



SESSION OVERVIEW

LIMES Congress XXV

21-27 August, De Lindenberg, Nijmegen

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1. Roman imperialism I

1. Roman imperialism and early frontier formation. The creation-reshuffling of tribal (id)entities

Wednesday, 24 August 2022, Lindenbergzaal

Session Chairs: Nico Roymans, Manuel Fernández-Götz & Erik Graafstal

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Session Abstract: In the past decade Roman archaeology has experienced a growing interest in the study of Rome's military expansion in the tribal frontiers of West- and Central Europe. Examples are the recent hausse in the research of Caesar's Gallic Wars and of the Augustan campaigns in Northern Spain and Germania. The result is a rapidly growing archaeological dataset which can be used to contextualize and re-assess the historical sources. We also observe a growing interest in the often extremely violent and predatory nature of Roman expansion in the tribal frontiers and in its short-term effects on the indigenous populations.

This latter theme touches on the central aim of this session. We want to focus attention on the social and ethnic dynamics in the tribal frontiers during and directly after the conquest period. Historical sources point to a profound rearrangement of tribal maps and an intense restructuring of local power networks. Among the instruments used by imperial agents are large-scale land expropriation, forced deportation of groups, mass enslavement, genocide, land allocations to pro-Roman groups, and profound interference in intra- and intertribal power relations. The short-term effects of conquest were often highly disruptive, but at the same time the controlled settlement of 'friendly' groups and the newly created clientship ties with pro-Roman leaders led to the formation of new tribal (id)entities which often formed the basis towards a formal administrative integration. Potential subjects for this session are:

- Short-term demographic effects of the Roman conquest.
- Studies of group migration in Roman frontiers, thereby using material culture and/or isotopic data.
- Comparative analysis of historical and archaeological data on group migration in tribal frontiers.
- Imperial agency and the genesis of new tribal polities and identity groups in the early post-conquest period.

Making Suebi – Roman frontier management in the southern Upper Rhine valley in the 1st c. AD?

Johann Schrempp, Archäologisches Landesmuseum Baden-Württemberg, Zentrales

Der Rhein bildete seit der Eroberung Galliens durch Caesar bis in das ausgehende 1. Jh. n. Chr. die Grenze des Imperium Romanum. Am östlichen Oberrhein sind bisher nur wenige Siedlungs- und Bestattungsplätze einer vorrömischer Bevölkerungsgruppen bekannt, die in der Forschung als Oberrheingermanen bezeichnet werden. Die Selbstbezeichnung „Suebi“ ist epigraphisch belegt. Charakteristisch sind Brandgräber mit reichhaltigem römischem Import, Waffenbeigaben und materielle Bezüge in den elbgermanischen Kulturraum. Südlichster Fundpunkt ist das in den 1930er Jahren entdeckte Gräberfeld von Diersheim gegenüber von Strasbourg. Zwischen 2015 und 2020 konnte in einer Kooperation der Albert-Ludwigs-Universität Freiburg und dem Landesamt für Denkmalpflege ein zweites, weitaus älteres Brandgräberfeld vollständig ausgegraben werden. Trotz fortschreitender Zerstörung hatten sich 53 Bestattungen erhalten. Die ältesten Gräber datieren aus tiberisch-claudischer Zeitspanne, die jüngsten gehören dem beginnenden 2. Jh. an. Auffallend sind die zahlreichen Beigaben von bis zur Unkenntlichkeit zerhacken und geschmolzenen römischen Bronzegefäßen, vornehmlich Kelle-Sieb-Garnituren und Eimer, ferner Beschläge und Aufhängungen von Trinkhörnern. Die Beigabe von intentionell zerstörten Waffen wie Spatha oder Lanzen spitzen scheint erst ab der Mitte des 1. Jh. aufzukommen. Durch die Ausgrabungen in Diersheim gelang – erstmals unabhängig von der materiellen Kultur – ein wichtiger Nachweis für die Herkunft der sog. Oberrheingermanen: Bei einigen Gräbern fanden sich zwischen sowie auf dem Leichenbrand in der Urne Tropfen von geschmolzenem, schwarzem Pech – ein Ritus, wie er im weit gefassten elbgermanischen Kulturraum zwischen Ostsee und dem böhmischen Becken bekannt ist. Die Ansiedlung germanischer Gruppen am Oberrhein resultiert womöglich aus der Reorganisation der Grenze des Imperiums durch Kaiser Tiberius. Verlässliche Partner Roms, die offenbar unter Waffen standen und in Stämmen organisiert waren, sollten das vormalig kaum besiedelte Gebiet des heutigen Südwestdeutschlands im Vorfeld der Reichsgrenze offen halten und kontrollieren; der Bezug zum Legionslager Strasbourg/Argentorate ist offensichtlich. Der Neufund einer Grabinschrift eines hochrangigen Anführers (pinceps) der Sueben aus dem unweit gelegenen Offenb urg bestätigt diese Annahme und liefert zudem neue Erkenntnisse zur Organisation der rechtsrheinischen Gebiete vor Ihrer Eingliederung in das Imperium und der Verwaltung der jungen Provinz Germania Superior.

Westward! Population dynamics along the Middle and Upper Rhine during the 1st century BC

Arno Braun, Sabine Hornung, Universität des Saarlandes

Mobility and migration of “Germanic” tribes along the Rhine river are mentioned by Iulius Caesar in his comments on the Gallic Wars on several occasions, mostly to invoke a threat to Roman interests and to politically justify further military interventions. From an archaeological perspective evidence had long been sparse, to say the least, in particular with respect to the Middle and Upper Rhine where an economic decline during the Late Iron Age, from about 80/70 BC, had led to processes of decentralization and a marked cultural persistence. Only recently have rescue excavations provided us with evidence that points towards the arrival of new groups from the eastern Late La Tène-sphere in the mountains right of the Rhine around 70/60 BC. It is these foreigners, the Caesarian army must have encountered on the Greifenberg in Limburg / Lahn when crossing the Rhine in 55 BC. Furthermore, their presence on the right bank of the river seems to have been only a first

step in their movement towards Gaul. Not only is there evidence for more wide-scale emigrations, with groups crossing the Rhine in LT D2, these foreigners must also have played a key-role in the formation of new identities there. Latest research on the initial phase of settlement at the later Roman vicus of Eisenberg / Palatinat has revealed material culture strongly influenced by the eastern Late La Tène culture as well as the transfer of technological knowledge. The establishment of new economic structures in this area, which had been only sparsely populated for some three or four decades and thus supplied ample ground for the reshuffling of Late Iron Age groups, later became an important resource in the preparation of the Augustan campaigns, too.

The case of the Cugerni on the Lower Rhine

Marion Brüggler, LVR-State Service for the Archaeological Heritage in the Rhineland

Whereas the historical and epigraphical sources concerning the Batavi are relatively abundant, only a few sources and inscriptions mention their southern neighbours, the Cugerni. The Cugerni are thought to have formed from a large group of Germani (probably Sugambri, also Suebi) that were resettled shortly before the beginning of the Common Era from the eastern bank of the Rhine to the area around the legionary camp at Vetera at modern Xanten. These Germani probably merged with a remaining indigenous population on the left bank of the Lower Rhine and subsequently developed a new identity as Cugerni. As with the Batavians but less in number, recruits were drafted from them: A cohort *quingenaria* was formed. The contribution will assemble the well-known written sources, but the aim is especially to give an overview of the archaeological evidence of the decades around the beginning of the 1st millennium until the foundation of the Colonia Ulpia Traiana that replaced the civitas of the Cugerni. The research area is the region of the probable settlement of the Cugerni, i.e. Roman Xanten and its hinterland. Older and newer excavation-data will be presented. Also, the information value of the distribution of small finds will be considered. Can we grasp a tribal identity of the Cugerni by way of these sources?

Settlers from the North? A late-Augustan *Landnahme* in the Utrecht region

Erik Graafstal, Municipality of Utrecht / Museum Hoge WoerdFirst

Over the past two decades, sustained archaeological research in the Utrecht region (central Netherlands) has revealed an early Roman horizon of rural settlement which reaches back to the first decades CE. While several sites are mainly known from fieldwalking and metal detection, a couple of them have been largely or partly excavated, notably at Utrecht-Hogeweide. The latter site has produced a large assemblage of handmade pottery which appears to have come straight from the northern terp area, whether physically or by tradition. Equally unusual is the use of cattle dung as fuel – a distinctly northern tradition, as are the ‘wall ditch’ structures found at this site. Apart from a range of militaria, the site has produced several other indications for close links with the Roman military system. ‘Chaucian’ pottery and militaria are also seen at other early Roman sites in the Utrecht region. For several sites, dating evidence (coins and dendrochronology) suggests a start date around AD 5/15. It is difficult to imagine that all of this settlement activity could have taken place without Roman consent, given the proximity of the newly established base in the central Rhine delta, Vechten/*Fectio*. The strong impression left is that we are looking at a Roman-tolerated if not orchestrated *Landnahme* in the late Augustan period, involving groups i.a. from the northern coastal area, with military service being part of the deal.Session.

Agros vacuos. De- and repopulation of the Dutch coastal area c. 50 BC – AD 100

Jasper de Bruin, National Museum of Antiquities, Leiden

There is a striking pattern in the occurrence of empty lands or agros vacuos along the edges of newly conquered Roman territories. This pattern seem to reflect a conscious policy, aiming at the creation of buffer zones between areas under direct Roman military control and areas that were not. These empty areas were not fixed, but shifted in time and space. In this paper, the phenomenon is broadly explored and discussed in more detail for the case of the western Dutch coast. Just before the period around 50 BC, the area was quite densely inhabited. While the habitation to the north of the river Rhine seem to be uninterrupted, radiocarbon datings to the south of this river suggest a rather abrupt end for the settlements. Combined with other evidence, it is conceivable that the disappearance of the habitation is related to the impact of the military operations by Caesar in more southern regions. Around AD 50, new settlements sprout in this area, followed by more sites after AD 70. Strikingly, these settlements all date after the construction of Roman forts along the Rhine river, suggesting that the new inhabitants entered the area under Roman military control. While the areas to the south of the Rhine become the new civitates of the Cananefates and the Frisiavones, the area directly to the north of the Rhine becomes a new empty area, suggesting a (forced?) translocation of people from the north to the south. Material culture from the area and remarks by Tacitus seem to provide additional insights in this process. Like the Batavians, the case of the western Dutch coast seems to be another example of a well-documented allocation of local communities in the early phases of the Roman conquest.

Ethnic recruitment and the genesis of the Batavi as a soldiering people. The numismatic evidence

Nico Roymans, Vrije Universiteit Amsterdam

In my paper I want to present a case study on the materiality and social impact of mass recruitment among the Batavi by Rome. The treaty-based military exploitation formed the basis for the development of the Batavi as a soldiering people. This raises two key questions for archaeology: 1. What is the material evidence for early military recruitment? 2. When does this recruitment start, and what was its scale? Until now archaeological research has focused on the study of Roman militaria from rural contexts. However, the earliest militaria often cannot be dated more specifically than 'pre-Flavian', and therefore do not inform us about the beginnings of ethnic recruitment. I will present an alternative method for tracing early ethnic recruitment, based on the study of the earliest Roman bronze coinages from rural contexts. For this purpose I employed the rich numismatic databanks of NUMIS and PAN. My basic assumption is that the earliest Roman coin influx on the countryside reflects payment to auxiliaries, and is not related to agrarian surplus production for markets or the payment of taxes. I will analyse the influx of Lugdunum I asses (7-3 BC), Nemausus I coins (16-8 BC), Vienna/Copia coins (38-36 BC), and finally the pre-Augustan horizon of silver quinarii from Central-Eastern Gaul. My conclusion is that mass-recruitment started earlier than assumed so far and that irregular auxiliary troops received payment in Roman coin, certainly from 12 BC (related to the campaigns of Drusus), but probably already from c. 20 BC onwards (the campaigns of Agrippa). This military pay gave (irregular) auxiliaries already in the Augustan period access to Roman military markets, where they could buy a broad range of consumer goods like Italian terra sigillata and a diversity of bronze fibulae. These new insights fit well into our archaeological model of the ethnogenesis of the Batavi in the Rhine/Maas delta. Large-scale ethnic recruitment played a key role in the genesis of a Batavian identity group and its self-definition as a soldiering people.

Evidence for immigration in the Batavian region in the pre-Claudian Era. The study of large handmade pottery assemblages using a combination of traditional and science-based techniques

Julie Van Kerckhove, Gerard Boreel, Aardewerk & Archeologie

In the Batavian region, most pre-Roman handmade pottery was locally produced and embedded in a strong regional framework, following ancestral traditions. After the Roman conquest, however, these well-known 'pottery style groups' and typologies were largely replaced by new vessel types, decorations and technological characteristics. Traditionally, these characteristics have been used as a tool to attribute pottery to a specific 'pottery style' or to an ethnic group, in an attempt to reveal the provenance of the pottery. In this paper, we will present the potential of a multidisciplinary approach, combining scientific methods (petrography, WD-XRF, SEM-EDS and MGR) with traditional stylistic and technological analysis (e.g. vessel type, tempering, and decoration), challenging the constraints of a predominantly stylistic approach. This method was tested in a pilot study, where we analysed over 12,000 sherds from well-dated assemblages in the Tiel region. Most of the sherds we studied, proved to be non-local. Moreover, the pottery provenance is very heterogeneous. A whole array of provenance regions and (hybrid) styles as well as inter-site variation strongly suggest a high degree of mobility and a diverse composition of society across a wide region. Such high quantities of non-local pottery should most probably be understood as having been brought to the Tiel region by immigrants taking their entire household with them. The small number of samples that were produced locally shows a mix of 'style elements', demonstrating the mobility of ideas and traditions, most probably introduced by the same immigrants. Comparable indications of hybridity were also observed in house architecture.

