

RAC  
XIII  
Edinburgh

TRAC  
XXVIII  
2018

PROGRAMME AND ABSTRACTS



Roman Archaeology Conference XIII  
and  
Theoretical Roman Archaeology  
Conference XXVIII

12-15 April 2018



## ACKNOWLEDGEMENTS

The organisers of RAC/TRAC 2018 are very grateful to the following institutions and bodies for their support, financial and otherwise of this conference: the University of Edinburgh and especially the School of History, Classics and Archaeology; the Roman Society; the TRAC Committee; the National Museum of Scotland; Historic Environment Scotland; the Roman Research Trust; Barbican Research Associates; and the British School at Rome.



HISTORIC  
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## WELCOME FROM THE RAC AND TRAC 2018 COMMITTEES

The University of Edinburgh has a long tradition of study of the Classical world, from the University's foundation in 1582 to the vibrant School of History, Classics and Archaeology today. Roman archaeology is a particular strength of the School and staff from Classics and Archaeology work closely together in this field. The University of Edinburgh has never hosted RAC or TRAC and we are proud to be able to do so in 2018. The organization of these conferences is a collaborative exercise, however, that involves institutions and individuals well beyond the University, including colleagues in Historic Environment Scotland and the National Museum of Scotland. The continued support of the Roman Society makes these conferences possible.

RAC-TRAC 2018 will bring together nearly 400 delegates, the majority presenting either papers or posters. We are very grateful to our keynote speaker, Dr Elizabeth Fentress, for agreeing to give her lecture at the end of the opening day of the conference and to the National Museum of Scotland for hosting the reception afterwards. In addition to the three days of the conference, we would like to invite you all to the TRAC ceilidh on Friday night. The Archaeology Committee of the Roman Society, together with the organizing committees of RAC and TRAC, are also pleased to announce that they will award the inaugural Sheppard Frere Prize to the best and most innovative student poster at the conference this year.

All of the information that you should require to make the most of the conference can be found in this pack. Should you need any further assistance please contact one of the conference volunteers. We would like to extend our thanks to these volunteers who help to make the conference run smoothly. We hope you enjoy your stay in Edinburgh.

### RAC Organizing committee

Ben Russell (Classics)  
Andrew Birley (Roman Society)  
Jim Crow (Archaeology)  
Manuel Fernandez-Götz (Archaeology)  
Fraser Hunter (National Museum of Scotland)  
Rebecca Jones (Historic Environment Scotland)  
Joanne Rowland (Archaeology)  
Eberhard Sauer (Classics)

### TRAC Organizing Committee

Lucia Michielin (Classics)  
David Rose (Classics)  
Carlos Cáceres Puerto (Archaeology)  
Martina Astolfi (Classics)  
Kathleen O'Donnell (Classics)

## ANNOUNCEMENTS FROM THE TRAC STANDING COMMITTEE

The TRAC Standing Committee would like to join the RAC and TRAC Organising Committees in welcoming you to the University of Edinburgh for RAC/TRAC 2018. We would also like to thank you for your support of TRAC and update you on several developments since the last annual conference in Durham.

Following last year's AGM numerous amendments were made to the TRAC Constitution, which can be accessed anytime on our webpage <http://www.trac.org.uk/>. One such amendment approved the addition of a fifth Standing Committee member in the role of Ordinary Member and, following an election at TRAC 2017, we were happy to welcome Dr Francesca Mazzilli (Cambridge Archaeological Unit) to our team. Her addition to the Committee continues to help us improve the quality of TRAC events and publications and she recently organised our second TRAC Workshop at the University of Cambridge, which focused on the creation and expansion of Wikipedia pages concerning theoretical archaeology. A list of all the pages created and edited can be found on Wikipedia by searching 'TRAC Wikipedia Workshop 2018'.

We are also very pleased to announce the launch of our fully open-access online journal, the *Theoretical Roman Archaeology Journal (TRAJ)* published and supported by the Open Library of Humanities (OLH). The first articles of the inaugural volume are now available to download freely from <http://traj.openlibhums.org/>, as are all articles from the previous *TRAC Proceedings* volumes (1991-2014), which have now been migrated to the platform. This journal serves as a publication venue for innovative and interdisciplinary research in the field of Roman Archaeology and we welcome contributions from all delegates at this year's RAC/TRAC conference as long as they possess a strong theoretical element. The local organizing committees will circulate a call for papers for the 2019 volume shortly after the conference's conclusion.

Additionally, the Standing Committee is delighted to announce the release of the next offering in the thematic series **TRAC Themes in Roman Archaeology** published by Oxbow Books. The second volume in this series titled *Material Approaches to Roman Magic* (Edited by Adam Parker and Stuart McKie) seeks to push the research agendas of materiality and lived experience further into the study of Roman magic, a field that has, until recently, lacked object-focused analysis. Building on pioneering studies, the editors of the present volume have collected contributions that showcase the value of richly detailed, context-specific explorations of the magical practices of the Roman world. This new volume is available to purchase now at RAC/TRAC 2018. If you are interested in contributing to the series please contact us at: [admin@trac.org.uk](mailto:admin@trac.org.uk).

Finally, the Standing Committee would like to thank the Roman Society and Barbican Research Associates for their continued financial support of bursaries that allow for a diverse and inclusive annual conference. Great thanks are also owed to the TRAC Local Organising Committee at Edinburgh for their hard work and dedication in planning what will surely be an exciting and stimulating week of papers and events.

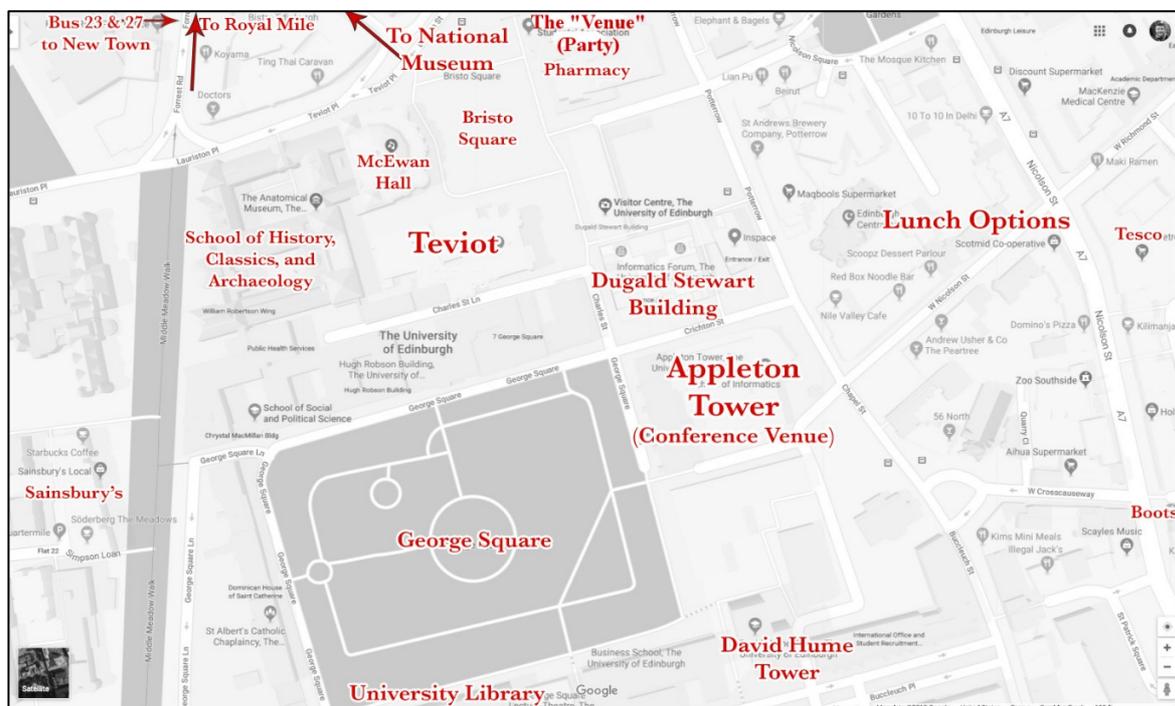
Sincerely,

The TRAC Standing Committee

Matthew Mandich, Lisa Lodwick, Thomas Derrick, Sergio Gonzalez Sanchez, and Francesca Mazzilli

## KEY INFORMATION

The conference will take place in the central campus. The main venue will be the Appleton Tower, with a workshop in the Dugald Stewart Building beside it.



*Detail Map of the Central University Area*

### Registration

Registration will take place on the ground floor of Appleton Tower from 8:15 on the first day of the conference and from 8:30 on Friday and Saturday. It will also be possible to register between 15:00 and 17:00 on the Wednesday before the start of the conference in Appleton Tower.

### Conference Opening

The conference will start on Thursday 12 April and the day will be closed by a welcome and our keynote lecture by Dr. Elizabeth Fentress, beginning at 18:15 in Lecture Theatre 1 of Appleton Tower. After the keynote, a reception will be held at the National Museum of Scotland from 19:30–21:00 (the National Museum is a short walk from the central university area, and is labelled on the large map).

### TRAC Party

The famous TRAC party (this year in the form of a traditional Scottish ceilidh) will be hosted on Friday from 20:00–24:00 at “The Venue” (Potterow) in the central university area (labelled on the detail map), 3 minutes’ walk from Appleton Tower.

### Refreshments and Meals

Mid-morning and mid-afternoon coffee and tea breaks will be hosted on the ground floor of Appleton Tower; coffee with pastries will be provided on the first morning of the conference as well. Daily lunch breaks will be from 13:00–14:00, and affordable lunches may be purchased from a variety of shops and restaurants surrounding the university. A particularly dense area, located east of the university, has been indicated on the detail map. For evening dining options, a variety of affordable quality restaurants may be found on Nicholson Street and other streets east of the university (the same area as lunch options), as well as along Lothian road, west of the university. More formal dining options may be found on the Royal Mile (north of the university), on the way to New Town (further north, along the Mound), and

along Princes Street in New Town (these locations are indicated on the large map.) Furthermore a series of deals and discounts at local restaurants and pubs can be secured on presentation of the conference badge:

- **Pear Tree** (pub): meal deals (both lunch and dinner), 15 % discount on normal menu and drinks, possibility of pre-order and take away (see flyers)
- **Red Box** (Asian restaurant and take away): 10% discount on food
- **Pizza Posto** (Italian Pizzeria): lunch deals, 10% discount on food outside the lunch deals
- **Beirut** (Lebanese): £5 take away deal
- **Mosque Kitchen** (curry): £6 curry and drink

### **Name Badges & Lanyards**

Please wear these throughout the conference as they will grant you access to all the session, events, and to the meal and drink discounts.

### **Conference Trip**

The conference trip to the Antonine Wall will be led by Prof. David Breeze and Dr Rebecca Jones. Buses will leave Appleton Tower at 9 am and return by 4 pm. The trip is currently full-booked but we have created a waiting list in case some places become available (please send an e-mail to the organizers if you wish to add your name to the waiting list). In advance of the trip, please consider downloading the Antonine Wall phone app: <http://www.antoninewall.org/visiting-the-wall/download-the-app>

### **Social Media Policy**

We encourage tweeting from the conference, please use hashtag #RACTRAC2018. All sessions are open for tweeting unless otherwise specified by the session organisers. TRAC also has a Twitter account (@TRAC\_Conference) which has details of events and sessions going on during TRAC.

### **Transportation**

If arriving by train, or from the airport on the Airlink bus or the tram, there is a series of bus services (n. 3, 5, 7, 8, 29, 30, 31, 33, 37, and 49) that go from Princess Street to Nicholson Street (less than 2 minutes' walk from Appleton tower). Ticket cost £1.60 and need to be paid on board in exact change. However, the venue is less a short 15 minutes' walk from Waverley Station.

### **Visiting Edinburgh**

Edinburgh is a vibrant international city, home to a variety of attractions, including Edinburgh Castle, the Royal Mile and historic Old Town, Calton Hill, Arthur's Seat, and the Whisky Experience. The city features a beautiful blend of Georgian, Neoclassical, and Reformation architecture which has been designated a UNESCO World Heritage Site. Edinburgh is also host to a number of museums and historical institutions, including the National Museum, National Library, and the Scottish National Gallery, among a number of other museums. Dubbed the "Athens of the North" during the Scottish Enlightenment, Edinburgh is a cultural, historical, and artistic hub. Edinburgh also has the distinction of being the birthplace of Harry Potter. The official guide to Edinburgh can be found at [edinburgh.org](http://edinburgh.org).

## PROGRAMME

Thursday 12<sup>th</sup> April 2018

From 8:15	<b>Registration &amp; Coffee</b> (Ground floor, Appleton Tower) <b>Poster Session I</b> (First Floor Balcony, Appleton Tower)				
9:00-13:00 (Coffee break: 11:00)	Lecture Theatre 5	Lecture Theatre 4	Lecture Theatre 3	Lecture Theatre 2	Lecture Theatre 1
	<b>Session 1a</b>	<b>Session 1b</b>	<b>Session 1c</b>	<b>Session 1d</b>	<b>Session 1e</b>
	Projecting Roman Power? Monumentality in Roman Frontier Installations	From Plans to Processes: A New Look at the Cities of Roman North Africa	Reuse and Transformation of Space in the Late Antique 'Latin West'	Defining Viridia: New Perspectives on Roman Gardens and Designed Landscapes	Formal Approaches to Complexity in Roman Archaeology (I)
<b>Lunch Break</b> (13:00-14:00) Lecture Theatre 1: Copyright License Workshop					
14:00-18:00 (Coffee break: 16:00)	Lecture Theatre 5	Lecture Theatre 4	Lecture Theatre 3	Lecture Theatre 2	Lecture Theatre 1
	<b>Session 2a</b>	<b>Session 2b</b>	<b>Session 2c</b>	<b>Session 2d</b>	<b>Session 2e</b>
	A Clash of Cultures? Encounters between Rome, its Inhabitants and its Neighbours	Plants, Animals and Identity	Water and Urbanism: The Evolving Infrastructure of Rome's Eternal Cities	TRAC General Session 1	Formal Approaches to Complexity in Roman Archaeology (II)
18:15	Lecture Theatre 5: <b>Welcome by RAC and TRAC Committees</b> <b>Keynote Lecture –</b> <b>Dr Elizabeth Fentress: <i>Slaving Societies</i></b>				
19:30	<b>Reception</b> (National Museum of Scotland)				

**Friday 13<sup>th</sup> April 2018**

From 8:15	<b>Registration &amp; Information Desk</b> (Ground floor, Appleton Tower) <b>Poster Session II</b> (First Floor Balcony, Appleton Tower)				
9:00-13:00 (Coffee break: 11:00)	Lecture Theatre 5	Lecture Theatre 4	Lecture Theatre 3	Lecture Theatre 2	Lecture Theatre 1
	<b>Session 3a</b>	<b>Session 3b</b>	<b>Session 3c</b>	<b>Session 3d</b>	<b>Session 3e</b>
	Recent Work and the Challenging of Perceptions of Roman Britain: The Archaeology of Occupation and Collaboration	Isotopic Studies in Roman Archaeology: Patterns of Commonality and Eccentricities	Ancient Consciousness of Connectivity in the Roman World	Quantifying Public Construction: Figure Labour, Territory Exploitation and Cost of Production	Beyond Adoption, Imitation, Hybridization: Representation and Visuality within and beyond the Roman Frontiers
<b>Lunch Break</b> (13:00-14:00) Lecture Theatre 1: TRAC AGM					
14:00-18:00 (Coffee break: 16:00)	Lecture Theatre 5	Lecture Theatre 4	Lecture Theatre 3	Lecture Theatre 2	Lecture Theatre 1
	<b>Session 4a</b>	<b>Session 4b</b>	<b>Session 4c</b>	<b>Session 4d</b>	<b>Session 4e</b>
	Cities in Transition: Urban Space in Asia Minor in the 3 <sup>rd</sup> and 4 <sup>th</sup> Centuries AD	Studying <i>Instrumenta Scriptoria</i> : The Social Value of Writing Equipment	'War and Peace!' Roman Coin Hoards in Archaeological Contexts	Remembering and Social Memory in the Roman West	Boundaries, Borders, and Frontiers: Modern Methods and Frameworks
20:00	<b>Ceilidh</b> (Potterow)				

**Saturday 14<sup>th</sup> April 2018**

From 8:15	<b>Registration &amp; Information Desk</b> (Ground floor, Appleton Tower) <b>Poster Session III</b> (First Floor Balcony, Appleton Tower)					
9:00-13:00 (Coffee break: 11:00)	Lecture Theatre 5	Lecture Theatre 4	Lecture Theatre 3	Lecture Theatre 2	David Hume Tower LG.09	Lecture Theatre 1
	<b>Session 5a</b>	<b>Session 5b</b>	<b>Session 5c</b>	<b>Session 5d-1</b>	<b>Session 5d-2</b>	<b>Session 5e</b>
	Shopping and the Roman City	The Comparative Archaeology of the Roman Conquest: New Research in Gaul, Britain, and Iberia	The Mediterranean Countryside in Late Antiquity	The Praxis of (Roman) Archaeology: Alienation and Redemption	A Place for an Experiment in Roman Studies	TRAC General Session 2
<b>Lunch Break</b> (13:00-14:00)						
14:00-18:00 (Coffee break: 16:00)	Lecture Theatre 5	Lecture Theatre 4	Lecture Theatre 3	Lecture Theatre 2	Lecture Theatre 1	
	<b>Session 6a</b>	<b>Session 6b</b>	<b>Session 6c</b>	<b>Session 6d</b>	<b>Session 6e</b>	
	Rome and the Partho-Sasanian East: 700 Years of Neighbourhood and Rivalry	Words and Pictures: Reading Verbal and Visual Messages from Sanctuaries in the Roman West	New Archaeological Perspectives on Imperial Properties in Roman Italy	Crafts: Everyday Technologies in the Ancient World	Egypt on the Move: New Meanings of Space and Place in Local Contexts	

**Sunday 15<sup>th</sup> April**

Antonine Wall trip: buses depart from outside Appleton Tower at 9 am and return at 4 pm

## **SESSION AND PAPER ABSTRACTS**

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<b>SESSION 1B</b> .....	<b>15</b>
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<b>SESSION 4A</b> .....	<b>72</b>
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<b>SESSION 4C</b> .....	<b>78</b>
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<b>SESSION 4E</b> .....	<b>85</b>
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<b>SESSION 5D – WORKSHOP 1</b> .....	<b>110</b>
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<b>SESSION 5E</b> .....	<b>115</b>
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## Session 1a (RAC)

### *Projecting Roman Power? Monumentality in Roman Frontier Installations*

Thursday morning, Lecture Theatre 5

**Session organizers:** David Breeze (University of Edinburgh) and Erik Graafstal (Municipality of Utrecht/Museum Hoge Woerd)

*This session will consider whether Roman military installations were built to project a specific image of Roman superiority. The session will embrace monument expression in fort gateways, whether these were for grandeur or were just gates, and why portals were blocked; fort orientation in frontier systems; platforms of power: governors' palaces on the Rhine and Danube; monumentality in artificial frontiers including Hadrian's Wall, the Antonine Wall distance slabs, and a consideration of the audience.*

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### **Expressing Power: Monumentality in Roman Frontier Installations**

*David Breeze (University of Edinburgh) and Erik Graafstal (Municipality of Utrecht/Museum Hoge Woerd)*

Roman military buildings were not always simple, practical structures. In several sites, monumental facades, gates or towers were erected facing the enemy. The axis of some forts were so aligned that they faced the enemy. Some installations were placed in skyline positions, perhaps not just to be able to see but to be seen. On the Antonine Wall in Scotland, a series of sculptural reliefs were erected telling the story of the conquest, fighting and Roman victory under Antoninus Pius; but what was their purpose? The aim of this session is to explore monumentality on Roman frontiers and through that seek a glimpse into the relationship between the Romans and their neighbours.

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### **Manifesting the Empire's Power: Roman Fort Gates**

*Christof Fluegel (Bayerisches Landesamt für Denkmalpflege)*

Roman military architecture in the provinces was a demonstration of the Empire's power: Fort gates of auxiliary forts could reach heights of up to 16m, whereas the gates of legionary fortresses were even higher, up to 20m. The representative aspect of Roman fort gates in 3D can be deduced from architectural brooches, relief stones (like at Maryport) or clay models, which allow us to reconstruct the height. These sources also provide us with a glimpse into the past on how military architecture was perceived by the Romans themselves. We even have "military lyrics" from the edge of Empire referring explicitly to the representative aspect of fort gates, as named in an inscription from Gholaiia in Lybia and describing the fort gate as a "gem in a gold ring". The front of Roman fort gates and military architecture was decorated with ornamental bricks, as evidenced in Pförring (Raetia), Rome (Aurelian Wall) or Cologne ("Römerturm"). The topographic aspect of forts contributed to the impressive representative aspect of fort gates, as Roman forts are often situated on lower terraces above rivers (like in Regensburg or Pförring) or hill slopes in the middle of an open landscape (like in Ruffenhofen in Raetia). For a traveller approaching a Roman fort from below this would add the impression of further height. These results show that Roman military architecture at the Edge of Empire could reach dimensions like in Rome. As a side-effect all rebuilt fort gates from the 1980s like Welzheim, Weißenburg or Pfünz (Germany) or South Shields (UK) and often used as "touristic icons" must be considered as too low.

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### **Defensible monuments or monumental defences? Stone auxiliary forts along the Lower Rhine**

*Julia Chorus (Radboud Universiteit)*

The metamorphosis of the range of timber auxiliary forts along the Lower Rhine – from Arnhem-Meinerswijk to the North Sea – must have been impressive: from the 160s onwards new defences and main buildings appeared in stone, a building material that was unknown in this area. After having built in timber for more than a century, with wood obtained from the immediate surroundings, tufa was now used that had been imported from far away. The position of the forts remained the same as before: as close to the river Rhine as possible and opposite or nearby tributaries. The forts were not transformed at the same time; neither within one building programme nor during one political situation. It took at least 40 years before all forts were rebuilt, during this period four emperors reigned. What intention did the builders have? Was this urge for monumentality at the Lower Rhine an expression of power? Was it symbolic or did threats at the border play an important part at each individual rebuilding activity? This paper deals with the change from timber to stone forts; an investigation into the late 2nd century Lower Rhine region.

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### **Monumentality in Roman Military Architecture: The Case Studies of Nijmegen and Udruh**

*Mark Driessen (Universiteit Leiden)*

Monumentality in Roman military architecture has both a physical and an emotional aspect. The physical aspect is connected with the furnishing of a selected location with representative buildings and structures, and contributes to the physical monumental manifestation of these buildings and monuments both separately and together as a whole. Monumentality also has an emotional aspect which relates, inter alia, to ideology, troop cohesion, and domination. The intentions of such forms of monumentality are dependent on the builders-planners and on the intended target groups. This paper focuses on such physical and intentional aspects of monumentality for both the 1st century *castra* of Nijmegen (Netherlands), as the 3rd-4th legionary fortress of Udruh (Jordan). The location and layout of the curtain wall assemblages and the *principia* make clear that these military sites were remarkable political and territorial markers in a changing landscape.

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### **Reading the Fortlets: Impressions of Power in the Landscape**

*Matthew Symonds (Current World Archaeology)*

Fortlets represent a small and versatile installation type that was used to widen the military presence in occupied zones by providing secure accommodation for a small garrison of soldiers. Away from Hadrian's Wall, these fortifications typically occupy either highly visible locations in the local landscape or key junctures along road or coastal communication networks. The scale and sophistication of the defences sheltering the soldiers can vary considerably. Techniques ranging from superficial attempts to make the fortlets appear as visually imposing as possible to practical but subtle hardening of the defences preserve clues about the nature of the environment the garrisons operated within. When considered in conjunction fortlet design and location provide an insight into what the garrisons manning them were intended to achieve. This paper will draw on examples from around the Roman Empire to illustrate how fortlet defences and positions were calibrated to help resolve the security concerns that required the presence of a resident garrison.

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### **Facing the Water: The Orientation of Early Frontier Forts towards Water**

*Andrew Tibbs (Durham University)*

The ancient writers are clear on the orientation of Roman military fortifications; that they should face east, the enemy or the direction of marching. Is this a show of the power and might of the Roman army, or an attempt for the gods of the Standards (housed within the *principia*) to overlook and intimidate the enemy, or is there a more practical answer? The evidence from the Flavian forts (and some camps) on the proto-frontier in the north of Scotland, is that the fortifications rarely are orientated towards the enemy or east. Instead, most sites are orientated towards bodies of water, with many being located at the confluences of rivers. It is not immediately apparent why this should be; is it to secure important crossings or is it because they are acting as transport routes before the construction of roads? The

orientation of these sites also calls into question their role as 'glen-blocking' forts. If these were constructed to guard arterial routes to/from the Empire, or to act as launch pads for an invasion of the Highlands, then it would be expected that the forts would be orientated to face up these glens, something which is not reflected in the evidence. This paper will look at the wider issue of fort orientation in relation to monumentality and whether or not there is a purpose to the positioning of forts; is it a symbolic act of power designed to influence and intimidate the local populations, or is there a more practical reason based on topographical positioning and nearby resources.

### Session 1b (RAC)

#### *From Plans to Processes: A New Look at the Cities of Roman North Africa*

Thursday morning, Lecture Theatre 4

**Session organizers:** Gabriella Carpentiero (Università degli Studi di Siena) and Andrew Dufton (ISAW, New York University)

*The intensely urbanized landscape of North Africa in the Roman period makes the region an obvious choice for interrogating life in the ancient city. These cities — like the North African populations that created them — are a juxtaposition of many layers of history and ethnicity that are too-often flattened into a single, culturally ‘Roman’ urban expression. Furthermore, the static, poorly-phased urban plans that are the primary focus of archaeological study make it difficult to answer the types of social questions that are at the heart of urban studies in later periods. Yet the large-scale excavation and excellent preservation at many North African cities, as well as information coming from new fieldwork approaches and non-invasive survey, provides an enticing body of data for a more nuanced research agenda. How were varied local interests expressed during building and renewal, and is it possible to recognize elements of cultural interaction in the construction and life of ancient cities? At what stage, if at all, did functional or community zones emerge in the cityscape? How did town layouts change over the period of Roman rule? And can we use the simple urban plan to make larger statements about the daily social life of urban populations? This session explores new methodological and theoretical approaches that hold the potential to answer these types of queries in greater detail, through a specific focus on tracing ongoing changes to the urban layout. Papers will include innovative fieldwork techniques for understanding the extent of urban areas and their chronological development, and in particular conceptual ideas for the reinterpretation of well-known settlements such as Timgad, Lepcis Magna, or Thugga. Overall, a shift from static plans to dynamic processes will breathe fresh life into the study of the North African city and the capacity of the urban layout to speak to wider social histories.*

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#### **Urban Planning and Cultural Hybridization in Graeco-Roman Egypt: A Semantic Analysis of Archaeological Data**

*Gabriella Carpentiero (Università degli Studi di Siena) and Maria Cristina Addis (Università di Modena e Reggio-Emilia)*

Urban layouts and architecture are an enormous source of information on the different cultural factors involved in the creation and development of a city and its population. This paper aims to exploit ancient cities as unwritten sources in order to investigate the interaction between local and external factors — a phenomenon often discussed as cultural hybridization — by the means of an interdisciplinary approach that integrates archaeological research and semiotic analysis. The cities of Greco-Roman Egypt, especially in the Fayum region, make particularly appropriate case studies to highlight the impact caused by the presence of Greeks and Romans over the backdrop of Egyptian traditions. Dionysias and Philadelphia represent two opportunities for the investigation of the manner in which the Graeco-Roman architectural and design principles have been adapted to fit within a different cultural context, differing both from the orthogonal Hippodamian cities of Greece, the Greek colonies in the western Mediterranean and the imperial Roman foundations. Archeological data were interpreted using a comparative semantic analysis of both written sources and architectural elements, looking specifically to the social practices characterizing external and local traditions. This approach allows the reconstruction of the topological values of buildings and settlements, conceived as devices devoted to differentiate and regulate social interactions, according to multiple and stratified cultural rules, habits and skills. Primary social practices have been individually considered, taking into account the formal structure of the urban pattern and the topological models regulating interactions between social actors. The outcome of this analysis is the identification of hybrid forms of the Graeco-Roman urban design that are generated by the influence of various cultural elements, by different adaptations of the dominant

culture to the local background, and by specific topological structures that underlay the urban pattern on the macro- and micro-scale of the city and its neighborhoods.

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### **Where the Word of the Emperor was Wind: Elite Networks and Imperial Visibility in the Cities of Mauretania Tingitana**

*Stephen Collins-Elliott (University of Tennessee)*

Since criticisms first emerged in the 1970s regarding the acculturation or resistance to Roman imperialism, the processes of local elite involvement in the adoption of Roman cultural forms has been of central importance. Within the dynamics of local elite power structures lie the central question of the role and presentation of the emperor himself in urban space. This paper undertakes a new approach to understand the cultural significance of the figure of the emperor within the sociocultural landscape of urban space, through the multivariate analysis of public inscriptions in the province of *Mauretania Tingitana*. By coding and classifying texts with attributes that pertain to their contents, prosopography, status, civic and ethnic identity, epigraphic genre, and findspot, I utilize computational methods in order to detect general patterns in the role of the emperor in contrast to other elites who were commemorated in public spaces. Both network analysis, a relatively recent addition to the toolbox of Roman archaeology, as well as multiple correspondence analysis, an older multivariate technique, are employed to assess the representation of the emperor over the first three centuries CE. Each of these methods were developed out of different theoretical backgrounds, but they both address the same question about the associations behind the imperial presence in the cities of North Africa, and can be profitably compared as ways to analyze and explore the social relationships that are publically advertised in the epigraphic record. Comparing the profile of imperial visibility in the cities of *Mauretania Tingitana* with other cities of the Maghrib further sheds light on the conceptual presence of the emperor within provincial urbanism.

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### **Residential Architecture in Ptolemais (Libya) in Light of the New Excavations and Non-Invasive Surveys: Greek, Alexandrian, Roman or Libyan Influences?**

*Julia Mikocka (Uniwersytet Warszawski)*

The aim of this presentation is to indicate Greek, Alexandrian, Roman and also local influences in residential architecture from Ptolemais, which are observed in buildings dated between Hellenistic and late Roman period. Ptolemais, a city which was founded in the area conquered by Greek settlers, erected in the Hellenistic period, by one of the Ptolemies, and in the 3rd century A.D. became the capital of the Roman province of Libya Superior, had to undergo various influences. This was also port city and thanks to the Mediterranean trade routes it was close to Crete, Tripolitania and Alexandria. Traditionally, Cyrenaica and Ptolemais itself, is considered as a region where the general historical processes, characteristic for other parts of the ancient world, found merely reflection and confirmation. The inspiration for this presentation is the combat which was undertaken by D. Roques against generalisations about Cyrenaica, a region he believes has its own specific history, frequently going beyond the accepted clichés of development and decline over time. During the presentation residential architecture from Ptolemais dated between Hellenistic and late Roman period in the light of the excavations and non-invasive surveys will be described. During the second part of the presentation chronological scope of the residential architecture under analysis will be present. The main moments in the history of development of the residential architecture will be described. On the basis of analysis of a results of excavations and of anomalies visible in the geophysical maps of Ptolemais several typical features of residential structures, which may also be seen in other cities of Cyrenaica, will be distinguished. In conclusion specific history of residential architecture from Cyrenaica, which frequently goes beyond the general historical processes, characteristic for other parts of the ancient world, will be presented.

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## **The Basilica/Curia of Sala (Mauretania Tingitana): Investigating Cultural Interactions through the Archaeology of Construction**

*Rosella Pansini (Università di Pisa)*

The paper describes the ongoing analysis of the urban layout in the monumental centre of Sala (Rabat, Morocco). The study aims to identify the elements of interaction between Mauretanian and Roman culture through the architectural analysis of buildings. The methodology used involves the combination of the data already published in the past, and those collected from scratch in 2015-2017 by the Department of Classical Archaeology of the University of Siena. The survey of the monumental centre through the aims of topography and 3D photogrammetry allowed to achieve new sources of information and a documentary base for the study of building techniques, ancient building modules and the architectural project and their relationships with local construction traditions. The focus of this paper is the so-called "basilica/curia Ulpia" (first half of the 2<sup>nd</sup> century), which is one of the main building of the forum area and whose interpretation is still controversial. The study of the architectural design and masonry reveals the use of two different building modules and two different measurement units: the Roman foot was used in the design process of the plan, while the Punic cubit was used in the construction of the walls. This would indicate the presence within the site of local workers, who applied Mauretanian building principles to a project conceived by Roman architects.

### Session 1c (RAC)

#### *Reuse and Transformation of Space in the Late Antique 'Latin West'*

Thursday morning, Lecture Theatre 3

**Session organizers:** Cristina Murer (Freie Universität Berlin), Tim Penn (University Edinburgh) and Christoph Rummel (Freie Universität Berlin)

*From the late 3<sup>rd</sup> century onwards, the Roman world, and the western provinces in particular, underwent fundamental transformations which became ever more pronounced with the advent of new economic, social, political and religious circumstances stemming from emerging early medieval power spheres and networks. Traditionally, Roman archaeology has seen Late Antiquity as a period of transition, during which Roman objects, structures and concepts were gradually lost or purposefully eroded. Patterns of reuse were studied primarily at the level of individual objects, artworks or architectural elements (e.g. spolia). Consequently, interpretations have often been artificially charged with contemporary ideological agency – in the case of spolia, to stress either the self-conscious connection of Late Antique populations with the past, or to overemphasise Christian triumphalism over pragmatic reuse of materials. This session builds on recent methodological approaches to move beyond existing traditions which view reuse primarily in ideological terms. It seeks to investigate patterns of Late Antique reuse and transformation by focussing on changing interrelationships between space and structures within wider socio-economic and political contexts. Papers are invited to focus on different spatial environments (e.g. rural settlements, domestic environments, public spaces, necropoleis, palaces, frontier zones). Contributions should assess, beyond ideological explanations, the extent to which these spaces experienced continuity, abandonment and/or different forms of reuse from the end of the 3<sup>rd</sup> century until the early medieval period. Through this approach, the session will provide a better understanding of spatial transformations – and therefore more general patterns of reuse in Late Antiquity. This will enable a more balanced view of the driving forces behind these processes than that provided by ideologically- charged studies which have dominated debates surrounding reuse and transformation to date.*

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#### **Reopen, Reduce, Reuse: The Transformation of Mortuary Space in Late Antiquity**

*Liana Brent (Cornell University/American Academy at Rome)*

The treatment of bodies and burials in mortuary spaces provides exceptional insight into how a living population disposed of, curated and remembered the deceased. Archaeological and literary instances of grave opening in antiquity denote a mixture of apprehension, curiosity and respect in post-burial encounters with human remains. Despite the frequency of post-burial activities in Roman cemeteries, burials have been considered time capsules, whose inherent value lies in their sealed, intact nature, which causes difficulties in the interpretation of graves that were damaged, disturbed, reopened or reused at various points in the 'lifespan' of a cemetery. Furthermore, grave reuse in Roman cemeteries is generally ascribed *a priori* to Late Antiquity on the basis of perceived changes in burial practices and attitudes to the dead in the fourth century. The idea that reuse took place after a cemetery's main phase of use assumes a lack of respect for burials of earlier generations, while simultaneously positioning the practice as subversive and outside normative burial patterns, without necessarily investigating the time between depositions. In this paper, I focus on the methodological and interpretive questions that surround archaeologically documented instances of grave reuse in antiquity. How do we recognize that mortuary spaces were reused successively rather than simultaneously? In cases of consecutive multiple burials, how can we determine how long of a period elapsed between the initial deposition and the time of reuse? To answer these questions, I turn to case studies from non-monumental Roman cemeteries, such as Musarna in Lazio and Vagnari in Puglia, where grave reuse occurred after the amount of time that was required for the body to fully decompose. Using the methods of archaeoethnology (*anthropologie de terrain*), this paper challenges notions of Late Antique reuse as a predatory practice, while exploring the temporal and corporeal connections between deceased individuals.

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## **Abandoning the Necropolis: Grave Robbing in the Late Antique West**

*Cristina Murer (Freie Universität Berlin)*

Funerary spolia were frequently re-used to decorate the interior of public and private buildings in the Late Antique 'Latin West'. Therefore, the marble revetments of high imperial tombs must of have been target of late antique spoliation processes. Next to this also imperial edicts, that tried to stamp out the all too common practice of tomb plundering, confirm that in late antiquity the social practice of tomb plundering must have been far more frequent than in previous periods. This paper focusses on several necropoles from Italy (Rome, Iulia Concordia and Ostia) and Germany (Duppach-Weiermühle). By comparing archaeological and legal sources, this paper delivers new perspectives on late antique recycling processes. It assesses the extent to which the social practice of tomb plundering and the re-use of funerary material in late antiquity can be connected with larger urbanistic, sociohistorical, political and economic transformations of cityscapes in Italy and the West from the early third to the sixth century.

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## **Burials in Roman Rural Buildings in Northern and Central Italy: Ideology or Pragmatism?**

*Tim Penn (University of Edinburgh)*

The treatment of bodies and burials in mortuary spaces provides exceptional insight into how a living population disposed of, curated and remembered the deceased. Archaeological and literary instances of grave opening in antiquity denote a mixture of apprehension, curiosity and respect in post-burial encounters with human remains. Despite the frequency of post-burial activities in Roman cemeteries, burials have been considered time capsules, whose inherent value lies in their sealed, intact nature, which causes difficulties in the interpretation of graves that were damaged, disturbed, reopened or reused at various points in the 'lifespan' of a cemetery. Furthermore, grave reuse in Roman cemeteries is generally ascribed *a priori* to Late Antiquity on the basis of perceived changes in burial practices and attitudes to the dead in the fourth century. The idea that reuse took place after a cemetery's main phase of use assumes a lack of respect for burials of earlier generations, while simultaneously positioning the practice as subversive and outside normative burial patterns, without necessarily investigating the time between depositions. In this paper, I focus on the methodological and interpretive questions that surround archaeologically documented instances of grave reuse in antiquity. How do we recognize that mortuary spaces were reused successively rather than simultaneously? In cases of consecutive multiple burials, how can we determine how long of a period elapsed between the initial deposition and the time of reuse? To answer these questions, I turn to case studies from non-monumental Roman cemeteries, such as Musarna in Lazio and Vagnari in Puglia, where grave reuse occurred after the amount of time that was required for the body to fully decompose. Using the methods of archaeoethanatology (*anthropologie de terrain*), this paper challenges notions of Late Antique reuse as a predatory practice, while exploring the temporal and corporeal connections between deceased individuals.

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## **An Officer and still a Gentleman? Military authority in transition in later 4<sup>th</sup> and 5<sup>th</sup> century Britain**

*Rob Collins (Newcastle University)*

The changed circumstances of the later Roman Empire saw the evolution of its elite classes in a complex political dynamic in which senators, equestrians, and even non-citizen barbarians could wield the reins of power. Military officers and generals, traditional figures of authority in the Empire, were no exception to these new circumstances. In the frontier of northern *Britannia*, notably though not exclusively along Hadrian's Wall, a number of changes are evident in the archaeological record of late 4<sup>th</sup> and 5<sup>th</sup> century military sites. Artefactual and architectural evidence indicates that the *praepositii* in this distant frontier zone were no longer living in a fashion typical of their class. *Praetoria*, commanding officers' houses, have evidence for significantly diminished size and opulence, and there is evidence for the creation of new structures with large spaces for social interaction, for example the conversion

of granaries into (feasting) halls at Birdoswald. The archaeological evidence at the end of empire is evocative of a transformation in the materiality of authority, one that further blurs the distinction between Roman officer, local elite, and barbarian chief. This paper will explore that evidence, arguing that the adaptation of the military elite was crucial to the post-Roman transformation of northern Britannia, and perhaps other late Roman frontier zones.

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### **Of Emperors and Bishops – Reoccupation(s) of the ‘Imperial Palace’ at Gamzigrad, Serbia**

*Christoph Rummel (Freie Universität Berlin)*

The Roman fortified site near the village of Gamzigrad in Eastern Serbia has long been interpreted as *Felix Romuliana*, ‘retirement palace’ of the tetrarchic emperor Galerius (VASIĆ 2007). After the key period of occupation in the late 3<sup>rd</sup> and early 4<sup>th</sup> century, it was largely abandoned, only to be rebuilt and reoccupied in the 5<sup>th</sup> and 6<sup>th</sup> century. This reoccupation saw a change of use, with a large three-naved basilica and possibly bishop’s palace built over the part of the earlier imperial palatial buildings of the site (MOCSY 1974, 303). Several smaller apsidal buildings in and around the site (8 identified to date) attest that the former palace – which does not appear to have had any surrounding settlement – served as a major ecclesiastical centre in the 5<sup>th</sup> and 6<sup>th</sup> centuries (ŠKUNDRIĆ 2015, 123). At the same time, major industrial activity took place in parts of the fortifications of the site (PETKOVIĆ/ŽIVIĆ 2006). Following a further period of abandonment, the site was resettled in the 10<sup>th</sup> and 11<sup>th</sup> centuries, this time as a civilian site of fairly low status (JANKOVIĆ 2010, 201). This repeat pattern of reoccupation and change of use throughout the *longue durée* of late Antiquity and into the early medieval period allows new views of how existing spaces were adopted or modified at the time – particularly so as even the Tetrarchic phase of the site is clearly orientated towards Bronze Age monuments in the surrounding landscape. Building on the work of a major Serbian-German cooperation project, this paper seeks to address such questions of reuse and adaptation of space at the hand of the data from Gamzigrad and to put them into the wider context of sites across the north-western Balkans, the easternmost fringes of the Latin West, in order to identify possible patterns.

Dorđe Janković: *Gamzigrad in the Middle Ages*. In: I. Popović (ed.): *Felix Romuliana – Gamzigrad*. Belgrade 2010, 201-212.

Andras Mocsy: *Pannonia and Upper Moesia. A History of the Middle Danube Provinces of the Roman Empire*. London 1974.

Sofija Petković & Maja Živić: *Traces of metallurgical activities in late Roman Romuliana: results of recent investigations*. *Metalurgija* 12, 2-3, 2006, 111-126.

Jana Škundrić: *The site of Gamzigrad-Felix Romuliana and its hinterland*. In G. v. Bülow (ed.): *Kontaktzone Balkan*. Bonn 2015, 117-128.

Miloje Vasić: *Felix Romuliana (Gamzigrad) – Palast und Gedenkmonument des Kaisers Galerius*. In: U. Brandl, M. Vasić (eds.): *Roms Erbe auf dem Balkan. Spätantike Kaiservillen und Stadtanlagen in Serbien*. Mainz 2007, 33-53.

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### **Reusing and Kinds of Reusing of a Roman Commercial Space in Late Antiquity: The Macellum Case Study**

*Armando Cristilli (Università degli Studi di Roma ‘Tor Vergata’)*

This research focuses on the Roman *macellum* and its potential to be transformed and adapted to the evolution of society and contributes to the reflection on the urban reuse in Late Antique Latin West. However, these functional (and sometimes architectural) transformations had not previously been studied in depth, although well-documented. But in this paper, the end of use of the Roman food-stuff markets is also important, because the *macellum* in Latin West was abandoned only when the urban life

started to decline, i.e. between the 3<sup>th</sup> and the 5<sup>th</sup> centuries A.D. Under this point of view, the *macellum* is an important proof of the changing happened in the cities. When it was defunctionalized, the market building was not used for anything else, never charged of symbolic values. Otherwise, when the building was turned into something else, it was chosen only for its peculiarities (public function, urban environment, constructive standards, water supply systems) indispensable to the development of city activities. At last, the list of the food-stuff markets reused demonstrate their total dependence on the urban context for their transformations: the new city needs determined the best reuse of the already useless *macella*. Because of its direct relationship with the city life, once again this building provides information on its social and economic dynamics. In these data we can see another aspect of that characteristic “flexibility” of *macellum*, already evident in the lack of a unique layout of this building.

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### **The Reuse of Public Monuments and the Reinterpretation of Urban Topography in the Late Antique West**

*Douglas Underwood (Independent Scholar)*

As has been noted, the study of spolia has progressed considerably beyond the traditional pragmatist/ideologist divide and new interpretive frameworks are needed to explore the wide varieties of reuse in Late Antiquity. However, it is not merely enough to develop new theoretical approaches; new evidence for reuse beyond the spoliation of individual architectural elements or fragments is also essential for moving past outdated interpretations of this phenomenon. This paper will put forward one strand from a study on the patterns of reuse of public buildings in the cities of the late antique west. Specifically, it will explore the archaeological evidence for the reuse of baths across southern Gaul and Spain. With nearly 30 documented examples, this evidence confirms several presumed trends: an accelerating level of reuse from the 4<sup>th</sup> to 6<sup>th</sup> centuries and that reoccupation was often connected to the structure’s original function. Yet there are slight—but significant—differences in the ways that baths were reused, both in terms of purposes, chronology and region. This paper will aim to situate these trends in the broader ideological context of the shifting definition and interpretation of space in the late antique city by presenting the broad picture for the end and reuse of baths along with a small selection of case studies. These examples will show a process wherein private interests gradually encroached on public spaces in cities from the 4<sup>th</sup> century, which should be more clearly connected to shifts in power structures as well as cultural values than any notion of appropriation or triumphalism. Thus, the broad exploration of the reuse of public space in Late Antiquity will be shown to be a valuable method in the continuing development of new approaches to this dynamic topic.

### Session 1d (TRAC)

#### *Defining Viridia: New Perspectives on Roman Gardens and Designed Landscapes*

Thursday morning, Lecture Theatre 2

**Session organizers:** Kathryn Gleason (Cornell University), Sarah Gilboa-Karni (University of Haifa), Rona-Shani Evyasaf (Technion-Israel Institute of Technology) and Samuli Simelius (University of Helsinki/Helsingin yliopisto).

**Chair/Lead discussant:** Kathryn Gleason (Cornell University)

*This session seeks to build on recent conferences and publications on Roman gardens and designed landscapes to hear new perspectives on archaeological theory, method and interpretation. Pioneering archaeologist Wilhelmina Jashemki gathered hundreds of gardens together in Gardens of Pompeii. Her penultimate work, Gardens of the Roman Empire, will be published posthumously in January of 2018 with co-editors Kathryn Gleason, Kim Hartswick and Amina-Aicha Malek. The papers in this session seek to explore new definitions of gardens and their characteristic features, as well as new understandings of designing, constructing and experiencing the Roman garden. Papers exploring unintended “after-life” uses of gardens are also welcomed. Gardens and other designed landscapes are built environments whose understanding is greatly enriched by the perspective of practicing landscape design professionals. While architects and engineers have been involved with the archaeology of their disciplines for centuries, landscape architects have rarely done so. Landscape architect and archaeologist Rona-Shani Evyasaf builds on recent scholarship on design by exploring the role of contemporary visual analysis methods in the assessment of archaeological sites. Built environments are constructed ecologies, as well, understood through specialized approaches to environmental archaeology and papers are welcomed in remote sensing, archaeobotany, malacology and pedology.*

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#### **Garden Sculpture of the Bay of Naples in the 1st c. CE: The Deities**

*Sarah Gilboa-Karni (University of Haifa)*

625 gardens in Pompeii, Herculaneum and the villas of the Bay of Naples, were documented by W. Jashemski in two volumes in 1979 and 1993. Jashemski's catalogue, enhanced by subsequent studies focusing on particular gardens, as well as by museum and exhibition catalogues, lists a vast array of garden sculpture. The iconography of these statues and reliefs is the focus of the present paper. Of over 600 images in sculpture located and studied, 55% depict deities. Deities not only dominate the statuary, but were clearly chosen deliberately and specifically. Most significantly, Venus *Pompeiana*, tutelary deity of Pompeii, whose regally dressed image often appears on shop fronts, is scarcely represented. However, her image as Venus *Genetrix* appears equally within the houses as in the gardens. Apollo and Isis, deities who also received a public cult in Pompeii, are barely represented. Priapus, "guardian of the garden" in Augustan poetry, is also rarely shown. Flora is nowhere to be seen. Judging by the statuary, the gardens are the exclusive domain of Liber-Pater/Bacchus and his *thiasus*, sometimes joined by Hercules, who is depicted as closely associated with the Dionysian realm. These are all fertility deities who also share a civic, apotropaic and chthonic significance.

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#### **Salubrious Spaces: Gardens and Health in Roman Italy (c. 150 B.C.-A.D. 100)**

*Patricia Baker (University of Kent)*

In this paper I ask how the sensory experiences Romans had in gardens were believed to affect their health. Various genres of Roman literature, in particular those influenced by Epicureanism, dating between 150 BC–AD 100 indicate that gardens had the power to encourage health, inspire relaxation, and to stimulate the senses. This corresponds with medical viewpoints about environmental factors

being fundamental to achieving humoral balance and a stable mind (e.g. Hipp. Aers; Galen de Sanitate Tuenda). Pliny the Younger, for example, explained (Ep. 1.9.4; 2.17) that his visits to his villas, located away from the city, enhanced his mental and physical state, demonstrating that there existed a perceived link between an individual's encounter with specific environments and their health. However, the literature only presents the views of the educated, so to gain a wider understanding of Roman perceptions of health in relation to the environment, I turn to the archaeological remains of gardens. By looking specifically at Roman gardens in Pompeii and Herculaneum, I ask what sensory experience (particularly vision for this paper) people had within them that were believed to contribute towards their well-being. This is achieved through an analysis of literature, art, and archaeological remains. Roman descriptions of gardens are compared with frescos to determine if they shared comparable attributes. The images also alert us to ideal views, flora and colours that may have been encountered. Vitruvius, for example, noted that green was beneficial for the eyes (de Arch. 5.9.5). The designs of gardens, along with their decorations and archaeo-botanical remains are compared to determine if they were intended to mimic natural landscape features that were deemed healthful for the individual who occupied the space. This assessment provides a nuanced understanding of the desired visual experiences in natural spaces that helped in the formation of health.

