the absence of multidisciplinary research. Stuck in the past, it would probably be helpful in this process of transition to do a complete reevaluation of Macedonian archaeology as a whole, including certain periods which outdated chronology needs to be rejected or confirmed in the light of new findings, international trends and hypotheses. This paper will present an overview of Macedonian archaeology in the past 20 years, and the challenges it is facing after gaining independence from former Yugoslavia. It will present views that reflect the current condition in Macedonian archaeology, expressed in terms of statistical analysis.

CULTURAL HERITAGE MANAGEMENT AND ITS CHALLENGES IN MACEDONIA

Andrijana Dragović, Nikica Korubin, Macedonia

The contemporary standards in the archaeology in the Republic of Macedonia are challenge for all those involved in discovering the past. The past of 6000 so far registered archaeological sites, not nearly registered according to the contemporary standards. The current condition on the "field" is a challenge for the civilization and its way of thinking. Illegal digging allover, trade with most valuable antiquities (with an astounding number of more then a million objects taken from Macedonia since 1991), lack of clearly defined national strategy regarding the cultural heritage, unprotected sites by any means, ignorance of what the cultural heritage actually is and about what is its position in the contemporary world, archaeological excavations not always professionally realized speaking from field, cabinet and intellectual point of view, institutional competency not clearly defined. In fact, a world of total relativism where the standard and the principle are not the things each research aims for, but a status quo situation where the responsibility is avoided, and the actual problem minimized.

In such circumstances MACAR (the Macedonian Centre for Archaeological Research) commenced its project whose first part was the seminar for presentation of the European standards for cultural heritage management based on the European convention on the protection of archaeological heritage from Valetta. The seminar encountered all the aspects of the process non-existing in Macedonia regarding the cultural heritage management in all society levels: inclusion of all relevant institutions, planning, concept, guidance and presentation of the archaeological heritage and not just a simple excavation where the results are almost never interpreted. The sessions and the workshops were led by 6 British experts from different institutions and levels of cultural heritage management.

The seminar was the first of its kind in Macedonia, moreover the first one treating one topic and the first one held by foreign experts.

The seminar is MACAR's attempt to change the opinion on the archaeology and the cultural past and to surpass the image of it from the 19th century, unfortunately still present in Macedonia.

This paper's aim is to present the new initiative for managing the cultural, especially the archaeological heritage in Macedonia according to the well-defined European standards which on the other hand is a pioneer step in the Republic of Macedonia.

Session title: **BODIES IN PIECES: THE CHANGING RELATIONS BETWEEN BODY PARTS AND BODIES WHOLE**

Organizers: Marie Louise Stig Sorensen, Katharina Rebay, Jessica Hughes
University of Cambridge - Leverhulme project - Changing Beliefs of the Human Body

Time: Saturday all day

Room: 223

Session abstract:

Is the whole more than the sum of its parts? Questioning Aristotle's famous statement, we want to investigate the tension between the human body as an integrated whole and a collection of constituent pieces. Body parts may stand metonymically for whole bodies, but through fragmentation and isolated representation, their meanings can be altered. Although body parts lose their original function when disarticulated from their whole, through their separation they can gain additional significances as well as alternative values and meanings. For instance, isolated body parts can become relics, objects of exchange, symbols of fertility, or indications of bodily malfunction.

Case studies in different periods and geographical contexts will include: the emphasis and significance of particular body parts in the Early Bronze Age, cremation as a process of fragmentation in Later European Prehistory, and votive body parts from healing sanctuaries in the classical Greek world. The broad range of

examples will enable us to compare social practices cross-culturally, exploring the changing meaning of bodily fragmentation over time and space.

Like last year's EAA session on 'Knowledge, Belief and the Body', this session arises from the broader context of the Leverhulme project 'Changing Beliefs of the Human Body' based at Cambridge University. We welcome participants from all disciplines, including archaeology, classics and anthropology, in order to approach the practice of bodily fragmentation from all angles.

Paper abstracts:

HEADS, SHOULDERS, KNEES, AND TOES: BODY PARTS AND PARTED BODIES IN THE MESOLITHIC-NEOLITHIC OF THE BALKANS AND WESTERN ASIA

Preston Miracle and Dušan Borič, University of Cambridge, United Kingdom

The burial record of the Late Upper Palaeolithic to Neolithic periods in Europe and the Near East contains many more body parts than "complete" bodies. These body parts can occur on their own, in association with other, disarticulated parts, and/or alongside complete skeletons from a wide range of depositional contexts. These parts have been considered from various perspectives, including burial rites, grave goods (e.g. "trophy" skulls), grave disturbances and site formation processes, the presencing of ancestors, and more recently, the distribution of personhood.

Here we describe the special treatment of extremities, including heads, hands, and feet from the mortuary records of the Balkans and Western Asia.

In particular, we examine how these parts inform on body concepts, including body boundaries and relationship between parts and wholes, and ultimately the question "what constituted a body?" in the past.

"BURY ME WHOLE" – DEVIATIONS FROM WILLIANCE LEAP'S WILL IN LATER BALKAN PREHISTORY

John Chapman, Bissierka Gaydarska, University of Durham, United Kingdom

According to a popular AD C19th North Yorkshire legend, after a certain Mr. Williance Leap lost a leg in a fall, the initial separate burial of the amputated limb was supplemented, at his death and according to a desire expressed in his will and recorded on his tombstone, by the re-unification of the remainder of Leap's body with the errant leg. This desire to be whole and immaculate in death was strong in the Modern period but, in later Balkan prehistory, it was a regular social practice for the survivors to manipulate the body and body parts of the newly - (and not-so-newly -) dead in a variety of ways, invoking such concepts as fragmentation, removal, re-combination, substitution and re-integration. The extent to which these practices and concepts created a specific kind of enchained personhood rather than simply the denial of individual identity will be explored through a diachronic analysis of data sets ranging from intra-mural burials on Early Neolithic tells, cemeteries from the later Neolithic and Copper Age and barrow burials from the beginning of the Bronze Age. The importance of the mortuary domain is the widespread occurrence of contexts that can be argued to be more 'closed' than most settlement contexts. These examples of body sub-division will also be juxtaposed with the common practice of deliberate object fragmentation and re-use of fragments 'after the break', which can be documented from inter-site re-fittings and the absence of object parts from totally excavated sites in many time/places in the past (see Chapman & Gaydarska, 2006 *Parts and wholes: fragmentation in prehistoric context*. Oxford: Oxbow Books).

PARTS TO A WHOLE: MANIPULATIONS OF THE BODY IN PREHISTORIC EASTERN MEDITERRANEAN

Kirsi O. Lorentz, University of Edinburgh, United Kingdom

All human groups face the issue of how to dispose a dead body. Cross-cultural variation in burial pathways is extensive, ranging from primary, one-off disposal, often with ritual elaboration, to complex secondary manipulations of the dead body and/or its parts. This paper explores processes of bodily

fragmentation in mortuary contexts through a focus on prehistoric Eastern Mediterranean and Chalcolithic Cyprus in particular. Bodily manipulation in the Cypriot Chalcolithic is further explored through anthropomorphic depictions. Burial contexts on Chalcolithic cemeteries include intentional deposits of fully articulated, semi-articulated, and fully disarticulated human skeletal remains. Tomb floors contain between one to three fully articulated skeletons in a hyperflexed position, a carefully arranged stack of disarticulated bones, and semi-articulated remains. Most anthropomorphic depictions in Chalcolithic Cyprus can be seen to depict the human body in its entirety. However, figurine shapes suggest a multiplicity of interpretations, including viewing them as singular body parts. Evidence for secondary treatment and manipulation of anthropomorphic figurines throws further light on fragmentation and treatment of the body and its parts. There is clear evidence that the depicted bodies or parts there of, were worn on actual, living bodies, as well as included with the bodies of the dead.

COMPOSING BODIES IN THE COPPER AGE ALPS

John Robb (University of Cambridge, United Kingdom)

Large-scale changes in body representation are visible throughout European prehistory, but it is uncommon to trace how such shifts happen at the local scale of traditions or corpuses smaller scale. This paper compares two adjacent valleys of the Alps in the third millennium BC, Valcamonica and the Alto Adige. In both valleys people participated in widespread third-millennium BC developments such as weapon symbolism and the placement of embodied beings (rock art, stelae, menhirs) in a monumentalised landscape. However, they did so in very different ways. In Valcamonica, the human body was represented as an assemblage of cosmological and biographical citations in ways which overlapped rock art.

In the Alto Adige, as elsewhere in the Alps, the human body was represented as a set of fixed, formalised relations between defined zones of a standardised body. This paper traces the history of this distinction, its relationship to the body composed in life (through ornaments and gestures) and in death through burial, and its relation to social personhood.

LIVING IN DIVIDED BODIES: BRONZE AGE BODY PRACTICES

Marie Louise Stig Sørensen, University of Cambridge, United Kingdom

The body always has the potential for being simultaneously parts and whole; the whole can be perceived as dividable into or as composed of parts. The cognition of the body involves navigating these possibilities and will involve cultural beliefs about the body. Questions such as "What is the body?", or "In which part of the body reigns the person; is it in the stomach, the heart, or the head?", or "Which body parts matter most?" are all cultural reflections on the very substance and experience of bodies – and the reflections they hint at are common throughout history and in ethnographic case studies. The body as dividable and divisible is a common conception, and this and similar understandings provide basic metaphors used for the understanding of society.

This paper discusses how the presentation of the body, the dressing and attiring, during the Early and Middle Bronze Age in Europe may be used to consider the contemporary conceptualisation of the body, and of differences between bodies. Is the Bronze Age body emphasised and presented as a composite structure? And if so, which are its main parts? Furthermore, how may these divisions and the body zones that they materialised affect the functioning body? Did some of the cultural perception of the normative body prevent comfort and free movement of some body part? In short, looking at the various emphasis, adornments, and performative dramatics that are expressed throughout the Bronze Age, this paper aims to speculate upon whether a distinct body ontology was present during this period.

AGEING AS DISINTEGRATION AND FRAGMENTATION

Jo Appleby, University of Cambridge, United Kingdom

The process of human ageing is one in which the body undergoes a process of deterioration which can be seen as both disintegration and fragmentation, and which can be observed on the human skeleton. During the ageing process, some body parts deteriorate and disintegrate (for example, the loss of bone

mass which leads to osteoporosis), whilst others may be lost altogether (for example teeth and hair). The body thus loses its sense of youthful completeness. How should we understand this changing physicality of the body? Does losing certain body parts mean that bodily boundaries become less distinct? Do lost parts of the body cease to be a part of that body and do they change ideas about what that body is?

This paper aims to address the problem of the disintegration of the body in old age through a case-study of ageing in the Early Bronze Age of Lower Austria. It will be argued that the fragmentation of the body itself is counteracted by an emphasis on bodily completeness and elaboration in the dressing and the disposal of the dead body. This gives rise to a situation where the most aged and therefore apparently disintegrated body is often the most elaborately buried.

CREMATION AS FRAGMENTATION IN LATER EUROPEAN PREHISTORY

Katharina Rebay, University of Cambridge, United Kingdom

In this paper cremation is addressed as a process of fragmentation rather than destruction. The significance of body parts and whole bodies will be explored through two main themes: the relationships between bodies and objects after the cremation and the treatment of cremated bones in cremation graves.

Objects that were important for constructing and signifying identity in life, such as ornaments and weapons, can be treated in a variety of ways during a cremation burial. Close relationships between bodies and objects can be taken apart or maintained or deliberately emphasised.

Cremation does not necessarily destroy the sense of a bodily entity, which is evident by how the burnt remains are treated and graves are constructed in Later European Prehistory. The survival of the idea of a body, however, does not mean that the complete recovery of all cremated bones was important and desired. The archaeological evidence proves quite the reverse. In most cases, only a part of the body ended up in urns or is buried in pits after cremation, and usually only a non-representative amount of bones is found in the graves. Lack of preservation, site formation processes or problems with bone recovery do not provide a satisfactory explanation. So does this mean the deposition of the whole body was no longer crucial for Bronze and Iron Age funerary rites and that the burial of body parts sufficed?

TRANSFORMATION OF PERSONS AND THEIR BODIES: ARCHAIC BELIEF SYSTEMS AND THE DISARTICULATION AND REDEPOSITION OF SKELETAL REMAINS AT CISTERNA GRANDE (CRUSTUMERIUM, ROME, ITALY)

Ulla Rajala, University of Cambridge, United Kingdom
Heli Arima, University of Helsinki, Finland

In this paper we will discuss the different religious beliefs and ideas of personhood indicated by the cases of human skeletal disarticulation and re-deposition in the Archaic chamber tombs at Cisterna Grande. The Remembering the Dead project has excavated in this mainly Archaic cemetery at Crustumerium (Rome, Italy) for four years. During the excavations we have revealed new information on the variability related with chamber tombs and inhumations. Archaic tombs are less visible in central Italian funerary research partly due to the rarity of the research projects dedicated to their study. Therefore, our contribution will help to understand better cultural attitudes represented in ritual practices.

The few excavations in Archaic cemeteries show that Archaic communities had differing local burial practices but also shared some customs on a regional scale. Although the dominant practice was inhumation, cremations are not unheard of, and thus, the motives for this fluidity between completeness and fragmentation will be debated. In the case of inhumations, the different transformations of bodies and persons resulting in redeposition and rearrangement of skeletons are to be discussed in the light of the findings at Cisterna Grande and elsewhere in central Italy.

PORTICOS, PILLARS AND SEVERED HEADS: THE DISPLAY AND CURATION OF HUMAN REMAINS IN THE SOUTHERN FRENCH IRON AGE

Ian Armit, University of Bradford, United Kingdom

The Iron Age of Mediterranean France contains a wealth of evidence for the removal, curation, display and representation of the human head. Previously taken as a manifestation of a distinctively 'Celtic' interest

in heads, this material has recently been subject to reassessment. Oppida such as Entremont, Glanum, La Cloche, and sanctuaries such as Roquepertuse, have yielded numerous sculptural representations related to headhunting in its broadest sense, as well as skeletal remains. However, the very diversity of this material suggests that it does not reflect a single, unchanging 'cult of the head', but rather a complex and evolving set of beliefs and practices which can be interpreted in the light of wider social changes in the region. A re-examination of the porticos with head-shaped niches at Roquepertuse, for example, suggests that the monument was constructed to receive heads which had already been curated for some time. The plastering and painting of these skulls, seems to have been intended to subsume them within the design of the porticos, blending previously disparate 'objects' within a unitary design. At the slightly later oppidum of Glanum, pillars and porticos again bear head-shaped niches but here show different fixing mechanisms which suggest that only the preserved faces were displayed, rather than the complete head or skull. This may suggest a desire to preserve some vestige of the individuality of the severed head. These sorts of changes in the modes of head preparation and display parallel developments in the associated iconography, where the depiction of headhunting alters over time. The values and meanings attached to heads appear to shift with the changing social circumstances of the Later Iron Age in the region.

VOTIVES BODY PARTS IN CLASSICAL GREEK SANCTUARIES

Jessica Hughes, University of Cambridge, United Kingdom

The models of individual body parts which were dedicated in sanctuaries across the ancient world represent a valuable and under-explored resource for studying ancient beliefs about the human body. In this paper I offer an initial reappraisal of the iconography and significance of votive body parts from Greek sanctuaries of the fifth and fourth centuries BC, the period in which the dedication of body parts became widespread as a cult practice on the Greek mainland. Focusing in particular on one fourth-century BC relief from the Athenian sanctuary of Asklepios, the god of healing, I examine the form and display of the votive body parts, drawing attention to their iconographic and structural parallels with images of the mythical sparagmos on fifth-century BC Attic vases. On the basis of this analysis, I put forward a reading of the votive body parts as effecting the fragmentation or dismemberment of the dedicants' bodies. Such a reading is intended to complement, rather than challenge or replace, those traditional interpretations which see the representation of the body part as drawing attention to a localised part of the body for the purpose of indicating sickness or healing, or, in the terms of Walter Burkert, as a pars pro toto 'sacrifice' for the health of the (whole) body of the dedicant. Nonetheless, I argue that this appeal to the imagery and language of dismemberment has profound implications in the context of the sanctuary space, both in mediating relations between the mortal and divine spheres, and, in some cases, in the reification of contemporary beliefs about the human body in sickness.

BODY AND SELF (IN THE LATE IRON AGE/VIKING AGE OF SCANDINAVIA)

Lotte Hedeager, University of Oslo, Norway

My paper will contextualize the human "self" in the Late Iron Age/Viking Age of Scandinavia. The iconography demonstrates that there existed other perceptions of the "self" than modern and post-modern western notions of the individual. During the late Iron Age bodies are presented in separate pieces or as human bodies amalgamating with animals. In addition, archaeological data as well as the Old Norse text demonstrate that animals and humans have been subjected to the same ritual treatment and thus played corresponding roles in religion. Therefore a modern perception of the human body as a structural category in opposition to animals might not be relevant if we wish to understand body and self during the late Iron Age. During this period a fragmented human body was more than the sum of its parts and the human "self" was a hybrid embodiment.

THE POWER OF BONES: CORPOREAL RELICS IN THE MEDIEVAL CHURCH

Deirdre O'Sullivan, School of Archaeology and Ancient History, Leicester, United Kingdom

The veneration (not the worship) of the physical remains of dead saints formed an important element in medieval piety. The tradition stems from the days of the early church when the remains of the first martyrs

were treasured in the catacombs, but it became much more prominent from the ninth century, when relic cults were actively promoted by the papacy, and bodies were often moved around (translated), and skeletons broken up.

By virtue of their association with God's Elect, corporeal or primary relics created a locus or place of sanctity, to which pilgrimage could be made. Saints were already in heaven, and could intercede with God on behalf of the suppliant. Relics were therefore tied to a belief in the possibility of miracles, signs of God's direct intervention in the human world. More usually, however, they served as a focus for individual devotion, linking the supernatural with human concerns.

This paper will explore the signification of corporeal relics, arguing that tactile nature of medieval contact created an intimacy with the holy that was of considerable potency for ordinary people.

HEART BURIAL IN POST MEDIEVAL GERMAN SPEAKING EUROPE

Estella Weiss-Krejci (University of Vienna, Austria)

In late sixteenth and early seventeenth century German speaking Catholic Europe, during the Counter Reformation, tremendous political and ideological transformations coincided with significant dead-body manipulations. In an effort to reclaim and revalue sacred places and sacred history, the Catholic reformers not only re-deposited saintly relics and restored shrines, which had been destroyed by Protestants, but also promoted the separate burial of the inner organs of ecclesiastical princes, royalty and war leaders.

Especially the separate burial of the heart became increasingly important.

The introduction of new rituals such as the Devotion to the Sacred Heart of Jesus in the seventeenth century additionally turned the heart into a highly sacred and very special symbol. The association of the heart with dead royal bodies promoted the development of a new relation between religion and the ruling authorities.

IN THE PURSUIT OF KNOWLEDGE: DISSECTION, POST-MORTEM SURGERY AND THE RETENTION OF BODY PARTS C.1750-1850

Annia Kristina Cherryson, University of Leicester, United Kingdom

By the mid-eighteenth century, human corpses were an integral part of medical teaching. Dissection of the dead was considered a vital component of anatomical studies, while surgical techniques were perfected on the recently deceased. Body parts, or in some cases the whole body, were retained for reference as part of anatomical collections. This paper will examine the archaeological evidence for dissection, post-mortem surgery and the retention of body parts in Britain between c.1750-1850.

Prior to 1832, only the corpses of executed murderers could legally be used in medical teaching and research, with the medical partition of the body seen as continuing punishment beyond death. This comparatively small number of bodies was insufficient to meet the requirements of the teaching hospitals and private anatomy schools, resulting in a flourishing black market in stolen corpses. The Anatomy Act of 1832 attempted to resolve this problem by giving the medical profession access to the unclaimed bodies of the poor. The majority of excavated dissected remains have been recovered from prison and hospital cemeteries and the treatment of these remains will be examined as means of assessing contemporary attitudes towards the dissected corpse as an individual, a teaching resource and a commodity.

Session title: A CONNECTING SEA: MARITIME INTERACTION IN ADRIATIC PREHISTORY**Organizer:** Stašo Forenbaher, Institute for Anthropological Research, Zagreb, Croatia**Time:** Saturday all day**Room:** 143**Session Abstract:**

Researchers have long realized that the Adriatic Sea was a medium of communication rather than a barrier in prehistory. Hemmed in between the Balkans and peninsular Italy, with its head in the Alpine foothills and its foot pointing towards the Aegean, the Adriatic touches different worlds.

Archaeological records frequently show that the coastal zones on both sides of the Adriatic had more in common with each other than with their hinterlands. Whilst the Adriatic is a relatively small and enclosed sea, travelling across its waters still presented serious hazards and took skill and knowledge. This has been addressed by recent work, both above and below the waterline, challenging our timehonoured notions of when, how and why the people living on the Adriatic shores, took to the sea.

This session aims to cover the period from the earliest evidence for navigation to the end of prehistory as signalled by Greek colonization. During this period, the region witnessed several episodes of radical transformation, including a switch from foraging to farming and the emergence of social elites. This session aims to question the role that maritime communication played in these momentous events. Other themes that we would like to broach in this session include:

- How geography, weather patterns and climatic change influenced the early Adriatic navigators.
- How prehistoric maritime travellers may have viewed the comparative roles of the mainland and the islands.
- What the social, economic and technological underpinnings of maritime travel were, and the knowledge which was involved.
- Who was travelling across the Adriatic and why they initially decided to travel across water.
- How distributions of raw materials and pottery styles may inform us about maritime travel and how this changed over time resulting in the cultural diversity and coherence that characterized this region throughout most of prehistory.
- Finally, how the situation in the prehistoric Adriatic compares to other parts of the Mediterranean, and to other inner seas elsewhere.

Participants will offer new insights relevant to some of these questions, augmented by the results of recent fieldwork and current theoretical developments.

Paper abstracts**THE RELATIONSHIP BETWEEN MIDDLE PALEOLITHIC OPEN AIR SITES IN ZADAR HINTERLAND AND MIDDLE PALEOLITHIC OPEN AIR SITES ON ZADAR ARCHIPELAGO**

Dario Vujević

This paper explores the possibilities of connection of the open air sites in Zadar hinterland, that have been represented in the literature by the general term Ražanac, with sites on the islands of Dugi Otok and Molat. They correspond closely according to raw material choice, as well as typological and technological characteristics. They also have the same character open air sites bound to raw material source. These relations give us wider area of mobility, with findspots that should not be studied as a series of separate sites, but as a system, or several systems, with hunting camps, raw material procurement camps and main camps. Distances are small, and they correspond to other European regions where communities migrate up to 100 km. Another important fact is that sites on the islands had to be formed when sea level was low, which makes the sea level chronological determinant for them as well as for sites in the hinterland. These regions could be in contact with the shore only after the sea level had dropped under 45 m below its current

level. If we neglect two shorter periods of lower sea level between 120.000 and 100.000 years before present, only 65.000 before present starts a long period when the sea level was less than 45 m, so it can be concluded that these sites were formed after that period. Comparisons with other European regions confirm such thesis, as well as characteristics of the finds such as small dimensions, dominance of scrapers and denticulation of artifacts which point to final phases of Mousterian.

BEGINNINGS OF TRANS-ADRIATIC NAVIGATION: A VIEW FROM VELA CAVE

Dinko Radić

Navigation in southeastern Europe begins immediately after the end of the Glacial period (some 10.000 BP), when, due to global warming, the sea level rose for almost a hundred meters. The earliest of the ancient sailors navigated throughout the Mediterranean, but here our attention is primarily focused on connections between Apulia and Dalmatia. The main reasons for sailing in those days were search for sources of raw materials, exogamous marriage partners, and mutual reciprocities of technology and various experiences.

Appearance and the construction of the primary navigational means represent an interesting problem. Studies are at the very beginning, so it is incomparably easier to establish connections between destinations (for example Cyprus and Palestine, Melos and Peloponnese, the islands of Palagruža and Korčula) than to grasp the construction of the ancient vessels, remains of which have not been preserved.

CHANGES IN SEAFARING AND USE OF THE SEA DURING NEOLITHIC: A VIEW FROM ISTRIA

Darko Komšo

Although the tradition of excavating Neolithic in Istria is older than 50 years now, only the recent excavations yielded data connected with seafaring and use of the sea. Kargadur is a Neolithic site located on the south-eastern coast of Istria. It consists of 2 phases, the Early Neolithic characterized by impressed ware, and Middle Neolithic characterized by the "Danilo" pottery. The difference between the phases is not just based on stylistic characteristics of pottery decoration, but also in the changes in subsistence strategies. One of the striking differences is the change in the perception and the use of the sea.

During the Early Neolithic phase of the settlement, the use of local resources was predominant. The sea use was confined to food collecting and fishing, which is evident from the abundant seashell and fish remains, as well as several bone hooks. During the Middle Neolithic phase of the settlement, situation changed drastically. The sea was still used as the food resource, but the presence of exotic material, such as obsidian, exogenous flint and polished axes suggest the exchange through seafaring with the distant areas.

PROCUREMENT OF RAW MATERIALS FOR LITHIC ARTEFACTS IN THE PREHISTORY OF MIDDLE DALMATIA

Zlatko Perhoč

Topics of this research project are: (1) provenance of the raw materials for lithic artefacts that were produced at the archaeological sites within the region under study; (2) sourcing and transport of the raw material; (3) question of provenance of the imported lithic artefacts.

The project principally refers to chert and its varieties. Numerous outcrops of the siliceous sediment in the region are investigated. The petrographical spectrum of lithic artefacts in the region indicates diverse geographical origin of the raw material and different ways of its procurement and transporation.

The aim of this research is to correlate archaeological sites and rock deposits within and outside of the studied region. Archaeometrical methods and techniques are used in the analysis of raw material provenance.

AROUND AND ACROSS THE ADRIATIC: OBSIDIAN TRADE FROM THE TYRRHENIAN TO TRIESTE

Robert H. Tykot

While early maritime travel in the Mediterranean has been demonstrated by the discovery of Melos obsidian in Upper Paleolithic contexts at Franchthi Cave, and the presence of Mesolithic settlements on at least a few of the larger islands, details about prehistoric seagoing are lacking, especially around and across the Adriatic. In the central Mediterranean, obsidian sources and trade have been well documented for the Tyrrhenian, in part because of the large number of excavated sites where lithic assemblages have been found and studied, especially in Sardinia, Corsica, Sicily, and mainland Italy. But it is only in recent times that obsidian artifacts found at sites along the Adriatic, especially on the eastern shores and on islands such as Susac and Palagruza, have been studied. Chemical analysis demonstrates that the vast majority of obsidian found along the Adriatic came from Lipari, while at inland sites in peninsular Italy a mixture of obsidian sources are represented. This paper specifically addresses the quantity and regularity of Neolithic obsidian trade and distribution around and across the Adriatic, and how it changed over this 3000 year period, with comparisons to other exchanged materials including ceramics and domesticated animals, and suggestions regarding perishable but socioeconomically significant material.

PREHISTORIC CULTURAL CONNECTIONS IN THE NORTHERN ADRIATIC IDENTIFIED USING ARCHAEOMETRICAL ANALYSES OF STONE AXES

F. Bernardini, A. Alberti, G. Demarchi, A. Demin, Manuela Montagnari Kokelj

On the basis of the results obtained in the past, a new research project on stone axes has started some years ago in order to collect and study the geo-petrographical and archaeological data of Friuli Venezia Giulia, Slovenia and Croatia which were culturally connected during Prehistory. Among the analysed artefacts, a group of amphibolic gabbro shaft hole axes has been studied. The archaeometrical analyses (OM; XRF; ICP-MS) carried out on 10 tools mainly from Istrian peninsula but also from Vipacco valley and south west Slovenia show that the most probable source area is Požeška Gora in Slavonia (Eastern Croatia). These data open a new perspective in the exchange systems between the Adriatic and the Balkans during the Copper Age.

FIGULINA WARE AS A MARKER OF ECONOMIC CHANGE IN THE MID-6TH MILLENNIUM BC? NEW DATA ON FIGULINA POTTERY PRODUCTION FROM THE MIDDLE ADRIATIC

Michela Spataro

Archaeologists have always seen *figulina* ware as a prestige item, with striking differences in texture and decoration compared to contemporary everyday pottery. It appeared along both Adriatic coastlines towards the end of the Early Neolithic, and was produced for more than a millennium, throughout the Middle Neolithic. To reinforce the idea that this special type of pot was a prestige/status item, some *figulina* pots have been found together with other exotic finds, such as *Spondylus* beads (e.g. at La Vela di Trento).

In the last few years, *figulina* samples from Impressed Ware sites on both Adriatic coasts, and also from Danilo and Hvar sites in Croatia and recently from a Square-Mouthed Pottery site in Italy, have been analysed scientifically using thin-sectioning, Scanning Electron Microscopy-Energy Dispersive Spectrometry and X-Ray Fluorescence.

The analyses show that the *figulina* ware was made by a more sophisticated method than that used for the ordinary ceramics produced at these sites. The use of local clay sources to manufacture *figulina* ware shows that this technology was widely dispersed, although practised by a few specialist artisans.

ADRIATIC OFFSHORE ISLANDS AND LONG-DISTANCE INTERACTION IN PREHISTORY

Stašo Forenbaher

This presentation explores the proposition that the archaeological record of small, remote islands with scarce resources reflects the intensity of long-distance interaction in prehistory, taking as an example the Adriatic offshore islands. The best represented periods, the early Neolithic and the end of the Copper Age,

correspond to the times of large-scale stylistic unity, the former, of the Mediterranean Impressed Wares, and the latter, of the Bell Beakers. During those periods, radical innovations were introduced over vast areas of Europe, first, a new subsistence economy, and second, a different kind of social organization. In both cases, long-distance interaction would have played a crucial role.

DOWN TO THE SEA IN BOATS: NAVIGATIONAL AND TECHNOLOGICAL CONSTRAINTS ON ADRIATIC SAILORS OF THE COPPER AGE

Timothy Kaiser

The sea does not permit sailors to travel across its expanse without constraint. Winds and currents sometimes permit maritime traffic and at other times they prevent it. Discovering when and where optimal (or even just tolerable) conditions obtained would have been a particular challenge to prehistoric sailors navigating the Adriatic. Refining that knowledge and disseminating it must also have been crucial to the successful maintenance of long-distance overseas interactions. Such interactions appear to have been exceptionally important at several prehistoric junctures, notably the Copper Age. This paper considers how navigational considerations, environmental and technological, may have affected the development of Copper Age networks in the eastern Adriatic.

WHAT IS MOVING AND WHAT IS NOT: ARCHAEOLOGICAL EVIDENCE OF HUMAN MOBILITY ON THE SHORES OF THE ADRIATIC BETWEEN COPPER AND BRONZE AGE

Franco Nicolis

Since few years isotopic analyses have shown that people moved around all over Europe in late prehistory. Archaeological reasoning is traditionally based on the evolution of the cultural setting, but "cultures don't migrate, people do" (D. Anthony). In this paper, a discussion of how archaeological evidence can explain the human mobility in absence of analytical studies on human remains will be presented.

The Adriatic sea, like the Alps, has never been a natural barrier. There is good evidence of long distance interrelations between the two shores of the Adriatic, and beyond, in the mid/late 3rd millennium BC, probably connected with the more complex phenomenon of the Bell Beaker. What does this mean? Displacement of people or dissemination of ideas? But "ideas don't migrate, people do". And why people were on the move? Was the long distance travel "an anonymous by-product of the economic system" (F. Kvalo) or did it have an ideological and political significance (M. Helms)?

SEAFARERS AND LAND TRAVELLERS IN THE BRONZE AGE OF NORTHERN ADRIATIC

Elisabetta Borgna & Paola Cassola Guida

According to several contributions the Adriatic regions would have been involved not only in coast-to coast contacts but also in the network of long-distance relationships that had linked Western Anatolia, the Aegean islands, Greece and the central Mediterranean in the Early Bronze Age (with reference to the Eastern and Aegean chronology).

Did small scale connections on a local level create the framework for a highly directional organized exchange? Or were long-distance exchange activities responsible for the increase in local mobility and tramping? In the paper the evidence for sea travelling is analysed taking into particular consideration the function of monumental architecture in the making of coastal landscapes consistent with sea-faring. Also inland monumental landscapes, such as the setting of EBA burial tumuli in Friuli and Venezia Giulia, Northern Adriatic, may be considered in the perspective of Adriatic mobility, as they seem to reveal a link - both conceptual and cultural - with the monumental seascapes.

PREHISTORIC OCCUPATION OF THE ALBANIAN ADRIATIC COAST

Ols Lefe & Michael L. Galaty

In this paper we investigate patterns of settlement along the Adriatic littoral of Albania, which varied in intensity during different periods of prehistory. We apply a "coastscape" model, as developed by Pullen and

Tartaron to explain occupation of the Saronic Gulf coast of the Aegean Sea in Greece. In Albania, settlements on the coastal plain were strongly tied to settlements located in their interior, mountainous hinterlands. These relationships were largely economic, related to Adriatic trade. This can be contrasted to other Adriatic and Aegean “coastscares”, where the relationships between coastal and interior sites were defined politically, as well.

AN OVERVIEW OF PREHISTORIC SETTLEMENT TOPOGRAPHY AND MARITIME CONNECTIONS ON LASTOVO ISLAND, CROATIA

Bryon Bass, Philippe Della Casa, Branko Kirigin, Dinko Radić, Tea Katunarić

The Augusta Insula Project focuses on the Croatian island of Lastovo. These investigations are part of ongoing archaeological and interdisciplinary research in the southern Dalmatian archipelago conducted under the aegis of the Korčula Archaeological Research Group (KARG). The multinational team for the 2001, 2003, and 2007 field campaigns consisted of archaeologists and geologists from Croatia, Switzerland, the United States, and the United Kingdom. Field studies focus on the application of heritage management practices pertinent to the island’s archaeological and historical resources. The first season’s research consisted of preliminary bibliographic studies and field survey, while the second field season consisted of limited subsurface archaeological testing at the localities of Kaštel and Lučica. The third season focused on more intensive field survey, informant interviews, and data collection. A GIS data base has been developed to examine the inter-relationships of the sites, and their relationships to the regional prehistoric and protohistoric coastal marine setting. The project is similar in scope to the Adriatic Island Project. Eventually, a joint data-base (including Sušac and Pelješac Peninsula) will enable the study of a large group of islands. Such a common data collection approach would be unique to Mediterranean archaeological research.

Session title: NEW PERSPECTIVES ON QUERNS IN NEOLITHIC SOCIETIES

Organizers: Caroline Hamon, Protohistoire européenne, Nanterre cedex, France
Jan Graefe, ArScan Westfälische Wilhelms-Universität, Hist. Seminar, Abt. für Ur- und Frühgeschichtliche Archäologie, Münster, Germany

Time: Saturday all day

Room: 156

Session abstract:

Since the time of the first neolithics, cereals were grounded to flour by querns. Together with the domestication and breeding of animals, the cultivation and processing of plants was one of the basis of the new agrarian way of life. However, the concrete exploration of the basic aspects of cereals processing has only emerged in the last fifteen years. The multiplication of studies at a more or less regional scale has purchased new data concerning the circulation of raw materials, the status of the sites and the economy of subsistence. Today, the study of grindingtools contributes largely to our knowlege of neolithic economy and social organization. This session aims at sharing and discussing the new perspectives of such studies on neolithic grindingtools from all over Europe.

The available studies generally integrate a global survey of the grindingtool aspects and their context of discovery (settlements, pits, cemeteries, hoards, etc...). The purchasing and use of raw materials, the form and size of the tools, their technological and even functional characteristics are now better, yet unequally, documented.

Despite a large range of local resources (sandstones, basalts, granites, limestones), some rocks were chosen on purpose for grinding activities. Therefore, in some cases the material from other regions was imported. The reasons of these importations may be diverse: cultural, economic, symbolic, etc...

SATURDAY

The technological and functional studies of such tools have stressed the surprising complexity of the cycles of reuse and a real diversity in the grinding tasks. New tools and methods of functional identification have been developed in order to make querns speak. The technics of grinding cereals, in terms of gesture and efficiency, have benefited from solid ethnographic comparisons and experimental references. Moreover, the comparisons of the tools and environmental data can help understand the evolution of the grinding technics together with the diet of neolithic populations. Besides, the grinding of diverse plants, of temper or of colourings on neolithic European sites is now admitted and the role of grindingtools in the technical system is more clearly defined.

Recent studies reveal that the status of neolithic querns is not only profane, reduced to domestic use in the households, but also ritual. Querns are often found in funeral ceremonies such as in the Linearbandkeramik cemeteries of central Europe, or in ritual contexts such as the hoards of north-western Europe. A real symbolic seems associated to querns, probably in link with their connection with the diet and the new agricultural economical and social order.