Changing landscapes in the northern frontier: Contrasting settlement patterns north and south of Hadrian's wall.

Manuel Fernández-Götz, University of Edinburgh, Derek Hamilton, Scottish Universities Environmental Research Centre, Dave Cowley, Historic Environment Scotland, Sophie McDonald, Scottish Universities Environmental Research Centre, and Ian Hardwick, University of Edinburgh

This paper will present some preliminary results from a new Leverhulme Trust-funded project entitled "Beyond Walls: Reassessing Iron Age and Roman Encounters in Northern Britain". The project aims to fundamentally transform our understanding of Rome's impact on northern Britain, by analysing the transformation of settlement patterns and lifestyles in an area extending c. 40 km south of Hadrian's Wall to c. 40 km north of the Antonine Wall. In order to contextualise the Roman influence, the project adopts a long-term perspective from c. 500 BC to AD 500 to facilitate the study of changes and continuities before, during, and after the period of direct Roman presence in the region. The main focus lies on rationalising existing survey and excavation data, while at the same time generating new information through remote sensing, palaeoenvironmental research, and radiocarbon dating. This combined strategy will produce more robust and nuanced narratives about Roman and indigenous interactions, and also contribute to the wider subject of cultural encounters on the edges of empires.

Exploring Power and Domination in Rome's northernmost frontier zone

Andrew Lawrence, University of Berne, Tanja Romankiewicz, University of Edinburgh

Narratives on Roman Imperialism and its repercussions on the subjugated societies are often constructed around historically attested episodes. While these recorded events undoubtedly had a substantial impact, more protracted causes for socio-political transformations must also be considered. Roman impact did not just start with the conquest of a specific area but took hold decades before, provoking a wide spectrum of reactions by different local groupings. A new theoretical framework introduced in the first part of this jointly-presented paper, developed from the sociological concepts of “power” and “domination”, takes this fluid and multidimensional setting into account. Here, power is understood as the ever-increasing and constant reconfiguration of political influence on and between pre- and para-Roman societies. Domination is then the institutionalized and stabilized administration of Rome over one or more of these polities. In the second part of this paper, in a case study of southern and north-east Scotland, this framework will be put to the test. Evidence from the regions’ architectural record prior and during episodes of early encounters with Roman power will be analyzed against Rome’s more systematic strategies of domination, such as the construction of the linear fortification of the Antonine Wall in AD 142. The material evidence of Iron Age architecture, its design, material and construction, highlights its role in the immaterial changes in local power structures along Rome’s northern frontier. What emerges are the complexities within these shifts, from models congruent with heterarchy or even anarchy to more hierarchical patterns. A final comparison with other case studies from Gaulish and Germanic regions then contextualizes the Scottish case into broader strategies of Roman imperialism. This paper belongs to the project “REASSESSING ROMAN IMPACT – GEOGRAPHIES OF POWER AND DOMINATION IN THE ROMAN WEST AND BEYOND 200 BC – 200AD”, funded by the Swiss National Science Foundation (SNSF).

New data on the Roman military presence in the Gerês-Xurés Transboundary Biosphere Reserve and its impact on local landscapes and communities

João Fonte, Ioana Oltean, Department of Archaeology, University of Exeter

New data gathered in the scope of the Marie Skłodowska-Curie project Finisterrae (grant agreement 794048) funded by the European Commission has allowed us to reassess the Roman military presence in the Gerês-Xurés Transboundary Biosphere Reserve, an upland landscape crossed by several main river valleys in the border between northern Portugal and southern Galicia. Until now, the only known Roman military site in this area was the fort of Aquis Querquernis, which postdates the Roman conquest. The early Roman military activity was completely unknown archaeologically until now, only through Latin written sources. In this paper, we will be presenting and discussing the new data collected following an interdisciplinary and multiscale approach, from remote sensing to absolute dating. This has completely changed our perspective on the early Roman military presence in this area. Remote sensing has allowed us to locate new Roman military temporary sites, which have been archaeologically investigated and historically contextualised, covering a time span between the 2nd century BC and the 2nd century AD. This allowed us to integrate them with indigenous social dynamics, favouring a more substantiated and holistic approach to the impact of Roman imperialism on local landscapes and communities in this area.

The siege of Cerro Castarreño: reassessing the Roman-indigenous dynamics between the River Douro valley and the Cantabrian Mountains (Spain) during the 1st c. BC

José Manuel, University of Salamanca, Jesús García Sánchez, Instituto de Arqueología de Mérida, CSIC-Junta de Extremadura

The presence of the Turmogi -or Turmodigi- in ancient sources is practically testimonial. Neighbours of peoples such as the Cantabrians, Celtiberians or Vacceans, their role during the events leading to Rome's absolute control of the Iberian Peninsula during the 1st century BC has mainly gone unnoticed in the traditional historiography. According to these sources, this territory was already incorporated into the Roman state when Augustus launched his offensive against the Cantabrians and Asturians (29-19 BC). In recent years (2017-21), archaeological research has documented the traces of a forgotten episode of violence in the region. Applying a multidisciplinary approach that combines different remote sensing techniques –aerial and satellite coverages, airborne LiDAR technology, aerial survey using UAVs, geophysical survey- and a thorough ground-truthing process –artefactual and metal-detecting oriented surveys, excavation of test-pits- it has been possible to document a 6 km long circumvallatio and an external contravallatio linking several Roman camps which surround the oppidum of Cerro Castarreño. Archaeological evidence also points towards the Roman military presence at the hillfort itself. This research undermines the traditional narratives where the Turmogi acted as a natural ally of Rome in the region after being wronged by the Cantabrians, hence serving as *casus belli* for the final Roman offensive in Iberia. Given the evidence, we must rethink the role played by these people in the complex Roman-indigenous dynamics of the Late Republic and Early Empire. Soon after this episode, the Pisuerga and Arlanzón river basins were restructured in Augustan times in close connection with the Roman military deployment in northern Iberia. The oppidum of Cerro Castarreño was replaced by the new city of Segisamo (Sasamón), which came to border the *prata* of the legio IIII Macedonica in Herrera de Pisuerga (Palencia), only 30 km to the north-west.

Le développement d'une zone frontière en milieu désertique : l'exemple de la Tripolitaine

Michel Reddé, PSL University, Ecole pratique des hautes études, Paris

Tripolitania's "border" is special in that it is an open frontier, in direct contact with the populations of the desert. It was only at the beginning of the 3rd century, when the nomads were already in the process of settling, that the Roman army controlled these vast areas by setting up a few military camps.

Getae, Moesi, and Scythians: Ethnographic (re)configurations in Rome's early lower Danube borderland

Timothy Hart, University of Massachusetts Amherst

When Rome expanded into the lower Danubian realm in the early first century CE, it found a human landscape consisting of a patchwork of sedentary and transhumant peoples, many of whom spoke related languages in the Thracian linguistic family. In his *Geography* (7.3.1), Strabo captured a snapshot of this greater Thracian world, which he described collectively as the land of the Getae, and which he pictured extending on both sides of the Danube throughout the Bulgarian and Wallachian plains, and the Dobrogea. Strabo's description of the lower Danubian realm captured the final moments of a cultural landscape that long predated the arrival of Rome and its Danube *limes*, but it was a rapidly-changing world, even then. In this paper I will explore how Rome's establishment of a military frontier along the lower Danube sparked fundamental changes in the ways Greeks and Romans thought – and wrote – about the indigenous communities of the region. Rome's *limes* neatly bisected Strabo's "land of the Getae," and since the empire viewed its rule as hegemony over discrete cities and peoples (Mattern 1999), it was ideologically untenable for half of the Getae to live under imperial rule while the other half did not. With the Danube *limes* firmly established, we find an intellectual, rather than a military answer to this problem. By looking

at the authors of the later first century and beyond, I will demonstrate how older ethnographic categories were superseded by new divisions designed to emphasize a – largely imagined – distinction between trans-limitine, Scythian, nomadism and the emerging “civilization” of Rome’s lower Danubian provinces. Crucially, I will also illustrate how these new ethnographic divisions shaped divergent Roman imperial interactions with the tribal peoples on either side of the river.

Indigenous and exogenous population groups in the Alpine foothills and the organisation of the province of Raetia et Vindelicum during the 1st century AD

Bernd Steidl, Archäologische Staatssammlung

For a long time, an inhumation-practicing population group has been known from the rural area of northern Alpine Raetia. This population is called the “Heimstetten group” after the most important find site. The women’s graves were characterised by a costume of uniform appearance. According to common opinion, this population was settled around AD 30 under Roman direction. New excavations and research have now made it possible to link the graves to a certain type of rural settlement, which can be recognisably derived from local roots. The local population bears the habit as the “Heimstetten group” for only about one generation, which can be understood as a nativist reaction to the Roman occupation. But even later, the group persisted in its traditional way of life and adapted Roman influences only to a small extent. In order to build an infrastructure in the province, Rome had to bring Mediterranean or Romanised population groups into the region, who were mainly involved in the construction of towns and vici of the central and western Alpine foothills. A third population component is discernible in the area around the provincial capital Augusta Vindelicum/Augsburg. In late Augustan/Tiberian and Claudian times, Elbe Germans were settled there. Probably, there was a connection with the end of the reigns of Marbod (AD 19) and Vannius (AD 50) to the north of the Danube. The Suebi, who initially settled according to Germanic patterns, quickly integrated. Already at the beginning of the 2nd century they formed part of the provincial elite. Overall, the picture of population conditions in Raetia in the early imperial period was complex. It was characterised by a continuing autochthonous population base, Mediterranean or Romanised immigrants as well as soldiers of the auxilia and relocated Germanic exiles who were open to the Roman way of life. Contacts between all groups can be detected. The boundaries became blurred over time, but did not disappear completely. The Mediterranean element lost importance, the autochthones in the rural environment changed little. After the early 2nd century, the Germanic tribes can only be traced through the persistence of the drinking horn custom.

The Enemy Within? Military forts behind the Danube frontier

Damjan Donec, Middle East Technical University

By the time of the Severan dynasty, there were nearly a dozen permanent military forts in the interior of the Balkan and Danube provinces, sometimes located hundreds of kilometers behind the Danube Limes. A few different explanations for their possible roles have been proposed in the scholarly literature, but they mostly revolve around the need to control strategic segments of the regional road network or to provide logistical and technical support and security to the mining operations in the Balkan interior. In this paper, we shall briefly survey the available data pertinent to these installations, and we shall try to put forward another possible explanation – not necessarily incompatible with existing explanations – for their presence in areas at great distances from the state frontier. The distribution of these forts in relation to the known facts about the ethnic and administrative map of the study-region and their founding dates are of crucial importance to the

hypothesis advanced in this paper. We shall also take a brief look at the available epigraphic evidence found in these forts or their vicinity and look at possible parallels in other frontier provinces. Should this explanation contain a kernel of truth, it will entail a number of significant implications for the municipalization and urbanization of the Balkan provinces and it will underscore the importance of the army in the administration of this peripheral and unruly corner of the Roman Empire.

Before the Romans, their coins came. Hoards of Roman coins of Augustan Period in Late Iron Age South-Carpathian Dacia

Dragos Mandescu, Ioan-Andi Pitigoi, Arges County Museum, Pitesti, Romania

In recent years, chance finds of coin hoard made with metal detectors have constantly increased in Romania. Two such discoveries, made recently in Argeş County, about 4 km away from each other (Valea Neniei, 2019 and Fureşti, 2020) attract attention: they are two monetary deposits of Roman republican denarii ending in the times of Augustus (13 BC). Both accidental discoveries were followed shortly by archaeological excavations that led to the recovery of the entire batch of coins and the clarification of the contexts. The first deposit clearly belonged to a pre-Roman Dacian settlement. The second one must be put in the context of a road that had been used since the Bronze Age. The two deposits of Roman republican denarii join three other similar discoveries in the proximity, all of these ending with coins from Augustus, previously known (Cetăţeni, Strâmba and Văleni). These unitary discoveries (five hoards closing with issues from 16-9 BC merged on an area of less than 200 km²) are able to attest a nucleus of Dacian communities in the South Carpathians being in close connectivity and relationship with the Roman authority just installed on the south bank of the Lower Danube. And all these right in the wake of vigorous Roman military interventions north of the river that finally led to the cessation of Dacian centers of power from Muntenia (i.e. Popeşti, Cetăţeni, Tinosu, Zimnicea, Piscu Crăsani).

From deserta Boiorum to civitas Boiorum

Szilvia Bíró, Iseum Savariense /Savaria Museum (Szombathely, HU)

The time of the formation of Illyricum/Pannonia province (the last decades BC and the first decades AD) is less known to the researchers. However the last years offer some new results, which help us to enlight the situation in NW-Pannonia. What did happen to the people of the Late LTD- period, how did the demography changed and how did the “population-map” of the area transform, inside and outside of the later province territory?