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### **Beyond the Walls- Water and Drama as the Common Denominator in Herod's Landscape Places** *Evie Gassner (University of Jerusalem)*

The question of King Herod's personal involvement in the building projects attributed to him was always one of the more dominant topics in the study of Herodian Archaeology. The purpose of this lecture is to try and answer this question by researching and discussing the location of a 'common denominator' in Herod's "Landscape" palaces, through the study of the relationship each palace has with its topographical surroundings. These palaces- the Promontory Palace in Caesarea, the Third Palace in Jericho, the Northern Palace in Masada and the Palace of Great Herodium- were chosen as case studies for their scale, architectural complexity and the unique connection they share with the landscape. A close study of the landscape in which the palaces are located may yield the answer to the question presented at the beginning of the abstract. All four palaces are built amidst what can only be defined as "dramatic landscape"- the arid Judean desert and rocky coast of the Mediterranean sea are some of the most spectacular settings in which one may choose to build a palace; the surroundings in which the "Landscape Palaces" are located all share a distinctive association with water. This lecture will attempt to argue that the use of the elements of water and the dramatic landscape, combined with the uniqueness of the structures themselves, may point to Herod's own involvement in the planning of the four palaces.

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### **The Use of Landscape Architecture Design Elements, as a Tool for Better Understanding of the Roman Gardens** *Rona-Shani Evyasaf (Technion- Israel Institute of Technology)*

The growing awareness to the existence of ancient gardens, and new techniques of garden archaeology, increased our knowledge and data of the ancient gardens and the Roman gardens particularly. In the past, the research of ancient Roman gardens was based mainly on historical records and garden descriptions by ancient writers, like Pliny the Younger, or upon artistic depictions in wall paintings and mosaics. The new data, gathered mainly from the middle of the 20th century but more intensively in the last decades, has given us new opportunities of research. Garden archaeology unearths elements like walkways, garden's paths; pools, watering channels and fountains, railings and pergolas, planting patterns and types of plants etc. However, one of the most important data the excavations supplies us with, is the context of the garden in its surrounding. By examining the tools of garden design used by the landscape architect when planning a garden, together with the new data, the scope of our understanding ancient Roman gardens can be widened. Some of the new aspect that can be investigated are the relations between the garden, the house and the surrounding landscape; the choice to design the garden as an open/close space; the physical/visual connection between the garden and the natural

landscape; divisions of the garden area; the location of the main gardens elements in relation to the buildings; focal points, symmetry axis and the viewing axis; the garden as a space to look at or a space to walk in; design of the physical elements as water elements and others. Using the comparison of different elements of landscape design in the gardens, can teach us a lot about the Roman garden design. It could also teach us about the cultural and regional influences that effected those gardens.

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### **A critical re-evaluation of the garden spaces in the Roman domestic sphere**

*Samuli Simelius (University of Helsinki/Helsingin yliopisto)*

The garden was an integral part of the Roman house, and for instance, gardens are identified in hundreds of the Pompeian houses. Wilhelmina Jashemski lists 520 possible gardens inside the city walls of Pompeii. Annamaria Ciarallo and Chiara Giordano have 523 entries in their catalogue of Pompeian gardens, even though they disagree with some Jashemski's identifications. The early excavators of Pompeii scarcely reported remains of plantings, meaning that several garden identifications have very little archaeological evidence. The interpretation instead seems to be based on the architectural remains, for example, the open areas in the middle of the peristyles are frequently identified as gardens. However, it is possible – also in Pompeii – that the space had a paved courtyard. Another example of questionable identification of garden space is the *plutei* with a groove on top, which has been interpreted as planting beds. Hardly any evidence to support this function is provided. The identification of garden space in the Roman domestic sphere needs a critical re-evaluation based on the new information provided by the excavations utilizing novel methodologies in the field of garden archaeology. Also, there is a need for a theoretical discussion on the garden space in the archaeological context, beginning from the simple question: When can a space be defined as a garden? This paper seeks to answer how we can identify gardens in the Roman archaeological context. It tackles the problem with a discussion of the theoretical approach and provides methodological tools for the identification of garden space applying the data from the latest garden excavations in the Vesuvian area.

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### **Hortus in Roman villas in the province of Gallia from architectonical and iconographic perspective**

*Marian Mojzis (Charles University of Prague/Univerzita Karlova)*

Hortus, the idea of this rather small area within the Roman villa, designated as a place for rest and contemplation did not change a lot during the Roman era. However, it was adjusted to the conditions laid down by the villa owners and also due to the weather conditions. Three of Vitruvian Triad virtues, are also linked in the hortus: *venustas*, describing its beauty and pleasure thanks to its proportions and symmetry, while *utilitas* means its suitability and usefulness according to the perfect location of garden elements among whom is no obstacle in their use and each one of them is on the right and proper place and thirdly *firmitas* for its durability and resistance relying on material selection. Is it possible to confront and archaeologically prove the veracity of historical sources? From what we know about architectural features, plants and the reason why they were planted and various species of animals kept in the gardens for pleasure or some use, we can see some common characteristics with the gardens from other parts of the empire, like Campania. Do historical sources relevantly help to complete archaeological excavation of Roman gardens? The correct interpretation of historical sources is conditioned by the correct interpretation of a wider context which is provided by the archaeological excavation. The more comprehensive overall picture of Roman gardens emerges from this synthesis of literary and iconographic sources together with the archaeological ones.

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### **Roman gardens represented in texts and wall paintings**

*Yukiko Kawamoto (Osaka City University)*

Roman gardens have traditionally been considered as the origin of formal gardens, based on Latin texts referring to *opus topiarium* and trimmed evergreen plants (eg. *Plin.Ep.* 5.6.16-18, 35). These literary sources inspired geometric Renaissance gardens, and the style of shaping trees and plants was also

adopted at Versailles which later became key features in French gardens. However, Pompeian gardens excavated by Wilhelmina F. Jashemski revealed that the majority of domestic gardens had informal plant patterns. Moreover, wall paintings and texts referring to gardens represent densely planted greenery resembling natural groves. Both archaeological and textual evidence challenge our previous conception of Roman formal gardens, and thus a careful reassessment of *opus topiarium* is required in order to claim it to be the origin of formal gardens. This paper explores literary sources referring to Roman gardens collected at the Thesaurus Linguae Latinae (Munich) and examines excavated gardens as well as wall paintings representing Roman gardens. By combining a range of sources, I shall analyse the design of Roman gardens and will consider how people in the Renaissance onwards *misinterpreted* Roman gardens.

### Session 1e/2e (TRAC)

#### *Formal Approaches to Complexity in Roman Archaeology: Exploring Complex Systems and Understanding Change* (double session)

Thursday all day, Lecture Theatre 1

**Session organizers:** Tom Brughmans (University of Oxford), John W. Hanson (University of Colorado), Matthew J. Mandich (University of Leicester), Iza Romanowska (Barcelona Supercomputing Centre) and Xavier Rubio-Campillo (University of Edinburgh)

**Chair/ Lead discussant:** Luís Bettencourt (University of Chicago/SFI)

*In recent years archaeologists have increasingly employed innovative approaches used for the study of complex systems to better interpret and model the social, political, and economic structures and interactions of past societies. However, for the majority of Roman archaeologists these approaches remain elusive as a comprehensive review and evaluation is lacking, especially regarding their application in Roman archaeology. In brief, a complex system is made up of many interacting parts ('components' or 'agents') which form a whole that is more than the sum of its parts – i.e. the interactions of these parts lead to emergent behaviors or outcomes that cannot be (easily) predicted by examining the parts individually. While such systems are characterized by their unpredictable, adaptive, and/or non-linear nature, they are (often) self-organising and governed by observable rules that can be analysed via various methods. For example, many past phenomena, such as urbanism or the functioning of the Roman economy, are complex systems composed of multiple interacting elements and driven by the diverse processes acting upon individuals inhabiting the ancient world. Thus, they can be explored using the approaches and methods of complexity science. The study of complex systems has primarily been undertaken in contemporary settings, in disciplines such as physics, ecology, medicine, and economics. Yet, as the complex nature of ancient civilizations and their similarity to present-day systems is being steadily realized through ongoing analysis, survey, and excavation, archaeologists have now begun to use methods such as scaling studies (e.g. settlement scaling theory), agent-based modelling, and network analyses to approach this complexity. Since these methodologies are designed to examine the interactions and feedback between components within complex systems empirically, they can provide new ways of looking at old data and old problems to supply novel conclusions. However, such methods have only been applied sporadically in ancient settings, and even less so in a Roman context or using Roman archaeological data. Thus, in this two-part session we aim to bring these methods, and the Roman archaeologists using them, together by offering a critical review of the theoretical and empirical developments within the study of past complex systems and their interplay with existing ideas, before investigating how we might capitalize on the new opportunities afforded by them in the future. Part I of this session, 'exploring complex systems', is concerned with examining and unraveling the underlying structures present in the archaeological record using the formal tools provided by the complex systems framework. Part II, 'understanding change', will focus on applications exploring the dynamics of change that generated the patterns observed in existing evidence. In particular, we invite contributions using formal methods including computational modelling and simulation, GIS, and network analyses, as well as diverse theoretical approaches to better understand ancient complex systems.*

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#### **Settlement Scaling Theory in a Pre-Modern Context: Exploring Methodologies, Interpretations, and Potential**

*Matthew J. Mandich (University of Leicester)*

As the fields of geography, economics, archaeology, and complexity science increasingly intertwine we are closer than ever to a deeper understanding of cities and their significance across time. Over the last decade, researchers investigating contemporary cities and urban systems have found that certain relationships exist between a settlement's population, socio-economic outputs, area, and infrastructural

efficiency. The discovery of these correlations, which have been consistently identified across continents and cultures, led to the emergence of a framework now known as ‘settlement scaling theory’. In brief, this framework allows for a number of quantifiable aspects of urban life to be analysed as a function of settlement population size. For example, as population increases a settlement will become denser since its infrastructure becomes more efficient, exhibiting decreasing returns to scale (or economies of scale). However, a larger population also leads to more prolific socio-economic outputs, which, when plotted against population, exhibit increasing returns to scale. As recent research has shown, evidence for these same patterns has been found in settlement data from several pre-modern contexts, indicating that the processes behind such scaling relationships are the result of more general phenomena unbound by the parameters of the modern world. This revelation has opened the door to further scaling studies that can contribute substantially to current debates surrounding urbanization and economic development in the ancient world, especially given the plethora of archaeological data available. Yet, as we move into this next phase of enquiry we must be aware of both the potential and the pit-falls this new approach. As of now, no standardized methodologies for determining an ancient settlement’s areal extent or even population are (yet) in use, and the quality (and diversity) of the datasets and equations used in scaling analyses are only loosely controlled. As such, this paper will examine the methodological issues inherent within this emerging framework and discuss the interpretations of the results so far obtained. It will also address some ways to combat these issues and elaborate on the value of settlement scaling theory for the holistic study of human settlements and urban systems.

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### **Settlement Scaling Theory and the urbanism of the Greek and Roman world: demography, infrastructure, and socio-economic conditions**

*John W. Hanson (University of Colorado, Boulder)*

In the last few years, there have been two developments that have led to a radical transformation of our view of ancient urbanism. There is now an emerging collection of theories, known as settlement scaling theory, which has devised a unified set of models of how settlements function in a range of settings, drawing on recent thought on complex systems. This research has demonstrated that there is a series of relationships between the numbers of inhabitants in each settlement and their infrastructure and outputs, meaning that they not only use resources more efficiently, but also act as engines of creativity and wealth. This has been explained by the role of settlements as ‘social reactors’, which increase the numbers of opportunities for individuals to interact and the chances for them to share resources or exchange knowledge, skills, and ideas. In turn, this might enable increasing economies of scale and increasing returns to scale, leading to economic development. The remarkable aspect of these theories, however, is that they are not based on contemporary conditions, such as capitalism or industrialization, but on more universal concepts, such as nucleation and agglomeration, meaning that they should be applicable to both modern and non-modern contexts. At the same time, there has been increasing interest in quantifying various aspects of the urbanism of the Greek and Roman world, including the sizes of the inhabited areas of settlements, allowing us to estimate the scale of the urban population and even the urbanization rate. In this talk, I hope to bring these trends together by offering a critical review of developments so far and a detailed discussion of how we might capitalize on the new opportunities afforded by them in the future.

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### **Refined population densities for the rank-size analysis of Rome over a long-term perspective: Continuity or change?**

*Francesca Fulminante (Università degli Studi Roma Tre/Cambridge University) and John W. Hanson (University of Colorado, Boulder)*

Over the last decade, rank-size analysis has become one of the main methods for investigating urban systems in the ancient world. There is still debate, however, about the exact utility of this method, owing to uncertainties about how the interpretation of rank-relationships. In this talk, we hope to reassess the method by considering the ways in which rank-size relationships can be seen as the

outcome of the emergent behaviour that is the hallmark of complex systems. We then attempt to improve on earlier work in three ways: by using new work to look at numbers of inhabitants, rather than inhabited areas; by collating recent studies on different settings to look at the long-term dynamics of urban systems, and by using various techniques of our own devising to examine rank-size relationships empirically and test them statistically. This allows us to shed new light on the extent of continuity and change.

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### **Understanding the long -term development of regional central place landscapes: combining and contrasting a data rich approach with a minimal computational model**

*Tymon de Haas and Eleftheria Paliou (Universität zu Köln)*

This paper seeks to explain long-term developments in the regional central place landscapes of the Pontine region, central Italy. To do so, we use a data rich approach that considers a range of diverse evidence on centrality and a minimal computational model. First, we gather the available empirical data on regional central place landscapes of the Archaic, Republican and Imperial period. Relating these data to pattern of demographic growth and decline and changing infrastructural networks, it is hypothesised that urban growth was preceded by rural demographic and productive expansion. Also, long-term changes in the central place landscape seem to follow on adaptations in the regional infrastructure. Second, we apply the spatial interaction model developed by Rihll & Wilson to the settlement distributions of the three periods under study. This model has been used with a certain degree of success for the identification of central places when solely settlement distributions and only sparse evidence suggesting central functions are known. The result of the model are here contrasted and evaluated with reference to the rich empirical data on centrality and settlement infrastructure. The suitability of the model to make useful predictions on central places in different periods that are characterised by changing rural economies, infrastructural networks and socio-political contexts is assessed. In turn, different notions of centrality that we put forward are evaluated in the light of the model results.

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### **Movement and vision in the Lower Tiber Valley: Exploring the port system of Imperial Rome through applications of topographic modelling and archaeological spatial analysis**

*Maria del Carmen Moreno Escobar (University of Southampton)*

This paper seeks to deepen on understanding the River Tiber as a changing element that influenced the territorial organisation and development of the Lower Tiber Valley during the early Roman Empire. It acknowledges the fundamental role played by the Tiber as axis of communication between the ports of Ostia and Portus and the City of Rome within a wider system that allowed and improved the supply of goods and foodstuffs to Rome from overseas. However, the changes occurred over the course of the river Tiber and its surrounding areas during the last millennia constitute important obstacles to achieve a fuller understanding of River's role on such system of supply. Notwithstanding the previous, these obstacles can be addressed and overcome through diverse analytical and spatial methods, and for such purpose, a combined application of topographic modelling, and historical, archaeological, and spatial analysis has been developed. Specific issues to be addressed are the changing nature of the river, the territorial development and organisation of its adjacent areas, and the differing degrees of visibility between the ports and the City. Through considering and exploring these issues, the paper will attempt to provide a fuller understanding of the characteristics of connectivity over which the port system of Imperial Rome was built. This research is carried out as a postdoctoral research project, developed within the "Rome's Mediterranean Ports" Project at the University of Southampton and the British School at Rome.

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### **A Complex Affair: Uncovering Patterns in Mediterranean Connectivity in Roman Time**

*Manuela Ritondale (Rijksuniversiteit Groningen) and Luce Prignano (Complexity Lab Barcelona)*

The reasons and processes according to which shipwrecks have been, and may be found, on the Mediterranean seabed are multiple, and include environmental, technologic and social factors. Not only does one have to wonder where ships were potentially passing, but also which are the processes that occur during and after the wreck event, and that prevent their preservation and discovery. The understanding of these factors is crucial to disclose potential biases in the available archaeological evidence, hence to properly approach any model building. This lecture will apply different methods of complexity science to investigate both the geographical and chronological distribution of Mediterranean Roman shipwrecks. Thus, the aim is to analyse changes in Mediterranean connectivity and seafaring strategies between 8BC-5AD, while proposing solutions to current input-data biases. In the first step, the spatial distribution of the shipwrecks in relation to the coastline will be analysed, through density analysis and spatial statistics tools in GIS, in order to disclose the main causes of clustering. Afterwards, through a network approach, we will look at the cargo composition of the shipwrecks to investigate the evolution of Mediterranean connectivity in Roman time. Particularly, we will present improvements on the preliminary model presented at the CAA in Siena in 2014 by addressing the following methodological and theoretical issues: 1) Shipwrecks' dating uncertainty; 2) Heterogeneity in spatial resolution (precision) of inferred provenance of amphoric types. We propose to overcome the difficulties that arise when trying to binarise such data into presence/absence information by adopting a probabilistic approach. Thus, instead of building only one network of amphoric types or geographic areas for each chronological arc, we consider the set of all the possible networks compatible with the constraints provided by the archaeological evidence. Conclusions will be drawn by analysing commonalities and differences within and among such sets.

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### **The Distribution and Mass Consumption of Wine through Maritime Networks in the Central Mediterranean, ca. 400 BCE –50CE**

*Stephen Collins-Elliott (University of Tennessee)*

This paper presents a mathematical model for assessing changes in the patterns of maritime commerce in the Tyrrhenian Sea and adjacent regions from ca. 400 BCE to ca. 50 CE, focusing on the distribution and consumption of wine. The aim is to examine whether or not the demand for Italian wine in southern Gaul shipped via amphorae can be seen as an anomalous or peculiar development within the context of the central Mediterranean over the last few centuries BCE. By bringing together consumption rates of amphora from excavated sites on land as well as data from shipwrecks, I seek first to provide a method that measures the compositional similarities of assemblages in relation to one another over time. This step involves grouping consumption patterns by comparing excavated assemblages and cargos using different distance metrics within a framework of probabilistic inference, toward illustrating the underlying distribution of amphorae throughout the Tyrrhenian basin and its periphery. Then, I outline a model to assess the diffusion of wine amphorae in the central Mediterranean as an economic-cultural trend that is based upon habitual, long-term behaviour. Beyond assessing Gallic consumer demand as a factor in Italian wine exportation, this approach seeks more broadly to situate the rhythms of the maritime trade in wine within their specific historical and geographical context, for the degree to which they accord with the early imperial expansion of the Roman state or rather speak to networks of economic complexity that pre-existed the rise of Rome.

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### **Agents, networks and the quest for system understanding: an idiot-guide to complexity science**

*Iza Romanowska (Barcelona Supercomputing Centre)*

When mathematicians Stan Ulam and John Von Neumann developed a fun game of black and white squares to kill some time at Los Alamos in the midst of the second world war few would have guessed that their invention would be used half a century later by medics to patch up heart tissue in cardiac arrest survivors and by policy makers to nudge the society in their preferred direction. This is how much cellular automata simulation has developed since its 'game' phase prompting some to declare it 'the new kind of science' in the early 2000s. By now this new kind of science, better known as 'complexity

science', has pervaded all branches of scientific enquiry. The main objective of complexity science is to understand the behaviour of systems, in particular complex systems. Complex systems are not necessarily complicated. In many cases systems composed of very simple components and behaving according to simple, deterministic rules produce global patterns that are highly counter-intuitive and would be difficult to predict without the use of heavy computational tools. Human societies, past and present, are a prime example of such phenomena and complexity science offers a tried-and-tested research avenue to gaining a better understanding of their functioning and evolution. Nevertheless, archaeology is a late and a slow adopter of complexity science. Although as a discipline we have been at a forefront of the theoretical developments in 'systems science', due to the lack of technical know-how and the general user-un-friendliness of 1960s computers, we did not get far. Now that building computer simulation does not require a computer science degree and other disciplines developed the methods, the theory and the software for us, there is little that should keep archaeology from embracing the techniques that allowed other disciplines to make rapid strides forward.

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### **Attracting cities: The role of urban attraction poles in a model of community formation and social complexity dynamics**

*Daems Dries (University of Leuven)*

In this paper, I will discuss dynamics of community formation and development as part of a complex social systems framework. A set of proxies generally subsumed under the wider process of urbanization will be considered to trace changes in social complexity in local communities. Selected proxies will span the social, economic and political sphere, including dialectics of individual and collective practices, social organisation of labour, technological production systems, exchange networks, territorial development, and structures of socio-political organization and institutions. Cycles of rise and decline of social complexity over a medium to long temporal scale (8<sup>th</sup> century BCE to 1<sup>st</sup> century AD, spanning the Archaic/Achaemenid /Hellenistic and early Roman period) will be described for a number of communities located in southwestern Anatolia. I will propose a conceptual model that explains these fluctuations through the workings of power structures generating multi-scalar push/pull factors between local communities and various overarching socio-political units. In this model, it will be highlighted how local systems reacted onto incentives and stimuli received out of the interactions with higher scale socio-political units and at certain times generated an urban pole of attraction out of a common substrate of village communities with basic modes of social organisation, pulling in flows of energy and resources from a wider environment to fuel widespread system changes and kick-start local system dynamics onto a whole new level.

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### **How Does a City Structure Moving Rituals? A Complexity Approach to Processional Movement at Ostia**

*Katherine Crawford (University of Southampton)*

Religious processions were complex multi-sensory rituals that comprised a significant portion of Roman ritual activity. A unique aspect of these moving rituals was the ways in which their movement enabled the temporary incorporation of otherwise disparate spaces within an urban landscape. Processional movement has received a wide range of study, but fragmentary literary and iconographic evidence, and its near invisibility in the archaeological record, has limited its degree of study. Research into individual routes has developed as a connect-the-dot approach of attempting to meld incomplete literary and archaeological evidence in order to re-construct routes. This approach, however, can only be applied to well documented processions and does not adequately account for other factors that may have affected the shape of a route. The application of a complex systems approach to reassess the study of processional movement moves beyond sole reliance on literary and iconographic evidence. Ostia, Rome's ancient port, is used as a case study to evaluate how processional movement can be studied and visualized when there is limited evidence about their occurrence. Both network analysis and agent-based modelling are applied to study how Ostia's urban landscape and urban activity structured the ways in which a procession navigated the city's streets. Examination of processional movement using

a complexity approach enables new inquiry into how religious practices were disseminated across Ostia's cityscape.

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### **Risk and Return in Roman Egypt: Using Stochastic Methods to Model Financial Outcomes**

*Paul Kelly (King's College London)*

This paper will show how stochastic methodologies can be used to model agent behaviours within perhaps the most complex Roman system: the economy. The return on capital investment is a key element of any such system. Modelling this return has, to date, relied upon deterministic, 'best estimate', methods not dissimilar to those employed by Columella in *De Re Rustica*. However, whilst such methods may identify a likely return on investment they provide no information on the risks concerned. By using stochastic methods, based on 'Monte Carlo' simulations, both risks and returns for outcomes from capital investment can be determined. Such methods are currently used within the financial and business world to model financial systems and behaviour but have only recently been employed in relation to the Roman world. Four different investment strategies are considered: direct farming of purchased land; leasing of purchased land to a third party; lending money and lending in kind such as wheat. For each alternative strategy the expected returns and their variability produced by the model are shown in graphical and numerical form. Such modelling requires reliable data as to the size, variability and correlation of input variables such as land and wheat prices. For the Roman period, only in Egypt are the archaeological and papyrological data sufficiently detailed to allow such modelling to be undertaken. The data used cover the period from 1 to 270 AD and are adjusted for inflation over this period. The results produced shed light on the financial rationality, or otherwise, of investors and the process of wealth creation within the Roman economy.

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### **An Agent-Based Model of Trade in the Roman East (25 BC – AD 150)**

*Simon Carrignon, Iza Romanowska (Barcelona Supercomputing Centre) and Tom Brughmans (University of Oxford)*

Traces of the processes driving economic activity in past societies are scarce and unevenly distributed. The archaeological record shows changes in the volume or in the kind of goods that were traded, but it is difficult to infer from it the social, economic and cultural mechanisms that resulted in these changes. On the other hand, economists have developed models that link observable patterns of trade with the underlying economic principles. As a result a huge arsenal of tools and models exists nowadays that address a wide range of research question. However, the challenge of incorporating key aspects of past societies into such models remains unresolved. Here, we present an agent-based model that fills this gap by bringing economic models and historical and archaeological knowledge together. The overarching goal is to develop a tool to test and compare different hypothesis regarding the socio-economic processes that have resulted in the observed patterns in the archaeological record. In this particular study we want to explore the social mechanisms behind changes observed in the distribution of different types of tableware used in the Roman East from 25 BC to 150 AD. These changes have been identified in an extensive dataset of 5121 tableware from 222 different sites in the Eastern Mediterranean, and involved four major types of tableware used during this period in the region. Our aim is to illustrate that simple social interactions, such as the frequencies of social interactions between cities can generate the pattern observed in the dataset. To that end, the original economic model has been modified to reflect the particularities of the region and the time period of interest. In the first step, we run and record a series of experiments where the probability of social interactions between the cities varies. We show how the results of those simulations can be related to the pattern observed in the dataset.

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### **Project MERCURY: Learning Resources for Computational Modelling in Roman Studies**

*Tom Brughmans (University of Oxford)*

Computational modelling in Roman studies has been applied to study phenomena as diverse as the structure of Roman social networks, the supply of troops on the Limes, flows on the Roman transport system, and the agricultural productivity of regions. Despite a recent slight increase in the number of such studies, this approach is still very much the domain of specialists familiar with formal approaches that are not commonly taught or applied in Roman studies education and research: agent-based modelling, mathematical modelling, statistical hypothesis testing, GIS. There is of course no need for all romanists to become well versed in these approaches. However, in order for these new formal studies to be thoroughly and constructively scrutinised, a wider familiarity with formal methods is crucial. Project MERCURY aims to address this need, by developing learning resources supported by Roman archaeology case studies that convincingly demonstrate how computational modelling can usefully contribute to ongoing debates in Roman studies. It focuses on supporting the ability of scholars to evaluate computational work independently and regardless of their previous experience with formal methods. What is the aim of computational modelling? How should its results be interpreted? How can we elaborate on existing models? How can we propose alternative models in case of disagreement? All these questions are key to a constructive evaluation of computational modelling work in Roman studies, but require some familiarity with the basic principles of the method. This familiarity will be offered through the learning resources developed in project MERCURY: explorable interactive introductions to basic concepts, guidelines to best practice in computational modelling, practical tutorials for getting hands-on experience with some of the methods, and a model library of key concepts and processes that can be used to create your own models. In this presentation I will give an overview of this ongoing work, illustrated through case studies on Roman imperial economic integration, ceramic product preference and amphorae reuse.

## Session 2a (RAC)

### *A Clash of Cultures? Encounters between Rome, its Inhabitants and its Neighbours through Material Evidence*

Thursday afternoon, Lecture Theatre 5

**Session organizers:** Richard Hobbs (British Museum), Leah Reynolds (Cardiff University), Ghislaine van der Ploeg (*Universität zu Köln*) and Will Wootton (King's College London)

*The session aims to examine how material culture is transformed at the interfaces between different cultures either as a result of elite exchange and interactions or more prosaic factors such as geographical proximity (e.g. frontier zones). Recent scholarship (see Eckhardt, Swift) has improved our understanding of life in the frontiers and borders of the Roman Empire and how these edges of empire were places of contact between religions, societies, and material cultures as a result of the migration and movement of people to and through these regions. Frontiers were spaces where cultures met and blended, creating new societies. These areas allow us to examine the creation and display of identities during periods of unprecedented mobility and interaction, as shown in the development of distinct forms of material culture in these regions. Thus this session will invite contributors to ask questions such as: why were such different approaches chosen and what do they tell us about the different ideologies of these contemporaneous societies? How did the Roman conquest of frontier zones affect the material cultures of these regions? How did people express global and local identities in their material culture?*

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### **Life on the Edge? Aspects of Material Culture in Wales and the Marches**

*Leah Reynolds (Cardiff University)*

The narrative of the Roman period in Wales and the Marches has traditionally focused on military conquest and occupation, and the responses of the civilian population to the transformative processes of conquest and integration into the Roman world are far less well understood. The relative lack of research in this area has led to the persistence of simplistic Roman/native dichotomies in the discussion of identities and material culture. This paper will attempt to redress the balance by on the material culture of rural settlements to explore the responses of this frontier region to cultural contact. Though the region has long been considered materially poor, broader comparative approaches have become increasingly feasible in recent years with the rise of 'big data' projects such as the Roman Rural Settlement Project (Smith et al 2016) and the increasing accessibility of data. This paper will take advantage of the opportunities afforded by this expanded dataset to engage in a comparative study of material assemblages, using case studies of artefact categories including pottery and items of personal ornament from rural settlements in Wales and the Marches to investigate the diversity of material responses to contact with Rome in a frontier zone, situating this approach within a body of material culture theory which has been central to the development of a subtler understanding of the relationship between people and things to consider the role of material culture and consumption practice in the ways in which the inhabitants of rural settlements negotiated the changing context of the imperial system in a region at the far western frontier of the empire.

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### **Copying, Adapting, Reinventing: Transformations in Language and Visual Culture on 3<sup>rd</sup> Century Civic Coins of the Balkan Provinces**

*Dario Calomino (University of Warwick)*

The coinage produced by the provincial cities of the Empire during the first three centuries CE is one of our main sources for understanding how local identities and traditions were maintained and expressed through material culture under the Roman administration of these territories. The peculiar nature of these coins combining civic designs and inscriptions on the reverse with elements of imperial imagery and ideology on the obverse shows how local communities interacted with Rome and were influenced

by its culture and institutions. Roman models were imitated, often embedded into pre-existing local traditions and sometimes inventively re-interpreted. Some stages of this process can be observed in the gradual transformation of the language and of the visual culture used on civic coins. Looking at the Balkan region as a case-study, this paper will discuss select examples from Moesia Inferior and Thrace, where civic coin production reached an unprecedented scale in the Severan and post-Severan age. In this period, the increasing presence of the Roman army and possibly also the activity of an itinerant imperial mint in the region to strike silver denarii for the troops enhanced the interaction between the locals and the Romans. Presenting examples from Odessus, Marcianopolis, Nicopolis ad Istrum and Pautalia, this paper will focus on two aspects of this transformation. It will show how Greek coin legends changed in order to translate or transliterate Latin names and titles, sometimes using neologisms or bilingualisms. It will also show examples of coin types both copying imperial models and adapting Roman iconography to local types, sometimes generating new designs that in turn influenced later Roman imperial imagery.

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### **Interactions between Relief and Text in the Funerary Inscriptions of Moesia and Dacia**

*Ghislaine van der Ploeg* (Universität zu Köln)

Funerary inscriptions, though standardised and following Roman social norms, are valuable sources which reveal much about the lives of the people they commemorated. Columbarium plaques often contained only the bare minimum of available information but more elaborate inscriptions provide a richer picture about the lives of people in antiquity and the aspects thereof which were the most important for them. This paper examines a number of epitaphs from the cities of Serdica and Singidunum which have a very striking physical appearance. While in their text they aim to follow Roman and Latin conventional norms, these inscriptions are commonly accompanied by a large relief sculpture where the emphasis is predominantly on the family. This paper aims to examine the relation between the text and image, showing that while often these two complement each other, there are also times when they present a differing or incomplete message. In considering the whole stone, this paper aims to move away from studies which consider inscriptions to be solely about the inscribed text and wants to consider the stone in its entirety, focusing on its role as an object and examining here how the combination of image and text shaped, maintained, and presented the identities of local people. In doing so, it will also show how Roman and local elements were combined in these inscriptions in order to create a blended, multi-faceted identity.

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### **Diversity is the Mother of Creation: The Roman Army and the Development of Specific Regional Styles in the Roman Empire**

*Stefanie Hoss* (Universität zu Köln)

Recent scholarship has emphasised the role of the high diversity in peoples and cultural influences in creative development of the material cultures of the Northwestern provinces, which are regional in spread, but glocal in outlook. One of the most diverse institutions within the Northwestern provinces was the military community, consisting of a mixture of the local populations and those from elsewhere in the Northwestern provinces, the Mediterranean or from outside of the Empire. The identities expressed in the military represented a version of male Romanitas (or rather, several parallel versions) that clearly differed from those in the Mediterranean basin. Through the increasing importance of the army in Roman society in general and by its close connection to the emperor, these styles later became an important influence on the male identities of the Roman Empire as a whole and on the lands beyond it. This paper will explore the creation and display of male identities in the military community of the Northwestern provinces and elsewhere, questioning whether we can apply models of Glocalization to this community and the outward signs of its male identities.

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### **'Triumphal' Arches in a Provincial Setting**

*Joanna Kemp* (University of Warwick)

In imperial Rome, there existed many arches which have been identified as ‘triumphal’ i.e. relating to a triumph or the defeat of a foreign enemy. Examples include the arches of Titus, Septimius Severus and Constantine. They are characterised as such based on their decoration: defeated or submissive barbarians, a quadriga chariot, the triumph itself or arms and warfare. Seemingly similar arches have been located throughout the provinces. In the 19<sup>th</sup> century, Heinz Kähler wrote a catalogue in the *Realencyclopädie der Classischen Altertumswissenschaft* in which he detailed almost 250 locations with such arches, or as he termed them, ‘triumphbogen’ based upon their decoration depicting captured barbarians, weapons friezes or trophies of some sort. Kähler emphasised the role of honouring the imperial family and emperor in arches outside Rome, rather than just being related to a triumph. Subsequent interpretations of arches in the provinces have always implied a function which looked to Rome, both in form and meaning. However, this is an oversimplified view which ignores local influences and cultures. While many of the 250 arches listed by Kähler are set up to the emperor, his list contains some which clearly had other functions. Despite all of these arches having been given the broad title of ‘triumphal,’ there was a lot of interaction and reinterpretation of these monuments when removed from the setting of the capital city, both with prototypes seen in Rome and with local monuments and ideas. This paper examines the form and function of an arch set up in the third century AD by one *Dativius Victor* in modern day Mainz. It investigates alternative motives for setting up such monuments, as well as different ways arches could be interpreted or altered by the local community in order to explore provincial reactions to, and reinterpretations of, Roman imperialism.

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### **Divine Silver: Elite Relations between Rome and its Eastern Rivals**

*Richard Hobbs (British Museum)*

Large numbers of vessels made of silver plate were produced in the late Roman period, some of which can be identified as imperial *largitio*, part of a system (that also included gold and silver coins, fine textiles and ivory diptychs) of maintaining the delicate web of elite relations in Roman and early Byzantine society. In parallel, such vessels were also being produced in Sasanian Iran and sometimes by other groups that lay beyond the fringes of both empires, such as the Hephthalites (a Hunnic group), again (it is assumed) for the maintenance of these elite relationships. According to our literary sources, silver was also used for diplomatic exchanges between these rival courts and as tributary payments to peoples beyond the borders of the Roman and Sasanian Empires. The first part of the paper will look at the internal evidence provided by these vessels in order to investigate the following questions: what can these objects inform us about the preoccupations and ‘world view’ of these parallel elites, as evidenced by the manner in which they were decorated? Do techniques of production, forms and subject matter suggest appropriation of ideas between these ‘rival’ courts who – we are again told by the literary sources – often exchanged craftsmen? The second part of the paper will examine the contextual and spatial evidence for where these objects have been discovered, in order to explore wider questions of the lives of these vessels once released into circulation. If silver plate was used for diplomatic gifts, why are they rarely discovered outside the broad zones of their production? Indeed what can a spatial analysis of their findspots inform us about their use?

## Session 2b (RAC)

### *Plants, Animals and Identity*

Thursday afternoon, Lecture Theatre 4

**Session organizers:** Maaïke Groot (Freie Universität Berlin), Sabine Deschler-Erb (Universität Basel), Örne Akeret (Universität Basel), and Lauren Bellis (University of Leicester)

*In recent decades, identity has become an important theme in Roman archaeology. Identity is often studied through material culture and epigraphy. The potential of organic remains of plants and animals has not been utilised fully. This is surprising, since the consumption of food and rearing of particular plants and animals – for which organic remains provide direct evidence – is an important way of claiming and expressing identity, and differentiating from others. When we do find statements about identity that are related to food, these are often simplified and not always correct. For instance, it is widely claimed that the ‘Romans’ prefer to eat pork. The evidence behind the supposed Roman preference for pork seems to be based on King’s regional study of animal bones, which shows a dominance of pig for Central Italy. So it depends on what the term ‘Romans’ refers to - people from Central Italy, legionary soldiers or everyone living in the Roman Empire - whether the statement is valid or not. Another example concerns the spread of Roman herbs, fish sauce, wine and olive oil throughout the Roman Empire. What does this say about the identity of the people who incorporated these new elements into their diet? Animals that were not exploited for food are also indicative of changing identity. Several Roman provinces show the introduction of new varieties of dog, particularly very small ‘toy’ varieties. The choice to keep new types of dog, particularly in rural areas, likely indicate changes in the identity of their inhabitants. They are also ideal case studies for investigating changes in the treatment of animals during their life - another potential marker of identity. Studies of organic remains can also reveal differences in growing food and ornamental plants between different regions of the Empire. Of course, these differences are at least in part due to differences in environment and climate. Nevertheless, identity can also have played a role in how people farmed, for instance what methods and technology were used, what crops were cultivated and what animals were raised (e.g. Kreuz 2005).*

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### **The Canine Diaspora: Did Dogs Influence Identity in Roman Britain?**

*Lauren Bellis (University of Leicester)*

Thus far, research has established the link between identity in the Roman empire and a rather eclectic range of material culture, ranging from pottery to altars and curse tablets. Human diet has had some consideration in relation to this theme, particularly from the 'big three' domesticates: cattle, sheep and pigs. Yet the living animals themselves have had less consideration. This is a key question that requires serious attention, given that Roman occupation of provinces led to the introduction of a variety of new species and variety of animal, including but not limited to: larger cattle, new dog morphotypes, fallow deer, and even rabbits. Daily life and the wider landscape would have been affected by these fauna, and the responses of the inhabitants would have formed a crucial piece of their own identity under imperialism. Dogs comprise the ideal case study for such a question: they lived in close contact with humans and their remains are some of the most commonplace on Roman sites, as they are often buried or deposited whole. In many provinces, Roman occupation is associated with greater diversity in dog types, particularly very small dogs that were almost certainly new genetic stock. New social and cultural attitudes may have accompanied these canines which natives may have discrepant responses to. The link between animal and identity will be investigated in this paper, using the province of Britannia as a case study. Multi-scalar faunal evidence will be utilised, from compiled secondary reports to highly detailed 'biographies' of dogs derived from complete skeletons. The relation between this data and contemporary textual sources will be considered in brief.

### **Upon What Meat? The Origins of the Roman Preference for Pork in Italy**

*Angela Trentacoste (University of Oxford), Silvia Valenzuela-Lamas and Ariadna Nieto-Espinet (Consejo Superior de Investigaciones Científicas – Institució Milà i Fontanals, Barcelona)*

Recent zooarchaeological research has demonstrated changes in livestock productivity across the Western Empire in response to Roman conquest, most notably an increase in livestock size and a shift in the species exploited. These changes are thought to reflect new pressures brought about by military occupation, foreign tastes, and urban populations, with improvements partly made possible the movement of larger ‘Roman’ animals around the Empire. As King has shown, an increase in pork consumption was also a part of this change to a more ‘Roman’ way of eating in some areas. However, in Italy these transformations in animal production occurred outside Roman influence between the 8th and 4th centuries BC. Northern Etruscan cities were the first to widely adopt a pig-focused husbandry system, and these communities also produced livestock significantly larger than their Bronze Age predecessors. The timing of these changes suggests that productive strategies traditionally viewed as Roman were in fact shared by urban Italian communities in north and central Italy. Furthermore, larger cattle may have been achieved through the introduction of foreign individuals from outside the peninsula. Were these changes governed by the evolution of regional culinary preferences, or by the development of a new approach to livestock farming? Is one of these factors more important to being ‘Roman’ than the other? This paper presents zooarchaeological data on livestock management in first millennium BC Italy to investigate the origins of the Roman approach to livestock exploitation.

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### **Plant and Animal Remains from a New Roman Contact Period at Scotch Corner, Northern England**

*Jonathan Baines and Lizzie Wright (Northern Archaeological Associates Ltd)*

Recent excavations at Scotch Corner have uncovered a previously unknown non-military Roman contact period at the crossroads of Dere Street and the Stainmore Pass. The recovered material culture, including high status goods and the most northerly evidence for coin production in Europe represents a sophisticated industrial and administrative centre at a time of early contact between an ascendant Roman presence in Northern England and the local Iron Age communities. It is clear that this roadside settlement lay central to a cultural junction of a fast approaching invasive new world of foods, lifestyles and power. This paper will explore whether this exciting and exceptional situation is reflected in the archaeobotanical and faunal remains. Do the faunal and botanic records reflect a changing identity of the natives and the developing influence of Rome in the region? We examine evidence into the local agronomy and the exploitation of the surrounding woodland for fuelling the specialised on-site manufacturing activities. The faunal and botanical records of Scotch Corner will be compared with near-contemporaneous Stanwick and other sites in the South of the province to investigate the relevance of urban versus rural and military versus civilian archaeological contexts on the deposition of plant and animal remains in the late Iron Age – Early Roman period.

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### **Roman Pepper Prices and the Culinary and Social Identity of the Elite**

*Merit Hondelink and Frits Heinrich (Rijksuniversiteit Groningen)*

Throughout much of European and Mediterranean history, black pepper (*Piper nigrum*) was a byword for luxury, and pepper consumption was a marker of status. Pepper was also imbued with positive medical and magical properties and was believed to be an aphrodisiac. After the Roman annexation of Egypt in 30 BC, through which the Romans gained direct access to the Indian trade routes, pepper appears to have become much more common and arguably cheaper. In Roman recipes containing pepper that we possess, however, the pepper component of the recipe represents a very significant, and for most consumers prohibitively high, part of the cost. In this paper we present calculations based on experimental botanical weighing and measuring data and price data from the written sources. With the results thereof we can calculate the price of any ancient measure of pepper or number of peppercorns mentioned in a text (in AD 77 prices), as well as make the actual amount of peppercorns per ancient

unit more insightful and concrete for the modern reader. When applying the resulting data to modern pepper consumption statistics and modern recipes it becomes apparent most Roman recipes, speaking from a culinary point of view, contain excessive amounts of pepper that would have rendered such dishes inedible. However, this was prevented by the (culinary) 'inefficient' application of unground pepper. We will argue that this represents purposely wasteful behaviour or conspicuous consumption by the elite. We hold this was necessitated by the lower pepper prices that made regular 'efficient' use of (ground) pepper accessible to large groups of consumers, thus diminishing its prestige. We will argue that elite recipes tried to offset this diminished prestige by requiring excessive amounts of pepper to make them more exclusive and inaccessible, thus allowing pepper consumption to remain part of the elite's culinary and gastronomic identity.

## Session 2c (RAC)

### *Water and Urbanism: The Evolving Infrastructure of Rome's Eternal Cities*

Thursday afternoon, Lecture Theatre 3

**Session organizers:** Jim Crow (University of Edinburgh), Duncan Keenan-Jones (Collegium de Lyon), and Guel Suermelihindi (Johannes Gutenberg Universität Mainz)

*Extensive water supply systems such as aqueducts and water lifting machines and associated fountains and baths were a defining characteristic of Roman civilization and represented a considerable expansion in scope and expertise on previous civilizations. Many remained in use for centuries, and were not bettered until the modern period. Such systems underpinned the growth in urbanization during the Roman period and were often an enduring legacy of Roman civilization. A further development was the widespread dissemination of water power including water mills: a proto "industrial revolution". Increasing awareness of environmental change throughout antiquity and the early medieval periods can also inform and create new insights about evolving patterns of water management and usage. This session aims to consider water management and networks as part of the wider infrastructure of Roman urbanism. One of the theme aims to highlight those scholars working in new innovative technical approaches for understanding water flow, construction processes, and water management involving trans-disciplinary research programmes with engineers, archaeologists, historians, geologists and hydrologists. Another theme will be to recognize the long-term contribution of Roman infrastructures for later societies in Europe and the Mediterranean and how this legacy was sustained and advanced.*

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### **Roman Urban Water Distribution and Later Days**

*Paul Kessener (Radboud Universiteit)*

Roman water distribution systems, of which the one at Pompeii is best preserved, made use of a network of elevated open tanks on top of water towers, connected to each other by inverted siphons. From the tanks on top the consumers were served who received water day and night: 'running water' in the true sense. It is generally accepted that the Pompeian water towers acted as pressure reducers, the reason being that the Roman water taps could not withstand pressures higher than 0.6 Bar. It will be shown that this concept is erroneous. A Pompeian-type water distribution system was applied in Sicilian towns for many centuries, surviving into late 20th century. It is thought to originate from the times of Arab occupation, or even from Roman times. At Palermo some 30 of once 70 water towers are standing today. As in Roman days the flow rate to consumers was set by means of the cross section of the supplying *calix*. In the Ottoman Empire a similar distribution system of elevated tanks on top of towers (*suterazi*) functioned for many centuries, into early 20th century. At Istanbul and elsewhere a substantial number of *suterazi* is still to be found. Indications are that the Ottomans learned from the Byzantines who applied this system for instance at Selçuk, Palmyra, Apameia. From at least Renaissance times onward similar systems functioned at Paris and other European cities, into the late 19th Century. In the Allgäu region, southern Germany, a Pompeian-type water distribution system functions today at isolated locations.

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### **Hydrosocial Ostia: Placing Roman Water in Context**

*Mark Locicero (Universiteit Leiden)*

Roman cities were places where water management systems explored and exploited new forms of water supply, usage and drainage. The diversity and complexity of these systems has only begun to be identified and fully appreciated. The city of Ostia was closely connected to the changing fortunes of Rome. Excavation of Ostia over the past century and a half has revealed a densely built urban area, with the preserved structures dating from the Republican to Late Antique period. An incredible wealth of hydraulic features is preserved within Ostia, offering a window into how Roman cities adapted and

reacted to changing hydraulic needs. Three city blocks (*insulae* III, i; IV, ii, V, ii) acted as case studies for this research. Each *insula* has at least a dozen separate buildings, and while some structures have been previously researched, many of the buildings were never integrated into the wider framework of their city block. This paper identifies the hydraulic systems of these three *insulae* and places them within their wider social and environmental context. Leading theories of sustainable resource usage have offered a new perspective on Roman water systems, especially hydrosocial theory. This approach views water not as an abstract volumetric concept, but rather as the dynamic intersection of its material properties, technological systems, and changing social values. The subsequent methodology, the Roman Water Footprint, presents a diachronic perspective on urban hydraulic systems. After identifying different parts of the urban hydraulic network that are archaeologically preserved within Ostia (supply, usage, and drainage), these hydraulic elements are arranged chronologically. It is thus possible to identify the unique hydraulic histories of each city block, and how these relate to the wider urban fabric. By juxtaposing the hydraulic systems with social and environmental data, this paper identifies new relationships between Roman technology, water habits, and environmental data.

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### **The Surface Drainage System at Pompeii**

*Eric Poehler (University of Massachusetts Amherst), Davide Motta (Northumbria University), and Duncan Keenan-Jones (Collegium de Lyon)*

Research on Roman urban water systems has focused predominantly on water supply, with the source, conveyance channels, and distribution networks most commonly addressed. Surface drainage and underground sewerage, however, were co-equal components of a city's infrastructure, managing both the continuous problem of wastewater from the supply system and the more episodic, but far larger issue by volume of runoff from rainfall. Traditionally, research on drainage at Pompeii has been limited to descriptive discussions of the major sewerage systems (Cozzi and Sogliano 1900, Jansen 2002) or of the mechanisms that control the flow and direction of water in the streets (Nishida 1991). More recently, efforts have been made to understand how monumental buildings were designed to anticipate their own drainage needs, and how the systems of surface drainage and underground sewerage were integrated to create a series of independent drainage basins across the city, each with street-level mechanisms of control (e.g., blockages and ramps at intersections and sections of raised paving across streets that redirect water flows) and dedicated exits from the city (Poehler 2011, 2012). In this paper we discuss our efforts to model these features of Pompeii's drainage system and examine numerically that system's hydraulic performance. Our model is based upon topographic data from the Pompeii Bibliography and Mapping Project – including terrain elevations, widths and orientations of streets, and locations of control mechanisms – with additional quantitative data on the height of curbs and crossing stones, gathered from fieldwork and published sources (van Roggen 2015). We test the system's capacity under different rainfall scenarios in order to understand its points of failure and how changes in street width, slope, or curb height might have impacted different parts of that system. Finally, we consider the social impacts of system failure by asking who was affected and who was not

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### **Construction Methods of the Arches of the Aqua Claudia and Anio Novus: Structural Technical Analysis of the Section between Porta Furba and Via Frascati and its Maintenance and Consolidation Works**

*Leonardo Radicioni (Università degli Studi di Rome 'La Sapienza')*

A city like Rome, with an urban population never seen in the ancient world, always needed huge resources. And water is without a doubt one of these. The Aqua Claudia and the Anio Novus were therefore the aqueducts that in the first imperial age went to satisfy this increasingly urgent need, due to the insufficiency of the seven existing aqueducts. They had a path of tens of kilometers, the last part of which overlapped on continuous arches that even reach 30 meters high. Choose to analyze a single section, although about 160 meters, talking about such an infrastructure may seem reductive, but it is useful and necessary if we consider the variety of solutions adopted in a work as big as this. And the part here analyzed is the most outstanding, precisely because of the whole series of maintenance or

repair successive, which have widely modified shape, size, and above all static and structural functioning. A great commitment therefore, lasting over the centuries, in keeping in function and in good condition an infrastructure so important, of which through the instrumental survey supported by 3D photogrammetry of the entire structure, it was possible to analyze every change and identify the causes that resulted in the necessity, to answer the question about why this point has required so many measures. The changes made include: first, the realization of two tiers of brick-faced concrete reinforcing arches; Then the complete closure of the latter's light; Finally, the enclosing of the whole mass between two continuous walls still in brickwork. Poor quality of the building materials of the original structure, excessive length of the arches in blocks in this section, which present delicate points as a double inclination of the level of the conduits, may be among the major causes of changes over the centuries.