Within this international meeting the uncomplete state of the research on the topic should be discussed. Furthermore, a basis for future research strategies should be developed. Based on querns of the early neolithic, differences in terminology should be pointed out if not clarified. The technological development and function of neolithic querns should also be discussed considering the archeological context. The length and intensity of use of the querns (one generation, one house's life), the localization of the grinding activities (household or collective grinding areas) as well as the supply of raw material should be investigated by a diachronic comparison including the Early Bronze Age.

Paper abstracts:

QUERNS, MORTARS AND GRINDSTONES OF NEOLITHIC SERBIA

Dragana Antonović, Institute of Archaeology, Serbia

Research of Neolithic grindstones, querns and related macrocrystalline stone artifacts in Serbia mostly have been limited to brief notations of presence of this kind of tools sometimes joined with simple description of the objects.

Several classes of macrocrystalline abrasive stone tools have been recognized at Neolithic sites in Serbia: querns, mortars, hand abraders and grindstones. They have shown a variety of forms and use wears. Unfortunately, serious research of use wear patterns have never been conducted for these tools, so the definition of the general types were undertaken only according to form and raw material of an artifact, and sometimes according to ethnographic analogy. Querns are supposed to be used in food production, mortars for mineral pulverization (grinding of pigments, ores, ceramic, shells etc.), grindstones in production of stone, bone and wooden tools and hand abraders either in food and production of objects of hard materials (stone, bone, wood, ceramic). Querns and large grindstones are mostly of the similar shape and they have been differing by archaeologists only by raw material.

Querns, mortars and all kinds of grindstones, mostly fragmented, were the usual finds at Neolithic sites in Serbia, but their position and distribution within the settlements have not been studied.

The beginning of use of querns at the territory of Serbia is noticed at the Mesolithic sites in Iron Gates. Their origin is connected with the sedentary way of life and certainly not with the beginning of agriculture.

TRADE AND USE OF RAW MATERIAL FOR NEOLITHIC QUERNS IN NORTHWESTERN GERMANY

Jan Graefe, Westfälische Wilhelms-Universität Münster, Historisches Seminar, Abteilung für Ur- und Frühgeschichtliche Archäologie, Germany

Basis of a successful grinding of cereals on querns is the raw material. Only a very limited range of rock types were used as querns. The quality of rocks is related to workability, durability and efficiency. The material has to be tightly cemented and the texture roughed with a fine or middle grain size. In neolithic times sandstones, basalts, granites and limestones were used. The hardness of rocks like sandstones depends on the strength of the matrix (carbonate or silica) which sticks the grains like quartz together. Based on a strong wear during the use, it was sometimes necessary to roughen the surface of the querns

using pebbles or hammer stones. Since the geological occurrence of usable material is quite different, in some cases rocks from other regions were imported.

The data of northwestern Germany exhibits that during the neolithic twelve different types of rock were applied. Normally, it was possible to identify the raw material sources, so it is certain that sandstones and granites came to the finding-places from deposits of 5 to 60 km distance. Each region has its typical raw material which is related to the geological occurrence and which is mostly used during the neolithic. Some other types of rock are only once attested as querns.

The procurement of raw material was assured by each settlement itself. There are no differences in form or size of querns between settlements nearby sources and settlements apart. Small flakes of typical raw material from excavated settlements show that the production of querns took place at the houses. It has to be mentioned that the rocks were first examined at the collection point.

The extraction of material for querns must have been done by mining. In some cases only rocks from riverbeds were collected.

TECHNOLOGICAL AND FUNCTIONAL ANALYSIS OF LINEARBANDKERAMIK GRINDINGTOOLS FROM NORTH-WESTERN EUROPE

Caroline Hamon, UMR 7041 ArScan Protohistoire européenne du CNRS, France -

The study of late Linearbandkeramik and VSG-Blicquy grinding equipment (5300-4600 BC) contributes to the understanding of the socio-economic organisation of the first neolithic people from northern France and south Belgium. Grindingtools are generally made of different local sandstones. Despite a great variability of morphology, their dimensions and the stages of their shaping prove that a kind of normalisation has been respected. Three groups of tools can be identified, and may correspond to specific functions.

In order to identify querns' function, traceological principles have been adapted to macrolithictools. A first experimental referential has been elaborated, both for grinding and abrading actions. A more accurate vision of cereal processing is now available: dehushing seems to have been practised on stone querns, which explains partially the lack of mortars at that time. This operation has been realised by uppergrindingtools of smaller dimensions. This study also demonstrates how querns have been recycled secondarily for temper and even colouring processing, as if querns were included in the technical system for more than their pure domestic and dietary functions.

The correlation of the exact function of a tool, of its stage of maintenance or reuse and of its spatial localization in the danubian house brings new data concerning the life cycle of grindingstone equipments at the beginning of the Neolithic. It brings new arguments to the discussion about the symbolic status of these querns. As suggested by several contexts, grindingstones used to be deposited in graves and, at the end of the danubian culture, in specific hoards associated to the domestic area. It reminds us how strong the identity of these first farmers of Europe was connected to their way of life and production.

rites of separation. quern tool technologies, social relations and the becoming of the northernmost TRB

Cecilia Lidström Holmberg, Department of Archaeology and Ancient History, Uppsala, Sweden

The presence and recognition of grinding and pounding tools have a long tradition in archaeology. Despite the early attention, 'ground stone' objects still belong to a rather neglected category of archaeological artefacts, especially within Scandinavian and North-European archaeology.

This presentation aims to discuss some aspects of quern tool technology, social relations and imageries of gender to the rearticulation of culture shaping the TRB in eastern, central Sweden.

In the first half of the 1900's, Swedish archaeologists harshly argued over the Mesolithic-Neolithic transition and the introduction of agriculture in eastern central Sweden, a debate of which of some text lines were luckily never taken into the printers. At Stone Age sites in focus of this debate, some rather big artefacts looking like 'poorly fermented loafs of bread' were found together with pottery and thin-butted axes of greenstone. The struggle continued – were the 'loaf-shaped' artefacts polishing tools or quern tools? Left in the archaeological oblivion for over half a decade, recent technological analyses have positively confirmed that the 'loafs of bread' no doubt are flat/saddle querns.

Current research on 'ground stone' artefacts at Mesolithic and Neolithic sites in eastern, central Sweden show that the saddle quern design appears in the area at the onset of the early Neolithic (c. 4000-3900 cal. BC), closely connected to a material tradition that archaeologists since the 1940's have labelled Funnel beaker- or TRB culture. The saddle quern design; which has its closest parallels in the quern tool technology of the LBK, was appreciated, produced, and used by many TRB communities in the area of study. While Mesolithic peoples no doubt processed plant foods and ochre for pigments using grinding and pounding tools, saddle querns does not exist at Mesolithic sites in the area. Close studies of the *operational chain* involved in the manufacture of quern tools at Mesolithic and early Neolithic sites, however, suggest that the early Neolithic quern technology have roots into the local Mesolithic making of certain axes and polishing tools. The saddle quern design is thus novel for the early Neolithic, while the technology has a local history. From a historical perspective on technology, practice and agency, this technological mix of old and new is, I suggest, a marker for the becoming of the early Neolithic TRB in the region. The becoming of the TRB thus includes the agency of local hunters and gatherers.

During the mid 1990's, several early Neolithic TRB sites were rescue-excavated in the area. With a new-fangled interest in 'ground stone' technologies, saddle querns were now identified and documented in several special contexts of deposition, of which some will be presented. Over 50 saddle quern slabs and loaf-shaped hand stones of arcose sandstone and shiny muscovite-rich metavolcanic rock were for example found at the TRB site Skogsmossen. Apart from a house surrounded with Funnel Beaker materials, this site also contained a small fen located some twenty-five meters away from the house. The fen revealed a large amount of TRB materials, which can best be described as sacrificial offerings. Deposition of saddle querns in the fen compared with the spatial abandonment of querns and other artefacts at the living site show that saddle querns were part of practice of separation. What might be embedded in this ritualisation of saddle querns in the early Neolithic TRB? This will be briefly discussed using some ethnographic examples. Taken together, I will argue that the changing materialities and ritualisations of querns at the onset of the early Neolithic contribute with information on social relations and its dynamic role to the historical and cultural process coarsely called the "Neolithisation".

STRUCTURE OF GRINDING STONES BETWEEN ANATOLIA AND CENTRAL EUROPE

I. Pavlu, Institute of archaeology, Praha, Czech Republic

The classification of prehistoric grinding stones is occasionally subdivided into a number of generally morphologically different artefacts with little respect to their use and way of manipulation. There is a proposal of a very general classification of grinding stones for food processing into upper and lower stones, and grinding stones manipulated by two hands or one hand.

To the contrary it is simplifying another morphological classification, which concentrated on the category of stone with dimples used mainly in the early Neolithic (Wright 1992). This category, commonly occurs in Anatolia during the aceramic period, looses, during the younger Neolithic and Chalcolithic period, its former variability and becomes restricted to mortars and small bowl like stones. At that time lower grinding stones, with defined rectangular working surfaces, also disappear.

The dimensions of full profiles are distinguished from the dimensions of the fragmented examples. The length and width of the upper stones from the older aceramic period on Aşıklı Hüyük (ca 8300 - 7530 BC) is characterised by a strong linear trend, but the dimensions in the Chalcolithic assemblage from Guvercininkaya (ca 5220 - 4680 BC) do not correlate in any important way. Their entire structure concentrates around middle values. The stone structure from the Neolithic settlement in Bylany on the other hand (ca 5300 - 4500 BC) shows considerably high length values while the correlation is similarly low. The upper stones reflect therefore a certain local continuation as well as cultural differences in the remote regions.

Lower stones are sorted according to their size into shaped, unshaped and massive types. The latest are typical for the older settlement at Aşıklı. Traces of wear on them are usually less evident. The relation between length and width of the lower stones is almost identical in different cultures. The aceramic shapes are larger in average. The structure of Central European grinding stones corresponds in dimensions with the Chalcolithic ones in Anatolia.

Bowl like stones occur in small or large versions. Occasionally it is difficult to distinguish between mortar bowl shaped slabs/anvils. Mortars are usually shaped into quadratic forms or only roughly worked natural shapes; their working surface is a regular circle. They are usually quite high since they soon wear off with use and get deeper. Bowl like stones are lower, often very small so that they fit into one hand. They were possibly used for grinding small amount of food or of other materials such as herbs or spices.

NEOLITHIC GRINDINGSTONES IN HESSEN, GERMANY: RAW MATERIAL NEED AND PROCUREMENT OF LBK SITES

Britta Ramminger, Universität Hamburg, Archäologisches Institut, Germany

Querns and whetstones represent together the major part of all stone artifacts in most LBK settlement inventories. For the analysis of stone tools particularly the used raw materials and their origin are of importance apart from technological aspects. A substantial aspect of the economic life in the early Neolithic is seized with the supply of raw materials of an individual site or a region. In Hesse various rock outcrops were used by the early Neolithic population. The distance of used deposits to the settlements and the kind of extraction are decisive for the question of the exploitation and distribution mechanisms.

Information about the demand of querns in the individual settlements are necessary for the evaluation of the raw material quantities and concomitantly the exploitation methods and possible surplus productions. For the Moerleener bay, a 6 x 12 km large microregion in the northwest Wetterau, central Hesse, the demand of quern raw materials was model-like calculated. Even with maximum grain consumption and high wear by rock abrasion and napping of the work surfaces the need of querns was relatively small.

EXPLORING THE ROLE AND MEANING OF GRINDING TOOLS IN GREEK NEOLITHIC SOCIETIES

Christina Tsoraki, Department of Archaeology, University of Sheffield, United Kingdom

Analysis of ground stone assemblages in the prehistoric Aegean has focused mainly on typological issues without exploring the character of this technological scheme in detail. Furthermore, ground stone and grinding tools in particular have been traditionally regarded as purely utilitarian tools covering everyday *practical* needs that contrast with fine ware and other rare types of artefacts such as ornaments that carried a 'social' meaning (Perlès 1992: 143-4). Thus, of the three exchange systems Perlès envisaged for the Greek Neolithic, grinding tools should be attributed to that for utilitarian products, 'mainly economic in purpose ...free from symbolic connotations' (Perlès 1992: 149). These suggestions have been made for the Greek Neolithic as a whole, but to date, have not been explored in a more contextualised manner and at the scale of the single site. Large-scale excavation of the flat-extended Late Neolithic site at Makriyalos, N. Greece, yielded an assemblage of ca. 8800 ground stone tools (out of which ca.5000 are upper and lower grinding tools) from a range of contexts including small habitation pits, large 'borrow pits' containing debris from possible feasting episodes, and encircling ditches.

Detailed examination of variables such as degree of wear, fragmentation patterns and spatial distribution within different contexts of deposition indicates that grinding tools played a more complex role within Neolithic societies than previously suggested. While they did serve everyday needs (processing of other materials), they were actively incorporated within symbolic acts contributing to the social reproduction of Neolithic communities.

Bibliography:

Perlès, C. 1992. Systems of Exchange and Organization of Production in Neolithic Greece. *Journal of Mediterranean Archaeology* 5: 115-164.

OBJECT BIOGRAPHY AND ITS IMPORTANCE IN FURTHERING OUR UNDERSTANDING OF THE STRUCTURED DEPOSITION OF QUERNS IN NEOLITHIC BRITAIN

Sue Watts, University of Exeter, United Kingdom

It is now widely accepted in archaeological circles that many of the artefacts found on prehistoric sites were not simply discarded, lost or unwontedly abandoned but were deliberately placed in the positions in which they were found for reasons that had meaning to the persons who deposited them. Such artefacts were imbued with symbolic meaning and their patterns of deposition were governed by underlying rules and structures.

This deliberate placement, or structured deposition, of objects, also appears to include querns and it has been highlighted in recent reports that querns are often found whole and sometimes unused, or broken, and placed in a position in which they would not have been used. But why should such seemingly innocuous,

utilitarian, practical tools have been considered suitable or worthy of structured deposition? In order to gain a better understanding of this we need to appreciate how they may have functioned within the societies that used them and in order to do this we need to analyse their life history or biography. Querns actually have rather complex biographies. They are long-lived artefacts and their primary use can span several generations. They can also potentially see several phases of secondary use, although it is only their final use which is witnessed in the archaeological record. And throughout their life history querns are enmeshed in a network of associations and relationships between people, other artefacts and the environment.

Although there is plentiful evidence, ethnological, historical and archaeological, to show that querns can function as a tool for grinding a wide variety of products – vegetable, mineral and animal, their importance for grinding staple food stuffs should not be underestimated for in this lies the heart of the quern's *raison d'être*. The task of grinding such products is a vital, socially meaningful act embodying pragmatic, emotional and symbolic values associated with the quern itself, the physical act of milling, the product being ground and the purpose for which it is being processed. It is these values that are reflected in the structured deposition of querns. The importance of cereals in Neolithic Britain, however, is difficult to assess. Bone isotope analysis has indicated that the Neolithic diet was predominantly based on meat and dairy products and yet there is also evidence for cereal cultivation. It is suggested, therefore, that grain was grown for particular uses, rather than as a regular food supply, and it is these especial uses that are made manifest in the structured deposition of querns on Neolithic sites.

Session title: EARLY MEDIEVAL PERIOD FROM PANNONIA TO ADRIATIC

Organizers: Luka Bekić, Croatian Conservation Institute, Zagreb, Croatia
Mitja Guštin, Institute for Mediterranean Heritage, Piran, Slovenia

Time: Saturday all day

Room: 241

Session abstract:

The aim of this session is to shed more light on complicated aspects of a Great Migration and early medieval period in areas of Pannonia and Adriatic.

Many nations crossed the panonnian plain from 4th to 10th century in search for a better life in the west. Some of them turned southwards, and settled near the Adriatic coast.

Although neighboring, these two areas are in fact very different considering the topographic and climatic conditions. Our aim is to bring forward some new investigations which could elaborate on aspects of life in the fertile panonnian plain and later their transition to life in mountainous areas close to Adriatic. Who controlled the areas on their arrival, and how did newcomers adapt to such a great change.

We hope to gather scholars with new results which could help us understand connections, similarities, differences and adaptations of these peoples towards new environments.

Paper abstracts:

MEDIEVAL SETTLEMENTS IN THE VIROVITICA REGION OF THE DRAVA RIVER BASIN IN THE PERIOD FROM THE 7TH TO THE 11TH CENTURIES

Tajana Sekelj Ivančan, Tatjana Tkalčec, Institute of Archaeology, Zagreb, Croatia

In the paper the results of archaeological research of the two sites - Virovitica-Dota and Virovitica-Kiškorija-jug, excavated on the place of the western Virovitica ring-road, are presented. These locations, positioned on elevated terraces in the Drava River Valley, were continuously settled from the Late Bronze Age, Roman Times to the Early Middle Ages. Archaeological excavations gave data for traces of mediaeval

dwelling houses, hearths and other features. These objects, as well as small finds (mostly finds of pottery) are dated on the site of Đota in the period from the 7th to the 8th centuries and later in the 11th century, while the nearby settlement on the site of Kiškorija-jug dates from the second half of 8th to the run-up to the 10th century. The finds are going to be compared with the contemporaneous settlements known from the archaeological excavations and from the field surveys of the surrounding area. The results of the research represent a contribution to our knowledge of human habitation in the Northern Croatia, especially in the region of the fertile Drava River plain.

ALTAR SCREEN PARTS OF THE HOLY CROSS CHURCH FROM NIN, CONTRIBUTION TO THE CHURCH DATING

Majda Predovan, Museum Nin, Croatia

This article analyses two partly reconstructed plutei, parts of the altar screen of the Church of the Holy Cross from Nin. According to the authoress, plutei are important component for disquisition of the church dating establishment. Parts of plutei are presented in the Museum of Nin and they are part of the permanent museum exposition.

Parts of the altar screen pluteus, which are being analyzed, first were published by don Luka Jelić in 1911. Archaeological excavations of the Church of the Holy Cross and its surrounding, which were done by don Luka Jelić (he was professor of theology in Zadar from 1894. to 1912., whose research and interest were oriented towards Nin) from 1907. to 1910., have questionable scientific value and have not had adequate technical documentation. Reconsidering results of Jelić's excavations, including contemporary scientific achievements, the authoress is trying to clarify in this exposition.

Based on the comparison method of the composition and style decoration characteristic, reconstructed plutei chronologically-stylish have been related to the first half of the 9th century, or more likely, the middle of the 9th century (the age of prince Trpimir from 845. to 864.)

EARLY MEDIEVAL POTTERY FROM KRNEZA

Karla Gusar, University of Zadar, Department of Archeology, Zadar, Croatia

Archaeological sites from the Early Medieval period are quite numerous in the region of north Dalmatia and especially in the hinterland of Zadar. In this period Croats inhabited this area, that was once part of Roman province of Dalmatia and archaeological evidences of these changes in the population structure are to be found in different locations all over this region.

Explored sites of Early Middle Ages in north Dalmatia mainly belong to cemeteries, but some settlements are also confirmed. One of the latest archaeological excavations started in 2007. in the village of Krneza near Zadar, at a site called Jokina glavica. It is a burial mound with finds from Early Medieval period where significant amount of pottery was found. Even though these vessels belong to the pottery group that in Croatia still isn't thoroughly explored, comparisons can be found in different sites in Dalmatia, as well as ones found in the other parts of Croatia and Eastern Europe.

This pottery collection also presents small, but important part that will hopefully contribute to better understanding of everyday life, culture and religion of Early Middle Ages in Croatia.

BIZANTINE FIBULA WITH *HARIS* FROM NIN - ORIGIN AND MEANING

Andrej Preložnik, Institute for Mediterranean Heritage, Science and Research Centre, University of Primorska, Piran, Slovenia

Dragan Božič, Institute of Archaeology, Scientific Research Centre of The Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia

On coast of Ždrijac, grave place of Nin community from prehistory till middle age, very interesting and for this site unique fibula was found. It is made from silver sheet in the shape of shallow box with sunken gilded relief plate in the centre. On it is depicted relief image of a woman with inscription XA PIC (HARIS). Fibula was classified between Liburnian finds and interpreted as Hellenistic product or influence from 2nd to 1st century BC, but depiction, inscription and shape clearly shows its origin in Byzantine culture.

There are several analogies, which illustrate iconography and meaning of central motif. We can find it on quality products of Byzantine goldsmith, as well as on mass scale produced talismans. Inscription HARIS is frequent prayer for god's grace, and endow objects, on which it is written - mostly marital jewelry - with a protective character. On its basis we can interpret depiction on Nin fibula as personification of Grace.

Fibula belongs by its shape in group of round box-like brooches, typical for Pannonian Keszthely culture, but known also from Albania and Calabria. Because of meaning and style of their motives as well as their Greek inscriptions, it is obvious, that these objects have Byzantine roots. They came in Pannonia probably from Byzantine centers like Iader in Dalmatia or Sirmium on Balkans. In Pannonia, they were used and further developed – judging after distinctive Christian themes of both, imperial and biblical origin – at least in beginning by members of Christian and Romanized community.

EARLY MEDIEVAL BETWEEN PANNONIA AND ADRIATIC. MAKING SENSE OF LANDSCAPE

Andrej Pleterski, Benjamin Štular, Institute of Archaeology, Scientific Research Centre of The Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia

The use of place names for reconstructing the Early Medieval physical landscape has a long and honoured tradition. It is possible and quite straightforward in cases, where the creation of these place names is based on mental charts of the environment. In some Slovenian case studies one can reconstruct the physical landscape with surprising details as regards the field systems, the use of pasture land and forest etc.

Using archaeological data, GIS, oral tradition and place names (etymology and charting) and historical cadastral maps we are able to reconstruct several aspects of the sacred landscape. The latter can be described, in the words of the session organizers, as an example of both contingent and structured built space.

Every piece of land had its own sacred meaning. The dichotomy sacred - profane did not exist. We can, however, speak of places where the sacred meaning was more accentuated. Therefore, sacred landscape was a matter of perception and not the actual physical state, contingent and not structured built space. Every landscape and all of the landscape was a sacred landscape. In search of the sacred landscape one is not searching for a specific place but rather the perception of the researched people. Changing the viewpoint changes the sacredness of the landscape. In our case study this change occurred through the processes of Christianization and feudalization. However, the change was so slow and gradual that the ancient sacred landscape was still in place in the 17th c. and some aspects have been preserved until today.

The elements of structured built spaces are the organization of settlements and cemeteries, field systems and path networks. We have reconstructed several such sacred landscapes in Slovenia, Austria, the Czech Republic, Germany and Ireland.

Combining time sensitive archaeological data with spatially sensitive oral traditions enables us to pinpoint the time and place. In our research we have also started to observe temporal dynamics.

Combining the above listed elements, the physical landscape, the sacred landscape and temporal dynamics offers a good insight into the social processes that formed and people who used the landscape. One could say that these people lived the landscape. Through that one can observe their adaptation on new landscape upon arrival. All aspects of their lives were intertwined in single belief system. One of the names for this belief system that we know from Slovenian oral tradition is Tročan (derived from the word "tri", the number three).

We believe that the methodology and the results are best shown in the following two case studies. The first deals with the micro region of Bled and the second with the village Polce. In the second part of the presentation we will briefly show some other case studies.

NEW INTERDISCIPLINARY RESEARCHES IN KESZTHELY-FENÉKPUSZTA, PANNONIA

Orsolya Heinrich-Tamaska, Geisteswissenschaftliches Zentrum Kultur und Geschichte Ostmitteleuropas, Leipzig

In Keszthely-Fenékpusztá the continuity of occupation may be followed from the Late Antiquity all the way to the early medieval period. Sixth- to seventh-century assemblages are often described as the so-called Keszthely-culture with Christian traditions. Such a remarkable continuity raises a number of fundamental

questions. How long was the Roman infrastructure maintained after the evacuation of the province? What was the military and strategic function of the castellum in post-Roman times? What role was given to the site by the changing ruler? Substantial changes were made to the landscape by modifying the water level of Lake Balaton to influence the agricultural profile of the area. An interdisciplinary, German-Hungarian joint project is now under way at this site and research in a number of neighboring disciplines is expected to produce significant results for what appears to be an intensive study of the late antique and early medieval history of the region of Pannonia.

NEW 9th AND 10-11th CENTURY SETTLEMENTS IN THE REGION OF NAGYKANIZSA (ZALA COUNTY, HUNGARY)

Judit Kvassay, Göcseji Museum Zalaegerszeg, Hungary

The Directorate of the Museums of Zala County (Hungary) accomplished between 2003 and 2007 excavations preceding the construction of the M7 motorway in the surroundings of Nagykanizsa. Within the frames of these works 3 sites provided settlement objects from the 9th and 3 sites from the 10-11th century.

The variously shaped pits and the ovens at Nagyrécse-Bakónaki-patak revealed typical potsherds and seed-drying sheets of the first half of the 9th century. Similar settlements objects and ceramic finds came to light at Galambok-Hársas-erdő site. The settlement fragment unearthed at Nagyrécse-Baráka-dűlő can be dated to the second half of the 9th century by an iron spur and by mould used to prepare earring-pendants. These lately excavated sites underline that Nagykanizsa and its surroundings had become relatively dense populated in the course of the Carolingian Period in the 9th century.

A quite new feature is the discovery of 10-11th century sporadic settlements in the Nagykanizsa region. Similar phenomenon has earlier been registered only in the northern part of Zala County.

ZATAK, FIELD BY THE RIVER LEDAVA

Mitja Guštin, Institute for Mediterranean Heritage, Science and Research Centre Koper, University of Primorska, Slovenia

In the year 2005, on the Zatak site, near the city Lendava, unfortified village has been discovered. Its architecture and inventory represents period from 10th to 15th century very good.

During archaeological excavations at the new highway route in Hungary, similar material has been found between *Nagykanizsa* and *Tornyiszentmiklós*. The material links this area with a wider river Ledava/*Lendva* area in a very clear settling pattern. Types of housing, pottery and various sacral edifices in the river Ledava and the *Zala* county areas, let us connect them with the times of Arpadović ruling house (895 - 1301).

A line of settlements around Lendava gives quality data for understanding the genesis of this area. Material evidence of settlement features and small finds witness the link between settling and areas which in later times becomes a part of Hungarian border - defense zone *Gyepűelve*.

COMPARISON OF 8TH CENTURY POTTERY FROM BLIZNA AND ŠARNJAK NEAR VARAŽDIN, CROATIA.

Luka Bekić, Croatian Conservation Institute, Department of Archaeological Heritage, Zagreb, Croatia

Blizna and Šarnjak are two multilayer archaeological sites discovered on fertile plains south of river Plitvica and Drava, in northwest Croatia. There are some more sites like them in nearby locations north of river Plitvica, like Pod lipom, Brezje and Zaves. All of them are up to three hours walking away from each other, so we can presume some interaction between them if they were indeed settled at the same time.

Both Blizna and Šarnjak have early medieval strata, consisting of pit-dwellings and middens. Some of the early medieval features were lately explored, and dated with AMS c-14 analysis. This paper will deal with pottery found on these two sites, especially with two pits dated in first half of 8th century. Pottery sherds from these two pits are quite different considering technique and materials used, so this problem needs some attention.

THE SLAVS OF 6th TO 7th CENTURY - ONE DISMEMBERED NATION

Marek Dulnicz, Polish Academy of Science, Poland
(Abstract not available)

MEDIEVAL SETTLEMENT NEAR BY VELIKA GORICA - SITE ŠEPKOVČICA

Aleksandra Bugar, Museum of town Zagreb, Croatia

This paper deals with medieval horizon explored in multi-layered locality of Šepkovčica near by Velika Gorica during conservation archeological excavations on the route of the future highway Zagreb - Sisak, which took place from November 2006 to July 2007. Turopolje, the lowland area south of Zagreb, is an archeologically rich area where traces of various types of settlements have been found - ranging from prehistoric periods, exceptionally abundant Ancient Roman times to the period of Middle Ages and the Modern Age. Similar situation can be found in the site of Šepkovčica which covers an area of over 50 000 m², where we can see the prehistoric settlement layer (Lasinja Culture), the cemetery from the roman period - (Noric-Pannonian grave mound), the ancient settlement layer, the remains of the road and architecture as well as the medieval settlement which existed in the 11th century (confirmed by AMS c14 analysis, but also with the archeological finds).

Since the research is still in progress and its results have not been fully analyzed yet, this paper mainly focuses on the ground-plan disposition of the archeological units and it aims to interpret the spatial relations within a settlement. The explored medieval settlement covers an area of more then 15 000 m² and it contains, so fare, more then 600 settlement objects, (mostly bases for columns, a few semi dwelling pits, numerous waste holes of different sizes, a few smaller fire places, draw well...). What we are dealing with here is a rural settlement of the open type which was built on an eolian sandy foundation. It is placed on a slightly raised terrace of river Sava, probably with stream flows on the surface and in the area which was once rich with oak forest. The soil in the waste holes is very dark and it contains a large amount of animal bones and sherds of pottery decorated with carved wavy or horizontal lines. In addition to that, 2 annulets with S-loop have been found as well as the fragment of the cast grape-shaped earring, which is typical of the 11 century repertoire.

That old settlement in the locality of Šepkovčica had a view overlooking medieval settlement at Kaptol in Zagreb with the old pre-Tatar cathedral and it probably gravitated to the center of diocese and market town, which is less than 20 km by air.

The greatest benefit of the "large scale" archeology on the highways, is the overall view of the spatial organization of settlement and at the same time it expands the archeological knowledge of medieval settlements in the south of Pannonia.

Session title: MIDDLE/UPPER PALAEOLITHIC TRANSITIONAL TIME IN EURASIA: CULTURAL-HISTORICAL, ANTHROPOLOGICAL, PALAEOECOLOGICAL AND ADAPTATION PROCESSES OF THE SPAN 50-30 KYR BP.

Organizers: Galina Levkovskaya, Institute of History of Material Culture RAS, St. Petersburg, Russia
Paolo Gambassini, Università degli Studi di Siena; Siena, Italy
AnnaMaria Ronchitelli, Università degli Studi di Siena; Siena, Italy
Kseniya Kolobova, Institute of Archaeology and Ethnography RAS, Siberian Branch, Novosibirsk, Russia
Nikolai Anisutkin, Institute of History of Material Culture RAS, St. Petersburg, Russia

Time: Saturday all day

Room: 203

Session abstract:

The Stone Age hunters and gatherers did not know modern borders in their migrations around Eurasia (even in the beginning of the 20th century the hunters of Taymir peninsula reached the Kola peninsula during one season migrations following their reindeer herds). So the complicated cultural-historical processes of the time of appearance of most ancient Upper Palaeolithic industries in Eurasia and beginning of the Epoch of *Homo sapiens sapiens* could be understood only as a result of comparing archaeological, anthropological and palaeoenvironmental patterns of many regions of Eurasia.

There were two most important goals for organization of this session.

The goal 1: The session will allow us to look at the complicated archaeological and anthropological processes of the Middle/Upper Palaeolithic transition time from the point of view of the materials on the Western and Eastern parts of Eurasia. This goal will be achieved if all abstracts with the new information on eastern regions will be published by EAA.

This aspect of the discussions will be very important for Palaeolithic archaeology because during the last time especially sensational information on the Middle/Upper Palaeolithic transitional time appeared in the eastern regions of the Eurasia.

New data were recently published [Kozłowski, 1982; "Temnata cave", 2000; Derevianko, Shunkov, 2001; "Palaeolithic of Altai" (Derevianko et al.), 2001; Derevianko, 2007; "Science" from 12.01.07: Hoffecker et al.;] about the very early (50-45 kyr BP) appearance of the most ancient Initial or Early Upper Palaeolithic sites in Eurasia and their locations in the non-western parts of the Eurasian continent: in Bulgaria (Temnata and Basho Kiro sites), Kostenki-Borshevo region of Russian plain (basin of Don river) and Altai (Denisova cave site, layer with anthropological remains of *Homo sapiens sapiens* and AMS date about 49 kyr BP). The most ancient transitional Middle/Upper Palaeolithic industries connected with *Homo sapiens sapiens* are found in Uzbekistan (in the grotto Obi-Rakhmat) in the layer with AMS dating of approximately 49 kyr BP ["Grot", 2004; Derevianko et al., 2001; Krivoshapkin, Brantingham, 2004; Derevianko, 2007]. But in Italy the transitional Middle/Early Upper Palaeolithic cultures (Uluzzo and others) have non-calibrated AMS C14 dates approximately 36 kyr BP and the most ancient Protoaurignacian sites – about 34-32.9 kyr BP [see: the abstract of P.Gambassini and A.M.Ronchitelli in the volume of the present conference]. Shatelperron and Aurignacian cultures of the Western Europe are of the same age (see the scheme of the palynological correlation of tens of sites from France [Renault-Miskowski, 1997, 1998]). The layers of volcanic ash present at the top of the Protoaurignacian sites in Italy, but not necessary from the single explosion [see the report of P.Gambassini and A.M.Ronchitelli in the present volume]. The Protoaurignacian sites of France are synchronous to Lashamp excursion (according to the scheme of Renault-Miskowski, 1998).

The goal 2: The session will allow us to discuss the role of some palaeoenvironmental factors in the complicated cultural-historical and anthropological processes of the Middle/Upper Palaeolithic transition time. The archaeologists don't usually write about the important role of the ecological factors in the cultural and technological transformations which sometimes are even called the "Upper Palaeolithic revolution". But during last years appeared the information from many regions of the world about existence of the extremely dry and very cold climatic oscillation with abrupt transition to it within the span 50-30 kyr BP. It is the HE4 event. It was discovered by many scientists in marine, glacial, cave, lake and other types of the sediments [Bond et al., 1993; Broecker, 1994; Thouveny et al., 2004; Mayewski et al., 1994; Bond et Lotti, 1995; Watts et al., 1996; Cortijo et al., 1997; Vidal et al., 1997; Paterne et al., 1999; Cacho et al., 1999; Schulz et al., 1998; Li et al., 2001; Voelker et al., 2002; Fedele et al., 2003]. It could have influenced on complicated cultural-historical, technological, migration and other processes of many regions of Eurasia. But it was not differentiated yet in Palaeolithic layers of most sites of Eurasia, especially in eastern regions, though the cold and dry pattern were reconstructed for some of them. So some reports of our session will concern the problems of discovering of HE4 event in Middle Palaeolithic or Early Upper Palaeolithic layers of Carpathians, Caucasus, Early Upper Palaeolithic sites from Kostenki-Borshevo region of Russian plain, some sediments from the basins of Dniestr and Yenisei rivers [the reports of Haesaerts et al., Hum et al., Levkovskaya, Lubin et al.; Levkovskaya, Hoffecker et al.]

Lately appeared the new hypotheses [Fedele et al., 2004] that the palaeoenvironmental catastrophe is the cause of the lacuna between the time of appearance of *Homo sapiens sapiens* and disappearance of Neanderthals in the end of Middle Palaeolithic and the beginning of the Upper Palaeolithic Epoch. The authors of this hypotheses write that the Campanian Ignimbrite (CI) eruption was synchronous to the HE4 event and partly to excursion Lashamp [Fedele et al., 2003, Fig.4: p.309; Fig.6: p.312; Fig.8: p.315] and it was "one of the contributing factors to the cultural differentiation in Western Eurasia which is called the Upper Palaeolithic" [Fedele et al., 2003, p.319].

The session will allow to discuss the last hypotheses from the point of view of the mentioned above materials on the eastern part of Eurasia where the Early Upper Palaeolithic began about 50 kyr BP – approximately 10000 years earlier than the Campanian Ignimbrite.

This session focuses on the discussion of the following most important Palaeolithic archaeology problems:

- What were the specific features of regional or general cultural-historical processes during the beginning of the Upper Palaeolithic – Homo sapiens sapiens Epoch?
- When and where appeared the first Upper Palaeolithic sites in Eurasia?
- What was the role of Neanderthals or Homo sapiens sapiens in the complicated cultural-historical processes of the Middle/Upper Palaeolithic transition time in different regions of Eurasia?
- How changed the life strategy and adaptation processes of Neanderthals and Homo sapiens sapiens in different palaeoenvironmental conditions?

These problems are traditional for Palaeolithic archaeology. But they will be discussed at the session on the basis of new materials. It is planned to discuss at the session the patterns from many regions of Eurasia of the span 50-35 kyr BP. The session will allow us to compare the Middle Palaeolithic, transitional Middle/Upper Palaeolithic, Initial Early Palaeolithic and most ancient Early Palaeolithic industries or palaeoenvironments of southern and northern Italy, Carpathians and Transcarpatians, northwestern and Colchis areas of Caucasus, basins of Dniestr, Don and Yenisei rivers, Altai, Uzbekistan, to discuss the problems of their correlations, chronology and connections of them with Neanderthals or Homo sapiens sapiens.