2. Organic Riches

2. Organic Riches. The impact of organic resources on Frontier research

Wednesday, 24 August 2022, Yellow Room

Session Chairs: Silke Lange & Carol van Driel-Murray

Affiliation: BIAx Consult, the Netherlands

Affiliation of co-organiser: Leiden University, the Netherlands

Session Abstract: Although artefacts made of organic materials such as timber, leather and basketry have long attracted attention, they tended to be relegated to the ‘daily life’ sections of publications and have had little impact on the wider narrative of Frontier Studies. In recent years, however, some of the most exciting new insights in Frontier research have emerged from sites with good organic conservation and the application of scientific methods has further increased the informative value of organic remains.

This session is not so much about interesting finds as such, but aims to highlight the contribution of organic materials to new developments in understanding the workings of the Frontier system and the communities in and around the military garrisons. How has the information drawn from organic materials changed our perception of the Roman Frontier?

Topics that might be addressed are: dendrochronology and the impact on the timing of military construction projects, the ecological footprint, the sourcing and transformation of materials. What has research into organic materials added to our understanding of the nature and composition of the civilian communities? Can traditions in woodworking, basketry or clothing help define the origins of communities? Also of importance are the specific problems of excavation in conditions of good organic preservation and, related to this, the demands made on protection and site management.

The contribution of the organic materials has been greatly underestimated and it is time to recognise that the bias in survival has distorted our perception of all aspects of life on the Frontier

Introduction to the session Organic Riches: wood, leather and textiles in frontier studies

Carol van Driel-Murray, Leiden University, the Netherlands

Introducing the session on organic materials I will also touch on leatherwork and textiles in relation to broader Frontier issues. Can particular assemblages identify who was actually doing the work and where they come from? Beyond the frontier, organic materials register the actual presence of individual people, giving an unusual insight in relations between the Empire and the Frisian region.

The potential of Anaerobic Archaeological Environments: A case study investigating cultural contact in the community at Vindolanda

Elizabeth Greene, University of Western Ontario, Barbara Birley, The Vindolanda Trust

The Roman site of Vindolanda near Hadrian's Wall has for decades provided unique evidence for understanding cultural change on the Roman frontiers. Because of the anaerobic environments that exist, wood, leather and bone are preserved in excellent condition, resulting in a far more robust dataset than is typical for most sites. The earliest levels of occupation at Vindolanda (85-130 CE) have all been extensively excavated and sit largely in anaerobic conditions. Therefore, the best understood period at the site is the critical phase during conquest and early settlement, a period that is critical for our understanding of cultural change and appropriation in the provinces and frontiers. This paper uses a case study from Vindolanda of two houses located in the settlement outside the Period 4 fort (ca. 105-120 CE) to show how anaerobic conditions dramatically change our understanding of the individuals who lived here. The houses themselves were constructed in two different ways, while the artefacts within also suggest that the inhabitants held different cultural habits. The material culture suggests that the inhabitants adhered to traditions, as well as adopted new habits. Because the structures were in anaerobic conditions the presence of wood, leather and other organic objects fills out the picture in a way not possible otherwise. The presence of wooden combs and leather shoes found in the round structure of native British style suggests the inhabitants utilized "Roman" goods for daily use, while the presence of writing implements and wooden tablets indicate the adoption of writing habits not present in pre-Roman contexts. The inclusion of organic artefacts in this dataset allows us to see much more clearly the nuances of cultural change on the level of individual households during this important period of conquest and settlement in the Roman provinces.

From tree to post. Logistics and organisation around infrastructural works in the Lower Rhine limes

Silke Lange, BIAx Consult, the Netherlands

New data from excavations of infrastructural works in the Netherlands provide insights into the organisation of building campaigns in the reign of Emperor Hadrian. Details about the different steps of the process emerge in particular from the research of wooden structures of sites along the Limes. Here, wood was the most important raw material for the construction of roads, bridges and

riverbanks. Examples are the revetments of the Roman road (the so called 'limes road'), bridge constructions over rivers and over marshy areas in the landscape. The data from the research provides a picture of the various logistical steps that formed the basis of the building campaigns. This starts with the exploitation of a certain area and the felling of the trees, the transport to the various distribution centres and the further transport to the building sites. Evident in this story is the quite recent discovery of four punch stamped marks on oak posts from the Roman road near Valkenburg. The homogeneity in wood species, use of tools and woodworking suggests a tight organisation behind the scenes of construction. Due to the specific characteristics of wood regarding the time of felling and transport, the duration of storage, the final processing, the logistic timing must also have been well thought out. After all, dry oak wood can hardly be worked with an axe or an adze without seriously damaging the tools. The question of how the logs are transported to the distribution centres also arises. What are the indications for rafts, what for transport by ship? The logistics of supplying wood will have had its consequences for the layout of the Limes area and the security of infrastructural works. Therefore, it is valuable to include the data of wood use and wood supply in the interpretation of the military-influenced layout of the landscape in detail.

Timber joints and wickerwork: organic remains in forts and vici in the Lower Rhine area

Julia Chorus, Chorus Archeologie

For the past 70 years excavations that were carried out at various sites along the Lower Rhine in the Netherlands have uncovered excellently preserved timber remains. This allowed the recognition and documentation of building techniques in the timber forts and associated military vici. A large variety in the foundation techniques, beam joints and wickerwork of wattle-and-daub walls of and within the forts can be observed. What do the military vici show us compare to this? In this paper my focus will be on the timber building remains and possible building tradition(s). By comparing the forts, and fort and vicus, what information can be deduced on the relation between the builders and population in both the forts and the vici? An important, associated aspect that will be addressed, is the difference in conservation of the timber and other organic remains. A discrepancy can be observed between Roman sites that were covered by medieval and later building layers, and sites that were not overbuilt in later periods. How can this difference be explained and how can this knowledge be used for site preservation and future research?

Vindolanda – Wood, Craft, Life & Connections: a view from the edge

Rob Sands, UCD School of Archaeology

An exceptional collection of wooden objects from Vindolanda, surviving in deep, damp, dark, anaerobic, deposits, has been recovered during excavations conducted over the last forty years at Vindolanda, a Roman auxiliary fort in Northern Britain. The collection consists of several 100 well preserved wooden items, which are primarily from well dated contexts in the late 1st and early 2nd centuries AD. Selected objects from this collection will provide an opportunity to reflect on how we might begin to consider the nature, and origin, of different traditions of woodworking found within a Roman context, and through this to think through the relationship between trees, people and craft.

As good as new? A special wood find from Houten (NL) suggesting a sustainable use of building materials in Roman times

Tamara Vernimmen, Ivo Vossen, ADC ArcheoProjecten

During an excavation in the periphery of a native settlement near Houten, the Netherlands, only a few Roman (1st-2nd century AD) ditches and a well were unearthed. At the bottom of the well however, an interesting discovery was made: a layer of thin wooden planks, scattered all over the bottom and clearly dumped as waste. Due to the fragile state of the planks, the complete section of soil was dug out to be uncovered indoors under more controlled circumstances, thereby revealing 29 more or less complete planks. They measured up to 1 m in length and between 12 and 18 cm in width. Most remarkable however is their slight thickness: only 0,1 to 0,8 cm. Almost all planks have a pointed end and a small hole in the middle of the other end. The wood was identified as oak and several planks were dated between 88 and 147 AD using dendrochronology. The dimensions and the

shape of the planks as well as the presence of nail holes brought us to the interpretation as roof shingles or scandulas. Roof shingles from Roman times are occasionally being found in Europe. The shingles from Houten appear to be the first ones from a native, i.e. non-urban or non-military context. An inventory of similar finds gave us insight into the production and use of roof shingles in general during Roman times as well as a clue to the long trip the shingles from Houten have made before ending up at the bottom of a well.

3. Ripae et Litora

3. “Ripae et litora,” Supply and security on the riverine and coastal edges of the Roman Empire

Session Chairs: Wouter Dhaeze, Erik Graafstal, Tom Hazenberg & Jeroen van Zoolingen

Affiliation: City of Oudenburg, Belgium

Affiliation of co-organisier: city of Utrecht, the Netherlands

Affiliation of second co-organisier: Hazenberg Archeologie, the Netherlands

Affiliation of third co-organisier: city of The Hague, the Netherlands

Session Abstract: At its height the Roman empire’s edges stretched over 29,000 km, half of which bordered the sea. While most of the imperial shores needed little protection, the northern provinces, both on the Continent and in Britain, saw military investment along the coasts in various forms and contexts from the 1st to the early 5th century. A special feature of this seeming backwater was the transport link between the German Rhineland and Britain. This corridor was a vital piece of infrastructure throughout the Roman period. With both the German and British fleets involved in its operation, and many harbour and military sites along it known, we are singularly well informed about this lifeline of the northern Empire.

This session will explore the interconnections between supply and security on the exposed water frontiers of the northern provinces. While Roman land frontiers have been studied in detail, they cannot simply be seen as a blueprint for coastal systems. The latter are often merely seen as extensions of land frontiers in reaction to seaborne raiders, but their purpose, development, operation and tactics are in fact more complicated, and unique for each situation, depending i.a. on the local geography, sealanes and flows of traffic. Recent work on the British shores and the North Sea and Black Sea coasts suggests that their military dispositions can be concerned not just with coastal defence, patrol and transport security, but also with taxation, logistics or communication. River frontiers also deserve a closer look, as they are functional hybrids, merging frontier security and river logistics. In the Rhine delta, especially, the picture gets blurred as coastal and riverine infrastructures merge.

This session intends to explore this broad theme of supply and security under four headings, concentrating on the northern shores and river corridors. The organisers invite papers on the following subjects:

- Hubs, harbours, ships
- River transport, navigation and the maritime seascape
- The range of activities of the German and British fleets
- Coastal security systems: southern North Sea, Cumberland Coast and Litus Saxonicum
- Comparative perspective from Danube and Black Sea region.

Prisoners of ethno-geography: Transnational dynamics of warfare between Late Iron Age Ireland and the Roman frontier in Britain?

Alistair McCluskey, Independent Researcher

Analysis of contemporary and recent historic warfare has underscored the significance of transnational dynamics, such as diaspora, that interact with or contest the existing political geography of the conflict region in question. This paper will apply the transnational dynamics of conflict to three aspects of the Roman frontier of Central Britain to demonstrate the value of this framework in understanding: (1) the human terrain networks in late Iron Age Britain and Ireland; (2) their relationship with the physical geography of the region; and (3) their relationship with the Roman military strategic response. The geographic links between Late Iron Age Ireland and Roman Britain are seldom studied in relation to Roman frontiers, with the Irish Sea more often perceived as being a barrier, frequently polarizing research perspectives between either the Late Irish Iron Age or the Romano-British Iron Age. When contact across the Irish Sea has been considered, the inquiry has tended to reflect upon the presence of Roman material in Ireland in the first instance. Although Roman and Iron Age research fields are well developed, they struggle to reconcile with each other beyond the presence – or otherwise – of each other's material culture on their respective sites. This paper will argue that the transnational and connected character of the North British Iron Age communities around the Irish Sea was exploited by some to pull Rome north as a strategic ally, while others used these connections to resist Rome's advance and develop their own strategic advantages where possible. In this respect, new perspectives of the frontier emerge including a possible 'west facing' limes along the coast, rivers, Pennines and Southern Uplands to complement the north facing mural barriers, developed over a military campaign extended across some 80-90 years between AD 70-160.

Sea frontiers along the Channel and the North Sea. Development, purpose and tactics

Wouter Dhaeze, City of Oudenburg, Belgium

The harbours along the shores of the southern North Sea and the Channel were of the utmost importance for communication, army supply, and trade between the Continent and Britain and along their coasts. From the Early Empire on the military took measures to protect critical infrastructure along this exposed stretch of the northern frontier. The military dispositions were concerned not just with coastal defence, patrol and transport security, but also with taxation, logistics or communication. The position of the known forts, not installed at the mouth of the rivers or tidal inlets, but some kilometres more inland, and usually offering not a perfect lookout for raiders, suggest that communication and control over the supply chain prevailed upon coastal defence. This does not mean that, in the case of raids, the available infrastructure or troops could be used, but always most economically. The water frontiers along the North Sea and Channel were not simple copies of the land frontier systems. Their purpose, development, operation and tactics are more complicated and unique for each situation. Military investment along these shores was continuously adapted to changing sea lanes and flows of traffic, changing morphology of the coastal areas, internal agendas of emperors, usurpers or governors, and changing barbaric threats. A lot of questions remain on for example the statute of these shores in the Late Roman period and the tactics of the coastal defence. Were they considered provincial borders or military borders as well? How did the available personnel in the military installations operate? Besides a general overview of the sea frontiers of the North Sea and Channel, this lecture elaborates further on these questions.