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### **Urban Infrastructure and the Development of Baths: Case Study Pompeii**

*Thomas Heide and Monika Trümper (Freie Universität Berlin)*

The development and spread of public bathing culture in the Roman Empire was closely linked to the development of urban infrastructure, notably sophisticated aqueduct systems. While this interdependency has always been recognized for the heyday of baths in the Imperial period, its impact has not been studied in detail for late Republican and early Imperial baths. It is the aim of this paper to fill this gap by focusing on the Stabian Baths in Pompeii. In his monograph from 1979, Hans Eschebach argued that this complex was gradually transformed in six phases from a Greek bath building with palaestra of the 5<sup>th</sup> century BC into a Roman bath complex. His developmental model did, however, not include a detailed study of the water management. Based on interdisciplinary fieldwork carried out in 2015-2018 (Excellence-Cluster Topoi C-6-8), it is demonstrated that Eschebach's cultural developmental concept requires significant revision. The baths were only built in the 2<sup>nd</sup> century BC and remodeled three times in order to enhance the bathing standard in close connection with improvements of the water management and urban infrastructure. The original water supply (first and second phase), a deep well, was only replaced in the third phase (Augustan period) by a connection to the public aqueduct, which certainly also supplied the baths for some time after the earthquake of AD 62 (fourth phase). Focusing on little studied questions, it will be discussed for the different phases how precisely the baths were connected to the aqueduct, how water was distributed within the baths, and how the flow of water to different users could be controlled. The reassessment of the Stabian Baths has significant impact on current discourses about Pompeii's infrastructure, namely when the city was provided with an aqueduct and to what extent this functioned in the city's final years (AD 62-79).

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### **Harbour Core Pb Isotopic Records: A New High-Resolution Proxy for Ancient Urbanization**

*Duncan Keenan-Jones (Collegium de Lyon), Hugo Delile (Maison de l'Orient et de la Méditerranée, CNRS, Lyon), Janne Blichert-Toft (Ecole Normale Supérieure de Lyon, Université Claude Bernard-Lyon I, CNRS), Jean-Philippe Goiran (Maison de l'Orient et de la Méditerranée, CNRS, Lyon), and Francis Albarède (Ecole Normale Supérieure de Lyon, Université Claude Bernard-Lyon I, CNRS)*

Urbanization is one of the key developments during the Greco-Roman period, and was underpinned by improved infrastructure. However, data sources for ancient urbanization are few and the process is very difficult to quantify. Lead pollution from Roman water supply systems, preserved in harbour sediment cores, is a new, high-resolution, semi-quantitative and continuous proxy for urban expansion and contraction found to correlate with historical events and natural disasters. Furthermore, the extensive use of lead pipe water distribution systems in the Western world over the last two millennia lends this proxy potentially wide applicability. Lead concentrations and isotopic compositions measured in the sediments of the harbors downstream of Rome and Naples show that lead water pipes were the only significant source of pollutant radiogenic Pb, which, in geologically young Central/Southern Italy, is a clear sign of imported lead. The core from Ostia further indicated that Rome's lead pipe water distribution system was commissioned around the 2<sup>nd</sup> c. B.C, two centuries after Rome's first aqueduct was built. Even more significantly, the isotopic record of Pb pollution closely tracked the urban

development of ancient Rome over more than a millennium, providing the first semi-quantitative record of the water system's initial expansion, its neglect, probably during the civil wars of the 1st c. BC, and its peak in extent under the relatively stable early Principate. The harbour core records fill the gap in understanding that precedes the appearance of significant literary and widespread inscriptional evidence from the late 1st c. BC onwards. At Naples, a well-dated sedimentary sequence contains a detailed record of 500 years of the city's tumultuous history, including the AD 79 eruption of Vesuvius. The novel method applied here to Rome and Naples illuminates the large-scale trade in lead around the Roman Mediterranean, with sources from Western Europe supplying both sites.

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### **Recent Discoveries on the Barbegal Mill Complex: Calcite Incrustations as a Key Proxy**

*Guel Suermelihindi (Johannes Gutenberg Universität Mainz), C.W. Passchier (Johannes Gutenberg Universität Mainz), Philippe Leveau (Aix-Marseille Université/CNRS) Ch. Spötl (Universität Innsbruck), and V. Bernard (Université Rennes 1)*

Watermills are without doubt one of the most lasting and powerful technical inventions of the ancient world. The watermill complex of Barbegal is one of the first industrial complexes and one of the largest such installations known from antiquity. It has been studied through excavations and what we know about the complex, its history and purpose is based on the remaining stonework of the mills and water installations, since no traces of the woodwork or machinery of the mills have been preserved. The archaeological museum in Arles, however, stores 142 pieces of carbonate that were formed on the now disappeared woodwork of the mills. We studied this material by analysis of the shape of the fragments and of stable isotopes, trace elements and crystallographic fabric of selected carbonate samples. We presents first results of this work, which sheds light on the structure of the mills; repairs on the woodwork; the history of the mill complex; the open or closed nature of the mill chambers; and the purpose of the mills. Main results are that regular repairs were made to the woodwork with an interval of less than a decade. The mill chambers were probably covered or even closed. Mill activity ended while water was still flowing over part of the woodwork, but in the open air, probably after damage to the roof structure. The purpose of the mill was probably not the production of flour for the neighbouring city of Arelate, but production of transportable food such as hard tack for the army or for the nearby harbours for at least some part of the mill activity.

**Session 2d (TRAC)**

***General Session 1***

Thursday afternoon, Lecture Theatre 2

**Chair/ Lead discussant:** Martina Astolfi and Kathleen O'Donnell (University of Edinburgh)

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**Between East and West. Lamps with figural decoration found at Ptolemais as a source of knowledge about Cyrenaican trade (1st to the mid-3rd century A.D.)**

*Maria Bak (Uniwersytet Warszawski)*

This paper explores the figure-decorated lamps found at Ptolemais, Cyrenaica (modern Libya). The interpretation of the artefacts juxtaposed with the lamps found at other sites in Cyrenaica let us formulate the types and decorative schemes popular in local manufacturing. Moreover, further conclusions based on the analysis of ceramics, made it possible to define the trade model between Cyrenaica and other regions over the period of 1st – mid-3rd century AD. The purpose of my paper was to present the possible routes of trade goods reaching Cyrenaica, including the lamps, irrespective of their provenience. My analyses let me determine that the import of goods from the West took place via the ports of Tripolitania, whereas from the East – via Crete.

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**“Fantastic beads and where to find them”: Roman melon beads in a Barbarian context**

*Alexandra Guglielmi (University College Dublin)*

Melon beads are rather ubiquitous on Roman period sites within the frontiers of the Empire, occurring on civilian, religious and military sites alike. Their meaning and exact function is, however, still debated, with some interpreting them as having amulets with apotropaic properties, while others see them as pieces of horse harness. But what meanings did these small objects acquire far beyond the imperial frontiers? Melon beads have been recovered in Ireland and southern Scandinavia in a range of different contexts: burials, settlements, as part of votive deposits, etc. They have been a central part of my doctoral research on the cultural biographies and significance of Roman personal ornament in Ireland, Denmark and Sweden during the first five centuries of our era. This paper will present an overview of my results and address the following questions: where are these beads found and in what kind of contexts? And most importantly, how were they used and what does this tell us about their significance in local societies? In all cases, these beads have become entwined in local practices and reinterpreted, forming an important part of ever changing transcultural identities in these “Barbarian” societies.

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**Two Sides of the Same Coin: Local Reactions to Roman Coinage beyond the Frontier**

*Kathryn McBride (Brown University)*

In realigning the focus on the interplay between the global and the local, rather than a one-sided transmission of Roman culture to the provinces, we see how the boundaries around what has been considered “Roman” were permeable and shifting, as well as individually and contextually contingent. This paper follows one category of material culture, coinage, through the variable economic, social, and symbolic values these objects contained as they circulated across various contexts. A coin is not a coin (as a monetary unit) in every instance in which it survives, and this paper hopes to further highlight how the permeability of borders between what was Roman and what was not, helps to break down the dichotomy of Roman and Native at and beyond the frontier. I argue that the social agency performed by coinage in frontier and extra-frontier regions played a key role in the local experience of Roman imperial action north of the Empire in the 1st and 2nd centuries CE. Not only do the specific contexts of coins reflect the physical reactions of local populations to foreign pressure, but the coins themselves

at different times played an active role as ambassadors of that colonial force. In these instances, it becomes much more difficult to view coins as simply objects existing in a vacuum (or in a museum cabinet), or to view them only as money or bits of Roman propaganda. These were dynamic, vibrant objects whose locally pertinent meanings can best be determined through a contextual analysis of their existence within a wider network of relationships. This paper will explore these themes through two cases studies: Scotland and Western Scandinavia, both regions that were non-monetized at the time of Roman contact, and which engaged with Roman coinage in unique and revealing ways.

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### **Earth, Wood and Fire. Environmental issues in *Terra Sigillata* production**

*Lorenza La Rosa (Universitetet i Oslo)*

During Roman late-republic and early empire, specialised pottery production districts were established in different parts of the Roman world: the development of big cities, such as Rome itself, and the presence of military contingents at the frontiers created a new demand impossible to satisfy only with locally oriented productions. Terra sigillata ware was therefore a product with a high standardization and its export assumed an extraordinary dimension in terms of quantity and diffusion in and out of the Roman Empire. In my paper I will discuss the organization of labour in Italian and Gaulish manufactures focusing on the relationship between production and environment. Several thousand tonnes of wood with high calorific value (e.g. coniferous wood) were burned every year in the pottery kilns in order to reach a temperature sufficiently high for the red slip ware. Thus, favourable environmental conditions and resources were not only necessary to establish a production site, but also to maintain it. On the other hand, changed conditions in the environment and in the availability of fuel, due to a massive exploitation of slow-growing coniferous forests, could have played an important role not only in production quantity, but possibly also in the “migration” of manufactures and in the economic crisis in some areas. Preliminary results regarding the environmental impact of terra sigillata production from Pisa and Arezzo manufactures (Tuscany, Italy), obtained combined ancient sources, contemporary productions and paleo-environmental analysis will be presented as my case study. I will therefore explore methodological issues involved such a study paying particular attention in how we can approach and visualize in the archaeological data gradual and recursive changes in the environment and in the production. In addition I will discuss the theoretical framework for understanding the entanglement of craft productions and environment.

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### **The invisible (Ro)man. A case study on north-west Italian mortuary archaeology in the wake of the Roman conquest**

*Sarah Scheffler (University of Leicester)*

When ‘Romanisation’ was first discussed as a term and concept, scholars challenged the depth and modus operandi of the cultural change initiated by the Roman conquest. For most, the final outcome, however, was obvious – indigenous would become (provincial) Roman. Scholarship finally ‘Romanised’ the object – whether the subjects had perceived themselves as Roman or not. Although such Roman-ness of north-west Italy has been questioned (e.g. Haeussler, R. 2013: *Becoming Roman? Diverging Identities and Experiences in Ancient Northwest Italy*. UCL Institute of Archaeology Publications 57. Walnut Creek), archaeological studies of the material culture and in particular mortuary contexts inevitably describe them as ‘fully Romanised’ latest by the Augustan period. Therefore, my PhD research – which will hopefully be done and dusted by the time TRAC takes place – has been focussed on a theoretical-material analysis of the mortuary assemblages published for the north-western Italian Lomellina (province Pavia). Defining ‘Roman’ and finding the ‘Romans’ in the data has shed a new light on the cultural change in the interplay between central places and periphery, landscapes transformed by centuriation and those untouched, between urban classes and the people of rural communities. Meanwhile men disappeared... the more ‘Roman’ the material culture of the Lomellina became, the more prominent female gendered assemblages featured in the archaeological record, leaving men – the Iron Age warrior behind. This observation contrasts the general assumption that the integration of indigenous communities into Roman society favoured men and the public sphere while

restricting women to the private space. This paper shall highlight how material and cultural change might reflect profound changes within peripheral communities and re-interpret how we 'Romanise' the indigenus.

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### **Make Do and Mend: can we distinguish periods of austerity from routine levels of maintenance & curation?**

*Sue Stallibrass (Historic England/University of Liverpool)*

Several current economic studies are looking at ways to reduce people's impact on the world's resources, mainly because of a concern that we will soon run out of essential supplies if we continue at our current rates of extraction and consumption in a period of rapid population growth. Reducing our impact on climate change is not entirely an altruistic issue. To what extent did this concern apply to the Roman Empire, and did it ever impact on people in Roman Britain? We can identify some specific crisis periods eg when the Empire's monetary system was literally in meltdown (see the Oxford Roman Economy Project's conference on recycling). A linear economic model of Take-Make-Dispose was less wide-spread in the past and 'disposable incomes' or 'consumerism' may have been unknown or alien concepts to many people living in Roman Britain. They may have found the concepts as surprising as ethnographic 'conspicuous consumption' seemed to European archaeologists living with depleted access to resources during the 1930s Depression, two World Wars & post-war rationing of the early 20th century. In many periods, for many people, a circular economic paradigm tended to operate: Reduce, Reuse, Recycle.

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### **Measure twice, cut once: Measurement as technology**

*Philip Smither (University of Kent)*

To ancient crafts such as metalworking, potting, weaving, construction, coopering, leatherworking, etc. measurement is fundamental. Rather than as object technology, measurement technology is the application of measurement theory to objects or phenomena to create or obtain information. There are several areas of measurement that will have actively and passively been engaged with by ancient craftspeople. This presentation will concentrate of weighing and metalworking, but the ideas can be applied to other crafts. Two hoards, Thetford and Hoxne provide good material for considering measurement in crafts, and will be considered along with site finds. Measurement is a control and can be used to regulate and/or alter our environment. In terms of crafts, measurement is not only important for providing an object with qualities for it to function, but also for craftspeople to determine how to most effectively create an object. The spoons and rings from the Thetford and Hoxne hoards are a good example of consistent measurement practice in creating objects. We should also consider measurement theory in its application to instruments of measurement. Measurement of this sort (weight, length, etc.) is categorised under ratios on the scale of measurements. Each division is rational, measurements can be rank ordered and there is a minimum of zero. In terms of weighing, this is important to attain the best level of precision, so that they do not run out of material or lose money. However, the production of ancient weighing scales was not very precise, leading to inaccuracies. There are number of variables that can creep into the production of an object, both accidental and deliberate. A final point to consider is how we conceptualise measurement in our own society, both nationally and internationally to better understand how ancient craftspeople applied the systems of measurement as well as the different instruments of measurement.

## Poster Session I

Thursday all day, First Floor Balcony, Appleton Tower

### **Rural Baths and Bathing: Socio-Cultural Interactions in the Romano-British Countryside**

*Giacomo Savani (Independent Researcher)*

In the Roman Empire, an appreciation of baths and bathing was among the few common socio-cultural traits shared by people with the most diverse cultural and social backgrounds. Perhaps because of their popularity in antiquity and their archaeological distinctiveness, antiquarians, as well as many modern scholars, have tended to take for granted the function of these buildings and, more importantly, their socio-cultural significance. This is particularly true in a provincial context such as Britannia, where Romanists have been primarily interested in military and public baths, neglecting the variegated field of rural bathing. Focusing on South-East England, this paper will discuss the role that bathing practices had in constructing a 'middle ground' between the newcomers and the natives in the aftermath of the Roman conquest and the reasons behind the early appearance of villa baths in this region, sometimes decades before the construction of their urban counterparts. Instead of viewing rural baths as merely functional buildings prerogative of the elite, this study highlights the complexity of their socio-cultural implications. Modern assumptions about property and individualistic choices have so far prevented scholars from investigating the broader impact that these facilities had in rural contexts. A careful analysis of the archaeological evidence suggests that some of them might have been accessible to at least a part of the rural population living in the surroundings of villas, potentially influencing and affecting the lives and identities of a far larger group of people than previously thought.

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### **Nymphaeums of Ancient Rome: Diffusion, Distribution and typology in Urban and Suburban Space**

*Michela Stefani and Martina Bernardi (Independent Researchers)*

The purpose of this work is to carry out a preliminary analysis of the topographical distribution, the function and the chronology of all nymphaeum, fountains and the other infrastructures connected with water in the city of Rome and in its suburbs, from Republican age to the Imperial age. The research is mainly based on a bibliographic study of all edited archaeological publications, very important sources, especially after the Unit of Italy (1861), to know archaeological news about excavations in Rome and in the suburban area, as well as the only testimony of the finds made during the great building activity in the centre of the city. However, those information were supplemented by specific bibliography of every monuments. Once this phase has been completed, for every structures was drafted a data sheet, which is the basis for the compilation of graphics, where are indicated the topographical distribution, function and chronology of filed monuments. Analytical research and compilation of the data sheet on nymphaeum and fountains in Rome and the suburban area has provided an extensive database, useful to answer some questions about characteristics of these constructions.

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### **Identity, Emulation, and Access in Pompeii: Mapping and Spatial Analysis of Peristyles**

*Summer Trentin (Metropolitan State University of Denver)*

This poster displays the results of a mapping and spatial analysis project involving the peristyles of Roman Pompeii. Peristyle gardens were an important means of communicating social and economic status in Pompeii due to their visibility and suitability for display of plant life, painting, sculpture, water features, and architecture. While they seem a ubiquitous part of the *domus*, peristyles are not evenly distributed throughout the city. When they are plotted on a map of Pompeii, patterns emerge both in the distribution of the gardens themselves and in their decorative features. The clustering of gardens and the types of decoration therein can lead to conclusions about the use of the peristyle as a signifier for personal and neighborhood identity, social competition, and *decorum*. Despite the important display value of peristyles and the fact that they seem to have been visually accessible to passersby, they also

served the day-to-day private activities of the household and provided access to more private rooms. This dual function of the peristyle is nuanced in part by mapping, which demonstrates that visual access to some household features, such as large reception rooms and religious structures, was very often denied to casual visitors looking into the peristyle. This project sheds light on emulation and competition among homeowners in the city of Pompeii as well as the differentiation between public and private activities that took place side-by-side in the peristyle. Furthermore, it potentially provides a direction for additional research into visual access and usage patterns in Pompeian houses.

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### **The “Ikea” of Roman Doors. Standardization in Hinge Production Across Imperial Italy**

*Lucia Michielin (University of Edinburgh)*

Doors are critical in fully understand the life of the private dwellings being them main entrance accesses of small cubacula doors. Contrary to the modern doors-leaves, the Roman ones were not pivoting on side hinges but on vertical ones. Hence, traces of hinges on Roman thresholds are quite common and these evidences can be analysed to track similarities and standardisations in these features across the whole Imperial time. However, in the almost totality of the discoveries only the negative footprint of the mechanism is preserved. In these cases it is possible to subdivide the traces in two main categories: squared shape holes and round shape holes. The first type provides no metrical information concerning the size of the actual hinges, since the whole mechanism is missed. Indeed, the compartment of the pivoting system was formed, in this case, by a metallic plate equipped with a hollow cylinder in which the hinge pivoted. The round shape traces, vice versa, are attested in the cases in which the hinge pivoted directly into the threshold, possibly reinforced by a metallic cage. In this second case, though, it is possible to measure the actual size of the hinges. The aim of this poster is to present the evidence of a survey of a cluster of traces coming from several thresholds located in Roman Imperial private building from Verona, Rimini, Rome Ostia and Herculaneum. This survey tends to show a standardisation in the sizes of the hinges across Italy and in very different typologies of buildings, from “shop-flats” to town villas.

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### **The Case for the Establishment of Management Guidelines for Historic Water and Wastewater Infrastructure**

*Meisha Hunter Burkett (Independent Researcher)*

Ancient Roman water and wastewater infrastructural heritage merits preservation because of its ability to inform modern water managers, planners and preservationists of the heroic civil engineering achievements of the past. The preservation of this heritage poses multiple challenges, in part owing to the inaudibility and invisibility of the underground components of these systems, the general public’s limited awareness of this heritage’s civil engineering significance, underrepresentation in World Heritage listings, and limited funding from government agencies that often privilege utility over aesthetics. Despite being inextricably linked to cultural, agrarian, and maritime landscapes, this infrastructural heritage can suffer unsympathetic alteration, encroachment, obsolescence, demolition and abandonment. Conversely, some examples have been preserved within active systems, and some decommissioned sites have successfully been repurposed. In order to consistently apply best practices to analysis, decision-making and treatments, there is a need for management guidelines pertaining to historic waterworks infrastructure. Conservation must be balanced with the need for new construction and upgrades, where (1) significance is acknowledged and character-defining features are identified, (2) the choice between rehabilitation versus replacement is evaluated for prudence and feasibility, (3) preservation is viewed as a pragmatic and cost-effective means to extend purpose-built service life; (4) sacrificial elements are replaced, and (5) decommissioned elements are repurposed.

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### **Egyptian Influences in Residential Architecture in Ptolemais (Lybia) and Nea Paphos (Cyprus) between the Hellenistic and the Late Roman Period: the Analogies and the Differences**

*Julia Mikocka (Uniwersytet Warszawski)*

The aim of the presentation is to explore the influence of the Egyptian architecture on residential architecture in Ptolemais and Nea Paphos. The present research is based on the analysis of documentation of the archaeological surveys conducted in Ptolemais and Nea Paphos. The type of architecture, architectural details and the artefacts found in the residences were analysed and the comparative analysis undertaken. The analogies with architecture from the Hellenistic and Roman Egypt were indicated. The research showed that the similarities between private architecture in Ptolemais and Nea Paphos relate to the chronology; history of building; architectural type; the function of some rooms; and the style of decoration. In the architecture of Nea Paphos and Ptolemais the analogies to Alexandria and other Egyptian centres can be clearly observed. These analogies mainly concern architectural elements and solutions. It has been hypothesized that, as compared to Nea Paphos, in the residences of Ptolemais the Egyptian influences are more prominent and long-lasting. This is a likely result of the similar history, location, and trade routes. Ptolemais and Nea Paphos were founded in the Hellenistic period, during the reign of the Ptolemies, with the monuments from Greek, Roman and Byzantine times still present at the time. It is assumed that one of the trade routes ran through Cyprus to Crete and then to the Libyan coast, the Nile, and to the coast of Syria. However, before the empire of the Ptolemies was established, Cyprus had resembled the Middle Eastern Levant while Cyrenaica had been completely influenced by Greece. The building traditions from Greece, Egypt and Levant had survived during the Roman rule, to varying degrees, and this could be the source of the differences in the degree of the Egyptian influences on the architecture of Ptolemais versus Nea Paphos.

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### **Rural Networks in Sicily the Archaeology of Rural Landscapes in the Catania Plain: the Late Roman period**

*Rodolfo Brancato (Università degli Studi di Catania)*

My poster seeks to outline the settlement organization trends in Eastern Sicily from the 4<sup>th</sup> to the 6<sup>th</sup> centuries AD, through the analysis of the legacy data and new survey data available for the Catania Plain. A systematic research on the Plain of Catania started in 1996 when a series of topographic surveys were carried out according to the *Forma Italiae* Project's methodology. Mostly covering the western portion of the region, due to their unexploited potential, these topographical surveys are of great interest for any attempt at the analysis of rural landscapes, routes and roads networks in Late Antiquity. Archaeological data seems to point to the increase in rural settlement in the area and the involvement of eastern Sicily in the Mediterranean long-distance trade: since the 4<sup>th</sup> century AD, together with the relevant number of Terra Sigillata and amphorae sherds from North Africa, Keay LII amphorae sherds are the most relevant chronological marker in survey data for 4<sup>th</sup>-6<sup>th</sup> centuries AD in the Plain of Catania with a percentage of 64% in relation with other types (36% for Keay XIX, Keay XXIV, Keay XXV, Keay XXXVB). The results may paint a vivid image of rural population trends in the Catania Plain during Late Antiquity, and represent also a pivotal element to reconstruct the role of Eastern Sicily in the context of the Mediterranean maritime trade between the decline of the Western Roman Empire and the new trade organization based on the central role of *Constantinopolis*. Therefore, my paper will present in detail the aforementioned results and will discuss patterns of change and continuity in agricultural production and maritime trade involving eastern Sicily in Late Antiquity.

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### **Reconsidering the Roman Campagna: the territorial context of southern Ager Veientanus around the so called "Sepolcro dei Veienti"**

*Chiara Cicone (Università degli Studi di Rome 'La Sapienza')*

Rome's northern suburb and, in particular, the territory included between Via Cassia to the west and Via Flaminia to the east, can be considered as a specific territorial context. Indeed, it has to be related to the close city of Veii which, since the Etruscan period, had a wide share of influence on its surroundings. After the Roman conquest, in 396 BC., the area was occupied by Veii's citizen and gradually organized to make it more productive through the realization of rural complexes and infrastructures. This territory, also known as southern Ager Veientanus, has been globally studied and investigated by the British School at Rome between 1960s and 1980s. In recent times, several

excavations and preservation activities carried out by the “Soprintendenza Archeologica di Roma” brought to a great amount of new archaeological discoveries in terms of villas/farms, secondary roads, infrastructures for water supply and funerary monuments, which needs to be read in a system, compared and integrated to the previous results. In order to reach this purpose, the study summarize old and new discoveries and put them onto a map, through which it will be possible to notice relations among viability, residential/productive buildings, funerary monuments and other infrastructures. The work is particular focused on the area around the so called “Sepolcro dei Veienti”, one of the most significant funerary monuments of Rome’s northern suburb, and the Via Veientana, an important secondary road which detached from Via Cassia and led directly to Veii. The map itself is a “work tool”: through the reconstruction of the ancient landscape, it allows an immediate comprehension of territorial and social dynamics, evidencing the economical relevance of Rome’s surroundings. Moreover, it shows the relation between geomorphological features and human settlements, underlining the impact of the context’s elements over the territorial planning.

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### **Villa pulcherrima [...] imminet litori: Maritime Villas, Ports and Imperial Administration in Trajan’s Age**

*Alice Poletto (University of Oxford)*

The Tyrrhenian coast is one of the most interesting areas in the general framework of the Imperial property in Italy. In particular, the coastline between the Argentario Promontory and the Sorrentine Peninsula experienced a considerable presence of imperial demesnes, concentrated in a relatively limited area - the same where the late-republican aristocracy owned its estates. Private maritime villas, provided with harbours, mooring space and port facilities, acted as gateways between hinterland and sea, allowing people and goods to flow constantly both seaward and landward. Similarly, maritime villas belonging to Emperors had such features, but on a considerably larger scale. Quite strikingly, most of the villas’ harbours north of Rome underwent remarkable works of restoration or were built anew in a short time span during the first couple of decades of the second century AD. This paper, whose inspiration draws from a page in the monograph ‘res Caesaris’ aims at offering new insights onto the relationship between Imperial maritime villas and the administration of ports and seaborne commerce in Imperial Italy, by means of a thorough analysis of both the historical sources and the archaeological data. Along the coastline between Telamon and Portus, there lay seven such imperial ports, remarkable both in size and in dock space (Portus and Centumcellae above all), whilst their inland-built facilities, such as warehouses and water reservoirs, that are disproportionately large for villas’ everyday life, must therefore be considered as catering to the needs of port activities and transmarine commerce. A renewed metric, topographical and historical analysis of these villas will prove that they were meant to meet the needs of the imperial administration and Annona, rather than being just coastal demesnes for leisure.

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### **Sweet Chestnut is a Roman Archaeophyte in Britain: True or False?**

*Rob Jarman, Gill Campbell, Frank Chambers, Zoe Hazell, Julia Webb (University of Gloucestershire)*

The sweet chestnut tree (*Castanea sativa*) is conventionally regarded as a Roman introduction to Britain. Many writers have cited archaeological finds of sweet chestnut wood, charcoal, nuts, artefacts and pollen from Roman period sites across England as evidence for this. A doctoral research project has reviewed all the reported alleged finds (thirty-three), examining original excavation reports and checking selected specimens stored in museum archives using wood and charcoal analysis and radiocarbon dating. One find is confirmed as sweet chestnut nut fragments of the Roman period (early–mid 3<sup>rd</sup> century AD): incorporated with other exotic food remains, presumed imported. Twenty-six finds are found to be not sweet chestnut, or not pre-6<sup>th</sup> century AD in date, or not verifiable by date and/or identity. Six finds are artefacts (tools, a writing tablet) and were not re-examined: they are presumed imported. Previously reported archaeological evidence does not support the Roman archaeophyte thesis: new information might provide a different answer. Sweet chestnut trees and woods across Britain and Ireland have been genetically assessed, to determine their ancestry relative to

genetically distinct populations of sweet chestnut that derive from European *refugia* in the Last Glacial Maximum. Genetic relationships between sweet chestnut populations in Britain and Ireland and Europe are being studied to ascertain human-mediated – and possibly natural – spread between sites. Additionally, new assessment of the dendrochronology of selected ancient sweet chestnut trees in England shows that wood sections with >50 growth rings can be cross matched with standard oak reference chronologies: sweet chestnut timbers might now be accurately dated, should they be found in archaeological and historic building investigations.

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### **Intensive or Extensive Arable Farming Practices in Iron Age and Roman Britain? Crop Stable Isotope Evidence from 1400 Years of Settlement at Stanwick, East Midlands, UK**

*Lisa Lodwick (University of Oxford), Gill Campbell (Historic England), Gundula Müldner (University of Reading)*

Agricultural production was the basis of the Roman economy. The growth of unprecedented urban and military populations required substantial agricultural surpluses to sustain the Roman world. Whilst technological developments in arable farming and shifts in crop spectra have been recognised, we currently lack a quantitative understanding of the organisation of agricultural labour. Arable farming in the Mediterranean is often characterised as intensive in character, with high labour inputs per area. Cereal production in the north-wester Roman world is often characterised as extensive in character, on the basis of the dominance of spelt wheat and widespread evidence for ploughing, although manuring scatters also indicate intensive practices. This poster aims to evaluate two key hypotheses. First, did farming become more intensive in the Roman Britain? Second, did  $\delta^{13}\text{C}$  values shift due to the Roman warm period? Crop stable isotope analysis (carbon and nitrogen) is used here to assess the intensiveness of arable farming at one site across 1400 years, in order to present the first detailed account of shifts in cultivation practices in later prehistoric and Roman Britain. Manuring has been shown to elevate  $\delta^{15}\text{N}$  values in cereal grains, and can be used as a proxy for a suite of intensive practices.  $\delta^{13}\text{C}$  values indicate the environmental conditions, including water status. Here we present  $\delta^{15}\text{N}$  and  $\delta^{13}\text{C}$  values from 41 crop samples from Bronze Age, Iron Age and Roman Stanwick, a site which developed from a prehistoric farmstead, to a Roman roadside settlement and villa. A decline in  $\delta^{15}\text{N}$  is recorded in the Roman period, indicating farming practices moved to lower-input levels, i.e. became more extensive.  $\delta^{13}\text{C}$  values are comparable in all periods, indicating that changes observed in human palaeodiet studies between the Iron Age-Roman period are not originating from the plant baseline. How this method can be applied to further Roman settlements is discussed.

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### **Stracathro and its Role on the Roman Gask Frontier**

*Birgitta Hoffmann (Roman Gask Project)*

Over the last four years the Roman Gask Project has been studying the Mearns, a complex landscape in Southern Aberdeenshire to understand the ways in which the Romans may have perceived and used this landscape during their occupation in the late first century AD, and during their campaigns in the second and third centuries. The Roman remains as currently known consist of the permanent first century fort of Stracathro and a range of marching camps which occupy very different terrains from a flood plain site to a camp that straddles a whale-back shaped hill. There has so far been an uneasy feeling that the position of Stracathro inland and within sight of the largest hill forts in the area was unlikely to be Rome's final installation to the north and that further forts were likely to be found closer to the coast (e.g. at Stonehaven). Crucial for this study was the reconstruction of the original landscape as modern infrastructure projects (like the construction of a number of fishing harbours and long distance road) and the large scale draining of the ubiquitous wetlands have completely changed the original usability of the area. The study highlights the crucial tactical importance of Stracathro within its original landscape and how its position allowed the Romans to combine the logistical needs of the fort's garrison with the tactical needs of controlling access from the Mounth passes with minimum investment.

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## **Archaeological Evidence for the Role of Imperial Estates in Italy Mediating Economic and Social Organization in the Countryside**

*Myles McCallum (Saint Mary's University)*

Roman imperial properties were an important element of the Italian countryside, yet seldom have such settlements been the object of archaeological analysis. In part, this is due to the difficulty identifying imperial praedia on the basis of archaeological remains. Archaeologists working within the Italian peninsula generally focus on luxurious, residential imperial properties that were the backdrop to documented historical events (such as the villas at Sperlonga and Tibur/Tivoli). These properties, however, must be seen as only one of many types of imperial landholdings insofar as they were places of occasional residence of the princeps himself. Many other properties were much less ostentatious, were focused on productive economic activity, and likely never hosted an emperor. One such property is the imperial estate at San Felice/Vagnari and its associated necropolis in the region of Puglia. These sites represent important nodes in the social fabric of the Italian peninsula and allowed rural inhabitants and members of local communities to establish a range of social relationships with the imperial administration, albeit indirectly and at some distance. This poster examines in detail the architectural and artifactual record of the villa estate at San Felice (Puglia), its relationship to the nearby, contemporaneous settlement at Vagnari, associated survey data, as well as the spatial distribution and architectural elements of imperial properties throughout the Tiber watershed of central Italy. The data indicate that such properties encoded a system of imperial patronage relationships onto the Italian countryside and mediated access to resources, markets, transport networks, and productive infrastructure. The role that such sites may have played in shaping group membership and identity in rural Italy during the imperial period merits further, more detailed investigation.

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## **Taste of the Mediterranean – Archaeobotanical Evidence for Imported Food Plants in the Territory of Bulgaria**

*Tzvetana Popova (Institute of Archaeology/Museum of Sofia) and Hanna Hristova (Sofia University)*

Archaeobotanical research in ancient plant remains is of great importance for revealing and understanding different social aspects of everyday life in the past. The study of rare plants may help reconstructing ancient trade routes and specific economic or cultural relations, established in and between Roman provinces. Archaeobotanical investigations on the territory of Bulgaria reveal that during the Roman period several food plants were introduced to the region and became luxurious products of trade. Such exotic foods were the fruits of date palm (*Phoenix dactylifera*), olives (*Olea europaea*) and stone pine kernels (*Pinus pinea* L.). One of the most significant features of the Mediterranean landscape is the olive tree with its fruits. Olives and olive oil were an important part of the Mediterranean diet and main component of trade in antiquity. The species sprang up across the Roman provinces, reaching a real economic growth in the 3<sup>rd</sup> -5<sup>th</sup> c. AD. The earliest archaeobotanical remains of olive, found on the territory of Bulgaria, were collected at the ancient necropolis of Apollonia Pontica (3<sup>rd</sup> c.B.C). Olive consumption was also evidenced at several archaeological sites with different status: military camp and settlement Yatrus (2<sup>nd</sup> half of 4<sup>th</sup> c.-1<sup>st</sup> half of 5<sup>th</sup> c.AD); ancient urban center of Kabyle and the late antique fortress Markeli. This new species was not incorporated into the local agricultural and horticultural traditions because of the unfavorable climatic conditions of the region. It probably became a privilege of the wealthy individuals, who could afford themselves different imported goods.

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## **A Roman City on the Via Appia: New Work at Aeclanum**

*Ferdinando De Simone (Accademia di Belle Arti di Napoli) and Ben Russell (University of Edinburgh)*

*Aeclanum*, a Roman city on the Via Appia in the Hirpinia region of inland Campania, is a little-known site that provides important evidence of long-term urban developments in southern Italy. The new survey and excavations at the site will be presented here. A series of public buildings, an extensive

GPR survey, and important evidence for the AD 472 eruption of Vesuvius will be discussed and illustrated.

### Session 3a (RAC)

#### ***Recent Work and the Challenging of Perceptions of Roman Britain: The Archaeology of Occupation and Collaboration***

Friday morning, Lecture Theatre 5

**Session organizers:** Tony Wilmott (Historic England) and Pete Wilson (Rarey Archaeology)

*For many years Romanists interested in the military occupation of the province tended to concentrate on the minutiae of fort plans and changes to military dispositions. While such information is fundamental to developing robust models relating to those areas subject to Roman military occupation of Britain and attempts by the Empire to extend its dominion further north they often failed to adequately integrate Roman military archaeology into wider understandings of the Roman period in the country. Over the last 10-20 years new understandings have started to emerge on the role and impact of the Roman military occupation army in moulding what we refer to as 'Roman Britain', including the development of the concept of 'military communities'. This session seeks papers that not only present new discoveries relating to the Roman army and its impact, or lack of it, but also offer new or emerging understandings derived the synthesis of that data.*

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#### **Decorating the Distance Slabs: Recreating Colour on the Antonine Wall**

*Louisa Campbell (University of Glasgow)*

It is easy to imagine Roman Britain in monochrome since much of the material culture that survives for display in our museums derives from stone and metalwork devoid of colour. This is particularly evident on the Empire's northwestern Frontier, the Antonine Wall, where Distance Slabs once embedded into the Wall were important media for promoting Roman propaganda through epigraphy and iconography. The most exquisite examples of these form the centrepiece of the Hunterian Museum's *The Antonine Wall: Rome's Final Frontier* exhibit. Displayed in a dramatic entrance gallery, they set the scene for the Roman occupation of Northern Britain. Some contain vivid, and often brutal, iconography of Rome's domination of submissive 'barbarian' prisoners, some depict deities, legionary emblems or religious ceremonies, while others contain zoomorphic or elaborately styled frames for abbreviated Latin text. Most contain a dedication to the Emperor who commissioned the Wall, Antoninus Pius, a commemoration to the Legions that had erected sections of the Wall upon which the stones were originally mounted and many include the distance constructed. This paper challenges the perception of these iconic sculptures as static objects devoid of the vibrant colours common in other contexts of Roman life as evidenced by murals on the walls of villas, painted sculptures and mosaic floors. I argue that this practice of applying colour to sculpture is likely to have extended into the context of distance slabs and pigment still visible on some examples confirms their original decoration. The paper draws on recent research on epigraphic evidence from the Hunterian, NMS, Great North Museum, Yorkshire Museum and the British Museum. The research incorporates non-destructive analysis of the distance slabs using p-XRF and Raman Spectrometry to identify and recreate the authentic colours that would originally have brought these sculptures to life and reinforce their intended message to the viewer.

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#### **Annexes on the Antonine Wall – 'Life Outside the Forts'**

*Bryan Wallace (Newcastle University)*

The paper provides for the first time a synthesis (that also includes the eastern forts of Camelon and Cramond) of the available evidence relating to annexes on the Antonine Wall. This synthesis emphasises the very variable nature of the annexes both physically and functionally which is suggestive of a flexible, local approach towards annexes rather than a centralised "top-down" one. It highlights the close proximity, accessibility and by implication interaction between forts and annexes and vice

versa. An annexe was a fortified enclosure, defended by ditches and ramparts. No annexe was stand-alone in nature and always relied upon the fort rampart/ditches and the curtain wall. The question of annexe dating remains open. The very variable and localised nature of the Antonine Wall annexes may suggest a pattern of local decision-making to construct or even not construct at all. The role of annexes is a complex issue that needs to be considered at a number of levels. Militarily they were an asset in the conquering and holding of Antonine Scotland. They were part of the overall military infrastructure and were a useful addition of defensible space, sometimes doubling this space as is the case at Rough Castle. Ironically given the supposedly male and militaristic nature of annexes there is no evidence to suggest that soldiers were garrisoned there other than on a temporary basis. They were military to the extent that they served the needs of the military community as defined in the broadest sense. Arkesteijn and Driel Murray (2015, 113) have demonstrated incontrovertible evidence for the presence of women, children and juveniles actually living in the annexes.

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### **Occupation, Collaboration and Conflict – The Lives of the 1st Tungrians at Vindolanda before the Construction of Hadrian’s Wall**

*Andrew Birley (Vindolanda Trust)*

Recent archaeological work at the site of Vindolanda has provided some of the most remarkable and vivid evidence for daily life on the northern frontier of Roman Britain. A large part of that evidence has come from the forts and settlements of the 1<sup>st</sup> cohort of Tungrians, raised from the territory of modern Belgium. They were to become a permanent presence on the frontier, integral to its development, serving at Vindolanda then at Housesteads (not to mention at Castlecary on the Antonine Wall for a time). At Vindolanda, which they founded, their forts dominated the pre-Hadrianic history of the site, building not one but three forts, all of which are largely preserved in anaerobic conditions. This preservation has allowed for a very broad range of goods to survive, from thousands of boots and shoes to ink and stylus tablets, military kit and the evidence of mixed cohabitation. Excavations of both extramural and intramural parts of the settlements have given us a detailed and personal picture which sometimes defies simple and binary explanations. In the extramural settlement circular wattle and daub huts sat adjacent to traditional Roman rectilinear buildings, and inside the fort roundhouse cook houses have been found. At the end, the final Tungrian fort and settlement, cAD105-20, was rapidly demolished. Items which had suffered damage or general wear and tear and others which would have normally been taken away such as weapons, cavalry gear and valuables were discarded. Buildings which could not be dismantled in time, such as the *schola*, were burnt to the ground. A centurion in the unit was recorded as killed in the ‘War’ on his tombstone and there appears an air of tragedy and misfortune. The Tungrian story of life on the frontier is not black and white, it is a story of occupation, collaboration and conflict.

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### **Horse Ritual and the Roman Cavalry: Funerary Practices and Horsemen Identities in Britain and NW Europe**

*Pamela Cross (University of Bradford)*

Evidence for Roman Imperial Period (RIP) cavalry identities and practices has expanded beyond Roman literature and the imagery related to finds of armour, coins and funerary stelae, to encompass a number of new analytic techniques and types of evidence. More recent work with site and soil analyses has identified shared stabling and cavalry quarters from one end of Hadrian’s Wall to the other, at Segedunum (Tyneside) and Luguvalium (Carlisle). The intimate, elite relationship of cavalryman and horse is known, even glorified, by various emperors and in texts such as Arrian’s *Ars Tactica*. But where in archaeology does the actual horse and man appear? Aside from work suggesting RIP size changes in horses by various zooarchaeologists, there are possible indications of breeding sites, such as the work in the Netherlands by Maaïke Groot and others. A number of RIP sites have significant horse ritual deposition. However, the horse is not typically seen as an animal of Roman ritual. Aside from the October Horse ritual, which has been labelled by some as based in non-Roman traditions, horse ritual

is generally associated with Eurasian steppe cultures or the post-Roman Anglo-Saxon, Germanic and Viking cultures. Human-Horse burial ritual is certainly not associated with the Romans. But then, the Roman cavalry was largely comprised of auxiliary troops, a mix of barbarians. After the Dacian-Sarmatian wars, the cavalry was a mix of Eurasians, including Sarmatians, and natives often stationed in long-term bases along the Limes and the Romano-British frontiers. Bioarchaeological analysis of the ritual deposition of human and horse remains, integrated with site analysis, and historical, epigraphic and iconographic evidence is used here to explore the synthesis of Roman-auxiliary Horseman identities. Sites discussed include the Roman fort at Newstead and the later RIP cemetery sites at Lankhills (Hampshire), Brougham (Cumbria) and York (Yorkshire).

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***Isurium Brigantum (Aldborough): New Evidence for the Civitas Capital***  
*Rose Ferraby and Martin Millett (University of Cambridge)*

Since 2009 survey work and research into antiquarian sources has revolutionized understanding of the nature and development of this Roman town. This has included magnetometry survey of the whole town and its surroundings as well as high resolution Ground Penetrating Radar survey of large parts of the walled area. The results of this work challenged past interpretations which have assumed that Flavian fort was replaced by the civitas capital. Whilst Isurium certainly had strong military associations, its history now seems more entangled than previously assumed, incorporating issues of control of mineral resources, riverine supply, and perhaps tax collection. This paper will outline our new evidence, and review understanding of the town in the context of Roman annexation and control of northern Britain.

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***I'm Not So (Saxon) Shore: The Later Occupation of Roman Richborough in Relation to Kent and the Coastal Forts***

*Philip Smither (University of Kent/English Heritage)*

This paper focuses on the later 3<sup>rd</sup> – 5<sup>th</sup> century occupation of Richborough and what the archaeology reveals about the ‘military community’. The approach of this study is primarily through the objects, but also approaches the question of Richborough’s place within the local late Roman landscape. In the years since the Richborough excavations a number of sites, local, national and international have been linked to Richborough. However, the scale of its impact is unclear. Military and official objects at Ickham (Young, 1981) were suggested to demonstrate trade with Richborough, however this has been disputed (Ager, 2010). A number of rural sites from around Kent show particular peaks in coinage in mid-3<sup>rd</sup> and mid-4<sup>th</sup> century might link to military events at Richborough, such as their construction in the AD260s and military campaigns in the AD360s. The brooch profiles could also link to these events and military style brooches from other Kent sites might suggest a link (Bayley and Butcher, 2002). However, a relative dearth of late Roman military fittings might point to a more transient military use of the site. Given the ups and downs in the fortunes of the Roman Empire in the 3<sup>rd</sup>-4<sup>th</sup> century it is likely that Richborough had multiple phases of occupation during this period. With a lack of 4<sup>th</sup> century structures and contexts, much of the nuance of this period was lost during the excavations. Although this study is primarily concerned with the military objects, there is also the aim to reassess the contextual data from the site as well as place Richborough in its local landscape and its links to the other shore forts. While the excavators saw a typical military site, our breadth of knowledge since can help to inform about the true nature of Richborough.

### Session 3b (RAC)

#### *Isotopic Studies in Roman Archaeology: Patterns of Commonality and Eccentricities*

Friday morning, Lecture Theatre 4

**Session organizers:** Ricardo Fernandes (Max Planck Institute/University of Cambridge) and Kevin Salesse (Université Libre de Bruxelles/Université de Bordeaux)

*Isotopic proxies (e.g.  $\delta^{13}\text{C}$ ,  $\delta^{15}\text{N}$ ,  $\delta^{18}\text{O}$ ,  $\delta^{34}\text{S}$ ,  $^{87}\text{Sr}/^{86}\text{Sr}$ ,  $^{14}\text{C}$ ) are increasingly applied in Roman archaeology to provide additional valuable information on a wide range of past human activities. Examples include, among others, the reconstruction of past human subsistence or mobility and animal or crop management practices. As isotopic data for the Roman world is accumulated, it becomes possible to enlarge the interpretative scale of research into social structures, rural and urban differentiations, networks of connectivity and mobility, agricultural economy, etc. Through inter-regional and/or diachronic comparisons and syntheses, patterns of commonality and eccentricities for the different activities under study can be identified. This is of particular importance for research of the Roman world given its temporal and spatial extent which certainly accommodated considerable variability. In several instances, isotopic data can provide unique information on relevant issues which is simply not available from historical records. Furthermore, it can be fruitfully combined with other sources of historical and archaeological data under integrated research approaches. This session welcomes contributions from isotopic studies towards Roman archaeology. Of particular interest are multi-isotopic contributions that adopt integrated approaches by combining multiple lines of evidence. There should be an effort to contrast or place novel case studies within the established general context, highlight uniqueness and new foci of interest, and improve on synthesis efforts. Topics of interest, include, but are not limited to:*

- *Exploring isotopic dichotomies, for instance: rural vs. urban, core vs. periphery, Republican vs. Imperial, Pagan vs. Christian*
- *Dynamics in social and economic organisation across the Roman world as suggested by isotopic indicators of diet, nutrition, and mobility*
- *Regional and temporal comparisons in animal and crop management practices*
- *Identifying individuality or singularities within generic isotopic patterns*

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**Revealing Patterns of Commonalities and Eccentricities in Roman Isotopic Data Using IsoArch**  
*Kevin Salesse (Université Libre de Bruxelles/Université de Bordeaux) and Ricardo Fernandes (Max Planck Institute SHH/University of Cambridge)*

IsoArch is a new open-access and cooperative web-based repository for isotopic data and associated archaeological information of bioarchaeological samples from the Graeco-Roman world and its fringes (<http://www.isoarch.eu>; Salesse et al. 2017). Created for paleodietary, paleomobility and paleoenvironmental reconstruction research purposes, IsoArch gathers up 17,000 published isotopic data obtained on human, animal, and plant remains, as well as organic residues, from about 300 locations. IsoArch is a dynamic resource designed to allow displaying data on georeferenced ancient world maps, performing online statistical data mining, defining robust isotopic baselines, and conducting extensive archaeological research within Classical Archaeology from an isotopic perspective. IsoArch is a big data initiative that provides a broad picture of the lifeways of Graeco-Roman populations at different time periods. The current paper will offer an isotopic overview on diet, mobility, and crop and animal management practices of Romans. Special attention will be paid to outlier behaviours through diachronic and multi-scale isotopic comparisons. The latter will include assessments of variability in diet and nutrition regarding multiple social variables (e.g. gender, age, social status) and degrees of mobility across the Roman world.