The following groups of the problems will be discussed at the session (on the bases of 17 published abstracts and some reports):

- Archaeological problems;
- Anthropological problems;
- Chronological problems;
- Palaeoenvironmental problems;
- Adaptation and life strategies problems;
- Methodical problems.

The organizers are grateful for financial support of their researches, some results of which are presented at the session, to:

- Royal Society of England (grant of 2006 year of G.M.Levkovskaya and R.Housley);
- Russian Foundation for Basic Research (grant of G.M.Levkovskaya № 05-06-80329a);
- grant of US National Research Foundation № 0715519 (of J.Hoffecker);
- program of Prezidium of Russian Academy of Science and Institute of the Material Culture RAN "Adaptations of ethnic groups and cultures to environmental, social and technogenic changes and transformations"; project of this program of M.Anikovich.

Paper abstracts:

FROM LATE MIDDLE TO EARLY UPPER PALAEOLITHIC IN SOUTHERN ITALY

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The evolutive phase of Mousterian in Southern Italy is represented by recurrent *Levallois* industries, with prevalent unipolar modality, whose goal was to obtain tendentially laminar, flat blanks. Among the sites with main evidence of this situation we can consider the high levels of Poggio Shelter at Marina di Camerota (Salerno), with industry dated about 43 Ky BP (TL), Castelcivita Cave (Salerno) dated around 40 Kyr BP (^{14}C) and Oscurusciuto Shelter of Ginosa (Taranto) whose upper level dates of 38,5 Kyr BP (AMS ^{14}C). In the three cases Mousterian industry has a majority of side-scrapers, also on blade, with a good percent of retouched points.

At Castelcivita, above the Mousterian level, lie Uluzzian strata, with abundant splintered pieces, typical backed semilunar shapes and ^{14}C dates around 33 Kyr BP. Following the dates it would be some millennia between the two occupations of the site. The age of early Uluzzian, according to recent AMS ^{14}C dates made on the eponymous site of Cavallo Cave at Uluzzo of Nardò (Lecce), is to put around 36 Kyr BP, therefore a little more recent than the age of evolutive Mousterian. The maker of the Uluzzian is very probably

Neanderthal man, judging by the rare human findings (teeth) of Cavallo cave. As regards stratigraphical situation and human type involved, the Uluzzian is one of "Transitional" technocomplexes of Europe.

The following complexes, stratigraphically over the Uluzzian, are to attribute to Protoaurignacian with Dufour bladelets: among the most important we can cite Castelvita and Paglicci cave (Foggia), with dates of beginning respectively about 32,9 and 34 Kyr BP (^{14}C). In both sites these complexes have local and diversified evolution. The end of these evolution could be represented respectively by the open air site of Serino, dated around 31 Kyr BP (^{14}C) and the level 24A1 of Paglicci (29,3 Kyr BP). All these sites present, on their top, tephra levels not necessarily from a single explosion.

These data will be critically examined, together with their interaction with a paleoenvironment changing both in time and dependently from the articulate geography of the Italian peninsula.

THE LITHIC INDUSTRY OF GROTTA LA FABBRICA (TUSCANY, ITALY): A CONTINUOUS SEQUENCE THROUGH MIDDLE AND EARLY UPPER PALAEOLITHIC

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The stratigraphical sequence of Grotta della Fabbrica (Tuscany, Italy) is characterized by a late Middle Palaeolithic layer, a "transitional" one (referred to the Uluzzian) and an Early Upper Palaeolithic (Aurignacian) and represent the only documentation so far known in Central and Northern Italy of the Neanderthal-Anatomically Modern Human substitution. This paper draws on the results of the study of layer 1, referable to a Typical Mousterian of non-Levallois *facies* (*sensu* Bordes), examined through raw material acquisition and use, techno-typological analysis and also through the comparison made with the overlying Uluzzian layer 2. The authors try to underline the similarities and the differences between these two lithic assemblages and to give a broader picture of the Late Musterian and "transitional" industries in Central Italy, linking the new available data with the ongoing debate about the Middle-Upper Palaeolithic transition.

ARCHAEOLOGY-PALAEOBOTANY-PALYNOLOGY DATABASE ON THE NEANDERTHAL EPOCH OF CAUCASUS AND RUSSIAN PLAIN: HE4 EVENT AND VARIATIONS OF ITS PALAEOENVIRONMENTS, INDUSTRIES AND TYPES OF ADAPTATIONS OF NEANDERTHALS

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Some materials of the palaeobotany-archaeology database [Stepanov, Levkovskaya et al., 2001] of the Middle Palaeolithic and Upper Palaeolithic sites of the former USSR area will be presented at the session. The Middle Palaeolithic archaeological complexes which are most accurately connected with pollen zones and are synchronous to the HE4 event at Caucasus and Russian plain will be discussed. Archaeological complexes, published by archaeologists V.P.Lubin, S.A.Kulakov, E.A.Beliaeva, L.V.Golovanova, D.A.Tchistyakov, N.K.Anisutkin, L.B.Vishniatsky and P.E.Nechoroshev will be demonstrated for sites: Malaya Voronzovskaya, Akhstyr, Kepshinskaya (Black sea area of Caucasus), Matouzka, Barakaevskaya, Monasheskaya and Mezmajskaya (north-western Caucasus), Korolevo 1 (Transcarpathians), Molodova V, Stinka, Betovo, Shliakh (from the basins of Danube, Desna and Don). Palaeoenvironmental reconstructions for the layers with anthropological finds of Neanderthals in Caucasian cave sites Barakaevskaya, Monasheskaya and Mezmajskaya will be compared. Specific features of adaptations to extremely dry and cold conditions of H4 event will be discussed.

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PALAEOENVIRONMENT AND CHRONOLOGY OF THE MIDDLE / UPPER PALAEOLITHIC TRANSITION IN THE EURASIAN LOESS DOMAIN, FROM DANUBE TO YENISEI: COMPARISON WITH THE MARINE AND GREENLAND RECORDS

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During the last decade multidisciplinary investigations were devoted to complementary long loess successions with pluristratified Middle and Early Upper Palaeolithic settlements rich in charcoal, from the Middle Danube Basin (Willendorf and Stranska Skala), the East Carpathian Area (Molodova and Mitoc) and Central Russia (Kostienki). This approach has provided a high resolution climatic sequence with a strong chronological framework back to 50 ka uncal BP set up on large series of radiocarbon dates. It confirms the predominance of highly unstable, but reproducible environmental conditions during the middle pleniglacial, together with the development of a large set of Palaeolithic occurrences ranging from Late Mousterian to Early Gravettian, including Bohunician, initial Upper Palaeolithic Szeletian, Stretleskaian, Gorodtsovian and Early Aurignacian.

The degree of resolution of the middle pleniglacial loess succession was further improved at Kurtak (Central Siberia) with a remarkable semi-continuous pedosedimentary and palynological record well dated from 26 ka to 42,5 ka BP on wood remains and charcoal. In this way, the integrated Eurasian loess sequence could be compared by proxy-correlation with the climatic signal recognized in the fluctuations of ^{18}O in the Greenland ice cores. This approach also led to compare the atmospheric radiocarbon ages of the loess sequence with the ice-varve calendar chronology and with the corrected chronology based on paired ^{14}C and U/Th dates via the climatic signal of the marine sequences.

Moreover, the integrated Eurasian loess sequence is also of importance for what concerns the chronostratigraphic approach of the Kostienki sequence which records one of the most detailed pedosedimentary and archaeological succession for the middle pleniglacial in Central Russia. In particular, the sections open at Markina Gora in August 2004, for which 15 complementary radiocarbon dates were produced on charcoal from the lower half of the sequence, allow a new insight on the chronological background of the volcanic and palaeomagnetic markers recorded in the Kostienki Area respectively ascribed to the Campanian Ignimbrite and the Laschamp excursion.

UPPER PALAEOOLITHIC ENVIRONMENTAL CHANGES IN THE CARPATHIAN BASIN

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Several Upper Würmian and Late Glacial loess profiles from the areas of Transdanubia, NE Hungary and the southern and central parts of the Great Hungarian Plain have been subjected to detailed scientific investigations. Despite the similar rhythm and characteristics of the alternating warmings and coolings during the Upper Würmian in the different studied areas, significant differences can be observed in the sedimentological and geochemical composition of the sediments and in the general character of the mollusk faunas of these regions.

A very similar paleobiogeographic setting must have developed in the Carpathian Basin during the Pleistocene as observable today, seen in the continuously alternating expansion and retreat of the faunal elements, belonging to different fauna circles and characterized by differing ecological needs, in accordance with the changes in the certain climatic effects. Consequently, the coolings and warmings, as well as the alternation of drier and more humid periods must have triggered a cyclical expansion and retreat of these fauna elements from and into the refugia areas within the whole basin.

The changes in the Quaternary mollusk fauna well correspond to the former transformations in the environment, primarily seen in the alteration of the climatic conditions, and thus are well suited for capturing these paleoenvironmental changes.

Thanks to the unique climatic endowments of the Carpathian Basin, as well as the vicinity of the Balkanic refugia areas, plus the presence of refugia preserving Central European woodland dweller mollusk elements, and the observable expansions of the fauna from these relict centers during favourable paleoecological conditions, the relatively short-term climatic and environmental changes can all be easily assessed via studying the mollusk fauna of the loess sequences in the basin. Considering the observed history of the mollusk fauna for the past 30,000 years, we can say, that the major faunal turnovers appeared in iterating periods of 1000-2000 years, enabling a description of the paleoenvironmental conditions of loess formation at a better temporal resolution.

With the help of radiocarbon dates at hand, detailed comparative paleoecological-paleobiographic maps could have been prepared for the studies area of the Carpathian Basin, depicting the distribution areas and dominances of the individual mollusk taxa. With the help of these paleobiographic maps, the migration paths a distribution areas and limits of the stratigraphically and paleoecologically different mollusc taxa could have been determined, reflecting the distributions of the individual paleoecological and paleovegetational zones, and as such the individual climatic effects as well.

MICROTEPHRA IN ARCHAEOLOGICAL SITES: FINETUNING OUR DATING AND UNDERSTANDING OF PEOPLE'S RESPONSES TO ENVIRONMENTAL FLUCTUATIONS

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Due to the dating uncertainties around this time period of the Middle to Upper Palaeolithic transition; it is imperative to identify secure stratigraphic and chronological markers, the Campanian Ignimbrite being one such key marker. The aim of our research programme is to use it, and other tephras, to link a series of sites chronologically and stratigraphically, so as to test the timing of archaeological and environmental change in a broad regional timescale.

Through the use of microtephra extraction techniques, the aim is to broaden the zone where we can trace the Campanian Ignimbrite and other tephras into archaeological and environmental records. Changes in the faunal spectra during this period and people's responses to climatic events can be discussed in more detail once such a more secure chronology is obtained.

This paper will review the chronological needs for such a programme of research, report on the progress of tracing microtephra on archaeological sites, predict regions where we would expect the Campanian Ignimbrite to be present and discuss the results of our ongoing research on a number of Italian sites.

APPEARANCE OF MODERN HUMANS AND MODERN BEHAVIOR IN CENTRAL ASIA: CASE-STUDY OF OBI-RAKHMAT ROCKSHELTER, UZBEKISTAN

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In process of an intensification of Paleolithic researches outside the Europe, dominated over last quarter of the last century in prehistoric archeology the harmonious scheme of dependence of change of type of material culture from evolution of physical characteristics and mental abilities of ancient humans has lost the universality. New data force a scientific world to bring remarkable corrective amendments in the developed concepts. So, if earlier appearance of anatomically modern humans directly connected with an epoch of transition from Middle to Upper Paleolithic, now available data confidently specify that, on the one hand, the modern human anatomy has appeared much earlier, and on the other hand, a number of the main cultural attributes of Upper Paleolithic is fixed in archeological complexes of a much greater antiquity. As the transition from Middle to Upper Paleolithic in territory of Eurasia is characterized by significant structural change of culture of ancient humans, in last researches the term «modern human behavior» is entered. This concept combines such elements, as transition to prevalence of the seasonally-focused purposely-planned hunting activity (unlike domination of scavenging human activity in Middle Paleolithic), settling of regions with harsh environments (high mountains, deserts and tundra landscapes); expansion of an exchange between different populations; regular manufacture of tools from not stone raw material; prevalence economically more effective blade technology; expansion of artefactual repertoire in connection with its standardization and strengthening of functional specialization; the expressed display of spatially-structural perception of habitable space (including allocation of functional zones within settlements, complication of hearths, etc.); increase of mobility level of the groups, connected, probably, with the advent of more complex social hierarchies; mass occurrence of symbolical and ritual activity.

The purpose of the given presentation is an attempt of revealing of conformity of the Paleolithic industry of Obi-Rakhmat rockshelter with the attributes of "modern behavioral complex" for definition of competency of reference Obi-Rakhmat industry to "Transitional" or "Initial Upper Paleolithic" complexes of Eurasia, and also the analysis of recovered in 2003 paleoanthropological material which is throwing light on the physical nature of manufacturers of the Transitional industries and appearance of modern humans in Eurasia.

The Obi-Rakhmat archaeological materials are unique (Derevianko, 2007, p.35-37) because it has yielded a clear stratigraphic sequence of 21 lithological layers that comprise 20 culture-bearing horizons and 36 horizons of human habitation of chronological interval 90000-30000 years ago (Suleimanov, 1972; Grot, 2004; Derevianko et al., 2001; Krivoshapkin et al., 2003; Krivoshapkin, Brantingham, 2004). Palaeoanthropological remains recovered from layer 16 provide the most important evidence on emergence of *Homo sapiens sapiens* in Uzbekistan. The suggested interpretation showed a combination of traits of Neanderthal and physically modern humans. The industry from Obi-Rakhmat layer 16 demonstrates continuity in development illustrating a gradual transition from the Middle to Upper Palaeolithic.

THE INITIAL UPPER PALEOLITHIC OF THE ALTAI

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The transition to the Upper Paleolithic in the Altai occurred around 50 – 40 ka ago in the form of a gradual transformation of local Middle Paleolithic traditions. Two major trends have been established within this evolutionary process: the Kara-Bom and the Ust-Karakol. The Kara-Bom trend is mostly blade-based and can be interpreted as a continuation of development of the Kara-Bom Middle Paleolithic technocomplex. Employed techniques were mostly aimed at recurrent production of large elongate spalls. However, a micro-blade reduction technique was also employed. Tools on laminar blanks are especially characteristic of the Kara-Bom toolkit.

On the other hand, the early Upper Paleolithic industries belonging to the Ust-Karakol trend demonstrate prismatic, pyramidal and narrow-face reduction strategies, including one aimed at micro-blade production. Aurignacian-like tools and bifacially worked foliate points represent the diagnostic tool categories of the Ust-Karakol toolkit. Numerous implements and ornaments made of bone, mammoth tusks, animal teeth, ostrich egg shell, mollusk shell and gemstones within the collections represent another important feature of the Ust-Karakol trend.

Antropological remains of Homo sapiens sapiens were found in Denisova cave in Upper Palaeolithic layer 11 [Derevianko, 2007].

The tooth of Homo sapiens sapiens was found in Denisova cave site in the archaeological layer 12 [Derevianko et al., 1970, p.13]. The Upper Palaeolithic industries were registered in this cave since the layer 11. Layer 11 has the C14 AMS date 48650 ± 2380 years BP (KIA 25285 SP553/D19) [Derevianko, 2007, p.12].

SOME DISCUSSION PROBLEMS OF ARCHAEOLOGY, CHRONOLOGY AND CLIMATIC STRATIGRAPHY OF THE EARLY UPPER PALAEOLITHIC SITES OF THE KOSTENKI REGION

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Kostenki-Borshevo region of Russian plain is located in the basin of Don river. The early Upper Palaeolithic sites are found in it under the horizon of volcanic ash which correlates with Campanian Ignimbrite (CI) in Italy [Melekeshev et al., 1984; Pyle et al., 2005]. The age of CI tephra (Y5 in marine sediments) is approximately 39300-40000 years BP according to the last data [Fedele et al., 2003].

The first part of the report concerns the problems of dating of archaeological layers of Kostenki-Borshevo region under the volcanic ash.

The problems with using of radiocarbon dating. The archaeological layer directly in tephra of Kostenki 14 site has the non-calibrated radiocarbon dates of charcoal : $32420 \pm 440/420$ (GrA-18053) and of the bone: $20640 \pm 170/160$ (GrA-18230) [Sinitzin, Hoffecker, 2006, p.169] years BP. The calendar age of the first date after its calibration is: 37300 ± 600 - 36800 ± 400 cal.years [Pyle et al., 2005; Hoffecker, in press].

Different explanations of these non-agreements of the dating of Kostenki 14 layer in tephra based on CI tephrochronology (about 40000 years BP) and radiocarbon method (about 33000 years BP, non-calibrated) are discussed. The first, stratigraphical explanation is based on comparing of the geological data on the layer in tephra of K14 and layer V of Borshevo 5 site with radiocarbon dating about 33000 years BP as well [Lisizin, 2005]. The layer V of Borshevo 5 is lying about 5 cm above the tephra horizon. So the lacuna could exist between the time of appearance in the region of the tephra about 40000 BP and time of existence of the Upper Palaeolithic Borshevo 5 site approximately 33000 years BP. The lacuna could exist in Kostenki 14 as well.

The second (cosmogenic) explanation is based on the hypotheses about the synchronization of the CI-eruption and the palaeomagnetic excursion Lashamp [Fedele et al., 2003]. The large quantity of different cosmogenic nucleides (including C14) appeared in the stratosphere of the Earth during the excursion Lashamp with low level of magnetic intensity. As a result of this fact very young C14 dates appeared (for the time of CI and excursion Lashamp). So it's important to calibrate the very young dates of the layer in tephra (for identification of their calendar ages).

Some results of using IRSL/OSL method. 15 IRSL/OSL dates were obtained for Kostenki 12 by S.Forman in the laboratory of USA. According to this data the age of the new archaeological layer V of Kostenki 12 (Middle or Early Palaeolithic ?) is about 44150-44650 years BP and the dates about 43470-50120 are obtained just under the new Upper Palaeolithic layer IV of Kostenki-Streletz culture. These dates are in the excellent agree with the ages of the rapid climatic oscillations which were reconstructed for this site on the basis of pollen method [Levkovskaya, Hoffecker et al., 2003].

Some problems with using of palaeomagnetic method for dating of Kostenki sediments.

The position of palaeomagnetic excursion Lashamp (approximately 41000 years BP, by Guillou, 2002) is not clear in Kostenki 14 site because [see the abstract of G.Pospelova in the present volume] " the paleomagnetists write about possible excursion in the layers 18-19 [Gernik, Guskov, 2002, Fig 1, p.247-248] which are mineral sediments [Sinitsyn, 2002, table 2, p.235] but according to the archaeologist A.A. Sinitsyn the Lashamp-Kargapolovo excursion was found in the soil - in the horizon 22 [Sinitsyn, 2002, table 2, p.235]. Paleomagnetic researches of Kostenki 14 and Kostenki 1 were carried out later by Norwegian palaeomagnetist R.Lóvlie [Lóvlie, 2006, p.135]. He didn't find any evidences of the excursion in both sections".

The result of palaeomagnetic research of Kostenki 12 site showed [Pospelova, 2005] that the sample from the archaeological layer III (the soil A just under the horizon with tephra) showed the opposite direction. The second anomal sample corresponds to the sediments above and below the archaeological layer IV. The cause of the appearance of these two anomalies is not clear yet. The palaeomagnetic zones of Kostenki 12 are well-correlated with pollen zones of this site [Pospelova, 2005; Levkovskaya, Hoffecker et al., 2005]. But the excursion Lashamp-Kargapolovo was not registered in the sediments of the same site from the catena zone. This zone is characterized by alternation of the palaeosoils and the flood terrace water sediments (opposite to the section with the excellent-developed soils where this excursion was found). Thus the problem of position of excursion Lashamp-Kargapolovo in the Kostenki-Borshevo region needs later researches.

Pollen correlations of Palaeolithic layers of Kostenki-Borshevo region. Pollen data were obtained by different palynologists (M.P.Gritchouk, V.P.Gritchouk, R.V.Fedorova, E.S.Maliasova, E.A.Spiridonova, V.A.Pisareva and G.M.Levkovskaya) for the sites Kostenki 1,6,11,12,14,17,21 and for the stratigraphical bore peat. It's very difficult to correlate the published pollen diagrams of the Kostenki region because there is a lot of lacunas in the sediments of the sections of this region. For example, the palynological data published for very important site Kostenki 14 [Spiridonova, 2002] is not usable for palaeoenvironmental reconstructions and correlations of four Early Upper Palaeolithic layers under the tephra. Even the most ancient Upper Palaeolithic layer 4b of this section has three characteristics: on different pages of the same publication is registered the domination of Picea or Pinus or Betula [see: Spiridonova, 2002, pp.239,244,246].

But only recently appeared in Kostenki the section with excellent stratigraphy (with four soils under the tephra horizon) which allow to solve some problems of climatic stratigraphy of the most ancient Streletz Early Upper Palaeolithic culture of the region. This is the Kostenki 12 section.

The new pollen data on Kostenki 12 and the results of generalization of pollen data published by different palynologists [Levkovskaya, Hoffecker et al., 2005] showed that the Kostenki ancient Streletz and Spizin culture existed in different palaeoenvironments.

The first phase of Strelets culture (layer IV of Kostenki 12) was connected with the megastage of the elm forests on flood-terrace refuge of Kostenki 12. It was the warm oscillation 12 of GISP2 scale – interstadial Moershoofd [Levkovskaya, Hoffecker et al., 2005]. Layer III Streletz culture began to form just after the end of Moershoofd. It formed during the first phase of the long Picea megastages and during cold phase just before and after it. Three phytophases were reconstructed for the Streletz culture at first: 1. cold steppe; 2. northern taiga (beginning of the Spruce megastage); 3. forest tundra. The Spizins culture was correlated with the megastage of the spruce forests (data on Kostenki 17, after Fedorova, 1963).

Some intercontinental correlations of the sites of Kostenki region with best dated pollen standards (lake Monticchio in Italy with 14 horizons of tephra, Dzigutski peat bog in Abhazia with many C14 dates) and some best dated $\delta^{18}O$ or $\delta^{13}C$ scales.

Different isotope scales and pollen standards published by many scientists [Dansgaard et al., 1993; Johnsen et al., 2001; Genty et al., 2003; Watts et al., 1996; Allen, Huntley, 2000; Allen et al., 2000; Arslanov, Gey, 1987] are used for correlations (Greenland GISP2, GRIP $\delta^{18}O$ scales, Villars cave $\delta^{13}C$ scale; pollen diagrams of lake Monticchio in Italy with 14 horizons of tephra; pollen diagram of Dzigutski peat bog in Abhazia with 7 C14 dating from 47000 to 35000 years BP, etc.). The correlations showed that the most ancient Palaeolithic layers of the Kostenki region (Mousterian or Upper Palaeolithic layer V of Kostenki 12) and the earliest layer of Upper Palaeolithic Strelets culture (layer IV of Kostenki 12) formed during interstadial Moershoofd. It was the warmest oscillation 12 of isotope stage 3. Its age is 45500 (46800?)-42300 years BP (according to $\delta^{13}C$ Villars cave scale [Genty et al., 2003]) or about 45000-43000 cal.years (after $\delta^{18}O$ GISP2 scale, Johnsen et al., 2001).

Layers V and IV of Kostenki 12 are the most ancient Upper Palaeolithic sites in Europe [see: "Science" from 12.01.07]. The Spizin culture which was connected with the Picea megastage formed just before interstadial Hengelo [according to R.V.Fedorova's pollen data; Fedorova, 1963]. Data on Kostenki 14 shows [Levkovskaya et al., 1983; Spiridonova, 2002; non-published data of G.Levkovskaya and V.Pisareva] that four archaeological layers under the tephra formed at this site during the Picea megastage. So they are younger than the layer IV of Streletz culture of Kostenki 12.

Discussion of the material culture complexes. The specific features of the archaeological complexes of the both Early Upper Palaeolithic cultures of the Kostenki-Borshevo region (Streletz and Spizin) will be discussed in the second part of the present report. The Early Palaeolithic archaeological complexes of Kostenki 1,12,14 and 17 are compared.

**TIME OF HE4 EVENT IN KOSTENKI-BORSHEVO REGION
(ARCHAEOLOGICAL, PALAEOENVIRONMENTAL AND ADAPTATION PROCESSES).**

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There were two abrupt climatic transitions to very cold and extremely dry climate phases in Kostenki region between 45000-35000 BP according to the new pollen data on Kostenki 12 site [Levkovskaya, Hoffecker et al., 2005] and on the bore pit from the Borshevo 5 site. What of it correlates to HE4 event?

Archaeological layer III of Kostenki-Strelezki culture has radiocarbon non-calibrated dating $36280 \pm 360/350$ (GrA-5551). The calendar age of this dating after calibration [by Fairbanks et al., 2005] curve is 41535 ± 225 cal.yrs. Layer III began to form at Kostenki 12 after the very warm interstadial (phase of domination of *Ulmus* forests at flood-terrace, $\delta^{18}O$ GISP2 isotope oscillation 12) during the first extremely dry phase with the domination of underdeveloped non-arboreal pollen grains and bones of horses in the palaeozoological complex. But it formed during 3 phytophases: 1) cold and dry, 2) at the beginning of interstadial or interphasial with coniferous forests on the flood-terrace, 3) cold, wet. Later there was an interruption in sedimentation only after which formed a layer with volcanic ash. The last layer with the microlenses of volcanic ash is characterized by the domination of underdeveloped pollen grains of *Chenopodiaceae* which are indicators of the geobotanical crisis of the HE4 time. It has the erosion contact with the layer under it (the layer III of Streletz culture). Such contact is an indicator of low level of basis of erosion of relief during very dry climatic oscillation. The reconstruction showed that the adaptation processes during the time of the formation of layer III of Kostenki-Strelezki culture changed very rapidly (data on Kostenki 12).

Thus the HE4 event corresponds to the second cold and very dry climate phase (with abrupt transition to it) of Kostenki 12. The HE4 event at first is identified in the continental part of Eastern Europe, in the area of present forest steppe zone of the Russian plain. It was discovered at Kostenki 12 in the sediments with microlenses of Campanian Ignimbrite (CI=Y5) tephra, the age of which is 39300 years BP [by Fedele, Giaccio, Isaia, 2003]

The problems of intercontinental or regional correlations of two distinct Kostenki abrupt extremal cryoarid climatic phases within the span 50000-40000 years BP with the following items of correlations are viewed: 1. with the published European pollen standard [Watts et al., 1996, 2000; Allen et al., 2000] of Monticchio lake in Italy with 14 horizons of buried volcanic ashes; 2. with the Upper Palaeolithic layers of Kostenki 12 and Kostenki 17 sites, which are the most ancient Upper Palaeolithic sites in Europe [see: "Science" from 12.01.07] and 3. with the palaeomagnetic excursion Lashamp (approximately 40.4 ± 2.0 ka [Guillou et al., 2004]). But the palynological data published for very important Palaeolithic site Kostenki 14 [Spiridonova, 2002] is not usable for palaeoenvironmental reconstructions and correlations, because the most ancient Upper Palaeolithic layer 4b of this section has three different characteristics: on different pages of the same publication was registered domination of *Picea* or *Pinus* or *Betula* [see: Spiridonova, 2002, p. 239, 244, 246]. Cultural layer of Spizinskaya culture of Kostenki 17 is younger than HE4 event but the layer III of Strelets culture of Kostenki 12 is more ancient than this event. The Spizin culture layer of Kostenki 17 corresponds to the coniferous megastage of Kostenki flood-terrace refugium, but the Streletz culture layer IV of Kostenki 12 - to the "*Ulmus*" megastage of it.

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MAGNETIC AND PALEOMAGNETIC CHARACTERISTICS OF THE DEPOSITS OF KOSTENKI-BORSHEVO REGION (IN THE CONTEXT OF DISCUSSION PROBLEMS OF GEOMAGNETIC EXCURSION LASCHAMP-KARGAPOLOVO).

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The chronology of archeological layers in the Kostenki-Borshevo region remains is a serious and riddle question. The absolute chronology methods are not applicable for all the cases, so one has to use the paleomagnetic and magnetic studies of rocks which can supply with additional knowledge on the age of the sediments. Geomagnetic excursion Laschamp-Kargapolovo is the best time-marker for the Upper Palaeolithic. This excursion has the global character because it was discovered in different regions of the Earth in the volcanic lavas [Bonhommet and Babkine, 1967], continental loesses [Kulikova and Pospelova, 1979; Pospelova et al., 1998] and marine or ocean sediments. Three similar geomagnetic characteristics of the excursion were obtained near Kargapolovo village (Siberia) in three sections. Radiocarbon dating of wood 38800 ± 550 years BP (SOAN-25) was obtained in Kargapolovo within the layer with excursion, 0.38 cm. above the excursion [Kulikova, Pospelova. 1976,1979; Petrova, Pospelova, 1990; Pospelova, 2002]. The average age of the excursion is about 42000 years according the recent data [Guillou et al., 2004; Leduc et al., 2006]. The duration of excursion corresponds to the few thousand years that permits to register its signature in the excavation not by single point but on the few stratigraphic levels to which even some pollen zones could correspond. As example some pollen zones correspond to it at the best stratified section Yangiyul [Pospelova, Levkovskaya, Pilipenko, 2002]

The excursion Laschamp-Kargapolovo is registered (similar to other excursions) on the low intensity background of geomagnetic field (according the data obtained in the session-pipe hole Yangiyul-Uzbekistan). The background level had the value only 0,30-0,25 relatively to the present intensity of geomagnetic field [Pospelova and Scharonova, 1999]. The comparison of pollen data with the variation of geomagnetic field intensity in this session shows that the maximal values of geomagnetic field intensity fit with the period of cold climate but the minimal values correspond to the rather warm interstadial [Pospelova, Levkovskaya,

Pilipenko, 2000]. The start and the end of the excursion corresponds to the very cold oscillations. During excursion Laschamp the lowering of the geomagnetic field intensity also was registered.

Some results of using magnetic data for paleoclimatic reconstruction. Some types of deposits of Kostenki-Borschevo region are possible to use for paleoclimatic reconstructions. Data on Kostenki 12 site show that the dynamics of the scalar magnetic characteristics of the rocks (SMChR) are indicators of the paleoclimate change. The magnetic zones were reconstructed on the bases of SMChR for the sediments of Kostenki 12. They were correlated with pollen zones [Levkovskaya, Hoffecker et al., 2005]. Magnetic zones with high SMChR correlate with very warm oscillations (thermomers), but magnetic zones with lower SMChR - with cryomers.

Some problems with identification of the deposits of excursion Laschamp-Kargapolovo in Kostenki-Borschevo region. The possible climatostratigraphical position of Laschamp-Kargapolovo in Kostenki-Borschevo region is the following: it is lying below the horizon with the volcanic ash of CI=Y5 stage of eruption about 38-40 kyr BP in Italy [Pyle et al., 2005].

Kostenki 12. The samples for paleomagnetic researches were gathered from 2 sections of Kostenki 12. Seven samples were collected by G.Levkovskaya, part of them from the fresh session with the best stratigraphy. The soils in this session did not change from solifluction and other processes. Two samples showed anomaly direction of magnetization when the staged thermally demagnetization up to a temperature of 600-680°C have been applied. One sample collected from 12-th humus lithological horizon (palaeosoil A, archaeological layer III), showed the opposite direction; it is lying just under the lithological horizon 11 with microremains of volcanic ash. The other samples have the direction close to the modern geomagnetic field [Pospelova, 2005]. The second anomal sample corresponds to the sediments above and below the archaeological layer IV. They were discovered in 2002 in the palaeosoils catena zone. This zone characterized by alternation of the palaeosoils and flood terrace water sediments. The interpretation of the appearance in Kostenki 12 of two levels with the magnetic anomalies is not clear now. 450 samples were collected from the excavations of 2003 year at Kostenki 12. They did not give the positive results. They were gathered from the buried flood terrace sediments that were synchronous to the lying "in situ" palaeosoils presented in the first type of the section.

Kostenki 14. Evidences of the excursion Laschamp were found in one sample collected between the archaeological layers IVa and IVb [Sinitsyn et al., 2004]. But the stratigraphic position of this sample is not clear now because the paleomagnetists write about possible excursion in the layers 18-19 [Gernik, Guskov, 2002, Fig 1, p.247-248] which are mineral sediments [Sinitsyn, 2002, table 2, p.235] but according to the archaeologist A.A. Sinitsyn the Laschamp-Kargapolovo excursion was found in the soil - in the horizon 22 [Sinitsyn, 2002, table 2, p.235]. Paleomagnetic researches of Kostenki 14 and Kostenki 1 were carried out later by Norwegian palaeomagnetist R.Løvlie [Løvlie, 2006, p.135]. He didn't find any evidences of the excursion in both sections.

Kostenki 17. E.R. Guskova found the evidences of the excursion Laschamp-Kargapolovo at the level of the archaeological layer II and just under it [Sinitsyn, 2005].

The researches in Kostenki showed that the best results were obtained in fresh section of Kostenki 12 with non-water type of the sediments. Different secondary processes (weathering, solifluction, complicated paleohydrological processes in the flood terrace, ancient human's activity, etc.) could be the cause of disappearance of the slides of paleomagnetic excursion. Except for this different methods of collection of the samples used by paleomagnetists in Kostenki region could be the causes of the objective or non-objective results of the paleomagnetic researches. Some scientists collected the samples in the test-tubes. As a result of pressing of the test tubes into the layers the disturbances of the loose sediments (loesses, sandy loams, etc.) could appear and the pieces of such sediments could change their ancient magnetic orientation. We study only the blocks of the sediments (5x5x5 cm³) which we cut out from the layers during the expeditions.

The signature of geomagnetic excursion is registered best when the samples are collected from the recent deep excavation. This signature could disappear due to the mentioned above reasons in the excavations of the sites that existed at the open air for some years. The best excursion results have been obtained from the core drilled wells or from the session-pipe hole [Pospelova, Larionova, 1973; Pospelova et al., 1998].

This review shows that it is very important to organize the very new detailed palaeomagnetic researches in Kostenki-Borschevo region and parallel with the pollen studying.

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NEW RESEARCHES OF THE KOSTENKI FAUNAL COMPLEXES OF THE DEPOSITS BELOW THE CAMPANIAN IGNIMBRITE (CI) Y5 TEPHRA (K 6, K 12, K 17 SITES)

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Kostenki is one of the most famous Russian Upper Paleolithic key geoarchaeological regions. It is located on the west bank of the Don River (Voronezh district). Deposits below CI tephra are dated between 45,000 to 42,000 years ago and contain the signs of the human activity, reflecting use the localities very early in the Upper Palaeolithic. Boriskovskii (in 1953-1955), Efimenko (in 1935), and Rogachev (in 1953-55; 1957-1958; 1963) distinguished below Y5 (CI) tephra bone- and artefact-bearing horizons in Kostenki 6, Kostenki 12, Kostenki 17 sites. About 560 indeterminate pieces of the mammal bones (stored in Zoological Institute RAS, St.-Petersburg, Russia) were recovered during the excavations. The original complete collection was looked over and recalculated. Here, the results of the examination of the fossil bones from collections of K 6, K 12 (Layer III), and K 17 (Layer II) are presented.

The landscape around Kostenki hunter's camps likely corresponded to tundra-steppe or forest-steppe since the mammals adapted to the dry and cold climate. Horse dominates the K 6 fauna - 66,7 % bones were identified to this animal. It was the main food source of site dwellers. Other species such as mammoth (8,8 %), reindeer (8,8 %), wolf (6,9 %), bison (4,6 %), hare (1,9 %), polar fox (0,9 %), red deer (0,9 %), woolly rhinoceros (0,5 %) are present. This fossil assemblage is very similar with K 12 (III) one, where horse also dominates (70,0 %), the mammoth (9,0 %) occupies the second place, and reindeer (8,4 %) – the third. Wolf (6,0 %), red deer (2,4 %), hare (2,4 %), polar fox (0,6 %), woolly rhinoceros (0,6 %), ground squirrel (0,6 %) are present. On the contrary, wolf (70 %) dominates the K 17 (II) fauna. It was the primary game for the hunters. Other species such as horse (11,7 %), bison (6,7 %), reindeer (6,1 %), mammoth (5,0 %), wolverine (0,5 %) are not so abundant.