Defending dunes and marching along marshes: details of the Antonine coastal limes between Rhine and Meuse

Jeroen van Zoolingen, Municipality of The Hague, The Netherlands

Much of the Roman coastline in The Netherlands has been lost to erosion by the North Sea. The The Hague region is one of only a few areas where some of this landscape remains. Now mostly covered by medieval dunes, at least two military sites have been excavated. The very first military activity in the area is known from the Ockenburgh site, where in the first half of the 2nd century AD a temporary camp arose. Not long after, around 150 AD a praesidium was installed adjacent to it, soon followed by a vicus covering the features of the camp. The outpost was occupied by a cavalry unit with intervention, patrol, and communication as its primary tasks. It functioned in a system of multiple outposts between the rivers Rhine and Meuse, of which at a distance of some 7 km the Scheveningseweg site is best understood. Though no military structures could be identified, multiple militaria and tools indicate a military vicus. Further inland, the Roman military undertook large scale infrastructural works. Around the same time when the Ockenburgh outpost was build, a primary Roman road between the rivers Rhine and Meuse was built/refurbished and dedicated. Around 160 AD a harbour was installed at the Roman town near present-day Voorburg (Forum Hadriani), which lay along this Roman road and was reachable through a canal connecting the major estuaries. In the last 10 years many of these sites where (re-)studied and published. As a result, the area features some intriguing detail to understanding the development and functioning of a coastal defence and guard system during the 2nd century AD.

The Roman bases at Velsen

Arjen Bosman, Military Legacy

The last significant presentation at the Limescongress on discoveries in Roman Velsen dates from 1995. Since then a lot has been achieved, mainly by research of the final base of Velsen 2. Insight on the outlay of the several bases of both Velsen 1 and Velsen 2 and their surroundings has changed dramatically. Also the difference between the forts of Velsen 1 and Velsen 2 has become more apparent, by indepth study of all findgroups. The dates at which the Romans founded and left both bases have become more solid. The supply of both forts is better known as is the type of troops which occupied Velsen.

The Mystery of the Marsh: the western end of Hadrian's Wall, UK

Jane Harrison, University of Newcastle, WallCAP

This paper re-examines the western end of the Hadrian's Wall, between Luguvalium (Carlisle) and Maia (Bowness-on-Solway). This stretch of the Wall faces the Solway Estuary to the north, unlike the eastern end where Tyne river and its mouth lie to the south of the Wall, and the paper asks whether this landscape position determines the character of the Wall structures along the estuary. To investigate the question a number of more recent small-scale pieces of fieldwork are brought together with older investigations and new work by the WallCAP Project in the area. The investigation takes a landscape perspective in examining an area of Hadrian's Wall that has seen less archaeological work than the central and eastern sections of the Wall. Overall, the landscape is low-lying and marshy, punctuated by hillocks of higher ground, which have always been the focus of settlement. How did this influence the development of the Wall constructions? There has been much speculation about what happens to the Wall structures between Milecastles 73 and 76, across the Burgh Marsh and Drumburgh Moss, where no evidence has been discovered for the curtain wall or indeed any aspects of the Wall. Did the landscape and security dictate a different approach

here or has the Wall been lost to erosion? Does comparison with other estuarial and riverine stretches of the Limes in other parts of the Empire help answer these questions? In this part of the World Heritage Site, the Wall structures and forts are mostly not visible and there are no spectacular stretches of upstanding remains, so the paper examines how landscape archaeology approaches can advance understanding of this area of the Limes.

Shore-ing Up Britain

Philip Smither, University of Kent/English Heritage/Portable Antiquities Scheme

Since the 1922-1939 excavations at Richborough, research into the late Roman shore forts in Britain took off. However, not only did archaeological evidence come up against historical evidence, most notably in the form of the *Notitia Dignitatum*, but the archaeological interpretation is on ground as unstable as the Thanet Sands. Returning to the Richborough excavation archive and reassessing the published material on the shore forts in Britannia has revealed that much was either omitted or misinterpreted. We can now also go beyond a simple historical narrative of the shore forts and provide a context within their landscape. It has often been noted that the shore forts vary in construction and this evidence has been used to provide a sequence for the shore forts which is often at odds with the archaeological evidence and historical narratives. A reassessment of the evidence in light of new archaeological analysis shows that in almost all cases the forts were the brainchild of Carausius and Allectus. Furthermore, their use in the 4th century suggests a close link with the main settlements in the hinterland. As the focus of the shore forts has mostly been in isolation a view of the wider landscape shows clear interactions between the shore forts and its environs. A major problem with interpreting the shore forts is how they are presented in the *Notitia* of the early 5th century. This presentation often led to them being interpreted as a unified system. While this is likely the case to some degree, this falls under a reutilisation of the forts in the AD330-40s. A further reutilisation, at least at Richborough, likely occurs in the c.AD380s when the site layout is significantly altered. There is a clear need to re-examine the archives of the shore forts, of which Richborough is only the beginning.

When's a fleet a fleet? Classes and legions on the water

Christoph Rummel, Roemisch-Germanische Kommission of the DAI

In past Congresses of Frontier studies, Roman Fleets, their ranges of operations and tasks have repeatedly been discussed. Both in Britain and on the Rhine – but also on the Danube and in the Mediterranean – there is ample evidence that legions maintained naval branches. Building on discussions at Newcastle and Viminacium, this paper will collate and analyse data on Roman legions that were evidently involved in maritime activity from Britain, the Rhine and Danube frontier, as well as from other parts of the Empire. On this basis, it will attempt to reconstruct their role in the naval frontier infrastructure of Rome. A key question to be addressed is to what extent the operational spheres of legions and established fleets can even be defined and if so, whether they complemented each other, overlapped or whether legions took on the role of fleets in fields and regions where these did not operate. In this way, the paper seeks to contribute one key aspect towards a better understanding of communication, supply and security in the waterscapes at the edge of the Empire.

Lower Rhine river palaeolandscape mapping: understanding meander dynamics below and along and flood deposition around and above Limes archaeological horizons

Kim Cohen, Utrecht University, Dept. Physical Geography

For a variety of reasons, the Holocene geological-geomorphological record of the Lower Rhine valley and deltaic river branches are intensively studied by geoscientists, paleo environmentalists and archaeologists alike. Palaeogeographical reconstructions, nowadays stored in digital map datasets, iteratively integrate that accumulated knowledge. For the Lower Rhine (and hence for the Limes that runs along it) they are very well developed, tightly age- and elevation-constrained. The contribution will cover channel dynamics: what older and younger meanders were present to settle on top of and along? What continued meander reorganization is seen during and after Roman times? What entire branches switched on and off? It will then cover flooding during and since Roman times, and the overbank deposits that this left.

The Fossa Corbulonis, keeping track on a multitude of small excavations, new ideas on its original purpose and further use

Wilfried Hensing, *Vestigia Archeologie & Cultuurhistorie*

In 1989 excavations by ROB at Leidschendam confirmed for the first time the existence of the Roman Canal dug, – as mentioned in Tacitus' Annals – under orders of Domitius Corbulo between the Rhine and Meuse rivers. Since then many excavations and other investigations along its course have taken place trying to establish its exact course, the way it was constructed and maintained in the challenging delta landscape and what the reasons for Corbulo and the Roman leadership must have been to undertake this task. Many details about the northern stretch, between Leiden and Forum Hadriani, have come to light, including reliable dendrochronological dates of the initial construction, later repairs and the end of use. Surprisingly, large stretches of the silted up canal lay still hidden under the modern landscape and have not been disturbed by its late medieval, and later successor, the busy *Rhine-Schie* Canal. It is for this reason that several stretches have been protected now as part of the Unesco World Heritage monument of the Lower German Limes. Unfortunately, we are much less well informed about the southern half of the watercourse, from Forum Hadriani to, presumably, its southern mouth somewhere near the present town of Naaldwijk. New research is very much needed there. In the meantime, recent discoveries of the Roman legionary camp at Valkenburg have given new thought about where the manpower to build the canal may have come from, and also what the Romans (Corbulos') real strategic intentions may have been. Other new evidence about its continued use, contrary to earlier ideas until well into the 3th century, points towards the canal being an essential part of a well-established long distance trade and supply route, allowing ships to sail mostly inland through the coastal deltas of the Rhine, Meuse and Scheldt rivers to the Channel coast and further on to Britannia.

River Main as route of military supply – new archaeological and geoarchaeological research

Thomas Becker, Landesamt für Denkmalpflege Hessen, hessenARCHÄOLOGIE, Außenstelle Darmstadt, Andreas Vött, Lea Obrocki, Johannes-Gutenberg-University Mainz, Institute for Geography, Geoarchaeology

The rivers Lahn, Main and Neckar are the largest within the Roman province Upper Germany, which connect the Rhine with the eastern parts of the province. Rivers Lahn and Main originate outside the Roman Empire and cross the Limes at different positions. The course of the Neckar concentrates on the provincial territory. The Main is the one of three rivers, which has the longest course through plain terrain outside the low mountain range (Mittelgebirge). The plain terrain on both sides of the river is an intensely settled area. The river and its stream network play a central role in supplying the military on the northern

border section of the province. At the same time, it was used to transport raw materials from the border to the hinterland. As part of the conquest of the provincial area on the right bank of the River Rhine, it not only offers supply options, but also has a strategic function. In recent years, both archaeological and geoarchaeological research was carried out along the river, which supplemented and expanded this picture of the water course used and controlled. This provides information on the varying use of the river from the 1st to the 4th century AD.

Bridge construction and maintenance work at the ripa Rheni and on the upper course of the rivers Moenus and Mosa as strategic construction measures in the 4th century AD – Results from dendrochronological and historical studies

Norbert Hanel, Universität zu Köln, Archäologisches Institut, Thomas Frank, Universität zu Köln, Institut für Ur- und Frühgeschichte, Labor für Dendroarchäologie / Dendro-Archiv NRW

In recent years, dendrochronological studies have provided important new insights into the construction and repair of Roman bridges on the Rhine and on the upper reaches of the Meuse and the Main estuary. In combination with historically documented events, these results allow a new evaluation of the bridges in the overall strategic concept of late Roman military leadership in the course of the 4th century AD. This is because the joint examination of dendrochronological data and historically documented events means that dendrodata, which were previously incomprehensibly young and therefore subject to criticism, can now be casually incorporated into the historical development and complement the understanding of bridge construction and maintenance/repair as part of late Roman military strategy. According to current knowledge, the dendrochronologically dated bridge construction measures can be linked to historically handed down campaigns against the Franks:

- - with the campaigns of Emperor Constantinus I in 310/315 AD
 - with the construction programme that transcended provincial boundaries and the military campaigns under Valentinianus I around 367 AD
 - with the conflicts under Valentinianus II/Arbogastes with tribes on the right bank of the Rhine between 388–393 AD.

As a result, not only fortress construction programmes directly on the ripa Rheni, but also the restoration of infrastructure, especially bridges, both in the hinterland and directly on the Rhine border can be interpreted as military strategic measures.

Chesters Road Bridge

Ian Longhurst,

The Romans originally carried Hadrian's Wall across the North Tyne at Chesters on a pedestrian bridge. Later the pedestrian bridge was demolished and replaced with a road bridge. Beyond its existence, nothing about this road bridge is correctly understood. M.J.T. Lewis rightly suggested that the archaeology at Chesters was of a river wharf. ("Roman navigation in northern England? A second look" Journal of the Railway and Canal Historical Society vol. 32 (1995) 417-422). The wharf has instead been misinterpreted as a grossly oversized bridge abutment.

1.

1. No one leaves a road bridge exactly on the military frontier. An outwork, most likely along the line of General Wade's road, had to protect the bridge.

2. The stone riverside quay had a wheel stop fitted to the edge to allow carts to be loaded directly from barges in the river.
3. The road bridge serviced resupply convoys whenever the army invaded Scotland and was built for the move to the Antonine Wall. Routing supplies for the army in Scotland through Chesters avoided a 150 metre hill on Dere Street and made additional fodder resources available.
4. Later, the quay was extended and a water course constructed at the back of the quay, to combat the silting up of the quay.
5. In a probable late Roman phase, when the quay was entirely silted up, a timber quay structure was probably built in front of the stone quay, presumably for another invasion of Scotland.
6. Sick and wounded soldiers were brought back on the empty supply carts, suggesting a hospital function at Chesters.
7. The bridge was the probable head of navigation. Developing the Tyne for navigation as far as Chesters under Antoninus Pius opens a question on river navigation on the Neckar in his reign.

Securing the transport of timber on water

Ronald Visser, Saxion University of Applied Sciences

Wood is one of the most important resources, both in the present world as in the past. It is one of the most sustainable and strongest building materials. The use of wood is versatile and it is not surprising that many structures along the Limes were made of wood or timber. Wood was needed for nearly everything in the Roman world, not only the ships that travelled along the rivers, the carts that moved along the roads, the pegs to secure tents, but also tools and weapons were made (partly) of this material. Various attempts were made to calculate an estimate of the amount of wood needed in the Roman period. For the Lower Rhine region, some studies state that the local landscape could have provided sufficient (fuel) wood and timber to sustain the local population, others debate this conclusion. In addition, there is strong evidence that timber was also used that must have been transported over hundred(s) of kilometers. The question remains how this wood was transported. The most logical route would have been over water ways. This paper will present and discuss evidence for the transport of wood and timber over water. The use of, for example, rafts or ships will have had consequences for security along the rivers. What methods or means were used? And how has this impacted the security?