## **Isotopes and the Roman Economy. An Economic Historian's Review of Roman Stable Isotope Studies of Organic Materials**

*Frits Heinrich (Rijksuniversiteit Groningen) and Paul Erdkamp (Vrije Universiteit Brussel)*

Over the past years increasing numbers of studies applying stable isotope analysis to organic materials from the Roman period have appeared. Despite a growing interest of archaeologists and historians in stable isotope chemistry, however, such studies have not yet found their way into mainstream Roman economic history and archaeology, unlike the evidence from other bioarchaeological disciplines, such as osteology, archaeozoology and archaeobotany. The unfamiliarity of most historians with the intricacies of stable isotope chemistry quite possibly may have added to this. Conversely, while discussing some immediate economic implications of their results within the context of their case study, most isotope studies do not directly connect to key (meta-) debates on the Roman economy. This paper seeks to bridge this divide and review the current status quo of Roman stable isotope research from the perspective of the economic historian. Our main focus will lie on the themes of agricultural strategy and diet and nutrition. In addition to synthesizing observable patterns in the data, this paper especially seeks to explore the applicability of stable isotope research (whether or not in conjunction with other data) in answering questions relevant to the debate on the Roman economy. In which ways might stable isotope studies be used to macroeconomically assess topics such as economic growth and decline, agricultural intensification, and (in)equality and prosperity? Furthermore, could isotope data be made suitable for time series analysis? Lastly, we aim to identify both opportunities and pitfalls in using stable isotope results for economic research.

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## **On the Hoof: Exploring the Study of Animals to the Roman Legionary Fortress at Caerleon using Strontium ( $^{87}\text{Sr}/^{86}\text{Sr}$ ) Isotope Analysis**

*Peter Guest and Richard Madgwick (Cardiff University)*

Provisioning large concentrations of professional soldiers stationed in their forts and fortresses along the Empire's frontiers was a major challenge for the Roman imperial administration. In a distant province such as *Britannia*, it is generally believed that the consumption of locally-produced agricultural resources must have been vital in feeding and maintaining the occupying army, which, if correct, suggests the presence of a sizeable military garrison will have had a presumably significant (though as yet unquantified) impact on the inhabitants of recently conquered territories. Simply feeding the 5,500 men in a Roman legion, for instance, must have required the ability to control agricultural resources over a wide area and to organise their redistribution from producers to consumers quickly and effectively. Yet how the Roman authorities were able to make this happen is almost entirely unknown. This paper presents the results of a pilot study that explores the potential for strontium isotope analysis ( $^{87}\text{Sr}/^{86}\text{Sr}$ ) of faunal dental enamel to provide new insights for the provisioning of animals to the legionary fortress at Caerleon in south-east Wales. These results indicated an unexpectedly wide range of bioavailable  $^{87}\text{Sr}/^{86}\text{Sr}$  in the local area, meaning identifying allocthonous individuals with confidence is difficult. The faunal dataset is also very wide-ranging but at least seven individuals can be identified as originating from beyond the local region, with some likely being brought from a substantial distance away. It is highly likely, however, that this under-estimates the proportion of animals reared outside the fortress' immediate hinterland and individuals that fall within the diverse local range could also have been from further afield. This has implications for understanding how the Roman legion was sustained, as well as the impact that provisioning the army had on the countryside, particularly around military sites.

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## **Feeding the Northern Fringes of the Empire: Examples from Gallic Populations**

*Leïa Mion (Aix Marseille Université), Estelle Herrscher (Aix Marseille Université), and Jöel Blondiaux (Centre d'Etudes Paléopathologiques du Nord)*

Roman diet has been extremely studied with the use of biochemical tools these last years. If first, studies tended to conclude at a standardization of the diet during this period, the last studies of population of Rome or other territories like Spain attests to a less uniformed diet across the empire. Historic and archaeological data support that northern continental fringes of the Empire was in the center of multiple cultural influence with the cohabitation of Gallic, Germanic and Roman population. Our study aims to understand if those particularities impact the diet. Using stable carbon and nitrogen isotope ratios, we choose to focus on (I) an urban population from one of the most important city of Belgica II *Samarobriva* (actual Amiens in France, n=91) to discuss the cohabitation of populations from different geographical origins and (II) three small rural populations (n=32, Roclincourt, Bettencourt, Duisans, France) to identify the impact of the economic and political structures of the society. Finally, a comparative analysis is attended between our French and contemporaneous Britain populations (n=475) to evaluate the impact of environmental factors and determine the specificity of Northern Gaul. Results show that within the urban population, the diet was highly variable with the presence of probable outsiders. The rural populations had diets different one from each other (the Bettencourt's individuals had a larger variability of alimentary choice compare to Roclincourt and Duisans with a greater reliance on millet) and significantly different from the urban one (less input of animal proteins). To end, the general diet of Northern Gaul seemed to be based on a significant amount of a resource enriched in  $^{13}\text{C}$  likely millet or low trophic level marine resources unlike the southern population of Britain.

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### **Millet and Fish? Exploring Individuality and Singular Dietary Choices in Roman Greece**

*Dimitra Ermioni Michael and Elissavet Dotsika (National Centre for Scientific Research 'Demokritos', Athens)*

Until recently most isotopic studies conducted on skeletal material from Greece refer either to prehistoric times or to the Byzantine period. In particular, isotopic studies regarding dietary reconstruction during the Roman times in Greece are almost absent, with the exception of one study by Anna Lagia, published in 2015, referring to Roman Athens. Therefore, even though Roman culture was influenced by the ancient Greek civilization, subsistence strategies of past societies in Roman Greece remain rather unexplored. The present study offers isotopic data for two sites in Greek territory during the Roman period, one deriving from Northern Greece (Edessa; Greek Macedonia, 2<sup>nd</sup>-4<sup>th</sup> c. AD) and the other from Southern Greece (Corinth, Peloponnese, 1<sup>st</sup>-4<sup>th</sup> c. AD). The vast majority of the isotopic studies published for Greek populations show a C<sub>3</sub> terrestrial diet. In fact, this is also the case for the aforementioned Roman sample in Athens. However, Edessa's results (both collagen and apatite ones) point out a significant presence of C<sub>4</sub> items, such as millet (N=14,  $\delta^{13}\text{C}_{\text{coll}}$ :  $-17.7 \pm 1.09$  ‰;  $\delta^{15}\text{N}$ :  $9.9 \pm 0.6$  ‰), and to a lesser extent possible freshwater intake, at least for 3 individuals (based on their apatite-collagen spacing). In addition, there is a singular case of a female individual presenting a C<sub>3</sub> terrestrial based diet, possibly reflecting a different geographical origin. On the other hand, Corinth's first results point out a possible high marine intake at least for two singular cases, who display elevated nitrogen values. Even though Corinth's investigation has not been completed yet, a significant marine consumption, at least for a portion of the skeletal sample under study, would be in agreement with the archaeological finding of a Roman fish market revealed in Corinth. Results will be further discussed in the upcoming conference, in relation to archaeological, ethnographical and anthropological information.

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### **On the Move at Imperial Roman Portus (ca. 1<sup>st</sup> to 3<sup>rd</sup> c. CE): Challenging Conceptions of Childhood Mobility through Multi-Tooth Oxygen ( $\delta^{18}\text{O}$ ) Isotope Analyses**

*Robert James Stark (McMaster University), Luca Bondioli (Museo Luigi Pigorini, Rome), and Tracy Prowse (McMaster University)*

While mobility in the ancient Roman world is an undeniable fact, not all segments of society are equally represented in textual and epigraphic accounts. This is particularly true of children, who are typically viewed as non-mobile within the normative discourse on Roman mobility as predominantly the domain

of adult males. This presentation examines childhood mobility among 20 individuals interred in the Imperial Roman (ca. 1st to 3rd CE) necropolis of Isola Sacra, which was used for the burials of residents of Portus. Portus, on the Tyrrhenian coast at the mouth of the Tiber, served as the main entrepôt for individuals arriving at and departing from Rome, resulting in a cosmopolitan environment of migration, emigration, and mobility. A serial oxygen ( $\delta^{18}\text{O}$ ) isotope analysis of the adult first, second, and third molars of these 20 individuals was undertaken to explore potential instances of childhood mobility away from the local  $\delta^{18}\text{O}$  area of Portus. This study found that a number of the individuals examined were mobile as children. Not only is childhood mobility evident, but several potential types of mobility events are apparent (e.g. unidirectional, circular, multi-locale), with several individuals exhibiting signatures suggesting an origin elsewhere and a move to Portus at a young age, while others appear to have resided at Portus, moved as children, and ultimately returned to Portus before completion of third molar development (~17.5 years). This serial  $\delta^{18}\text{O}$  study argues that not only were children mobile at Imperial Roman Portus, and by extrapolation the Roman empire in general, but that different types of mobility were undertaken by children. These findings from Portus will be contextualized and situated within broader textual and isotopic discussions on the norms and eccentricities of Imperial Roman mobility, and the benefits of examining the less often considered occurrence of childhood mobility in ancient Roman contexts.

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### **A First Isotopic Insight into the Diets of Romans during Late Antiquity**

*Ricardo Fernandes (Max Planck Institute SHH/University of Cambridge), Alessia Nava (Università degli Studi di Rome 'La Sapienza'), Christian Hamann (Leibniz Laboratory for Radiometric Dating and Stable Isotope Research), Thomas Larsen (Leibniz Laboratory for Radiometric Dating and Stable Isotope Research), Patrick Roberts (Max Planck Institute), Yiming Wang (Leibniz Laboratory for Radiometric Dating and Stable Isotope Research), Alfredo Coppa (Università degli Studi di Rome 'La Sapienza'), and Luca Bondioli (Museo Luigi Pigorini, Rome)*

Stable isotope analysis is increasingly employed to study the diets of ancient Romans. Under an isotopic approach, individual dietary preferences can be quantified across a wide spectrum of social and economic variables (e.g. status, age, gender) expanding considerably on the dietary evidence provided by traditional research approaches (e.g. analysis of written sources, archaeo- faunal and -botanical studies). The importance of isotopic data has been recently highlighted through the building of an online isotopic database for the Greco-Roman world (IsoArch) allowing for regional and diachronic comparisons. This also highlighted the existence of important data gaps, in particular, a lack of human isotopic data from late antiquity. To offer a first insight into individual diets during late antiquity human remains from a Roman villa complex next to the Via Labicana (within modern day Centocelle, Rome) were investigated. Following osteological analysis, radiocarbon and multiple isotopic measurements were made on bone mineral and collagen and on single amino acids. Caloric contributions from food groups were quantified using a Bayesian mixing model (FRUITS). Human isotopic values from Centocelle were compared with those from other regions and time periods within the Roman world using data available from IsoArch. Isotope results showed that the individuals likely lived for several years in the region prior to death. Most had diets that were comparatively poor in animal protein. Main energy sources were plant foods with an uncertain minor contribution from millet. Overall the results reveal impoverished diets which contrast with those from other Roman sites. If this reflects socio-economic status, a cultural choice, or a more general trend within late antiquity will be discussed and addressed through an expanded future study.

### Session 3c (RAC)

#### *Ancient Consciousness of Connectivity in the Roman World*

Friday morning, Lecture Theatre 3

**Session organizers:** Erica Rowan (Royal Holloway) and Chris Siwicki (University of Exeter)

*The acquisition of imported goods was a common and often vital part of life in the Roman Empire: the government in Rome imported grain from Egypt, legionaries at Cologne consumed olive oil from Spain, and individuals in Herculaneum covered their floors with marble from Greece and Asia Minor. Recent research on globalization and material exchange has shown the Roman period to be a time of intense connectivity, whereby people at all levels of society, in both urban and rural communities, were exposed to an array of non-locally produced items. While tracing patterns of connectivity remains important, it is equally important to begin questioning the extent to which the participants in such processes – not just the receivers, but the intermediaries, and the producers – were aware of the biographical pathways of goods. This session therefore proposes to explore the ways in which people across the Roman Empire conceptualized and were conscious of the distant origins of the objects that surrounded them. By selecting papers that cover different forms of material culture and regions of the Empire, the session will examine the degree to which ‘foreignness’ remained, or ever was, a factor in people’s relationships and interactions with particular products. In other words, at what point did an object lose or gain its non-local associations? The session aims to advance our understanding of human-object relationships and to consider the impact such relationships might have on our interpretations of connectivity in the Roman world. Asking such questions of material culture can pose particular difficulties (how do we tell if a person in Londinium thought of Pentelic marble as Athenian, Greek, Mediterranean, Roman, or just non-local?), and one of the further intended outcomes of the session is to develop working methodologies for demonstrating the awareness of these itinerant object pathways.*

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#### **Connectivity, Consciousness and the Roman Inter-Artifactual Domain**

*Martin Pitts (University of Exeter)*

An important corollary of an interconnected Roman world was that objects circulated with ever greater intensity over longer distances. It is therefore logical for modern scholars to wish to determine the extent of ancient consciousness of such connectivity, and indeed, whether it mattered for the production, distribution, selection and use of material culture. To this end, this paper examines processes of material standardisation and synchronous changes in material culture in the early Roman West (following Jiménez 2017), with particular focus on southern Britannia, Gallia Belgica and the Rhineland. The methodological focus of the paper is on how to distinguish selections and combinations of standardised objects in which provenance mattered to ancient users, as opposed to more universal changes in objects that were governed by what might be described as a Roman inter-artifactual domain (following Gell 1998). The principal case-study for this paper consists of a series of ceramic and finds assemblages associated with Legio XX, which was variously based at Neuss, Colchester and Usk in the first century AD, as examined in a wider context. As the legion moved, did it prefer to consume objects of a particular provenance, or did assemblages simply maintain a practical balance between military supply and local provisioning?

Gell, A. 1998. *Art and agency. An anthropological theory*. Oxford: Clarendon.

Jiménez, A. 2017. Standard time. Typologies in Roman antiquity, in A. Van Oyen and M. Pitts (eds.) *Materialising Roman Histories*, 75-84. Oxford: Oxbow.

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#### **Tastes Like Not From Here: Consciously Connecting Food**

*Erica Rowan (Royal Holloway)*

Roman literary sources provide ample evidence of an elite awareness of the origins of their staple food supply and the origins of foreign or luxury goods. It is also possible to see that, at times, ingredients were desired for their foreign quality rather than their taste or nutritional value. This conceptualization of connectivity and the perceived value placed on these goods is, however, more difficult to discern for the general population. It is also difficult to determine the importance of a distant origin, rather than the taste, texture or quality of a particular ingredient from the surviving material culture. Focusing on the archaeobotanical record, this paper will begin by looking at the methodological challenges associated with identifying a consciousness of food connectivity. The paper will then propose taking a sensory approach to the topic, exploring how the flavour of imported goods marked these items out as different and in doing so, ensured an awareness of connectivity. The sensory experience of preparing or consuming an item outside the range of locally and frequently available goods would have been unmissable and led to at least a moment of reflection on the distant nature of these products. Moreover, recent anthropological and archaeological research has shown that taste, but especially smell, is able to evoke powerful memories of place, time and community. Thus food was able to impart not only an economic or cultural sense of connectivity but a personal one as well.

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### ***Mercimonium et circenses: Roman ‘Merchandise’ as an Indicator for a Connected Entertainment Industry in the Imperium Romanum***

*Boris Burandt (Goethe-Universität Frankfurt)*

The Roman Empire of the Principate brought forth the first entertainment industry of world history. Where Rome came, arenas, hippodromes and theatres arose within a short time. Since the late first century BC, a professionalized industry had established around the so-called *munera*, which generated profit with memorabilia, or, in a modern term, with "merchandise". The celebrated gladiators or charioteers were depicted on oil lamps and drinking cups, knife handles or as clay statuettes. Thanks to their chosen material and mass production, these were available in high numbers and at relatively cheap prices. Archaeological proofs for this part of material culture are found in nearly all areas of the Roman Empire. Unfortunately, these objects have mainly been used as a pictorial source for the equipment of Roman gladiators and charioteers so far. An evaluation as an independent product group hardly took place. However, there are many interesting questions about these finds: Who were the producers, who the distributors of this merchandise? Was it regionally fabricated or were there larger manufactures distributing their products all over the empire? And: was there a local interest in distant sport events like those at the capital? These and other questions will be addressed in this paper, which seeks to shed more light on the connection between the Roman population and the entertainment industry all over the Empire.

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### ***New Perspectives on Ancient Consciousness of Connectivity: Socio-Political Propaganda in Sanctuaries***

*Francesca Mazzilli (Cambridge Archaeological Unit)*

Archaeologists collect and group data that look alike and compare them across areas. They link dots with lines to view connections (network analysis). In my monograph, 'Beyond Religion', I argue that sanctuaries and the people who commissioned and experienced these sanctuaries were connected with and influenced by other cultures. How can we claim that our reconstruction of the connectivity of the Roman world was the one perceived by ancient people? In this paper I will propose a new perspective of the ancient consciousness of connectivity through an interregional comparative study of multi-dataset into a wider socio-political context, starting with pointing out the limitations of this study. On one hand, investigation of sanctuaries and connectivity is a bottom-up analysis; it does not discuss interactions of people but considers the end product of this process of movements of people and ideas that influenced the diffusion of a specific type of temple instead of another, for instance. Our understanding of facts is our reinterpretation of them (the theory of abstraction). Any study of the past has to deal with issues related to the fragmentary nature of data. On the other hand, the methodology proposed in this paper

shows that the benefactors of sanctuaries intentionally produced a similar type of monumentality and embellishment that elites from other cultures in the Near East had already adopted and they used means that were widespread in the Near East (the Greek script and Greek names of deities). This suggests that they were aware of external elements around them and, therefore, of their connection with the outer world. This could be seen in the way they showed their social status, they aimed to be like elites in the Near East and to belong to an outer world that they were connected to.

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### **The Durius River Valley: Reconstructing Local Perceptions of Connectivity**

*Henry Clarke (University of Leeds)*

Studies of material assemblages in Central Spain typically focus on the increasing concentrations of non-local artefacts following the establishment of Roman power. However, few consider how aware or interested local groups were in the origins of such objects. In this paper, I draw on the strengths of scholarly thinking around identity, and on the need to balance reflections on the representative value of artefacts and their practical use, to work towards a methodology for conceptualising local sensitivities towards non-local goods. My analysis will concentrate on data from the Durius Valley (the modern Duero/Douro) in the Iberian peninsula, a geographically-distinct area, which presents the opportunity to explore perceptions of connectivity along a coherent, yet diverse river valley. I will frame my discussion with an overview of explicit epigraphic expressions (e.g. on funerary *steles* and *tesserae hospitales*) of connectivity to reconstruct general levels of awareness of connectedness throughout the valley. Local *tesserae hospitales* are an asset of the area, since they are relatively unique, and help to build a framework for understanding how far local perceptions of ‘their world’ may have extended. I will then explore specific examples of non-local ceramic, glass and metal tablewares, items for personal adornment, and other artefacts from a range of contexts, including urban and rural sites, and funerary contexts. My analysis will emphasise contexts of use and significance, and how these may reflect the place of artefacts within the consolidation of, or departure from, local patterns of behaviour. I will likewise compare non-local productions with local material traditions, imitation goods and hybrid objects to gain a wider view of patterns of production and consumption in the region. In all, this will allow me to consider how approaches to non-local artefacts and their biographies may have varied within this geographical region.

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### **Changes in Consciousness of Connectivity and the Labelling of Roman Architecture**

*Chris Siwicki (University Exeter)*

From the late fourth century BC onwards, Roman architecture was transformed by the introduction of styles, materials, and practitioners from the Greek world. By the early Imperial period, traditionally Hellenic architectural elements – for example, Corinthian columns, mosaic pavements, and marble – had become standard in public and domestic buildings of the Roman Empire, even where there was no prior Greek influence. While aspects of this process have been well-studied, what has received much less attention is the extent to which the Romans themselves conceived of such features as ‘foreign’ and the ways in which this changed as their use became normalised. Our awareness of the origins of particular building materials or styles should not presuppose the same level of consciousness in antiquity or that this was a constant. This paper investigates the ways in which connectivity was perceived in Rome’s built environment by its inhabitants. It goes beyond noting the presence of imported materials and designs in the city, to examine the extent to which they continued to be connected with their places of origin once integrated into new contexts. The research looks at a long period between the first century BC and second century AD in order to assess the ways in which such associations persisted and changed overtime. Acknowledging the limitations of reconstructing such attitudes from the physical remains of structures alone, the investigation emphasises the role of literary evidence and explores the possibilities of analysing architectural motifs on non-architectural objects. The presence of such details in different contexts – for example, entablature mouldings on sarcophagi – presents an alternative way of gauging the wider familiarity of certain styles. Developing a greater

understanding of ancient consciousness of connectivity in this area leads to a reconsideration of the ethnic-based labels often still employed to categorise the architecture of this period.

### Session 3d (TRAC)

#### ***Quantifying Public Construction: Figure Labour, Territory Exploitation and Cost of Production***

Friday morning, Lecture Theatre 2

**Session organizer:** Christopher Courault (Universidad de Córdoba University)

*The economy of public construction has to be considered not only from a historical perspective, but also an economic one. Behind all Roman monuments there are several aspects (building techniques), environment factors (category of stone, topography...) and organisation of labour (status, number of workers, slave, army, professional of construction, salary ...). The objective is to join activities from quarry exploitation to building making, with special attention to materials and social impact. In this sense, transformations of material resources (estimation of volume), figure labour organisation and transport are the main lines which allow us to investigate the construction effort. The archaeological information is quite dispersed, which is why it is important to identify local specificity and labour organisation change, which may constitute complementary information for further research. At the same time, the investigation of the uses 19<sup>th</sup>-century sources on labour and on costs is an important part of this work. Most of the information on ancient labour costs is dedicated to eastern Roman Empire, so we should reflect on their use in the western Roman Empire. During the last years, the development of quantitative studies have enabled us to get a real point of view about logistical and new economic data. Thus, by correlating all these elements it is possible to evaluate the cost of production for an edifice and each material resource, according to the labour force and environment. This economical evaluation should be enough to get a general point of view when literary sources do not give any information on the price of a construction; in a few cases, however, it may enable us to compare results with literary testimonies.*

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#### **The Use of Carrara and Proconnesus Marble in Second-Century AD Rome. An Economic Analysis**

*Javier Á. Domingo (Pontificia Università della Santa Croce)*

From the late 1<sup>st</sup> century AD, Rome began to import increasing amounts of Proconnesus marble, to the detriment of that of Carrara. This choice involved transporting to the west large quantities of marble from quarries that were much farther away than those of Carrara and at a considerably higher cost. Various factors have been suggested to explain this phenomenon: the proximity of the quarries to the sea, which would have facilitated transportation, although Carrara is also near the sea; the mass production of architectural elements, which would have lowered their cost; the presence of persons of senatorial rank, frequently of Asian origin (such as Celsus) and with interests in those quarries, as *curatores* of public buildings in Rome; the imperial control of some sectors of those quarries for the production of materials for public buildings, etc. In our talk, we wish to verify the possible economic consequences of this choice. To do this, we will undertake an empiric experiment consisting of calculating the cost of the building material and its fabrication, transport and placement (in Rome) using two examples of the same architectural element, one made with Carrara marble and the other with Proconnesus marble. Based on the studies carried out in recent years of the methodology for calculating construction costs in the ancient world, we will analyse the variables that most influenced the end cost; for example, the price of the marble (the Proconnesus product being slightly cheaper than that from Carrara); the greater distance the former had to be transported to Rome; the lower cost of labour in the Proconnesus quarries compared to those of Carrara, etc.

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#### **The Construction Process of the Forum of Aquileia: Labour, Costs and Timings**

*Caterina Previato (Università degli Studi di Padova)*

This paper aims at considering and analysing the construction process of the forum of Aquileia, a Latin colony founded in the North-eastern part of Italy in 181 BC, which soon became one of the most

important city of the Roman Empire. The forum of Aquileia is pretty well known thanks to the archaeological excavations carried out in the last two centuries. It was planned since the foundation of the colony, but its monumentalisation dates back to the 1st century AD. For this purpose, large quantities of Aurisina limestone, a local stone quarried about 30 km far from Aquileia, were brought into the city. By means of data available, this paper aims at calculating labour, costs and timings of this building activity, and in particular of the extraction, transport and installation in the forum of local stone elements. In this way, it will be possible to better understand the socio-political and economical context in which the construction process took place.

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### **The Quarries of Hadrian's Wall: Materials and Logistics of a Large-Scale Imperial Building Project**

*Kathleen O'Donnell (University of Edinburgh)*

This paper will summarise the results to date of a PhD being undertaken at the University of Edinburgh which is investigating quarrying for one of ancient Rome's largest and best preserved frontier walls, Hadrian's Wall. Lying at the northernmost edge of the Empire, the organisation and execution of sourcing millions of cubic meters of stone was no mean feat. The quarries of Hadrian's Wall potentially provide a wealth of information about the logistics behind this enormous building project, which in turn offers an insight into the Roman state's ability to manage large scale construction. The project is exploring how this task was accomplished by looking at a wide variety of sources. Understanding where the stone came from is of principle importance and for this a historical approach is being used – by looking at a mixture of antiquarian and modern sources and combining this evidence with modern mapping, satellite imagery and field work. So far in the study area over 500 quarries have been identified. The quarries have been mapped in GIS and added to a detailed gazetteer. The presentation of the paper will consist of an explanation of identifying the quarry sites, mapping the sites, and the condition of the evidence which survives at the sites and how this can inform our understanding of how quarrying for ordinary building stone in Roman Britain was organised. There is also petrological testing planned for later in this year and I hope to be able to present preliminary results from this with the paper.

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### **Historical Sources and Approaches to Ancient Labour Costs**

*Simon J. Barker (Norwegian Institute in Rome)*

To-date, a considerable amount of research on the economics of ancient building practices has made use of 19<sup>th</sup>-c. building manuals, especially G. Pegoretti's 1869 'Manuale pratico per l'estimazione dei lavori architettonici'. Pegoretti aims to give labour totals for every single task imaginable and, in the case of stone-working, for every stone type (seventy-eight in total). Even though Pegoretti's manual has become the standard reference point for any discussion of stone-working logistics, it is far from unique having followed a well-established tradition. Alongside Pegoretti's manual are a host of other manuals (Italian, French, British and American) that can usefully be brought into this discussion. The potential of post-antique documentary evidence to enhance our understanding of the logistics of Roman building has been evident since Janet DeLaine's 1997 ground-breaking study of the design and construction of the Baths of Caracalla. However, the data provided in building manuals needs to be treated with caution, not least because the manuals can be confusing, the language archaic, and the explanations limited at best. Thus while we have labour constants for a variety of ancient construction projects, applying them is the real challenge. The issue with these sources is knowing which sets of figures to use for particular construction activities in the ancient world - not every project would have required all of the steps provided in the 19<sup>th</sup>-c. manuals. The aim of this paper, therefore, is to explore these issues and examine the potential and the pitfalls to using 19<sup>th</sup>-c. building manuals to examine the labour requirements for ancient construction with an emphasis on the tasks involved in stone-working and the cost of stone architectural decoration. Overall this paper will provide new insight into the logistics of stone-working practices during the Roman period and an evaluation of 19<sup>th</sup>-c. manuals through an examination of post-antique sources.

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## **From Modelling to Interpretation: A New Theoretical Framework for an Integrated Socio-Economic Reading of Roman Construction Costs**

*Dominik Maschek (University of Birmingham)*

Since the pioneering studies of Janet DeLaine in the mid-1990s, the modelling of labor force and construction costs has developed into a specialized sub-field of Roman archaeology. In recent years, it has seen a certain rise in popularity, as demonstrated by a series of international conferences, monographs and edited volumes. Goals and methodology of this particular academic sub-discipline are primarily practical in nature: Estimates of labor force, building materials and construction costs are used in order to model the duration and logistics of specific building projects. Ideally, this can lead to a deeper understanding of Roman construction in the form of various case studies which are analyzed in depth but mostly in isolation. In terms of theory, the deeper aims and the heuristic potential of this approach are much less well defined. It seems particularly striking that, so far, the intricate complexities of modelling have not yet been matched by an equally complex attempt at interpretation. Therefore, the aim of this paper is to sketch out a theoretical framework which goes beyond conventional practice in order to address broader issues of analysis: What is the contribution of construction costs to wider debates on the Roman economy? How does the cost and mode of construction relate to society and politics? And what does the variegated process of construction tell us about the changing nature of socio-economic power relations in the Roman Empire?

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## **Walls of Pompeii – An Overview of Materials, Techniques and Economic Implications**

*Cathalin Recko (Universität zu Köln)*

The construction industry is an important part of the Ancient economy. Building projects are comparable through the materials used, the amount of labour required and their integration within the environment, for example regarding transport costs. Put together, these factors can be a valuable indicator for the building's socio-economic impact. The walls of Pompeii form an excellent case study for the understanding of the required processes of material production and treatment as well as the building of the wall itself. Due to the good state of preservation and the large number of walls still standing several meters high, a rather distinct picture of used materials and the treatment they underwent can be gained. The range of materials used in the walls of Pompeii demand different scales of labour and transportation due to their specific nature and origin. An overview of the occurring wall techniques including their different building materials will give an insight into local building traditions and characteristics. Furthermore, it will be shown how these characteristics affect the overall calculations of labour requirements and thus the economic value of the wall. In addition, some practical issues regarding the material calculation will be addressed. This paper aims to compare the characteristics of local (or regional) stone types and their consequential labour requirements. Thereupon the connection between the choice of materials, their structural and physical properties, and of course their economic implications can be analysed. A diachronic perspective can additionally detect developments and changes in the relationship between builder and materials as well as techniques.

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## **The Economics of Roman Wall Painting: Quantifying Production**

*Francesca Bologna (King's College London)*

The quantification of the economics of Roman wall painting allows us to better understand the economic and social significance of this craft. By reconstructing the specific actions and materials involved in its production processes we can estimate production times and costs, thus uncovering not only the burden sustained by the patrons in both economic and personal terms, but also the living standards of the artisans involved. The almost complete lack of recorded costs and labour figures from the Roman world can be overcome by turning to post-antique sources, such as 19th and early 20th-

century building manuals. These pre-industrial handbooks present us with punctual estimates of actions, times and materials needed to carry out specific construction works, and they can be used to reconstruct the labour involved in the creation of wall painting, together with other comparative data. My paper will present the results acquired through the quantitative analysis of a specific case study, the Casa dei Pittori al Lavoro in Pompeii, and show how this method helps us understand the working practices of ancient craftspeople.

### Session 3e (TRAC)

#### *Beyond Adoption, Imitation, Hybridization: Representation and Visuality within and beyond the Roman Frontiers*

Friday morning, Lecture Theatre 1

**Session organizers:** Peter S. Wells (University of Minnesota)

**Chair/Lead discussant:** Peter S. Wells (University of Minnesota)

*There now exists a vast literature on Roman imports beyond the frontiers, on questions of imitation and hybridization, and on amalgamating of Roman and indigenous techniques and motifs in specific objects in the material culture. Papers in this session develop a new perspective on interactions between craft producers and consumers in the Roman provinces and those beyond the frontiers by focusing specifically on contrasting patterns in the visuality of objects made, used, and deposited within the provinces on the one hand and outside them on the other. In what ways were the products made in the provinces similar to those crafted beyond the frontiers, from the perspective of the use of visually striking features ('enchanted' in Gell's terms), and in what ways were they different? Addressing this question will shed new light on differences between the uses of and responses to material culture (Gosden 2005, 2008) on the two sides of the frontier and contribute to our understanding of the active role of objects in the context of interactions across the frontiers. Among the categories of material culture examined will be pottery, bronze vessels, glass vessels, coins, and gold and bronze ornaments. Of special concern is the nature of the contexts in which the objects examined occur – in settlement deposits, in graves, in hoards. This approach will lead to challenges to some attributions of objects being 'imports' from the Roman world and will show that they are more likely products of indigenous manufacture outside of the imperial boundaries. Finally, papers will address the question. How different were patterns of visual representation and of visual reception within and outside of the empire?*

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#### **Tying the Empire Together: The Appropriation of *Clavi* in the Eastern Mediterranean**

*Tineke Rooijackers (University College London)*

*Clavi* were perpendicular stripes on tunics that originally functioned as sartorial markers of the *senatores* and *equites* in Rome. With the expansion of the Empire, they were eagerly adopted throughout the Eastern Mediterranean, as evidenced by both textile remains and depictions, and seem to have lost their original particularistic meaning in the process. Although they perhaps kept an association with high status, they were worn by men and women alike of various social standings. In fact, they became *the* (universalistic) standard for tunic decoration in the region for centuries to come. Having become ingrained in the aesthetic of the tunic, they were elaborated upon, coloured, multiplied, and filled with geometric and figurative decoration. Eventually, this modified and re-signified version made its way back to Rome, as depicted for example in the portraits of women in the third-century catacombs. This paper examines the spread of *clavi* on both the regional and local level, looking specifically at the case studies of Fayoum, Palmyra, and Rome itself. Rather than viewing this in terms of 'influence' or 'emulation', I use the concept of (non-hegemonic) appropriation to understand how local agents adopted and adapted Roman dress in selective, creative, and strategic ways, to suit their own norms, tastes, and aims. This approach privileges not only local agency, but also considers the materiality of *clavi*. Why did tunics with *clavi* proliferate, rather than the toga for example? Did they resonate with local aesthetics or were they 'enchanted' in other ways? And how did *clavi* influence local norms and aesthetic sensibilities in turn? *Clavi* were both local and global in the sense that they knew several particularistic and local variations, but were at the same time part of a shared, universalistic 'repertoire' of objects and styles that tied the empire together.

## **Beyond Representation? Genealogy and Selection in Funerary Objectscapes in the Early Roman West**

*Martin Pitts (University of Exeter)*

Material culture has been used in a largely ‘representative’ way in Roman archaeology and history, in which objects gain historical value insofar as their ability to stand for abstract phenomena such as Romanization (e.g. *terra sigillata* and villas), social identity (e.g. fibulae and epigraphy), or economic growth (e.g. shipwrecks and amphorae production). The ‘representative approach’ is not necessarily wrong or inherently flawed, and it has undoubtedly led to many profound new understandings of the Roman Empire in which material culture plays a prominent role. Nevertheless, there are many reasons why it is good to question the assumptions inherent in representative thinking, not least its partiality, especially within a sub-discipline like Roman archaeology in which ancient written sources have traditionally framed understandings of material culture. New perspectives and explanations may be instead realised by attempting to answer the question of what objects did in the past, rather than assuming that objects represented something at the outset of research (Van Oyen and Pitts 2017). To explore these notions, in this paper I try to go beyond representation by considering the relationship between the genealogy of objects and patterns of object selection in a sample of nearly 800 Augustan-Tiberian grave assemblages from across northwest Europe, as well as contemporary settlements (e.g. the Kops Plateau Roman military command post, Nijmegen).

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## **Back and Forth – the Tangled Web of Roman and Germanic Sword-Belts**

*Stephanie Hoss (Universität zu Köln)*

Because the sword was the main weapon in antiquity, it was imbued with symbolical value and formed a constituent part of a soldier/warrior’s identity. Items of such importance are usually decorated in a manner seen as appropriate to their function, underscoring and visualizing their symbolical value. As a sword has to be carried in a scabbard, only the grip and pommel are normally visible, which limits the amount of decoration it can carry. In many cultures, the sword’s scabbard and the belt it was worn on were used instead to visualize the sword’s importance. The sword-belts of Germanic warriors and Roman soldiers have a long history of entanglement with each other, with practical elements and visual cues from both sides reflected in the appearance of the *balteus* and *cingulum militare* on the Roman side and the sword-belt and baldric on the Germanic side. Objects that must have come from inside of the Empire have been found outside of it and vice versa. These interactions have long been acknowledged for Late Antiquity, but actually start in the early 1st century AD. My paper will identify some of the differences and similarities of the Roman and Germanic sword belts during the Principate and into early Late Antiquity, recording the interaction of both warrior/soldier cultures and trying to map the sword-belts visual patterns and practical affordances within and outside of the Empire.

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## **Finger Rings with Gems from Scandinavia - Germanic Elite Jewellery or Roman Gifts?**

*Thomas Grane (National Museum of Denmark/Nationalmuseet)*

Since the turn of the last Millennium, it has been increasingly acknowledged in the scientific community that Scandinavia and the Roman Empire shared ties in the first four centuries AD, although the nature of the ties is under ongoing discussion. Although several indigenous object groups are being recognised as evidence of an intellectual transference of ideas and inspiration, the material culture suggesting these ties primarily comprises the vast amount of objects of a Roman origin found in the region. Scandinavia was too remote for regular commercial trade. It is a reasonable assumption that those limited object groups of Roman origin arrived with for specific reasons, whether we talk about Roman military equipment or high quality glass or copper-alloy vessels. One small find group has generated dispute over the origin, though. In 1969, Christa Beckmann published the *article Metalfingerringe der römischen Kaiserzeit im freien Germanien in Saalburg Jahrbuch*. One particular type, Beckmann 17b, is dated to roughly the 2nd half of the 3rd century AD. The ring is made of gold and equipped with one or more gems. Beckmann considered it of Germanic origin and the distribution was concentrated in Scandinavia. In the 1980s, Kent Andersson was researching for his doctoral thesis

on gold and goldsmiths in the Roman Iron Age. His analyses led him to suggest that this type was in fact of Pannonian origin and possibly produced as *dona militaria* for Germanic allies. This theory initially met some opposition, though little investigation has followed. In this paper, I will present the arguments and focus on the question of producer/consumer in the context of the Germanic elite, the find context and the distribution of Beckmann 17b. It is possible to identify and understand the role of this type of finger ring and its possible origin in Germanic or Roman craftsmanship?

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### **Visual Worlds on the Northern Frontier**

*Fraser Hunter (National Museum of Scotland)*

Britain's northern frontier saw a range of different communities, living side by side or in parallel, who shared aspects of visual material culture which they apparently used and perceived in different ways. Starting from the frontier complex of Newstead (Scottish Borders), this paper will explore aspects of different worlds operating on the frontier.

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### **The Creativity of Frontiers: A Worldly Phenomenology of Material Culture across Romano-British Boundaries**

*Andrew Gardner (University College of London)*

The cultural dynamism of the frontiers of the Roman empire has become a well-established theme in recent work (e.g. González Sánchez & Guglielmi (eds) 2017), picking up the baton from an earlier generation of scholars who were interested in Rome and its neighbours as parts of a world-system (e.g. Cunliffe 1988). We are obliged, though, not least by current events across the globe, to understand the bordering processes and practices evident in the Roman world more fully. In particular, we should be looking to the contemporary field of border studies (see e.g. Mignolo & Tlostanova 2006), both as a source of inspiration and as an arena of debate to which we can contribute. Our distinctive addition to this field is precisely in the material domain, and in this paper I will take a phenomenological approach to artefacts (rather than an agentive one), taking a leaf from the 'worldly phenomenology' of everyday life pioneered by Alfred Schutz (1899-1959; e.g. 1967). Seeking to integrate this perspective on human experience with an understanding of the nature of bordering practices, this paper will examine the development of distinctive forms of stone monuments in the Irish Sea zone and in the north of Britain in the later Roman and early medieval periods. Both in themselves, and in (what we can discern of) their settings, these objects manifested visually and tangibly striking forms of interaction and separation, simultaneously. Understanding the role they played in the structuration of frontier societies in the late and post-Roman periods thus has much to offer to the wider project of elucidating the role of the frontiers in the shaping of the empire itself.

Cunliffe, B.W. 1988. *Greeks, Romans and Barbarians: Spheres of Interaction*. London: Batsford.

González Sánchez, S. and Guglielmi, A. (eds) *Romans and Barbarians Beyond the Frontiers: Archaeology, Ideology and Identities in the North*. Oxford: Oxbow (TRAC Themes in Roman Archaeology 1).

Mignolo, W.D. and Tlostanova, M.V. 2006. Theorizing from the borders: shifting to geo- and body-politics of knowled

ge. *European Journal of Social Theory* 9(2), 205-221.

Schutz, A. 1967. *The Phenomenology of the Social World*. Evanston: Northwestern University Press.

## Session 4a (RAC)

### *Cities in Transition: Urban Space in Asia Minor in the 3<sup>rd</sup> and 4<sup>th</sup> Centuries AD*

Friday afternoon, Lecture Theatre 1

**Session organizers:** Jim Crow (University of Edinburgh) and Ben Russell (University of Edinburgh)

*The cities of Asia Minor have received extensive archaeological attention over the last century. We now have a vast amount of information about the Roman imperial phases of many of the largest urban centres, as well as many smaller ones, across Asia Minor. More recently, the late antique phases of these cities have also been intensively investigated. Key studies, like Ine Jacob's Aesthetic Maintenance of Civic Space: The 'Classical' City from the 4<sup>th</sup> to the 7<sup>th</sup> c. AD, have drawn attention to the wide and varied attempts by individuals and communities to maintain urban landscapes in this region. Some of the developments visible in this late period, however, can be traced earlier, notably in the 3<sup>rd</sup> century AD. Beginning with the Severan boom in construction the era ends with widespread building of civic fortification and a range of cities acquiring new statuses. In the archaeological record, while monumental building is scarcer from the second quarter of the 3<sup>rd</sup> century AD onwards, intense investment in funerary monuments is visible. This session, therefore, aims to explore changing patterns of investment in urban centres across this transitional period, from the 3<sup>rd</sup> and 4<sup>th</sup> centuries AD.*

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### **Disturbed Periods of Prosperity – Evidence of the 3<sup>rd</sup> and 4<sup>th</sup> Centuries in the Harbour Town of Side**

*Alice Landskron (Karl-Franzens-Universität Graz)*

The location of Side, situated on the trade route to Egypt and the Levant, favoured an economic growth of the antique harbour town especially in the 2<sup>nd</sup>/3<sup>rd</sup> c. AD. During this period Side developed into one of the richest cities in the region of Pamphylia and among other cities of the south coast of Asia Minor. The invasion of Gothic tribes and Isaurian people from the north led to poverty in Side up to the 4<sup>th</sup> c. AD. When Side became a metropolis in the early 5<sup>th</sup> c. AD, a renewed period of prosperity lasted until the Arab invasions in the 7<sup>th</sup> c. AD. In my paper, I will focus on the evidence of changes in urban space, in particular with regard to monuments and sculptural decoration, of the harbour town of Side in the 3<sup>rd</sup> and 4<sup>th</sup> c. AD. The erection of the two main temples of Apollo and Athena near the harbour under the reign of Septimius Severus, the multiple neokoros, and the establishing of an agonistic tradition from the 2<sup>nd</sup> c. onwards implied manifold structural and decorative activities. The archaeological material (i.e. inscriptions, monuments, sculptures, and coins) reflects the historical context and gives an insight into how the city coped with the disruptive invasions in the second half of the 3<sup>rd</sup> c. AD (Gothic tribes) and in the mid-4<sup>th</sup> c. AD (Isaurian people), and eventually enjoyed a new era of prosperity.

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### **A New Image for the City: The Impact of the 3<sup>rd</sup>-Century Fortifications on the Perception of Nicaea**

*Ayşe Dalyancı-Berns (Technische Universität Berlin)*

In the middle of the 3<sup>rd</sup> century AD the cityscape of Nicaea changed dramatically when a large-scale project to fortify the city was realised. The walls were by far the largest construction that has been built in Roman Imperial Nicaea. Enclosing the town completely by a huge wall brought a number of changes to daily life. Once built, the fortifications clearly defined the border between the urban and rural parts of Nicaea's territory and limited their connectivity. At the same time the impressive building demonstrated city's power and magnificence. In this paper I will analyse how the fortifications changed the way inhabitants and outsiders perceived the city. First I will discuss the structure and the aesthetic features of the building and their potential to communicate specific qualities of civic life. As a second

step I will search for the representations of the monument in media such as coins. Finally I will consider the impact of fortifications on other cities of Asia Minor during this period. Consequently my contribution will help understanding the impact of the newly built fortifications on the transition of the cities in the 3rd and 4th centuries AD in Asia Minor.

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### **The Tetracylon Street of Aphrodisias in the 3rd and 4th Centuries AD**

*Alexander Sokolicek (Österreichische Akademie der Wissenschaften) and Doğuş Coşar (Mimar Sinan Üniversitesi, Istanbul)*

This paper focuses on recent excavations in the Tetracylon Street, Aphrodisias' main thoroughfare. Laid out probably in the 1<sup>st</sup> c BCE, the street remained substantially unchanged until the late 4<sup>th</sup> century AD when the street underwent major reconstruction. Along its east side, a luxurious, two-storied colonnade was erected, and the entrance to the sanctuary of Aphrodite received a refurbished face when the Tetracylon was re-erected around AD 400. In all the continued and new luxury of late antique Aphrodisias, the colonnade followed traditional Roman models, the Tetracylon celebrated the city's pagan goddess, and the connection with the Sebasteion and other main public areas let Aphrodisias blaze in late antique **glamour**. Recent excavations yield a large amount of small finds and fragments of the interior decoration of the colonnade. The finds and their archaeological context elucidate aspects of local trade and commerce, but they are also informative about the living style of Aphrodisias' late antique élite who lavishly decorated the interior of the colonnade with pilasters, mosaics, and glass windows. The 'new luxury' of the Tetracylon Street coincides with the construction or refurbishment of other Aphrodisian urban buildings, such as the city walls, public places, and luxurious houses.

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### **The Roman City of Tarsus in Cilicia and its Terracotta Figurines**

*Isabella Hasslin Rous (Musée du Louvre) and Serdar Yalcin (Macalester College)*

With a past going back to the Neolithic period, the city of Tarsus in Cilicia was an important urban center in Hellenistic and Roman times due to its key geographical location at the crossroads between Anatolia, the Aegean, Syria and the broader Eastern Mediterranean. The mound of Gözlükule, which provides material testimony to this vast past, has attracted the attention of the European travelers and archaeologists since the 19<sup>th</sup> century. The French probings of the 19<sup>th</sup> century, the official American excavations of the early 20<sup>th</sup> century directed by Hetty Goldman under the auspices of Bryn Mawr College, and the current 21<sup>st</sup> century research project by Boğaziçi University have revealed Roman terracotta figurines found in different types of deposits. The rich corpus of coroplastic material unearthed during these excavations of successive centuries and varying degrees of accuracy is today dispersed: the scientifically excavated main bulk of the material is housed in the material archive of the Boğazici University Tarsus-Gözlükule Research Center at Tarsus, the Tarsus Museum of Archaeology and the Adana Museum of Archaeology. Some of the material recovered during the early French explorations is kept in the Louvre Museum. The current excavations have attested Tarsian figurines in cultic and workshop contexts. This reveals new aspects of coroplastic production and use in the city of Tarsus during Roman times. This presentation will introduce the new joint project of Boğazici University and the Louvre Museum, the aim of which is the digital documentation, analysis and publication of the Roman period figurines from Tarsus-Gözlükule. The purpose is to study both, the technical aspects of the terracotta corpus as well as the iconography and its implications for the provincial Roman religion during the Imperial period.

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### **Antiochia ad Cragum in Rough Cilicia: Late Roman Transformation**

*Michael Hoff (University of Nebraska)*

In the mid-first century CE, Antiochus IV of Commagene founded several cities along the coast of western Rough Cilicia. One of these foundations was Antiochia ad Cragum, a city whose territory once

was occupied by a band of the infamous Cilician pirates. Few traces of the site's pirate past survive. More information of the city's later history is becoming known as a result of 12 years of excavation. Ceramic dating of several of the large, still well-preserved public structures, such as a Bath and Bouleuterion indicate a construction date in the second half of the first century CE. The archaeological record is interrupted in 260 by the Sasanian razzia led by King Shapur I. Many of the cities along the Rough Cilician coast were affected by the raids. We observe that these Cilician cities—Antiochia among them—become fortified in the later third century likely as an afterthought following these raids. We also notice that in the early fourth century there is a spate of building activity, at least in the form of conspicuous embellishment. A large, mosaic-covered enclosed gymnasium with a swimming pool is now built adjacent to the bath. In the late fourth/early fifth century a great change occurs in the city. The heart of the city becomes transformed into a light industrial complex. Excavations in the last couple three seasons have revealed that the Great Bath lost its original function and was repurposed as a ceramic production center, and a glass workshop took over the Mosaic Courtyard. We are still in the early stages of excavations. Nevertheless, the evidence increasingly points to a transformation of the traditional/early Roman urban fabric of the city from one in which the city's elite find expression (Baths, Gymnasium), to a denial of that embellishment and a marked change towards industry in the late Roman period.

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**'It Ran on the Sweat of other Cities,' (Libanius on Constantinople): How Far did the Grandiose 4<sup>th</sup>-Century Infrastructure Projects of the New Rome Create a Recession in the Urban Economic and Social life of the Cities of Asia Minor?**

*Jim Crow (University of Edinburgh)*

After Constantine's victory over his rival Licinius Byzantium was transformed from a relatively modest Roman colony into Constantinople, a city that within a century rivalled and exceeded any of the great Mediterranean metropoleis. But from the contemporary cities of the Roman East, especially those in Asia Minor there is limited evidence for active civic economies as defined through civic buildings. Whilst it is always more difficult to define the absence than the positive practice from the material record, the evidence from Constantinople points to a great building boom across the 4th century, to continue under the Theodosian dynasty. This paper aims to describe and quantify the building projects of New Rome and to reflect on the evidence or absence of civic activities in western Asia Minor before Theodosius I.