K 17 (II) site is radically different also by the skeletal part representation of the mammals from the K 6, K 12 (III) sites. Two complete wolf skeletons were found in K 17 (II). Man may have been hunted carnivores for skin. On the contrary, only isolated fragments of wolf legs are represented in K 6, K 12 (III) fossil

assemblages. All parts of the horse carcass, including low, medium and high food utility cuts, are represented in K 6, K 12 (III), suggesting, that the whole animals was brought to the sites for butchering, where used totally. The skull fragments are predominated. On the contrary, the horse skull fragments are absent in K 17(II), and the front leg bones are predominated – 80,0 %, These high food utility cuts may have been transported as carcass portions to the K 17 (II) settlement.

The result is not in contradiction to archaeology data. Deposits below the CI tephra at Kostenki yielded several artifact assemblages, which are assigned to the local early Upper Palaeolithic Strelet's (K 6, K 12 (III)), and Spitsin (K 17 (II)) cultures.

LATE PLEISTOCENE STRATIGRAPHY MARKERS AND CHRONOLOGY OF PALAEOLITHIC IN THE UPPER DON BASIN (RUSSIA)

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I. One of the most complicated problems in the basin of the upper Don river is the correlation of stratigraphy sequences and absolute chronology of Paleolithic sites habitation levels. **II.** The Kostenki-Borschevo group of 26 sites (including multilayer ones) yielded data on radiocarbon and paleomagnetic dating as well as on palynology and tephra-chronology. Six multilayer sites with uniform formation of stratigraphy depositions (Kostenki 1, Kostenki 11, Kostenki 12, Kostenki 14, Kostenki 17 and Borschevo 5) allow framing of the substantive periodization for archaeological assemblages. **III.** The earliest finds of the initial Upper Paleolithic are deposited in diluvium loams characterized with interstadial palynology spectrum. These are overlaid with the lower humus bed thought to be the first stratigraphy marker for the multilayer sequences. **IV.** Above the lower humus bed is deposited the layer of loam with the seam of volcanic ash which is regarded as a marker not only for the local sites but also for the Russian plain as a whole. Spread of the volcanic ash fallen down 38-37 kyr BP is traced from Italy [Melekeszev et al., 1984; Pyle et al., 2005] to the very south of Russia. This volcanic ash is recognized in seven sites including two - Kostenki 14 and Borschevo 5 - where archaeological finds were directly overlaid with the tephra. The volcanic ash is especially important marker for dividing the assemblages transitional from the Initial Upper Paleolithic to the typical Early Upper Paleolithic. **V.** General stratigraphic sequence is complemented by the upper humus bed, which was deposited over the loam with the ash. According to the absolute dates 32-26 kyr BP comprised in the upper humus bed are habitations of the early Upper Paleolithic. **VI.** These are overlaid with cultural layers dated by the middle and the late Upper Paleolithic comprised in the suite of surface loess loams complicated with series of paleosoils. Among those the well defined stratigraphic marker named Gmelin paleosol 22/21 kyr BP cuts the Gravettian episode industries from the latest ones. **VII.** The correlation of the records under 4 stratigraphy markers (upper and lower humus beds, tephra and Gmelin paleosol) allows to even discrepancies of the different dating methods. Based on the comprehensive chronology of the mulilayer sites the ranging of the Middle/Upper Paleolithic in the upper Don basin is postulated. **VIII.** One of the recently discovered sites Borshevo 5 being excavated for the last 2 years yielded new stratigraphic and radiocarbon data to make the absolute chronology more precise. Currently the excavations and the testpitting are under way but the results obtained by now allow to distinguish the age according the chronological markers.

The upper Gravettian cultural layer deposited in Gmelin paleosol obtained C-14 dates 17-22 kyr. The estimated age for this settlement may fall in the terms 22-21 kyr BP. The second cultural layer recognized as the kill-site of the hunters for horses is deposited in the upper covering division of the upper humus bed and may be dated at least 28-30 kyr BP. The third cultural layer is synchronous with the deposition of the volcanic ash Y5 being occurred with the upper contact of the ash. The finds of mammoth bones in the lower humus bed in a testpit at the depth of 5 m under the modern surface may indicate the forth cultural layer remains thought to be as old as about 40 kyr BP. Cultural layers of Borshevo 5 are in good correlation with data of the multi-layered sites Kostenki 12 and Kostenki 14. The well stratified structure of Kostenki-Borschevo settlements illustrate in detail the geological and human history of the Upper Paleolithic in the South-East of the Russian Plain.

FINAL PALAEOLITHIC BLADELET ASSEMBLAGES IN THE MIDDLE YENISEI AREA.

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Bladelet assemblages – assemblages of less 5 cm length flakes.

In the 1970es-1980es a number of sites with bladelet assemblages were discovered in the Middle Yenisey area, including Afanasjeva Gora, Tarachikha (layer 2), Novoselovo 13 (layer 2, 3), and Shlenka. All of them are believed to date from the early Sartan period. Since 1998 some more sites with bladelet assemblages have been found in the Derbinsky gulf area (Blizniy Log, Konzyl, Maltat). However, the latter group is dated to the late Sartan time (Akimova et al, 2005). Both groups share some types of stone tools, as well as some technological and metrical characteristics:

- *prevalence of various types of prismatic shingle cores;*
 - *presence of disc cores and cone-shaped cores similar to high scrapers;*
 - *most flakes are less than 5 cm long;*
 - *more than 60% of all of tools are on blades;*
 - *typical are blades with marginal retouch, short endscrapers with marginal retouch, round endscrapers and high endscrapers;*
 - *presence of microblades;*
 - *presence of burins;*
 - *prevalence of dorsal, marginal, semi-abrupt retouch;*
- The Derbinsky gulf sites show also some similarities with the Kokorevo assemblages:
- *presence of endscrapers on blades;*
 - *presence of chisel-like tools;*
 - *presence of points;*

It appears that in the Middle Yenisey area the sites with bladelet assemblages existed during the whole of the Sartan period, and therefore they should not be considered transitional. There seems to be an association between bladelet assemblages and mammoth fauna throughout Siberia. In addition, one can note that the sites with bladelet assemblages show no signs of long-term structures (dwellings, storage pits), which may be indicative of the short-term character of their occupation.

A QUANTITATIVE APPROACH TO THE STUDY OF CULTURAL DYNAMICS IN THE MIDDLE AND EARLY UPPER PALAEOLITHIC

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This paper introduces a simple method designed to evaluate the general degree of “advancement” of stone/bone industries of the Middle and early Upper Paleolithic by calculating what the author calls the MP/UP index. The Middle and Upper Paleolithic are regarded as two ideal polar extremities each characterized by a number of polar attribute states. The real MP and UP industries form a continuum of states between the two ideal poles and the position of any assemblage on this scale can be expressed in quantitative terms. Since this approach was described and tried for the first time (Vishnyatsky 2002), it has been applied by different authors to a number of MP and early UP assemblages from West and Central Asia (Vishnyatsky 2004), South Siberia (Rybin 2003), and East Europe (Anisyutkin 2005). In the present paper the author starts with the description of the method itself and then gives several examples, illustrating how and for which purposes it can be used.

SOME SCENARIOS OF THE MIDDLE TO UPPER PALAEOLITHIC TRANSITION IN EURASIA

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The ideas of the unilinear evolution of hominids accompanied by sociocultural evolution, that dominated anthropological thought some 100 years, now seem to be hopelessly obsolete. The analysis of new data, including first of all the materials obtained in the last 10 years in East Europe and Mountain Altai, shows the variability of the Early Upper Paleolithic formation processes in different parts of the Old World. The present analysis is based not on some a priori sociological scheme, but on the principles of the concrete-historical approach. According to this approach the objects under study should be considered in their concrete spatial, chronological and sociocultural frames. The main conclusions can be formulated as follows:

- 1) The classical unilinear evolutionary model of transition does not work in any of the regions under consideration. It appears that in those regions, where one can observe a gradual transformation of the Middle Paleolithic technologies and tool forms into the Upper Paleolithic ones (as is the case in the Near East and Altai), this process was not accompanied by biological changes. Judging on the available data, some of the local Middle Paleolithic traditions were associated with early *Homo sapiens*. In addition, even in these regions of Eurasia the mass production of formal bone tools and material symbols started abruptly in the very beginning of the Upper Paleolithic (for instance, the lower part of layer 11 of Denisova Cave in Altai). This allows to speak about a revolutionary leap that took place some 50-45 kyr ago.
- 2) In Europe the formation of the Upper Paleolithic mainly followed the acculturation scenario. Due to the influence of the new coming populations who brought a developed Upper Paleolithic culture, a part of the local Neanderthals changed their traditions and, probably, behaviors, which is reflected in the appearance of the so called "symbiotic" (archaic) cultures. This process started 50-40 kyr ago and occurred particularly intensively in the outlying parts of the Neanderthal world (for instance, in the Middle Don region, where the oldest of the East European Upper Paleolithic assemblages have been found, and in the north-east of the Russian Plain). The process of acculturation was accompanied by the process of assimilation of a part of European Neanderthals by newly arriving *Homo sapiens*. However, the latter assertion needs to be confirmed by additional skeletal evidence.
- 3) In the areas densely populated by the Neanderthals, where the latter were strong enough to withstand the newcomers, the process of cultural transition was delayed. In some cases (Crimea, Iberian peninsula) the Middle Paleolithic traditions had persisted rather long, until they disappeared some 28-20 kyr ago, without leaving a trace in local Upper Paleolithic cultures. In these situations one can speak about replacement.
- 4) Two facts are worthy of special note:
 - a) not a single region of Europe shows a gradual transformation of the local Mousterian into the local Upper Paleolithic. Quite the reverse, some early Middle Paleolithic industries seem to have more Upper Paleolithic characteristics than the late ones.
 - b) the oldest "developed" Upper Paleolithic industries (Spitsynian, Kostenki 14/IV6, Aurignacian 0, etc.) are clearly of different cultural affiliation, and at the same time they share something what I define through the term "Auringnacoidness".

These two facts allow one to suppose that the oldest "developed" Upper Paleolithic cultures of Europe have some common base, which had been formed probably beyond our continent and much earlier than 50-45 kyr ago. The search for this hypothetical base is now one of the most important tasks faced by Paleolithic archaeology.
- 5) Thus, the historical sense of the concept of the *early stage of the Upper Paleolithic* seems to be adequate to the process of formation of the *Upper Paleolithic culture proper*. This process was not unilinear and followed different scenario. It cannot be explained as an adaptation to some environmental changes. Rather it should be understood in terms of sociocultural adaptation resulting from interactions of human groups with different social and cultural traditions (developed Upper Paleolithic, symbiotic cultures, surviving Mousterian). The completion of this process is marked by the total or nearly total disappearance of both Mousterian and symbiotic cultures. Purely Upper Paleolithic sociocultural characteristics come to be absolutely predominant. The early Upper Paleolithic ends and the middle part of the Upper Paleolithic begins. In different parts of Eurasia the dates for this boundary range from 28 to 22-20 kyr ago.

CONTRIBUTION TO THE KNOWLEDGE OF THE INITIAL UPPER PALAEOLITHIC (TIME AND PLACE OF APPEARANCE IN EUROPE).

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The Initial Upper Palaeolithic appears in Europe about 43000 BP during Middle Wurm (OIS 3). It immediately preceded Interstadial Hengelo.

The earliest complexes were founded at Balkan Peninsula (cave sites Bacho Kiro and Temnata), Mediterranean seashores of Spain, Italy and France, as well as at the centre of Russian Plain. In the latter case we mean the last discoveries at Kostenki site. It is revealed a cultural layer (Kostenki 14/IVb) with tools and ornamentations of typical Upper Paleolithic design. These artefacts are dated the absolute dating over 40000 BP.

All these earliest complexes have not cultural and genetic interrelationships with Regional Mousterian.

At the present time we have not reliable data about place of Initial Upper Palaeolithic origin. Existing hypotheses are not confirmed with reliable data up to now.

Working Group Meeting

EUROPEAN REFERENCE COLLECTION: STANDARDS FOR SHARING SCIENCE

Time: Saturday morning

Room: 154

Introduction: Guus Lange, National Service for Archaeology, Cultural Landscape and Built Environment, the Netherlands

Governments in Europe use electronic means to streamline there services for their citizens and enterprises. Services have to become transparent, trustful and easy accessible, irrespective of time, place or expertise. Basic registers of civil information like addresses, geocoded information, cadastral surveys, buildings registers, car registration numbers etc. are becoming transparently linked with each other. It helps management by (local) government and it helps citizens and enterprises with their need for governmental information. Site and Monument Records belong to the same category of basic registers. And so, together with the implementation of the Treaty of Valetta (Malta, 1992), archaeology in Europe enters a new challenging world. Our information is used by more, and much different, users. These users range from archaeological specialists, many of them employed by commercial excavating firms, students, teachers, professionals from other disciplines and domains, civil servants (town planning), developers, architects, artists, citizens (of which tourists form a very important group), etc. For all these users a common language need to be defined if we are not to end up in a Tower of Babel situation.

The Working Party on the European electronic Reference Collection (eRC) was installed by the Board in Cork EAA 2005.

The aim of the working party is to promote the quality of archaeological fact gathering and interpretation. As material culture studies form the most basic building blocks of education, theory and policy making, we concentrate on offering sustainable access to widely dispersed knowledge sources on material culture.

The means by which to attain this goal is to discuss, evaluate and promote the use of semantic and information technology standards. A first task is the use of a controlled multilingual vocabulary throughout Europe. This vocabulary will be further enriched with, illustrations, typological information, relevant literature

and references to the places where the physical specimen are stored. Once such a vocabulary has been constructed extensive and fast access to our own archives will be made possible and totally new cross domain, cross language and cross paradigm research questions can be defined and answered. Information technical aids will be provided to make the information available on the Internet.

By opening up our knowledge, information and data, archaeology will gain in transparency, usability, efficiency and effect, trustfulness and value for society. By linking to other domains of science and society, where similar initiatives take place, archaeology will be enriched. Eventually, an European knowledge infrastructure will make knowledge sources and background information available to professional and non-professional users in a distributed, interactive and networked environment.

THE ROLE OF SEMANTIC STANDARDS IN ARCHAEOLOGICAL KNOWLEDGE MANAGEMENT

Guus Lange, National Service for Archaeology, Cultural Landscape and Built Environment, the Netherlands

If we wish to open up our data and information to build new knowledge techniques of data mining and other search methodologies become a focal point of developments. Users are looking for objects in databases that are comparable to the objects they are examining in the field or behind their desktop. Comparable objects, described by others, carry additional information that could be used for the classification and interpretation of the object under study. On the Internet one can search for objects by 'googling' its name. If similar objects are all given the same name a good result of the search is guaranteed. 'Good' is defined here as precise and just enough: not too much hits, nor too few. For data mining in database tables and for automatic retrieval from unstructured text also one needs well defined and dynamically controlled vocabularies. We propose to bind these vocabularies to existing typologies. A typologies can be defined as the central values of a certain category of finds. Around the central value – the statistical mean value, i.e. the type – a collection of slightly different individuals form the reference collection. In a reference collection (RC) the maximum variation of all the types is shown. Reference collections are subsets of all the finds collected. The relative numbers of individuals in the different collections are estimated as:

type : RC : finds = 1 : 10 : 10.000

This means that with one good defined term, in theory 10.000 records of information become available.

With this shared vocabulary links can be build with other vocabulary by means of mapping. In fact users are searching for concepts rather than terms. One step further is that naïve users do not have to know the exact term used by the specialist, but still be able to find what he/she is looking for. By adding structured semantic descriptions to the types, for instance with the ontological tool of CIDOC CRM is one method. Searching by image is another. While a third method is text retrieval based on rules and machine learning techniques.

STANDARDIZATION VS MAPPING: SOME CONSIDERATIONS ON CIDOC-CRM EXTENSIONS

Andrea d'Andrea, Università degli Studi di Napoli l'Orientale, Italy

Standardization and sharing data are the key works in archaeological computing agenda. In fact only apparently we have many digital resources available. Different formats, systems and structures make difficult to access to different archaeological repositories. In order to overcome this limit, mainly produced by the spread of computer applications often developed with proprietary format, recently we witnessed of implementation of thesauri, standards and metadata. Multiplication of these tools has increased the confusion: to guarantee the interoperability among various archives it is necessary to produce a mapping between different data structure. Recently the diffusion of CIDOC-CRM made easier this task. Many mappings to CORE CIDOC-CRM are already available for data encoded according to Dublin Core, EAD, AMICO, etc. Besides CIDOC-CRM is aligned to DOLCE, a foundational ontology and to other domain ontologies (X3D, MPEG7). This contribution will refer to these different mapping procedures pointing out benefits and risks.

OPEN BOEK: EXTRACTING INFORMATION FROM ARCHEOLOGICAL REPORTS AND PAPERS

Hans Pajmans, RACM, the Netherlands

In our implementation, passages in a selection of archeological documents containing numeric figures, cardinals, ordinals or other numeric expressions, are marked and classified according to, e.g. CIDOC/CRM; the system is trained on those instances and the results are used to automatically recognize and classify similar passages in new documents. The passages are then parsed and augmented with HTML-markup for display, and the results are indexed for subsequent retrieval. In the same way, geographical references are recognized, disambiguated and marked up.

In this manner, it is possible to search for chronological dates in the text, regardless of the notation (1100-1200, twelfth century, 12th century, XII century or any year within that period of time), to search for locations within a certain radius of a point or to display the Googlemaps photographs for locations found in the text.

The next phase will be the application of Named Entity Recognition techniques to recognize objects in the texts, and collect the data relevant to them. In this way we will be able to build 'clusters' of properties that can subsequently be used to fill regular databases.



GENERAL SESSIONS



Paper abstracts:**PALAEODEMOGRAPHY OF THE STONE AGE POPULATION OF LATVIA**

Gunita Zariņa, Institute of Latvian History, University of Latvia, Akadēmijas Laukums 1, Rīga, Latvia

The osteological material from Zvejnieki Stone Age cemeteries (8150 to 4190 BP) in Abora I settlement site (4250 – 3770 BP) offer some insight into Stone Age demographic processes of Latvia. Most of material dates to Late Mesolithic and Middle to Late Neolithic. Osteological material of 177 individuals could be used to estimate demographic indices.

Estimated demographic statistics are only slightly dependent on period. In the Mesolithic and the Neolithic, there is a marked prevalence of male burials at the cemetery, exceeding females by a factor of 1.8–2.2. In the Middle and Late Neolithic, compared with the Late Mesolithic, the proportion of child and juvenile burials has fallen by half (possibly due to changes in burial customs); there is a slight increase in male life expectancy, earlier commencement of reproduction and a reduction in female life expectancy. It should be noted that the demographic changes during the Stone Age cannot be linked to the transition to a food producing economy, since hunting, fishing and gathering remained the main mode of subsistence.

PALAEODIETARY ANALYSIS OF NEOLITHIC TO IRON AGE POPULATIONS FROM THE MINUSINSK BASIN, SOUTHERN SIBERIA, RUSSIA

S. Svyatko¹, E. Murphy¹, R. Schulting², J. Mallory¹

¹ Queen's University Belfast, Northern Ireland, UK

² University of Oxford, UK

The research represents the first attempt to study the complex inter-relationships between the environment, lifestyle and diet of the prehistoric populations of the Minusinsk Basin. The main objective of the study is to gain an understanding of the reasons behind the dietary changes that occurred from the Neolithic to the Iron Age periods in the region. As such, the research focuses on human remains derived from the six main archaeological periods and prehistoric populations of the area – the people of the Neolithic period, peoples of the Afanasyev, Okunev, Andronov, Karasuk and Tagar Cultures – which are considered to date from the 25th to the 1st century BC.

Two main methods have been employed – carbon and nitrogen isotope analysis, and dental palaeopathological analysis. In addition, where possible, statistical analysis of the associated graves has been undertaken for the purposes of analysing social structure. It is intended to marry the results of these studies to general archaeological and palaeoenvironmental information derived from the area as well as to undertake a new programme of radiocarbon dating on the remains.

To date the stable isotopes of more than 300 adult individuals have been analysed, and some of them have been radiocarbon dated. The paper will present a summary of the preliminary findings. So far the stable isotope results have revealed the existence of dietary differences between individuals of different cultures. In addition, evidence for social differentiation in terms of diet has been apparent among the remains of individuals derived from single sites, particularly those of the Karasuk and Tagar Cultures. It is clear this multidisciplinary approach has the potential to greatly further our understanding of these prehistoric Steppe populations.

ORIGIN OF THE SLAVS: AN ANTHROPOLOGICAL CONTRIBUTION

Janusz Piontek, Beata Iwanek, Serhiy Segeda and Oskar Nowak

Adam Mickiewicz University, Faculty of Biology, Institute of Anthropology, Poznań, Poland

This research has been supported by the Ministry of Science and Higher Education (Poland) – grant project No. 2P04C 103 29.

Two viewpoints on the ethnogenesis of the Slavs clash in modern archaeology: one assumes that in the ancient times the Slavs occupied the territories in the northeastern part of Central Europe, especially in the

basins of the Oder and Vistula rivers, the other - assumes the existence of Slavic territories only in the areas located further east.

The author contends that the visions of the process of ethnogenesis of the Slavs created by archaeologists must be confronted with and must not be inconsistent with the findings of other disciplines of general anthropology. In particular, the studies of differentiation of the biological features of primaeval populations cannot be neglected. Recently, R. Dabrowski (2003, 2006) presented the results of studies into the anthropological differentiation of human populations from the river basin of the Oder and the Vistula in the time of Roman influences and in the early Middle Ages, using for the analysis newly acquired skeletal material and by applying - in the studies into morphological differentiation - very sensitive methods of the analysis of biological distance between populations as well as up-to-date methods of multi-featured analysis. The research demonstrated very close similarities of the people of the Przeworsk and Wielbark culture in the Roman period to the Western Slavs, and the people of the Chernyakhov culture to the Eastern Slavs.

The aim of the study is to assess biological differentiations between Central European populations from the Roman period and the Early Middle Ages on the basis of the frequency of odontological traits (non-metrical dental traits according to Zubov's classification).

The results may to some extent verify or reject the hypothesis concerning the continuity or discontinuity of the settlement of the Oder and Vistula rivers basin at the turn of the Antiquity to the early mediaeval times.

A comparative analysis was carried out on the basis of 24 populations (4 wielbark culture populations, 7 chernyakhov culture populations and 4 balt groups; 9 populations from the middle ages, including 4 populations from nw poland and 6 populations from the territory of ukraine). Biological differentiation between Central European populations from the Roman period and the Early Middle Ages was analyzed using the principal component analysis.

From the results obtained we can draw the following conclusions: (1) the populations of Wielbark Culture and Chernyakhov Culture from the Middle Ages are indistinguishable as far as the frequency of odontological traits is concerned. They also exhibit similar intragroup variability. The Balts are characterized by different frequency of 4 out of 8 traits in comparison with the above-mentioned craniological series; (2) we positively verified the hypothesis concerning the biological continuity of the settlement of the Oder and Vistula rivers basin at the turn of the ancient times to the early mediaeval times.

BIOARCHAEOLOGICAL ANALYSES OF ARCHAEOLOGICAL POPULATIONS FROM DALMATIA (CROATIA)

Emma Lightfoot¹, Mario Šlaus² and Tamsin O'Connell¹

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This research project focuses on diet and migration in Roman and Early Mediaeval Croatia, utilising stable isotope analysis in order to procure information directly from skeletons, independent of material culture and ethnic labels. The individuals are from five cemeteries on the Dalmatian coast of Croatia; Relje (Roman) and Šibenik, Velim, Radašinic and Glavice (Early Mediaeval). This area has a complex history, being successively taken over by Ostrogoths, Byzantines, Avars and Slavs and, possibly, Croats. Unfortunately, little is known about the lifestyles of this ethnically-mixed population.

Initial carbon and nitrogen isotopic results, as an indication of diet, will be presented and discussed. Carbon isotopes differentiate between marine and terrestrial diet, while nitrogen provides an indication of the amount of animal protein consumed. These isotope results will be compared to biological sex, age, health and status, as well as differences between the Roman and subsequent peoples and between the Early Mediaeval cemeteries. Furthermore, two skeletal groups have been identified, robust and gracile, on the basis of craniometric data. This may represent two separate populations, differing genetically and/or socially. These groups are also distinct in terms of skeletal trauma and caries (indicative of a high carbohydrate, low protein) diet. Stable isotope signatures of these two groups will be compared.

The geographic origin of these individuals will also be discussed. Oxygen isotopes in water show spatial variation which is then reflected in tooth enamel. It is therefore possible to identify people who spent their childhood in a different region. The Roman samples are from a large cemetery associated with the port of Zadar and there may be individuals buried from other parts of the Empire. The early mediaeval cemeteries may also contain individuals who formed part of an initial migration. Incomers will be identified using this technique. Local and non-local peoples will be compared in terms of diet, osteology and grave wealth.

ANALYSIS OF TRAUMAS IN TWO MEDIEVAL SERIES FROM CONTINENTAL CROATIA: KLIŠKOVAC AND CRKVARI

Mario Šlaus, Department of archaeology, Croatian Academy of Sciences and Arts, Zagreb, Croatia

This paper presents the results of analyses of human skeletal remains from two medieval sites in continental Croatia: Kliškovac and Crkvari. To date, the remains of 121 individuals (47 subadults, 27 females and 47 males), mostly well preserved, have been excavated from the two sites. The remains of adult individuals (n = 74) have been studied to determine the frequency and distribution of traumas.

The average age of males in the sample was 37.4 years, the average age of females 36.5 years. A total of 573 long bones were analyzed. The overall frequency of traumas in the postcranial skeleton was 2.8% (16/573). Signs of antemortem trauma were observed in 14 individuals (8 females and 6 males). Skeletal evidence of perimortem trauma (trauma occurring at or near the time of death) was observed in 6 individuals (4 females and 2 males). All perimortem traumas were inflicted with sharp bladed weapons (most likely swords, sabers or battle knives).

The overall frequency of cranial trauma was 16.7% (6/36 preserved crania). Cranial traumas were observed in 5 males and 1 female. Three skulls exhibited one injury, two skulls had two, while one skull had three injuries. A total of 10 cranial traumas were recorded, five of which were shallow, well-healed antemortem depression fractures, while five were perimortem traumas inflicted by sharp bladed or blunt instruments. Comparison with osteological series from Croatia and other parts of the world show that the Kliškovac and Crkvari series is specific because of the high frequency of cranial traumas and the large number of perimortem fractures. Together, these results suggest a high risk of interpersonal violence in the two sites. The distribution of perimortem injuries in the series in which five of the nine affected individuals were women (four of the six individuals with perimortem injuries to the post cranium, and one of the three individuals with cranial perimortem injuries) suggests that the observed injuries may have been the result of violence committed by marauding swiftly-moving light cavalry targeting undefended civilians rather than the results of armed clashes between military units. In this context it is relevant to remember that the infiltration of lightly armed cavalry units was a favourite tactic of both Mongols, who passed through continental Croatia in the 13th century, and Turks, who terrorized and temporarily occupied large parts of continental Croatia during the Late Middle Ages. Further multidisciplinary research incorporating osteological, archaeological and historical analyses are necessary to confirm the results of this study and attempt to identify specific episodes of intentional violence that resulted in the observed traumas.

THE SPECIFICITY OF THE RESCUE EXCAVATIONS OF A FLINT SITE

Julia Siemaszko, Michał Dziób

For the last ten years excavations in Poland are dominated by the rescue excavations. It lets us to expose large surfaces and to explore many sites, but the haste required in this kind of work provokes that we have to take over a different methodic than in case of the stationary excavations.

Even at the stationary excavations flint sites demand a special treatment. The precision necessary at this kind of sites causes slowing down the excavations, and that is what the investors usually don't like.

How to reconcile the rescue type of excavations with the specificity of the flint site? This presentation is to show some ideas about how to solve this problem.

NEOLITHIC LANDSCAPE SPACES IN SOUTHERN SWEDEN

Magnus Andersson, National Herotage Board, Lund, Sweden

People's use and perception of the landscape and the place in southern Sweden varied through the Early and Middle Neolithic in a way that can be related to the form of the social organization. Changes in the organizational structure of society influenced the way in which way people moved socially and physically in the landscape and made their impact on it. At the same time, the use of the environment involved its transformation, so that it took on a different, meaningful role which in turn affected the social sphere.

PRELIMINARY INVESTIGATIONS OF THE NEOLITHIC MASS-BURIAL DISCOVERED AT "ALBA IULIA-LUMEA NOUĂ" ARCHAEOLOGICAL SITE

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Some recent archaeological excavations at "Alba Iulia-Lumea Nouă" Neolithic site (Transylvania, Romania) revealed an exceptional discovery consisting of almost 100 human skeletal remains, uncovered in two multiple burials, about 12-13 meters from each other. AMS - radiocarbon ages on teeth and charcoal indicate that the dates of the burials span 4690 - 4450 cal BC.

The present study investigates the preservation state of the Neolithic human remains.

Fossil teeth and bones are the most widely used remains for ancient DNA (aDNA) studies [1], but DNA is a relatively unstable biological molecule which often shows extensive degradation during burial, and/or can be easily contaminated prior to analysis. Therefore, rapid screening methods are crucial to determine the authenticity and preservation state of DNA extracted from ancient samples [2]. Indirect evidence of the long-term survival of DNA in samples could be provided by assessing the protein preservation through the analysis of the total amount, composition, and relative extent of diagenetic change in protein.

In order to evaluate the degree of protein preservation in these ancient samples, amino acids were extracted from tooth enamel and their concentration and extent of racemization was determined by high-performance liquid chromatography.

The relatively low extent of racemization in the amino acids found is consistent with good protein preservation in the fossils from the "Alba Iulia-Lumea Nouă" site. These preliminary results suggest that this mass Neolithic burial has the potential for further biomolecular analysis, including aDNA studies. Such a large burial population is rare from the Neolithic and thus "Alba Iulia-Lumea Nouă" provides a unique sample set for additional scientific analyses, including the age estimation for the human remains by measuring the extent of racemization in ancient tooth enamel.

Two of the authors (S. Varvara and M. Gligor) gratefully acknowledge the Romanian Ministry of Education and Research for the financial support under the project CEX 06-11-25/2006 (Subcontract no. 173/28.07.2006).

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A SETTLEMENT OF THE MAKÓ CULTURE AT ÜLLŐ (COUNTY PEST, HUNGARY), NEW EVIDENCE FOR EARLY BRONZE AGE METALWORKING

Róbert Patay, Museumsdirectory of County Pest, Árpád Museum, Ráckeve, Hungary

Archaeological investigations were conducted on the outskirts of Budapest between 2001 and 2006 preceding the construction of the south-eastern section of the motorway bypassing the city. On the outskirts of Üllő we uncovered settlement in Early Bronze Age Makó Culture. Pit 5605 contained moulds and a crucible, finds which shed new light on our knowledge of Early Bronze Age metalworking. This paper offers a description and discussion of the Early Bronze Age settlement and its finds, and their implication for the metallurgy of this period.

The finds from Üllő represent the flourishing metallurgy beginning in the Vučedol period at the close of the post-Vučedol period. They reflect the adoption and development of the Vučedol technology of the late

Early Bronze Age 2 and the Early Bronze Age 3 period (corresponding to Reinecke A). A part of the implements (the Kömlőd axe, the flat axe and the awls) were metal types widespread during the Early Bronze Age, while others (the thin and curved flat axes) were less common during this period. The socketed chisels reflect impacts from the west. The carefully made crucible and the equally finely fashioned two-part moulds reflect an excellent knowledge of the period's bronze casting techniques.

THE EVIDENCE FOR BRONZE AGE EXPLOITATION OF SALT FROM BĂILE FIGA, NORTH-EASTERN TRANSYLVANIA, ROMANIA

Valerii Kavruk, Dan Buzea, Romania

North-Eastern Transylvania is very rich in rock salt, brine springs and brackish water flows. There, between Beclean city and Figa village, in a place known as *Băile Figa (The Baths from Figa)*, situated right above a salt deposit, in the river bed and on the valley of a brine stream, one can observe hundreds of posts and isolated or grouped poles, as well as fences made of planks and wattle. From place to place, on the surface of this area, stone mining tools have been found.

The archaeological excavation which took place here in the spring of 2007 (in collaboration with Anthony Harding) were concentrated on three sectors: near the spring of the brine stream (Sector 1); 50 m east from the brine stream (Sector 2); in the river bed and in the valley of the brine stream, 400 m below the spring (Sector 3).

The excavations in Sector 1 (4 x 8 m) uncovered the traces of a wooden construction, inside which two wooden "troughs" were found. These "troughs" were hollowed out of tree trunks, with an open and a closed end. Their bottom part was perforated along the median line. Longitudinally perforated elder pegs were inserted in these holes. In some cases, inside these pegs, hemp cord or/and thin wooden spikes were introduced, which sealed them hermetically. Probably, these "troughs" were used to direct the jets of water to make holes in the rock salt in order to crack it more easily. Three other such "troughs" were found in the river bed of the stream, outside the excavated sectors.

In Sector 2 (1 x 20 m) a hillock was sectioned. It was established that it was anthropogenic. It seems that this hillock, as well as tens of other hillocks found in the valley of the stream, are the spoil from vertical pits dug in order to excavate salt.

In Sector 3 (12 x 12 m) many wattle (hazel) and plank-made (oak) fences were uncovered. Sometimes these fences merged, thus creating enclosed areas. In many cases these areas were covered with roofs made of beams and rods. Perhaps these constructions were meant to collect brine, used to preserve food. Among these fences there have been found some wooden artefacts: a socketed axe handle, a palette, a dish, a perforated disk, two hooks, as well as some pegs (similar to those found in the perforations of the "troughs"). In this sector many Bronze Age potsherds were found. C14 analyses done at Groningen on eight wooden samples showed that the "troughs" and most of the constructions discovered at Figa date to ca 1000 BC. At the same time, one sample dates to the 3rd century BC and one to the 5th century AD.

Further work is planned for late summer 2007, and (funding permitting) during 2008.

THE LATE BRONZE AGE BURIAL PRACTICES IN BULGARIAN LANDS: GENERAL TRACES AND REGIONAL SPECIFICS

Tanya Dzanfezova, Bulgaria

There are considerable variations of the burial practices during the Late Bronze Age (1600/1500 –1100 cal BCE) in the Bulgarian lands.

Cremation in flat cemeteries dominates within the area of the well defined Lower Danube Encrusted pottery culture communities in the Northwest Bulgaria. According to the information, obtained from the Orsoya cemetery, specifics, characterizing the later phase of the culture are indicated. Considering the problem about the east and south "borders" of the culture, and the so-called "zones of contacts" theme, the general trends and the peculiarities are pointed, coming from the comparison between typical Encrusted pottery culture sites on the one hand and sites with similar finds, but more distant from the Danube river, on the other hand.

The LBA burial rites of the other Bulgarian regions (Central and Northeast Bulgaria, Upper Thracian Plain and Middle Tundja regions, Sakar-Strandja region, the Rhodopes, Struma and Mesta valleys) are still not uniformly studied, because of the differences in terrain investigations and information sources. In general, inhumation (mainly in Hocker position) located in tumuli or/and flat cemeteries prevails in these regions. Important exception of this tendency is the fact that cremation is the typical burial rite, practiced in the

Rhodopes. There are specifics of the funeral practices, known from the East, Middle and West Rhodope. The regional differences in the cremation accomplishment (in situ, in or out of the mound perimeter), the various ways of placing the urns, the presence of graves, interpreted as "cenotaphs", and diverse burial rite traces are examined.

Of the other regions mentioned, cremation occurs as exception for instance, in Yagnilo, the Varna Region, and at some sites in the Upper Thracian Plain. The examples of biritualism (for instance in Malkata mogila near Radnevo and mound 85 near Borino, the Rhodopes) are essential. Attention is also paid to the use of Early Bronze Age tumuli for secondary Late Bronze age burials, and to the "internal division" into zones in some cemeteries (in cases of Orsoya and Nova Zagora, for example). In the frames of conditionality, "the richness" of burials is compared. The evidences of more "representative" examples are pointed in regard to the attempts for research in depth of the social stratification.

The presence of variety in the Late Bronze Age funeral rites, known from the Bulgarian lands (types of cremation and inhumation in mound or flat cemeteries) is placed in the context of the Balkan Late Bronze age cultures. The connection of the burial customs with the neighbour regions allow to study the Bulgarian burial practices from later second millennium cal BCE in broader cultural context.