Operation Zwammerdam ships: Putting things together on rowing and steering on the Roman Rhine

Yardeni Vorst, Restoration team 'Zwammerdam ships'

In 2018 a team of dedicated volunteers, carpenters, shipbuilders and archaeologists started to rebuild and reconstruct a river barge found nearly fifty years ago in the Dutch village of Zwammerdam. The ship was one of six Roman-period vessels found in the harbour area of a Rhine-based fortress. It was named 'Zwammerdam 2' in order of its discovery and the ship was conserved for future study and display. Since its excavation, the construction was studied on paper as well as in actual parts and onward from 2008 it was recorded digitally piece by piece. Fitting together the ship in 3D helped to solve certain questions and supported the reconstruction of a vessel that was incompletely preserved. However, some aspects of the construction remained unclear. Starting to rebuild the actual ship in 2018 was like putting theory into practice and it forced us to think again about each nail and joint from an interconnected perspective. Sharing our thoughts not just with archaeologists but

with our team of historical shipbuilders and generally practical people, benefited the process greatly. We reexamined the evidence for a rowing setup in the bow of the ship and considered the implications for using it effectively, gaining new insights. We also designed an experiment to explore steering and the attachments of a steering oar behind a river barge of Zwammerdam type, based on the archaeological find of a unique Zwammerdam steering oar. In our presentation we will discuss the archaeological evidence found for rowing onboard Zwammerdam 2 and other river barges of similar type. We will also discuss what we think is missing and put out some ideas on steering these vessels, moving up and down the rivers in Roman times.

4. Digital Limes

4. Digital Limes. The use of modern methods and advanced techniques for a better understanding of the Frontier development

Monday, 22 August, Karolingenzaal

Session Chairs: Roeland Emaus, Maarten Sepers & Wouter Vos

Affiliation: Saxion University of Applied Sciences / University Leiden, the Netherlands

Affiliation of co-organisier: Saxion University of Applied Sciences, the Netherlands

Affiliation of second co-organisier: Saxion University of Applied Sciences, the Netherlands

Session Abstract: A growing number of archaeologists are in some way working with what has conveniently been called 'Digital Technology': Lidar, aerial photography, GIS, remote sensing, photogrammetry, 3D-modelling, infrared, big data and even machine learning and citizen science are terms and techniques that are emerging and in some disciplines becoming more or less common practice. With these innovations going on for a couple of decades now, we would like to investigate whether this has really changed the way we study the Roman Limes. Without being a specialist in the field of these digital techniques, most Roman Archaeologists know that the combination of several techniques brings forward significant data that was hard to get with the more conventional, analogue methods.

The techniques have promised many opportunities for new research abilities, but do we use them exhaustingly well enough for positing the right and new research questions? Do Roman Archaeologists and Digital Archaeologists speak each other's language well enough, or are we multiplying the uncertainties of one discipline with the uncertainties of the other? Are we still searching for answers in an old-fashioned mode with – maybe- blinkers on? Or are Roman archaeologists equipped enough for exploring the real possibilities of the 21st century?

The aims of the papers in this session should therefore not focus on the individual site or method used to present the Roman Limes, but should happily deal with the main question which is: does the use of new technology lead to a better understanding of the Roman Limes? Has our research taken a different turn with the advent of a new digital toolbox? Or are we just answering old questions with modern answers? Do we use the full potential of combining the above-mentioned programs, but also, and more important, what are the chances and limitations by using these techniques for a better understanding of the Roman frontier?

Remote sensing and excavation in Villamontán camps

Esperanza Martin Hernandez, Dolabra, Felix Teichner, Florian Hermann

One of the many new areas of the Iberian Peninsula in which Roman military sites have been documented is the camp complex of Villamontán de la Valduerna, where at least seven enclosures of different sizes and orientations have been identified. All of them are next to the Roman via that goes from Asturica Augusta to Bracara Augusta following the Tera River.

The study and understanding of this new type of archaeological sites cannot be addressed by a singular research effort, so a work plan was proposed, which involved the formation of a multidisciplinary team that carried out a series of coordinated studies involving remote sensing, field surveys and archaeological excavations, among others, with the intention of filling the gaps in our current knowledge about this particular Roman site. The work carried out during the 2020 and 2021 campaigns is the logical continuation of other research projects that have studied the Roman conquest of the north of the Iberian Peninsula.

We focus this research on the implementation of several remote sensing protocols, which include surveys through ground-penetrating radar and electromagnetic equipment, the study of LiDAR data, as well as infrared and multispectral imagery and the execution of at least 20 flights through the year to document the differential growth of the vegetation in the area.

Finally, this study ends with several archaeological excavations at various points in the identified enclosures, with the intention of documenting any potential chronological or typological differences, and to collect enough finds of material culture to correctly define these sites and their function in the surrounding area of a major Roman road.

With this communication we intend to assess the scientific contribution of this very specific case, which incorporates modern studies and technologies to the study of an archaeological site from the start, in contrast with a more traditional approach based exclusively on field surveys and excavations.

Everything but straight – new geophysical research on 75 km of the Upper German Limes

Jennifer Schamper, Generaldirektion Kulturelles Erbe Rheinland-Pfalz, Direktion Landesarchäologie, Außenstelle Koblenz, Peter Henrich, Generaldirektion Kulturelles Erbe Rheinland-Pfalz, Direktion Rheinisches Landesmuseum Trier, Matthias Lang, Bonn Center for Digital Humanities, Universität Bonn

The first 75 km of the Upper German-Raetian Limes are located on Rhineland-Palatinate territory, starting on the Rhine near Rheinbrohl. Despite numerous surveys carried out since the 18th century, there are still areas where further research is needed. For this reason the Rhineland-Palatinate Directorate of Cultural Heritage, Directorate of State Archaeology, launched a geophysical prospection project in which a total of c. 100 ha was geomagnetically surveyed between 2018 and 2021. The aim was to use modern, non-invasive prospection techniques to locate the course of the Limes in Rhineland-Palatinate with accuracy and to verify the presence of suspected tower sites and fort locations. In addition to the discovery of previously unknown prehistoric and Roman monuments, the results show that the course of the Limes over long stretches is not straight, but rather 'meandering'. In some places, the absence of a straight border can be explained by the fact that the Limes incorporated prehistoric structures such as big Bronze Age grave monuments, which are also recognisable in the geomagnetics. This data will be part of a large-scale analysis by combining it with remote sensing data consisting of high-resolution aerial imagery and LiDAR data. The main focus of this research, carried out by the Centre for

Digital Humanities at the University of Bonn, is on the hinterland of the Limes, in order to take an in-depth look at this hitherto little-noticed area for the first time. The aim of the overall project is to use the non-invasive methods as sources for limes research and to answer previously unanswered questions about landscape planning, land use, defence strategy and transport topography.

A look into the big picture: identification of trade patterns in the Western Roman border using Network Science

Arnau Lario Devesa, University of Rome 'La Sapienza', Jordi Pérez González, University of Girona, Mateo González Vázquez, University of Trier, Carlos Palacín Copado, University of Barcelona

In the last three decades, research carried out at CEIPAC has focused on the presence of exotic foods in the Limes. The availability of products that were not part of the diet of the inhabitants of the frontier regions, such as Betic olive oil, the amphorae of which are present in all the Roman sites, was due to the interest of the Roman state in supplying its army. Thus, we defend through the study of the amphorae material a new research prospect: the survival of the limes was dependent on the supplies that arrived from other provinces. Given these characteristics, studies on amphorae and their epigraphy are well advanced and allow us to raise more complex questions. To address these questions, we will employ the data collected by ancient historians, archaeologists and epigraphists; nowadays transformed into Big Data. Such is our case. During the last decades we have accumulated more than 50,000 amphorae epigraphy records, contained in the CEIPAC database. In addition to the data generated and studied in a traditional way we now add computer science, computational modelling systems and simulations, applied theory in network science and visualization programs. At this point, it is impossible for a single person to rationally reflect on these data simultaneously. We are helped by software provided by the digital humanities. Recently we attempted to ask the computers complex questions and simultaneously to work in an intense interdisciplinary framework (with physicists, computer scientists and mathematicians) in a context of blue skies research (Grant agreement ID: 340828). Our proposal focuses first on the limits of adopting this new technology in our research. We will then point out the hybrid curricular profiles. Finally, highlight the benefits of using these emerging analysis methods for limes studies.

Acoustics and proxemics of military contiones

Kamil Kopij, Institute of Archaeology, Jagiellonian University, Adam Pilch, AGH – University of Science and Technology in Krakow, Monika Drab, Szymon Popławski, Wrocław University of Science and Technology

In our paper we present the results of acoustic and proxemic analysis of selected speaking platforms from which Romans have spoken publicly in military context. Our main goal was to determine the maximum number of recipients that were able to hear speeches intelligibly as well as to see gestures of an orator. Since most known military contiones took place in camps where the troops resided and the speaking platform (pulpitum) was placed within the principia our primary concern were these structures of three camps: Carnuntum, Novae and Dajaniya. We have also analysed the campus of Carnuntum as a possible place to speak to the soldiers. This will enable us to compare results obtained through analysis of three very different structures, divided geography, chronology and in terms of materials from which they were built. The analyses were conducted based on 3D virtual reconstructions of the structures taking into account acoustic properties of the materials from which they were build. Using Catt-acoustic software we run simulations in order to

establish Speech Transmission Indexes (STIs) for different background noise levels (between 36dBA and 55dBA). At the same time we established maximal visibility of three different classes of rhetoric gestures based on results of experiments we conducted. Based on the results of acoustic and proxemic simulations (the areas of audibility and visibility) we estimated the crowd sizes using two different methods based on modern observations of the behaviour of crowds. As a result we:

1.
 1. estimated the number of people that could intelligibly hear a speaker and see his gestures for all case studies,
 2. established whether all gathered soldiers were able to hear the speech intelligibly as well as see the gestures of the speaker or not.

The Missing Dead: Reconstructing the Past through Digital Gameplay at Roman Vindolanda

Claire Stocks, Newcastle University, Barbara Birley, Vindolanda Trust, Richard Davison, Newcastle University

This paper explores how digital games can enhance educational provisioning at sites along Hadrian's Wall. Using a mystery game (aimed at students aged 7-11) produced by the speaker/authors at Roman Vindolanda as a case study, we consider how such games offer learning opportunities for the visitor through entertainment (so called 'edutainment'). Moreover, we consider the wider benefits digital gaming could offer for online visitors to Vindolanda and Hadrian's Wall, both in terms of engaging new audiences with the Roman frontier in Britain, and in terms of connecting users with a shared cultural past when world developments – such as a global pandemic – reduce the possibility for in-person learning opportunities and visits. The benefits of using computer games for 'serious gaming', that is gaming used for the purpose of improving health or for education, are well-established (Mahony, Tiedau and Sirmons 2012; Malaka 2014), and the use of such games in museums and on cultural heritage sites is increasing. This paper takes as its focus the authors' experience in designing such a game for use at Vindolanda and digital activity packs (based on the game), which were created to support home-learning in response to the Covid19 pandemic. Called 'the Missing dead', the game is based upon a real-life discovery of a child's skeleton in 2010. The activity Packs, produced in collaboration with industry game-developers Creative Assembly, makers of the Total War series, support learning in literacy, numeracy, history, and computer science at home.

5. Feeding the frontier

5. Feeding the frontier. Agricultural economies, productive potential, and predictive modelling
Saturday, 27 August, Karolingenzaal

Session Chair: Laura Kooistra

Affiliation:

Session Abstract: The provisioning of the army and the role of the local population in supplying food has already been the subject of discussion for decades. For a long time, historical sources and the marginal landscape have led to the assumption that the Roman army in the Rhine delta (for example) was mainly supplied with products transported over medium and long distances. In the past twenty years, a large number of agrarian settlements and in addition, several army camps both situated in the Rhine delta have been investigated. Research combining archaeological, archaeobotanical, zooarchaeological, geomorphological and historical data has shed new light upon

the way the provisioning of the Roman army in this area was organized. In addition to the traditional research method of data compilation, there has been recent focus on quantitative modelling and agent-based modelling in this area over the past 10 years.

The collation of datasets generated by developer-funded excavations, especially in North-East Gaul and central-southern Britain, have demonstrated that agricultural communities in regions further from the frontiers were orientated towards supplying the Roman army. The application of multi-isotope techniques has provided new insights into the sourcing of animals and crops and the husbandry systems under which they were produced. Meanwhile, increased study of archaeobotanical and faunal assemblages in the Danube region, Noricum, Pannonia, and the Middle East are providing new insights into food supply and allow broader comparison of frontier supply systems in different parts of the Roman Empire.

We would like to invite colleagues to share their researches concerning feeding the Roman army at the borders of the Roman Empire in our session.

Who were the logisticians? The men responsible for feeding the limes garrison

Steve Matthews, Royal Holloway, University of London

Although it is accepted that taxation was the responsibility of the provincial procurators and this in turn was used for army provisioning, it is really not clear how this was done and who was responsible for the day to day victualling of the army. This paper seeks to find those men responsible for army provisioning, both the soldiers at the military units and the soldiers and the civilians employed within the procurators' officia, or elsewhere. It draws on evidence in the more detailed papyrological records of individuals supplying the army in Egypt and then looks for those same individuals at work elsewhere around the frontiers. A multitude of individuals can be seen to have been employed, collecting grain from the provincials, measuring grain and other provisions to troops, potentially accounting for supplies and liaising between civilian and soldier. However, all these individuals have titles that are ambiguous: *mensores*, *actuarii*, *librarii*, *tabularii* and *dispensatores* could all be involved in military supply but they may not have been, indeed it is often far from clear if they are either civilian or soldiers. Similarly, some soldiers such as *beneficarii* may have been involved in provisioning the troops but had many other functions as well. Yet by systematically surveying the epigraphic and papyrological evidence for trends, it is hoped to see which roles were empire-wide and which were not. Unsurprisingly, there is no unanimity, but it is possible to suggest that certain groups of individuals were engaged in re-supply in the officium of the procurator, in the community and in the camps.