## Session 4b (RAC)

### *Studying Instrumenta Scriptoria: The Social Value of Writing Equipment*

Friday afternoon, Lecture Theatre 4

**Session organizers:** Alex Mullen (University of Nottingham)

*When thinking about literacy in the Roman world, we still turn to Harris' Ancient Literacy, a book which has avoided any fatal blows from a barrage of nit-picking attacks for nearly thirty years. Important research has consistently eroded its pessimistic view on levels of literacy, but without producing any single work which was broad enough in geographical scope and content to wrest power from the authoritative text. In order to advance understanding of the spread of literacy, Latinization, the fate of local languages and attendant attitudes in the Roman world, we must promote and integrate consideration of the non-textual sources, and especially the ways in which various types of instrumenta scriptoria (ink pots, pens, wax spatulas etc., see Božič and Feugère 2004) can be used (Derks and Roymans 2002), or not (Andrews 2012), as proxies for literacy in Latin and Latinization. Recent work has demonstrated that careful contextual analysis can illuminate the relationship between the material culture of writing equipment and socio-cultural practices, attitudes and identities in the Roman period (Eckardt forthcoming; Swift 2017). Papers in this panel might explore: 1) the scope for analysis of the distribution and interpretation of the equipment of writing within various geographical and chronological parameters, using a range of databases including the PAS; 2) the correlation of the distributions of instrumenta scriptoria with other social phenomena; 3) the social value of writing and its instrumenta through a range of sources, for example deposition in burial contexts, domestic iconography and the miniaturization of equipment.*

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### **Pen as Sword: The Uses and Abuses of Writing Equipment**

Alex Mullen (University of Nottingham)

‘Antyllus was immediately killed on the spot, stabbed by large writing implements, said to have been made for that purpose.’ (Plutarch, *Life of Gaius Gracchus* 13). According to Plutarch, Antyllus, a servant of the consul Opimius, had been ferrying sacrificial entrails around and abusing members of the opposing Gracchan faction when he met his end with styli. This quirky little detail invites further examination. What really are these μεγάλοις γραφείοις ‘large writing implements’? What does Plutarch mean by the comment that they had been made for the purpose? Is the detail meant to highlight that these are literate men (as opposed to the mob?) and what significance might that have had in the Late Republic? Writing equipment clearly had symbolic as well as obvious practical importance in the Roman world: writing implements were themselves inscribed, deposited in tombs and even miniaturized. Finds of *instrumenta scriptoria* have also been seized upon by modern investigators as symbols or ‘proxies’ of literacy and, in some cases, Latinization. The ERC project *The Latinization of the north-western provinces* incorporates the archaeological evidence for writing with detailed examination of the full range of the written remains to rethink the spread of literacy and Latinization and to move definitively beyond the more lapidary and literary focus of some ancient historians (notably Harris 1989). The task is not straightforward, however, the databases are patchy and unreliable, and even the practical functions of some *instrumenta* have been brought into question (see Andrews 2012 on seal boxes, cf. Derks and Roymans 2002).

Andrews, C. 2012 *Roman Seal-boxes in Britain* (Oxford).

Derks, T. and Roymans, N. 2002 ‘Seal-boxes and the spread of Latin literacy in the Rhine delta’ in A. E. Cooley (ed.) *Becoming Roman, writing Latin? Literacy and Epigraphy in the Roman West* (Portsmouth, RI) 87–134.

Harris, W. V. 1989 *Ancient Literacy* (Cambridge MA/London).

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## **Roman Writing Instruments in Hispania: A Global Perspective from Augusta Emerita**

Francisco Javier Alonso López (Biblioteca Pública del Estado en Ciudad Real Consejería de Educación, Cultura y Deportes)

In this paper we present a global view of Roman writing instruments in Hispania. After a brief account of production and circulation patterns based on previous archaeological reports, a summary of the known distribution and chronological trends is provided. Following from this general presentation, the evidence from the city of Emerita is taken as model to measure the development of literacy in urban context in Roman times. This specific analysis takes a multifaceted approach to the evidence: the quantity and typology of instruments found in the different areas of the city (dumps, funerary and urban); the content of tombs; and the quantity and type of graffiti on different surfaces, particularly on ceramic vessels.

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## **Writing about What? Tablets, Seals and Styli in Northeast Roman Spain (2nd-1st centuries BC)**

Oriol Olesti Vila (Universitat Autònoma Barcelona)

In recent years the increase of late republican sites in the Iberian North-East, 2nd-1st c.BC, and its possible military context, has modified our vision about the process of conquest and “romanization” of these areas. Undoubtedly, the Italic elements presents in some of these sites indicates a military presence (legionaries, *auxilia*?) more complex than we expected. The indigenous context, nonetheless, must be taken into account, since they were the majority of the population during that period, both in oppida and rural sites. However, it has been poor emphasized by the researchers the presence in an important part of these military and indigenous sites of some objects that reflect the diffusion of the writing and the habit of register, like tablets of wax (hardly preserved), Styli, seals, and finally seal-boxes. We have collected more than 20 sites with this kind of *instrumenta scriptoria*, some of them never published. In our view, these are elements that prove the existence of an official mail (administrative-military), but also reflect the diffusion of new commercial and economic management habits in N.E. In this paper we will analyze its presence, attempting to assess its historical, cultural and economic interest, as a reflect of the process of integration in the Roman world.

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## **How did People from Augusta Raurica Read and Write? With a View on Other Roman Sites from Switzerland**

Sylvia Fünfschilling (Augusta Raurica)

Augusta Raurica is an important roman site in nowadays Switzerland. Publications focused on objects connected to writing, as well as on inscriptions on ceramic. The results will be presented here as well as some results from other sites in Switzerland especially the military site of Vindonissa with a rich inventory of wooden writing tablets. The aim is to give a synthesis on what has been done in Switzerland concerning the topic.

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## **Written in Ink – Identities and Writing Equipment**

Hella Eckardt (University of Reading)

Writing equipment in the Roman world relates to an important and powerful skill especially closely associated with a military and urban milieu. Rather than viewing *instrumenta scriptoria* as indicative of levels of literacy, this paper examines the material in context to consider cultural practices and identities. A recent project analysed metal inkwells from across the Roman Empire, as a case study of an object type not previously studied as a group. Iconographic and funerary evidence provide rich information on how these objects were used and displayed. A life course approach is employed to explore the association of inkwells with women and children and with elite males. A nuanced examination of grave groups can also hint at the identification of professional scribes. Many graves

contain both writing equipment and glass or bone counters, which may relate to gaming or accountancy; also often associated are objects associated with bodily presentation, eating and drinking. The paper will discuss the cultural significance of writing equipment and explore how detailed artefact research can provide insights into ancient practice.

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### **The Young Lady with her Stylus: Instrumenta Scriptoria as Grave Goods**

*Josy Luginbühl (Universität Bern)*

The ability of mainly urban Roman upper class men to read and write has been well documented. It shows that the appropriate skills were relatively widespread and in frequent use. But what kind of statements is it possible to make about less privileged individuals, such as those in the lower classes or women? The socio-cultural practice of equipping the dead with *instrumenta scriptoria* shows the importance of literacy, either as a real ability or a symbolic skill. The discoveries of the *instrumenta* are distributed throughout the Roman Empire. The varied combinations of burial offerings and their concentrations show a complex picture of the dissemination of literacy and serve as evidence for literate individuals. The chronological and geographical differences permit us to generate statements about social status and gender distribution, as the objects are intimately connected to the deceased. Inkwells, *stili* and other writing instruments in graves are an indication of skills, which do not necessarily leave their mark in written sources. In particular, hardly any texts which can be identified as written by women have been handed down and women's literary skills are only mentioned in exceptional circumstances, while the pieces of grave furniture with reference to literacy clearly indicate a relationship with writing. The rich sarcophagus of Antestia Marciana from Aquilea for instance provides two *stili* made of bronze, a jewel box and some amber objects and a woman's grave from Durrachium contained among other objects a wax tablet. The combination of *instrumenta scriptoria* as burial objects in women's tombs and iconographic depictions of apparently literate women should encourage us to assess female literacy in more detail.

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### **Cutting the Thread: Is there a Link between Seal Boxes and Writing Tablets?**

*Colin Andrews (Open University)*

This paper will consider whether there is any evidence to suggest that Roman seal boxes were used to seal writing tablets and therefore provide archaeological evidence for literacy in the Roman Empire. This well established connection, which was generally accepted within the archaeological community, has made seal boxes extremely significant. There are few small artefacts with such resonance if traditional theories are correct and they do provide physical evidence for literacy. For this reason it is important to ensure that seal boxes really were used to seal wooden writing tablets. This paper explores the evidence that helps our understanding of how seal boxes were used in antiquity. The ancient written evidence will be considered as well as the archaeological evidence. The practical insights gained through experimental archaeology will also be discussed as this approach provided important evidence for the specific question of how these artefacts were used. The evidence strongly suggests that seal boxes were used to seal bags or pouches containing money or other small valuables rather than writing tablets. This raises the question; if seal boxes do not provide evidence for literacy, then what do they provide evidence for? They are a piece of Roman technology, which is very widespread both in Britain and the wider empire and they are evidence for economic activity of some sort. In Britain their distribution is primarily centred on larger towns, such as London, Colchester and Wroxeter. But they are found in a range of contexts, with a significant number from rural sites, especially in Norfolk. My 2012 study was based upon a corpus of 871 examples and it now stands at over a thousand, so these objects are not rare and need to be properly studied and understood.

### Session 4c (RAC)

#### ***'War and Peace!' Roman Coin Hoards in Archaeological Contexts – From Daily Life Episodes to Group Tragedies***

Friday Afternoon, Lecture Theatre 3

**Session organizers:** Cristian Gazdac (Institute of Archaeology, Cluj-Napoca)

*The development of archaeological techniques combined with an increase of IT facilities have made possible the research of Roman archaeology and history at the scale of the whole Empire and beyond. In the last decades, this opportunity led to the identification of general and specific patterns on various aspects of the Roman daily life. The main aim of this session is to demonstrate at the scale of the Roman Empire how the analysis of archaeological context together with the numismatic and epigraphic sources, and the IT support, can establish - and solve a long-term debated aspect. When a coin hoard represents, as it is largely accepted, a proof of wealth as saving money, or there are other meanings for coin deposits: votive/construction offerings, daily accidental loss of money, individual/local tragedies (e.g. fire, earthquake). Considering a long-perspective of this approach, once we have separated the hoards in various categories according to their purposes, we can easily re-think through the archaeological, numismatic and epigraphic evidences on the general and specific patterns of hoards'/coin-deposits discovery. The case-studies which will be presented if this session will be approved will fully demonstrate the importance of archaeological context in explaining historical and numismatic facts upon coin hoards while the numismatics, while numismatics will help the understanding and the dating of archaeological context. The archaeology, numismatics, epigraphy and IT can all point out when and where we can discuss now about the moments of turmoil at different levels, from episodes of daily life to individual and group tragedies.*

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#### **Group vs Individual Tragedies: The Meaning of Hoards with/without Archaeological Contexts**

*Cristian Gazdac (Institute of Archaeology, Cluj-Napoca)*

The topic of this paper is one that always attracted the scholars as the coin hoards have represented during history a symbol of wealth and power, as well as a proof of human tragedy, as these hoards were not recovered by the owners. At the same time this fascinating and mysterious features given by the presence of hoards in antiquity has led generations of scholars to understand them only through the perception of contemporary meaning: an accumulation of coins found together represent a treasure/hoard and was a result of a major historical event, no matter the value of coins at that time, the context of finding and the chronological background. This paper attempts to identify general and specific patterns of human behaviour in association with his wealth (the hoard) in the normal daily life (peacetime) and while facing lethal danger (wartime). Presenting clear case-studies of hoarding combined with various methods (e.g. statistics, archaeological contents, coin denomination, hoard composition, etc.) the term 'hoard/treasure' may be seen divided in new categories such as: pocket money, votive offering, religious artefacts, bullion. This classification will bring up a new and more accurate picture on what the ancient individual really regarded the coinage and not as we, nowadays, like to believe.

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#### **The Abritus Battle and Roman Gold and Silver Hoards**

*Aleksander Bursche (Uniwersytet Warszawski) and Kyryło Myzgin (Uniwersytet Warszawski)*

In his text published in the *Numismatic Chronicle* in 2013 Aleksander Bursche demonstrated that after the battle of Abritus of 251 Goths could have captured the Roman Imperial treasury and carried off its contents to their northern homeland. This is suggested by finds of hoards and single pierced aurei of Trajan Decius and his immediate predecessors recovered in Ukraine, Moldova, eastern and northern Poland. This territory was settled around the middle of the third century by the Gothic communities. Within five years after this publication the number of finds assigned to the Abritus horizon, particularly

those attributed to the archaeological Chernyakhiv Culture, had vastly increased. It may be possible to place in that same horizon the most recent finds of hoards of Roman antoniniani and bronze vessels discovered in the territory of the Chernyakhiv Culture.

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### **What Happened with Neronian Gold?**

*Benjamin Hellings (Yale University Art Gallery)*

This paper investigates the substantial presence of Neronian gold in the Roman northwest, where Neronian aurei account for *c.* 30% of all gold coin finds from the first two centuries. This figure is all the more remarkable since at least 85-90% of these were struck during a four-year period (AD 64-68). By creating a database of hoards from the Roman northwest, this paper demonstrates that, in addition to their considerable numbers, Neronian aurei also formed the bulk of circulating gold for over 150 years, which has implications to date archaeological contexts. The dataset used for this paper consists of more than 1,300 Neronian aurei from the northwest and includes single gold coin finds since their high value (equal to 25 silver denarii) allows them to be regarded as a hoard. By assessing hoarded and non-hoarded Neronian aurei it is possible to determine whether any differences between the two find types exist. Where known, the archaeological contexts of gold coins can further our understanding. Similarly, even knowledge of the type of site and rough chronological indicators are vital to understanding how and who used them as well as when and where, as this paper sets out to examine what happened with Neronian gold.

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### **Conflict, Abandonment or Inflation? The ‘Trouble’ and ‘Monetary’ Hypotheses of Coin Hoards in Germania Inferior Revisited**

*Silke Hahn (Goethe-Universität Frankfurt)*

The peak of coin hoarding in the Late Third Century in the Northwestern Roman Empire was often regarded as indicator of trouble (such went the common continental conclusio) or, if hints at conflict were missing (as in Britain), as structural abandonment out of monetary reasons: debased coins that had allegedly not been meant for retrieval. A third approach views coin hoards of the period before the wider background of inflation and money in circulation. This paper aims to investigate coin hoard evidence of Germania Inferior from the Late Third Century and tries to identify categories of purpose according to the prevailing patterns of coin deposits as to their contents and archaeological context. Selected case studies from my on-going PhD project will be presented and discussed. Systematic recording offers a solid ground for comparison of various models of interpretation – and for imagining plausible ‘episodes of daily life stories’ behind the findings.

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### **Des travaux de Blanchet au projet TréMoG. La lente prise en compte des contextes dans l'étude des dépôts monétaires à travers l'exemple de la Gaule du Centre-Est**

*Antoine Hostein (Ecole Pratique des Hautes Etudes, Paris), Alexandre Burgevin (Institut National de Recherche en Archéologie Préventive (INRAP)), and Pierre Nouvel (Université de Franche-Comté)*

Comme l'indique le titre, la communication vise à établir un bilan historiographique et méthodologique de la façon dont les contextes archéologiques ont pu être pris en compte à différentes échelles – stratigraphie, site, micro-région – pour l'étude des dépôts monétaires. Le champ d'investigation sera la Gaule du Centre et du Centre-Est, un territoire très riche en découverte récentes et anciennes. On recense par exemple près de 200 dépôts pour le seul territoire des Eduens, qui couvre une superficie d'environ 20 000 km<sup>2</sup>. Cet espace, qui avait bénéficié d'une grande attention de la part d'Adrien Blanchet, fait actuellement l'objet d'un programme d'étude du CNRS en collaboration avec l'Ashmolean Museum d'Oxford (Projet PICS ‘Trésors Monétaires de la Gaule’, 2016-2018). Une attention particulière sera portée à la période des II<sup>e</sup>-IV<sup>e</sup> siècles, la mieux documentée aussi bien d'un point de vue numismatique qu'archéologique. Sera en particulier abordée la question des dépôts dits « de panique », traditionnellement attribués aux « invasions barbares ».

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## **The Archaeological Evidence of Some Roman Coin Hoards in Carnuntum**

*Franz Humer (Archaeological Park Carnuntum)*

The region of Carnuntum between Vienna and Bratislava is the largest archaeological landscape in Central Europe. More than 400 years the Colonia Septimia Aurelia Antoniniana Karnuntum was the political and military center of the middle Danube Limes. In the last few years many preservation and presentation measures have been carried out in the excavations. Since 2001, some very interesting coin hoards/deposits were found in a civilian city quarter (private house, public bath) and the western town fortification of the Civilian town. Due to the numismatic aspects, the detailed archaeological evidence will be presented as it shows the fine stratigraphy of layers where the hoards were found in. Beside a general overview about this ancient metropole is given, with all the aspects of 170 years of archaeological research, the problems of restauration as well as ideas for new presentation and mediation are part of this paper.

#### Session 4d (TRAC)

#### *Remembering and Social Memory in the Roman West*

Friday afternoon, Lecture Theatre 2

**Session organizers:** Ralph Häussler (University of Wales Trinity Saint David), Günther Schörner (Universität Wien) and Thomas Schierl (Rheinische Friedrich-Wilhelms-Universität Bonn)

**Chair/Lead discussant:** Zena Kamash (Royal Holloway)

*'Memory' and 'remembrance' in societies and of societies have been key terms in social sciences for more than twenty years and also became key topics in the study of the Classical world. The material remains of the past – for which the French sociologist Maurice Halbwachs (1950) coined the term *cadre matériel* – allow archaeology to study the material aspects of memory. Studies of memories in the Roman Empire focused either on the city of Rome herself or on the Eastern Greek-speaking part, while the West has been neglected or even treated under the heading 'forgetfulness' to demonstrate that the cultures in the western and northern provinces did not remember their pre-conquest pasts (cf. e.g., Woolf's *The Uses of Forgetfulness in Roman Gaul*, 1996). The aim of this session is to show that – contrary to conventional opinion – people in the western provinces used various means to come to terms with the knowledge and memory of one's pre-Roman history: indeed, remembering one's origins and descent as an essential part of social memory also played a key role in the West for identity-building within the framework of the Roman Empire. Different means can be detected archaeologically – for example:*

- *the connection with a common mythological past by making use of well-known founder heroes like Hercules (e.g. in Mauretania Tingitana);*
- *the framing of pre-Roman monuments and their loading with a new meaning especially in sacral sepulchral contexts (e.g. in the province of Baetica, Britannia, etc.);*
- *the conscious recourse on pre-Roman material culture in Roman times (e.g. in Africa proconsularis);*
- *the use of pre-Roman sanctuary sites for the construction of an unbroken tradition to the Roman Empire (in most provinces, e.g. Britain, Gaul, Africa proconsularis, Iberia);*
- *persistence and creation of deities and cult places.*

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#### **"Roman" and non-Roman Religion in Augustan Italy**

*Eric Orlin (University of Puget Sound)*

I propose to talk about religious activity in Italy outside Rome during the Early Principate, especially in Cisalpine Gaul, which under Augustus became part of Italy as the new *regiones* Transpadana and Venetia et Histria. Drawing the relationship between memory and the built environment, I explore the impact of several distinct streams of activity to explore how the inhabitants of this territory both integrated themselves into the Roman community and maintained a sense of local identity. On the one hand many inscriptions attest to incipient imperial cult activity, dedications and sanctuaries connected to the imperial family, but on the other hand the ways in which this activity manifested itself in this region reveals unique local behaviour, different both from Rome and also from other parts of the West. Inscriptions also reveal "traditional" cult activity continued unabated as temples were constructed and reconstructed for Jupiter, Diana and other traditional deities. But we also see construction projects for deities of local importance, as well as dedications to a wide array of divinities. The cultic activity and new structures could serve to erase or replace Republican and Civil War memories and allow for new memories to emerge, or to strengthen local identities in the face of an increased Roman presence. Thus the reshaping of space allows us to see the reshaping of relationships and offers insights into how residents of Italian communities viewed themselves and their relationship to the imperial authority in the wake of Augustus' triumph in the civil war.

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## **A Song of Acorns and Iron: Aquitanian Theonyms and Industrial Memories in the Central Pyrenees**

*David Wallace-Hare (University of Toronto)*

“It was only in the Roman period that the people of this area [the Convenae] created an identity for themselves in response to Roman actions and using a vocabulary derived from Roman practice. There is precious little evidence for a distinct, or distinctive, pre-Roman identity for the people of this area.” Patently untrue. The following paper shows that the cultural memory of one specific people of the Pyrenees, the Convenae, is embedded in the theonyms and personal names that they chose reflecting clear strategies of natural resource management that changed over time. However, the cultural memory of local industries preceding and concurrent with Roman occupation is only evident via Basque linguistic resources, as the Pyrenees was home to speakers of Basque languages, of which Aquitanian was a part. The following paper focuses on one group of these deities, tree gods. Statements like Esmonde Cleary’s, unfortunately quite recent, reflect a common unfamiliarity among scholars of the Pyrenees with Basque. Using Basque, we can identify three new tree deities Arixo (Basque *artiz* “oak,” Artahe (*arte* “holm oak”), and Leherennus (*leher*, “pine”). These gods exemplify ecological exploitation strategies found in other mountain communities, as several deities in northern Italy and Gallia Narbonensis with names based on Celtic *baco-/bago-* “beech” and *dervo-* “oak.” By mapping the tree deity species in Gaul we can see that oak deities predominate. I propose that Fagus and Sex Arbores, typically the only Aquitanian tree gods identified, are part of a larger continuum of oak related deities who reflect interest in swine-herding and animal husbandry (acorns and beech mast were the staple fodder for swine all over Europe). They also add to the large amount of evidence of the continued consumption of acorns by humans from the Neolithic in the Basque country and Pyrenees.

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## **Remembering the Rites: Learning and Transmission of Religious Rituals in the Worship of Pannonian Female Healing Divinities**

*Blanca Misic (Champlain College)*

The present paper proposes to explore the role of religious rituals in the preservation of memory of local divinities and cult places. Drawing on latest research and theoretical developments from the cognitive sciences (e.g. Van Mulukom, V. (2017). “Remembering religious rituals: autobiographical memories of high-arousal religious rituals considered from a narrative processing perspective”, *Religion, Brain & Behavior* 7(3), 191-205), the paper puts forward a new theoretical framework for explaining how religious rituals were learned and transmitted among worshippers; preserving, in the process, the memory of local divinities and cult places. This theoretical framework will be tested within a case study of epichoric healing female divinities from southern Pannonia (e.g. Nymphs, Nutrices, Silvanae...), and the pre-Roman cult site(s) to which they are connected. The paper aims to show that religious rituals played an important role in preserving the worship of local divinities and in shaping local identities.

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## **Recalling Local Traditions in the Durius River Valley**

*Henry Clarke (University of Leeds)*

How might evidence of human interaction with the landscape enable us to identify enduring local pre-Roman memories within the context of the Roman Empire? Recent scholarship on the archaeology of place and conceptions of cultural memory suggest ways in which social memories in the ancient world were embedded in distinct landscape features. By exploring the evolution of sets of meaning rooted in such landscape features during the establishment of Roman power, we can better understand how the negotiation and preservation of social memory and perceptions of place changed over time in specific geographical regions. In this paper, I will draw on data from the Durius Valley (the modern Duero/Douro) in the Iberian peninsula, a geographically-distinct area, which presents the opportunity to explore material aspects of memory linked with specific landscape features along a coherent, yet diverse riverine environment. I will reflect on how material evidence from the 1<sup>st</sup>-2<sup>nd</sup> centuries AD

might enable us to reconstruct lasting local traditions, memories and practices under the Roman Empire. I will also consider how local memories could be renegotiated alongside the broader cultural traditions and patterns of behaviour that became more familiar to local groups after Roman power was established here. In my analysis, I will explore evidence of sanctuaries, cult spaces and ritual sites associated with specific landscape features, including springs at San Esteban de Gormaz and caves at Clunia in the Upper Durius Valley. I will likewise investigate evidence of meaningful places and ritual activity around the Durius and Tâmega rivers, and the Larouco Mountain in the Lower Durius Valley. Ultimately, I will consider the different ways communities along the Durius Valley preserved meaningful pre-Roman places and memories linked with them across diverse geographical contexts after the establishment of Roman power.

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### **Embodied Memory at Rural Healing Sanctuaries in Roman Gaul**

*Alena Wigondner (University of Arizona)*

Scholarship on Roman colonialism generally assumes that Roman culture quickly and easily permeated cities while rural areas, farther from centres of administrative control, were slower to incorporate Roman culture and so maintained their pre-Roman character for longer. In this study, through analysis of healing votives in Roman Gaul, I consider the possibility that this rural conservatism was not simply a matter of inertia but partially the result of the use of rural spaces as sites of active remembering of a pre-Roman past. Gaul's annexation into the Roman Empire in the mid-first century B.C.E. caused the development of new religious practices, including the practice of offering votive objects representing parts of the body or the entire body at both urban and rural healing sanctuaries. Because each healing votive represents a dedicator's personal, private decision regarding how to represent her/himself, this assemblage provides an opportunity to study the act of remembering at the level of the individual and its connection with expressions of identity. Differences exist between the urban and rural assemblages of healing votives, most notably in style: stylistically Romanized votives are more common in urban sanctuaries while votives reflecting pre-Roman artistic style were offered more often at rural sanctuaries. This pattern seems to confirm the standard story of Romanized city and conservative countryside. However, many GalloRoman healing sanctuaries were by nature pilgrimage destinations; urban and rural sanctuaries alike were visited by both city and country folks. Therefore, I argue that the stylistic differences observed between votives offered at urban and rural sanctuaries occurred because urban and rural spaces were considered appropriate to express different aspects of individual identity, whether one lived in a city or in the country. In this way, those seeking healing utilized rural sanctuaries not only to remember a pre-Roman past but also to embody it.

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### **Sufetes and their Scribbles: Negotiating Global and Local Memory in Roman Leptis Magna**

*Anthony R. Shannon (Harvard University)*

This paper examines two bilingual (Latin and Neo-Punic) inscriptions from Lepcis Magna to address how local magistrates could negotiate social memory through their relationships with political and social structures on global (i.e. imperial) and local (i.e. municipal) scales. The first inscription (*IPT* 24; *IRT* 321, 322-323) was set up by the sufes Annobal, son of Imilco Tapafi Rufus, in ca. 2 CE. The Latin text denotes the titulature of Augustus, the dedicatee of the monument, and that of Annobal, including his local magistracies, presented as a means of self-representation and justification for the erection of the monument. The Neo-Punic text, however, omits the titles of the emperor altogether, opting instead to restate or translate the accomplishments and roles of Annobal in a language that would be understood more broadly by the local population. The second inscription (*IPT* 27; *IRT* 318, 347) set up by the sufes Tiberius Claudius Sestius, son of Tiberius, in ca. 92 CE, operates in much the same manner. The Latin text addresses the emperor Domitian, for whose divinised father Sestius served as priest, and lists honorific formulae that mirror closely those of Annobal nearly a century earlier, and in some ways are more emphatic. Sestius' Neo-Punic text also forgoes the imperial titulature and focuses on the sufete's achievements, particularly his variety of priestly appointments. However, the latter text is more detailed as to his indebtedness to the people of Lepcis, particularly for his right to wear the *toga praetexta*,

signalling, along with the advertisement of his citizenship, a shift over the course of the first century CE in the integration of global cultural markers into local political and social discourse, suggesting a more nuanced, hybridized identity and approach to social memory formation amongst the magisterial class in Roman Lepcis Magna.

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**‘Worthy of Memory More for his Studies than his Reign’?: The Memorializations of Juba II’s Mauretanian Dynasty in the Roman West**

*Richard Teverson (Fordham University)*

The cultural programs of Augustan allied rulers during their reigns are frequently studied. However, the cultural legacies of these rulers after Roman annexation of their kingdoms are rarely looked for. My paper fills a part of this lacuna, responding to Ng’s (2016) call for finer theoretical distinctions between examples of “the past in the past” (in the phrasing of Alcock, 2002) and the operation of cultural or social memory, by contributing to our broader understanding of the legacies of allied kingship. The varied nature of re-uses of Juba II and his son Ptolemaios’s civic patronage and statues, and Juba’s written scholarship demonstrates the range of purposes—and audiences—for later quotation and evocation of North Africa’s royal past. Statues of Juba and Ptolemaios were re-displayed in a private house in Volubilis, public buildings near Sala’s forum, and the *frigidarium* of baths in Caesarea Iol. Likewise, authors ranging from Plutarch and Pliny the Elder to Avienus cited or referred to Juba’s writings on history, geography, myth and the arts. The eclectic nature of Juba’s writings and portrait commissions, the detailed post-annexation archaeological contexts from which they survive, and the relatively rich literary evidence surrounding Juba’s reign, allow me to analyse the transmissions of his cultural program to later audiences, and how later patrons carefully reconfigured, referenced, and quoted his artistic commissions and written works for new purposes.

Alcock, S. *Archaeologies of the Greek Past: Landscape, monuments, and memories* (Cambridge, UK: Cambridge University Press, 2002).

#### Session 4e (TRAC)

#### *Boundaries, Borders, and Frontiers: Modern Methods and Frameworks*

Friday afternoon, Lecture Theatre 1

**Session organizers:** Meg Moodie, Rory Nutter (University of Edinburgh), Kai Radloff (Humboldt-Universität zu Berlin) and Rob Collins (Newcastle University)

**Chair/Lead discussant:** Rob Collins (Newcastle University) and Emanuele Intagliata (University of Edinburgh)

*Borders and boundaries were a significant feature of the Roman perception and construction of space, articulated in religious, domestic, urban, provincial, republican and imperial contexts (Whittaker, C.R., 1994: *Frontiers of the Roman Empire. A social and economic study*, Baltimore.). This session seeks to distinguish between our ability to identify boundaries, borders, and frontiers in geospatial terms, and the frameworks that we employ to understand the significance of such concepts within as well as outwit Roman society. Where 'hard lines' can be observed, as in the external walls of a domus or the civitas, fossae, and clausurae, then boundaries and borders can be reasonably identified. But how do we identify borders when such demarcations are missing, as with the Roman imperial provinces? How do we identify larger transitional zones, like the frontier beyond the militarised border? In addition to the physical elements that indicate boundaries, borders, and frontiers, how do we approach the cultural impact of such structures? Are modern theoretical paradigms and frameworks appropriate to communicate the meaning of such features for Roman and non-Roman alike? Or do such approaches only have meaningful value for modern scholarship? This session seeks to investigate borders and frontiers as complex cognitive formations realised in the landscape throughout the entire Roman era, from the 4th century BC to the 7th century AD.*

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#### **Neighbours and Networks: The Impact of the Roman Frontier on Indigenous North Africa**

*Meg Moodie (University of Edinburgh)*

The concepts of culture clash, hybridity, and syncretism have often been used when discussing the zones of contact along the Roman frontier. These imply a shift in two cultures; the established and the incoming. Material culture, religion, and politics are some of the areas of visible engagement with any new cultures and traditions, reflecting the desire to adopt and accommodate these influences. However, fully comprehending the depth to which indigenous and foreign cultures interacted goes beyond the obvious external projections. A vital socio-political aspect of the pre-Roman Maghreb was mobility and land tenure, following practices uncommon in the contemporary Roman world. A land of pastoralism and semi-nomadism, the Maghreb was a place of continuous, organised movement across vast areas necessitating a unique relationship with the land. With the increased interest of Rome reaching further into North Africa, came a need for the physical representation of their presence and control, namely frontier systems. Using structures such as *fossae* and *clausurae*, the Romans attempted to adapt to the pre-existing socio-economic conditions of the ancient Maghreb in order to establish a successful frontier. This current paper will discuss the impact of the Roman frontier system on the pre-existing land use in ancient North Africa, and attempt to better understand the degree of interaction, control, and collaboration between these two cultures. This will be conducted through case studies, including the Hadd Hajar and Wadi Skiffa frontier systems and data from the UNESCO Libyan Valleys Survey. This will not only look at the physical manifestation of the Roman frontier but also the concepts of landscape and land ownership as experienced by Romans and North Africans in the ancient Maghreb.

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#### **Controlled Mobility, Controlled Trade: Institutional and Physical Management of Shipping in the Mediterranean Ports in the High Roman Empire**

*Emilia Mataix Ferrándiz (University of Southampton)*

The Mediterranean was a reticular system with key centres boosting trade and exchange; but controlling the mobility of people entering and setting sale from ports in different ways. Commercial regulations constitute one realm of negotiation among diverse areas, the more so because economic entanglements are one of the principal causes of mobility. These conventions defined places for legal commerce and allowed the security of exchanges, bringing what had generated customs duties while controlling the passage of merchandises. The empire witnessed a “controlled mobility”, as well as a “controlled trade”, since the import and export of goods were controlled and registered by the state, aiming to gather taxes and monitor the flow of goods along its shores. These elements depict a scenario of imperial control of the space, using the law as a tool to establish the boundaries to move around these areas. Roman regulation became visible on these spaces through controls such as registering of cargos and taxation. One of the problems of reconstructing the context and the procedures of these areas is that in many cases, the archaeological evidence proves to be insufficient. Because of that, the physical spaces need to be studied with the help of the legal texts that describe the boundaries in mobility established by the imperial government during the high empire. This presentation will present an overview of ancient Mediterranean ports structures inserted in the legal framework established by the imperial and local institutions. As we will see, the creation of legal boundaries reflects a political model, which allowed the Roman emperor to be at the head of an empire that, within the limited framework of the technical.

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### **The Final Frontier? Rethinking the Roman Colonisation of Italy through Epigraphy**

*Rory Nutter (University of Edinburgh)*

The foundation of colonies was a crucial element in the expansion in Rome in Italy during the fourth and third centuries BCE. These settlements have traditionally been interpreted as marking a periphery between Roman and non-Roman territory and interactions. However, such a claim is out-dated, relying heavily on a perception of colonisation as strategic, geographic bulwarks. This paper seeks to reconsider these preconceived notions through an analysis of epigraphic record of the relevant inscriptions in the period 340-200BCE. The intention is to re-evaluate the view that colonies were founded to represent a boundary to Roman control and authority, and a barrier to those outside this sphere. Although the number of inscriptions for this period is small, they constitute a vital corpus of contemporary evidence with which to re-evaluate the political and social framework of Roman colonies. Particular attention will be devoted to an analysis of the spread of Latin across Italy following the Roman conquest, and the extent to which non-Latin languages persisted in use following a settlement or a people’s submission to Rome. Inscriptions of a public nature in Italy will be used to consider non-Roman attitudes to identity, and evaluate the conception of Roman imperialism as a matter of political submission with peoples permitted greater cultural freedom than has previously been acknowledged. Here, Roman colonisation of the Middle Republican period constitutes a mode of political influence and interaction in order to demonstrate that colonies existed not as a peripheral frontier, but a crucial and vibrant hub of interaction within the mosaic of political statuses in Italy.

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### **The Late Roman *Limes* Revisited. The Changing Function of the Roman Army in the Dutch River Area (AD 260-406/7)**

*Berber S. van der Meulen (Vrije Universiteit Amsterdam)*

The publication of Luttwak’s extensive work on the defence of the Roman Empire (Luttwak 1976), has become central to the study of frontiers in the Late Roman period. His third and final “system” of defence-in-depth is still a matter of debate, especially in the archaeology of the western Empire. The standard narrative describes how the Roman army struggled to cope in the West as a result of the *Limesfall* of the later 3<sup>rd</sup> century, and deserted their perimeter defence in favour of a defence-in-depth, with a dual army (*comitatenses* and *limitanei*) and fortifications in the hinterland. Evidence for such a shift in military strategy in the archaeological record, however, has been scarce. Furthermore, Luttwak forgoes any function the Late Roman *limes* might have had beside defence (cf. Whittaker 1994), and his definition of frontiers is clearly too linear and anachronistic (inspired by the Cold War). The necessity for collapse is a by-product of such thinking (Whittaker 1994, 194). This paper provides an

archaeological survey of the Dutch Lower Rhine region, focussing on coins, crossbow brooches and military architecture. This combined dataset strongly suggests that there is no solid evidence for a sudden *Limesfall* triggering defence-in-depth, but rather that the Late Roman *limes* showed great continuity with earlier periods in both form and function. At the same time, however, this paper would like to argue that the Late Roman *limes* was not simply an unchanged continuation of the 2<sup>nd</sup> and 3<sup>rd</sup> centuries, purely dictated by path-dependency. Innovations can be identified in site location choices regarding natural landscape features and in the functions of individual sites within the broader infrastructure, representing both an adaptation to changing geophysical circumstances and an overhaul of military logistics and strategy. This paper will therefore place both developments in the framework of a flexible *limes* that adapted itself gradually to a changing socio-economic and political climate, rather than through singular dramatic events.

Luttwak, E., 1976: *The grand strategy of the Roman Empire. From the first century AD to the third*, Baltimore.

Whittaker, C.R., 1994: *Frontiers of the Roman Empire. A social and economic study*, Baltimore.

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### **Religious Boundaries in Imperial Rome – The Pomerium Rule**

*Asuman Lätzer-Lasar (University of Erfurt)*

Aim of this paper is to reconstruct the course of the *pomerium* (The sacred boundary) in Imperial Rome using a diachronic mapping to understand its topographical development and the impact of the shifting boundary on the urban setting. By discussing the (only partially visible) religious boundary line against the backdrop of newly arrived deities – such as Magna Mater, Isis and Serapis as well as Mithras – the symbolic meaning of this border line to different social actors (inhabitants, political rulers, priesthood) will be evaluated in concrete comparison. The Roman *pomerium* was a religious boundary line in the midst of the city, dividing the *ager publicus* from the inaugurated district in which significant religious activities could take place, such as the auspices. In Rome, the religious boundary line was only partially marked by *cippi* and was no real “hard line”, but rather a highly symbolical border. As Orlin stressed for the Republican Period, the religious boundary line was fluid and did act differently depending on the cult and/or the attitude of the actors involved in the establishment of the cult. With the growth of the imperium and at the behest of various leading statesmen (e.g. Sulla, Augustus, Claudius, Vespasian, Septimius Severus) the boundary line was relocated several times. Newly arriving deities were appropriated differently regarding the *pomerium*. While the Magna Mater cult was installed inside the sacred boundary line, on the Palatine hill, other deities had to find their place outside of the *pomerium*. Taking archaeological and literary evidences into account and introducing the concept of “urban religion”, which elucidates how the urban setting fostered religious transformations, the presentation will focus on the socio-spatial meaning of the religious boundary.

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### **Planning the Antonine Wall: An Archaeometric Reassessment of Installation Spacing**

*Nick Hannon (Canterbury Christchurch University)*

The topic of the intervals between the Antonine Wall’s installations has frequently been discussed, leading to the production of a number of hypothesised models. With the recent availability of LiDAR data covering the entire World Heritage Site the opportunity exists to conduct a reassessment of this topic. The following investigation argues that through the careful use of the measurements contained within this LiDAR data rather than through its visualisation, new answers to existing archaeological questions can be obtained. It argues that by using a three dimensional approach to measuring the frontier, it can be confirmed that the Antonine Wall’s fortlets are spaced at intervals of one Roman mile, if this mile is based upon the *pes Monetalis* standard. However, if the intervals between forts are considered the situation is much more complicated. This analysis shows that the forts were constructed in three distinct zones with no specific reference to one another and that different measurement standards were employed within each zone. The paper also demonstrates that the forts and fortlets were

not set out in relationship to one another; these were planned separately and form distinctly different systems.

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### **The Dynamics of a Frontier Landscape: The Lower Rhine from 50 BC to AD 500**

*Kai Radloff (Humboldt-Universität zu Berlin)*

The relationship between archaeological research and the analysis of borders is rather ambivalent: borders, often representing the final interpretative result of distribution maps or site catchment analysis, appear quite frequently in archaeology. However, relating these results with political or even ethnic entities is known for being highly controversial. Anyhow, despite this discussion, one historic border is notoriously famous for being defined as a political, ethnical and cultural line of separation: the Roman frontier. Well known from written sources and still easily recognisable by its large-scale military installations, it is one of the “undisputed borders” within archaeology. Interpretations may have changed meanwhile –so is the frontier for example not considered linear anymore but zonal and more permeable in general –but one of its main characteristics, the linear military structures are used in many cases to define the borders of the study regions in Roman period archaeology; this indirectly continues the narrative of being a “military border”. So one has to ask what we actually can learn about the formation process of the Roman frontier by just looking at either one or the other side? The study presented aims at contextualising the Roman frontier by analysing and comparing the landscape on both banks of the Lower Rhine. In doing so, it will focus on the dynamic process of socio-political change, which set in after the Roman occupation. In which respect did the unoccupied territory developed differently compared to the now occupied? Looking mainly on alterations within the settlement pattern, the project seeks to explore how the borderland emerged, persisted and changed between 50 BC and 500 AD up the River Maas and down the River Ijssel.

## Poster Session II

Friday all day, First Floor Balcony, Appleton Tower

### **Identifying and Assessing Roman Imperialism Before and After the Gallic Wars in the Swiss Plateau, Swiss Jura and High Rhine Region**

*Andrew Lawrence (University of Berne)*

After the Helvetii and Rauraci were defeated by Gaius Julius Caesar near Bibracte in 58 BC, they returned to their original territories in modern-day Switzerland where they were most probably subject to a foedus with Rome. Just before Caesar's death, two colonies were founded on the Rhine and Lake Geneva respectively, as a further means of territorial control. Using not only this historical framework as a starting point but also the detailed state of archaeological research for Late Republican Switzerland, which has recently been boosted by new discoveries and investigations, the paper aims to assess and analyse Roman impact for the Swiss Plateau, Swiss Jura and High Rhine Region from the 1<sup>st</sup> half of 1<sup>st</sup> cent. BC onwards. The poster is divided into three parts: In part one, the historical background and the regions and sites in question will be presented. The second part will debate which methods can be used for identifying and assessing Roman imperialism in the archaeological record of past territories. In the third part, an overview on the transformations of the landscapes and key sites of the Swiss Plateau, Swiss Jura and High Rhine regions will be given and the implications of Roman impact in Late Republican/Early Augustan period discussed. The result is a nuanced and heterogeneous picture of early Roman impact in this part of eastern Gaul for the period in question.

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### **The Barbarian Horde in the Roman Imagination c. 120 BC – AD 120**

*Ralph Moore (Trinity College Dublin)*

The 'Barbarian Horde' trope consists of the image of vast multitudes of Northern Europeans on the move, intent on pillaging neighbouring states, sacking or even destroying cities, and often seizing new lands in which to settle. It is an image that can be found throughout representations of Northern European people groups in the art, literature, epigraphy, and visual culture of the Roman and Greek worlds, especially in the period c120BC-120AD. The 'Barbarian Horde' trope represents an interrogation of the ways in which Romans and Greeks perceived and rhetorically represented the peoples of Northern Europe as threatening, and the ways in which this impacted their material interactions. Of particular importance to the field of Theoretical Roman Archaeology are investigations into the material remains of Roman imperial policies towards the conquered peoples of Northern Europe, and what they reveal about the role of the 'Barbarian Horde' trope. These include the establishment of new infrastructures in the Northern provinces to control population movement, the destruction of pre-existing population centres and foundation of new ones, the resettlement of 'migrant' populations, and comparisons of these approaches to those taken in other regions of the empire. The poster will revolve around the migration of the Helvetii and their later treatment as imperial subjects as its main case study. It will examine the relationship between the cultural depictions of them in literature (e.g. *De Bello Gallico*) and art (e.g. the friezes of the Arch of Orange), and the destruction of the Iron Age *oppida* of Bibracte and Bois de Châtel paired with the foundations of Augustodunum and Aventicum (as population centres) and Colonia Julia Equestris and Augusta Raurica as military strongholds in the region, in cartographical relationship to control of space and population movement.

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### **From Dacian to Roman to Romanian? The Political Consequences of Romanization in Ancient Dacia**

*Brittany Stone (University of Kent)*

The movement of the native Dacian population during Roman occupation has been debated by scholars because the answer has modern determining implications over the Dacian land. What happened to the native population of this eastern Roman province over the period from the Roman invasion under Emperor Trajan to the Roman withdrawal under Emperor Aurelian? Three prominent theories have

arisen: some scholars argue that the Romans annihilated the native population during the Dacian Wars; others claim that the Dacians were “romanized” by becoming slaves; it has also been suggested that the Dacians gave the region to Romans after their defeat and were exiled from the area. This disagreement stems from a political discourse in the scholarship that has lasted for centuries, a territory dispute between the governments of Hungary and Romania. The Hungarians state that the Dacians died out or abandoned the territory, leaving it vacant from them to occupy and take over a thousand years after the Roman withdrawal from the province. However, the Romanians, claiming to descend from the Romans and the Dacians, state that their ancestors refused to leave the area and were then invaded by the Hun people. The confusion of population movement caused political strife between the two governments, who used their archaeologists to manipulate and misconstrue evidence in order to “prove” who had been in the region for the longest and thus had the rights to claim the land of ancient Dacia. Today, the Dacian area of Transylvania is under the jurisdiction of Romania but the effects of the region’s unreliable archaeological history are still being felt and have to be acknowledged for an unbiased account of the past to be realized. My poster will highlight this complicated past in theoretical and practical senses, and make suggestions for future research in this area.

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### **Ancient Culture and Modern Ethnicity: Exploring the Politics behind Recreations of Roman Cultural Identity in museums and heritage display**

*Karl Goodwin (University of Kent)*

Displays concerning the Roman period within museums and heritage sites in Britain, Belgium and the Netherlands, have been created in regards to modern political concerns about ethnicity. Thus, we see subjects on the Roman army, trade and religion. Due to this, other features such as ancient perceptions of cultural identity have regularly been left asunder, giving the viewer a false impression that those societies living in the Roman Empire were similar to themselves, and of the same ethnic origin. In spite of the modern scholarship bringing awareness to the wide-ranging spectrum of identities that existed in the empire, this rarely seems to be displayed for a general audience. My research seeks to explore why this is. In this poster, I indicate the preliminary findings of my data collection that asks if cultural identities seen in archaeological research are being depicted to the public; why museums and heritage sites choose to express them or not if so, how they demonstrate variant conceptions of identity; and how displays are related to modern indicators of ethnicity. To do so, my research goes to the source of historical narratives by meeting with curators, archaeological finds experts, museum directors and other museum/heritage workers and specialists. The poster will highlight some answers and issues that have been raised through face-to-face meetings and museum visits thus far. Amongst the common trends is that cultural diversity within the Roman period is not explicitly pointed out and sign posted within historical depictions. Another is that creating narratives concerning identities requires an object led approach, and this for many museums is not possible. These answers therefore indicate that there may be a disconnect between the historical narratives they want to produce, and those which they do, demonstrating a perceived link, either implicit or explicit, between past cultural identities and modern defining criteria of modern ethnic indicators.

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### **Studying the Latinization of the Iberian Peninsula within the ERC project LatinNow. A Sociolinguistic, Archaeological and Epigraphic Approach**

*Noemí Moncunill and María José Estarán (University of Nottingham)*

This poster will present the work carried out by the two research fellows working on the latinization of the Iberian Peninsula within the ERC project LatinNow (The Latinization of the North-western Roman Provinces: Sociolinguistics, Epigraphy and Archaeology), hosted by the University of Nottingham and based at the Centre for the Study of Ancient Documents, University of Oxford. The project aims at providing a new interdisciplinary approach to the phenomena of latinization, literacy and multilingualism linking both epigraphic and archaeological material (e.g. writing equipment) to broader social factors, and it is geographically focused on Britain, Gaul, the Germanies, Raetia, Noricum and the Iberian Peninsula. Given the extent and the complexity of the topic, it has been necessary to adopt

different methodologies adapted to the documentation available in each region. In the case of the Iberian Peninsula, the analysis is determined, on the one hand, by the wealth of the Pre-Roman epigraphic record –comprising inscriptions in at least five different languages–, and, on the other hand, by the strong intensity and development of the Roman epigraphic habit from an early stage. Crossing the results drawn by the epigraphic, archaeological and sociolinguistic tools within our grasp, it becomes evident that each Palaeohispanic culture had a different behaviour when facing and adopting Roman culture. This is why the diachronic and the diatopic progress of the Latinization of the local written cultures during the Roman establishment is one of the key elements of our study, as our poster will show. It is our final intention to identify the proxies of each stage of this process, so as we could determine the pace of the loss of local languages in the Iberian Peninsula.

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### **A Post-human Past in the Past: Romano-British Engagement with the Materiality of the Prehistoric Past**

*Philip Hughes (University of Leicester)*

Debates surrounding the ‘past in the past’ (Bradley & Williams 1998), have prompted investigations into how past people materially presented a consciousness of the past in later societies, particularly under the rubric of memory studies (Van Dyke & Alcock 2003). Recent theoretical approaches derived from what is known as the ‘post-human’ or ‘ontological turn’, however, question the pervasive anthropocentrism of post-processual perspectives and the unhelpful dualisms persisting within western post-enlightenment discourse, most pertinently that of past versus present (Witmore 2009; 2014). Post-humanist archaeology advocates a renaissance of materially-focussed archaeologies, arguing for a return to things (Olsen 2010) where humans, non-humans, objects, places and exist as ‘things’ in a flat ontology. With this in mind, this poster will showcase my doctoral research which investigates Romano-British engagement with the materiality of the prehistoric past by a comparison of two regions: the south-west and the east midlands. Focussing on landscape specific case-studies, it will contend that past and present cannot be considered ontologically separate. Indeed, when we think of ‘Roman Britain’ we often forget that prehistoric materiality was *of* Britain in its imperial context, and it should be more prominent when we critically examine the material culture of Roman provincial imperialism and how identities were relationally constructed through non-human agency. Consequently, prehistoric monuments, features and objects exert an agency as collaborative stakeholders (Van Dyke 2017), actively co-constituting the reality that facilitates the actions of Romano-British people to take place within landscapes that were materially multi-temporal. After all, as Laurent Olivier describes, people at all times live in a ‘world already so saturated with the past that the present hardly has a place of its own’ (Oliver 2011: 30).