DARDAN CULTURE OF THE LATE BRONZE AGE IN KOSOVA

Haxhi Mehmetaj, UNMIK Kosovo

According to the first discovered site in Bërnica e Poshtme, Kosova, late bronze age Dardan Culture is made known in the archaeological literature and is named as Dardan Culture of Bërnica e Poshtme. Apart from Kosova, this culture is also found in North western part of Macedonia, South Serbia and South east Serbia. This culture consists of dwellings and graveyards. The dwellings can be classified in two categories: naturally well protected dwellings on hills, and dwellings on the plains by the rivers. Rich and various archaeological material of this culture can be found in the tombs. The rites of burning bodies are predominant in this culture. The burnt bones remains are put in special burying vessels, Bychonic urns. All urns are covered with a chonic plate. Small ceramic vessels, ornaments and weapons are found in the urns, or besides them.

The late bronze age Dardan culture unity is manifested by the burying rites, mortal practises, ornament modelling and especially by ceramic modelling. In the ceramic vessels found in the tombs of Grashtica and Kegekolla, the geometric motif ornamented vessels can be distinguished

THE INTRODUCTION OF IRON INTO ARCTIC NORWAY. LOCAL PRODUCTION AND THE SLOWNESS OF ACCEPTANCE

Roger Jørgensen, Tromsø University, Norway

Most of North Norway is situated north of the Arctic Circle. According to traditional chronology the Iron Age is introduced approximately 500 BC with the coming of the pre-Roman Iron Age. There are, however, very few finds of iron older than AD 300. Till the late 1990s there was no sign of local iron production during the Iron Age which brought about a hypothesis linking the need for iron in North Norway to a contemporary surplus production taking place in Mid Norway, way south of the Arctic Circle. Two Iron Age iron production sites have since been found and excavated in North Norway at approximately 69°N. This is about 500 kilometres north of the above mentioned iron producing districts in Mid Norway. The North Norwegian sites are dated to approximately 500 BC and AD 300 and have never been published. In my paper I would like to present the sites and discuss what cultural mechanisms prevented this technological step forward from spreading throughout North-Norway.

SOME SYMBOLIC ASPECTS OF THE CULT OF THE DEAD IN LIBURNIAN CULTURE

Sineva Kukoč; University of Zadar, Croatia

On the eastern Adriatic the cult of the dead is best known in Liburnian culture (from the river Raša to the river Krka), besides Histrian culture (Istria). However, Liburnian funerary rites and beliefs are not well known because of poor state of exploration and the nature of the «archaeological» culture. That is why only chosen aspects of that cult are analysed on this occasion, which are also (possibly) symbolic.

I The meaning of the grave recipients

Liburns do not put them beside the deceased. That is why the exceptions are very important: a) using just one small pot as a grave offering in some graves from the beginning of the Iron Age, b) using greater amount of pots in certain large Hellenistic family vaults (Nadin) dating to 4-1 century BC. All cups/glasses are local products, but some of them (grave 85 from Nin) imitate foreign ones, e.g. forms from Picenum «*kothon*». Sometimes they are replaced by an imported form such as an Apulian askos (grave 23 from Nin), which is a type often presented on Daunian stelae in funerary rite scenes (banquet, libation). Liburnian cups/glasses point to a rite with a liquid intended for the deceased. In the Hellenistic concentration of the recipients (Nadin) imported forms for mixing and drinking wine are dominant. Therefore it is possible to offer thesis about Liburnian concept of the «funerary» banquet of the deceased in the context of similar funerary phenomena on the (western) Adriatic and in the wider region. Potential funerary banquet is most evident (for now) in the necropolises of the planned type (system of the funerary *celae*), appearing in Liburnia and elsewhere (Picenum and southern Italy) since the 4th century BC in the context of Hellenization. Poorly known problem of the spatial structural relations of Liburnian necropolises (flat ones, with mounds) during the entire Iron Age is also discussed briefly.

II Infant funerals

Special (ritual?) meaning of the infant graves is emphasized, either in traditional cist (Nadin etc) or «*enchytrismos*» type, in a large clay pot (Nin, Ričul).

III Proposition of an ideal reconstruction of «male» and «female» (funerary) clothes

IV Liburnian «system» of signs and potential iconic symbols

Remains of such system are: swastika, anthropomorphized swastika, wheel/disc, bird (bird-boat/cart), horse, man. Dynamics of the Liburnian culture is well presented by iconographic-stylistic (and semantic) changes of the anthropomorphic presentation, from long-lasting Liburnian geometrism and non-figurativity to relatively pronounced Hellenistic «concreteness», often presented in silver. The symbolics of motifs bird/horse boat, man, swastika is most probable, which are applied on unique Liburnian artifacts (pectorals, some fibula types, belts, pendants) in funerary context.

SNAKE'S MOTIF IN FUNERARY MONUMENTS IN DARDANIA

Exhlale Dobruna-Salih, UNMIK Kosovo

The important role of snake in Illyrian religion is documented also in Dardania with the dedication of snakes' couple Dracon and Dracena in the Votive altar from Bllaca in the territory of Scupi. Anyway, its carved figure is found too rarely in funerary monuments of this territory, as in other Illyrian territories too. It is found in four samples until now. One of them is a titulus and the three others are stelae. These come from different parts of the whole Dardania, where it was treated in different iconographic ways and in different components of the monument.

The titulus and a stela are from the areal of Skopje. There are five snakes carved in it, which are closely connected with the descendant's cult. Its symbolic mean is to protect the tomb. The titulus is found in Zllokuqan and there is a snake in the leaves carved in it. Another stela is found in the territory of Ulpiana, in Sibovc, near Podujeva (Besiana). There is the snake carved in leaves, too. Equally to decorative mean, it should have the symbolic mean, since in this case it had an important role in Dionysus (Liber) cult. The last stela is from timacum minus (Ravna) and it is dedicated to the local doctor. Here there is a snake around a stick, that belongs to the attribute of Esculap and symbolically it is connected with the descendant's job.

We can conclude that the snake's motif has symbolic meaning in two cases, and in two other cases it has symbolic and decorative meaning.

COINS AND COINAGE WORKSHOPS IN SACRED SITES OF THE THRACIANS NORTH OF THE BALKAN MOUNTAINS

Valeriu Sîrbu, Museum of Braila, Romania
Cristina Bodo, Romania

We propose to catalogue and analyze the meanings of the finds of coins and coin stamps, dating back to the 3rd century BC – 1st century AD, from the sacred sites of the northern Thracians because, so far, there is no comprehensive study of this phenomenon.

Archaeological research has found evidence of various types of cult sites and temples at the Geto-Dacians, and the categories of artifacts found in them includes coins or coin stamps; we will also be looking at the clay representations of coins, either as individual items or the result of their being imprinted upon the sides of recipients.

Many of the finds of coins between the Balkans and the Danube are in “field of pits” sanctuaries, such as in Durankulak, Russe or Bagachina. On the other hand, the finds are more numerous and varied at the Geto-Dacians north of the Danube and from the Carpathians. Thus, whereas there are few associations between coin workshops or coin stamps and sanctuaries (Sarmizegetusa Regia, Pecica, Ocnița), there are many instances of treasures or isolated coins in cult sites or as votive deposits, oftentimes together with other categories of artifacts (Sarmizegetusa Regia, Pecica, Ocnița, Cărlomănești, Pietroasa Mică, Conțești, Căscioarele).

Finally, we will draw attention to the meanings of the presence of coins as offerings and of workshops in Geto-Dacian sacred sites, with an eye to both the whole of the artifacts and of figurative representations discovered in them, as well as their presence in similar contexts at other ancient peoples (Greeks, Romans and Celts).

ANCIENT MACEDONIAN SHIELDS FROM PELAGONIA

Duško Temelkoski, Macedonia

In the year 2006, the remains of three Macedonian shields were found by the illegal operators on the archaeological site Staro Bonche (Old Bonche), Republic of Macedonia. This site is placed in the northern part of Pelagonia valley, and it is recorded as Hellenic settlement with a few necropolises around it. The tomb constructions belong to the cyst type – fenced and covered with stone tablets. At the same time practiced two basic funeral rituals, cremation and burial. Up to the present days, the site is not archaeologically researched. One of the hypotheses is the one that there was the ancient City of Pelagonia. In the Numismatic Collection of the Museum of Prilep there are more then 30 silver and bronze coins with origin of Staro Bonche, and they belong to the Macedonian Kings: Philip II, Alexander III, Alexander IV, Cassander and Demetrios I. But, these surface findings cannot be considered as chronological indicators for the very accurate start of the settlement existence and for the ending of its existence.

The remains of the shields include 150 fragments of the bronze foils. Although, the fragments are still under conservation, the round form of the shields is evident and they have the approximate diameter of 80 cm. The bronze foils have the relief decorative motives arranged in an exterior frieze and in the central zone.

The exterior frieze contains the seven little eight-rayed suns with diameter of the nucleus of 0.5 cm and three bands on the edge. There are two types of suns regarding the look of their rays. The first type includes the suns with rays which length is 2 up to 2.5 cm and they are with rounded roots. The second type of suns includes rays of needle-shaped form and in that respect there are two variants regarding their dimensions: the rays with length of 2 cm and the other type of rays are with length of 2.5 cm up to 3 cm. The one of the shields which were found in Staro Bonche belongs to the first type, and the other two shields belong to the second type.

In the central zone of the shields there is a relief decoration of the big twelve-rayed sun. Dimensions of the rays are 7.5 cm up to 9 cm and they are with rounded roots. The central sun is circled by round band with an inscription ΒΑΣΙΛΕΩΣ ΔΗΜΗΤΡΙΟΥ. The Graphic Table with the numbers of the preserved letters confirms the hypothesis the three shields are found in the settlement Staro Bonche.

B	A	Σ	I	Λ	E	Ω	Δ	H	M	T	P	O	Y
2	2	5	3	3	2	1	1	5	3	3	2	1	2

Katerini Liampi made the typographical analysis of the decoration of the ancient Macedonian shields, so the shields found in Staro Bonche are included into the group of identical shields with inscription of the name of King Demetrius which were found on three archaeological locations of settlement in Greece (Dion, Dodona and Vegora).

Pitifully, the archaeological context of the shields found in Staro Bonche is unclear. The illegal operators have made a big destruction of the cultural layers. The pit where the shields were found is with irregular circular form. It has dimensions of 1.10 X 0.97 m and depth of 1.20 m. Also, in that pit were found the following findings: ceramic vessels, one iron knife that is very badly preserved and weights with pyramidal form and kidney forms. The fragments of the biggest ceramic pythos (pot) make us suppose that all of these previously numbered findings, including the shields, were put inside this pot. What kind of pit it was? Did it was votive pit filled up with presents for the Gods of War or it was a tomb-cenotaph of a warrior of the Guard of the King Demetrius? It is hard to tell.

The second question is: To whom of King Demetrius the shields belong to - to Demetrios I Poliorketes or to Demetrios II? The fact is that on the locality of Staro Bonche so far only the coins of King Demetrios I Poliorketes are found, but not one coin that belongs to King Demetrios II. Also, King Demetrios I Poliorketes was well known by his extremely militant character, that is one more reason for us to believe that the shields found in the locality Staro Bonche belong to him.

COMPOSITIONAL ANALYSIS AND THE PROBLEM OF PROVENANCE OF HELLENISTIC POTTERY FROM VIS, RESNIK AND CAPE PLOČA (CENTRAL DALMATIA, CROATIA)

Lucijana Šešelj, Department of History, University of Zadar

Branimir Šegvić, Faculty of Mining, Geology and Petroleum Engineering, University of Zagreb

The archaeological excavations at Vis, Resnik and cape Ploča have revealed great quantity of Hellenistic pottery. Stylistic and typological analyses indicate that this pottery has been produced in pottery workshops somewhere in the Central Dalmatia. The aim of ceramic compositional characterization is to determine the possible locations of production and techniques involved in its manufacture.

The samples of ceramics were subjected to the following petrological, mineralogical and geochemical treatments: thin-section petrographic analyses, XRD analyses, EMPA analyses and ICP-MS analyses. Thin-section petrographic analyses and X-ray diffraction analyses (XRD) were performed at the Faculty of Mining, Geology and Petroleum Engineering, University of Zagreb. It deciphered ceramic mineral assemblage consisting of: plagioclase, clinopyroxene, quartz, mica, calcite, K-feldspar and amorphous phase. *Vis* and *Resnik* locality samples showed smaller differences in mineral composition while *Cape Ploča* locality samples are featured by significant non-uniformity. Span of firing temperatures is constrained by determined mineralogy and it ranges from approximately 700 °C to 1000 °C.

Phase chemistry data have been obtained by the electron microanalyses (CAMECA SX-51 microprobe) at the Mineralogical institute of the University of Heidelberg. It proved existence of the newly formed firing phases. Ceramics bulk chemical composition is determined by the Inductively Coupled Plasma Mass Spectrometry (ICP-MS) method at the ACME laboratories (Canada).

Based on the obtained results, we suggest that the raw ceramic material might have been autochthonous, especially for the *Vis* locality. Further investigations are needed to corroborate these results.

THE DELMATIAN BATTLEFIELDS

Siniša Bilić-Dujmušić & Darko Periša, Croatia

This paper will discuss the ubication of the Roman battlefields and war theatres in their conflicts against the Delmatae. Some initial results of an interdisciplinary approach combining archaeological methodology with historiographic interpretation will be presented, concerning primarily the locations of Promona and Delminium. Besides, some indications, concerns and problems will be stressed about location of the other battlefields: Synotion, the place of Gabinius' ambush, Andetrium and Figulus' overruned camp.

AMPHITHEATERS IN THE REPUBLIC OF CROATIA

Marin Buovac, Croatia

This paper comes as a result of synthesis of almost all hitherto published reports regarding the much intriguing topic of amphitheatres and spectacular gladiator fights in the Republic of Croatia. In the process I will try to prove that the maximum number of potential amphitheatres on Croatian soil mentioned in both Croatian and foreign literature is 11, all in the contemporary Roman provinces (Dalmatia, Pannonia and Histria et Venetia), though certain facts indicate that this number might be even greater. The up-to-date research has resulted in three completely preserved amphitheatres (Pula, Salona and Burnum) and eight hypothetical amphitheatres (Mursa, Andautonia, Iader, Aequum, Tilurium, Corinium, Epidaurum and Siscia). The largest concentration of amphitheatres is situated in what was once the Roman province of Dalmatia, also home to the two military amphitheatres that were part of the legion camps. The oldest amphitheatres along the east coast of the Adriatic Sea and its hinterland ("the door to the Apennine Peninsula") can be traced back to as early as the Augustan period in the 1st century. In this paper I will try to present all the "pro et contra" arguments concerning the potential existence of amphitheatres in this area and subsequently show that Croatia (Dalmatia in particular) bears a rich and well preserved tradition of both gladiator fights and building amphitheatres in the Ancient, i.e. Roman World.

OPAQUE GLASS IN ANTIQUE PERIOD (CHARACTERISTICS AND MANUFACTURING TECHNIQUES BASED ON TYPOLOGICAL-COMPARATIVE AND STRUCTURAL ANALYSIS OF CUP DATED TO 1ST CENTURY A. D., MADE OF OPAQUE RED GLASS PASTE FROM ARCHEOLOGICAL MUSEUM IN ZADAR)

Šime Perović, Museum of Antique Glass, Zadar, Croatia

The purpose of the article is to compare several types of opaque glass materials such as: „lattice“ glass, pasta vitrea and various coloured opaque glass. We tried to determine the differences among them, to describe opacification techniques for each of type and to explain the presence of a small number of opaque glass artefacts among the large number of transparent glass objects from Roman necropolis of Zadar.

SOME RARE TYPES OF ROMAN IMPERIAL COINS FROM THE NORTHERN PART OF THE CROATIAN ADRIATIC

Martina Čelhar, Mato Ilkić, University of Zadar, Croatia

Great amount of versatile numismatic material has been discovered on the northern part of the Croatian Adriatic thanks to numerous systematic and rescue archaeological excavations during the last few decades. This kind of archaeological finds improves our knowledge about money distribution, as well as about economic circumstances in general in the region of ancient Liburnia. Certain numismatic finds from this region are exceptionally interesting, as they are not known in the current scientific literature.

The first such find was minted in Rome during Trajan's reign. It is exceptional because the same scene appears on both sides of the coin, both being obverse. Large Emperor's bust is in the central part of the coin, laureated, faced to the right. The inscription around the central scene reads IMP CAES NERVA TRAJAN AVG GERM P M. Such inscriptions were common during the first years of the Trajan's reign. This copper coin belongs to the denomination called as according to its size, weight and metal. Roman Imperial coins with identical scene on both sides (either two obverses or two reverses) are exceptionally rare. Such coins belong to asses in most cases, usually with two obverses. The oldest examples of such coins date back to the second half of the first century, during Titus and Domitian's reign, and they also appear later occasionally, in the second and third centuries. Three types of asses with identical scenes on both sides appear during Trajan's reign, but the type of copper coin from Trajan's time found in Roman necropolis at the position Relja in Zadar is not mentioned in the *Roman Imperial Coinage*.

The second interesting copper coin belongs to Constantin II, with the caesar's title. It was minted in Thessaloniki (*Tessalonica*). Two armed soldiers with two standards i.e. military signs between them are presented on the obverse, with the inscription GLORIA EXERCITVS. This kind of coin is not rare, but the

combination of the legend GLORI-A EXER-CITVS, with the abbreviation in exergue SMTSF definitely is (it is not known in the catalogue *Roman Imperial Coinage*). This coin from the Late Antiquity was found on the island of Pag in the Novalja region, where Roman town of *Cissa* was situated. It is preserved in the museum collection «Stomorica».

Described numismatic material from the northern part of the Croatian Adriatic has not been presented scientifically which is a necessity as it can improve our knowledge about Roman Imperial coins.

FORUMS OF PULA AND NESACTIUM IN THE CONTEXT OF URBANIZATION OF ROMAN ISTRIA, ARCHEOLOGICAL MUSEUM OF ISTRIA, PULA, CROATIA

Kristina Džin, Archaeological Museum of Istria, Pula, Croatia

Systematic archeological research conducted in 2006, provided new information in the study of the continuity of life in the Roman town Colonia Iulia Pola. The availability of terrain determined the size of Roman Forum, which is 81 m long and 37,5 m wide on the north side, that is, 35 m on the south. Therefore, its dimensions are obviously not congruous with the traditional rule where the side ratio is 2:3. Next to the forum in Zadar (1:2), Pula forum (1:2,2) is the most elongated among all known forums in Roman towns in Croatian area.

Forum was built on an earlier market in the 1st century BC, and until 4th century AD, it underwent a number of alterations. During the Late Roman period and the Middle Ages it served as town square that diminished with time. During systematic archeological researches of the forum on the Municipium Nesactium site, carried out since 2002, equilateral quadrangular forum with Capitoline Triad was unearthed, together with adjacent objects of so far unidentified purpose.

There were many speculations about the existence of the Nesactium Forum, and this research helped to finally prove it. Even during the 1981 and 1981 excavations (V.Girardi-Jurkić), two bases of peristyle columns with part of outlet precipitation-water canals have been found, while the more recent researches confirmed the existence of the peristyle.

NEW RESULTS OF THE RESEARCHES OF THE CONTINUITY OF ROMAN RESIDENTIAL AND RURAL VILLAS OF SOUTHERN ISTRIA FROM 1st TILL 6th CENTURY

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Due to its historical development, the area of western and southern Istria represents the classic example for the research of the construction continuity of Roman residential and rural villas from the 1st till the 6th century.

New researches in southern Istria on the sites of residential villa in Vižula near Medulin, maritime villa in Pomer, and rural villas on Peličeti and Šurida near Fažana, make a relevant component needed for our better understanding of the archeological evidence recorded so far. In addition to the already researched villas (Sipar and Katoro near Umag, rural residential complex in Červar Porat and Loron, Sorna near Poreč, Valbandon, Verige and Castrum on Brijuni, etc.) from the period between the 1st and the 6th centuries, the new results confirm the architectonic modifications of ground-plans of constructions, function of rooms and economic purpose of each object, especially for the period between the 4th and 6th centuries.

Besides its earlier phases from the time of August till the period of Trajan, luxurious residential villa in Vižula is also known for its residential area decorated with late Constantian mosaics, covered by mortar floors with added hearths from the period of the great movement of the peoples and complete transformation of villa into a compact settlement.

The same transformation, associated with social and manufacturing changes, is visible in the changing type of the presses, vine and olive containers. They are the result of the manufacture restrictions and the way of life that took place in these very rooms till the period of the great movement of the peoples, which is evident in the Šurida and Peličeti complexes. These changes affected the miniature archeological finds (jewelry, tools, applied pottery and numismatic finds starting from the period of August till Justinian).

New social relationships, transformation of servile into colonate relationships on latifundia, and transformation of luxurious spatial villas into compact settlements, all go to show that the old classic relationships could not be incorporated into the new social reality.

ANTIC FIGLINA ON THE PENINSULA LORUN, ČERVAR PORAT - POREČ

Vladimir Kovačić, Zavičajni muzej Poreštine, Poreč

Archaeological excavation on Roman senatorial and imperial site Lorun started in 1994. The site was used for production of household pottery and various clay articles used in transport. International team that consists of experts from the Universities in Bordeaux and Padua has managed to establish three phases of development on the site: litoral architecture connected to port (waterfront, piers, warehouses); production center and area with furnaces. *Figlinae* can be dated to the period between the 1st and the 6th century.

CASTELLUM IN MADONA BAY, BRIJUNI, BUILT AROUND ROMAN VILLA

Vlasta Begović, Institute of Archaeology, Zagreb, Croatia
Ivančica Schrunck, University of St. Thomas, St. Paul, USA

According to all archaeological investigations so far, and the insights obtained by these investigations, we can classify the settlement in the Madona Bay into spontaneous formations with geographical, cultural and ethnic continuity since antiquity. A naturally protected site on the Brioni Islands, from both sea and land, the Madona Bay became in the late antique one of the key points on the Adriatic maritime route. The settlement with high fortification walls was created by successive building alongside a large rustic villa. This *villa rustica* expanded and developed in times of peace and prosperity, then stagnated and expanded again with the construction of a *fullonica* and the surrounding settlement. In turbulent times of late antiquity the settlement found itself in the anchorage zone of a naval base which was defended, together with the settlement, by massive fortifications. The site became a Byzantine stronghold and refuge in the 6th century and developed the features of a late Roman settlement – *castellum*. A multi-layered and complex settlement, represents a key archaeological site for the documenting of the history of colonization and building activity on the islands. The urban matrix of this settlement had been created by a spontaneous transformation of antique structures (both civilian and military).

THE GREAT MOTHER IN ROME: ARCHAEOLOGICAL AND EPIGRAPHICAL EVIDENCE FOR THE WORSHIP OF CYBELE IN VATICANUM

R. Gee

This paper examines the presence of the Phrygian deity Cybele and her son/consort Attis in Rome with a focus on one particularly resonant site described in the fourth-century Regionary Catalog: the Phrygianum on the Vatican plain (Ager Vaticanus), site of the modern day St. Peter's/Borgo section of Rome. Archaeological finds of altars commemorating the sacrificial rituals of *criobolium* and *taurobolium* have been published by *Atti della Pontifica Accademia romana di Archeologia* over a period of years, and the recorded find spots place the Phrygianum on the eastern end of the Campus Vaticanus. The Phrygianum stands out from among the other eastern cult sites existing outside of the city limits of Rome (their presence was forbidden within the *pomerium*, the boundary of the city) because it was apparently well-known in the ancient world. An inscription from 160 offers evidence of the Phrygianum as a paradigmatic site for followers of the goddess Cybele in the sense that Vaticanum was used to indicate sanctuaries to this deity elsewhere. Like the better-known sanctuaries at Ostia and Lyons, it may have been a site with a temple, a sacred field with altars, and perhaps room for a college of priests. Given its size and reputation, the Phrygianum was in all likelihood an important destination for Romans participating in the cycle of March festivals in honor of Cybele and Attis, the best known of which is the *Hilaria*, the joyous ceremony that followed the period of lamentation. The Phrygianum is listed in the Regionary Catalog together with an adjacent site, the Gaianum. While scholars have generally ignored this interesting linkage and proposed the Gaianum as a site for horseracing, Paulo Liverani's recent archaeological/topographical study of the Vatican region in the classical period proposes a conceptual and functional tie between the campus of Gaia and the complex of Cybele, an argument I find persuasive given the syncretism between Cybele and the Magna Mater. As a significant part of this paper I will expand Liverani's conclusion and propose a selective siting for the Phrygianum/Gaianum that creates a synergistic pairing between this sanctuary and the nearby Circus of Gaius and Nero.

MAGNA MATER'S SANCTUARY OF MYSTERIES FROM JADER-INTERPRETING THE FRESCO DECORATION

Aleksandra Nikoloska, Macedonia

During the Roman times, the Forum of Zadar was a location of a sanctuary of the metroac cult. This sanctuary – plausibly of a private character – gives a new insight into how the cult was celebrated in Dalmatia, as well as into influences that helped the development of its autochthonic form. In addition to a marble plate discovered inside the sanctuary and revealing the name of Magna Mater, a fresco decoration has been attested on its interior walls displaying obvious mystery connotations typical of the cult. Amongst fourteen figural representations recognisable on this fresco we find a depiction of a Corybant in an ecstatic dance, easily identified due to its helmet and a shield. This figure leads us to numerous iconographic analogies and mythological cycles, mainly coming from centres of the metroac cult famous for their Mysteries dedicated to the Great Goddess. The figure of the Corybant reveals a specific initiation ritual, frequently connected to the ruling class and traceable to present times.

SYNCRETISM OF GOD LIBER WITH AUTOCHTHONOUS GODS ON THE TERRITORY OF THE PROVINCE OF DALMATIA

Ivana Jadrić, University of Zadar, Croatia

Due to large number of Liber's monuments on the BiH territory, but also on the other parts of province of Dalmatia, most of the explorers of the Roman religion had the opinion that under the name "Liber" was hidden domestic god that was equalized with Liber.

On the Japod territory there is a large number of trails of worshiping domestic gods; in Privilica near Bihać the cult of Neptun Bindo (*Bindus*) is witnessed, so that Liber could very likely be one of the domestic gods. On the shrine from Ustikolina Liber is mentioned together with Terminus and Jupiter, and to him was given central position. Therefore, he gets the greatest significance, and that cult alignment serves to Paškvalin as a proof that Liber is *interpretatio Romana* of the domestic god. On the relief from Rider Liber wears trousers. From that detail of Liber's clothing we can recognize domestic man who is wearing trousers common for iliric population in continental parts, where the climatic conditions were sharper than those at the coast. Liber's sanctuary at the territory of Narona has been raised by dedicant of iliric descent (*P. Annaeus Epicadus*), so it can be assumed that the cult of a vine god is risen at the older, domestic tradition of vine growing which is present from the old age, and is merged with the cult of Roman Liber brought by the italic colonists at the Republican age.

By studying Liber's monuments we can conclude that Liber's cult penetrates with strong Dionysian tradition from coastal part of province of Dalmatia to its inner parts, and alterate cults of the domestic gods of fertility. Those gods probably didn't have much with growing of vine because of climatic condition, so that the local population of those isolated regions have simply continued to worship its old gods of fertility.

THE ROMAN ROAD *NAISSUS-RATIARIA*: WHERE WAS THE STATION OF *TIMACUM MAIUS*?

Vladimir Petrović, Serbia

My paper represents an attempt to reconstruct the course, development stages and significance of the Roman road that connected the well-known intersection of ancient itineraries, positioned in *Naissus*, with *Ratiaria* on the on the danubian *limes*. The research method is based on the data from the famous Roman itinerary of *Tabula Peutingeriana*, as well as on the archaeological, epigraphic and literary sources. The *Tabula Peutingeriana* notes the following stations on the road between *Naissus* and *Ratiaria*: *Naisso XXVII Timaco Maiori* X *Timaco Minori* XXVII *Combustica* XXVII *Ratiaria*.

To obtain the complete picture of this Roman *via*, it is essential to resolve some problems considering the ubification of the road stations. The recent field prospections I attempted suggest some new conclusions about the exact location of the first two stations: *Timacum Maius* and *Timacum Minus* and indicate possible mistakes in the distances that derive from *Tabula Peutingeriana*. In the final remarks I divide four different stages in the development of the *Naissus-Ratiaria* road: **I** Pre-Roman Phase, **II** Early-Roman or Military Phase, **IV** Limes Phase and **V** Developed-Roman or Economic Phase.

ROMAN CORNUCILARIUS FROM BITOLA NEIGHBOURHOOD - AN ARA OF ROMAN SOLDIER (CORNICULARIUS) FROM THE VILLAGE OF LOPATICA

Vesna Kalpakovska, Macedonia

This epigraphic marble monument (86 x 66 x 45cm.) was discovered during the project for conservation of the paintry in the church Sv. Bogorodica in the village of Lopatica. It is a part of the holy table in the altar of the church.

The monument contains 5 rows ancient Greek text, well-saved and readable. It reads that the parents Apollodoros and Tertia erected this ara to their deceased son, who in the course of his military career was a cornicularius. At the end of the text is added that they erect the ara to themselves, too, still being alive. Most probably, cornicularius' parents as per their civil status were peregrini, while the son, due to the favours performed to the Roman army received Roman citizenship, obviously from his name, *Ailios Sotas*. This ara sepulchralis could be dating from the period 2 - 3 century A.D.

HYPERORIA IN THE BYZANTINE DIPLOMATIC PATTERN

Adriana Claudia Citeia, Romania

The history and culture of the Byzantine provinces have had the mark of polytropy. Their destiny was profoundly marked, after the 4th century by the Byzantine policy regarding borders, by the endemic tendency of the migratory peoples that were attracted by the mirage of the New Rome, and last but not least by the sacralization of the space through Christianization.

Hyperoria was an endemic tendency of extending the Byzantine space. The shifting of the borders re-knit the relations between the communities, determined the appearance of a "unique space, differing from itself", removed any attempt at cultural or ethnic solipsism, through a balance that was distinctive of the area between singularity and pluralism.

"CASTE OF HARILAQ" – ANCIENT PALEO-BYZANTINE FORTRESS

Bedia Raci, Fatmir Peja, UNMIK Kosovo

Harilaqi castle is located 15 km in the south-west of Prishtina. Initial archeological groundwork's have commenced in 2005 and are continuing even today. Its location is almost 1.5 hectares all surrounded by walls, which have not been found in the initial start of the digging. Surrounding wall, which track are saved completely is a massive construction width cca 2 m. It is build from broken rocks and in some parts from bricks composed masonry. Attached to the surrounding wall until now we discovered two towers, one inside the walls and the other outside the surrounding wall and also three gates to the inside of the castle. Apart from the surrounding wall where also found two separated architectonic structures, which forms, size and build technique, are identical. These structures have ring forms and straight angles combined with bricks and rocks connected with masonry comprised from pounded brick. For the moment its destination and function cannot be determined, to the west of these structures a basilica was found with huge dimensions facing east with a slight deviation towards north.

Apart from architectonic structures where also found ceramic parts belonging to different pre-historical periods until the VI century and also other objects.

GLASS OBJECTS IN THE PERMANENT EXHIBITION OF THE MUSEUM OF BYZANTINE CULTURE, THESSALONIKI, OR HOW THE SAME OBJECTS ARE TELLING DIFFERENT STORIES

Anastasia Tourta, Anastasios Antonaras, Museum of Byzantine Culture, Thessaloniki, Greece

Permanent exhibition of the Museum of Byzantine Culture, which is arranged chronologically and thematically in 11 rooms, includes a considerable number of glass objects. This material will be used as case study, in order to show how archaeological objects can be interpreted in several ways as museum exhibits.

Aspects of the economical history, like trade, distinction of local products and origin of imports can be presented through these objects. But also, many other, small, private stories can be told, shedding light to aspects of private and personal sphere in which history and archaeology seldom enter.

- *Early Christian Church.*

In this room glass is presented in the form of lighting devices, as well as in the form of composite glass panes and mosaic tesserae, once decorating the walls of Thessaloniki's churches.

- *Early Christian Cities and Private Dwellings.*

In this room metal tools and glass vases connected with glass-working activity are presented along with series of vessels showing the use of glass as tableware or as container for cosmetics and ointments. Glass implements, like coin-weights or jewelry, are also presented offering a different feature of the presence of glass in early Christian society.

- *From the Elysian Fields to the Christian Paradise.*

In this room, glass vessels used in burial contexts are presented: placed in graves as grave goods or as part of burial rituals, also found atop of graves as remains of memorials. Glass jewelry is also presented as a quite common mean of adornment found in graves.

- *From Iconoclasm to the Splendour of the Macedonian dynasty and the Komnenoi.*

- *Byzantine Castles.*

In these two rooms, glass bracelets and beads are presented offering a sight to less expensive alternatives that Byzantine ladies had, in order to adorn themselves.

- *The twilight of Byzantium*

In this room, big-sized, close-shaped tableware vessels, occasionally used as unguentaria, along with few glass, or glass-adorned jewels and costume adornments are presented.

- *"Byzantium after Byzantium". The Byzantine heritage in the years after the Fall of Constantinople.*

Glass lamps, mainly found in churches and monasteries, along with bigger tableware vessels and smaller ones devoted to medicaments and ointments found in habitation areas are presented in this room.

ARCHEOLOGICAL DATA ABOUT THAIFALI

Liana Vakulenko, Ukraine

Among German tribes that together with the Goths approached the borders of the Empire and whose presence became appreciable ancient authors names the Thaifals. The Thaifals are mentioned by Jordan [Jord. Get.91], Zosimus [Zosimus IV, 25, 1], Ammian Marcellin [Amm.Marc., XVII, 19;Amm. Marc., XXXI, 9]. The majority of researchers consider the Thaifals to be Germanic. The biggest quantity of information about the Thaifals may be found in sources of IV c., probably in the period of their highest activity. So, the Thaifals, nevertheless they were mentioned together with the Goths, were different from them. They were different tribes, though they acted together.

Till now there were no attempts to link the Thaifals with any archeological culture. The similarity that can be observed in material culture of the Chernyakhov population that in its great mass is identified with the Goths, and the population of the Carpathian barrows culture. The neighborhood of territories of these two cultures and the same chronology make us think about common activity and common destiny of these peoples.

The fact that the Thaifals are less numerous people in comparison with the Goths agrees with archeological materials. We know that the territory occupied by the Carpathian burrows culture is much smaller than the territory of the Chernyakhov sites spreading.

The Thaifals are constantly mentioned in the Carpathian region. Though non defined mentioning of the Thaifals' lands in this or that way is connected with the territories not far from the right river bank the Dnister and the Siret rivers, that is the waterways that are connected with the Carpathian barrows culture territory.

THE AVARIANS IN HERACLEA LYNCESTIS

Anica and Dimitar Gorgievski, Bitola, Macedonia

The turbulences of the ancient world (5-7 century AD) which caused changes in social and cultural structure have affected Heraclea Lyncestis as well. There are many reasons which caused Heraclea to outlive

its own turbulent life. Even if the most famous communication artery of the classical times, Via Egnatia, after the fourth century has lost its significance at some extent, it is still one of the most significant roads.

The penetration of the Slavs i.e. their presence in Macedonia is attested in the first half of the eighties of 6 century AD. In 584 AD they have attacked Solun (Thessalonica) and were completely defeated. Two years later on, in 586 AD, they have organized another attack, but this time they were together with the Avarians.

Most probably those attacks have spread to Peloponnesus and through entire Macedonia. The city of Heraclea, as an important station of Via Egnatia road, will be in the centre of those events.

The thing that is characteristic of the Avarians, as very well organized military people, strongly connected to their origins, is attested among the material findings in Heraclea. It is considered that there was not any other nation so strongly connected to its origins, as the Avarians were. In fact, the warrior and the war were the tie with their fatherland, with the original clans and beliefs.

The Avarians used the following weapons: leather-made armour, arrow and spear, they were keeping a bow in hands and as per necessity they were using one or other of these weapons. For sure, the main arm of the Avarian soldiers was a bow, when attacking the enemy, so called nomad reflex bow (arch).

Such bony tiles from reflex bows and three-ribbed peaks of arrows were excavated in Heraclea.

The Avarians were bringing their ornaments from their seats in Pontus. Therefore, the polychromatic ornaments found in Heraclea are other evidences of the Avarian presence in these areas. A circle application and a five-angled another one are also found. They are made of bronze and decorated in the manner "verroterie cloisonnée".

Buckles showing favourite scenes of fights among the animals, which are typical to the Avarian manufacturing, are also found in Heraclea.

Many Byzantine and Western authors in many pages of their books have described the huge avarice of the Avarians towards the gold. This fact is confirmed that wherever they were moving/ penetrating they were plundering gold and other preciousnesses. Their popular traveling goldsmiths were accompanying them (the warriors) in order to satisfy the necessities of the rich classes of their society.