Feeding the Roman Army in Britain: Animal supply networks on the frontiers

Peter Guest, Vianova Archaeology, Richard Madgwick, Cardiff University, Angela Lamb, British Geological Survey

A major new research project, entitled 'Feeding the Roman Army in Britain: Animal supply networks on the frontiers' (FRAB), will transform our understanding of the Roman army and the strategies that ensured the success of Roman imperialism in Britain. This will be achieved by generating new evidence for the economic practices and supply networks that provided animals to Britannia's frontiers, thereby revealing the impact of garrisons on the surrounding landscapes and their populations. The army consisted of some 300,000 men and it must have been a major challenge to supply soldiers on the Empire's far-flung frontiers. Unfortunately, we do not know how the Romans were able to do this so effectively, meaning that we cannot answer vital questions about how the army was provisioned, or the impact that the presence of thousands of soldiers had on the countryside. FRAB will focus on 15 sites in three frontier case-study areas – Hadrian's Wall, the Antonine Wall, and southeast Wales – analysing the jaws and teeth of 706 animals (cattle, sheep/goat and pigs) from legionary fortresses, auxiliary forts, supply bases and farms. 73 FRAB will produce one of the largest multi-isotope datasets (strontium, oxygen, carbon, nitrogen and sulphur) in archaeological research from anywhere in the world. It will provide, for the first time, a sophisticated understanding of how Roman soldiers were provisioned, and how Rome's frontiers

operated as economic, as well as militarised zones. The project will reveal animal origins, the supply networks that supported Britain's garrisons, and if new animal and landscape management strategies were introduced to intensify production and support the army. The combination of the latest scientific techniques and an interdisciplinary methodology will release the great potential of faunal remains to change the way we understand the Roman army in Britain.

Feeding the Army at Viminacium Legionary Fortress: Preliminary Zooarchaeological Evidence

Sonja Vuković, Bojana Zorić, Laboratory for bioarchaeology, Archaeology Department, Faculty of Philosophy, University of Belgrade, Ivan Bogdanović, Institute of Archaeology Belgrade

Viminacium, one of the most important spots at the Upper Moesian limes, was founded as a legionary camp, where the 7th Claudia legion was stationed from the second half of the 1st century AD, until the late Roman period. Next to the fortress, a city was built and became the capital of the province of Moesia Superior (and Moesia Prima in the late Roman period), while the whole area was surrounded by rural settlements the economy of which was based on agriculture. Up to date research of meat production and provisioning, based on zooarchaeological data from the civilian areas, indicated that the city of Viminacium was mainly supplied by the meat of improved cattle bred in surrounding rural areas, with a significant addition of pork, lamb, and chevon. Recent excavations of the legionary fortress, along with the analysis of animal remains, provided the starting points for the research of meat provisioning of the soldiers stationed in Viminacium. Preliminary zooarchaeological data revealed significant differences between the fortress and civilian areas, mainly in species ratios and mortality profiles of domesticates. This paper will be focused on zooarchaeological data (species ratios, mortality profiles, and biometry) from the Early Roman, Roman, and late Roman features 1 excavated at the north-western part of the fortress that mostly have been attributed to the embankments along the ramparts. By comparing the data from different periods, we will discuss plausible diachronic differences in meat diet and food provisioning for the camp. We will also compare zooarchaeological data from the fortress with contemporary surrounding civilian areas, to understand better the food supply systems. The questions of whether the army was supplied with animal products locally or from long distance will also be tackled.

Material Traces of Viticulture in Southern Pannonia

Jana Kopáčková, Hana Ivezić, Archaeological Museum in Zagreb

Wine played an irreplaceable role in everyday life of Roman soldiers. Roman military was a very large consumer of wine, olive oil and grain. Export of wine from the Mediterranean to the Limes is traceable due to findings of the amphorae. But what about local production of wine in the Middle / Lower Danube area? Till this day, the knowledge of local viticulture in Southern Pannonia was based only on a few written literary sources and one unique epigraphic monument from Popovac (CIL III 3294 = 10275). This paper brings newly discovered material evidence of viticulture – collection of specialised iron tools used in vineyards. Tools such as the *falx vinitoria* (vine-dresser's knife), *falcula vineatica* (grape-knife) and *falx arboraria* (pruning hook) are direct evidence of existing viticulture in this area and quite a large number of such tools has been identified during the ongoing revision of Archaeological Museum in Zagreb collections, all of them from known military and civilian sites from the Limes area, more precisely from Pannonian sites. Such a consequent number of previously unknown and unpublished artefacts directly related to viticulture offers the opportunity for a reassessment of wine production and supply on the Danube frontier in Pannonia.

Say "Cheese" – trying to identify dairy production tools and sites around Roman military sites

Birgitta Hoffmann, Roman Gask Project

The Ancient Sources mention several times the provision of the Roman Army with "caseum" (cheese) (e.g. SHA Hadrian 10.2). There is little detail what this "caseum" was: was it freshly prepared 'curds and whey' or an easily stored 'parmesan'-style cheese, or anything in between. However, this difference is essential in our understanding of the origin of this ingredient, and why it seems to have dropped off the menu in the Eastern Empire in Late Antiquity. Most modern cheeses are highly processed and require a specific set of tools and workshop provision as well as controlled

temperature and humidity conditions to achieve a palatable end product. This level of accuracy is hard to achieve in the ancient world but may not have been necessary. Based on the results of two years of experimental data and the analysis of archaeological evidence this paper will look at the possibility of cheese consumption of the Roman Army on campaign and possible production and storage while in their forts.

6. Feminists at the gates

6. Feminists at the gates. Frontier research by female academics

Wednesday, 24 August 2022, Bleu Room

Session Chair: Anna Walas

Affiliation: University of Leicester, United Kingdom

Session Abstract: Traditionally Roman frontier archaeology acquired a reputation as field led by brilliant men. Research by women has broadly tended to focus on 'softer' topics such as analysis of finds assemblages, study of literary sources, approaches to leisure on the frontier, and more recently, the study of environmental material. Gendered differences in the choice of subjects studied often mirrored the division of roles during the excavation of archaeological sites. Conversely, the voices leading on tackling the 'bigger picture' questions, addressing issues of frontier systems, structural archaeology of frontier installations and tackling chronology and phasing of individual sites has mostly been accomplished by male scholars.

The Roman frontiers research community is also renown for its openness and collegial support. In the last two decades, there has been a marked increase in the quantity of research produced by female scholars, inviting the opportunity to reflect on this changes and its meaning for the discipline. What approaches are being represented by female scholars? Does gender play a part in the way female scholars approach the archaeological material? Does the increase in the representation of female scholars necessitate engagement with feminist approaches, or not?

The session invites female scholars to present on subjects relating to all themes in archaeology of Roman frontiers in order to review the breadth and scope of research led by women, while reflecting in the discussion on the role of gender in the production of knowledge about Rome's frontiers.

I would be delighted to chair the session to provide both an opportunity for a celebration of achievements of female scholars and a glimpse into the future through reviewing current themes and interests represented by female Roman frontier archaeologists worldwide.

Walls don't stop women. An urban approach to frontier sites

Catherine Teitz, Stanford University

Roman frontier archaeology of the past century focused on the military – its architecture, its influence, and its men. In the last 30 years, research by female scholars on women, children, and other non-combatants transformed our understanding of the military community. While these groups are now well-attested, military frameworks still dominate our perception of the spaces they occupied and limit our understanding of their lived realities. Civil and extramural areas were thought to be divided from military ones until recently, and remain marginal spaces in excavation and analysis. I propose that frontier sites should be interpreted more broadly, encompassing places and people once overlooked. Urban studies, another male-dominated field, has grappled with both representation and knowledge production, and offers a model for Roman frontiers. Urbanism (at any scale) includes diversity in people and activities, structures that serve multiple functions over time, and relatively dense habitation. At frontier sites, transcending the civil-military typology through an urban approach shifts the perspective, revisiting the narrowly prescribed expectations for who is present and how a place is occupied. It consciously holds space for the larger community and

challenges the traditional interpretations of structures without valorizing or minimizing any group's influence. My research at Vindolanda and Corbridge demonstrates the benefits of an urban approach for frontier sites of different scales and relationships to the military. I reevaluate the archaeological evidence, analyzing site plans, structural changes, and artifact distribution, and I consider the long-term use and development of military-built structures and private strip-buildings at both sites. Despite the differences between a fort and a military town, an urban perspective, one deliberately inclusive of women and other non-combatants, reveals how the sites physically adapted to a wide variety of needs for its many inhabitants. The socio-spatial framework of urbanism offers a bridge for our perceived military-civil divide.

The Visible Invisibles: The Epigraphic Footprint of Roman Women on the Frontier in Britannia

Jo Ball, University of Liverpool

Inscriptions provide an important source of evidence for understanding life in Roman Britain, particularly in the military frontier zones where the epigraphic habit was particularly keenly practiced. However, this can prove detrimental when considering women within Britain, as here, as in many other provinces, women are a minority among the surviving inscriptions, with only an estimated 10% of inscriptions associated with a female subject – and some of these are only a name (Allason-Jones 2005). The lack of female authors within the epigraphic record from the British limes renders this large part of the Romano-British population functionally invisible – particularly in earlier, male-dominated studies of the province's archaeology. Going forward, we must consider how best to work with the corpus of female-related inscriptions, to understand how they relate to the wider epigraphic tradition on both the British frontier, and the wider Empire. This paper explores the imbalance between male- and female-associated inscriptions in the British frontier zone, and contrasts the quantity and quality of the epigraphic record from the military areas with those from civilian communities. It considers what impact the lesser visibility of women in the epigraphy has had historically on the study of women in Roman Britain, and discusses how this can be mitigated to produce a more accurate impression of female lives in the province going forward. Allason-Jones, L. (2005). *Women in Roman Britain*. 2nd Edition. York (Council for British Archaeology).

Women and Roman Religion in provinces. Case study: Dalmatia

Anna Mech, University of Warsaw

Female religiosity in Roman provinces and frontiers is still an emergent field of study. Even if situation presented in anachronic and Rome-centric literary sources tells us almost nothing about female participation in religious life in provinces, epigraphic and archaeological evidence combined with the developing adoption of new interpretative tools and perspectives into ancient religious studies, provide us with a much more nuanced picture. This is especially true in the case of religious activities of women in the provinces, where epigraphic monuments are the best (sometimes even the only) source of evidence for female presence in public places and religious agency, and the methods of history of Roman religion as a research approach have important limitations. The aim of this paper is an attempt to analyse the female religiosity in Roman provinces using Dalmatia as a case study. Roman Dalmatia is the province with the highest proportion of finds related to the public cult activity of women among all the provinces of the Empire. This may be related to pre-Roman local customs and peculiarities of social organisation which gave women more religious agency than in other provinces. Thanks to the application of several academic frameworks and interpretative tools to this case study, it will be possible to better understand female identity and representation in a provincial setting, including the questions of how women participated in religion in the provinces, what was the social framework within which they operated or how they could be socially visible during their religious acts.

Female archaeologists and Roman military research in Croatia

Mirna Cvetko & Iva Kaić, University of Zagreb, Faculty of Humanities and Social Sciences, Department of Archaeology

Archaeological excavations and study of Roman military sites in Croatia were scarce and mostly in the domain of male archaeologists. It was all to be changed in 1997, when prof. dr. Mirjana Sanader started her groundbreaking archaeological excavations of the Roman legionary fortress of Tilurium. The excellent results achieved during more than 20 years of excavations of Tilurium showed the great importance of the site, both for national and international archeology, primarily due to the fact that it was the first Roman military site in Croatia where systematic archaeological excavations were carried out. Prof. Sanader made an outstanding contribution to the research of the Roman military in Croatia not only through the Tilurium research, whose results were published in five monographs and numerous scientific papers, but also in her management of several scientific projects concerning the Roman military at the Delmataean and Danubian limes in Croatia.

Women in Vindonissa. A glimpse at pioneer female researchers around 1950

Christine Meyer-Freuler, Kantonsarchäologie Aargau/Switzerland & Regine Fellmann, Kantonsarchäologie Aargau Switzerland

In Switzerland female researchers entered only after World War II the field of Roman Frontier Studies. The most well known of them are Elisabeth Ettlinger, who established roman pottery research initially at Augusta Raurica and then at Vindonissa and Victorine von Gonzenbach, who was employed as the first female conservator in Vindonissa. Both worked together closely at the excavations at the famous "Schutthügel" and created their own method to understand the stratigraphy and to cope with the enormous amount of pottery. Due to their research and the extraordinary material (leather, writing tablets e.g.) coming from the layers, the "Schutthügel" gained the interest of the international scientific community. Due to some special objects Victorine von Gonzenbach early recognized the presence of women in the legionary camp of Vindonissa, a subject, which got more and more attention in the last decades through Valerie A. Maxfield, M. Roxan, L. Allason-Jones and Carol van Driel-Murray who introduced a session at the Limes Congress. The biography of the two researchers Elisabeth Ettlinger and Victorine von Gonzenbach are very different and reflect their relation to military topics. Beginning from their work in Vindonissa we try to give answers to several questions: Stood they in the shadow of male scholars, who were foremost excavating and publishing? Did they have any chance at their time to make a career? Could they choose their own topics and how relevant were these for the academic discourse? In an outlook we will provide a small sketch about the actual situation of women researchers at Vindonissa.