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Olsen, B. 2010. *In Defence of Things: Archaeology and the Ontology of Objects*. AltMira: Plymouth.

Olivier, L. 2011. *The Dark Abyss of Time: Archaeology and Memory*. Rowman and Littlefield: London.

Van Dyke, R. 2017. Durable Stones, Mutable Pasts: Bundled Memory in the Alsatian Community of Castroville, Texas. *Journal of Archaeological Method and Theory* 24 (1): 10-27.

Van Dyke, R. & Alcock, S. 2003. *Archaeologies of Memory*. Blackwell: Oxford.

Witmore, C. 2009. The Realities of the Past: Archaeology, Object Orientations, Pragmatology. In B.R. Fortenberry & L. McAtackney (eds.) *Modern Materials: Proceedings from the Contemporary and Historical Archaeology in Theory Conference*. Archaeopress: Oxford, pp. 25-36.

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### **Impact of the Roman Army on the Material Culture of Syene (Aswan, Upper Egypt)**

*Mariola Hepa (Swiss Institute for Architectural and Archaeological Research on Ancient Egypt in Cairo)*

Syene was the most important Roman garrison town in Upper Egypt. While not being situated at the actual border of the Roman Empire, at least until Late Antiquity, the town was crucial for the control of important lines of communication and commerce, both to the Red Sea and towards Nubia in the South. As the Cataract posed a major obstacle for fluvial transport, goods and people travelling upriver had to disembark at Syene and circumnavigate the non-navigable part of the river on the land. Syene thus became an important hub for economic and military activities from the Pharaonic Period onwards. This presentation will focus on the impact of the Roman Empire on an old Egyptian town. In the case of Syene, the primary carrier of this new cultural input was the Roman Army. While epigraphical and historical sources inform us about several (up to three) units garrisoned in the town, no traces of a camp have yet been found despite the fact that a significant part of the settlement has been excavated (93 areas up to now). Obviously, a different model for the dispatch of military units was at work here than in the northern limes-areas of the Empire. In spite of this lack of architectural traces of the military, nearly everyone mentioned on the numerous ostraca found throughout the town has some relationship to the Roman military. It will be shown that a representative part of the small town's population were soldiers or professionals dealing economically with the army and that this can be traced in the material culture. Besides typical parts of attire like fibulae or elements of horse's harnesses, the composition of products that were brought to Syene from other parts of the Empire, mainly represented by pottery, clearly show the changes that took place with the increased Roman presence.

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### **Adoption and Assimilation: Interpreting Mortaria in Roman Britain**

*Julia A. Hurley (Brown University)*

In British contexts, the pottery forms known as mortaria are often interpreted as proxies for Roman cultural influence. Such interpretations are often reliant upon assumptions about their use, particularly in relation to the spread of Roman food ways. A closer examination of the available archaeological and textual evidence, however, belies this reading. The spatial distribution of mortaria over time, as well as the development of specialised production centres in Britain, Germany, and Gaul, represent an integrated web of production and consumption centred at the western end of the Roman Empire, with Britain ultimately becoming one of the most avid consumers of these forms. This observation calls into question their association with 'Roman,' or even Mediterranean, cultural influence. Their remarkable ubiquity within Roman Britain suggests that, on the contrary, mortaria may have been associated with a distinct cultural identity and set of material practices in this provincial context, despite the presumed Roman influence in the form of these initially imported objects. In this paper, I discuss the problems inherent in defining and understanding this category of artefact, and contest assumptions about the use of mortaria as well as their sociocultural significance. Drawing upon archaeological evidence from production and consumption contexts, as well as the limited written evidence, I present an alternative theory for their purpose in a British context. Mortaria serve as a case study for exploring the intersection of culture contact and connectivity and local and regional practice within the Roman Empire, with the aim of understanding how the interaction of these influences affected the development and expression of cultural identities through material culture.

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### **Clashes, Conquest, and Culture: Roman and Gallic Interaction and Identity in the Late Republic**

*Marsha McCoy (Southern Methodist University)*

The Roman subjugation of Gaul in the late Republic challenges long-held assumptions about Roman attitudes toward conquest, identity, and culture. In 120 B.C.E., the Romans defeated Gallic tribes in southern Gaul, and the Roman denarii of 119 B.C.E. display typical "conquest" iconography. In 118 B.C.E., however, the Romans authorized the foundation of Narbo Martius in southern Gaul, the first Roman colony outside of mainland Italy, and its organization likewise deviated from previous Roman practice. Similarly, an issue of denarii appearing in connection with the colony (Crawford, *RRC* 282/1-5) displays features so unique and distinctive in design, iconography, and organization that they indicate a transformation of typical conquest behavior and the creation of a blended Roman and Gallic identity and culture. With the helmeted head of Roma on the obverse and a triumphant Gaul in a biga carrying

a carnyx, the Gallic war trumpet, on the reverse, the coinage contrasts starkly with both the denarii of the previous year and Caesar's later denarii depicting his conquest of Gaul (Crawford, *RRC* 448/2a-3), coinages both aimed at audiences in Rome and not at a cultural interface at the edge of the Roman empire where Narbo Martius was situated. Recent excavations of a Gallic military and religious deposit dating to the time of Caesar at Tintignac, France, indicate a cultural and ritual function for the carnyx as well as a military one, reinforcing the cultural and religious significance of the Narbo coinage's reverse. The Romans exhibit seemingly different approaches and ideologies regarding conquest, identity, and culture toward the Gauls during the late 2<sup>nd</sup> and 1<sup>st</sup> centuries B.C.E. But the evidence of Narbo Martius and its material culture as reflected in its coinage reveals their capacity to transform their own cultural icons, habits, and practices to encompass and engage other cultures, a capacity that may explain the ease with which Gaul was "Romanized" in the relatively short period after Caesar's conquest of the area.

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### **Syncretic Religions in Roman Northwestern Europe**

*Rachel Cartwright (University of Minnesota)*

While the 'romanization' of places is often addressed when discussing the expansion of the Roman Empire, this term does not correspond with the actual changes in religious practices and beliefs. Fluidity in Roman religious beliefs enabled the blending of religions to occur as the empire's borders expanded, rather than the replacement of native practices as seen in other aspects of colonial contact. The syncretism that occurred with the expansion of the Roman Empire shows variability within ritual practices and the influence that one religion can have on another. This paper explores the ways in which ritual practices changed with the development of practices through the transition of Iron Age peoples' religious beliefs into the syncretic religious beliefs of the Roman period. The rituals and practices associated with the native religions of the provinces are examined, and compared to the ways in which those practices changed with the coming of the Romans. In order to examine the blending of these religious practices and beliefs two sites are examined: the Temple of Sulis Minerva in Bath (England) and the Sanctuary of Hercules Magusanus in Empel (Netherlands). These sites have evidence of pre-Roman, Roman, and post-Roman activity, allowing us to observe, archaeologically, the changes in beliefs and practices in response to cultural contact.

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### **The Memory of the Deceased in the British Isles at the Roman Sunset**

*Domenico Benoci (Istituto Pontificio di Archeologia Cristiana)*

Roman Britain's epitaphs can be included in the canonic, classical epigraphy. Epitaphs are carved in stones with, stereotyped forms defined by some standard incipit (i.e. Dis Manibus, Memoria), the dead's name, its job, some information about the memorial, and a routine closure. However, at the end of Roman domination, around the 5th century the beginning of the so called 'British Dark Age', epitaphs change. Written supports change their shape, forms are shorter compared to the old ones, Latin itself undergoes a transformation, but only when it is not replaced by Ogham. The dead's name and its patronymic are what is left of written informations. Many of these changes are strictly linked to native celtic population customs. This speech's aim is to reflect about how British memory perception regarding their deceased has changed due to the fall of Roman Empire. This aim'll be achieved through British late antiquity written and epigraphic sources content analysis, and using the studies of several researchers (i.e. Hübner, Macalister, Okasha, Tedeschi), which have undertaken a collating of funerary inscriptions. Therefore, we'll analyse: written supports and their shapes, Pagan and Christian forms, the language and its alteration, the areas of discovery, in order to provide a more detailed framework about Britain's late antiquity funerary inscriptions and their value as a reflection of a different way of thinking in the late antique society.

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### **Death by Association: Dogs, Bronze and Purification in the Roman Ritual Practice**

*Jason Lundock (Gulf Archaeology Research Institute) and Aaron Irvin (Murray State University)*

Building upon previous research on the association between materials and the objects they are used to represent, this poster will offer a case study on the association that dogs made in copper alloy had with purification. First, it will be established through the use of literary and archaeological examples that both dogs and copper alloy held associations independent from each other with cleanliness and purification ritual in Late Iron Age and Greco-Roman societies in Europe. It will then be postulated that the use of copper alloy in the making of canine images would often have been a willful association between the material and the object that it is depicting, with notable examples from the archaeological record used to support this position. In conclusion, our plans for continuing research on this topic will be suggested and our hopes of its future contribution to the wider scholarly debate on the significance of materiality in ancient finds studies offered.

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### **Elements and Materials of the Artemis Cult in Attica Under Roman Rule (I cent BC-III cent AD)**

*Micaela Canopoli (Università degli Studi di Rome 'La Sapienza')*

This poster will be focused on defining the characteristic of Attic religious scenery connected to the cult of Artemis by identifying which changes occurred under Roman rule, in the period from the I cent BC until the III cent AD. The character of the cult of Artemis in Attica during the Classical period has been investigated through the years, and only a few researchers have considered the post-classical phases. After the Classical period, in fact, this region held a special status as a cultural capital and exemplary sacred landscape from which the Romans derived an endless source of inspiration. In this framework, the importance held by the cult of Artemis and the sheer amount of documentation related to it, make this cult an extraordinary case-study. This poster will make use of the most recent discoveries in the study of Roman Greece and in the approach to sanctuaries for investigating in a fresh manner the best-documented region of Greece and one of its main cults. The results will fill a gap in the existing literature and offer a new way of approaching the relation between conquered and conquering. The objective of this poster will be to investigate the history and rituals of Artemis sanctuaries in Attica starting from the analysis of the archaeological and documentary sources in order to describe which changes characterised the sacred landscape of this region related to the cult of one of the main Goddess of Greek religion, and whether a transformation can be seen related to the establishment of Roman power in the Mediterranean.

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### **Memory of the Sacrifice and Cult to Celtic Deities in Epigraphy and Sculpture in the *Germaniae* during the Roman Period**

*Audrey Ferlut (Université Lyon3)*

The Germanic provinces are marked by both a Celtic and Roman influence. In the Roman period, people of various origin set up Latin dedications to deities wearing Celtic names. Latin dedications belonged to the new habits appeared in the Germanic provinces in the Roman period but, addressing it to deities with a Celtic origin might be the evidence of a persistent Celtic memory. Moreover, performing these dedications, using the practices born in the provinces after the Roman conquest – practices from a Roman inheritance or born with the Roman imperial culture –, was a way for the dedicator to be integrated in the community but also to worship some deities linked, at least by their names, to the Celtic background of the Germanic provinces. This could be evidence of the construction of a specific cultural memory as defined by Jan Asmann. It was important for the more wealthy dedicators to spread the word of their participation to the cult by paying for a monument, notably inscribed altars, but also sculptures, to make the sacrifice and cult to the deities visible in the public sphere. The aim of the paper is to understand how the memory of the sacrifice and cult was presented in the surviving votive offerings. We will see if the dedicators' choice, on perfectly Latin inscriptions, to worship Celtic deities, could be the evidence of a persistent Celtic background as part of a cultural memory. Then, we will attempt to identify if such votive habit shows the adoption of the Roman form of remembering the sacrifice or if some elements from Celtic origin remained or if it was a syncretism of both. Finally, by making a survey of the worshipped deities, we will estimate in which context this cultural memory was more likely to be expressed.

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## **Late Iron Age and Roman Cremation Practices in Britain: A Bio-Archaeological Examination of Cultural, Social and Technological Transitions**

*Emily Carroll (Reading University)*

The Late Iron Age and Roman period in Britain witnessed numerous cultural, social and technological transitions, including increased interactions with the continent. While these processes have received significant attention with regards to discussion of the material culture evidence, it is only recently that bioarchaeological research has considered the role of funerary practices and what they can contribute to our understanding of these processes. The primary mortuary rite during this period was cremation. Although previously thought to contain limited information compared to inhumation burials, current research now recognises that they hold the potential to reconstruct entire funerary sequences, from the building of the pyre, to the final deposition within the grave. Recent methodological advances in the field allow us to infer a wealth of information concerning burning practices and pyre technology, providing an insight into ancient cultural, technological and social practices that could not be achieved before. This paper will present the results of a multi-disciplinary approach, combining archaeology, environmental, osteological and pyrolytic data to explore the Iron Age-Roman Transition from a funerary (cremation) rite perspective. Results indicate that the social attitudes towards this funerary rite differed significantly over time with regards to sex, age and pathology. The existence of difference taxa types across cemeteries reflect a shift in firewood selection practices. Concepts of the body represented by the presence/absence of different skeletal zones change between rural and urban communities, and burnt bone microstructures indicative of varying burning temperatures and intensities is subject to socio-economic status.

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## **Temple Construction and Repair in Roman Britain**

*David Walsh (University of Kent)*

In recent times, scholarship on the decline of ‘pagan’ temples has begun to take a much wider chronological view than just focusing on the fourth/fifth century ‘Christianisation’ of the Roman Empire. What analyses of the quantitative data regarding the construction and repair of temples has demonstrated is that in many areas (such as Italy, Noricum, Pannonia and Gaul) there was a significant decline in investment in these structures long before the reign of Constantine. Additionally, it is clear that such patterns of decline are not uniform across all forms of temple, with certain types, such as mithraea, continuing to be constructed unabated long into the third century. Subsequently, this has raised important questions as to what motivations lay behind support for temples and why this altered in some cases but not others at this time. However, research on temples in Roman Britain remains at odds with other provinces in that little quantitative analysis of building patterns has been undertaken. Indeed, arguably the last major thematic study on temples in Britain was Lewis’ *Temples in Roman Britain* published in 1966. As such, it is now time to draw together much of the available data to illustrate how support for temples in Britain altered across the Roman period, not only to gain a greater insight into the religious life of Roman Britain, but also to explore the extent to which Britain compares with other provinces in this regard. In my proposed poster, I will illustrate the patterns of temple construction/repair in Roman Britain, highlight how this varies depending on the type of temple, and explore how certain examples met their fate. Furthermore, I will demonstrate how this compares to the provinces of Noricum and Pannonia so as to establish the extent to which the data from these frontier regions differ.

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## **Staging the Cult of Mater Matuta and Fortuna at Sant’Omobono during the Roman Republic**

*Daniel P. Diffendale (University of Michigan)*

The site of Sant’Omobono in central Rome, at the south foot of the Capitoline Hill, contains the remains of the Roman twin temples of the goddesses Fortuna and Mater Matuta, which were in use from at least the 5<sup>th</sup> century BCE until Late Antiquity. This sacred precinct was the site of a ritual performance—the

*Matralia*—thought to be performed in secret on the basis of ancient texts. The results of a recent comprehensive study of the site’s architecture, however, demonstrate that a series of reconstructions “opened up” the temples, which started with enclosed *alae* in the early 5<sup>th</sup> c. and wound up surrounded by open colonnades by the 1<sup>st</sup> c. BCE. These repeated rebuildings created new sightlines during the Middle Republic; this opening-up corresponds with the increasing use of the site as a stage for dedications by victorious generals. While literary accounts of the *Matralia* focus exclusively on the participation of *matronae* and the exclusion of enslaved women, literary and epigraphic evidence of dedications within the precinct is exclusively the product of male agency. The architectural trends suggest that the *Matralia* festival, which included some potentially theatrical elements, was more of a spectacle than a mystery carried out behind closed doors. This runs contrary to scholarship that sees the precinct as the exclusive domain of women, and opens up new lines of research on gender and sacred space.

## Session 5a (RAC)

### *Shopping and the Roman City*

Saturday morning, Lecture Theatre 5

**Session organizers:** Mary Harlow (University of Leicester) and Ray Laurence (Macquarie University)

*The study of consumption and production are fundamental features of Roman archaeology, often undertaken with a view to understanding the relationship between these two elements. However, the actions of choice, of purchase and of transportation to the place of consumption are often omitted from most studies. What today we call 'shopping', can be understood both as a process of distribution and, via more post-processual conception, of identity formation. Consumers, of course, needed to purchase goods. There is a wealth of evidence to inform us of ancient conceptions of trust and for the governance or regulation of sale – whether at auction, at markets or from shops/homes. The session will build on earlier work on the subject of shopping in antiquity and, in addition, break new ground by engaging this work with the vast range of material culture associated with Roman archaeology. As organisers, we are very conscious that shopping in the Roman Empire was a cultural practice that needs further definition – for example, most Roman towns had a forum, but did the presence of this space create the conditions for a form of shopping that was as universal, or were fora associated with very different forms of shopping. One of the key, but often not articulated, preoccupations for those who study the Roman Empire is: to what extent is our evidence and our understanding of shopping unique? To help the panel investigate this matter, we will invite a commentator specialising in the study of shopping in later temporal periods to comment on the papers given. This will enable us to see the contrasts and the similarities of shopping as a cultural practice and to comprehend what Roman archaeology can bring to the longue durée of a key aspect of popular culture as well as its regulation by elites across the Empire.*

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### **Shopping, Slavery and the Self: The Origin of the Market in Britain**

*John Creighton (University of Reading)*

This paper explores the emergence of the phenomenon of shopping and shops in early Britannia. Archaeologists focusing on the Roman world often overlook the extraordinary transition involved in moving from a Middle Iron Age of small-scale communities to a world of towns and commodities. In our hillforts and farmsteads communities were small, with only a few select goods moving long distances; most subsistence materials were probably shared and distributed on a communal basis. Transition to a world of shops and monetary usage, fully fledged in places like London very shortly after the Claudian conquest, and the change is remarkable. Yet shops are so 'natural' that in narratives of Roman Britain the change is hardly ever commented on. It is just part of being 'civilised'. This paper focuses on the early archaeological evidence for shops and shopping, but also psychological and social changes involved in moving from one to the other. I will examine ways perceptions of objects change as the supply-chains shifts from objects whose origin has been witnessed and known, to objects from afar where the labour behind their creation is masked (slavery in the mines and quarries, manufactories churning out Samian, olive oil from industrial size presses). The market is examined as a 'disruptive technology' which changes lives, shifting from a world of prestige goods and gift exchange (where objects are personified), to one where anything has a price (where even people can become objects for sale). Indeed the advent of slave procurement in the late Iron Age is seen as one of the fundamental triggers of commodification (based on analysis of other colonial contact situations). The paper will draw on a range of anthropological approaches including those of Graber's development of a *theory of value*, but it also focus on the detailed evidence for the earliest definable 'shops' in London, Colchester, Verulamium and Silchester. In its origin the shift to shopping is far less civilised than we might want to think.

## **Inventing the Shop? On the Early History of the Taberna**

*Miko Flohr (Universiteit Leiden)*

The proliferation of the *taberna* in the cities of Roman Italy from the late Republican period onwards, and the consequent commercialization of urban landscapes throughout the Italian peninsula responded to a spectacular increase in the buying power of urban consumers, and this profoundly changed urban communities. Yet this development could only happen because the key economic institutions—coinage, and the *taberna*—were already a regular part of urban life. This, in turn, raises the question of how these institutions emerged. While there has been quite a lot of debate on the emergence of coinage, the early history of the Roman *taberna* has been much less intensively discussed. Still, understanding where the *taberna* came from, and how it began its march through the Italian peninsula is a key element in reconstructing the history of Roman urban consumer economies. This paper will focus on the earliest history of the *taberna*, revisiting both the archaeological and the literary evidence. It will highlight the relative scarcity of *tabernae* before the mid second century BC, and discuss how in the few places where *tabernae* can be firmly dated to before the Second Punic War, there may seem to be a certain unfamiliarity with the concept—*tabernae* were sometimes being built in strange places, and occasionally in odd numbers. The paper will analyse which parties were involved in the construction of these early *tabernae*, and it will explore the idea that the *taberna* was an Italian (or even a Roman) innovation that did not have direct roots elsewhere in the Mediterranean, and until the later Hellenistic period, had no close parallels; it will be argued that this sheds a rather different light on the later history of the *taberna* in Roman urbanism.

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## **A New Perspective on Prices and Inflation in Roman Egypt**

*Paul Kelly (King's College London)*

The processes used to determine the prices of day to day goods are a fundamental part of the social practice of shopping. Such processes can range from the prices of all goods being fixed by the State to the price of a particular good being determined by individual negotiation within a truly market economy. Diachronic price trends, particularly inflation, reflect and influence social conditions. This paper suggests that the number formats of prices can be used as an indicator of competitive pricing and challenges the commonly held position as to inflation in Roman Egypt. The number formats used for prices of different commodities are analysed to differentiate between 'conventional' pricing in round figures and 'fractional' or 'marginal' pricing where the more complex price format would imply that there was active competition within and between buyers and sellers. As regards diachronic trends, the commonly held view is that the only period of price inflation between AD 1 and 270 in Roman Egypt occurred between AD 160 and 190. The paper demonstrates, through statistical analysis, that contrary to this view there was continued price inflation for commodities such as barley, wine, donkeys and slaves after AD 190. There are high correlation factors between the price trends for these commodities. Capital goods also show continued price increases. The exception to this pattern is wheat where the Roman state intervened in the market and there was thus a co-existence of state-led and private-market economic sectors. The ability of the retail markets to cope with the inflationary conditions of the early fourth century is also assessed. These conclusions have important implications for the current interest in the quantification and nature of the Roman economy since the only reliable price information for the Empire comes from Egypt.

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## **Shopping in Roman Iconography**

*Lena Larrson Loven (Göteborgs Universitet)*

This paper aims to discuss iconographic motifs of shopping in Roman urban contexts. Shopping – selling and buying various kinds of merchandise – was a regular part of urban life and iconographic scenes of shopping appear to be part of the “arte plebea” tradition of Roman art. This seems to have been mainly a Roman tradition with no, or few Greek iconographic predecessors. It appears to have been established in Campania in late Republican times, and to have become more frequent in Roman

Italy of Imperial times, and later this tradition was diffused to the western Roman provinces. The *arte plebea* tradition regularly includes various scenes of work and the examples discussed here will come primarily from funerary iconography but some examples from other artistic genres will also be included. The discussion will comprise scenes from Roman Italy and some provincial example, primarily from Roman Gaul. They will show women and men involved in situations of “shopping” including the marketing, buying, or selling of products from an urban context. To some, such situations would have involved the role of customer and to others it was the role of seller. The majority of examples discussed here date from Roman Imperial times.

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### **‘Commercial Streets’ in Roman Cities: Places of Shopping in Italy between the Mid-Republic and the Mid-Empire**

*Grégory Mainet (Université de Liège)*

We are living in a consumer society and we are used to doing some shopping in “commercial streets” or “shopping centers”. In Antiquity, the Romans' habits of consumption were different and most people only looked for food and what was absolutely necessary. Nevertheless, as the severan *Forma Urbis Romae* shows, the streetscape of Rome was dominated by *tabernae*, which are usually associated with commercial and handcraft activities. We observe the same phenomenon in Ostia where almost all of the streets are lined with shops. In these cities, *tabernae* are distributed across the whole urban fabric from the wider into the narrower thoroughfares. Elsewhere, the situation is a bit different. Shops are mostly located along the main streets, as *Via dell'Abondanza* in Pompeii or *Via del Miliario* in Alba Fucens, while the others are free of *tabernae*. In some cities, like Norba or Fregellae, there are hardly any streets with shops. Obviously, in these cities there were shops inside some buildings, like *macella* and *insulae*, or periodic markets, which left little archaeological evidence, but most of the fixed shops were located along the urban thoroughfares. So, this paper focusses on the “street-as-market” between the Mid-Republic and the Mid-Empire in Centrale Italy. How can we explain the development of these shops along streets? What are the effects of the transformations of the street architecture on street design, on the Roman practice of shopping and on the others marketplaces? Why is the streetscape of Rome and Ostia different from other cities? The increase in the number of *tabernae* along the thoroughfares contributed to designing new spaces of consumption, where goods for sale were displayed through the large doorways which characterised the Roman shops. This paper eventually shows that the commercial streetscape development attests some significant changes in the Roman consumption.

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### **Shopping for Souvenirs: Buying Material Mementoes of Travel in the Roman City**

*Jo Stoner (University of Kent)*

With the modern rise of cheap international travel and the associated mass-produced tokens of holidays, it can seem anachronistic to speak of Roman souvenirs. There exists however extensive evidence from throughout the Roman period of objects bought as mementoes of journeys and of visits to places, people, and events. These objects, many of which survive in the archaeological record, reveal the Roman desire to acquire specific souvenirs, and the presence of associated production and retail to supply this demand. Through reference to the work of Susan Stewart (1993), evidence for a variety of souvenir objects is assessed with the aim of understanding the Roman acquisition of souvenirs as a specifically cultural practice. The paper explores the contexts in which such souvenir items were produced and purchased, through close analysis of the objects themselves, assessment of contextual details, and review of contemporary textual sources. The approach taken to the evidence is holistic; considerable work has been done on souvenirs associated with early Christian pilgrimage, however this paper will show that it was not a phenomenon restricted to either Christianity or Late Antiquity. Instead evidence from locations including Britain, Egypt, and Asia Minor reveals the presence of both secular and devotional souvenirs – and their retail – throughout the Roman period and Empire, bringing to light an understudied but significant element of Roman cultural and economic consumption.

### Session 5b (RAC)

## The Comparative Archaeology of the Roman Conquest: New Research in Gaul, Britain, and Iberia

Saturday morning, Lecture Theatre 4

**Session organizers:** Nico Roymans (Vrije Universiteit Amsterdams), Manuel Fernandez-Götz (University of Edinburgh), and Angel Morillo (Universidad Complutense de Madrid)

*Written sources offer us a crucial dataset for the study of Roman military expansion in the West during the late republican and Augustan period. There is an extensive historical literature on the social, economic and ideological aspects of the Roman conquests and their impact on local societies, mainly written from a Roman perspective. Until recently, archaeology has hardly been able to contribute to this debate for various reasons, including difficulties with identifying the material manifestations of the Roman conquest. This situation, however, has started to change in the last decades for various reasons. The influence of post-colonial theory and the corresponding critical view of imperialism and militarism has enhanced interest in the more negative sides of imperial expansion. Most important, however, is the availability of a large amount of new and better dated archaeological evidence that enables us to develop a more accurate picture of the Roman conquests and their direct impact on the subjected societies. Some regions with high-quality data on rural settlements allow us to discuss the effects of the conquest on local habitation patterns and demography. The newly collected archaeological data may also trigger new research towards ideological aspects of imperialist expansion, like attitudes towards mass violence and genocide, and the role of ethnic stereotyping of enemy groups.*

*In this session we aim to focus attention on the following themes:*

- *Regional studies on the Roman conquest and its short-term impact on local societies in Iberia, Gaul and Germania;*
- *Studies on various military strategies including different forms of violence practised by the Roman military;*
- *The role of ethnic stereotyping and racism in Roman military expansion in the barbarian frontier;*
- *Recent archaeological discoveries of military camps, battlefields or massacre sites that shed new light on the conquest period.*

*We hope this session can shed new light on the both the ideology and practice of Roman militarism and imperialism.*

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### **Burnswark Hill: Another Victim of Imperial Ambition?**

*John Reid (Trimontium Trust, Melrose)*

For the last 50 years, the striking Roman military earthworks and the associated assemblage of Roman ballistic weaponry which surround the hillfort at Burnswark in Dumfriesshire, have been seen within a non-conflict framework (Breeze) which appeared to agree with the identification of 'Roman practice works' in vogue in the 60s and 70s. This interpretation has been challenged by other authors (Keppie, Campbell and Hodgson) who suggest that the site was the scene of significant if not major conflict between indigenous population and the Roman Army. Making novel use of multiple techniques, including LiDAR, field survey, geophysics, non-invasive metal profiling and limited targeted excavation, recent investigations have since uncovered the true extent of the missile barrage and re-assessed the spatial distribution and morphology of the Roman military hardware. When seen against a backdrop of other recent work from the Continent, particularly Gaul, Germany and Spain, a story of strategic Roman intervention is beginning to emerge. We shall briefly explore the previous theories, and the nature of the finds, setting them within a pan-European context. We shall then examine possible links to the centrally-directed campaign of Q. Lollius Urbicus, Imperial Governor of Britannia and architect of Antoninus Pius's only acclamation as Imperator.

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### **Constructing the Archaeology of the Roman Conquest of Hispania. Or not? New Evidence, Perspectives and Challenges**

Ángel Morillo (*Universidad Complutense de Madrid*) and Esperanza Martín (*Freelance Archaeologist*)

In 1998 we organized in Segovia (Spain) the first meeting about Roman army in Hispania, mainly to present the archaeological news that were occurring in this topic during last decades (Morillo, coord., 2002). The denomination "Military Archeology" was provocative in the Spanish scientific panorama of the late 1990s, when studies of this character were looked with some suspicion by many scholar, whose concept of Romasination was still very classic. Since then, "Military Archeology" has become a common denominator used by numerous Spanish researchers to analyze aspects related with the Roman army from the archaeological evidence. Other denominations have appeared since then, such "Archeology of conflict" or "battlefield Archeology", which are part of the conceptual framework of Military Archeology. Studies on this topic have increased in geometric progression during the last 15-20 years, while knowledge has experienced a qualitative leap, particularly in regions like the north and north-west peninsular, in which the army had a much more durable presence. Archaeological news have begun to discover the reality of episodes like the Cantabrian wars, practically unknown from an archaeological point of view decades ago. Also, recent progress in this topic has affected too other regions such as the Northeast, the Levantine coast, the Southeast and the present Portugal. In these areas we begin to distinguish the Roman military evidence in indigenous and Roman Republican settlements. This bibliographical increased has allowed an spectacular change in knowledge on different aspects linked to the actuation of the Roman army in Hispania, renewal of both knowledge itself and methodological approaches. In the beginning of the 1990s the main problem of research was the identification of the military *facies*, but nowadays the focus has been expanded. We are able to integrate new archaeological realities from other methods and techniques and complementary disciplines, such as metallodetection, necessary to locate battlefields and temporary camps, drones and georadar or aerial photography and satellite imagery, LiDAR and others. Today, we can move forward through much more ambitious and comprehensive approaches. However, a simple look of a good part of the work of the last years reveals that the stratigraphies and reports of the most part of the "new" military camps and forts (some of them with more than 20 years of history), remain unknown, so we only scarce notices on news in congresses and scientific journals; Unfortunately, the citations of foreign bibliography are often the same in all works, repeated from one to another publication. "Forget" citations of previous publications of reference, as if publishing without bibliographic apparatus turned the author into a supposed "discoverer"; Also, the Spanish participation in international forums, such as the *Roman Frontier Congress*, is still very limited; the multiplication of new data is sometimes accompanied by a surprising conceptual and interpretative poverty, due to the lack of knowledge of the models and of the baggage necessary to arrive at historical conclusions, the ultimate objective of all archaeological work; Working with the computer to try to identify camps from satellital and LiDAR images through the observation of straight and angled lines in the landscape (supposedly corresponding to the defensive systems of Roman camps) is limited to presenting itself as a career background between different researchers and teams, claiming the authorship of the discovery; in most cases the new forts identified by satellital and LiDAR images are dated without a direct observation in the field through specific surveys or interventions that clarify its identification and chronology. Settlements of this type in the Cantabrian Mountain range are systematically dated during the Cantabrian wars, forgetting the

continuity of the military Roman army in this area. The question would be which is the real contribution to the historical discourse that we can obtain from the discovery of a possible new military precinct if we are not able to determine its authenticity and its chronology. It is necessary to reflect about these challenges and try to redirect them as much as possible. Only in this way we can advance in a real knowledge of the process of conquest of Hispania, more balanced and dialectical between Roman and indigenous, far from personal and ideological postures.

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## **Archaeological Reconstruction of a Mountain War: Augustus' Campaigns in the North of Hispania**

*Eduardo Peralta (Real Academia de la Historia), Jorge Camino (Consejería de Presidencia del Principado de Asturias), and Jesús Torres-Martínez (Universidad Complutense de Madrid)*

Scientific research on Augustus's wars against the last independent populations in the Cantabrian Mountains, the Cantabrians and the Asturians, has only been made possible through systematic archaeological exploration on the northern side of the mountains in Cantabria and Asturias, and on the southern side in the region of Castilla y León. Because of the archaeological surveying and excavations by several teams of archaeologists who have joined the search for the sites of the *Bellum Cantabricum* et *Asturicum*, we now know of a considerable number of Roman campaign camps, indigenous oppida that were attacked and several strategic penetration routes. This series of evidence forms an archaeological ensemble of exceptional historical importance that has enabled a reconstruction of the nature and location of a large part of this war, veritable topomachia for the systematic control of the rugged geography on both sides of the mountains, in addition to determining the different phases of the Roman conquest. The first and foremost Roman camps and indigenous oppida were discovered and

excavated in projects directed by the authors of this paper, with the authorisation of the Spanish institutions responsible for archaeological heritage. The most recent research has revealed new sites within this conflict, even in the most remote high mountain areas. It has thus established the true scale and originality of this methodical war for the control of northern Hispania, and in this way corroborated with archaeological data the reliability of classical sources as regards the impressive Roman military force and the resistance of the populations under attack.

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### **The Cantabrian Wars: New Archaeological Perspectives from Western Asturias and Monte Bernorio**

*José Costa-García (Universidad de Santiago), Joao Fonte (University of Exeter), Jesús García-Sánchez (Universiteit Leiden), David González-Álvarez (University of Durham), Andrés Menéndez Blanco (Universidad de Oviedo), Jesús F. Torres-Martínez (Universidad Complutense de Madrid), Manuel Fernández-Götz (University of Edinburgh), and Antxoka Martínez-Velasco (Sociedad de Ciencias Aranzadi)*

This collaborative paper presents the results of two research teams working on the Roman conquest of northern Iberia. The last few decades have witnessed a spectacular increase in archaeological data from the Cantabrian Wars (29-19 BC), including the discovery of numerous Roman military camps, evidence for the violent destruction of indigenous hillforts and even some battlefield scenes. This new research will be summarized based on two case-studies: 1) The area of Northern Palencia, with the destruction by the Roman army of the fortified *oppidum* of Monte Bernorio; 2) and western Asturias, where new remote sensing technologies have led to the discovery of several Roman military camps.

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### **Attack, Defense, Action, Reaction. The Indigenous Resistance to Romanisation through the Walls in the South of the Iberian Peninsula from Cato to the Flavians**

*Andres Maria Adroher Auroux (Universidad di Granada)*

In the last three decades the studies about the rural tower structures in the Baeticae and South of Tarraconense provinces was developed from the absolute ignorance to a complete and complex ensemble of items that belong to a very differences nature....so structural than chronological point of view. Then, from the so called in the end of last century, *turres hannibalicas*, allowing considerer them dating from the 3rd century BC to the more recents studies speaking about many walls in rural spaces, or changes in the places of tower structures in the landscape, or, even new technical evidences of using complex systemes of defense so in the roman ramparts to iberic ones...new techniques shared in all of cultural grupes beeing together in iberian peninsuale between the 3rd to 1st century BC: roman, cartaginian and iberic people. The procesus of conquest by the roman army was not so equal from an archaeological or cultural point of view. The differences in the reaction of indigenous people allows to the roman army the answer at the levels of each case. So, we can see in the middle of the rural landscape isolates houses with defenses, or even walls entouring several houses (*oppida*), but not always related to the military structures. Sometimes we found this littles *oppida* related with a mean ways between two places, as a port and an importan city innerside. Os perhaps in a metallic sources, as iron, but also cupper or silver and gold. Then, these *oppida* bécame a *castella* where the power of control for the rest of the country was longer then military one, so, tax control, comercial control, and even prioduction control of the indigenous people, so in agricultura and cattle raising. Today we know that the expression of the roman repression to the iberic people was made by differents ways, buta ll of them reflexed in the landscape, taken place of the several cultural expression of each tribal societies, so the roman experience before the iberian conquest, was used to better develop the control of natural sources, but also the social and economics ones, from the structure of the societies fighting with the roman army, trying to deserved from the external impacts that, alongmg the years, will destroyed the natural development of the indigenous cultures in the south of iberian península.

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### **Hannibal’s Wall, High Mountain Archaeology and New Entries over the Establishment Period of Roman Hegemony in the Alps**

*Michel Aberson (Université de Lausanne), Romain Andenmatten (Service des bâtiments, monuments et archéologie du Canton du Valais), and Aurèle Pignolet (Archeodunum SA)*

Several fortified sites from the period of transition between the Iron Age and the Roman period were found between 2600 and 3050 meters above sea level in the Greater Saint Bernard area. As part of the third and last Archaeological Research Campaign on Hannibal’s Wall (RAMHA, 2014 to 2016), these sites have been the subject of preliminary investigations in order to better contextualize the new discoveries of high mountain archaeological sites of the region. The drystone wall of the Hannibal’s Wall is nearly 270 meters long and leans against a precipice to mark a protected area of nearly 3500m<sup>2</sup>. Some thirty hut foundations and fifty shelters in the moraines at the periphery of the site have been partially explored. More than eighty late-Republican shoe nails, items of military equipment, ornaments, tools, ceramics of indigenous tradition, numerous food remains, a playtable and an inscription in "Lugano alphabet" are the main vestiges that were brought to light until now. Farther south, on the frontier ridge passes, can be found several large drystone walls, a fireplace at the foot of one fortification, nails of late-republican shoes, one fibula, one iron toe, coins and wooden poles. Thus we are permitted to propose contemporary dating for at least four sites. Between the civil war and the establishment of Roman hegemony, these positions, probably occupied by auxiliaries troops, cast a new light over the late-republican period in the Alps. Questions also arise beyond purely tactical military reasons because further unfortified installations, dating from the same period, are to be found located at similar altitudes, whether in Valais (CH), Aosta Valley (IT) or Val d'Ossola (IT). The interdisciplinary research program RAMHA integrates many partners, universities and laboratories. Its results will be published in a monograph and an interregional development is envisaged in the coming years.

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### **Conquest, Genocide and Ethnic Stereotyping. Investigating Caesar’s Actions in the Northern Germanic Frontier Zone**

*Nico Roymans (Vrije Universiteit Amsterdams)*

Caesar’s conquest of Gaul has preoccupied many generations of classicists, historians and archaeologists. And yet there have been new developments in the past decade that have given a fresh impetus to the study of the Roman conquest of that region:

- a. The impact of post-colonial theory, which has generated a new set of research questions

- b. The steady growth in archaeological data, allowing us to make better-informed statements about the direct impact of Caesar's military campaigns
- c. The emergence of new forms of critical reading of Caesar's narrative, yielding new insights about the role of the Commentaries as a political communication tool.

I would like to use this new impetus in a renewed study of Roman imperialist expansion in the northern Germanic frontier zone of Gaul, with a particular focus on the theme of mass violence and genocide. I will distinguish three types of mass violence against groups that resisted Roman domination: a. the mass enslavement and deportation of an entire group; b. the massacre of a community, including its non-combatant population, after a battle; c. the systematic annihilation of a dispersed community by employing a scorched earth policy. The archaeological record is clearly quite different for these different types of mass violence, as are the methodologies needed to gather and interpret the evidence.

In the first part of my presentation I will briefly discuss examples of the above types of mass violence and show how archaeology can provide us with a more accurate picture. We can point to a growing body of archaeological evidence that seems to confirm that Caesar's conquest indeed had dramatic consequences for groups in the northern Germanic frontier zone. Next, I will address the question of just how exceptional Caesar's use of mass violence was in this zone. It is worthy of note that virtually all instances of genocide described by Caesar were concentrated in the extreme north of Gaul. There are several interrelated explanations for this: the absence of central places or heavily defended oppida that Caesar could use as military targets; the employment by indigenous groups of a strategy of decentralised, guerrilla-type warfare in the frontier zone; and of course Caesar's desire to avenge the successful ambush of a Roman army by the Eburonian leader Ambiorix.

But we are left with the intriguing question of whether the extremely violent actions in this zone were also influenced by anti-Germanic ethnic stereotyping and racism on the part of the Romans, including Caesar himself. We can point to his highly negative framing of Germanic peoples as a warlike, semi-nomadic race who posed a threat to Rome and to civilisation. In contrast to that of Gallia and Britannia, his geography of Germania can be characterised as a 'geography of exclusion'. The groups inhabiting the northern periphery of Gaul maintained a lifestyle that closely matched his general stereotyping of Germani. Although Caesar is often described as a pragmatist, I will argue that his negative stereotyping of Germanic ethnicity may well have influenced his military decision-making and the moral justification for the genocidal actions of the Roman army in the northern frontier zone.

### **Roman Attitudes to Empire and Imperialism: Recent Trends in Scholarship**

*Hannah Cornwell (University of Birmingham)*

Roman historians and political commentators were remarkably self-aware of the issues that the creation and maintenance of their empire brought, frequently presenting Rome's hypocrisy of imperial rule through the mouths of the victims of empire: the most obvious examples being Tacitus' Calgacus (Agr. 30-5-6), Sallust's Mithridates (Histories 4.69M), and Caesar's Critognatus (BG 7.77). There existed an uneasy tension between a certain code of ethical conduct, which the political elite upheld, at least ideologically, in their attitudes to empire, and the various forms of violence meted out as part of Rome's practice of imperialist expansion. Understanding the nature of Roman imperialism has, of course, been a constant focus of Republican and early Imperial history. Studies in this area have swung from a deep focus on Rome's internal structures and debates, to the application of realist IR theories seeking to view Rome as part of a much larger system. As Jonathan Prag has recently stressed a major challenge to our understanding of Roman imperialism is the issue of the conceptualization of Roman foreign policy, and indeed our exploration of the issues has been understandably shaped by the sources that historians have engaged with. The rhetorical engagement with ideas of empire in the literary sources has potentially obscured ideological aspects of imperialist expansion. This paper serves as a way into the debates from an historical perspective, to provide an overarching framework of recent trends as background for the following presentations of newly collected archaeological datasets.

## Session 5c (RAC)

### *The Mediterranean Countryside in Late Antiquity (AD 300-600)*

Saturday morning, Lecture Theatre 3

**Session organizers:** Angelo Castrorao Barba (Università degli Studi di Palermo) and Lucy Grig (University of Edinburgh)

*In recent years, research on the late antique countryside has burgeoned considerably. One notable feature under analysis has been that of 'non-linear dynamics' in settlement, economic and cultural patterns. In some regions, but also within micro-regions themselves, we can observe the co-existence of apparently opposing phenomena, such as on one hand the exploitation of luxury and wealth and the continuity of the imperial tradition and on the other the emergence (or re-emergence) of particular settlement types (vici/secondary settlements or fortified sites), according to a changed political/economic context and/or to the emergence of the Church as a new actor/power in the landscapes of Late Antiquity. The aim of this session is to discuss and re-think the framework of the Mediterranean countryside during Late Antiquity analyzing and comparing the heterogeneity and complexity of the following issues across different regions of the Mediterranean basin:*

- *Growth of elite wealth and the emergence of luxury in rural villae*
- *Increase in agricultural production and long-distance trade*
- *New roles of secondary settlements (e.g. 'villages' and stationes/mansiones, dispersed and polynuclear settlements)*
- *Crisis and breakdowns in specific regional contexts*
- *Insecurity and militarization of the landscape*
- *Christianization of rural areas*

*Contributions regarding specific geographical areas focusing on the key themes of the sessions will be strongly encouraged (single excavations contextualised in a wider territorial context; regional and micro-regional data from survey and landscape archaeology projects) as well as broader overviews.*

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### **Resilient Communities in the Late Antique Countryside? Paradigms of Interpretation in the Light of New Archaeological Evidence**

*Tamara Lewit (University of Melbourne)*

Archaeological evidence of the late antique Mediterranean countryside has long been interpreted within historiographic paradigms which followed contemporary fashions. Following World War II, rural change was envisaged in catastrophic terms which centred on the destruction of villa life by "Germanic invaders", the impact of war, and the characterisation of early medieval European re-purposing of villas buildings as "squatter occupation". With the post-colonial transformation of ideology in the third quarter of the 20th century, interpretations expanded to greater inclusion of different patterns in non-European regions such as Africa and Syria, and the pendulum swung to a "continuist" interpretation which downplayed notions of crisis brought about by the end of an empire. In recent years, a new explanatory framework has been proposed in the form of climate change, another paradigm clearly reflecting its contemporary context. This paper proposes that contemporary thinking on "resilience" is a useful concept to apply to the late antique Mediterranean countryside, allowing us to acknowledge evidence for real crisis - including mass migrations, a degree of climatic change, and the collapse of central government in the West. At the same time, a notion of resilience also allows us to examine how changes in the countryside - such as, in Africa, new directions of trade, or, in Europe, changed farming practices including greater diversity of crops or exploitation of micro-regional ecologies - allowed communities to adapt to new circumstances and to survive during a time of radical change.

**Dynamics of Settlement and Landscapes in the Arverni City at the End of Antiquity (Auvergne, France). Contribution of Systematic Surveys and Palaeoenvironmental Studies (4th-6th c. AD)**

*Frédéric Trément (Université Clermont Auvergne)*

The systematic surveys and palaeoenvironmental studies carried out on a large scale in the Limagne plain and on its mountainous margins over the past two decades have contributed to a profound renewal of our perception of the dynamics of land use and landscapes during the end of Antiquity and the beginning of the High Middle Ages. These researches show the strong resilience of the *villae* network set up at the beginning of the Early Empire in the basin of Clermont, for many of them, moreover, at the location of sites already occupied at the end of La Tène. The most important of these establishments, of which about forty have been recognized, obviously constitute the very stable and durable framework that structures the countryside surrounding the chief town within a radius of more than twenty kilometers, where the “black lands” were already celebrated for their legendary fertility in the 5th c. AD by Sidonius Apollinaris, bishop of Clermont and great landowner. The degree of stability of these *villae* appears proportional to their initial size. As for the other types of establishments (interpreted as “farms”), they mostly disappear during the 3<sup>rd</sup> c. AD. We find here a pattern of evolution very similar to that which was recognized in Languedoc and in Provence, where it was interpreted as the sign of a movement of land concentration. The spatial analysis of the settlement pattern and the palaeoenvironmental data reveal, however, that this apparent stability conceals profound changes in the modalities of regional development, from which we begin to better perceive spatial cycles and geographical dynamics. These developments appear to be conditioned, in particular, by the differential development of secondary agglomerations (*vici*) and by a rebalancing of productions for the benefit of livestock. Archaeo-environmental research conducted in the peripheral mountains (Haute Combraille, Livradois, Forez) echoes these hypotheses, highlighting an important cycle of land clearing linked to the development of pastoral activities at the turning point of Late Antiquity and High Middle Ages.

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**Tuscan Countryside in Late Antiquity (4th-6th c. AD): Settlement Patterns, Christian Topography and Economic Trajectories**

*Stefano Bertoldi (Università di Pisa), Gabriele Castiglia (Pontificio Istituto di Archeologia Cristiana), and Angelo Castrorao Barba (Università degli Studi di Palermo)*

The study of the territory corresponding to present Tuscany is highly dependent on the so-called “Tuscan model”, formulated more than twenty years ago (Francovich, Hodges 2003). One of its main points, for Late Antiquity, was that of a settlement-economic system anchored to a “decay of the system of villas and the organization of rural populations between the 5<sup>th</sup> and the 6<sup>th</sup> centuries A.D., with a progressive accentuation of the crisis” (Valenti 2004). Numerous studies and researches produced in recent years allow us today to further refine this paradigm, highlighting new trends at multiple reading levels. New data emerged from both detailed and large-scale analysis of the human schemes (in relation to the decay of the ‘villa system’ and secondary settlements), the progressive diffusion and structuring of the rural ecclesiastical network, changes in trade networks and their subsequent interaction with the different hierarchies of settlements. This paper intends to engage in dialogue with all of these topics in order to define new reading keys of the Tuscan rural areas for the centuries running from the 4<sup>th</sup> to the 6<sup>th</sup> c. A.D.: we will present general frames, both in terms of political-administrative mutations occurring in Late Antiquity, as well as in rural settlements, economy and the diffusion of the *cura animarum*. A particular focus will be on the basin of the Ombrone River, for which we have a rich data set, on the one hand, of a detailed listing of local and imported production and excavation records and, on the other hand, of the various types of settlements. In this view emerges a significant role of economic traction played by the so-called ‘secondary settlements’, both along the coasts and the *hinterland*, in addition to the overwhelming development of a new class of materials, the so-called “*ingobbiata di rosso*” – imitating the ARS archetypes – which represent a marker of new economic/commercial trajectories related to changes in rural settlement patterns.