These rarely met findings, which in the literature are titled with the Latin word *exagia*, are discovered in Heraclea as well.

At the end, without having big ambitions, we may freely conclude that all these modest data allow us to foresee one moment glittering from the darkness of the ancient events, with hope it will help in deciphering separate events from the time of the big moving (migration) of the nations.

THE EARLIEST MEDIEVAL BI-RITUAL NECROPOLIS NEAR THE CITY OF BALCHIK – BULGARIA

Lyudmila Doncheva-Petkova, Sofia, Bulgaria

In 681 a new state was founded on the Balkan Peninsula. Bulgaria originated as a result of the victory of Khan Asparouh over the army of the Byzantine emperor Constantine IV Pogonatus (668–685). Various opinions have been expressed about the nature of the state. The prevailing view is that it was the outcome of the mutual constructive activities of proto-Bulgarians and the Slavs that were already living on or had arrived together with the proto-Bulgarians to the south of the river Danube.

Several generations of scientists have been looking for evidence for the earliest period of the Bulgarian state. Studies of Slavonic and proto-Bulgarian settlements and necropolises have been taking place since the 50ies and the 60ies of the XXth century. The lack of coins and the rare finds of non-ferrous metals greatly impede the precise dating of the necropolises. For several decades the culture of the Danubian Bulgarians has been considered as a variation of the Saltovo-Mayatska culture or the culture of the Khazars' chaganate and the date of the bi-ritual necropolises was referred to the second half of the VIII c. till the conversion into Christianity in 864.

Recently graves and accidental finds similar to those of the Vrap-Erseke group, which refer to the end of the VIIth – the beginning of the VIIIth c., have been discovered. A lot of data from the first decades of the settlement of the proto-Bulgarians was provided during the several years of excavations of the bi-ritual necropolis near Balchik. Impressive are the various graves (with incineration and inhumation), the diverse grave inventory, the different orientation (the predominant one being north-south), the large number of animal skeletons, the rich and various ceramics. The copper lamellae with forged semi-spheres, the bent lamellae with insignificant parts of wooden objects with free nails and rivets with semi-spherical heads, Byzantine buckles of the Corinth type and type D22 according to the classification of M. Schulze-Dörlamm, various other buckles, ear-rings and bracelets remind us that the necropolis originated during the first

decades since the foundation of the state. The considerable number of graves (so far 222 of them have been discovered) and the several super-positions suggest that it has existed for a long time. Future studies will establish whether its end reaches the year of the Bulgarians' conversion into Christianity – 864.

The necropolis near Balchik with the discovered in the graves ceramic spherical and conical jugs, a cup, bowls resembling metal vessels, copper lamellae with nails and free rivets with semi-spherical heads and buckles is not only one of the earliest, but so far our earliest artefact of this kind. The analogies to the east – in the Crimea, Kerch, as well as along the Middle Danube – among the artefacts from the middle Avar period confirm this. These materials and graves make it possible to talk about population which was most probably sedentary and had settled near the seashore during the years associated with the foundation of the Bulgarian state. This population brought with them various belt decorations, the technologies of the pottery production and the traditions of the burial rites.

THE BI-RITUAL CEMETERIES FROM TRANSYLVANIA/ROMANIA (8TH-10TH C.)

Ioan Marian Țiplic, Sibiu, Romania

The history of Romanian space in the period of 7th-9th centuries is one disputed enough and this is due the fact that this temporal segment assigned to the period of ethno-genesis process. The Romanian historiography beginning from 19th century metamorphosed the discussion about forming stages of Romanian nation in a political problem and linked to the problem of political status quo of that time. Radiography of studies themes, which referred to this problem, is bringing out the implication of the political in the spreading out of the researches connected by Romanian ethno-genesis. If in the next years after the World War II, was seeking to be demonstrating the massive contribution of Slav populations in forming process of Romanian nation, in the nationalistic communism that followed "the spring from Prague" the Slav contribution diminished.

As part of conversation connected by these themes, also is finding a place the bi-ritual necropolises analyses from Romanian space, necropolises assigned to some Slav populations, necropolises catalogued by K.Horedt as belonging to *Medias* Group.

Very interesting is the fact that in Transylvania, after renouncing at cremation rite was adopted the inhumation, in the 7th-8th centuries raise a population which is cremated and curious is the fact that as a part of necropolises by *Medias type*, we find inhumation graves, of course in scanty number. These probably belonged to the local elements that lived together with the newcomers, the Slavs. Remarkable is the fact that during of two centuries the number of inhumation graves will exceed those of cremation, which is mean that finally the new elements will adopt the Christian burial rite. Beside of fact that once with this population reappears the cremation rite, also can be observed a change in material culture, in the first as regarding the ceramics, which isn't worked with fast wheel as till now, but with hand and slow wheel, and in that background could be observed also a local influence. From this horizon of bi-ritual necropolises also are part the discoveries from Ocna Sibiului, Gușterița, Boarta, Bratei, Tîrnava (Sibiu County) and Berghin, Ghirbom, Turdaș (Alba County) etc, reflecting the existence of some Slavs communities in central-northern part of Transylvania, in special connected with salt exploitation.

In the framework of discussion connected by this theme also is finding place the analyses of bi-ritual necropolises from Romanian space, necropolises assigned to some Slavs populations, necropolises catalogued by K.Horedt as belonging to *Medias* group. The name of this group was give by the discovery of bi-ritual necropolises from *Medias –Dealul Furcilor* point.

Remarkable is the double grave case, when in the same urn were discovered remains of calcined bones resulted from both woman and man. This case is often meets in the necropolis from Ocna Sibiului. Also, this situation is possible to exist in the case of others necropolises. The anthropological study made on the contents of many urns proceeding from Ocna Sibiului pointed out this thing of double burials; in 82 graves from 88 cremation graves, which were anthropological studied, contented the remains of two persons, man and woman. It was demonstrated that the persons death from the double graves was concomitant are almost concomitant. A series of writing sources signalling in totality, in this period, the existence of women sacrifice rite at the Slavs populations. The children and young men double graves attest the existence of symbolic marriage usage by the young men after death.

It seems that as in the case of cremation graves where were found two urns, is possible the remains of calcined bones to proceed also from two persons, man and woman. Also, in the case of some calcined bones from Gușterița was made an anthropological study. Between studied graves, one was with two urns. It was established that in o urn were remains of man calcined bones, and in the other remains of a woman.

However, at Gușterița in a urn were discovered the remains of man and woman calcined bones in the same urn, but the fact that man bones are a little, and also because this situation is singular in the necropolis from Gușterița, is mooted a question about the character of double burial, setting free the assumption that the remains were put in the urn accidentally, being the remains of former cremation or let down on the funeral pile, from where were gathered in the same time with woman bones.

The anthropological study pointed out the fact that at Ocna Sibiului, the type of population buried, both in cremation graves and inhumation graves, is the same and can be identified with the east European type, Slavs, while the population buried at Gușterița belongs to Mediterranean type, autochthonous.

The detailed analyses of these necropolises, as well as their reports with the parallel cultural horizons, former or subsequent from chronological points of view can offer a more complex imagine about Ethno-genesis process.

In our opinion these necropolises by Mediaș type marks the fusion moment of those *two population sheets* – how as P.P.Panaiteescu defines the coexistence of some ethnic groups in the same territory –Slavs and Romanics. The variation percentage between these graves, by cremation and inhumation, facilitate some information regarding the large penetration of Christianity in the Transylvanian space, beginning with the 8th century, phenomenon finalized during the 9th-10th centuries.

We consider that the graves horizon from the end of 9th century and the beginning of the 10th century assigned to Ciunbărd group represent the last western Slavs influences in the defining process of Romanian people.

MONUMENTAL MOUNDS OF BORRE, NORWAY GRAVE MOUNDS MONUMENTAL MOUNDS OF BORRE, NORWAY. GRAVE MOUNDS AND RELIGIOUS ARENAS FROM THE 6TH THE 10TH CENTURY

Lena Fahre, Norway

This paper deals with the monumental burial mounds in Borre (Norway) as sign of emerging of social power and ruler ship in the early medieval period in Eastern Norway. In Scandinavian archaeology, large burial mounds have been connected with emerging ruling classes, central places in the landscape and manifestations of different regions in this period. The Mounds is also a symbol of social and religious dimensions and changes taking part from the 6th to the 10th century in Norway.

The mounds of Borre is a collection of 8 monumental mounds and about 30 smaller burial mounds, and its very different form the famous burial of Oseberg and Gokstad. These Mounds is placed just a few Miles from Borre, but as far as we know they have not been surrounded of other burial monuments.

One of the most famous mounds in Borre was excavated (or destroyed) in 1852. The mound was constructed of sand and gravel, and this was used as a construction layer when a road was built in the area. In the mound the workers discovered at wooden Viking ship, horse equipment in Borre style, sacrificed animals and burned bones from a human being. This burial is dated to the first half of the 10th century, and indicates cultural contact between Borre and areas in Eastern Sweden, The Baltic countries and Russia. The similarity of the finds is seen as a close connection between the royal dynasty in Borre, Uppsala and the princely dynasty in Russia.

This paper will also include the interpretation of two "Three armed mounds" which is difficult to interpretate only as burial mounds. An interesting question is how this community was organised, and how the burial mounds and the "three armed mounds" are related in time and space. Other archaeological projects in Scandinavia show that these types of mounds have postholes in the centre and in the end of the arms. Some of them could be constructions for buildings, religious areas or symbols of the world tree of the world called Yggdrasil. This indicates several functions. On a religious level, it indicates that this site was a place man could meet to performing rituals as such as sacrifices and as a symbol of authority and ideology.

EXPLANATORY MODELS FOR THE ABUNDANCE OF WOMEN AT VIKING-AGE BIRKA IN SWEDEN

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Women seem to be underrepresented in extant grave material of the Viking Period in most areas of Scandinavia. One exceptional location where women predominate is the international trading center of Birka in Sweden. I explore reasons for the apparent abundance of women here and maintain that this site is not

representative due to the wealth and status of its inhabitants and the efforts of the missionary Ansgar to Christianize the island during the ninth century. However, even here where relatively more women have been found than elsewhere in Scandinavia, most women were buried with less extravagant grave rituals, such as in cremation and coffin graves rather than chamber graves, which were built more frequently for men.

The apparent dearth of women throughout most of Viking-Age Scandinavia has been partially attributed to archaeological methods biased toward locating male remains, including more ostentatious burial rites, which we also see at Birka. However, Old Norse literary and historical sources from shortly after the Viking Age also indicate fewer females than would be expected according to natural sex ratios. A partial explanation for this lack of females has been infanticide, but this dearth of women is also compounded by differential status of male and female commemoration in life and in death. At this anomalous and wealthy Viking trading site of Birka, we see the effects of the generally lower standing of women but also perhaps some effect of Christianization, which brought new possibilities for women during this period of conversion.

PLAYTIME IN MEDIEVAL SCOTLAND: THE MATERIAL CULTURE OF BOARD AND DICE GAMES

Mark A Hall

An exploration of the everyday pursuit of board and dice games from Pictish times to the Reformation. The social theory of play is briefly outlined before proceeding to treat medieval board and dice games as a case study. Dealing with various pieces of evidence from Scotland (in a European context) – boards, playing pieces, dice, poetry, illuminated manuscripts, paintings, sculpture and stained glass included – the principle games played – hnefatafl, chess, tables, alquerque and nine men's morris – are outlined and comments advanced about the social contexts to which the material relates. Archaeologically, places in Scotland that have produced significant examples of gaming equipment include the royal burgh of Perth, the court site of Finlaggan, the monastic school of Inchmarnock, the Pictish/Viking settlement of Buckquoy, Carrick Castle and the Border Abbeys of Dryburgh and Jedburgh. Dicing is explored as a case study of church condemnation and support of games. Medieval board games were so, integral to people's lives – across a range of social contexts – that they were all susceptible to being taken up as lessons from living-in and understanding the world and its creation. They remind us of the complexity of medieval thought.

THE ANALYSIS OF CULT TEXTILE BAGS FROM EARLY MEDIEVAL GDAŃSK

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Several objects being until now rarely found, among dwelling objects and handicraft workshop's relics, were discovered in the '50s of the 20 c. during archaeological excavations in Gdańsk, among many monuments of early mediaeval material culture. Amulet bags of wool belong to the most interesting ones. The bags were made of different size and shape and their contents revealed variability in aspect of articles and herbs comprised. Among 4 discussed bags the differences of shape and size are remarkable. Three of them are almost identical of shape similar to a water-drop, while the fourth one is larger, has rectangular shape and preserved string bound up with a piece of leather for hanging the bag on one's neck. The contents of the bigger bag were very interesting. It consisted of beaver's fang with a hole for hanging, a fragment of a cross made of amber and some woolen thread. The smaller bag revealed inside an iron needle and herb remains. The meaning of bags, contents had symbolic and magic aspect. The bags contained articles relating to various magic beliefs. The miniature Thor's hammers, even-armed crosses identified as Christian symbol and also as a symbol deriving from pagan tradition of the region, were put into bags apart from preserving and healing herbs. The fangs of various animals symbolizing desirable features as e.g. bears fangs for intensifying possessor's strength, deer teeth for speed and proficiency or fox's fangs to support possessor's shrewdness. Sometimes statuettes of bone or antler representing the single animal instead of fangs occurred. The bags were made of no felted wool of poor quality.

RELICTS OF CHURCHES AND CEMETERY IN PŁONKOWO. CUIAVIA –POLAND

Małgorzata Grupa, The Nicolas Copernicus University in Toruń, Poland

The first exploratory season in Płonkowo enabled to discover stone foundations' relicts of two wooden churches built in 1571 and 1754. The churches were founded by Cuiavian nobles, to whom Płonkowo belonged at that time. Three crypts made of brick, in which noble families were buried, have been found. Searching for a church from the times of the Pomians from Płonkowo 1320-1460 have not brought successful results yet. Layers under the Kaczkowskis crypt having very little volume and lack of material indicating chronology, prove that the area had been used before the church building in 1571, but what purposes had it served – that is undefinable at present. Apart from information concerning the churches' spatial planning, those studies turned out to be very rich source of knowledge on Polish noblemen and country-people funeral ceremonies. Burials uncovered inside the church and along the outside walls were undoubtedly of noblemen. Rich grave-equipment, first of all; silk robes, coffin coverings, laces of gold wrap, twisted gold wire were the most luxurious world products of those times imported by Hanza merchants via Gdańsk and Toruń. The occurrence of top expensive world-products in the graves of Płonkowo is the evidence of high affluence standard of the nobles inhabiting those areas. Family celebrations in baroque style – baptism days (christening), weddings, funerals, should have given a testimony of high position of a family in social structure. Funerals were almost theatre performances. Grave equipment shows that local nobles were fond of everything what was luxury and was unobtainable to the poor. That separateness had to be and it was defined by attire. The custom of inserting a coin in a grave had outlasted in Płonkowo for thousands of years. The majority of our departed got a copper for St. Peter. Coins were found in jaws and around the head.

The considerable difference in size (height) and massiveness (solidity) of bones is remarkable during making an analysis. The nobles, as for contemporary population, were very handsome persons often of 180-185cm tall. Their dentition was prominently sound and splendid. Possibility of selecting persons belonging to the nobles and countrymen delivers us the reasons for defining differences between the rich and the poor.

Multi-layer burial forms in the church and cemetery prove that the previous burials were not removed from the area, but digging down a pit was continued nearly to the last dead and then the next coffin was committed to the grave. When the last graves had been dug into the depth about 50cm, the decision of removing the cemetery to another place outside the village was taken (in 1900). Whereas it is impossible to ascertain, at the present stage of researches, when the burials in the church were stopped. Undoubtedly it had been continued as far as in the 2nd.half of 18th and the beginning of 19th century.

In conclusion of those studies several questions related to that place emerge. We have recognized in the greater part the S-sector of the church and the presbytery, whereas what the N - part and the W (the main entrance to the church) look like is unknown. Whether there is a crypt also placed in the N-side, what the burials on the whole surface of the church look like, what the third crypt, which is not yet fully recognized, keeps covered.

A NEW TYPE OF NUMISMATIC ARTIFACTS

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Any fragment of precious metal with an inscription about weight or cost to become that subject which is called to carry out one of numerous functions of money. Inscriptions, including on vessels is one of ways of contacts of different cultures and civilizations (Franklin, 2002, p.51). The metal money expressed in the form of a coin, i.e. a standard slice чеканного metal, and also ingots from precious metal have different parameters of monetary circulation. Products tourets, therefore, are a subject of studying of the independent unit of numismatics – bars(ingot)logy. Ingots from precious metals have been widely distributed in Europe. In Haithabu during an epoch of Vikings the mark was equaled 204,66 (Jankuhn, 1976, s. 218). Reference ingots in Europe had test 980-1000 °, so called «marka usualis argenti puri», in the Strasbourg documents such ingots referred to «argentums ekszaminatum atque signatum» (Mihalevskiy, 1948, s. 139).

We'll consider two occurring at different times vessels of 12 centuries with Russian inscription and 14 centuries with a Turkic inscription. It is interesting, that practically identical weight parameter has both products. The Byzantium bowl weighs 985, and a vessel from the Saraiy - 980,75.

At weight 985 r should correspond(meet) to weight norm to equal 36 grivnas of one of additional clauses(articles) of vast edition of the @Russian code@ equal of 27,3 at the rate of half pound of 204,756. On a bowl 36 grivnas, but only 35 are written not. The difference between weight and the cost, expressed in percentage makes 2,77. Thus, "cost" of a bowl makes 97,23 % from actual. Occurrence of the given legal tender which in is modern the world name the bill, it is necessary to search in sphere of calculations when the owner did not have cash for calculations. Therefore it has addressed on the credit market, promising to return at once all sum of the debt. The sum of the debt, certainly, should make not 35, but 36 grivnas. It is the market of very short credits.

Other type of the similar payment tool in capital of Golden Horde - the Shed scarlet - Джедид. A Turkic inscription: «five sa()um and twenty with a half of silver mitqals». In message of Fr.Pegolotti the question is different things about saggies and mitqals. Saggi - there is weight unit 4,4 r, and mitqal - 4,55.

«Five s(a)um», represents the weight 990 r (198 X 5), that does not correspond(meet) to weight (980,75) vessels, but a difference is represented with an one-percentage intoxication which occurs in process переплавке silver. The given size is established by evidence of Pegolotti (1936, p.21-23; Khan, 2005, p.151-152).

20,5 mitqals there are 93,275 (4,55x20,5), that represents a forward discount. We shall combine components of an inscription of the given product tourets - we shall receive a redemption price of this derivative instrument. It will make 1083,275 r (198x5 + 93,275). The dish of Kypchak itself represents the second type of issue of the bank bill.

Profitableness on it makes 9,51 % (93,275 : 980,75 x 100 %). It should be repaid in longer terms, rather than the bill of the first type.

At an identical weight parameter as we see, vessels, represent completely different two a derivative instrument with a different maturity and a different degree of profitableness. New numismatic artifacts show dimensions of the credit market in Europe during an epoch of the Middle Ages.

THE ENCLOSURE WALL OF LOUIS XIII'S CASTLE IN VERSAILLES

Jean-Yves Dufour, Inrap, France

Prince among French historic monuments, the château de Versailles is without doubt one of the most famous buildings in the world. Thousands of books and articles have been written about it. Given that the site is so well known, what could a modest preventive archaeological field evaluation, lasting only a few days, possibly add to the sum of knowledge? Quite a lot, as it turns out, because the trenches were opened in the outer courtyard of Louis XIII's first lodgings at Versailles Test trenching was restricted to the area within the perimeter of the projected underground services gallery in the Royal Courtyard. Despite this, the results are instructive about the layout and construction of the wall around the forecourt of Louis XIII's castle. The remains both of the wall and of a tower, have been clearly identified next to a medieval way. Parts of three walls aligned east-west, perpendicular to the enclosure wall, have also been found in the Royal courtyard. They are best understood as belonging to service buildings. The discoveries confirm the accuracy of Gomboust's engraving, the only known picture of an outer courtyard which, according to Jean Héroard, Louis XIII's doctor, had been the idea of the King himself.

AN ETHNOARCHAEOLOGICAL RESEARCH ON TRANSHUMANT ACTIVITY IN THE NORTH OF THE VALENCIAN COUNTRY (MEDITERRANEAN SPAIN): PRELIMINARY RESULTS

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J. Seguí, Valencian Museum of Ethnography, Spain

The paper aims to discuss on ethnographic information gathered on the seasonal migration of shepherds and their flocks linking the Serrania de Gúdar (Teruel) and some inland territories of Castelló with the nearby coastal areas of Mediterranean Spain. Fieldwork is currently being carried combining ethnographic and archaeological approaches. Paper discussion drives some ideas in herding strategies, particular ways of land use, as well as the social effect of cultural contact that transhumant activity may trigger. Preliminary archaeological implications are finally suggested in relation to similar works carried out within the Mediterranean context.

USING PHYTOLITHY ASSEMBLAGES TO ANALYSIS OF AN SARMATIAN KILN FOR BAKING POTTERY

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The kilns are relative little just then very composite objects of archeological sites. The purpose of our work is the environmental historical analysis of the kilns, namely can we extract information from the former vegetation or fuel (wood, straw) by the analysis of the samples from the kilns? We have analysed phytolith assemblages, because the biogenic opal is very resistant and it can remain so hard circumstances too where the pollen assemblages go bankrupt. We have analysed 12 samples from an Sarmatian kiln for baking pottery. The phytolith, organic matter and carbonate content of every samples have been analysed, and in our presentation we would like to present the results and their relationships.

COMING IN FROM THE COLD. THE ASSOCIATION FOR CULTURAL EXCHANGE AND ARCHAEOLOGICAL TRAVELLING SCHOLARS IN EUROPE 1965-75

C.Stephen Briggs, Independent Scholar and Charity Trustee of the Association for Cultural Exchange, UK
Llwyn Deiniol, Llanddeiniol, Llanrhystud, Ceredigion, UK

Although ironically it broke down many cultural barriers, the Second World War also broke up relationships between scholars right across Europe. Peacetime reconciliation then became difficult because of the deep suspicions of some travellers and tourists throughout the Cold War which followed. This impacted on academe, so that most Western States were unable to be seen to establish scholarly communications with the Iron Curtain countries.

In 1958 Philip Barnes founded the Association for Cultural Exchange (ACE) as a non-political, educational charity. Between 1965 and the early '70s, the charity employed Hugo Blake (now a respected scholar of Italian Medieval Archaeology) to make contacts in European universities and museums, particularly with the Iron Curtain states. It was intended to create a mechanism for helping younger western scholars understand scientific progress elsewhere in Europe.

A small number of scholars were greatly advantaged in this way, with mainly the older generation travelling west, and the younger in the opposite direction. Significant contacts were also made in Scandinavia and Germany.

This paper enumerates those scholars who took part. It gathers together accounts of some of their encounters and experiences and briefly considers their subsequent careers.

Research to establish the basic facts for this study raises some quite disturbing facts about how archaeologists and administrators have kept or disposed of archival material relating to one aspect of the discipline's recent history.

THE INTERNATIONAL ARCHAEOLOGICAL "PROJECT CETINA" BETWEEN SCIENCE AND POLITICS

Ante Milošević, Museum of the croatian archaeological monuments, Split, Croatia

"The Cetina Project" has been conceived as an international archaeological project with participating institutions from Croatia, Slovenia and the United Kingdom. The preparation for its realisation started in 1999, prompted by the outstanding discoveries in the Cetina riverbed which, in addition to the known topography of the region, have captivated the attention of academics across Europe. It has been wondered why this river possesses such an exceptional history, why so many archaeological objects have been recovered from its riverbed and what the larger context of these finds might be. After the initial inspection of the Cetina valley made in 2000, the first survey of the area's potential was organized in 2002 when primarily the paleoenvironment investigations were conducted. During that year, as well as during the summer of 2003, limited drillings were performed on multiple locations of archaeological interest. The obtained results suggested that not only were there well preserved prehistoric settlements, but also that a large part of the valley might preserve the prehistoric landscape. Moreover, the study suggested that the environmental sequence in the valley stretched back at least 10,000 years, possibly even longer. In the archaeological point

of view, the Cetina valley has crucial predispositions necessary for the survey planning: exceptionally preserved settlements, remarkable environmental data and a material culture comparable with many other, better known parts of Europe. The team of experts further realised that the Cetina valley probably contains one of the best-preserved waterlogged landscapes in the region. Given the lack of paleoenvironmental data between the Swiss Alps through to Northern Greece, it is clear that the Cetina valley could provide an environmental baseline for much of the Balkans and the potential to answer many key questions about the social and economic development of Dalmatia and the Balkans more generally.

After the initial surveys and the efforts of the project team to bring these remarkable discoveries to the attention of archaeologists around the world, it is essential to make further detailed and interdisciplinary surveys of the Cetina valley. This is also a matter of some urgency as the extraordinary levels of preservation are now under threat from changes to the water regime that currently preserves the environmental remains. In addition, the river banks are eroding and in some places ancient house timbers now protrude from the river banks. As artefacts erode freely from the river banks it is inevitable that looting is taking place. Archaeologists and historians together with other related experts now face a major challenge to explore and preserve the remarkable landscape of the Cetina valley as part of the cultural heritage of Europe.

It is evident from the preliminary assessment that environmental archaeology of the Cetina valley has a sound potential to provide fundamental insights in several domains:

- chronological data sequence on pollen, plant macrofossils and insects spanning the Holocene which are of clear international importance to studies of climate and vegetation succession;
- the past use of the valley land during the crucial periods of its cultural development;
- the development of the river and its associated wetlands over the time period represented and the implications of the palaeohydrology for the settlement of the valley floor;
- direct information on the economy, functional structure and, possibly, the living conditions of the waterlogged settlements associated with the river.

Due to its importance and a very large landscape (1000 km²) with a complex geomorphic history, it is impracticable to prospect for major environmental sites using a rather haphazard strategy based on local knowledge, limited fieldwork and "ground testing" with a hand auger. Instead, there is a pressing need to develop an objective survey strategy that quickly and efficiently identifies "environmental hotspots". Therefore, the project team has developed a four-step strategy which could form the basis for a generic strategy to study other similar areas globally:

1. Performing a detailed aerial photographic survey of the riverbed to locate depressions and palaeochannels using historic collections of air photographs in the UK and Croatia.
2. Performing multiple surveys and photo-registration of the Cetina valley during different seasons and weather conditions.
3. Defining high-resolution digital topographic models of the river valley, which will allow the identification of old riverbeds and other topographic features of archaeological interest. Recent surveys in the UK have indicated the potential of using LiDAR (**L**ight **D**istance **A**nd **R**anging) remote sensing techniques and multispectral analysis in revealing areas of ground water saturation and, therefore, areas where organic materials are well preserved. The Natural and Environmental Research Council have agreed to undertake a LiDAR and multispectral survey of the Cetina Valley on behalf of this project.
4. Performing a high-definition ground penetrating radar survey of the Cetina valley to look for both archaeology and palaeoenvironmental features at depth. In the collaboration with Dr. Gianfranco Morelli, two preliminary transects of over 5 km have already been run across the valley using a GSSI Terravision ground penetrating radar array with 14 antennae and providing a width of 2 metres. The preliminary results so far obtained look encouraging.

Once the data obtained by these methods and techniques are processed, integrated and interpreted, the areas identified as "hot spots" for environmental archaeology will be investigated by hand auguring. If preservation looks positive as our indications already suggest, open face sections will be cut and sampled for recovery of a wide range of environmental indicators, and materials will be collected for radiocarbon determination. Those non-destructive surveys will significantly contribute to plan extensive archaeological investigations in the Cetina valley, which are promising for both Croatian and world archaeology.

However, this sophisticated and widely accepted archaeological project has been opposed since 2004 by present Croatian politics, which suspended all previously reached agreements and permissions for its realization. The project fulfilment has also been blocked by personal alternation in all major Croatian

institutions which supported the project. Scientific progress has been silenced by everyday political irrationality, but this is hopefully transient.

APPLYING GEORADAR IN DETECTING ROMAN REMAINS IN CASKA ON THE ISLAND PAG; CONTRIBUTION TO THE STRATEGY FOR SUSTAINABLE DEVELOPMENT

Goran Skelac, Georheo d.o.o., Croatia

During past three years systematic archeological research was organized in the bay of Caska. Excavations and surveys were taken on land and underwater. Roman necropolis, part of Roman villa with remains of storage *dolia*, cellars and parts of infrastructure (*cloaca*) were excavated and protected. During underwater research discovered the remains of Roman port, completely preserved Roman wooden anchor and plenty of small finds were discovered. According to Roman coins, period of Roman domination in Caska lasted from 1st century BC to 4th century AD.

Results of excavations were mapped along with all visible remains of walls and other structures discovered during the surveys.

Additionally, many interdisciplinary advices and research, such as geological samplings, study of local tectonic movements, analysis of organic material, etc, were applied for better understanding of spatial organization and historical dynamics of this micro region. Results of these actions are still in process of elaboration.

Remote sensing with georadar was applied to detect underground remains of possible Roman (or other) architecture in the areas with no visible surface marks i.e. to estimate archaeological potential and to map the possible structures.

As the results of this research another part of Roman villa that has been partly excavated; remains of another large architecture (villa or forum or something else) and areas with and without archaeological remains were mapped.

Such results are very useful in planning the future archaeological excavations and *in situ* presentations.

SUPPORTING INFORMATIONAL SYSTEMS IN ARCHAEOLOGY

Pavel Vavřín, Czech Republic

Traditional methods of information search apparently don't satisfy actual requirements any more. Bibliographies and registries, if any, are usually scattered in many publications of various kinds. It is obvious that the situation arisen is to be treated by the help of modern information technologies – information systems must be established, which will simplify the scientific work through enabling as many published cognitions as possible. So that a scientist can spend as much of his time and energy as possible on analysing information instead of acquiring it.

One of such systems began to be built up in the Institute of Archaeology of the Academy of Sciences of the Czech Republic, Prague. It is the digitalisation of the famous archaeological journal *Památky archeologické* (issued since 1854; 42 000 pages, ca 9 000 articles and reviews).

BURNT MOUNDS AND TROUGHS IN THE CONTEXT OF THE LANDSCAPE: A PALAEOENTOMOLOGICAL APPROACH

A.G.Brown¹, S.Wynne², M. Gowan², S.R.Davis³,

¹ University of Southampton, ² University of Exeter, ³ University College Dublin

Burnt mounds, hot-stone based water-heating structures, have, in some places, persisted as features of the landscape since their formation in the Middle-Late Bronze Age. In other places they have been buried by alluvium and have occasionally been preserved to a remarkable degree. The environment in which they were constructed, used and abandoned can be reconstructed using palaeoecological techniques, largely on the infills of the troughs or adjacent sediments. This study has focussed on burnt mounds from Ireland for several reasons; firstly due to a very high level of infra-structural development; hundreds of these sites have

been excavated in the last few years and secondly because the high rainfall in Ireland promotes peat growth and the preservation of the troughs within organic sediments. This study has used both pollen and Coleoptera and both will be reported upon in this paper.

Preliminary results show that whilst the burnt mounds themselves affected the surrounding environment through local deforestation for fuel, the impact on the natural invertebrate fauna of the sites seems to have been less profound. Beetle and other insect remains are abundant at many burnt mound sites and they give clear indication the surrounding conditions typically included flowing or stagnant water with muddy waterside spaces, grassland or shrub vegetation with a variable but generally minor woodland component. There appears to be little or no direct evidence of the human activities generally assumed to have taken place at these sites (e.g. cooking or fat rendering). Was it that these activities were very short-lived, that they took place in the winter when there are fewer insects around, or was this a very clean process that did not alter the natural ecological balance of the site?

HISTORIC LANDSCAPE CHARACTERISATION: TOWARDS A DEMOCRATIC HERITAGE?

Stephen Dobson, Department of Landscape, University of Sheffield, UK

Historic Landscape Characterisation is a tool for documenting the character of historic land-use and aims to present a means of highlighting some of the less 'significant' or 'special' aspects of the past. It is a nationwide approach, initiated by English Heritage, in an attempt to recognise the relative importance of all landscape remains and particularly those that help to form a regional 'sense of place'. Since this approach is essentially a judgement-free exercise, for documenting those aspects of the past that exist in all areas of the contemporary landscape, it does not intrinsically attribute any specific value to historic remains. Although it is a national programme, the individual projects are conducted on a county-based level and are therefore broadly compatible but essentially designed and implemented as regional rather than national tools. This 'bottom-up' approach enables local distinctiveness to be expressed but could be criticised in its limitations for providing a complete and comparable national picture. It is perhaps because of this, however, that the importance of local features and remains are given particular significance for their contribution to the character of their contextual surroundings rather than being judged at a national level. Examples are presented here as to how the archaeologist, landscape architect and developer may use Historic Landscape Characterisation information and work together to enhance 'placeness' in residential areas through its use in design and the community consultation process.



POSTERS



LITHICS AND MOBILITY - LATE MESOLITHIC SHORT-TERM CAMPS IN NORTHERN LAPLAND

Mikael Manninen, University of Helsinki, Institute of Cultural Studies, Department of Archaeology, Finland

The poster presents some results of an on-going research project on Late Mesolithic (c. 5800-4600 calBC) sites and lithic technology in northern Fennoscandia. The studied sites are characterised by a type of oblique/transverse arrowhead that has no clear predecessors in the area. In the poster sites from Finland, Sweden and Norway are discussed. It is concluded that the organization of the sites as well as the organization of technology at the sites indicate that they were short-term camps used by highly mobile groups using both the sea coast and the forested mountainous inland areas.

PERCEPTIONS OF TIME AND SPACE IN SEDENTARY AND NOMADIC CULTURES

Eva Cermakova, Department of Archaeology and Museology, Faculty of Arts, Masaryk University, Brno, Czech Republic

According to phenomenologists (but also physicians) the fashion of the perceived world is nothing but the result of the manner of observing. Thus, this is the position, from which one observes the world, what is crucial for the creation of one's „reality“. I believe, that one of the most important factors, influencing the „virtual world“ in terms of time/space perception, is whether a society is sedentary (obviously peasants) or mobile (obviously nomads or hunters/gatherers).

Two ways of space perception

For the sedentary communities space means just „here“ – the absolutely known piece of land, which creates actually an unity with its inhabitants. For the nomadic people, however, space is an entity, which has to be controlled and „caught“ by various means (australian songlines, rock art, carpets).

Two ways of time perception

Analogically, there seems to be two basic distinctive approaches to time. A culture can „catch“ the time sophisticatedly in objects like henge, rondels and another calendrical architecture, which is typical for sedentary cultures. On the other hand, nomadic cultures seem to live simply „now“ in the present.

In general, the sedentary societies tend to have a more complicated relation to time, whereas nomads show out more sophisticated relation to space.

NEOLITHIC SETTLEMENT BURIALS IN MORAVIA

Dockalova M, Fojtova M, Jarosova I, Cizmar Z

The project focuses on the settlement burial rite in Neolithic populations living in Moravia in the chronological period of 5700-4500 BC. Culturally, the period is delimited with Linear Pottery Culture, the Stroked Pottery Culture and the Moravian Painted Pottery Culture.

In the recent years, extensive archaeological rescue research – especially in central Moravia – has considerably extended the amount of knowledge on the Neolithic burial rite. The new findings naturally include also burials and graves discovered in settlement agglomerations. Most new findings come from the Linear Pottery Culture period, while the period of the Stroked Pottery Culture shows constant stagnation, and the Moravian Painted Pottery Culture has yielded only random individual finds.

From the archaeological point of view, there are four categories of burials in settlements: individual burials within the settlement structure, mass burials of adults and children, multiple children's burials within the structure, and individual graves.

Manifestations of culture and social phenomena are a part of the prehistoric past of humanity. Individual time periods of prehistory provide an opportunity to follow and analyse certain features, leading to general social characteristics. One of these phenomena are the so-called burials in settlements, as one of the few types of sources yielding evidence of not only ritual and religious ideas, but also of possible social differentiation. The objective of the research project is firstly to explain biological and cultural differences within the Neolithic population.

SPATIAL DYNAMICS OF RAW MATERIALS AND MANUFACTURED OBJECTS DIFFUSION DURING PREHISTORY. WORKGROUP 3 ASSESSMENT IN THE ARCHAEDYN PROJECT

P. Allard, O. Weller, E.Gauthier, Laure Nuninger

This paper presents one example of the first results of a recent research program "ACI Space and territories"-ArchaeDyn project, 2005-2007. The main research topic is the study the spatial interactions between social groups, the resources that they exploit to insure their subsistence, the manufacturing of objects and trade with other groups over a short, medium and long distance, and the itineraries which govern the flow at different periods.