Britannia Romana: ambiguous image of a province

Kseniya Danilochkina, Russian Presidential Academy of National Economy and Public Administration (RANEPA), Moscow, Russia

Ancient authors from Caesar and Tacitus to Claudian show us the Province of Britannia adding characteristics that make its image dual. It was often created based on assumptions and prejudice that describe Britannia as a ferocious and barbarian land. At the same time Roman literary tradition and some other types of representation make us think of Britannia as of a woman's personification due to grammatical gender of the word itself, but also because of images we can see on coins and epithets or metaphors with which *she* was described. But this figure or image was not the same in the eyes of Rome during the whole period of Romano-British contacts' existence. Instead, it was constantly changing because of different circumstances (like political situation, war/peace shifts, etc.), and they also changed perception of different parts of the island. And those "barbarian" land became "civilised", because they were part of the Roman Empire. For example, Hadrian's and Antonine's Walls (being limites of the Empire) added some details to the image that made dualism more vivid by separating the island in two parts. Moreover, the ambiguity of Britannia at some point reflects the dual and more archaic way of representation of women. This paper is going to discuss how the image of Britannia as a land of opposites was reflected in ancient literature and what influenced the dualism, and also what it influenced on. And that may be seen not only in antique times but also influences our own perception of this cultural and historical phenomenon. And we still know Britannia as a helmeted female warrior that is the national personification of Britain.

Discussion

Rebecca Jones, Historic Environment Scotland

Gender Archaeology and Feminist Theory is a significant research area in Archaeology, also now reflected in the EAA's Archaeology and Gender in Europe (AGE) Community. My intention is to lead the discussion session following the papers on female scholars, research pioneers and women on Roman Frontiers.

7. Managing the Romans

7. 'Managing the Romans????' Preservation, protection and community management of frontiers. Opportunities, challenges, and use of 'citizen science'

Wednesday, 24 August 2022, Steigerzaal

Session Chairs: Tessa de Groot, Daniel Poulet & Nigel Mills

Affiliation: Cultural Heritage Agency, the Netherlands

Affiliation of 1st co-organiser: Zsolnay Heritage Management Nonprofit Ltd., Hungary

Affiliation of 2nd co-organiser: Nigel Mills Heritage, United Kingdom

The session will explore issues and approaches concerning the preservation and protection of Roman heritage across the Limes and the challenges and opportunities for communities to contribute to management processes. The session is of particular relevance in view of the impending expansion of the Frontiers of the Roman Empire World Heritage Cluster to include the Lower German Limes and the Danube Limes and will provide an opportunity to share experience and to discuss issues and approaches.

The proposed session is structured as two parts, but there may be overlap between them:

- *Part One: Preserving and protecting the Limes.* Session organisers: Tessa de Groot & Nigel Mills. This part of the session will focus on exchanging knowledge and experiences on different ways of protecting and preserving archaeological sites and on the preservation and protection aspects of presenting sites to the public. Papers will cover different legislative approaches as well as practical issues on the ground.
- *Part Two: Engaging communities in managing the Limes.* Session organisers: Tamar Leene, Daniel Poulet & Nigel Mills. This part of the session will focus on community engagement with the processes of managing the Limes including capacity building, knowledge development, community involvement, tourism, dealing with development, visitor experiences and other aspects.

Limes in the woods – threats and chances

Andreas Schaflitzl, Landesamt für Denkmalpflege Baden-Württemberg

It's common sense that heritage sites which are situated in forests and woodlands are better preserved than sites on farmland. But does that mean the heritage is best protected from damage? And what about visibility? In fact, landuse of woodlands also causes damages on the limes. Some are natural like trees falling by storm, others are caused by harvesting with heavy machines damaging the site by driving over walls or pulling trunks through sites. Especially in succession of climate change the forests start to change their shape – where conifers used to grow, nowadays after hot and dry summers trees are weakened and die from diseases and bugs. But as usual great disasters offer great opportunities. In forests, where large areas have to be chopped down skidder trails can be planned new so less or no damage to the heritage will take place. Trees growing on top of walls can be replaced by

trees next to walls, so they cause less damage by growing and falling. Tree use concepts can also help to improve the visibility by using the right tree species: the idea of forest aisles for the visualisation lead to an overgrowth of ground cover plants in the past, which make it nearly impossible to see the slight remains of trenches and walls. Great deciduous trees cast shadows so that small plants can't grow anymore. These kinds of trees are also more resistant to arid periods and better prepared for future climate change. Such concepts have to be developed with local foresters and woodlandowners in order to get an accepted solution for the site protection, presentation and landuse. This paper wants to show case examples on the ORL in different situations and different projects and workshops together with woodworkers and foresters.

The neverended story – told in a new way. Roman legionary camp of the Legio II Italica, Ločica near Savinja river, Slovenia

Mateja Ravnik, Danijela Brišnik, Milana Klemen, Zavod za varstvo kulturne dediščine Slovenije, Območna enota Celje/Institute for the Protection of Cultural Heritage of Slovenia, Regional unit Celje, Jure Krajšek, Pokrajinski muzej Celje/Regional Museum of Celje

The construction of the legionary camp in Ločica near Savinja river began probably between 168/170 AD and ended 172 AD. It was mainly built for the needs of the Legio II Italica, whose task was to ensure the security of the Roman Empire on its eastern frontier, in Noric province (in so called »Military zone« Praetentura Italiae et Alpium), during frequent incursions of the Germanic tribes, especially Markomanians. From the end of the 19th century onwards, the area of the camp was explored in several excavation campaigns. Prof. dr. Franc Lörger was the first to determine the area of the camp. The last noticeable research was between 2008 and 2011 by the Archaeological Institute of the Austrian Academy in Vienna and they used non-destructive methods of archaeological survey, which resulted in the first clearly readable plan of the entire legionary camp. A wide wall with as many as 38 towers, in praetentura and retentura principia, surrounded the camp, which had two sets of military barracks for first and second cohort, a large hospital and a warehouse, a latrine and an unfinished thermae. The plan also showed a lot of undeveloped space, where other buildings (barracks, buildings for the commanders, workshops, etc.) and infrastructure (roads, a cloaca) should be built. It is believed that the legionary camp had never been completed, as the legion moved to the northern borders of the empire – to the Danube Limes (Lauriacum, Austria); and last but not least, the role of the camp as a hospital was not negligible either as "Antonine plague" broke out at the same time. In 2020 – as a part of a project to build a new road, while terminating the unsecured railway crossing in Ločica – the investor, with the help of the project designer, the IPCHS, RU Celje, Regional museum of Celje and the Municipality of Polzela decided to mark the site appropriately with information boards and prepare several activities for the popularization of cultural heritage and the recognisability of the site. In addition, a smaller scale archaeological excavation was conducted. And so, a new chapter on the legionary camp in Ločica near Savinja was written.

Mortar Design for Conservation. Danube Roman Frontier 2000 Years After

Mladen Jovičić, Emilija Nikolić, Institute of Archaeology, Belgrade, Serbia, Ivana Delić-Nikolić, Ljiljana Miličić, Institute for testing of materials (IMS Institute), Belgrade, Serbia, Snezana Vucetic, Faculty of Technology Novi Sad, Serbia

MoDeCo2000 project (2020-2022), funded by the Science Fund of the Republic of Serbia (PROMIS programme) is focused on the research of Roman mortars on the Serbian part of the Danube Limes. The project aims to study raw materials as well as the technologies of making lime mortars used during the construction works, trying to reveal different aspects

of life on the frontier during centuries. The samples refer mostly to the bedding and wall-core mortars but also rendering and flooring mortars from 23 archaeological sites on the right bank of the Danube, which belonged to the provinces of Moesia Superior and Pannonia Inferior during the Roman Empire, and Moesia Prima, Pannonia Secunda, and Dacia Ripensis during Late Antiquity and Early Byzantium, spreading to the period from the 1st to the 6th century. The character of the sampled buildings covers both the military aspect (legionary fortresses, auxiliary forts, and smaller fortifications), and the civilian aspect (baths, villas, palace, basilica, city rampart, and tombs) with the most exceptional of all, the Trajan's Bridge over the Danube. After fieldwork, the samples were examined in the laboratories using contemporary techniques and knowledge from geology, chemistry, archaeology, architecture, and civil engineering, obtaining data on materials and technologies used during the ancient construction. Based on these results, the design of the lime mortars for conservation, using the achievements of the materials science and engineering has been conducted, with the aim to create conservation recommendations during the preservation of the future UNESCO property "Frontiers of the Roman Empire – Danube Limes (Serbia)", as a part of its nomination dossier. The proposed mortar design should greatly contribute to the improvement of conservation science and practice in Serbia, being the first comprehensive research and scientific project in the region dealing with the everlasting topic of the Roman mortars.

Citizen Science on Hadrian's Wall: A WallCAP Case Study

Kerry Shaw, University of Newcastle (UK)

With citizen science becoming increasingly popular as a methodology linking archaeological research and meaningful participation by local communities, how can we extend engagement and ensure best practice to maximise the potential for both parties when taking a participatory approach to research. The Hadrian's Wall Community Archaeology Project (WallCAP), funded by the National Lottery Heritage Fund (UK) and hosted by Newcastle University, must include high levels of community involvement to meet funder requirements whilst also undertaking structured and professional archaeological investigation and intervention. Initially, high public participation in archaeological research of a World Heritage Site may seem difficult or contradictory – can all stakeholders be satisfied with such an approach? Can participative, collaborative and co-curated research successfully blend the needs of both local host populations, heritage managers, and the archaeology. While addressing specific management concerns such as heritage at risk and research questions pertaining to stone biographies along Hadrian's Wall, WallCAP has also incorporated local communities in training, fieldwork, events, consultations and exhibitions. As a result, the project has successfully generated reliable and reputable archaeological data, tackled heritage conservation concerns, and enhanced public engagement with the monument. These successes and lessons learned by WallCAP will be reviewed, including the strategies employed for both worthwhile community engagement and robust archaeological research. It will explore aspirations vs reality though an honest appraisal of project activity when generating vital data for heritage managers and researchers whilst also enabling local communities in exercising their roles as active stakeholders in the WHS.

Engaging disadvantaged communities in heritage-led regeneration: The Rediscovering the Antonine Wall Project

Riona McMorrough, West Dunbartonshire Council

The Antonine Wall, established as part of the Frontiers of the Roman Empire World Heritage Site since 2008, runs through a diverse landscape of urban, post-industrial, semi-rural and

rural settlements in central Scotland. Many areas experience very high levels of deprivation, and the route of the Wall means that many of these communities (ranking high on the Scottish Index of Multiple Deprivation) live very close to the Wall. In 2018, a £2.1m project, Rediscovering the Antonine Wall, was launched to enable the partners to both raise awareness of the Wall with a wider audience and to specifically increase the relevance of the monument to the local communities living along its length, particularly those less likely to traditionally engage with heritage. This paper will address how the management, promotion and enhancement of a World Heritage Site can be used to engage those who have no interest in heritage. It will demonstrate how a 37 mile turf mound, only visible in a limited number of locations, can act as a catalyst to regenerate post-industrial and ex-mining communities. And how a relatively modest £2.1m budget split across five municipal areas can be utilised effectively to turn what was once a divisive structure into a focus for collaboration and bringing communities together. This paper will consider the varied approaches the project has taken to engaging as wide an audience as possible, regardless of background. It will summarise these approaches, showcasing examples of how this has successfully made heritage accessible to all, including those that did not wish to engage or felt heritage wasn't relevant to their lives. It will highlight how capital projects such as large sculptures and Roman themed playparks have created destinations in previously overlooked areas. It will also introduce some 'lessons learned' and offer best practice recommendations applicable to other sites.

Frontier Voices – a participatory arts project exploring community connections and meanings of the World Heritage of the Roman Frontiers – part of the Hadrian's Wall 1900 Festival

Nigel Mills, Heritage, United Kingdom

Frontier Voices is part of the Hadrian's Wall 1900 Festival, a year long, community-based celebration of the 1900 years since Hadrian visited Britain in AD122 – the accepted 'birth date' of Hadrian's Wall. Frontier Voices is an arts-based creative exploration of perceptions of Hadrian's Wall World Heritage sites and landscape amongst diverse groups and communities all along the Wall and from some of Europe's Roman frontiers. It is a learning engagement project creating artistic outcomes and sharing experiences. Diverse groups of participants of all ages & cultures, will participate in creative activities as they make outcomes in words and art while engaging with Hadrian's Wall and the European Limes. Participants will be able to explore how they feel about the former Roman Frontiers while they are inspired by the World Heritage sites, learn about these and then express themselves creatively. The project offers local communities (schools, young people's groups outside-school-groups, Special Educational Needs groups, refugees, older adults etc) the opportunity to see what other groups have made through real and digital visits to the Roman Frontiers. They will also be able to meet some of the participants too – challenging perceptions and experiences and better understanding of different groups of people as the demographic changes from country to urban and from East to West along the Wall. Meeting other participants will widen creative horizons. The Roman sites and museums involved in the project along Hadrian's Wall include Senhouse Roman Museum, Tullie House Museum and Art Gallery (Carlisle), Birdoswald Roman Fort, Roman Army Museum, Vindolanda, The Sill Landscape Centre, Carrawburgh Roman fort, Corbridge Roman town, Great North Museum, Segedunum Roman fort, Arbeia Roman fort. European groups and sites involved include NIGRUM PULLUM and Park Matilo in the Netherlands, Altmannstein on the Raetian Limes (Bavaria) and LIMESTOR/Peutinger Gymnasium (Baden-Württemberg). Creative outputs will be exhibited at partner venues during the programme and in a final exhibition at The Sill in December 2022/January 2023.