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### **The Site of Mesumundu (Siligo, Sardinia) and its Territorial Context**

Marco Milanese, Maria Cherchi, Alessandra Deiana, and Gianluigi Marras (Università di Sassari)

The theme of *statio* or *mansio* is a topic of the historiography of Roman Sardinia, whose study is mainly based on the Antoninian Itinerary, or other ancient written sources, and on the distribution of road milestones. Often the identification of sites mentioned in sources with sites or archeological artifacts areas appears in the studies, although the impact of archaeological research don't seem to be fully effective. Often Roman road tracts are referred to main routes or *diverticula*, but the depth of these material documents remains somewhat weak, as the spatial, planimetric, functional and stratigraphic characterization of the hypothesized settlements, and sometimes the same identification. If only the *mansio* of San Cromazio (Villaspeciosa) and the *praetorium* of Sas Presones (Bonorva) have been investigated in recent years, a different pattern could emerge from excavations in Mesumundu (Siligo), pluristratified site, of which one phase is related to a *mansio* located on *A Karalibus Turrem*, main street of Roman Sardinia. On this site, rarely subject to methodologically acceptable interventions, various elements lead to this interpretation: its position on the ancient road, its rural environment; the presence of a small Roman thermal complex and an aqueduct that exploited the hot waters produced by local vulcanization; the absence of an extensive settlement; traces of a possible sanctuary dedicated to the sources. Since 2013, archaeological surveys have aimed at evaluating site extension, its stratigraphic potential, and capturing stratigraphic sequences to define its chronological phases. Recent geophysical and archaeological surveys have allowed us to know the extension and articulation of the site and to include it in its territorial context, subject to repeated archaeological surveys.

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### **Settlement Trends and Rural Economy in a Late Antique Countryside of Western Sicily: Interpreting Data from the Contessa Entellina Survey**

Antonio Facella (Scuola Normale Superiore di Pisa)

The Contessa Entellina Survey is a systematic intensive archaeological survey carried out by the Scuola Normale Superiore (Pisa) in the municipality of Contessa Entellina, in inland western Sicily. The surveyed area is 136,4 square kms. Around 65 sites active between the 4th and 6th centuries AD, and 20 off-site finds, have been identified. Taking into consideration not only the 'raw' data of the number of sites identified as certainly active in each century, but also the different average density of "index fossils" per century, it has been possible to reconstruct more reliable settlement patterns and trends. Furthermore, the analysis of material culture has shed light on several aspects of the economic dynamics in the micro-region. In this paper, several specific issues will be discussed, among which:

- the presence, in the investigated area in Late Antiquity, of a dense and hierarchical rural settlement pattern, and the gradual rarefaction of medium- and small-sized sites (possible evidence of progressive concentration of land property) in the context of a long-lasting tendency to the increase and development of nucleated settlement (*vici*);
- the possible reconstruction of a dynamic and rather complex Late Imperial rural landscape, resulting from a productive framework that was more diversified than expected, and probably included the exploitation of *saltus* and *silvae*;
- the economic and trade relationships between the investigated area, coastal southwestern Sicily and North Africa;
- the apparent development, in the 5<sup>th</sup> century, of a tendency towards a grain monoculture, possibly playing a role in the crisis of dispersed settlement that affected the area in the late 5<sup>th</sup> - early 6<sup>th</sup> century;
- the appearance in the 6<sup>th</sup>-7<sup>th</sup> centuries, for the first time since the Augustan Age, of new settlement and land-exploitation strategies, which carried into the 8<sup>th</sup> and 9<sup>th</sup> centuries.

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### **From Villa to Kastron: The Changing Landscape of Late Antique Epirus**

Will Bowden (University of Nottingham)

This paper will discuss the excavations at the site of Diaporit in Albania, where a major *villa maritima* was abandoned in the 3rd century before being reoccupied as an Early Christian centre in the 5th century. The new site included a church apparently focused on three graves, presumably originally containing the bones of founders or those perceived to be martyrs (although found to be largely empty on excavation). Other facilities included a bathhouse, a chapel and storage facilities and the complex has been interpreted as a centre of pilgrimage. The site was relatively short-lived and seemingly fell into disuse in the 6th century, although was clearly recognised as a cult locus into the later Middle Ages. The paper will outline the findings from this site emerging from the post-excavation work and put the results in the context of discoveries from the nearby town of Butrint and the wider landscape of late antique Epirus. This was a region that saw the widespread development of Christian monuments in the 5th and 6th centuries prior to dramatic transformations in the later 6th century when rural settlement was apparently reconfigured around numerous fortified hill top settlements. The paper will also examine approaches to the late antique countryside in Greece and the Balkans, in particular looking at the conclusions drawn from field survey.

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### **Rural Architecture and Settlement in Late Antique Tripolitania**

*Nichole Sheldrick (University of Oxford)*

Like many regions of the Roman Empire, the architecture and settlement of rural Tripolitania underwent a significant transformation in Late Antiquity. During the first three centuries AD, the dominant form of rural structure across much of Tripolitania was the 'open' farm building, characterised by large, open-air farmyards or courtyards. However, beginning as early as the 3<sup>rd</sup> c. AD, this form of building was increasingly abandoned in favour of the fortified farm buildings (or *gsur*) that have come to define the Tripolitanian countryside, and which often formed the focal point of small, nucleated settlements. In the pre-desert and *gebel* regions, the construction of impressive fortified towers and ditched compounds, often with decorative embellishments and associated settlements suggests that these regions continued to prosper well into Late Antiquity, and while many of the characteristics of these buildings had defensive roles, they were also still well-suited for a continuation of the same types of agricultural and pastoral activities which had been taking place in the region for centuries. The fate of the coastal regions, however, previously home to many large and successful olive farms, appears to have been more closely tied to the declining urban centres, and in the region of Syrtica to the east, permanent settlement seems to have been more or less abandoned. This major transition in the architecture and settlement of the region has often been seen as having been related to two major factors: a decrease in the stability and security of the region and increasingly stratified social structures. However, a regional analysis and comparison of the different trends in the development of fortified architectures and changing settlement patterns in different parts of Tripolitania shows that this also reflects the divergence of the economic and socio-cultural trajectories of those areas in Late Antiquity.

**Workshop 5d-1 (TRAC)**

***The Praxis of (Roman) Archaeology: Alienation and Redemption***

Saturday morning, Lecture Theatre 2

**Workshop organizers:** Jake Weekes (Canterbury Archaeological Trust) and Andrew Gardner (University College London)

Chaired panel discussion/debate on the topics of: divisions of labour, hierarchies and alienation; “field archaeology” and academia; specialisation and silo mentality; Anthropologies and Sociology: there IS such a thing as society. The workshop will be focused around an introductory presentation and six talking talking-point papers

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**Introduction to the Workshop: Alienation in Commercial and Academic Archaeology and the Role of TRAC**

*Andrew Gardner (University College London) and Jake Weekes (Canterbury Archaeological Trust):*

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**Divisions and Hierarchy within and between Commercial/Academic Archaeology**

*Francesca Mazilli (Cambridge Archaeological Unit)*

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**The Role of Volunteers and the Archaeological ‘Profession’**

Marta Alberti (Vindolanda Trust)

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**Challenges Facing Early Career Academics**

Lacey Wallace (University of Lincoln)

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**‘Roman Britain’ as a Conceptual Framework within Development Control Archaeology**

Sadie Watson (Museum of London Archaeology)

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**Making Archaeology Appealing – Recruitment and Engagement in Research**

Andrew Gardner (University College London)

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**The Place of Research in the Planning Process**

Jake Weekes (Canterbury Archaeological Trust)

Followed by open conversation moderated by the panel.

## Workshop 5d-2 (TRAC)

### *A Place for an Experiment in Roman Studies*

Saturday morning, David Hume Tower LG.09

**Workshop organizer:** Tatiana Ivleva (Newcastle University)

**Chair/lead discussant:** *Heather Hopkins (Independent Scholar)*

*When Dana Millson was organising a session on experimental archaeology at TAG held in Southampton in 2008, she was faced with the problem of whether there is a place for the experimental archaeology in a theoretical conference (Millson 2010, 1). The answer was yes, as experimental archaeology is very much stuck in-between theory and practice, using scientific applications to understand how things were produced and used in the past but at the same time drawing its inspiration from various theories and hypotheses, and individual subjective knowledge based on the careful observations of objects and practices. Yet, the experimental archaeology has somehow been of secondary importance in Roman studies and does not feature prominently in Roman archaeology. While few institutions in UK or on the Continent teach experimental archaeology module in their archaeology degree, many Roman archaeologists are cut off from any experimental aspects, which became the sphere of knowledge of an experienced artisans or reenactors with interest in the Roman past. For instance, when Roman Military Equipment Conference held in St. Andrews in 2016 had reenactors displays on horseback riding skills and cavalry warfare, majority of the delegates were not versed in wearing a Roman helmet or riding a horse or throw a javelin, albeit having a deep knowledge about the types of pilum and styles of horse decoration. This workshop explores the place and status of experiments in Roman archaeology in theory and practice. The following discussion points are brought to the fore:*

- *The status of Roman experimental archaeology: a dying art, already dead, or in the revival stage;*
- *The view on Roman experimental archaeology: is it at all necessary for academics to be deeply involved with experimental archaeology to understand the technologies and practices of the Roman past (e.g. know how to make or throw a javelin, for instance);*
- *The classicist view on experimental archaeology: accessibility.*

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## **The Past and Future of Experiments on Roman Studies**

*Lee Graña (The University of Reading)*

From the onset of archaeological interpretation, experimental archaeology has played a significant role. From military equipment to culinary practices, or 3D reconstructions to architectural projects, experiments have proven indispensable in bridging facts with theories. The existence of conferences and organisations based on experimental archaeology demonstrate the success of independent studies, however, when it comes to the Roman period, little has been done to develop this often overlooked sub-discipline. As theoretical archaeology gains traction, the need to pool ideas and methodologies in experimental archaeology is becoming apparent and, to our benefit, has culminated in this session. The following paper is a brief introduction to the subject of Roman experimental archaeology, how this subject has developed, the direction in which it seems to be heading, and the redirection we may want to apply. This conference workshop presents the perfect opportunity to determine the level of support for continued research into this sub-discipline. It is also a perfect opportunity to introduce delegates to the larger workshop being organised by the TRAC committee for experimental archaeology in Roman studies. In September of 2018, this interim TRAC and Vindolanda Trust joint workshop will be taking place at Vindolanda. To this end, the second half of this paper will outline the aims and objectives of the subsequent event. It is the intention of this paper, as of this session, to attract Romanists of all disciplines within archaeology and to encourage the integration of experimental archaeology in future studies.

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## **Towards a Set of guidelines for Roman Re-enactors and Academics**

*Bill Griffiths (Tyne & Wear Archives & Museums)*

In 1999 the 12th International Roman Military Equipment Conference was held at Arbeia Roman Fort in South Shields on the theme of 'Re-enactment as Research'. The conference explored the common ground between re-enactment and research. The final paper was an attempt to summarise the conference and produce a set of guidelines for academics and re-enactors to support each to facilitate the other to gain most value from their work. I would like to re-present the conclusions of this paper and discuss how the area has developed, or not, over the following almost 2 decades. This will include a consideration of the 2017 reproduction of an entire Cavalry Turma for a special event in Carlisle – very much an experiment as much as a show – as part of the Hadrian's Cavalry project along Hadrian's Wall World Heritage Site.

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## **Contrasting the Roles of Experience, Experiment and Expertise in Experimental Archaeology: A Case Study Reconstructing the Dyeing Industry of Pompeii**

*Heather Hopkins (Independent Scholar)*

Before this study began, the conflicting understanding of the scale of the dyeing industry of Pompeii was based on a theoretical understanding of dyeing imposed on a single superficial survey of remains. The practical capabilities of the apparatus were unknown. Through experimental archaeology, this study used full-scale replicas of the apparatus, leading to a practical understanding that informed a new survey. The remains were reappraised, altered apparatus were identified and misidentified 'workshops' discounted. The first digital replication of an artefact of multiple materials allowed several years' use to be simulated in minutes. The dyeing industry was shown to be small enough to rely on imports. Throughout, this study prompted wider questioning of the roles of experiment and experience in understanding an artefact, its use and its capabilities. It was demonstrated that valid, decisive findings could only come from direct practical knowledge, in this case an understanding of the dyeing process and how the apparatus operated, but to gain this knowledge or explore indirect factors specialist academic and craft expertise were required. The original study was grounded within archaeological, classical and engineering disciplines, while retaining integrity, accessibility and relevance to each. Findings were challenged by professional crafts people and re-enactors, who demonstrated flaws through immediate practical demonstration. Reflecting together allowed deconstruction and reformation of the study, subsequently leading to exploration of previously unappreciated factors, such as the novel choice of lead for heated dyeing kettles being chemically ideal. Contrasting the different specialist knowledge required during the study demonstrated the balance needed in approach. Participants should endeavour to gain practical experience and experiment to better understand an artefact, but should also embrace wider expertise that may guide them. Experimental findings must be embedded in academic, crafts and practical experience, without which attempts to recreate authentically could lead to unintentional loss of integrity.

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## **Out of the (Academic) Frying Pan, and into the (Experimental) Fire! –Experiments on a Roman Hypocaust from the Perspective of a Classical Archaeologist**

*Claire Walton (Butser Ancient Farm, Hampshire)*

Over 30,000 school children of primary school age visit Butser Ancient Farm every year to enjoy a range of practical hands-on activities designed to support classroom learning. The author argues that such meaningful and stimulating experiences should not be the preserve of childhood, and that as adults, exposure to such practical experiences can only serve to enhance the existing body of theoretical knowledge. To this end the author, who studied classical archaeology, aims to conduct a series of experiments in the winter of 2017 using a full scale functioning hypocaust system. This system is part of a Romano-British villa house constructed at Butser Ancient Farm in 2003 and is closely based on archaeological evidence. Initial results will hopefully allow us to draw conclusions on the following:

firstly, the benefits of experimentation against a background of pre-existing theoretical knowledge and whether a practical knowledge of how the system operates (for example, how long it takes to reach optimum temperatures) potentially changes the current view on use of domestic space in such villas; secondly, how the engineering principles of this particular design of hypocaust operate and how the results compare to experimental data compiled by others. How skilfully can we operate the system? Can we replicate the conditions likely to have been experienced in the villa? Following the cross-disciplinary experimental work of Prof Hannes Lehar of University of Innsbruck I too will be seeking the assistance of heating engineers, woodsmen and potentially university students over the duration of the project. Finally, I will briefly discuss best practice in experimental work and how research of this nature should be seen as a critical element in the 'toolkit' of accepted approaches to understanding and interpreting archaeological evidence. In other words, through doing, we are obliged to approach our chosen subject matter from a different perspective. Rather than being a passive onlooker, we become an active participant and in doing so, our brains operate in a different way – no longer the traditional academic way, but the practical Roman way!

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### **Off with their Heads! Broken Figurines and Religious Practice in Roman Britain**

*Matthew Fittock (The University of Reading)*

While experimental methods have gained the attention of archaeologists over the past few years so too has object fragmentation and its implications for examining the nature of social practices of past societies, although unfortunately the potential of both methods has still not fully realised in the course of studying Roman objects. Building on initial work examining the fragmentation of monumental statuary and my similar work on smaller portable ceramic figurines, this paper puts forward a methodology combining experimental techniques with fragmentation studies and presents the results of a series of experiments breaking replica ceramic (pipe-clay) figurines on different types of surface and by hand that replicate the different breakage patterns of the Roman period figurines found in Britain and explores how they might have been broken. The results of these experiments not only help identify and differentiate between natural and non-natural breakage patterns, but also indicate whether such patterns were caused by accidental dropping or by deliberate actions, such as striking specific body parts, like heads of Venus figurines, on hard surfaces to intentionally remove them. These subtle breakage patterns give a direct insight into the specific nature of religious beliefs and ritual practices in Roman Britain, while the experiments are themselves a solid baseline from which to develop the methodology further in order to attain even more representative and informative results.

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### **Recreating Roman Ballistic Warfare: Challenges and Opportunities**

*John H. Reid (Trimontium Trust, Melrose)*

There have been several previous attempts to quantify the capabilities of ballistic weapons available to the Roman army. These have met with variable success, particularly those which relate to the performance and capabilities of slingers (*funditores*). As a consequence, theories and models have been postulated which are not always consistent or convincing. We present data from our own observations and experiments with this weapon. These studies which focus on the qualities of the ammunition, and the general range and accuracy of the sling which may put a different spin on previous results. In particular, we highlight the challenges and opportunities which are presented by the engagement of a range of enthusiasts to recreate the use of this weapon. We contrast the results achievable by different groups and consider the implications for existing theories which range from the ballistic effectiveness of the weapon, to the structure and layout of hill forts.

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### **Following the Steps of the Roman Republican Legion. The Experience of the Via Scipionis Project**

*Eduard Ble Gimeno (Universitat de Barcelona/ARTIFEX S.L.), Jose Miguel Gallego Canamero (ARTIFEX S.L.) and Pau Valdes Matias (Universitat de Barcelona)*

Between 8th and 22th of September we carried out the Via Scipionis project for the second time. This project tries to re-enact the historical march that Publius Cornelius Scipio (later known as Africanus) conducted with two legions from the mouth of the Ebro River until Cartagena (former Roman Cartago Nova or Punic Qart Hadasht). Following the steps of their predecessors, ten volunteers dressed like Roman legionaries or Iberian auxiliaries marched more than 450 km in 15 days (an average of 30 km per day). The project combines archaeological research, historical dissemination and tourist promotion, so may be classified as Experimental Archaeology, Re-enactment or even Living History. In fact, we tried to answer some archaeological questions regarding the carriage of military equipment or the impact of long marches and a legionary diet on the health and the body (specially the feet) of the Roman citizens. And at the same time, every evening we opened the gates of our humble camp and showed the visitors how was the Roman republican army and the life of a legionary caught in the middle of a forced march. However, in this paper we don't want to get stuck on the results. We also want to focus on the problems and the challenges that we confronted and how we tried to overcome them (if possible). Questions such as how can we combine being the subject of a strenuous experiment and afterwards taking an active part on a talk for more than an hour? Can we test Roman footwear when most of the time we are forced to walk on paved roads? And apparently the most important one, can we infer from our own experiment that the Scipionic march from the Ebro to Cartagena was really done in seven days?

**Session 5e (TRAC)**

**Second General Session**

Saturday morning, Lecture Theatre 1

**Chair/ Lead discussant:** Lucia Michielin and David Rose (University of Edinburgh)

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**‘Ad Caeli Regiones Apte’: Reconsidering the Importance of Orientation to the Functional Capacities of Rooms in Roman Houses**

*Evan Proudfoot (University of Oxford)*

The use of spaces in Roman houses and their accordance with ancient textual nomenclature is a subject of perennial interest for archaeologists and historians. Following on from the pioneering work of scholars over the past quarter century, classical archaeologists have largely moved away from attempts to assign naively deterministic, function-based labels to particular rooms and room types. The predominant modern consensus, while not wholly agnostic, prefers to conceptualise domestic space in terms of flexibility and multi-functionality, as well as gradients of public and private. Some degree of nuanced problematisation is warranted, yet there is a discernible tension between the conviction with which labels for rooms and spaces were used by classical writers and the reticence with which modern scholars are willing to identify them archaeologically. Nowhere is the discrepancy between ancient evidence and modern interpretation more apparent than in the case of seasonally-constrained utilisation capacities for domestic space. Ancient sources are replete with references to seasonally and diurnally differentiated rooms and apartments, built and routinely used for a particular range of fixed functions. Though scholars have purported to look for archaeological evidence of this differentiation and largely come up empty-handed, their approach has been stymied by an over-reliance on Vitruvian precepts rather than architectural principles, and consequently a fruitful avenue of research has prematurely been abandoned.

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**Painted Decoration and Memory on the Streets of Pompeii**

*Taylor Lauristen (Christian-Albrechts-Universität zu Kiel)*

Although decorative programmes applied to the interiors of houses in Pompeii have received the bulk of scholarly attention over the years, the city’s streets were no less adorned with wall paintings. While many of the images discovered on the facades of Pompeian buildings date to the years immediately prior to the eruption of Vesuvius, paintings and inscriptions produced decades and even centuries earlier also appear. Indeed, unlike domestic interiors, which were often refurbished to keep up with aesthetic trends, house facades remained rooted in the decorative themes established during the 2nd century BC, when simulating ashlar masonry and other architectural elements was en vogue. In figural scenes, Hercules and Venus, deities closely connected to the city’s past, appear alongside Roman historical icons such as Romulus and Aeneas. A painting of the latter’s flight from Troy on the doorpost of workshop even inspired a passer-by to scribble the first line of the Aeneid below. In fact, *arma virumque cano* (or some variation thereof) represents one of the most common graffiti found on Pompeian facades, suggesting that the Augustan emphasis on Rome’s cultural history had longstanding public appeal. Other inscriptions and *programmata* recall electoral campaigns and public games hailing from the reign of Nero; a handful, written in Oscan, even evoke the pre-Roman past. In AD 79, all of these words and images could be seen on Pompeii’s streets, producing a network of visual stimuli that consistently referenced the city’s complicated history. This paper will explore the full range of this imagery in greater detail and offer some thoughts as to why Pompeians, in particular, might want to preserve shared social memory.

## **A GIS-Based Attempt to Trace the *Domus* and its Context in Late Antique Rome**

*Juhana Heikonen (Aalto University of Helsinki)*

The Roman *domus* has been mainly discussed in the context of Pompeii and Herculaneum. This discussion has led to generalizations on Roman urbanity. Generalizations on urbanism based on provincial towns are as accurate as researching modern Brighton to make assumptions of the future super cities in the Pearl River Delta. This paper discusses of a project to tract changes of the Post-Severan Rome as a GIS-based study according to literary, archaeological and epigraphic evidence. After the Pre-Severan peak, the Roman population started to decline and the building within the Aurelian Walls of vast *domus*' and *horti* begun. The relation between the public and the private urban space of the early Empire changed when the patrician classes moved away from the Roman Forum, still attending their magisterial and administrative duties most probably from their urban homes within the walls (when not residing somewhere in their landed properties). The change in the steep decrease of population and the eventual Roman *disabitato* can be best traced from the remaining shards of the Severan Marble Plan up to the famous 1748 G. B. Nolli Map. Of the hundreds of *domus* known, only a few are known from sufficient archaeological data. In many cases, the only sources are the inscribed *fistulae*. However, unlike in Pompeii, even if the surviving literary evidence is in favour of Rome, the archaeological evidence most definitely is not. One of the best group of archaeological sources are the late antique *domus* that lay underneath the ca. 25 early Christian churches. The renaissance maps, the churches, *fistulae* etc. are but few alternative means to trace the Roman late antique urbanity. The aim of this paper is to put all this information into a new socio-topographic context using novel cartographic techniques based on literary, archaeological, epigraphic evidence and later graphic evidence.

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## **A Dwelling Perspective on Roman Roads and Routes through the Trimontium Landscape**

*Simon Clarke (University of the Highlands and Islands)*

This paper seeks to apply some of the ideas of anthropologist Tim Ingold to movement through the hinterland of the Roman military complex at Newstead in the Scottish Borders. As a general principle Ingold rejects the notion that humans sit outside nature and have manufactured their cultural environments from an initially empty space. Instead, he puts forward the so-called “dwelling perspective”; that humans are engaging with their environment, not as omnipotent outsiders, but as a constituent part of it. Somewhat against this perspective Ingold has characterised wheeled transport and hobnailed boots as insulating travellers from a full sensory experience of place, and paved roads as “stepping machines” to which individuals surrendered agency and a sense of engagement as they moved over territory. While primarily focused on the post-Enlightenment experience of journeys in modern Western Society, it is clear that Ingold sees this as equally applicable to the Roman road network. He contrasted such “destination orientated travel”, with premodern / pre-imperial, indigenous approaches to movement and encounter during journeys through landscape, as a much more immersive experience of the environment. Detailed examination of how Dere Street developed at Newstead before, during and after the Roman occupation, calls into question Ingold’s bold generalisations about the implications of paved surfaces. Far from insulating the traveller from experience of place, Roman roads were an integral part of the evolving environment. While engineered roads to some extent directed and controlled the behaviour of travellers, individuals nevertheless retained considerable agency, in their choice of route and in how they travelled along particular roads. In addition, the construction of engineered roads was itself a considered response to the environment (topographic and cultural) by the commissioning authorities. They were very much interested in users’

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## **Tarraco, Scipionum opus? Iberian Heritage in Roman Tarraco**

*Pablo Varona (Institut Català d'Arqueologia Clàssica, Tarragona)*

Contemporary historiography has generally considered that the Roman colony of *Tarraco* (today Tarragona, Spain), capital of the province of *Hispania Citerior* (later renamed and reorganized as *provincia Tarraconensis*) and one of the most important Roman cities of the Iberian Peninsula can trace its foundation to the year 218 B. C. when, in the midst of the Second Punic War, the Scipio brothers

and their army erected a military base close to a harbour to serve as the bridgehead of Rome in Iberian territory. Even Pliny the Elder called *Tarraco* “the work of the Scipios” (Nat. His. III, 21). However, archaeological research from the past quarter century has proven that the city itself existed and thrived long before the Roman arrival. A large Iberian *oppidum* most probably called *Tarakon* occupied at least since the fifth century B. C. what would be the lower city and western suburb from the Late Republican period onwards. Its memory, despite what the plinian sentence could indicate, was alive in several aspects of everyday life. This Iberian substrate can be detected in areas as different as the urbanism and morphology of some parts of the city, epigraphy and its intrinsic demographical aspects, and certain religious practices and cults. Consequently, this paper aims to explore how this indigenous substrate survived through the Romanisation of the city, even though it was considered a model of Roman city, even “an example for all provinces” in the words of Tacitus (Ann. I, 78) due to its efforts to be the perfect *simulacrum Romae*.

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### **Cultural Transmissions in the Hauran (Southern Syria) through a Religious Network**

*Francesca Mazzilli (Cambridge Archaeological Unit)*

When considering sanctuaries, recent scholars have mostly concurred on a strong local cultural identity. In my monograph I argue that rural cult centres were the result of contacts of the people of the Hauran with various cultures. However, none has so far discussed the following research questions that this paper aims to address: how did a religious belief or an architectural style spread on a regional scale? Is their distribution the result of movements of agents that carried a specific cult or architectural style? Can we map and trace these phenomena? This discussion will be aided by using network analysis, which enables us to investigate interactions between sites, cultural transmissions and movements of people on a regional scale. The paper sets the basis for a first network analysis applied to the study of sanctuaries in the Roman Empire, which aims to widen network analysis to new stimulating fields of Roman archaeology. This paper will emphasise that sanctuaries are excellent objects of study to explore cultural transmissions and undertake a network analysis as they show a variety of traits that more than two sites could have shared and we can use them to create relations between sites. These are: styles of temples' layout, capitals, architectural decorations, deities, type of names of dedicators and the writing of the inscriptions. Another factor to consider is agents who could have brought a trait from one site to another: they could have been major temple's benefactors identified as the elite of the region. Only superimposing the networks based on multiple common traits and the network based on the presence of the elite in different sites we can gain a more comprehensive understanding of cultural transmissions. Therefore, this paper will ultimately provide the benchmarks of how to apply analysis to the study of sanctuaries.

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### **Agency and the Scale of Social Memory along the Southern Coast of Britannia**

*Nicky Garland (Newcastle University)*

The practice of social memory, defined here as collective ‘remembering’, plays an important role in the formation of new societies in the Roman provinces. This paper argues that practice theory, particularly the examination of past agency and social structure, has much to offer an understanding of how social memory was propagated from the pre-Roman to early Roman period. Central to the understanding of past practice is the consideration of human action and bodily experience and the locales in which were activities were undertaken, i.e. the ‘places’ of interaction in the inhabited landscape. Through the application of practice theory and the examination of past landscapes this paper examines how social memory was articulated and reinforced at specific but varying social scales; namely the family unit, religious group and settlement community, and how these scales are reflected in the material aspects of memory (i.e. material culture, structural remains, the understanding of landscapes). However, the key to identifying how social memory was articulated in this period is to investigate how routine and repetition occurred over time, to determine which pre-Roman activities were retained and which were discarded in favour of other traditions. This paper focuses on the role of social memory in identity formation in Southern Britain. Despite the physical boundary of the English Channel, people and ideas

moved from the Continent to Britain (and vice versa) prior to and following the Claudian invasion of Britain. While new social trends had a major impact on the social transformation of 'British' peoples the origins of these groups remained pivotal in the creation of a new provincial society in the late 1st century AD. Using Historic Environment Record data, this paper will demonstrate how remembrance was undertaken by different facets of society and, together, how this affected the formation of collective identity in this region.

## Session 6a (RAC)

### *Rome and the Partho-Sasanian East: 700 Years of Neighbourhood and Rivalry*

Saturday Afternoon, Lecture Theatre 5

**Session organizers:** Eberhard Sauer (University of Edinburgh)

*From the first century BC to the seventh century AD, the Roman Empire (and its eastern and western successors in Late Antiquity) faced no neighbour in Africa or Europe controlling territories of even remotely comparable size – with the possible exception of late antique realms in the thinly settled steppe zone. In the east, by contrast, the Partho-Sasanian Empire was in control of much more fertile land and large cities than any of Rome’s neighbours elsewhere. Always of formidable size, in Late Antiquity the Sasanian Empire expanded further – eventually even exceeding the shrinking Roman world in geographic extent. The session will explore relations between the Roman/ Eastern Roman Empire and its Near Eastern neighbour, from commercial contacts to military confrontation. Defensive and offensive strategies the two empires employed, where they faced each other, and military infrastructure in the frontier zone will also be central to our session. We hope to move away from isolationist perspectives, examining the Roman Empire or small parts thereof at the exclusion of neighbouring cultures. The broad focus, with an emphasis on Rome’s largest and most organised imperial rival, will help to contextualise the empire’s economic standing and military might in a global arena.*

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### **Landscapes of Control and Connectivity: The Northern and Western Frontier Landscapes of the Sasanian Empire**

*Kristen Hopper and Dan Lawrence (Durham University)*

As part of the Persia and its Neighbours project, the frontier landscapes of the western and northern borderlands of the Sasanian Empire (c. 3<sup>rd</sup> – 7<sup>th</sup> century AD) have been investigated by a team from Durham University. The team has integrated data from a variety of sources, including remote sensing data and field survey, working across modern national boundaries at an unprecedented scale. On its northern frontier in northeast Iran, the Sasanian Empire faced the threat of incursions from complex nomadic polities. Here, the Sasanians invested heavily in defensive infrastructure, transformed the urban and rural settlement pattern, and significantly impacted the connectivity of the region as a whole. This can be compared to the western frontiers of the empire in Georgia, Azerbaijan, Iraq and Syria. In these cases, the Sasanians were navigating complex relationships with the equally powerful Roman/Late Roman Empire, local kingdoms, and in some cases nomadic groups. Landscape investments on a significant scale, like those seen in northeast Iran, are attested in Azerbaijan and Iraq. However, the landscapes in both Georgia and Syria offer us a different perspective. This paper will compare and contrast Sasanian frontiers in these different regions and address the complex interplay between local, regional and imperial factors in the production of ancient landscapes.

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### **Binding Traditions: Mortar Technologies used in Roman and Sasanian Fortifications of the East**

*Riley Snyder and Martina Astolfi (University of Edinburgh)*

For more than nine millennia, lime-based cementitious material have been used throughout the world. Because of its renowned strength and endurance, great attention has been paid to the wonders of Roman concrete and the structures they produced such as the Pantheon and Colosseum in Rome. However, large infrastructural projects using similar material technologies were not only used beyond the Empire’s frontiers but continued with great success long after the fall of Rome itself. Recent archaeological fieldwork at Dariali Fort in Georgia and Gorgan Wall in Iran have produced a wealth of information about Sasanian fortifications in late antiquity. With the aim of identifying specific mortar technologies and chronological differences in construction phases through mortar recipes, samples were collected and examined using petrographic and chemical analysis. The subsequent quantitative and qualitative data indicates a continuity in mortar technologies amongst structures at these sites.

Furthermore, these results represent a keen understanding of quality lime production as well as the selection of chemically reactive aggregates that provide strength, water resistance and longevity— a continued tradition and feature of Roman concrete itself. These results, when compared with Roman and Byzantine lime-based mortar technologies, signify clear similarities in resourcefulness, technical ability and environmental reliance of the Sasanian builders charged with construction of these defensive structures.

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**Military Infrastructure in South-West Lazica. Remarks on Distribution and Building Techniques**  
*Emanuele Intagliata (University of Edinburgh) and Davit Naskidashvili (Ivane Javakishvili Tbilisi State University)*

Ancient Lazica (western Georgia) enjoys an enviable strategic location that made it an attractive borderland to control in the 6<sup>th</sup> century, guarding mountain passes through the Caucasus and direct access to the Black Sea coast. For most part of the 6<sup>th</sup> century, Lazica, a Byzantine vassal state after 522, proved an important battleground in the fight between Rome and Persia. Numerous forts are reported by written sources to have been restored or constructed anew by Emperor Justinian during this period. Seven of them are mentioned in Justinian's novel 28; the existence of some of these is confirmed by other written sources like Procopius (e.g., *De Aed.* III, vii, 5-9) and Agathias (*Hist.*, II, III, and IV). A number of them have been identified tentatively on the ground and excavated, while others, e.g. Lysiris, await discovery. The presence of a large number of forts along the coast, demonstrates the priority of Rome to prevent the Persians from reaching the Black Sea coasts and, therefore, threatening not only nearby coastal towns, such as Trapezus (northeast Anatolia), but also Constantinople. This paper will reflect on the distribution pattern of forts in south-west Lazica based on already published material and new data collected during a recent survey in the provinces of Guria and Ajara. Its aim is to reflect on the factors that have contributed to choosing the location of known military installation. The paper will also present the preliminary results of the architectural analysis of some fortification circuits, with specific focus on the site of Tsikhisdziri (Petra?), where scientific studies on brick and mortar have been able to shed more light on the different phases of occupation of its citadel.

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**The Problems of Romano-Buddhist Art**  
*Warwick Ball (Independent Scholar)*

The 'Roman' influence on much of the Buddhist art of Afghanistan and north-western India – Gandharan art – in the first few centuries AD is self-evident; how it arrived there is less obvious and has prompted wide speculation. Its predominant elements are the Buddhist religion given expression by Classical art patronised by a dynasty originally from China. It is in the sculptural arts that Roman influence is mainly reflected, in particular some aspects of the iconography of the Buddha image. Speculation on the arrival of such influences so far from the Roman West have revolved around three possible channels: a natural evolution from the art of the Hellenistic kingdoms that were established in the region after Alexander's conquest; direct influence by groups of itinerant artists from the Roman world; and indirect influences stemming from Romanising elements in Parthian and Sasanian art. This paper will examine the art itself and all three theories concerning perhaps the most extraordinary episode in the history of Rome.

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**Why the Women? Assessing Female Iconography in the Sasanian World**  
*Eve MacDonald (Cardiff University)*

The Sasanian kings employed diverse cultural imagery on their public monuments. These images tend to display both continuity with the Parthians and a conscious echoing of the Achaemenids while also employing a vocabulary of Greco-Roman traditions. Sasanian Queens occasionally make an appearance on public/state monuments in sculptural relief and/or inscription. The complex imagery of the founder of the Sasanian dynasty Ardashir, and his son Shapur make use of both the image and name of their queens on public monuments and later kings sporadically used the image of women on coinage

as well. This was in stark contrast to the Sasanian predecessors, the Parthians and Achaemenids, where we have no evidence of women on public monuments. This paper aims to examine material evidence for the public imagery of women in the early Sasanian period within this context. It will explore modes of interpretation of female imagery and ask whether the appearance of women equals a shift in status or if the concurrent appearance of female deities from the Zoroastrian tradition in Sasanian imagery played a part in the increased visibility of women in the public sphere. Assessing the imagery of women in the Sasanian world and their relationship to kingship and authority, we can perhaps begin to picture the way female imagery was received in the Sasanian world view. Important for this paper will be the prominence of imagery of Imperial women in the contemporary Roman sphere under the Severans and the possibilities that arise of influences and connections in the complicated multi-cultural iconography of the Ancient Near East from the 3<sup>rd</sup> century onwards.

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### **Serving the Emperor or Serving the Great King: Two Different Fates for a Vassal Monarch**

*Leonardo Gregoratti (Durham University)*

Roman historians used the terms “kingdom” and “king” referring to the Parthian political entity. Modern scholars choose to add the term “empire” to the discussion using both definitions almost interchangeably. The idea of a “Parthian Empire” though more accurate and effective in describing some of the main peculiarities of the Arsacid state, can be sometimes misleading due to the comparison with the Roman Empire, the “empire” par excellence. Since Pompey’s establishment in the East of the Roman province of Syria in 64 BC, Roman leadership decided to exert its political influence and territorial control through maintaining on their positions of local power a series of client monarchs loyal to the Republic and then to the Empire. Only during the last decades of the 1<sup>st</sup> century and the very beginning of the 2<sup>nd</sup> century AD the Roman client kingdoms system was gradually replaced by a more direct form of land control. But what did happen on the other side of the Euphrates that is to say in the area under Parthian political control? Since their conquest of Mesopotamia the Parthians, like the Romans, decided to maintain most of the local political subjects they met in their campaigns westwards. Unlike the Roman system, there the vassal kingdoms never ceased to be one of the most important means the Great King had at disposal to control key areas of his vast dominions. Parthian vassal kingdoms were never permanently annexed. They grew in importance gradually playing a relevant role in the Empire’s structure until one of them, Persis, became strong enough to take control of the whole Parthian state. Thorough an attempt of comparison between the two vassal kingdom systems this paper aims to spot differences and similarities between the two rule systems employed to face similar problems.

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### **Imbalance of Power? Persian and Roman Military Efforts in Late Antiquity**

*Eberhard Sauer (University of Edinburgh), Jebrael Nokandeh (National Museum of Iran, Tehran), Hamid Omrani Rekavandi (Iranian Cultural Heritage, Handcraft and Tourism Organization, Gorgan), and Davit Naskidashvili (Ivane Javakhishvili Tbilisi State University)*

Both the Sasanian and (Western and Eastern) Roman Empire faced powerful opponents in the north, they both employed mobile field armies, they both used natural barriers for defensive advantage, and they both erected and manned chains of fort and linear barriers to meet this threat. Yet, the differences in their defensive efforts were perhaps of greater significance than these similarities. In terms of scale, the longest Sasanian fort-lined wall was more than three times longer than its longest late Roman counterpart. The grandest purpose-built late antique military fortress in the Persian world was well over ten times larger than any late Roman military compound. In terms of innovation, late antique Persia pioneered long mud brick walls, lined by canals and heavily defended campaign bases, probably as safe retreats for mobile field armies, whilst the Roman army had largely abandoned the construction of marching camps. There is considerable variety and innovation too in the late Roman world, notably in fort design, but overall one observes a reduction in fort size and a decline in capabilities. An awareness of such differences, and the underlying causes, is essential for understanding the divergent fate of west and east in late antiquity.

- Why the Western Roman Empire was conquered by its northern opponents and the Sasanian Empire, despite temporary setbacks, was not.
- Why in the early seventh century the Persians succeeded in temporarily conquering much of the richest provinces of the Roman Empire.

Is there a core of truth to the decline and fall of the Roman Empire, unfashionable as it may be?

## Session 6b (RAC)

### *Words and Pictures: Reading Verbal and Visual Messages from Sanctuaries in the Roman West*

Saturday Afternoon, Lecture Theatre 4

**Session organizers:** Ton Derks (Vrije Universiteit Amsterdams), Thomas Schattner (Deutsches Archäologisches Institut, Abteilung Madrid), and David Wigg-Wolf (Römische-Germanische Kommission)

*The focus of the session will be on the relationship between text and image. This is a theme that indeed has a topical dimension following the replacement since the 1980s of the logocentrism prevalent from Luther's times by Baudrillard's 'visual turn', and subsequently a 'pictorial turn' with the 'increasing mediatization of reality in postmodernism' (Mitchell 1994, 106; Squire 2009). Geographically we will concentrate on the Roman Atlantic provinces of the Roman Empire from Britannia to western Hispania, as they present a range of commonalities relevant to the topic: on the one hand the lack of writing, on the other a pictorial world that was not particularly pronounced. In this context pictorial monuments that include writing are in all respects a ground-breaking development. While literature on the relationship between text and image in the Graeco-Roman world is now extensive, and the subject has even become a research field in its own right, no more than marginal attention, if any, has been paid to peripheral areas of the ancient world such as Britain or the Iberian peninsula, and then has been restricted to funerary monuments (e.g. Beltrán Lloris 1999, Hope 1997). Besides presenting a review of the more general development across the Empire, in the session individual case studies will consider regional peculiarities. By restricting the topic to sanctuaries, the phenomenon is given a spatial context that is a priori suited like no other to providing a graphic illustration of the relationship between Roman verbal culture on the one hand, and native pictorial tradition on the other, as well as combining it with religious historical questions where applicable.*

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### **Temple Decoration in Italy in the Late Republican Age**

*Stefano Tortorella (Università degli Studi di Rome 'La Sapienza')*

Current research on exterior decoration of sacred buildings in general shows a major interest in sculpted decorations than in paintings, mosaics, stuccowork and architectural terracottas. My study aims at filling this gap, by means of a thorough analysis of the several kinds of decoration of the Roman temples in Italy in the late Republican age (with particular regard to the second and first centuries BC). This paper will consider the so-far known examples of temple decorations in Roman Italy. Purpose of this study is to determine whether painted decoration was specific to temples and to what extent temple paintings were similar to the marble revetments in sanctuaries. According to the worldwide-spread Hellenistic fashion, temples were often decorated with wall paintings. Decorations in the First Pompeian Style occurred earlier, and were followed by Second-Style patterns and schemes. I will take into account murals in cellae as well as outer walls and portico decorations of sacred buildings. In my analysis, both archaeological data and ancient literary sources will be considered. Most descriptions of Roman decorations in ancient sources concerned temples either constructed *ex manubiis* by the *virii triumphales* and painted anew or sacred buildings which were just re-decorated. Such decorations must have been "triumphal" paintings, *tabulae pictae* or painted inscriptions. To this extent, literary sources are remarkably precious in the study of temple decoration, as they provide us with important information on not-so-far preserved ornaments. In addition, I also aim at understanding if wall paintings in sacred buildings differed from paintings found in the private sphere, which could have been influenced by decorative patterns of temples and sanctuaries.

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### **Gabii in Texts and in Facts: The Tale of a Lost City**

*Daniel Roger (Musée du Louvre) and Steve Glisoni (Institut National de Recherche en Archéologie Préventive (INRAP))*

The city of Gabii, 20 km from Rome, is now a piece of the rural Roman landscape. But in ancient times, at the center of an area contained within walls as old as Rome's and at the top of a slope of an ancient volcano, the city of Gabii was dominated by one of the first sanctuaries built in the Latium on the pattern of the Hellenistic religious centers such as the one of Athena in Lindos or the Asclepeion on Kos. In the middle of the 2<sup>nd</sup> century BC, this monument delivered a clear message to all people travelling along the via Praenestina from Rome to Praeneste : in cities subdued by Rome and impaired by minor civil rights, there was still a way open to local elite in need of recognition and able to fund architectural achievements remodeling urban landscape. These ambitions were obviously backed by Roman authorities as a vector of unification in old Latium. But indeed, as of the 1<sup>st</sup> century BC, Gabii was renowned for being a ghost city, a place deserted by its inhabitants, disappearing in the shadow cast by the metropolis. Writers such as Cicero, Propertius, Horace, Dionysus of Halicarnassus, and Lucan used to spout about the vanishing of the city, an alleged fact that later made hard to understand Gavin Hamilton's discoveries of 1792-1793: the Scottish antiquarian unearthed imperial portraits of first rank and prestigious inscriptions that told another story. Since 2013 an excavation led by a team from the musée du Louvre has taken place between the sanctuary of Juno Gabina and the so-called forum excavated by Hamilton. The results obtained by the French archaeologists give clues to interpret the contradiction that lies between literary and epigraphic evidences and between texts and the visual effect sought by local elites of Gabii throughout times.

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### **Cosmologies of the Middle Ground: Reading Iconography of the Divine on the Roman Frontier** *Ton Derks (Vrije Universiteit Amsterdams)*

Iconographic representations of gods from the Roman frontier provinces, whether in stone sculpture, terracotta or bronze, have been approached from different angles and their interpretations have been quite diverse. While earlier studies classified the material in categories of 'native', 'Roman', and 'Gallo-Roman' deities, more recently Webster (2001), in a critical article on the Romanization concept, argued that a creole perspective on these iconographic representations would offer 'insights into the negotiation of post-conquest identities from the "bottom up" rather than from the perspective of provincial elites.' Others (e.g. Van Andringa 2011) strongly argued against the idea of hybrid pantheons, coexistence, borrowing, and fusion. In this paper I will review these apparently contrasting approaches and try to reconcile them. My starting point is a bilingual votive altar dedicated by a Palmyrene family in Rome which bears both text and figural representations. While the reading of the texts and images themselves is relatively straightforward and unproblematic, the understanding of their mutual connections is a true challenge. The Roman example may serve as a methodological warning against simple one-dimensional categorical interpretations. Drawing on recent work in the field of religious anthropology, the final part of the paper will explore the implications for our views on the panthea of the communities in the continental northern frontier.

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### **Image, Word, and Empire at *Aquae Sulis*** *Eleri Cousins (St Andrews)*

By the 3<sup>rd</sup> century AD, the sanctuary at *Aquae Sulis* (modern Bath) was one of the most visually and architecturally elaborate spaces in Roman Britain. One of the few sanctuaries in the province which has produced both abundant visual and epigraphic material, its combination of an emphatically classical environment with an intensely place-specific cult grounded in the veneration of the central hot springs render it a compelling case study for the construction of sacred space in a provincial setting. This paper examines the means through which iconography and stone epigraphy at *Aquae Sulis* came together to both reflect and construct the integration of the sanctuary and its worshippers into the wider Roman Empire. It begins by investigating the role of imperialism and conquest in the creation of both the iconography of the early sanctuary and of its later epigraphy, focusing primarily on the imagery of the 1<sup>st</sup> century temple pediment, and on how the cult of *Sulis* was combined with religious engagement with the emperor in epigraphic dedications by members of the military community, primarily soldiers and their freedmen. It then turns to the ways in which later iconography, in particular monuments which

draw on the visual language of Jupiter Columns from the Rhineland, as well as small-scale dedications which reflect local British iconography, demonstrates Aquae Sulis' increasingly organic incorporation into the artistic and religious networks of the north-west provinces. This is also linked to both epigraphic and stylistic evidence for itinerant craftsmen and sculptors at the sanctuary. The paper concludes by bringing these two halves together with a consideration of how the visual and epigraphic environment of the mature sanctuary expressed socio-cultural tensions and contrasts which are perhaps inevitably inherent in a provincial Roman sacred space on the edge of empire.

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### **The Gods of Corbridge: Divine Bodies, Worshipful Words and the Creation of Identities on Hadrian's Wall**

*Hanneke Reijniere-Salisbury (University of Cambridge)*

A wide variety of religious images (including reliefs and altars) have been recovered from the Roman fort and settlement of Corbridge. The gods represented by this set of material include Jupiter and Mercury, but also Romano-Celtic gods such as Apollo Maponus and the Tres Matres, and gods with their origins farther afield like Astarte and Jupiter Dolichenus. Therefore this site provides an excellent opportunity for thinking about the variety of religious belief on the Roman frontiers, just as the variety of kinds of representations allows for considerations of how this belief looked. This paper will ask what kinds of information and relationships might have been conveyed and created by these sculptural works. My approach will focus on the representation of deities' bodies, and ask how these represented gods communicate to their audience notions of divinity and aspects of identity. This will include consideration of the absence of divine bodies, and what comes in to take the place of figural representation. Often it is writing. When inscriptions are factored in, we see that different information is often offered from the images, which can call into question our analysis as based on the figural representations. Attempting to reconcile the messages of the visual and the verbal is the task of this paper, and should lead to a consideration of how images of the gods sought to function in various social and religious ways within a complex site such as Roman Corbridge.

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### **Roman Rural Sanctuaries as a Framework for Text and Image in Western Hispania?**

*Thomas Schattner (Deutsches Archäologisches Institut, Abteilung Madrid)*

Roman rural sanctuaries in western Hispania are notable for the fact that the occurrence of both image and text together is an absolute exception. This is in contrast to a much higher occurrence in funerary contexts. The best, and - thanks to the huge number of nearly 80 inscriptions and corresponding statues - most astonishing example is the sanctuary of deus Endovellicus in S. Miguel da Motta/Portugal, although a connection between a particular sculpture and the relevant inscription is nearly impossible. The hypothetical reconstruction shows statues and inscriptions set up loosely in the sanctuary, where we can also assume the existence of at least one building. The situation there can not be explained solely by the geographic position in the south, where Mediterranean Graeco-Roman influence was higher, but more probably is related to the cult founder's individual conception of the sanctuary which had oracular character. In a regional perspective, in the Hispanic north and north-west we find only sanctuaries with inscribed monuments (for example altars from the Sanctuary of Berobreus at Monte do Facho, Galicia, Spain) and no images. In the south, on the other hand, only sanctuaries with imagery (and no text) are known. There, favissae with thousands of common Roman lamps are preserved, mostly with the usual stamped images (Horta das Faias, Santa Bárbara de Padrões, Horta do Pinto, Portugal).