The investigation progresses by exploring several themes, such as varied geographical scales, from the micro-region to Western and Central Europe, including French territorial space, at equally varied periods, from the Neolithic to the medieval times. We proceed by evaluating and measuring how the territories are constituted and how they evolve by taking into account the exploitation of mineral and biological resources, the activities of agro-pastoral and craft production, and the circulation and consumption of manufactured goods.

The work group "Diffusion of Raw Materials and Manufactured Objects" is centred on a diachronic study of management in the area of the consumption of products of divers natures (bronze, flint, jadeite, stoneware, salt, ceramics...), the study of which answers some very specific problematics. The products include objects of various uses (millstones, axes, weapons, tools...) found in different contexts (settlements, deposits, river finds...) during Pre and Protohistory.

The example presented in this poster is the study of the circulations of the flint raw materials during the Linearbandceramic period, (called Rubané in France), that is the Early Neolithic, in Western Europe (5300-4900 BC cal.).

For the project, the first step consisted in building the database with all the settlements for which the studies concerning the lithic industry and particularly raw materials were available. It is thus about a compilation of recent works, and the principal ones are for north of France and Belgium: Allard 2003, Jadin 1999 for Belgium, Zimmermann 1995 Germany and some others punctual works.

The objective is to show existence of true distribution flint networks which enters in competition and delimits zones of distribution in Western Europe.

MULTIPLE BURIALS AT THE NEOLITHIC SETTLEMENT FROM "ALBA IULIA-LUMEA NOUĂ", (ALBA COUNTY, TRANSYLVANIA, ROMANIA)

Mihai Gligor, Systemic Archaeology Institute, "1 Decembrie 1918" University, Alba Iulia, Romania
Marius Breazu, Simona Varvara, Topography Department, "1 Decembrie 1918" University, Alba Iulia, Romania

The "Alba Iulia – Lumea Nouă" archaeological site, discovered in 1942, is located in the north-eastern part of the city of Alba Iulia (Alba County) on the right bank of the Mures River, and it is one of the most representative Neolithic settlements in Transylvania (Romania).

From the multiple issues raised by the archaeological research carried out at "Alba Iulia – Lumea Nouă", the present study focuses on some recent discoveries, consisting of two multiple burials situated in the middle of the settlement, at about 12-13 metres one from another. A rough estimation of the number of human skeleton remains found in 2003 (Mariş private property) and 2005 (Colda private property) in the two burials leads to the idea that approximately 100 persons were buried in that area.

The skeletons were not in their anatomic position and the cause of death was not obvious. If we take into consideration the high number of skeletons and the fact that most of them are incomplete, then it is possible to assume that the individuals buried at "Lumea Nouă" suffered a violent death. However, we cannot leave out the theory according to which their death was caused by a disease.

References to similar discoveries from Germany (Talheim, Herxheim) and Hungary (Esztergályhorváti) allow for a series of analogies that are also plausible at a chronological level.

Studies of physical anthropology and ancient DNA analysis are in progress in order to establish the cause of death and the number, height, age and sex of the deceased.

Over the entire researched area, together with the human skeleton, there have also been found animal bones, bone tools, stones and a large number of pottery fragments. Another interesting finding is a metallic

ring which could have been part of the funerary inventory. The SEM-EDS analyses have indicated that the ring was made of copper and manufactured by beating.

Based on the radiocarbon data and taking into consideration the typology of the pottery artefacts, we may state that these new discoveries at "Alba Iulia – Lumea Nouă" site belong to the Foeni group, whose communities had a significant contribution to the genesis of the Petrești culture (first half of the 5th Millennium B.C.).

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BURIAL, MASS GRAVE OR SACRIFICE? A CASE STUDY FROM THE LATE COPPER AGE SITE OF ABONY (HUNGARY)

Szilvia Fábrián, Gábor Serlegi, Archaeological Institute of Hungarian Academy of Sciences

In the prehistoric cultures of Europe, especially from the Late Copper Age, numerous settlement features are known, in which human skeletons, parts of skeletons and skulls were found together. Some of these features can be interpreted as mass graves, others as sacrificial pits, but in many cases it cannot be decided, with what aim they were dug out: they often contain both systematically placed skeletons, skeletons thrown in in an unnatural position and partial skeletons, like skulls, limbs, and other human bones. What kind of relationship can be detected between these human remains that were buried so differently? Were they placed beside each other by accident or have all the phenomena within such a closed assemblage different meanings? Is it conceivable that the relationship between the whole and its parts can be interpreted as a burial and its grave-goods? Or are these the elements of sacrificial rites? In this case, could the relationship between the whole and its parts have conveyed a complex meaning for the prehistoric human community?

In this poster we would like to present a few special assemblages from a site in Hungary dated to the beginning of the Late Copper Age. At the settlement of the so-called Proto-Boleráz horizon, preceding immediately the Baden cultural complex, nine pits have so far been excavated that contained remains of special depositions of human remains. This group of features is spatially clearly separated from the rest of the settlement and has yielded so far the remains of 48 individuals. These deep pits contained carefully buried and thrown-in human bodies, partial human skeletons, skulls, animal bones, intact ceramic vessels and sherds in layers, which suggest the regular repetition of these activities. These can be described with any of the expressions in the title, but cannot be conclusively connected to any of them.

GEOGRAPHICAL PATTERNING OF LINEAR POTTERY SETTLEMENT IN EAST BOHEMIA

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The subject of this contribution is the relationship between environment and Man at the time of the Linear Pottery (LBK or locally LnK) culture. The study region selected is East Bohemia, as delimited by administrative divisions. Emphasis has been placed on the siting of settlements, their relationship to natural conditions and an attempt to trace settlement trends in the culture under considerations. On the basis of a catalogue of sites and 1 : 5000 scale maps the changing densities of settlement, altitudes, distances from water sources, terrain morphology, degree of slope and slope orientation were identified. These formed the basis for subsequent analyses at the level of both the entire study area and in microregions (the Hradec Králové, Jičín regions), as well as of natural settlement clusters associated with water courses. The results also enabled a resolution of the question of settlement continuity in the periods both preceding and following the LBK. It proved to be that LBK settlements in study region form three conspicuous clusters that are associated with watercourses. Three smaller settlement concentrations that should not be overlooked also run along rivers. The basis on which the settlements clustered, and whether there was common interaction between them that might have arisen in the social (descension factors) and economic spheres, is a question of interpretation. The development and trends in the monitoring clusters will be analysed from view of stylistical and chronology of the LBK pottery.

THE RESULTS OF THE PHYSICAL ANTHROPOLOGICAL STUDY OF THE SKELETAL REMAINS FROM COPPER AGE PITS AT ABONY (HUNGARY)

Kitti Köhler, Hungarian Academy of Sciences, Archaeological Institute
Tamás Hajdú, Department of Biological Anthropology, Eötvös Loránd University

This study is aimed at the classical physical anthropological investigation of the human remains from the mass graves or sacrificial pits excavated at Abony (Hungary) and dated to the Proto-Boleráz horizon, a transitional phase between the Middle and Late Copper Age. So far no human remains have been analyzed from this period immediately preceding the Late Copper Age Baden cultural complex. Consequently, our aim beyond the publication of the new physical anthropological data is the biological characterization of the population of the Carpathian Basin in this period. The work is based on the study of the remains of 48 individuals from 9 pits.

During the work, the age of death of the interred is estimated, their sex is determined and their metric and morphological data are recorded. Based on the results of the metric study we carry out a biostatistical comparison of the skull series from Abony with other Neolithic and Copper Age populations of the Carpathian Basin and other areas of Europe. With the help of oral pathological traits and macroscopic changes we try to reconstruct certain aspects of the lifestyle of the buried individuals. Furthermore, inherited epigenetic traits and developmental disorders are discussed as well. Based on the results of the physical anthropological examination of the skeletal remains from feature 263 – which contained the remains of the most individuals – we try to answer the question of the cause of death of the buried individuals and the way of their deposition in the pit.

GENDER RELATIONS IN THE EARLY BRONZE AGE: THE REBEŠOVICE CEMETERY

Sosna, Daniel; Galeta, Patrik; Vladimír Sládek, Czech Republic

We argue that archaeological evidence from the Únětice cemetery Rebešovice (Czech Republic) challenges the model of a male dominated community. The application of computer-intensive resampling techniques enabled us to test quantitative differences between the burials of females and males. The qualitative part of the analysis was focused on the search for the artifacts and forms of body treatment that would be restricted to males.

The results of our analyses show that there are only minor differences in the mortuary treatment of females and males. Neither quantitative nor qualitative aspects of the burials suggest that males would receive more attention than females. On contrary, burials of females tend to be more elaborate. Moreover, there is little evidence that males would signal their ideological dominance through the control of specific artifacts or forms of body treatment.

Our results challenge the stereotypical models of male dominance based on the implicit notion of female subordination in the Bronze Age. We argue that Únětice females should not be viewed as mere vehicles of their male relatives' status. The alternative model of gender relations suggests that females might have pursued their own strategies to gain social esteem.

RECONFIGURING ANATOMY: FIGURINES, CREMATION AND COSMOLOGY IN THE LATE BRONZE AGE ALONG THE MIDDLE DANUBE

Nona Palincas

This paper starts from a series of observations made on the clay figurines belonging to the Gârla Mare-Žuto Brdo Culture (Late Bronze Age along the Middle Danube):

- that the human anatomy, as we commonly understand it, is represented in a distorted manner: only some bodily parts (usually hands, shoulders and waist) are easily recognizable, while others are only slightly indicated (head) or are missing at all (legs);
- on a significant number of the figurines the human anatomy is reconfigured, the most important sign being the placement of the breasts on the hips;

- that the body is not understood as limited to the boundaries of its epidermis, but as also including its garments and accessories;
- a series of symbols are represented on the surface of the figurines, snakes and sun symbols being the most important of them.

This paper intends to make sense of these observations by analyzing:

- the meaningful parts of the human body as seen by the makers and users of these figurines;
- the movable parts of the human body (basically the female breasts) and the reason of this reconfigured anatomy;
- the way human anatomy is embedded in cosmology;
- the relationship between figurines and cremation, their corresponding burial rite;
- the more general context (Aegean influence in the region) that seemed to have triggered this new way of representing and thinking about the body.

BURIAL CUSTOMS OF THE BRONZE AGE INHABITANTS OF ISTRIA, CROATIA- THE TUMULUS BURIAL ABOVE THE BAY OF MARIĆ NEAR BARBARIGA (VODNJAN)

Giulia Codacci-Terlević, Archaeological Museum of Istria, Croatia

This paper reports on the results of the research of a Bronze Age tumulus situated above the Bay of Marić near Barbariga (Vodnjan) in southern Istria. The research was conservational and was conducted in the period between July 2nd and November 19th, 2003. It was lead by the author of this paper. The newly discovered information regarding the burial customs of the Bronze Age inhabitants of Istria is presented in this paper.

Tumulus burial is characteristic for many countries of Europe during the Bronze Ages, even if it appears somewhat earlier. The tumulus burial mounds dating from the Early Bronze Age until the Late Bronze Age are attested on Istrian peninsula too. Examining a historical review of research of tumuli in Istria, we learned that those stone mounds had been interpreted as monumental burials as soon as at the end of the 19th century. The first systematic archaeological excavations were conducted later, starting from the middle of the 20th century. The researchers ascertained that tumuli appeared as artificial mound burials, made mostly of stones, containing inside a grave made of calcareous slabs. The dimensions of the graves were, except in one case, not longer than 150 cm. The dead were buried in a contracted position. Some tumulus burial are placed isolated on the top of the hills, on strategic positions, as highly visible monuments. This was the case of the tumulus burial above the Bay of Marić, wich was made on the top of the hill named *Komunal*. In some istrian tumulus, the grave goods found inside, reflected the status of the deceased. Here we noticed that, as it was the case with some other tumuli in Istria, the tumulus above the Bay of Marić near Barbariga was robbed before its excavation. At the moment of its discovery, it was almost entirely levelled to the ground. In the course of research, we could nevertheless record the existence of a circular drywall, not higher than 50 cm, with the diametre of 15m, which enclosed a grave at its center, made in the drywall technique. The dimensions of the grave were 147x75 cm; its orientation NW-SE. Even though, when discovered, the whole skeleton was missing from the grave, we managed to collect some diagnostic ceramic fragments wich enable us to date this tumulus to the Early Bronze Age.

SVETI MIHOVIL – BALE, ARCHEOLOGICAL RESEARCH OF THE PREHISTORIC HILL FORT SITE IN 2006 – 2007

Romuald Zlatunić, Archaeological Museum of Istria, Pula, Croatia

The hill of St Mihovil lies 1 km east of the Bale settlement. This strategically important location dominates over the rich lowland area of southwestern Istria from Pula through Fažana, Vodnjan, and Brijuni to Rovinj. The hill is situated some 202 m above the sea level. On three sides it is enclosed by fertile fields, while the forth side connects it to the neighboring Monte Forke hill, containing a prehistoric tumulus. Two sources of drinkable water can be found on its northern and southern sides. The northern source has been renovated and now serves as a fishpond, while the southern one has been abandoned and unused for a long time now. Few more sources (small ponds) are located in the direction of the coast, though most of them have been buried by now. It was all these advantages that made the prehistoric communities choose this location for their permanent settling. Besides prehistoric remnants, ruins of mediaeval Benedictine convent

with a church whose walls remained preserved up to 2m in height were unearthed on the hill. Upon these ruins, the chapel of St Mihovil was built. This baroque sacral complex has been partly renovated (especially the roof construction).

The first archeological protective test pit excavations, headed by curator Damir Matošević from the Regional museum of Rovinj, were carried out in 1992, while the most recent ones were executed during August 2006.

Preliminary results of the researches executed in 2006 and 2007, much like those carried out in 1992, point out to the continuous inhabitation of the hill from the Early Neolithic – impresso, Middle Neolithic – Danilo and Late Neolithic-Hvar periods to the middle of the Bronze Age. Several fragments of Roman glass, tegulae and two iron objects have been unearthed. One nail was found in humus layer, test pit I, sector II, and an iron arrowhead in test pit II (sector II), together with the remains of the convent. These finds point out to human activity in the surrounding area of the hill during Roman period and the Middle Ages.

In terms of architecture, the area of test pit I (sector II) revealed an underlying dry stone wall foundation possibly belonging to a Bronze Age complex. Since the dimensions of the pit were too small, it was expanded in 2007.

During the excavations, numerous miniature archeological finds were discovered, including lithic raw materials, tools and weapons, ceramic assemblage, and rich osteological material. Among the recorded lithic tools and weapons, a great number of arrowheads (12-13 pieces) made of different types of flint, one fragment of obsidian, and numerous scraping tools, borers and semi-finished products were found. Arrowheads are dated into the period lasting from the end of the Middle Neolithic period till well into the Bronze Age. Ceramic products have been present since the earliest production phase in the Early Neolithic, then Late Neolithic and Bronze Age. In test pit I (sector II), one decorative bone object, probably a ring, has been found, while test pit II (sector II) revealed one iron arrowhead.

OPPIDA - THE EARLIEST TOWNS NORTH OF THE ALPS

Gilles Pirrevelcin, France

An international project supported by funding from the Culture 2000 programme of the European Commission and designed to raise awareness of an important European heritage: the pre-Roman urban sites of the Celtic civilization in Europe.

A European civilization

The oppida - a Latin word used by Julius Caesar himself - developed in Europe at the end of the 1st millennium BC. Located to the North of the Alps, they extend between Southern Britain to the West and Hungary to the East.

These urban or proto-urban settlements were centres of social and economic importance. They remain one of the most striking manifestations of this pre-Roman northern European civilization.

A European project

Original research in the 19th century, and the identification of a cultural continuity across Europe (the so-called Celts), was one of the first major steps of European archaeology.

Today, there is an urgent need to raise the profile of the oppida sites and to produce a shared database of basic information. It is hoped to increase the diffusion of information about these monuments both to the general public as well as to provide quality documentation for the academic user. The valorisation of these monuments for visitors forms a second major strand of the project.

Principal objectives of the project

- The creation of a professionally produced website dedicated to oppida containing quality scientific information for each known site: **www.oppida.org** (under construction).
- The publication of a book, featuring aerial photographic images, will treat the subject in more detail, placing the oppida in their historic and geographical context. This volume is intended to be visually striking and to whet the appetite of an interested general public.
- The production of two major roving exhibitions: one on the theme of the oppida, using modern visual modelling techniques as well as aerial photography; the second on the representation of this historical period in schoolbooks and other pedagogic supports.

- The publication of a compact volume entitled « L'Archéologie, instrument du politique », which is the result of a successful colloquy held in Luxembourg in 2005 targeting education professionals and concerning the representation and mis-representation of the Celtic pre-history of Europe.
- The creation of a European network of oppida site managers and the preparation of a *vademecum* of good practice concerning their conservation and presentation. This part of the project comprises a series of visits to a selected number of these sites across Europe in order to observe the differing degrees and practises in valorisation. These visits will combine the knowledge of period specialists with that of site managers and, where possible, provide the occasion for encounters with local government representatives.

RESCUE EXCAVATION OF A ROMAN FACILITY IN POMER, ISTRIA – PRESERVATION FROM MODERN URBANIZATION

Kristina Džin, Ida Koncani Uhač, Davor Bulić, Archaeological Museum of Istria, Pula, Croatia

During the process of urbanization, heavy construction machinery caused considerable damage to a Roman building complex. Large part of the object, including the mosaic floor decorated with geometric, vegetal and zoomorphic motifs, has been ruined. Archeologists' intervention saved the object from further damage. All construction work was stopped and protective archeological research began.

The researched object is situated on the coast. It represents merely a part of a luxurious Roman summerhouse. Among the preserved architectonic remains, a water reservoir in the shape of the letter "L" was also unearthed. Most of other known reservoirs found on the Istrian peninsula have elongated rectangular shape, which makes this particular reservoir stand out. Another such-shaped reservoir was recorded at the beginning of the 20th century in Radeki village, 12 km north of Pomer, by the Austrian conservator A. Gnirs. Together with the brackish water source that lies next to it, the reservoir forms the shape of a square.

Other parts of the complex extend into the sea. During underwater research, Roman port was found. Its outer surface was enclosed by large monolith blocks, and its interior was filled with small stones and discarded Roman construction material. Unearthed archeological material: decorative elements (mosaic floors, frescos), construction material (*tegulae*, *spicae*), household articles (ceramic and glass vessels, *amphorae*, oil lamps etc.) testifies of a rich economic status enjoyed by the owners of the villa during the Early Imperial period.

ARCHEOLOGICAL FINDS FROM THE ROMAN OBJECT ON STANCIJA PELIČETI IN ISTRIA

Kristina Džin, Aleksandra Paić, Archaeological Museum of Istria, Pula, Croatia

The poster introduces the architectonic (rooms, corridors, cistern) and construction elements (*tegulae* with production stamps, *suspensurae*, inlet and outlet pipes, canals) of the villa rustica on Stancija Peličeti. The numerous finds that emerged during archeological research serve as temporal indicator for the complex itself (glass, bronze, iron, fine and industrial kitchen pottery, *amphorae*, *dolia* and oil lamps).

This previously unknown site was unearthed during the construction of one of the vital highways on the Istrian peninsula, at which point an archeological protective research was initiated.

Primary analysis of the building complex found at this location sets the site's main economic function in line with the numerous industrial centers of the prosperous, olive-rich Istrian region, along the main Roman transportation route Pola – Nesactium – Albona – Tarsatica.

ROMAN VILLA IN ČERVAR PORAT: *TERRA SIGILLATA*

Astrid Mirjana Majkić, Archaeological Museum of Istria, Pula, Croatia
Zrinka Ettinger Starčić, Juraj Dobrila University of Pula, Croatia

Excavations of the Roman villa in Červar Porat near Poreč, conducted in the period 1976-1979 have uncovered 134 pieces of *terra sigillata*. *Terra sigillata* represented luxurious table ware with red slip, which inherited and developed forms of Hellenistic pottery. The most beautiful pieces were being distributed in the

period from 30 BC to 200 AD from the production centres in Italy and Gallia. According to the place of origin, *terra sigillata* can be subdivided to the Italic (Arrentine, north Italian, mid Italian) and the provincial one (Oriental, African, local). *Terra sigillata* can be differentiated also by the decorations: relief-decorated and plain wares, the former made in moulds.

Most of the preserved fragments of *terra sigillata* from Červar Porat belong to smooth sigillata in forms of plates and little bowls, while there are 7 fragments of *Sarius* type *skyphos* belonging to relief *terra sigillata*. The preserved *skyphos* fragments belong to the un-decorated parts of the vessel.

The *Eastern sigillata A*, along with the later Hellenistic products from Pergam area, are an example of the oldest red slip pottery on the eastern Mediterranean (around 150 BC), and preceded the Arrentine pottery for some 100 years. This type of *sigillata* is represented by only one certain piece of the round-body vessel on this site which can be dated from the Augustan period to the end of the 1st century. The other piece, due to its fragmentation, cannot be determined with certainty. There is a dilemma whether it belongs to the poorly produced *North Italic sigillata* or it is indeed the *Eastern sigillata A*.

The later phase of the *Arrentine sigillata* is also called the North Italic because it originated in the north Italic workshops in the Augustan period. Forms Drag 17 and Drag 15/17 are predominating among the fragments of *sigillata* of this type. On the two plates of this form, on the bottom, the seals *in planta pedes* with the potters' names have been preserved (*Secundvs, A. Terentivs*). The import of this *sigillata* group on the site can be traced from the Augustan period, in the forms EAA 15D and Consp 23. It flourishes in the period between the reigns of emperors Tiberius and Claudius, which in Červar can be traced to the forms Drag 17 B and Drag 15/17, Drag 35, Ritt 1, Ritt 5, Ritt 8, Ritt 9, Consp 47. The local production is represented by only one example of a dish brim Drag 24/25 which is dated to the 1st century AD.

The *Central Italic sigillata* is represented by only one fragment of the wall of a vessel and is dated to the 1st-2nd century AD.

The fine red slip pottery dated to the 1st century is also represented by one fragment of the bottom of a plate of the Campanian provenience.

The greatest number of tableware fragments from Červar Porat belongs to the *African sigillata* (*African Red Slip Ware*). It was produced in the North African production centres, and was present on the market from the 1st to the 7th century. The most common form is a large plate. According to the places of production it can be divided to the production A, C and D. All three production types, along with the transitional type A/D which precedes the forms typical of C and D, have been found in Červar. Production A appeared at the end of the 1st and lasts to the 3rd century, while the production C lasts from the mid 3rd to the mid 5th century, and the production D from the 4th to the 7th century.

The chief rival to the African tableware, in the East from the 4th century onwards, was the Phocean pottery (*Phocean Red Slip Ware/ Late Roman C Ware*). Just like the *African sigillata*, it belongs to the type of fine red slip ware, and was being distributed in the period from the 5th-7th century. On the site Červar Porat we have the following forms: Hayes 1A (5th century), Hayes 2A (5th century) and Hayes 3 (second half of the 5th - first half of the 6th century).

Along with the African tableware, kitchen ware imitating the *African sigillata A* was also being imported. In Červar this group was represented by forms Hayes 58 A (4th century), Hayes 61 B (5th century), Hayes 93 B (the end of the 6th/7th century) and Hayes 105/106 (7th century).

The diversity of *terra sigillata* from the Roman villa in Červar Porat is an evidence of a luxurious way of life, but also of trade connections with the whole Mediterranean. *Terra sigillata*, along with the other movable material found during the excavations, can be dated from the Augustan period to the 6th century, and lead to the conclusion that the villa was lived in with continuity during that period.

ROMAN IMPERIAL COINS FROM THE SITE OF VIŽULA NEAR MEDULIN, EXCAVATIONS 1995 – 2004

Zrinka Ettinger Starčić, Faculty of Philosophy in Pula, Croatia

During the nine years of the archaeological excavations of the Roman *villae rusticae* on the Vižula peninsula, 39 pieces of the imperial copper coins have been found. The coins can be dated to the period between the beginnings of the 2nd to the end of the 4th century. The oldest coin is *sestertius* from the 2nd century and the latest is *AE 4* minted during the reign of the emperor Arcadius, between 383 and 388 AD. Three coins were minted in Siscia, one in the town of *Arelate*. It was impossible to establish the place of minting for the remaining coins. Out of 39 coins, 7 have been too worn-down to be precisely dated, and 10 were found only in fragments. They are all very small in diameter and of poor-quality metal.

The imperial coins can be traced from *sestertius*, which was too worn-down to be attributed to any emperor. In the monetary system of the Roman Empire, *sestertius* had the value of four asses, but it was minted from brass, the alloy of zinc and copper, not bronze.

The money from the 4th century can be traced from the *nummus* of the emperor Maximin II and Constantine I. In 307 Constantine I carried out a monetary reform which reduced its weight to the 1/48 of the Roman pound, 6.82 grams to be exact, which was the equivalent of 25 denari. This was the period of great crisis in Roman economy, and the coins were rapidly losing on their value, dimensions and weight.

Not even a monetary reform in 348, carried out by the emperors Constantius II and Constans, could stop the decrease in value. The coins minted after the reform bear a characteristic legend *Fel(icius) Temp(orum) Reparatio*. That type of coins found on Vižula can be attributed to the emperor Constantius II and Constantius Gallus, and bear an image of a soldier piercing a fallen horseman with a spear. Three coins were found of that type, belonging to the emperor Constantius II, but we can determine the place of minting for only one coin, and that is the town of *Arelate*. It was not possible to determine the place of minting for the money of that same type belonging to the emperor Constantius Gallus.

The coins of Valentinian II bear witness to the ongoing crisis and great inflation. Valentinian II tried to prevent the further decrease in value with coins of a very wide diameter (*AE 2*). Even the image on the reverse alludes to the emperor's efforts to solve the crisis and renew the Roman state symbolised by a kneeling woman. The coin from Vižula was minted in Siscia in the period 378 – 383. The latest coin *AE 4* was minted during the emperor Arcadius in the period 383 – 388.

The most frequent coins are from the mid 4th century, but those are the coins of the smallest denominations which were easily lost and sometimes even discarded by the owner. If we agree with the theory that the luxurious villa became an imperial one during the emperor Constantine the Great, it is no surprise that the money from that period is the most numerous. The finds of the imperial coins only confirmed, along with the architecture and movable finds the continuity of life in the villa on the Vižula peninsula.

ROMAN MILITARY EQUIPMENT FROM PONTES - TRAIANS BRIDGE

Snežana Černač-Ratković, Serbia

The site Pontes is situated at the right Danube bank, down the river from the Iron Gates, and represents one of the fortresses belonging to the Roman limes defensive system. This castrum shows several phases, from the 1st to the 6th century A.D. It was excavated during the last decades of the 20th century (from 1979 to 1990) and the excavations bore rich archaeological material.

Military equipment represents one of the most significant and rich groups of finds. It consists of helmet parts, belt parts, shoe parts and parts of horse equipment, phalere and phiale. The here presented material includes only finds made of bronze, because its state of preservation is rather good.

Most of the material comes from cultural layers inside of the castrum, that can be divided into five phases. The most numerous finds date from the 1st to the 3rd century, reaching its peak during the reign of Septimius Severus and used both by infantry and cavalry. The number of finds from the 3rd century is reduced. It becomes bigger again during the second half of the 4th century, that can be brought in connection with presence of military due to raids of German tribes from the left Danube bank.

The Roman castrum Pontes was ultimately destroyed during the second Hunnic attack in 443, along with other castra in this part of the Roman limes.

A LONG WAY FROM HOME – DIASPORA COMMUNITIES IN ROMAN BRITAIN

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This poster presents preliminary results of a multi-disciplinary project (2007 – 2009) exploring the cultural and biological experience of immigrant communities in Roman Britain. We wish to challenge popular assumptions of an essentially homogenous Romano-British population by examining the diversity of cultural identities in this remote province. Evidence for diaspora communities will be analysed through an innovative combination of material culture, skeletal and isotope research.

Romano-British cemeteries from North Yorkshire and Dorset were selected from settlements of differing status and function including military, civil, and urbanised. The skeletons selected date from the 2nd – 4th century AD. These human remains are being analysed to identify immigrants through ancestral traits, and through oxygen and strontium analysis. This research will contribute to a growing interest in the diversity of the Roman Empire rather than its uniformity. Britain under Rome was truly multi-cultural, but how did diaspora communities create identities that were distinct from the host society, and maintain ideological links with their homeland? Can we identify incomers, and do they differ from the host population in their health and diet? How was material culture in Romano-British burial used by migrants to express and contest their identities? Did forced migration of individuals and/or family groups impact on their health? Was the consumption or rejection of certain foods used by diaspora groups to integrate with or distinguish themselves from their host societies? Such questions resonate with key issues concerning diaspora communities in modern day societies.

The project is funded by the AHRC, as part of the "Diasporas, migrations and identities" research programme

SAINTS' MEDALLIONS AND ARCHAEOLOGY

Ondina Krnjak, Archaeological Museum of Istria, Pula, Croatia

Medallions bearing images of saints serve as pendants. They can be round, oval, heart-shaped or polygonal, and are usually of smaller dimensions. They bear images in relief on both sides, most frequently representing Jesus, the Virgin, various saints, miraculous showings, miraculous holy objects (holy paintings or sculptures) and pilgrimage sites. Those are often accompanied by appropriate inscriptions. Medallions are mostly made of cheap non-precious metals (like bronze, copper, aluminium etc.), only rarely are they made of gold or silver.

Saints' medallions belong in the category of so-called devotionalia, i.e. objects that were used to demonstrate one's piety in everyday life. A person could acquire these objects in various ways. They were distributed by bishops, missionaries and priests. They were also sold at pilgrimage centres, near churches on market days and other religious occasions.

Believers most often hung the medallions on their rosaries, but they were also worn around the neck functioning as jewelry, and not rarely did people use them for other purposes. In some regions infants obligatorily wore them wrapped in their swaddling-clothes, while grown-ups wore them as pendants on a ribbon around their neck. People would throw them in the soil during ploughing, before sowing time. Depending on what region we are talking about, the application of saints' medallions differs.

As an expression of deep piety, they were not even separated from the bodies of the dead. Objects of that kind are therefore found in archaeological excavations in which modern-history strata are represented, especially on burial grounds.

Saints' medallions have so far practically been neglected in the Croatian archaeological practice, and they stayed on the margin of numismatic interest as well. Nevertheless, their cultural and historical value cannot be denied. Therefore, their expert analysis should in the future represent a compulsory part of an interdisciplinary approach to understanding of the various layers of life on this territory.

Archaeological Museum of Istria houses objects of this kind that were found during the archaeological excavations in Marčana, Ližnjan, Pićan, Lobarika, Tinjan, Vodnjan and Pula, as well as those that already existed in the museum, but the site of their discovery has not been marked. Most of this material was published.

PRODUCTION OF GLAZED CERAMICS ON THE TERRITORY OF ISTRIA

Tatjana Bradara, Archaeological Museum of Istria, Pula, Croatia

In archaeological research on the territory of Istria, on land as well as underwater, late mediaeval and Renaissance glazed ceramic material regularly appears. The characteristic of late mediaeval and Renaissance ceramic tableware is that it was fired twice. Two types of coating could be applied to the already shaped vessels – slip-coating (engobe), which is applied before the first firing, and glassy coating (transparent and opaque, lead glaze and tin glaze respectively) applied before the second firing. The vessels were additionally decorated by painting o/or incising patterns on their surface (sgraffito decoration).

Until a few years ago glazed ceramic vessels were considered to originate from workshops in Veneto, Friuli-Venezia Giulia, Marche, and Emilia Romagna.

The fragments of ceramic pottery which were brought to the surface from the bay of Sv. Ivan Kornetski near Umag and Valdibora cove near Rovinj indicate the possibility of existence of workshops in Istria starting from the end of the 16th century. Mentioned ceramic finds include a range of accessories used in pottery production like cylindrical containers, tripod stilts which were used during the second firing, as well as some items that most probably served to separate "shelves" with cylindrical containers or pottery in the kiln. Cone-shaped vessels with flat bottom were used for the preparation of vitreous masses and colour pigments. Several fragments of vessels may be the remains of the so-called *biscuits* (i.e. vessels once fired).

The hypothesis on workshops existing in Istria is corroborated with "imperfections" on some vessels made during the second firing. These include vessels bearing traces of other vessels stuck to them in the firing process, or coatings (slip-coating and vitreous coating) that are not smooth, nor applied evenly, or are cracked. Some vessels are overfired (their colours ranging from red to brown), some are very thin bottomed and others bear traces of three-legged pads which remained stuck to them in the firing process.

The fragments found at Valdibora cove and the bay of Sv. Ivan Kornetski are, for the first time now, evidence which imply the existence of pottery workshops at the mentioned sites (production of vessels with or without slip-coating, with incised or painted decoration). From the 16th century onwards, ceramic pottery has been available to the lower classes as well. Due to higher profitability and the rise in the number of users, workshops which produce second or third rate table dishes have started their manufacture in smaller cities.

FAIENCE FROM DELFT IN OLD ELBLĄG

Grażyna Nawrońska

From the mid 17th century until late 18th century, there were around 30 pottery workshops manufacturing faience in the Dutch town of Delft. The technique of white tin glaze and decorating the vessels with blue and then colour decoration adopted by the Dutch potters resulted in the fact that the town had become one of the most important production centres of such type of ceramics in Europe.

Following the processes to manufacture the Italian majolica from the time of Renaissance, the potters from Delft used three major techniques to produce vessels: high-temperature technique, mixed technique and over-glazing technique. The inspiring role in the early production period was the white and blue Chinese and Japanese porcelain, from which the patterns to decorate the vessels were taken; developing, at the same time, their own style that was so specific for all further production. The main decorative elements of various types of vessels-plates, bowls, mugs, vases, the whole range of table and hygiene vessels included: Chinese figurative scenes, decorations of floral or bird type, the Far East vessels or so-called European motives.

During the excavation works performed in the Old Town in Elbląg since 1980, its urban layout, forms of wooden and brick development, technical infrastructure of the town as well as the defence system elements have been found. However, the most precious discoveries were the archaeological sources in the form of hundreds of thousands of clay, leather, wooden, metal and glass objects as well as many other materials.

One of the most precious ones include frequently discovered faience from Delft –mainly plates, bowls of various sizes, mugs, tea cups, small plates and vases. They have been found in building plots of former wealthy townspeople and they are proof of particularly intensive commercial trade of Elbląg with the Netherlands. But first of all, they show us the picture of material culture of the inhabitants of the multi-national town, they define their needs, tastes as well as their standard of living.

VANHALINNA HILLFORT IN LIETO – A FORTIFIED HILL IN THE CHANGES OF TIME AND LANDSCAPE

Kristiina Korkeakoski-Väisänen, University of Turku, School of Cultural Research, Archaeology, Turku, Finland

Teija Tiitinen, National Board of Antiquities, Section the Section for Site Management, Turku, Finland

Our presentation deals with one of the most important fortified hills in Finland. It is situated by the Aura River in the Lieto parish in the vicinity of Turku - the oldest town in Finland.

The first signs of human activity on the hillfort are dated to the latter part of the Bronze Age (1000 - 500 BC). At that time the hill was still unfortified. The first fortification possibly dates back to the middle Iron Age (500 AD). At that time the hillfort was a refugee fort. It was not permanently settled until the end of the Viking period (1000 – 1150 AD). After that, at the beginning of the first Millennium, the area was the main fortification of the Swedish occupation in the southwest Finland.

Vanhalinna started to lose its significance at the beginning of the 13th century. In the year 1229 the bishop's seat with its castle and defense tower was founded at the Koroinen cape. At the same time the crown started to build a new castle to the mouth of the Aura river about 10 kilometers to south (6.2 miles) from Vanhalinna. One reason was the land uplift caused by Ice Age, which had made the navigation route from the sea to the Vanhalinna difficult. The strategic importance of Vanhalinna was gone.

The first written records of the Vanhalinna estate are from the latter part of the Middle Ages. The Estate belonged in turns to the Crown, Bishop and the Dome of Turku. After that it was a hereditary estate and the owner changed often during the 16th century.

The time of peasant prosperity started in the end of 19th century and the present main building was built in the year 1930. The courtyard has been on the same place since the medieval times.

Nowadays the Vanhalinna estate is a museum. Its life cycle has become again to the same phase as it was from the start - as a focus of surrounding activities. On our presentation the phases of the hillfort are shown in different historical contexts. The periods of activity and inactivity have changed during the centuries, but the Vanhalinna hillfort has always been there, and it's always been visible and present. Only the activities around the hillfort have changed.

LET'S HAVE A LOOK AT THE POTS: FUNCTION AND STYLE OF THE CHIMÚ CERAMICS

Sylvie Kvetinova

Material culture artifacts involve two inter-related aspects: function and style. While artifact's practical function can often be relatively easy to determine and may be strictly pragmatic and devoid of symbolic meaning, it is argued that in certain cases artifact's style is not self-contained and has its own implicit function, though frequently precarious to grasp. One of the proposed purposes of style in material culture is to convey ideological content as means of extension of power beyond the local group, i.e. to stand in for other modes of social domination such as the use of force. The inherent premise that it is the elite who in such cases sets the ideological and social norms of stylistic form implies that the elite also commissions and controls the production of the relevant artifacts. Certain degree of standardization, detectable statistically, may then be expected at these artifact classes.

Examples of the mentioned use of style involve, among others, cultures of the North Coast of today's Peru. While the Moche culture and socio – political organization have been thoroughly studied and ideological manipulation has been hypothesized for its fine pottery, the study of the funerary ceramic finds of the subsequent Chimú culture (AD 1000 – 1476) falls behind, although the characteristic Chimú blackware pottery belongs among the most numerous collections in almost all Americanist museums worldwide. The goal of this doctoral work is to statistically evaluate the Chimú ceramics from museum collections in terms of metrics, typology, technology and iconography, and draw conclusions on its socio – political role(s), contrasted with the context of cultural development of the region.

BIRDS AS INDICATORS OF LANDSCAPES: THE ROLE OF AVIAN REMAINS AND METHODS IN ARCHAEO-ORNITHOLOGY

Erika Gál, Archaeological Institute of the Hungarian Academy of Sciences

Bone assemblages found at archaeological excavations are usually poor in avian remains. The low economic value of birds in comparison with mammals, as well as the intense mobility and seasonal presence of a rather great number of avian species, made their hunting more difficult and rarely worthwhile for ancient peoples.

On the other hand, birds are rather specialized animals from an ecological and climatic point of view. Their sensitivity towards the food as well as the environment of their nesting grounds have proven to be useful indicators of the landscape and season they cohabited together with ancient people. Special finds

such as the skeletal parts of chicks and the formation of medullary bone may even specify the time of year when the birds were hunted.

This study involving several methods and examples from the field of archaeo-ornithology is intended to call archaeologists' attention to the importance of avian remains in interdisciplinary studies.

This research was funded by the Bolyai János Fellowship and OTKA Grant F048818.

BIRD BONE REMAINS FROM THE TELL SETTLEMENT OF ÖCSÖD–KOVÁSHALOM (EAST HUNGARY)

Erika Gál, Archaeological Institute of the Hungarian Academy of Sciences

Of the 23,000 animal remains found at the tell settlement of Öcsöd, 100 bones (=0,43%) belonged to birds. The majority of avian remains derive from Tisza culture (Late Neolithic) layers. Half of the material could not be connected to archaeological features. A quarter of the remains were found in houses, while the other quarter were recovered from pits.

In spite of the poor representation of avian remains the taxonomical richness is noteworthy. Nineteen species could be identified, representing two main ecotypes. Most of the species live in the reedy-swampy environment. White pelican (*Pelecanus onocrotalus*), great white egret (*Egretta alba*), purple heron (*Ardea purpurea*), spoonbill (*Platalea leucorodia*), swan (*Cygnus cygnus*/*C. olor*), mallard (*Anas platyrhynchos*) and coot (*Fulica atra*) nest on the ground in thick vegetation. The wading birds such as the white stork (*Ciconia ciconia*), grey heron (*Ardea cinerea*) and little egret (*Egretta garzetta*) make their nest on the trees and brood in colonies. The two diurnal birds of prey – lesser spotted eagle (*Aquila pomarina*) and white-tailed eagle (*Haliaeetus albicilla*) – also live in gallery forests, a habitat that suits the arboreal species woodpigeon (*Columba palumbus*) and crow (*Corvus frugilegus*/*C. cornix*) as well. Grey-lag goose (*Anser anser*) prefers grassy terrain, while black grouse (*Tetrao tetrix*) the wooded places surrounding marshland.

Crane (*Grus grus*) and great bustard (*Otis tarda*) represent the humid and dry steppe environment, respectively. These two large species were the best represented, yielding 29% of the avian remains. White-fronted goose (*Anser albifrons*), which lives in open marshland, is a passage species or winter visitor in Hungary.

The identified bird species confirm that the settlement was located in a flood plain environment with smaller or larger water surfaces and forests. Periodically, however, wet and dry open grasslands were also exploited by hunting. Opportunistic fowling, typical to the Neolithic period in Hungary, was practiced throughout the year.

This research was funded by the Bolyai János Fellowship and OTKA Grant F048818.

FISH BONES FROM EARLY MEDIEVAL SETTLEMENT TORČEC-LEDINE IN NORTHERN CROATIA

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Torčec-Ledine is first explored Early Medieval Fisherman's settlement in the Drava River Basin on the Croatian territory. During the period from 2002 to 2004, the Institute of Archaeology, Zagreb, under leadership of Tajana Sekelj Ivančan, has carried out a systematic research of the site. By archaeological excavations the eleven objects in type of shallowly dug-in one-space houses, of a rectangular form with rounded corners, has been analyzed as closed units.

The most numerous finds among the objects are represented by pieces of ceramic pottery and animal bones. No human skeletal material has been found. Considerable part of the animal osteological material is not preserved enough for species determination or age and sex estimation. Mostly based on teeth specimens, archaeozoological analysis can confirm presents of cattle, small ruminants, domestic pig and

dogs. As a proof of lifestyle, the most interesting are findings of fish bones. Those pieces are well preserved and present in every year findings. There were also small knives with a short blade, instruments made of bone and different kind of hooks made of metal. All mentioned leads to the conclusion that in the economy of the inhabitants of the early medieval settlement along the Drava Basin at Ledine, fishing played a major role in the period from the end of 10th to the end of 11th centuries.

PROCUREMENT OF FRESHWATER SHELLFISH DURING THE LATE NEOLITHIC: A QUANTITATIVE ARCHEOMALACOLOGICAL STUDY OF A TELL SITE FROM SE HUNGARY

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The Late Neolithic in the Southern Great Hungarian Plains is represented by members of the Tisza Culture. This cultural group populated the elevated Pleistocene lag surfaces of the floodplain of the major and minor rivers, corresponding to the former natural levees of Pleistocene riverbeds, creating multilevel tell settlements populated for several hundred years and covering an area of several hectares. Although agricultural production was the gist of subsistence of these groups, they were also engaged in various forms of foraging to complement their everyday needs as shown by the numerous empty shells, fishbones and bones of wild animals retrieved from the cultural layers and refuse pits of these tell settlements.

During the archeological excavations of the Late Neolithic tell site of Szegvár-Tűzköves ca. 2700 shells were retrieved from 28 micro horizons. Representatives of 4 shellfish taxa were identified in the material: *Unio pictorum* (Linné 1758), *Unio tumidus* Retzius 1788, *Unio crassus* Retzius 1788 and *Anodonta cygnea* (Linné 1758). The detailed morphometrical, paleoecological and statistical analyses of the shells revealed information on why, where and how the shellfish was harvested and procured by the Late Neolithic population of the tell. Out of the 2680 shells 1653 was suitable for taking measurements and used in a detailed statistical analysis. In case of the measurable valves, the valve height was recorded using a caliper with an accuracy of 0.01, and the gained value was used to predict the meat yield of the shells. This also highlights the approx. number of people who might have gained food from the meat. When the recorded parameter is studied along a vertical profile along with the number of harvested shells, we can get a good picture of the strategy devised by the former human foragers, the underlying reasons of the chosen strategy, plus whether or not the chosen strategy resulted in any size and/or compositional changes in the natural shellfish population.

As shown by the gained results, shellfishing was continuous throughout the life of the tell with varying intensities. There is no change in the environment of the harvest; i.e. the floodplain as it is shown by the univocal dominance of the taxon *Unio pictorum*, preferring stagnant waters along the profile. The most intensive period or peak harvest can be identified at level 22. The number of harvested shells is negligible below and above this horizon. Stratigraphically speaking, this collection peak must correspond to the phase of initial settlement when alternative food sources were relatively restricted. During the life of the tell, dominantly a single taxon was targeted with collection of the larger, older forms yielding more meat as expected (*Unio pictorum*). In the level of peak harvest the mean size of the harvested population of *Unio pictorum* is significantly larger than that of the whole material (Wilcoxon test $p < 0.0001484$). This highly selective foraging strategy, both regarding taxa and size classes caused significant changes in the size composition of the targeted natural shellfish population. The relatively broad size ranges, and the large number of outliers in the lower part of the profile indicate maximized foraging efficiency. There seems to be a statistically significant upward reduction in the mean size with both the initial intensification of the harvest, and following the collection peak of horizon 22 (Kruskal-Wallis test $p < 0.05$). With a reduction in the intensity of shellfishing the mean size of the population is also stabilized (Kruskal-Wallis $p = 0.942$), displaying even a minor increase from horizon 14 upwards. This is a clear sign of human-induced size reduction in the natural population technically termed as overexploitation. This feature was formerly observed by the first author in several other Hungarian Neolithic profiles as well (Nagykörű, Körös C.; Hódmezővásárhely-Gorzsa, Tisza C.).

ECOARCHAEOLOGICAL AND ARCHAEOZOOLOGICAL ASPECTS OF PREHISTORIC SETTLEMENT VINIČICA NEAR JOSIPDOL

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Viničica is stony hill which dominates at wide area of Ogulin valley, situated nearby Josipdol (Central Croatia). It is actually a complex of two uphill, Velika (elevation 450) and Mala Viničica (elevation 350,7) with relating plateaus and declines. This dual hillfort was continually settled during Bronze and Iron Age. Underneath Viničica there was a Roman settlement of probably municipal status. There are numerous findings of epigraphs, walls and the graves dating from 1-4 century AC. From the middle of 19th century objects found at hillfort and local area is being transferred to Archaeological museum Zagreb. Since 2002. systematic research of settlement complex is going on. Researches include intensive field survey, making of digitalized geodetic base, air photographing and excavating certain parts of the settlement (objects for living, stone walls, approaching roads, etc.). Special attention in this research is taking place in ecological aspect of everyday life of those prehistoric inhabitants. Most researches assume that this settlement can be identifying with Iapodic central hillfort Metulum, which was mentioned by *C. Iulius Octavianus* in his memoirs (Anthic authors Appian and Cassius Dio later communicate about it). Also, a numerous animal remains were found in this settlement. In cave 4 the majority of animal remains belong to small ruminants (sheep and goat more than 43%); the follows are the cattle and pig bones and teeth. In cave 5 only bones of cattle's and small ruminants were found. Analysis and interpretations of those osteological animal materials can provide a lot of information about nutrition, everyday way of life during various eras of this community.

EARLY FARMING IN DALMATIA: ARCHAEOBOTANICAL REMAINS FROM THE EARLY - MIDDLE NEOLITHIC SITES OF DANILO AND POKROVNIK

Kelly Reed, Institute of Archaeology, UCL, UK

Southeast Europe is one of the major regions where the mechanism of spread of agriculture has been debated between those who favour demic-diffusion and those who support indigenous adoption by hunter-gatherers. Central to any model is an understanding of subsistence practices, and archaeobotanical evidence provides a primary window on the nature of past economies. Unfortunately detailed archaeobotanical studies on early farming in the areas of Former Yugoslavia are few, resulting in a significant geographical gap in our knowledge. By focusing on the early Neolithic within Croatia, both the Mediterranean and Danubian routes for the spread of Neolithic agriculture can be investigated.

This poster will introduce the preliminary archaeobotanical results from the Middle Neolithic site of Danilo and the Early – Middle Neolithic site of Pokrovnik, Dalmatia.

AFTER MIDDLE AGE. RECONSTRUCTING SOUTH EAST HUNGARIAN LANDSCAPE BY TREE RINGS

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The science of dendrochronology and its disciplines is increasingly used in archaeology. By the help of these sciences we can get information about climate and vegetation from historic and prehistoric ages. Trees can preserve the climatic features of the period when they lived. So by the analysis of trees and wooden objects we can capture records extending over several hundred and/or thousand years and we can reconstruct the original environment and landscape.

The subject of this study is a *Quercus robur* timber, which was found in Békéscsaba, Hungary. We found its building date, 1774 which was grained in the timber. This girder was used in the 18th century and we can determine its felling date, by counting and measuring its tree-rings and paste this data series into a tree-ring chronology.

Tree ring widths are determined next to biological factors by moisture, temperature and insects, which vary from year to year. These factors are completed with sunspot activity, whereat the different species respond distinctly.

Our goal was a chronological and palaeoclimate search relative to the area, namely the analysis of tree rings, determining the age of the timber and to compare tree-rings with moisture data and sunspot activity.

TOWARDS DEVELOPMENT OF HUMAN OSTEOLOGICAL COLLECTIONS IN SERBIA: THE RESEARCH VALUE OF IRON AGE GRAVES AT KOSTOLAC

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Osteological collections, like all archaeological resources, are a non-renewable resource. Those collections with research value should therefore be retained even after initial analyses whenever possible. This is true not only because there are so many approaches to the study of human skeletal material, but because new methods are constantly being developed that can improve understanding of long-standing anthropological questions as well as those research issues of more recent interest.

The cemetery site of Pećine in eastern Serbia is a case in point. Although not the oldest prehistoric remains in the area, the Celtic graves from Pećine offer a unique opportunity to study both ancient lifeways and cultural change in the Middle Danube region. Out of 43 graves found, nine belong to the Early Iron Age and 34 to the Late Iron Age. Their chronological placement is confirmed not only by the burial form, which includes both extended supine inhumations and cremation burials, but also by grave finds such as jewelry, weapons and pottery—all conforming stylistically to Celtic material culture. The necropolis is also uniquely interesting in that the graves are divided in several groups, each of them containing two to eight burials. These groups have been interpreted as family-graves of related individuals.

Furthermore, as one of many necropolei surrounding the Roman Imperial provincial capital city of Viminacium, this set of pre-Roman Celtic remains from the site also had the potential to address questions regarding the impact of Roman incorporation on frontier peoples. Particularly relevant in this context are the biological consequences of increased urbanization and integration into a trans-regional political economy. Both of these circumstances are theoretically possible of inducing substantial changes in the biology of human populations. Unfortunately, most of the skeletal material from Pećine was discarded after an initial analysis in the 1970's due to a lack of suitable storage facilities.

The joint Serbian-American Viminacium Archaeological Project is presently making the curation and preservation of osteological remains a priority in order to prevent the loss of such important data in the future. It views the establishment of a substantial osteological research collection at the site as a benefit to scientists both in Serbia and in the international community, and aims to salvage Serbia's archaeological resources as a tool for economic advancement through development of tourism and research facilities.

TRAUMA ANALYSIS IN ROMAN ERA SKELETAL SAMPLE FROM ZADAR – RELJA

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Zadar (*Iader*) was founded as a Roman colony possibly by Caesar or by the emperor Augustus. During the Antique period it was one of the largest urban centres on the eastern Adriatic coast. Because of urban construction, rescue excavations of Roman necropolis were carried out in 1989/1990 and 2005/2006 in the city district Relja. Almost 1500 graves (incinerated and inhumated) were excavated. Grave goods (coins, pottery, pins, *fibulae*, glass vessels etc.) date the use of necropolis between 1st and 6th century AD.

Bioarchaeological analysis was carried out on 356 skeletons (95 females, 206 males and 55 subadults). The average ages at death for males and females from the analysed sample is almost identical: 35.6 years for men (sd=8.1) and 35.3 years for women (sd=9.7). Trauma frequencies in this sample were compared with trauma frequencies in two composite Antique skeletal samples: one from the eastern Croatia and the other from the eastern Adriatic coast.

Trauma analysis showed a variety of injuries ranging from sword cuts to the cranium and long bones, directly associated with the cause of death, to more mundane cases of healed broken fingers and ribs.

A total of 2753 long bones were analysed and traumas were observed in 29/2753 (1.0%) of all analysed bones with no significant differences between men (1.1%) and women (0.9%). Most long bone traumas are present in the clavicle (1.6%), tibia (1.4%) and radius (1.3%). The frequency of long bone traumas in Zadar-Relja is similar to frequency in Antique composite skeletal samples from eastern Croatia (1.1%) and eastern Adriatic coast (1.6%).

The frequency of cranial traumas in Zadar-Relja is relatively high: 21 out of 91 preserved skulls (23.1%) exhibit some kind of trauma. Head fractures are two times more frequent in men (15/50 or 30.0%) than in women (6/41 or 14.6%), but this difference is not statistically significant. The most dramatic cranial trauma noted is a massive perimortem fracture to the left parietal and occipital bones of an adult male caused by a sharp bladed object (most likely a sword).

The presented data suggest that intentional interhuman violence in *Iader* was relatively common. The pattern and frequency of analysed injuries seems to be most consistent with street fights and tavern brawls with only occasional use of sharp weapons, rather than the more overtly violent confrontations encountered in battles or other military operations.

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IDENTIFICATION OF CRANIAL TRAUMA IN THE WAY OF COMPUTED TOMOGRAPHY FROM BURIAL GROUND AT DRAZOVCE, SLOVAKIA

B. Kolena, M. Halaj, L. Luptáková, M. Vondráková

Excavation of an early mediaeval burial ground in Nitra–Dražovce, Nitra, Slovakia revealed the 447 graves of 402 individuals. Inter alia, there were found a high presence of traumas and paleopathological findings. The most common skull lesion is a fracture which is essentially defined as a discontinuity of the bone (Rubin, 1988; Horáčková, 2004). Bone traumas are made in case of acting force on skull run over bones strenght in flexure, tension, traction or torsion (Ortner, Putschar, 1981). We differ an intravital, perimortal and postmortem fractures (Kolena, 2007). Utilization of computed tomography and X-ray in paleopathological analysis is very important as result of explanation of fracture genesis.

The complete osteoanthropological analysis of the individual (grave 130) has been realized by method of Ascádi, Nemeskéri, 1970; Hauser, De Stefano, 1989; Čihák, 1987; Manouvrier, 1880; Ubelaker, 1978 by software Antris (Jakab, Poláček, 1990). The analysis detected a male sex and senile age bracket. The intravital repaired fracture (*fissura directae transversa*) on cranium had been macroscopically uncovered. The skull has been examined by spiral method of computed tomography by the medium of Somaton Sensation 16 with utilization of three-dimensional reconstruction of pathological process. According to the evaluation of examination, the fracture is a result of interpersonal violence or falling down to hard field. It could be occurred in adulthood. The radial fracture expanded as approach to least resistance and copied of suture coronal running.

At the close, we suppose, going by absolutely fractures repairing that the individual belonged to responsible status in tendance (primary health care services, survive to senile age bracket).

Anthropological results within information from archeological researches can better explain the past. Utilization of modern methods in osteoanthropological analyses brings new results which help us to know, understand and illustrate the behavior and evolution of individuals and population in former times.

OSTEOANTHROPOLOGICAL ANALYSIS AND GENETIC SEX DETERMINATION OF HUMAN SKELETAL REMAINS FROM THE EARLY MEDIEVAL CEMETERY AT DUBOVANY, SLOVAKIA

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Sex identification of the excavated archaeological skeletal remains contributes to the investigation of demographic structure in medieval human populations. However, osteoanthropological sex determination is complicated in a case of fragmentary bones and in skeletons from infants and children. The development of DNA-based techniques has led to improvements in sex determination.

Osteoanthropological analysis of skeletons from the early medieval burial site from Dubovany (8th - 9th century A.D., Slovakia) included sex and age determination, paleopathological and epigenetic analysis. The estimation of age based on obliterations of cranial suturaes, deciduous and permanent teeth dimensions determined a matus I, adultus I and senilis age bracket.

For genetic analysis, 5 bone tissue samples with good macroscopic status were selected based on morphological characteristics. The aDNA was isolated from spongy bone of femur proximal epiphysis and compact bone of femur diaphysis by silica matrix extraction (Bauerová et al., AJPA 2005; Suppl. 40:70). aDNA was amplified by nested PCR assay according to Palmirotta et al. (1997) with SRY (chromosome Y) and DXZ4 (X) as target loci and "classical" PCR assay with amelogenin gene (X,Y) as target.

According to our investigations, two men and three women were determined. PCR analysis showed that only one out of five analyzed samples did not contain amplifiable DNA. In this sample, a large osteoporotic lesions have been observed. We have not detected 204 bp PCR fragment corresponding to SRY locus. Additionally, we amplified amelogenin 106/112 bp and we were successful in one man and one woman sample. Therefore, we suggest that nested PCR is much more sensitive in ancient DNA studies than "classical" PCR. Our results demonstrate that the molecular sex determination is in good accordance with anthropological studies.

In general, the molecular methods are inevitable in the investigation of archaeological bone remains and can be used as additional method for the anthropological analysis. However, the age and bone diseases can complicate either anthropological as well as molecular analysis of the archaeological skeletal remains.

ANTHROPOLOGICAL ANALYSIS OF THE EARLY MEDIAEVAL STRANČE - GORICA SKELETAL SERIES

Željka Bedić, Vlasta Vyroubal, Domagoj Meić, Zrinka Premužić. Croatia
Mario Šlaus, Department of Archaeology, Croatian Academy of Sciences and Arts

Stranče - Gorica is an early mediaeval Croatian cemetery located approximately 4 km north-east from the town of Crikvenica on the northern Adriatic coast. Archaeological excavations of the site carried out from 1974 to 1997 discovered 186 graves. Archaeological artifacts (jewellery, pottery and objects of everyday use) date the use of the cemetery to the 8th-11th century and are consistent with other early Croatian burial sites located in Istria and Dalmatia. The site itself is divided into two horizons dating from the middle of the 8th century to the first half of the 9th century, and from the second half of the 9th century to the end of 11th century.

Anthropological analyses were carried out on 46 skeletons curated in the Osteological Collection housed in the Croatian Academy of Sciences and Arts. The skeletons were recovered from 1993 to 1997. Eleven individuals were subadults, 13 females, and 22 males. The average age at death for females was 38.15 (sd=9.16), for males 35.86 (sd=12.62). Analyses carried out on the remains included: analyses of the frequencies and distribution of carries, alveolar bone disease, linear enamel hypoplasia, cribra orbitalia, periostitis, Schmorl's defects, osteoarthritis, and traumas. The results recorded in Stranče - Gorica were compared to an early Croatian composite sample consisting of skeletons from 4 sites (Radašinovci, Velim, Šibenik - Sv. Lovre, and Glavice - Gluvine kuće, n = 331) and a composite late Antique sample consisting of skeletons from 5 sites (Osijek, Vinkovci, Štrbinci, Zmajevac, Vid kod Metkovića, n = 260).

Previous analyses of skeletal material suggest a marked deterioration of living conditions and quality of life during the early mediaeval period. Data from Stranče - Gorica support this trend. Statistically significant differences between Stranče and the late antique composite sample were present in alveolar bone disease (13.3% in Stranče - Gorica, compared to 10.7% in the late Antique composite sample), periostitis (29.7% in Stranče - Gorica, compared to 13.9% in the late Antique composite sample), and Schmorl's defects in females (18.9% in Stranče - Gorica, compared to 10.9% in the late Antique composite sample).

One of the most arresting differences between Stranče - Gorica and the late Antique composite series is the difference in the frequencies of anterior teeth alveolar abscesses (15.6% in Stranče - Gorica compared to 2.9% in the late Antique composite series; $\chi^2 = 6.045$; $p < 0.05$). Besides very high frequencies of anterior teeth alveolar bone disease, adults from the Stranče - Gorica site also exhibit a high degree of anterior tooth crown abrasion, as well as moderate/severe osteoarthritis on cervical vertebrae and hypertrophy of the flexor attachment sites on the proximal phalanges. This pattern of skeletal and dental involvement suggests some type of habitual activity in which organic material was energetically rubbed against the posterior surfaces of the anterior dentition. This resulted in clearly visible abrasion of the tooth crowns subsequently leading to alveolar abscesses, severe osteoarthritis in the neck, and a very strong grip. An identical pattern of dental and skeletal changes was recorded in the early Croatian composite sample.

Because the frequency of this pattern is considerably higher in early Croatian series, a possible explanation for the discrepancy is that lacking sophisticated late antique technologies, early Croatian populations manufactured various goods utilizing their teeth as a processing tool.

The results of our analyses place Stranče in the early Croatian cultural horizon, and are consistent with archaeological artefacts that date the cemetery to the 8th-11th century.

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A HUMAN SKELETAL STUDY THROUGH TIME USING THE WELLCOME OSTEOLOGICAL RESEARCH DATABASE (WORD)

Jelena Bekvalac, Centre for Human Bioarchaeology, Museum of London

The Wellcome Osteological Research Database (WORD) was launched online in March 2007 and is the culmination of a Wellcome funded project to analyse and record onto an Oracle database the human skeletal remains curated at the Museum of London. The human skeletal remains were recovered from commercial excavations within the City of London and Greater London area and are a unique stratified collection of human remains covering over two thousand years of the history and development of London.

Human skeletal remains provide a comprehensive range of information pertaining not only to the individual but also with respect to the population and society in which they lived. Queries relating to the data in the WORD database are manifold, being either simple or complex in their nature and can address not only purely skeletal queries but in association to the archaeology and history of the time.

The aim of the poster will be to demonstrate with illustrated tables and charts some of the results that may be gained from the WORD database relating to demography, stature, diet and disease, comparatively relating the skeletons and data into the context of the Roman, Medieval and Post Medieval periods.

The benefits of such an on line research tool are numerous and of relevance not just to osteologists but also archaeologists, historians and medical fraternity. The WORD database essentially allows for more readily accessible comparative research to take place both nationally and internationally and is a dynamic resource.

APPLICATION OF CHEMICAL ANALYSIS TO THE STUDIES OF EPIDEMIC BURIALS

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The chemical analysis of archaeological artefacts is widespread nowadays. The study of properties of archaeological soils may give valuable information about life conditions of ancient population.

Archaeological excavations in Riga (Latvia), in 2007, revealed human burials, including several common burials of 16 – 17 centuries, possibly victims of epidemics or military operations.

The aim of this investigation was to find out additional information about the soil chemical structure and quantitative amounts of some major elements in the excavation area. Potassium, calcium and magnesium were chosen as the main possible disinfectant elements used at that time. It could be different lime materials or ashes. Sodium was used as a homogeneity indicator of the whole investigated soil area.

The concentrations of calcium, sodium, potassium were determined by flame photometry (Jenway PFP7), content of magnesium - by flame emission spectrometry (PerkinElmer AAnalyst 200) using N₂O – acetylene flame. For the analysis of chemical structure of soils X-Ray powder diffractometric technique was used. Powder X-Ray diffractometer (Brunker Advance D8) using Cu K_α as an X-Ray source ($\lambda=1,54056\text{\AA}$) and scintillation counter as detector. Each sample was scanned in 2 θ interval of 3 – 50° at a step of 0.02°.

Contents of sodium and potassium were similar in all analyzed soil samples, for sodium varying from 1.8 to 9.1 mg Na/100g dried soil and for potassium from 6.2 to 14.2 mg K/100g dried soil, demonstrating homogeneity of the sampled area.

Essential variations in the content of calcium and magnesium were observed by all applied analysis techniques. High levels of calcium and magnesium were observed in one of common burial areas. X-Ray diffractograms showed that there were dominated calcite and dolomite minerals in these samples. Also pH values of these soil samples were higher. Results of chemical analysis points to usage of mixture of CaO and MgO as disinfection materials during inhumation in this area. In the course of time these oxides were converted to dolomite limestone CaMg(CO₃)₂ in the presence of soil CO₂.

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EVALUATION OF THE SOIL ANALYSIS OF ARCHEOLOGICAL COMPLEX "ZVEJNIEKI"

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The archaeological complex Zvejnieki is situated on lake Burtnieki in north-eastern part of Latvia. Zvejnieki cemetery is one of the largest Stone Age burial sites in Northern Europe. More than 300 graves dated 7500-2600 BC were excavated by Dr. F. Zagorskis in the 1960's and 1970's. The excavations revealed settlements with Mesolithic and Neolithic occupations. Archaeological artifacts and bones were surprisingly well-preserved, therefore a number of archeological, anthropological, palaeopathological, geological, palaeozoological investigations have been carried out on materials of this complex.

The aim of this study was to find out chemical composition of soil, responsible for exceedingly good preservation of archaeological artifacts in this site. Geological context of the site is a gravel-pebble layer, formed on a layer of sandy freshwater lime, typical on shores of receding lakes.

For the analysis of chemical structure of archaeological soils X-Ray powder diffractometric technique was used. The initial results showed that freshwater lime consist of calcite and dolomite minerals. Presence of amphibole, kaolinite and clay was found in soil samples from sandy peat and calcareous sand layers.

Flame photometry, flame emission and atomic absorption spectrometry were used to find concentration of calcium, magnesium, potassium, sodium, iron, manganese.

Compositions of soil suggest that saturation with calcium and magnesium might be the principal reason of good preservation of archaeological artifacts.

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EVIDENCE OF HUMAN IMPACT ON THE ENVIRONMENT: BLOWN-SAND MOVEMENTS IN HISTORICAL TIMES ACCORDING TO ARCHAEOLOGICAL AND GEOMORPHOLOGICAL INVESTIGATIONS NEAR APOSTAG, SOUTH OF BUDAPEST, HUNGARY

István Knipl, Diána Nyári, Tímea Kiss, Hungary

On the poster the archaeological and geomorphological analysis of a site near Apostag, South of Budapest will be presented. The excavation is located on the west part of the Danube-Tisza alluvial fan on the border line between a stabilized blown sand surface and a former floodplain of the Danube River.

The purposes of the research were (1) to identify the cultural groups and their activity; (2) to map the geomorphology of the study area; (3) to determine the periods of aeolian activity; (4) to assign the possible types of human activities enabling aeolian activity. In order to determine the exact time of blown-sand movements OSL measurements were applied.

Based on the results, OSL yielded Early Holocene age for the lowermost layer (9080 ± 1168 BP), on which sequences of paleosoils, fluvial deposits and blown-sand layers were formed during the Holocene.

Initially fluvial processes were characteristic on the territory. The Danube River deposited fluvial sediments during floods on the surface, its altitude varied between 95-97 m asl. The former bed of the Danube was located only 4-8 km far from the site. When the Danube left this area and drifted to West a thick paleosoil was formed on the surface, which became dryer.

According to the archaeological evidences, people settled down on this paleosoil surface. They were Sarmatians who inhabited the area between the 1st and 4th century. They were farmers and they also kept livestock on the pastures. The excavated marks of trenches, the house and stock-yards prove that the excavated site probably functioned as a stock farm and the neighbouring mounds have been pastures or meadows. This is confirmed by the OSL measurements, as blown-sand movement was detected on the nearby higher places in the 3rd century AD (OSL: 1733 ± 228 BP). Probably the cause was ploughing or over-grazing resulting bare surfaces, which were scenes of wind erosion. Finally, a 60-70 cm sand sheet covered the paleosoils of neighbouring mound.

On the evidence of the archaeological investigations, later, in the Árpád Age a larger population lived on the territory and their activity meant an intensive burden on the environment. Because of the human impact, aeolian activity revealed again in the 11th century AD (OSL: 988 ± 180 BP) and a 20-30 cm thick sand sheet covered this time the former surface of the excavated site then a poorly developed soil was formed.

Afterwards during the 12th century (OSL: 858 ± 148 BP) blown sand movement happened over again and another 60-80 cm thick sand layer covered the territory of the excavated area.

As a conclusion, there was three times spatially localized blown-sand movement on the territory. The first movement effected a sand deposition on the next mound because of the activity of Sarmatians then two times blown sand movements covered the area of the site by sand sheets as a result of anthropogenic disturbance in the Árpád Age. Thus, former landscape has been changed. Today the surface is approximately 1 m higher than before and a sandy surface can be found where a thick paleosol was situated before.

RE-CREATING ARCHAEOLOGICAL TEXTILES: A COMPARISON OF TOOLS, TECHNIQUES AND STRUCTURES

Barbara Klessig, Humboldt State University, California, USA

When recreating archaeological textiles for research and educational purposes, one has to be aware of the limits of transportation. Transporting recreated archaeological looms can be very cumbersome and a major test in logistics. One has to consider the weight and size of most early historical looms, such as the warp weight loom and the horizontal shaft or harness loom. By using techniques developed in weaving with multiple rigid heddles, archaeological textiles can not only be re-created but can also show the mechanics of how they could have been created on a warp weighted loom. This poster will show a comparison between a warp weight loom and the rigid heddle loom using multiple rigid heddles. Along with photographs and diagrams comparing the actions of the two types of looms, there will be samples of archaeological textiles re-created with multi rigid heddle techniques. Although the ends per inch or centimeter are limited, the use of this type of loom can give one insight into the workings and structures of archaeological textiles and how they could have been woven on early historical looms.

PALAGRUŽA - THE ISLAND OF DIOMEDES - THE LIGHTHOUSE OF SCIENCE

Branko Kirigin, Archaeological Museum at Split, Croatia
Joško Božanić, Studia Mediterranea, University of Split, Croatia
Tea Katunarić, Academy of Arts, University of Split, Croatia

The small waterless archipelago of Palagruža, situated in the very centre of the Adriatic Sea is in many ways unique and exceptional. Recent systematic research has revealed archaeological, cultural history and geological facts that have changed numerous prejudices regarding the cultural and natural history of the Adriatic. Discoveries of Early Neolithic, Late Copper and Early Bronze Age artefacts, more than 12.000 sherds of Archaic, Classical and Hellenistic Greek fine pottery many with graffiti indicating the presence of a shrine of Diomedes, the well known Greek hero in Trojan War, Early and Late Roman finds with architectural remains and the Medieval church of St. Michael have shown that Palagruža played and most important role in transadriatic communications.

Palagruža is the richest fishing area of the Adriatic, and the fishermen from Komiža on the island of Vis were the first to experience open sea fishing in the Mediterranean.

However, something can and must be said about Palagruža inasmuch, despite its minute size and remote location, it constitutes a key for the understanding of the geological evolution of Adria (a promontory of the African plate protruding northward into the ancient Tethys Ocean), at the critical border between the domains of the Apennines and the Dinarides mountain belts.

Not only of archaeology, history and geology, Palagruža offers exceptional possibilities for scientific research in many ways.

On Palagruža stands the most powerful Lighthouse in the Adriatic, built in 1875. Within this lighthouse the University of Split through its Studia Mediterranea Centre plans to offer to worldwide Universities and Art Schools a place where professors and their students (not more than 12) can come and do research or organize discussion pools and workshops on various subjects. The spacious building some 100 m above sea level, offers not only a magnificent view but also adequate space for holistic research.

AERIAL ARCHAEOLOGY IN FLANDERS (BELGIUM)

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From the time when Charles Léva gave the good example, aerial archaeology in Flanders (Belgium) has played a effective role in archaeological surveys, in the monitoring of sites and monuments as well as in the registration of soil-related phenomena, such as erosion and land development. In recent years aerial archaeology has been continued by teams of both major universities of Leuven and Ghent. The University of Leuven surveys the eastern part of Flanders and the University of Ghent the western part. Both areas have their own particular landscapes and specific archaeological features. Although weather conditions and financial support are not always favourable, the results of these aerial surveys have been remarkable. The poster shows examples of recent discoveries in different areas of Flanders.

SUPPORTING ACCESS TO ARCHAEOLOGICAL HERITAGE: A GPS GUIDE TO MONUMENTS AND SITES OF ROMAN TOWN EMONA

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The heritage of the Roman town Emona – both still hidden beneath modern Ljubljana and preserved and presented to the public – is, despite of past and present endeavour, poorly recognisable and increasingly marginal. To enable increased acessibility, beyond the ordinary sphere of activities, we decided to use mobile technology, as it presents the opportunity to support educational visits by providing both location-based information and guidance through this information based on the visitor's interests and needs.

We built a digital guide on a GPS mobile device; after testing several applications we decided to use Caerus, a platform developed at University of Birmingham. Our location aware and flexible guide is especially appealing to teenagers and younger adults, which have been previously rarely induced to visit Emonas heritage. The guide combines animations, narration, video, sound effects and music relevant to the particular site or monument, thus acting as a attractive support for presenting and promoting archaeological heritage of Emonas heritage, as well as a medium for mobile learning within an authentic context.

We endeavour to explore the field of mobile learning further, especially through assessing possibilities for active participation of visitors through actions such as e-graffiti and different spatial annotations.