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### **Summing Up and Discussion**

*David Wigg-Wolf (Römisch-Germanische Kommission)*

**Session 6c (RAC) – sponsored by the British School at Rome**  
***New Archaeological Perspectives on Imperial Properties in Roman Italy***

Saturday afternoon, Lecture Theatre 3

**Session organizer:** Maureen Carroll (University of Sheffield)

*There is a significant diversity in the nature and types of imperial properties, ranging from landholdings whose sole purpose was to generate revenues for the emperor, to villages, and luxury villas and palaces. Marco Maiuro's monograph *Res Caesaris* (2012) presented a detailed examination of the economic significance of imperial properties in Italy, largely on the basis of historical and legal documentation. Moving on from this, the proposed session has, as its primary focus, more recent archaeological evidence for the diversity of imperial properties in various locations in Roman Italy. In taking this approach, we may be able to offer some fresh insight into avenues of enquiry such as: what makes a villa or an agricultural estate in possession of the emperor or the imperial family different from a villa or an estate owned by other elites?; what function did complexes of buildings on an imperial property have and what do the remains tell us about their design and appointment?; how does an imperial vicus physically distinguish itself from any other small town?; what new archaeological evidence exists for the economic basis and exchange network of an imperial property?; and what do we know through the excavation of human remains and material culture about the people who lived and worked on an imperial property?*

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**Portus: The Port of the Emperor**

*Simon Keay (University of Southampton/British School at Rome)*

The site of the Portus Romae, the maritime port of Imperial Rome, is well known as one of the major ports of the Roman Mediterranean, supplying food to Rome, and acting as a re-distributive hub within the broader Mediterranean. However, it is often forgotten that Portus also occupies a unique place as the port of the emperor and that it was, thus, significantly different to other ports around the Mediterranean basin. It was established as the Portus Augusti under Claudius on land on the northern fringe of the territory of Ostia that may have belonged to Messalina, and was then enlarged by Trajan with the addition of the Portus Traiani. This paper builds on the results of ten years work at the port by the Portus Project, and argues that Portus is best understood as a vast Imperial property, with an Imperial villa at its heart. This contention is supported by an analysis of the distinctive character of the topographical layout, development and function of four key buildings at the centre of the port during the first two centuries AD, as well as a summary of evidence for the people present at the port. It is contextualized by a brief consideration of the epigraphic evidence for the distinctive nature of its administration, relationship to nearby Ostia and its relationship to public authorities at Rome.

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**New Work at Hadrian's Villa at Tivoli**

*Francesco de Angelis (Columbia University) and Marco Maiuro (Università degli Studi di Rome 'La Sapienza')*

The Columbia Advanced Program of Ancient History and Art has been excavating since 2014 in two areas of Hadrian's villa, the so-called Lararium and the so-called Macchiozzo. Our talk will focus primarily on this latter; never excavated before in modern times, located at the centre of the villa, next to the Piazza d'Oro, the Caserma dei Vigili and the so-called Fish-Pond, the new building complex brought to light by the Project, belongs to an architectonic and functional typology that was so far unattested in the villa. It consists, in fact, in a building complex for housing imperial dignitaries and members of the imperial retinue. The high level of preservation of mosaics, paintings and architecture makes it possible to gain insights into the living conditions and dwelling facilities of those who, being in residence, work with and for the Emperor, though neither belonging to the highest echelons of imperial guests and members of the imperial court, nor being imperial slaves or workmen.

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### **The ‘Villa degli Antonini’: Luxury and Entertainment at Lanuvium**

*Deborah Chatr Aryamontri (Montclair State University)*

The site known as the “Villa degli Antonini,” near the 19th mile of the Via Appia, has been identified since the 18th century with the villa, located at or near Lanuvium in the Alban Hills, referred to by the *Historia Augusta* as the birthplace of Antoninus Pius and Commodus. The sumptuous nature of the complex, with its impressive *thermae*, amphitheater, and residential quarters decorated with varied black-and-white mosaics, lends plausibility to the traditional identification. While so far this villa does not offer any signs of significant productive capacity, the unfortunately dispersed, but copious elements of *opus sectile*, colored glass mosaics, and glass inlays uncovered in recent archaeological investigation, show how at this site the entertainment and representational aspects appear to have been considerable. The bath complex included a heated *piscina*, and the amphitheater, although quite small, was provided with *vela* and extensive passageways and rooms beneath the arena. The amphitheater could reasonably be the one where, according to the *Historia Augusta*, Commodus earned the nickname *Hercules Romanus* by killing wild animals. The close proximity to the town center of Lanuvium (where inscriptions attest Antonine freedmen, a mime actor patronized by Faustina the Younger, and *vigiles*) suggests spectacles at the villa were witnessed not only by the imperial entourage, but also by local elites and the general public, as proposed for the Villa of Domitian at Albano. This new approach breaches the traditional rigid image of the imperial *domus* as exclusively a ‘residential’ space meant only for the emperor’s personal entertainment, and shows that such private estates could serve for political display of his personal life as well. This paper aims to broaden our knowledge of one monumental imperial residence as both a place for personal repose and a playground for the active public life of the emperor.

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### **Continuity in Land Use Practices and Resource Exploitation in Roman Etruria: From Elite Management to Imperial Control**

*Edoardo Vanni (Università degli Studi di Siena)*

The aim of this paper will be that of analyzed the correlation between different landuse practices and changing propriety regime (from private to public) in the peculiar context of Roman Etruria. In other words exploring the ancient Etruria landscape and its changes in terms of agro-sylvo-pastoral systems and economic structures (land, settlements, labour, market etc.) to detect different economic strategies run by various subjects. The assumption of this work is that the direct imperial control in this region, exercised since the half first century AD by the julio-Claudian family, has had a crucial role in terms of economic activities and settlement strategies. The long-run perspective tells us that the history of the imperial propriety in this part of Italy has deeply rooted in the evolution of the landscape transformed by the economic strategies adopted firstly by the Roman State and then by senatorial elites. On the other hand the particular environment of this region had represented a physical *realia* with which to deal with. Archaeologically speaking this continuity doesn’t imply an absence of changes. I will take into account several archaeological sources to reconstruct the transformation of the landscape, the economic activities practiced (agriculture, olive oil and wine production, husbandry, timber) and the different structures utilized to run them (roads, rivers, pastures, woodlands, farms, villa, vicus and so on).

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### **The Making of an Imperial Property at Vagnari, Apulia**

*Maureen Carroll (University of Sheffield)*

Archaeological investigations since 2012 in the central village of a vast working estate at Vagnari, established as an imperial property in the early first century A.D., have contributed significantly to an understanding of the profit-driven Roman agricultural and industrial exploitation of the environment in ancient Apulia in the imperial period. Revenues were generated, in part by the emperors’ slaves, through cereal crop cultivation and viniculture, as well as the metal industries and the production of tile and brick. But the excavations, in fact, reveal the existence of an older predecessor settlement of at least the

second century B.C. that underwent a significant transformation and expansion as a *vicus* once it passed into imperial hands in the early imperial period. The area around Vagnari, therefore, had neither been abandoned nor uninhabited after the Roman subjugation of Apulia in the early third century B.C. The paper will explore how the site at Vagnari and its material culture shed new light on the nature and identity of the pre-Roman and Roman inhabitants here and how this evidence contributes to an understanding of the profound cultural, social, and economic changes brought about by the acquisition of the land by various groups, especially the imperial household.

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**Investigating Life and Death in a Working-Class Population from an Imperial Roman Estate at Vagnari, South Italy**

*Liana Brent (Cornell University/American Academy at Rome), Marissa Ledger (University of Cambridge), and Tracy Prowse (McMaster University)*

Excavations at the site of Vagnari (southern Italy) have revealed a large Roman Imperial estate (1st - 4th c. AD) situated near the route of the *via Appia*, an important trade route linking the city of Rome to the southern coast of Italy. Ongoing research in the necropolis associated with this Imperial estate has uncovered 144 burials, mainly consisting of single inhumations and a small number of *in situ* cremations (n=4). While much is known about the lives of urban Roman populations, mainly from historical sources, comparatively less is known about rural working-class communities in the Roman world. This paper will discuss bioarchaeological investigations of the people buried in this cemetery to understand the geographic origins of this working-class population, and what life was like on an Imperial estate in terms of diet, health, and trauma. Further, this paper will discuss burial ritual at Vagnari, the treatment of the dead, and archaeological evidence for post-deposition visits to the cemetery. Did individuals receive treatment in death that reflected their social, biological or occupational status on this Imperial property? Does the treatment of the dead differ from contemporary Roman cemeteries that were not located on Imperial estates? The goal of this presentation is to integrate biological, archaeological, and historical evidence to provide greater insight into life and death in a relatively unknown segment of the ancient Roman population, the workforce of a rural Imperial estate.

## Session 6d (TRAC)

### *Crafts: Everyday Technologies in the Ancient World*

Saturday Afternoon, Lecture Theatre 2

**Session organizers:** Adam Sutton and Owen Humphreys (University of Reading)

**Chair/Lead discussant:** Mirko Flohr (Universiteit Leiden)

*Crafts – including metalsmithing, potting, weaving, construction, coopering, leatherworking, etc. – were a key part of daily life in the ancient world. As the basic productive activities, crafts formed the basis of the economy, being relied upon as sources of income and requiring the investment of significant time, effort, and economic capital. Craft knowledge and professional practice could also be a significant part of individual identity; key to the construction of personhood. As social networks, craft industries served to tie people together through apprenticeship, commercial interactions, or through collegia. Through class, colonialism and gender, crafts could create and reinforce social division. This perception of crafts sees the production of material culture as an energetic process, contrasting with the usual notion of crafts as ‘traditional’, unchanging windows on the past. Previously, traditional crafts have tended to be overlooked in favour of the study of new inventions and innovative technologies. Archaeology has the power to change this, being able to provide both a longue durée perspective on gradual change in industry, and also the chance to assess the importance of ‘traditional’ techniques as ‘technologies in practice’. This session therefore seeks to explore crafts as fundamental socially constructive practices: the ‘everyday technologies’ that created, maintained, and changed ancient societies. We invite the submission of papers from all spheres of classics, ancient history, and archaeology which offer theoretically-informed discussions of the roles of crafts and craftspeople in the Roman world. We would particularly like to invite papers which theorise the role of objects within systems of technical knowledge; which bring new evidence bases and methodologies from non-archaeological traditions; which theorise the position of craftspeople within social networks; or which consider the dialogue between economics and production.*

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### **Who Worked Wood? Craft Specialisation and Practical Identity in Roman London**

*Owen Humphreys (University of Reading)*

In Roman archaeology, objects related to crafts are almost always categorised according to the material on which they were used; metalworking, leatherworking, woodworking, etc. Whilst convenient, these categories are simplistic modern constructs, which encourage the supposition that ‘woodworking’ or ‘metalworking’ were emic categories of practice that would be recognised in the Roman period, rather than etic divisions designed for the convenience of modern researchers. It is the contention of this paper that this is not a satisfactory end point for an analysis of ancient crafts. A prime example of this is ‘woodworking’. Modern craftspeople who work with wood may be joiners, wheelwrights, luthiers, builders or hobbyists, each of whom will have a very different lived experience of ‘being a craftspeople’. These issues are particularly relevant to the Roman period. In Rome, tombstones single individuals out as chest makers, comb makers, interior woodworkers or two-wheeled cart builders. Clearly, these provide a direct link to peoples’ self-identification, but how can we approach these issues in a provincial society with a limited epigraphic record? The Roman period also sees the introduction of an incredibly diverse range of craft tools many with apparently highly specialised functions. However, we must be careful not to assume that specialised tools automatically indicate increased specialisation and status on the part of the craftspeople using them. By using a range of sources of evidence (including tools, preserved wooden objects and waste, structures and writing tablets), this paper will seek to build a picture of craft practice in Roman London from the ground up, focussing on the technologies involved in woodworking. Using the concepts of practice theory and ‘technologies in use’, we will attempt to discern how practice was used to construct professional identities, and how the physical actions of carrying out crafts shaped people’s interactions and lived experiences.

## **Crafting Bricks and Building Monastic Homes: Communities of Brickmakers in Late Antique Egypt**

*Darlene L. Brooks Hedstrom (Wittenberg University)*

Apa Shenoute, writing in late fourth century, urged his superior at the Upper Egyptian monastery in Atripe to stop spending money to pay architects and craftsmen for new construction. In particular, he focused upon those who kneaded clay and carried bricks (Canon I. YW 88-89) for they participated in an age-old method of building in Egypt: making sun-dried mud bricks (Coptic *tōōbe*, ome; Greek *pēlos*). Aside from churches made of a combination of carved stone, palm timbers, and mud bricks, monastic builders worked almost entirely with sundried bricks when building their settlements. Bricks were easily assembled by craftsmen who kneaded clay and mud from the Nile flood plains with straw, limestone chips and sand. Slapped into a wooden mold, the wet mud would dry quickly due to the arid climate. The bricks would be used to build structures covered either by domes or by barrel vaults. Walls were covered with a lime plaster that protected the mud bricks from natural erosion. With the advent of settlement archaeology, Egyptian monastic settlements are no longer regarded as poor examples of late antique architecture. By using theories linked to communities of practice, making, and materiality, I will explore how a microstudy of late antique monastic bricks and brickmaking offer a fresh perspective on objects once discarded by archaeologists from many Egyptian sites as irrelevant. By looking at the craft of making and designing bricks, I will illustrate that a brick has a lot more to tell us about monasticism than previously thought.

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## **The Threads that Bind: Textile Production Before and After Cities**

*Troy J. Samuels (University of Michigan)*

This paper will use the archaeological remains of two interconnected crafts, spinning and weaving textiles, to explore the shifting dynamics of female agency in central Italian pre-urban and urban communities. Abundant material evidence for textile production and evidence that it was female gendered activity has been recovered in pre, proto, and fully urban contexts across first millennium BCE Italy allowing this craft to be viewed over a *longue durée*; this evidence hints at a significant shift in the technology of textile production concurrent with the formation of many Italian cities. Recent work has suggested this technological change is related to exogenous processes, as Italian textile technology reoriented itself towards an eastern facing, Greek network of textile products and production techniques and away from earlier, northern and central European models. I will argue that, in addition to these external developments, the role that textile producers played within communities was fundamentally changing due to the new, urban reality. Excavations over the last decade at the urban site of Gabii have produced a robust new corpus of evidence for textile production spanning the first millennium BCE. Focusing on textile-making tools from three elite domestic units, this paper will argue that the changes in craft production at Gabii are not only driven by new or emergent technology. Instead, shifting social organization and the changing role of female textile producers within the fabric of pre-urban and then newly urbanized communities is a determining factor in the new methods of production visible in the archaeological record. Rather than technological advancement, the changes in the networks of textile production seen at Gabii after its “urban moment” can help us understand the changing roles female craft producers played as Italian communities moved from heterarchic, specialized household based pre-urban settlements to hierarchic, cities.

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## **Everyday Innovation: Reconsidering Creativity, Cognition, and Continuity. A Case Study in Iron Age and Romano-British Ceramics**

*Adam Sutton (University of Reading)*

A key contention of this session is that craft practices are too often regarded as ‘traditional’. Perception of the word ‘craft’, in our own societies, has connotations with the low-tech, old-fashioned, and artistic; craftspeople are often regarded as the skilled perpetuators of practices that are fixed, technologically,

in a bygone time. In perceptions of the past, crafts are seen as similarly unmoving, generally existing in ‘low-energy’ states of continuity that are occasionally punctuated (often prompted by external stimuli) by ‘high-energy’ intervals in which opportunity or necessity prompts innovation and change. This model of continuity and change has been fundamental to the archaeological endeavour for centuries – phase-based dating structures are archaeologists’ bread-and-butter. This paper utilises modern understandings of innovation and design theory (which emphasise the continuous nature of creative action on material culture) to argue for ‘everyday innovation’ – the notion that innovation is itself an ongoing process of interaction between craftspeople, their materials, and the objects surrounding them. Utilising case-studies from Iron Age and Romano-British ceramics, it will be argued that there is evidence for innovation of this nature in the form of short-lived and geographically-restricted changes in the nature and/or production of objects, and in the form of the kinds of incremental and cumulative technological changes that modern historians now regard as commonplace. The significance of this reading of the innovative process will subsequently be considered, examining what the implications of this theory may be for our perceptions of periods of relative change and stasis. Implicated in this is the acknowledgement of the craftsperson in continually recreating the material environment; and the need to consider the innovative process as a highly accessible aspect of practice that, until recently, has received little attention from archaeologists.

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### **Innovation, Specialization, and Social Negotiation in Roman-Period Potting Communities of the Eastern Provinces**

*Elizabeth A. Murphy (Universität zu Köln/Rheinische Friedrich-Wilhelms-Universität Bonn)*

Sometimes referred to as ‘production centres’, ‘nucleated workshops’, or ‘concentrated workshops’, clusters of workshops manufacturing similar goods have long been understood as benefitting from shared resource- and distribution-networks, which offer collective gains through cooperation and economies of scale. Many of the major Roman pottery wares have been attributed to manufacturing organization of this type, and close evaluation of the workshops at Roman-period production centers suggest sometimes complex sets of socio-economic relationships among potters in these communities. This is particularly clear in terms of product innovation and intraindustry specialization among workshops, wherein individual groups often focus on the manufacture of a small subset of the total wares produced at the center. Looking at this archaeological evidence through a theoretical lens, research in Economic Geography highlights the innovative work environments of agglomerations in fostering product heterogeneity, while ethnographic studies of nucleated workshops describe social mediation strategies that selfimposed intra-industry specializations in order to relieve tensions generated within communities of local artisans producing similar types of goods. These strategies thereby serve to balance mutual economic success achieved through cooperation with competitive advantage through differentiating one’s products from those of a neighbor. Employing these theoretical approaches, this paper explores innovation, product specialization, and typological variation between workshops at production centers at Roman period ceramic production centers across the eastern Mediterranean, in order to explore the economic strategies and social negotiations within locally aggregated industry.

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### **Making Lamps and Making Light in Early Roman London: Connections between the Production and Consumption of Ceramic Oil Lamps**

*Michael Marshall (Museum of London Archaeology)*

In *Britannia*, where they are comparatively rare, oil lamps have been argued to represent a means by which specific portions of the population, such as the army, sustained or replicated forms of domestic and ritual practice that were of Continental, ultimately Mediterranean, origin on the edge of Empire. However, an analysis of the form and affordances of lamps from Roman London suggests considerable diversity in how artificial light was actually used. Marked differences between the products of industries based in different areas of the Empire pose questions about how the processes of designing

and manufacturing lamps served to change or perpetuate particular ways of using artificial light, while an analysis of the London evidence for ceramic technology and chaîne opératoire will be used to explore how design conventions and techniques were transmitted, copied, misunderstood or deliberately transformed, both over time and between makers working in different areas. The different mediatory effects of specific types of technology, particularly the wheel and the mould, will be assessed, as will the manner in which Romano-British producers were situated within both local and international networks of lamp makers, suppliers and consumers. Finally, a model will be proposed to outline how these different factors contributed to the evolution of artificial light within the specific provincial setting of Roman London.

## Session 6e (TRAC)

### *Egypt on the Move: New Meanings of Space and Place in Local Contexts*

Saturday Afternoon, Lecture Theatre 1

**Session organizers:** Stephanie Pearson (Humboldt-Universität zu Berlin) and Lindsey A. Mazurek (Bucknell University)

**Chair/Lead discussant:** Eva Mol (University of Chicago)

*In recent studies of Roman imperialism, issues of place have become increasingly important. A special set of questions are provoked by objects that display a connection to Egypt—whether by iconography, material, or find context—yet are discovered in parts of the Roman world outside Egypt itself. Until the last decade, the “Egyptianness” of these objects was considered paramount to their interpretation: thus they have often been treated as if they were from an Egyptian context, with an emphasis on the cultic or funerary rituals that would have dictated their use there. But studies particularly of Isis cult outside of Egypt have shown that Egyptian culture took on new meanings as it reached different regions of the Roman world. Objects from Egypt or representing Egypt in some way were highly mobile; they could even gain and shed layers of significance as they travelled from place to place. What impact did this mobility have on the objects, their significance, and their users? What did “Egypt” mean after being deracinated and replanted in disparate parts of the Empire? Pursuing answers to these questions means activating new theoretical models that will advance broader discussions of cultural contact and exchange in the Roman world. This panel examines Egyptian objects as a case study for “periphery-periphery” interactions in the Roman Empire. For this panel, we seek papers that examine the meaning of Egypt outside of Egypt through the study of material culture. We are particularly interested in regional diversity, and welcome submissions that consider Egyptian and “Egyptianizing” material culture from lesser-studied regions of the Mediterranean, as well as themes of place, deterritorialisation, cultural identity, and reception across the Mediterranean region.*

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### **Rethinking “Greco-Egyptian Magical Gems”: Context and User Choice**

*Caitlín Eilís Barrett (Cornell University)*

Throughout the Roman Empire, many people used amulets inscribed with unusual-looking divine images, esoteric signs, and “*voces magicae*.” Many of these objects present Roman adaptations of foreign (especially, though not exclusively, Egyptian) iconography and utterances, and modern scholarship frequently assumes that Egyptian motifs on engraved stones automatically served “magical” purposes. However, contextual evidence suggests a much broader range of possible functions and values for such artifacts. “Magical gems” may not have constituted a clearly-bounded *iconographic* or *epigraphic* category in antiquity, but a *functional* category, constantly negotiated through practice and user choice. Although most known “magical gems” come from unprovenienced museum collections, ongoing excavation has produced a corpus of about 25 such objects from known findspots. Their distribution is extremely broad, with examples from Italy, Greece, the Levant, Anatolia, Central Europe, and Britain. Specific find spots include (inter alia) burials, industrial contexts, domestic contexts, hoards, military installations, and public archives. This evidence problematizes the *a priori* labelling of Egyptian or other unusual motifs on engraved stones as “magical” and suggests a surprisingly flexible set of functions for these objects, which participated in activities ranging from ritual practice to record-keeping. Furthermore, the gems’ functions and values likely depended not only on their iconography and inscriptions, but also their materiality. Their semi-precious stones not only possessed display value, but were sometimes thought to possess magico-medical properties of their own. Some consumers may thus have valued gems’ raw materials as much as – if not more than – their imagery. Accordingly, the owners of so-called “Greco-Egyptian magical gems” need not always have viewed these artefacts as either “Greco-Egyptian” or “magical.” These multivalent objects resist reduction to texts or images

alone. Instead, contextual analysis suggests that their functions and valuations were flexible, emerging from ongoing interactions with users, contexts, and assemblages.

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### **Materiality and Subjectivity in the Egyptian Sanctuaries of Roman Greece**

*Lindsey A. Mazurek (Bucknell University)*

In this paper, I examine how Greek communities used Egyptian imports for religious purposes. Recent studies of Egyptian material culture in the Mediterranean (Swetnam-Burland 2015, Tomorad 2015) have highlighted the frequency with which Egyptian objects appeared in Rome and across the Roman provinces. While Egyptian artefacts turn up regularly at Imperial period Greek sites (Philips 2008), they are curiously sparse in Greek sanctuaries to the Egyptian Gods. Apart from Rhodes (Fantaoutsaki 2011), most Egyptian sanctuaries in the region preserve only one or two Egyptian objects, usually small statuettes in dark Egyptian stones. Greek Isis devotees seemingly preferred locally made sculptures carved in classical style. I argue that this preference aligns with one of Egyptian religion's larger functions in Greek society: to contextualize concepts of the foreign in a locally legible aesthetic. First, I consider examples of Egyptian imports in sanctuary contexts at Rhodes, Delos (Leclant and Meulaere 1957, Siard 2001), and Thessaloniki (Steimle 2008), considering how each community juxtaposed imported and locally produced statues. I then set these sculptural programs in their architectural contexts, examining how the built environment facilitates a cultural reconciliation between the two styles. To conclude, I integrate literary and epigraphic evidence surrounding the cult, particularly a set of aretalogical inscriptions that depict Isis occupying parts of Greek mythology normally ascribed to goddesses like Demeter and Athena. Viewed together, the evidence demonstrates that imports helped legitimize the cult's presence in Greece by creating imagined connections to Egypt. When displayed in a primarily Greco-Roman sculptural program, however, these images were minimized, suggesting that cementing Isis' ties to Greece was a more pressing concern for local communities.

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### **Osiris. True of Voice, King of the Gods. The Use and Perception of Osiris' Imagery in the Provinces of Pannonia, Dacia and Moesia**

*Dan Augustin Deac (Zalău History and Art County Museum)*

Osiris was considered the Egyptian god of the Afterlife, being attested from the Old Kingdom to the Roman period in Egypt. Based on the archaeological discoveries, this presentation explores the way

the image of Osiris was perceived during the Roman Imperial period far away of Egypt, in the provinces of the banks of the Danube River: Pannonia, Dacia and Moesia.

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### **Finding Egypt in the Aegyptiaca of Italy, 750-500 BCE**

*Matthew Skuse (University of Edinburgh)*

The use of Egyptian-style amulets, or aegyptiaca, on the Italian Peninsula in the 8<sup>th</sup>-6<sup>th</sup> centuries BCE was part of a wider phenomenon of the reproduction, circulation, and repurposing of aegyptiaca across the Mediterranean. This phenomenon was particularly popularly expressed through the use and deposition of scarab-shaped amulets inscribed with hieroglyphic or pictorial designs, many of which were likely produced in the Aegean, but also saw the use of amulets in the form of various Egyptian deities. Gunther Hölbl's *Beziehungen der ägyptischen Kultur zu Altitalien* (1979) provided an invaluable study of the aegyptiaca of the Italian Peninsula, demonstrating that they were used broadly in Etruria, as well as at points of Greek and Phoenician settlement or contact. However, many questions remain as to the significance and function of these aegyptiaca, and the relationship between their circulation, use, and deposition in Italy and in the Aegean. In particular, there has been little attention given to the extent to which early aegyptiaca in Italy embodied or evoked any sense of Egypt, the Egyptian sacred landscape, or Egyptian ritual practice. This paper will examine the allocation of 'Egyptianness' to scarabs and other aegyptiaca and the importance of 'Egyptianness' in their uses, considering the mediation of this quality through Aegean producers and unknown (Greek?) traders, and the deposition of such objects in burial contexts among other funerary offerings.

### Poster Session III

Saturday all day, First Floor Balcony, Appleton Tower

#### **Edge of Empire? A Reassessment of Irish ‘Sub-Roman’ Swords**

*Sam Hughes (University College Dublin)*

The existence of a group of Irish swords with distinctly Roman characteristics has long been recognised by archaeologists (Rynne 1982). However, a lack of examples from dated contexts led to a reliance on the chronology provided by later medieval sources and was coloured by a view of the Irish Iron Age with little to no Roman influence (Cahill Wilson 2014, 18ff). As such, these swords have typically been viewed as an Early Medieval (c. AD 400-c. AD 800) introduction to Ireland (Rynne 1982, 95). A reassessment of these swords demonstrates that many display features more similar to early Imperial weapons rather than later period types of sword. However, these are not imports; but Roman-looking swords manufactured in Ireland. In pushing the date of these swords back into the Iron Age, we must ask how they may have been introduced to Ireland and how they were treated in an Irish context. By examining these swords as products of Irish interaction with the Roman Empire this paper follows in the vein of recent work on the Irish Iron Age that has reassessed Roman material in Ireland as an integral part of Late Iron Age materiality and in turn the expression of transcultural identities (Cahill Wilson 2010; 2014).

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#### **Spinners in a Soldiers' World: Textile Craft and the Construction of Female Identity at Vindolanda**

*Marta Alberti (Vindolanda Trust)*

The everyday craft of spinning, as well as the manufacture of the tools needed to perform it, would have occupied a vast portion of a woman's time in Roman society between the 3<sup>rd</sup> and the 4<sup>th</sup> century AD. Spinning would have been not only a productive activity, but one that also may have contributed to the construction and negotiation of female identity. Proficiency with the spindle whorl appears to have been a vital component of the female social persona during the lifetime and beyond. Whorls are the most frequent traces of the spinning craft: they have been found in both civilian and military context across Roman Britain, and were deposited in inhumations and cremations across the Empire. Spindle whorls were also often portrayed in the hands or by the side of the deceased in grave stones from Britain to Pannonia. In the following paper we will analyse how the make, wear and physical properties of spindle whorls may shed light on the performance of the spinning craft, as well as the identity and position of spinners within the social network of a Roman Fort along Hadrian's Wall frontier. The case study of 3<sup>rd</sup> and 4<sup>th</sup> century Vindolanda will be analysed in detail. Here excavations conducted in 2009-

2012 and 2013-2017 have produced tightly contextualised datasets pertaining respectively to infantry quarters in the NW quadrant and cavalry quarters in the SE quadrant of the last stone fort. Through comparison of the spindle whorls' assemblages from the two quadrants, this paper will theorise the position of spinners and their craft within the complex social fabric of a late Roman military settlement.

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### **Illuminating the Darkness: Analysis of Roman Oil Lamps through Experimental Archaeology**

*Caitlin Lobl (University College Dublin)*

Using experimental archaeology, Roman oil lamps from Colchester was studied holistically from production through deposition. The first experiment was to explore the capability of the two-piece mould at producing lamps. To test this, nine moulds were created. In groups of three, the moulds were unfired, low fired, and high fired. The moulds were used repeatedly to produce lamps and the use-ware was noted. The second experiment was to compare the luminosity level of the lamps based on the type of oil used to fuel the vessel. The oil types were based on what would have been available to the Romans of Colchester those oils being; olive oil, goose fat, and linseed oil. Using a light metre, the luminous output was measured and converted into lumens. The final round of experiments dealt with the deposition of the moulds from the first experiment and the lamps. The presence of lamp moulds in the archaeological record is slight. To understand why there is not a larger presence, abrasion and soaking tests were employed. The moulds soaked in water for a week (an arbitrary amount of time). Following the soaking, the moulds were abraded one at a time with equal parts sand and water for ten minutes each. The final experiment comes from a hypothesis by Colchester archaeologists. A bustum feature was uncovered and based on how lamps were found within the feature, it is believed they were used to start the fire for the cremation. Thus, the lamps were used and left for deposition.

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### **Luxury Tableware? *Terra Sigillata* in the Terp Region of the Northern Netherlands**

*Annet Nieuwhof (University of Groningen)*

With thousands of finds, Roman *terra sigillata* (TS) is a common find category in terp settlements of the Northern Netherlands. It is traditionally interpreted as luxury tableware of the local elites, who acquired it through their contacts with Romans, or were able to buy it from traders who came to this area with their merchandise. Recent research, however, has questioned this interpretation. Firstly, the far majority of TS is found as sherds, which, despite their good recognisability, only rarely fit other sherds. Moreover, many of these sherds are worked or used in some way. They were made into pendants, spindle whorls and playing counters, or show traces of deliberate breakage and of use for unknown purposes. Such traces are found on 70-80% of the sherds. Rather than as luxury tableware, TS may have been valued for the sake of the material itself. It may even have been imported as sherds rather than as complete vessels. This value also shows from its long-term use. Used or worked TS sherds are often found in Roman Period and early medieval finds assemblages that may be interpreted as ritual deposits. Secondly, so-called Housesteads ware, which is ascribed to Frisian soldiers stationed at Hadrian's wall and consists of cooking pots as well as drinking vessels, shows that even when TS was easily available, pottery that was handmade in the style of their homeland was preferred by these soldiers over TS, also, or even especially, for communal meals with a festive character. This pottery seems to have been associated with the identity of these soldiers. In both cases, symbolic meaning was apparently more important than the luxuriousness of the tableware. The poster will present some of the finds and set out future lines of research, both for TS and for Housesteads ware.

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### **Painters and Workshops in Pompeii: Understanding Ancient Working Practices**

*Francesca Bologna (King's College London)*

The aim of my paper is to address the working practices and workforce organisation of Roman wall painting, focusing on the city of Pompeii. The commonly accepted idea that painters worked as part of stable organisations ('workshops') is assessed and revised through an integrated study, starting from the stylistic analysis of painted subjects aimed at identifying individual painters' hands, later moving

to an ethnological approach, eventually turning to the economic aspects involved in the production of wall paintings. The catalogue of Pompeian figure painters which originated from my investigation of Third and Fourth Style wall paintings did not highlight any recurring collaborations between craftspeople, rather it seems to point to the existence of a more fluid and flexible organisation. The comparison with the economic organisation of better documented pre-industrial societies (especially late medieval Italy but also ancient Greece and Roman Egypt) proves that it was possible for artisans to work intermittently and to seek employment individually rather than as part of a structured organisation, and that such a system was equally viable for employers. Also, the selected case studies prove that, even in antiquity, mobility was common for manual workers, especially if they were skilled ones. Lastly, the assessment of the economics of wall painting, especially production times and artisans' real wages and living standards, appears to undermine the assumption that the city of Pompeii could sustain one or more stable workshops, rather pointing to the presence of itinerant painters.

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### **Just Passing Through: Metals and Movement in Roman South Yorkshire**

*Louis Olivier Lortie Roger Doonan, Nicholas Clark, Colin Merrony and David Inglis (University of Sheffield)*

The investigation of the Roman economy in South Yorkshire in the first and second centuries provides an interesting context to consider the place of metals in a network of roads, settlements, fortifications, and production sites. Fortified sites and ceramic production sites are among the better understood, while metal production remains far less researched. Current evidence does not point towards large scale organised primary or secondary iron production in the region. It may be that other neighbouring areas (Jurassic ridge, Humber estuary) were a valued source of iron, while modern Derbyshire was a source of lead. Due to its proximity to these metal producing regions, it seems possible that South Yorkshire would have been of some importance in the circulation and subsequent production of metals. Current developments in material culture studies coupled with the popularity of social network approaches suggests that Roman metallurgical practice might benefit from such analysis. This paper therefore attempts a preliminary work through of social network analysis for a range of sites and features in Roman South Yorkshire that connects with metallurgy, mines and metals. The outcome of this study is critically assessed to evaluate what such approaches might add to our understandings of commodities and economy.

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### **The Creation of Anaerobic Archaeological Environments at Vindolanda**

*Elizabeth M. Greene (University of Western Ontario) and Andrew Birley (Vindolanda Trust)*

This poster is part of a series submitted for presentation on the analysis of organic materials and anaerobic environments found at Vindolanda. The presentation aims to illustrate the site formation processes and various environments in which organic materials are found on the site. It will show the stratigraphic sequence and activities that created this ideal atmosphere for the preservation of materials such as leather, wood, bone and textile. One of the most common questions we field at Vindolanda from specialists and non-specialists alike asks how these conditions were created and maintained; therefore, this poster illustrates the various circumstances on different areas of the site that are still preserved in anaerobic or semi-anaerobic conditions. Two primary types of environments will be discussed: Domestic contexts from the early timber forts dating from the late first and early second centuries AD and semi-anaerobic ditches from the first through third centuries AD. The remains of the early timber forts (periods 2-5; AD 90-130) give us the best picture of artefact deposition of items of daily use because the structural spaces are preserved underneath levels of fill and foundations from later periods. Fort ditches from period 1 (AD 85-90) and periods 6-8 (mid-2<sup>nd</sup> c. to 4<sup>th</sup> c.) are semi-anaerobic and give us better information about discard strategies on the site. Stratigraphic section drawings of each discreet environment will be accompanied by photographs (2D and 3D) and explanations of the site formation processes involved in the creation and maintenance of these contexts.

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### **Bullseye: Analysis of Ox Skulls used for Target Practice at Roman Vindolanda**

*Rhys Williams, Tim Thompson, Caroline Orr and Gillian Taylor (Teesside University)*

This poster is part of a series submitted for presentation on the analysis of organic materials and anaerobic environments found at Vindolanda. Vindolanda is a World Heritage site at the Frontiers of the Roman Empire. Vindolanda is known for its exceptional preservation of artefacts, including bone, potentially due to the formation of an iron (II) phosphate compound called vivianite. The impressive artefact collection at Vindolanda also houses an extensive assemblage of leather shoes and ox skulls with evidence of archery practice. The purpose of this investigation was to analyse trauma seen in ox skulls. This enabled the categorisation of trauma type and mortem period to confirm projectile trauma and other trauma marks present. Fractures were then sequenced to identify the number and order of trauma marks. These features provided context to the trauma present to support the use of ox skulls for target practice at Vindolanda. The skulls have been imaged using a 3D scanner, stitched, analysed and annotated. The 3D image was printed in separate pieces so that the public could view, handle and open the model skulls to follow the trauma annotations and perform their own analysis. This research will provide clues to the mysteries of military life at Roman Vindolanda as part of the multidisciplinary research currently undertaken at Vindolanda.

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### **Unravelling the Microbiological and Chemical Secrets of Anaerobic Preservation at Vindolanda, UK**

*Gillian Taylor and Caroline Orr (Teesside University)*

This poster is part of a series submitted for presentation on the analysis of organic materials and soil environments found at Roman Vindolanda. One of the most unusual features on archaeological artefacts found at Vindolanda is the presence of Vivianite ( $\text{Fe}_3(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$ ). Vivianite is a ferric iron (Fe(III)) phosphate mineral that forms in anoxic, anaerobic and waterlogged conditions. More specifically, it is found when organic matter decomposes, as phosphorus is released which leads to an increase in bacterial growth; thus the formation of vivianite is stimulated through specific bacteria interactions in combination with specific chemical concentrations. However, the exact chemical and microbiological conditions for this process are poorly understood. In this poster we present chemical data from soil to illustrate the change in conditions through a context. DNA was also extracted from the soil samples and subjected to Next Generation Sequencing (NGS) analysis. This informs us about the bacteria, diversity and community structure within the soil. It is hoped that by understanding and unravelling the soil conditions it will help us understand preservation and the processes which impact on preservation.

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### **Walking a Mile in a Roman Shoe: Researching Leather Preservation at Vindolanda**

*Hrafnhildur Helga Halldórsdóttir (Teesside University), Elizabeth Greene (University of Western Ontario) and Gillian Taylor (Teesside University)*

This poster is part of a series submitted for presentation on the analysis of organic materials and soil environments found at Roman Vindolanda. The preservation of leather at Vindolanda is both remarkable and complex, with hundreds of leather shoes and other artefacts uncovered each year. This poster focuses on the life-cycle of one single leather shoe excavated from the site, which exhibits metallic-blue deposits of vivianite on its sole. Vivianite is an iron (II) phosphate that can take on various shades of white, yellow and blue and its formation requires a combination of factors, including an iron source (hobnails), poor oxygenation, low sulphur, and a high phosphate source. These factors are all present in the soils at Vindolanda and are potentially involved in the good preservation observed at the site. This poster aims to present insight into the leather preservation at Vindolanda through a micro-historical approach to the lifetime of this single shoe, utilising 3D imagery, inorganic chemical analysis and the archaeological context. The analysis is part of a larger set of research currently being conducted, which attempts to unveil the interplay between human agency and soil preservation processes that have rendered the extraordinary leather preservation encountered at Vindolanda.

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## **Patterns of Hoarding: Historical Events vs. Daily Life Hazard – An Open-Access Web Application Connecting Numismatics and Epigraphy**

*Petru Ureche (University of Cluj-Napoca)*

At a time in which IT makes its presence known in the most aspects of every day life, it is natural that scientific research benefits the facilities offered by this domain. The study of coin hoards of the entire Roman Empire and their correlation with the epigraphic and archaeological sources is a lot of hard work, we tried to come in the archaeologists, historian, numismatist and epigraphist's aid by creating a web app that it may prove extremely useful. Also, the publishing of the data on the internet comes to the attention of the interested researchers who can access the data anytime and anywhere, this app having a double purpose: to offer support to the researchers involved in this project and to spread the results and to offer a working data base to other interested researchers. The online app is based on a map which will point out the connection between the distribution of coin hoarding, the mention of turmoil situation on inscriptions from the same area and the literary sources of the time mentioning points where the coin hoards were discovered. For a better understanding and correlation of the data, the app is equipped with a system for filtering the data using one or several factors (e.g. filtering by provinces and chronological segments). Among the relevant factors that can be used in filtering the data, the following can be found: the province, the context of discovery, the last emperor in the series and the presence of the coins issued by a certain emperor in the treasury. Taking into account these factors the correlation with certain major events (collective tragedy) will be made, or when major events are not related, establishing the meaning of the deposit (saving money, votive/construction offerings, daily accidental loss of money, individual/local tragedies).

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## **Production and Trade of Local and Imported Clay Lamps in Late Antiquity: New Evidence from the Campanian Countryside**

*Vincenzo Castaldo (University of Edinburgh)*

Existing work of the late antique economy in Campania still shows a discrepancy between studies of the sites on the coast and in the hinterland. In fact most of the well documented late antique contexts are found in the urban area of Neapolis and these have received the bulk of attention while for the countryside the published data are very few. The same trend is noticeable also in the ceramic studies where the published data in most cases refers to the sites of the coast. Furthermore most of these studies have focused the attention only for the ceramic production widespread in the Mediterranean such as the ARS, African cookwares and the Amphorae. Otherwise some production such as the clay lamps have been studied in Campania in a quite marginal way especially for the late antique types. However the lamps are an interesting archeological marker and provide an important amount of information on different aspects of daily life in the roman world. Furthermore the study of lamps and the analysis of the lamp stamps offer also an important dataset of information in order to better understand the trade flows and the distribution roads/network at micro-regional and on long distance during the roman empire. Finally this paper will provide a comprehensive picture of the local and imported clay lamps found in several archeological contexts of the campanian countryside. These mostly include widespread types from North Africa (e.g. *Atlante VIII* and *X*), along with their local imitations, but also less common types. Significant part of this study will focus on the morfological and typological aspects and on the identification of the fabrics. The synthesis of the results obtained from each site will offer a new insight into the local and regional trade network in Campania during the late antiquity

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## **General Agent-Based Simulation Model for Studying Ancient Populations**

*Tarja Sundell and Juhana Kammonen (University of Helsinki)*

Ancient populations and their development can be studied on the molecular level with simuPOP (Peng & Kimmel 2005). In our previous study we supplemented a simuPOP population model with data from the Finnish database of Mesolithic stone artefacts (Sundell et al. 2014). The evidence suggests there has been a population peak in the Late Mesolithic, followed by a distinct population decline, which still affects the contemporary genetic diversity and population in Finland (Sundell 2014, Sundell et al.

2014). Here, we present a general agent-based simulation model to which data from archaeological databases can be imported. In our case study (Sundell et al. 2014), this approach helped to unravel an extremely interesting time period in Finnish prehistory. Here, we further generalize the model in order to study the dynamics of arbitrary ancient populations, especially where abundant ancient artefact data is available.

Peng, B & Kimmel, M. (2005) simuPOP: a forward-time population genetics simulation environment. *Bioinformatics*, 21(18): 3686-3687.

Sundell, T. 2014. *The Past Hidden in Our Genes. Combining Archaeological and Genetic Methodology: Prehistoric Population Bottlenecks in Finland*, PhD thesis, University of Helsinki, Finland.

Sundell, T., Kammonen, J., Pesonen, P., Halinen, P. & Onkamo, P. 2014. Archaeology, genetics and a population bottleneck in prehistoric Finland. *Antiquity*. 88, 342, 1132-1147.

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### **New light in the Endouellicus cult: the epigraphical transmission process of CIL II 142**

*Sara Henriques dos Reis (UNIARQ - Centro de Arqueologia da Universidade de Lisboa)*

Considering the main themes to be addressed at the Congress, 1) History; 2) Classics; 3) Archaeology; this poster is intended to give a new interpretive proposal about the genealogy of family, whose reconstruction was only possible by the recent finding of an epigraphic manuscript. The archaeological context dates back to the Roman Lusitania (*Hispania*), in the *finis terrae* of the western Roman empire, where this *gens* appears in a *uotum* made to a pre-Roman deity, *Endouellicus*. Based on two inscriptions (one in stone support, another in literary) is intended to draw a historiographical and an onomastical analysis, regarding their reading problematics and, simultaneously, establishing their geographical route over time to its current conservation place. Thereby, the epigraphic sources in study benefit from a very rich historiography, documenting multiple events from the sixteenth to the twentieth century, and reporting the interaction between important European characters: humanists, nobles of the royal court and clergymen. The first records, in the 16th century, were attended by André de Resende (a dominican friar and humanist), Diogo of Sigi (humanist, latinist and tutor of the infants of the royal house), D. Theodosius I (V Duke of Bragança) and A. *Pighius* (a dutch Roman Catholic theologian, mathematician and astronomer); in the 17th century, stands out the humanists E. Vinet and I. Scaliger, and the ecclesiastical, Aires Varela; in the 19th century, E. Hübner synthesizes the previous authors in his monumental work, the CIL II; and, in the 20th century, stands out the contributions of J. Leite de Vasconcellos (an ethnologist and linguist), founder of the Portuguese Ethnological Museum, current National Museum of Archeology (MNA). Nevertheless, if the studies of one of the inscriptions proceeded through the centuries, the other, however, completely disappeared not only from the written record but also from the geographical one.

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### **The Reflection of Personal and Collective Tragedy in Latin Epigraphy**

*Rada Varga (Romanian Academy)*

The perception and expression of tragedy are not only very personal matters, but deeply rooted cultural features as well. While Greek epigraphy deals quite frequently with drama, loss and defeat, Roman epigraphic habits implement very different patterns. Thus, the epigraphic sources register death, as they honour the deceased, but offer few details on circumstances. Other local or personal tragedies, well documented archaeologically (fires, natural disasters, etc.) and/or literary (wars, epidemics), have not usually made it into epigraphy. In this context, the scarcity of sources should not discourage research, but, by the contrary, encourage it. Because recording tragedy and loss is not common for Roman epigraphy, the cases which break the pattern become extremely relevant in the context of identifying and analysing individual and group tragedy markers. The proposed presentation will focus on identifying epigraphic descriptions and mentioning of negative-impact events in the Roman Latin west and analysing these records. As time span, we will deal with the Principate period; geographically, we believe that coming with examples from as many of the European, Latin language provinces (excluding

Italy) can only benefit the purpose of the research and validate the results. We will try to discover why negative circumstances, either affecting the individual or the community, were described by certain persons, in certain contexts. As much as we can pinpoint it, we believe that the cultural and educational background of the person erecting the monument is of crucial importance. As well, the general epigraphic context of a given period and province might prove relevant for the choice made when recording a tragedy. Through selected case studies, we will develop the above mentioned ideas; as well, we will work on identifying situations where the epigraphic evidence can be correlated with known historical events or with archaeologically identified local contexts.

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### **Public Archaeology in Aeclanum: Creating Pedagogical Materials and Site Narratives for Outreach**

*Zofia Guertin (University of St Andrews)*

For the 2017 excavation season at Aeclanum (modern Passo di Mirabella), run by the University of Edinburgh and the Apolline Project, a multi-disciplinary team came together to develop several types of interactive projects for visitors and the local community. Through collaborative work with the international students and several specialists, digital and mixed-media materials were created for local use and more general dissemination. The presentation of this archaeological site to the public had certain contextual challenges but the goals presented by site directors at the onset were achieved with great success. Growing interest in developing public outreach has led to a diversity of approaches to try and engage audiences across all ages and backgrounds. The modern role of the archaeologist has broadened into having a responsibility to present the information that has been unearthed to the general public and make it relevant and approachable to local communities where the work is taking place. New scholarship in public archaeology mythologies gave the projects at Aeclanum a launching pad to develop our own approaches; these projects included activities aimed at raising public awareness and understanding about the site (interpretation) as well as the site's interpretive content (presentation). This poster will highlight some of the community outreach projects from this first season, and look ahead to 2018. By bringing to life some of the aspects of daily life in a Roman city for our audience, rather than presenting a city frozen in time, we could make bridges and create touchstones to the modern world for the public to access the history of their region.

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### **Diversifying Roman-Indigenous Cultural Interaction in NW Iberia: Resilience, Resistance and Confrontation**

*Joao Fonte (University of Exeter), David González Álvarez (Durham University), Jose Manuel Costa García (Newcastle University), Carlos Marín Suárez (Department of Universal History), Alfredo González Ruibal (Spanish National Research Council (CSIC))*

The Iron Age in NW Iberia has traditionally been defined by the 'castro culture'. This label depicts a static image of pre-Roman communities from a culture-historical archaeology perspective; a vision which offers a homogeneous and gradual view of social structures along the entire period and across the whole region, from simpler to more complex social forms. More recent approaches have emphasised nonlinearity and diversity instead, both in temporal and spatial terms, as elsewhere in Atlantic Europe. This gave way to a more complex picture that comprises different power economies and ethnic identities, going beyond static social models and dichotomist hierarchical/non-hierarchical views on Iron Age social organisation. Building on this, as well as on the new and manifold data available on the Roman military presence in this area, we argue for a more complex and diverse picture of cultural and political change after the expansion of the Roman state in NW Iberia without neglecting power asymmetries. Regional diversity within NW Iberia regarding pre-Roman identities and social structures had a clear impact on the nature of relationships that indigenous communities established with the Roman state. Reflecting on sociological concepts such as resistance, resilience or confrontation can help us to achieve a more balanced and nuanced discourse on the incorporation of indigenous peoples into the Roman imperial framework. 'Romanisation' should not be addressed in a unilateral and monolithic way, since we must consider regional diversity, the diverse interests of the Roman state

across the region, also in addition to the multiplicity of pre-Roman social organisation models. Our aim is to discuss these ideas by considering the different regional timing and character of entanglements between the Romans and the indigenous communities in NW Iberia. This resulted in divergent responses and thus alternative models of cultural interaction, encompassing both negotiation and opposition processes.

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### **Cycling the Limits of the Roman Empire**

*Penny Coombe (University of Oxford)*

On 1 June 2016, I set out to on the first leg of what will be a complete solo tour of the Roman Empire's limits by bicycle. After 6 weeks, 2039km and visits to 32 Roman sites and museums, I arrived in Vienna. My route followed the Rhine, Moselle and Danube, since these important rivers have acted as boundaries and borders, trade routes and cultural connectors in the Roman period. This form of personal journey and experimental archaeology of experience may be compared and contrasted with computational spatial analysis and mapping. My poster presentation particularly focuses on the movement and use of stone for sculpture in the Rhineland and Danube area, tracing the journey of stonework from quarry source, to place of use and reuse, to current locations in heritage institutions.