Identity through art. How Weissenburg is strengthening its role as a Roman City in modern Bavaria

Simon Sulk, Bavarian State Conservation Office

Weissenburg is one of the most important “Roman Cities” in Bavaria. Above all, the Roman Museum, as a central museum for the roman Limes in Bavaria, and the affiliated Limes-Information Centre show the importance of the roman past for the city that itself takes for granted. Regrettably, the role as a “Römerstadt” is not broadly appreciated by the citizens. Being part of the touristic highly developed regions, the “Fränkisches Seenland” (Franconian Lake District) and the “Naturpark Altmühltal” (Altmühl Valley Nature Parc), tourism is of important significance for the city. To make the role of the roman period more present and tangible in the city, the newly established City Marketing is trying via several projects to increase the public awareness for its historical heritage. The attempt is more a low-threshold than scientific approach. In 2015, the local artist, Roland Ottinger, created a colossal face mask of a roman horseman, inspired by the find of the so-called Weissenburger Römerschatz, a treasure containing three decorated helmet masks from the 3rd century. It was placed at the state highway to attract attention to the roman Weissenburg. The motif of the face mask was renewed in 2021, when the City Marketing, supported by local sponsorship, ordered a smaller copy. It was placed vis-à-vis the train station so that, not only motorists, but also train passengers are made aware of Weissenburg’s roman past. In addition, the connection between the various roman sites, the roman auxiliary fort and the bath house with the historic settlement where the roman museum is located, was put into focus. The internationally known artist, HOMBRE, created an oversized piece of graffiti in the railway underpass, which is the official route for pedestrians between the roman attractions. This project was also sponsored and developed through local engagement. In 2022, it is planned to use the recognition value of the face masks for a project with schools, homes for the handicapped and community organisations. Miniatures of the masks will be provided to these groups for use in creating their own displays, which in turn might be displayed at a prominent location, such as the roman fort, Biriciana, or the town hall. It is obvious, that the potential of the roman heritage in Weissenburg is far from being exhausted.

Community involvement in the World Heritage Sites of Pécs (Sopianae)

Daniel Poulet, Zsolnay Heritage Management Nonprofit Ltd.

A part of the late Roman, early Christian northern cemetery of Sopianae, the Roman predecessor of the city of Pécs, was added to the World Heritage Sites list in 2000. The site earned the cultural-historical treasure rating on the grounds that the architecture and mural painting of the excavated finds illustrate the early Christian burial architecture and art of the northern and western provinces of the Roman Empire in an extremely versatile and complex way. It is a popular form of genre, also known as living history or live interpretation, for an experience-oriented and at the same time entertaining presentation of heritage sites. In the project, the values of heritage were presented by a company using the improvisational theater genre, whose members conveyed the knowledge and stories related to the memories by shaping people living in Roman times connected to the World Heritage sites of Pécs and including them in a professionally authentic framework. The live-action scenes, which deal with the themes of architecture and mural painting, also included an interactive presentation of religion, Roman gastronomy and dressing habits, and late Roman burial forms. Great emphasis was placed on the active involvement of the visitors and the experience of joint creation, so that the audience can experience the ancient history of the city of Pécs by taking on the roles that shape the story and act. The various museum

pedagogical methods offer many ways and opportunities to create activity and experiential knowledge transfer. We also use traditional and innovative techniques and methods during developing workshops. As a development of the innovative method, our local history board game, Every Age of Pécs, was completed. The game is designed for World Heritage Sites, where students can relive the different historical periods of Pécs by playing during the sessions.

8. Home away from home

8. Home away from home. Roman frontiers as movers and mixers of people

Monday, 22 August 2022, Red Room

Session Chairs: Tatiana Ivleva, Stijn Heeren & Pete Wilson

Affiliation: Newcastle University, United Kingdom

Affiliation co-organiser: Vrije Universiteit Amsterdam, the Netherlands

Affiliation second co-organiser: Rarey Archaeology, United Kingdom

Session Abstract: Migration is often treated as a given in LIMES studies. It is undeniable fact that Roman army spurred a large-scale movement of people: at any military fort, be it legionary or auxiliary, soldiers of mixed descent were garrisons together and were supposedly living happily alongside side each other never to settle properly at one place. Widely accepted and often explored is the theme of the movement of peoples and artefacts both into and out of the Roman Empire across its frontiers. Sessions dealing with interfrontier interaction between Roman soldiers and 'barbarians', and alongside frontier between soldiers and natives, as well as sessions devoted to the topic of units' movements and their mixed composition have become a regular feature at LIMES Congresses.

Yet, migration as such was and still is an often-contested issue in archaeology in general. As a discipline it has moved a long way from drawing arrows on maps based on material culture styles in the 19th and early 20th century, with the later 20th century seeing a retreat from migrationism. With the advent of the third science revolution in the recent decades, the ban on migration in archaeology was lifted: strontium isotope studies and aDNA made the identification of migrants easier. Spectacular results were obtained for prehistory and also much work has been invested on the Early Medieval period. Roman provincial archaeology is not far behind these developments with several scientific studies finding evidence for medium and long-distance mobility. However, can the same be said for the Roman frontier studies?

This session invites case-based study papers that focus on method and manifestation: how to recognise and define migration and mobility in a frontier setting. At the same time, we welcome case-based papers that address impact: what was happening on the frontiers when so many people of various origins from places far and near cohabit together? For the latter, we ask potential speakers to consider the following questions: can we detect evidence of clashes, exclusion, and marginalization within the garrisons, or can the example of three-nations series of inscriptions from Birrens (RIB 2100, 2107 and 2108) be extrapolated to the other frontiers? Apart from gathering the evidence for the multi-cultural make-up of the frontiers, the session also aims to move the discussion on and invites papers that explore transgression of personal and social identities within such multicultural milieu. Is there evidence that supports the deliberate construction of 'home away from home'? Or can we talk of transcultural frontier environment where new norms were produced and curated, not specific to any entity?

This paper examines the phenomenon of third century CE object selection in funerary contexts from cemeteries associated with military bases and those from adjacent civilian areas from a transect of

territory from NW Britain to SW Germany. Drawing an expansive later Roman database of over 4000 grave assemblages, I wish to draw specific attention to patterns from the third century CE, which has often proven challenging to pinpoint chronologically in the archaeological record. The paper builds on recent work by the author that re-assesses the ceramic evidence for N. African migrants associated with military communities elsewhere in northern Britain in the early third century CE (Pitts 2021). How exceptional were such occurrences in a wider northwest provincial setting, and indeed, what do wider patterns of funerary consumption reveal about the extent of cultural diversity and unity within and beyond the military sphere in this little-understood period of societal transformation? Pitts, M. 2021. York's 'African-style' Severan Pottery Reconsidered.

Funerary objects on Rome's third century CE northwest frontier: moving people and things?

Martin Pitts, University of Exeter

I am going on a trip, what am I going to pack? A comparative approach to the pottery of Batavians at home and abroad

Cristina Crizbasan, University of Exeter, Roderick Geerts, Leiden University

The military environment has been known as one of the primary driving sources of mobility across the Roman Empire. The auxilia alone contributed to the enrolment of over two million men during the imperial period, enhancing the migration rate as new recruits would have been transferred across the Empire. When garrisoned abroad, they would have faced the challenge of assessing the functionally and socially meaningful items to pack for their trip or to replicate upon their arrival. This paper aims to explore whether Batavian presence can be attested in other provinces through the study of material culture, specifically pottery. Ceramic assemblages from the Netherlands and Britain will be compared in order to identify similar morphological and typological patterns, which could reveal the ways Batavians constructed their identities abroad. First, a scrutinising assessment of pottery assemblages at home will be undertaken, in order to establish the trending vessel selections in Civitas Batavorum and to build a referencing point for the material abroad. Previous research has highlighted the distinct character of these ceramic assemblages which, when considered as a whole, set them apart from the adjacent civitates. Secondly, the ceramic material from abroad at Vindolanda in Britain will be assessed in relation to the Dutch material, in order to understand the extent to which the mobility of these military communities affected their way of constructing identities across time and space. In short, through the study of material culture, the identity of the owner could be discerned, as artefacts are rarely created in a vacuum. They incorporate ideas, expectations and needs of the individual and society, communicating their identities and revealing the Batavian presence in the archaeological record.

Evidence for child migration and early death at Vindolanda on the northern frontier of Roman Britain

Trudi Buck, Durham University

Epigraphy and material culture attest to migration of military personal on the northern frontier of Roman Britain. Evidence for civilian migration and mobility is less well known, particularly for children. The study of human remains can assist in the understanding of the past beyond mere description of the skeletons themselves, and the unexpected discovery of a child buried covertly beneath the floor of a third century barrack building at the fort of Vindolanda allows for the discussion of childhood migration. Stable isotope analysis of a developing permanent molar reveals that the child had lived in a much warmer climate than that of northern Britain, until at least about the age of seven years. Analysis of the dental and osteological developmental stage of the child shows that they were around the age of 8 – 10 years of age when they died. An osteobiographical approach to an individual skeleton can work as a microhistory, providing information from the small-scale microhistory to more large-scale phenomena such as migration. Using the study of an individual case creates a narrative that incorporates textual, archaeological and osteological data to recreate the life history of that individual and also inform on wider macroscale archaeological themes. This paper will consider the case of this specific child who spent their early years living around the Mediterranean region but who died shortly after migrating to northern Britain and was

buried in a clandestine grave. Consideration will be given to who the child was and how they ended their short life within an auxiliary fort on the northern frontier of Roman Britain.

An archaeological and quantitative isotope study of population dynamics in the Late Roman Lower Rhine borderscape

Stijn Heeren, Lisette Kootker, Vrije Universiteit Amsterdam

This presentation deals with two isotope studies in which the burial record of the late 3rd to 5th century is analysed, in the limes zone as well as the regions north and south of it. Some Early medieval burials are also included, because they offer a stark contrast to those of the 5th century. Together they have provided a first-ever insight in to palaeomobility patterns in a more quantitative way. Apart from the results concerning the local and non-local origin of the deceased, methodological steps forward are also discussed. For the earlier part of the period discussed (the 3rd century), results of cremation burials are also included, while until now, only inhumation burials were targeted.

Mainz-Mogontiacum: an ethnic melting pot on the Rhine frontier in the 1st century AD

Michael Johannes Klein, ex Landesmuseum Mainz

A number of approximately 250 stone inscriptions provides information about the origin of persons living in Mogontiacum and surroundings in the 1st century AD and hence reveals that Mogontiacum was in the Julio-Claudian and Flavian periods a real ethnic melting pot. We know about numerous legionaries, auxiliaries and civilians from foreign regions of the Roman Empire who encountered there indigenous tribes, like Treveri, Aresaces, Caeracates and Mattiaci, living on either bank of the Rhine. The bulk of Roman legionaries who were garrisoned in Mogontiacum until the early Claudian period, came from Northern Italy, but some also from Middle Italy and the provincia Narbonensis. In the Claudian-Neronian period, numerous legionaries still were of Italian descent, but the number of soldiers coming from the Narbonensis, Lugdunensis, Hispania and from Noricum considerably increased. In the Flavian period, the number of inscriptions about the origin of legionaries diminished, but there are many from new regions, like Germania inferior, Macedonia, Dalmatia, Pannonia and Thracia. Regarding the auxiliaries, there are many inscriptions set up in the Augustan-Tiberian period by soldiers from Syria, like Ituraei, from Raetia, like Regi, Focunates, Runicates, and by soldiers from Aquitania, like Petrucorii and Nitiobroces. In the Claudian-Neronian period, soldiers from Hispania and various tribes of Dalmatia, like Daverzei, Ditiones, Maezei, and from Thracia, like Bessi, Dansala and Breuci, were present in Mainz. The Flavian period sees, apart from some Thracians, soldiers from Gaul and the Germanies, like Treveri, Betasii, Helvetii and Sequani. Among the civilian people immigrating to Mainz, there are many local cives Romani and members of indigenous tribes, as well as immigrants from Italy, Hispania, Gaul and Dalmatia. With regard to all the above-mentioned people, the population of Mogontiacum developed in the course of the 1st century AD into a new provincial society of multi-ethnic descent.

Soldiers, slaves, priests, administrative servants(?): persons with Greek/oriental names in Rhaetia

Julia Kopf, Universität Wien

Based on small inscriptions with a cluster of Greek names from Brigantium/Bregenz (A), the aim of this paper is to overview the so far known written records of people with Greek respectively oriental names from the province of Rhaetia. Moreover, the social and professional background of the mentioned persons shall be examined, provided that the records themselves or their find context offer hints. Regarding statements about the provenance of the persons in question we have to be cautious: the hitherto known written records do not explicitly mention that and Greek respectively oriental names were also popular for slaves and gladiators of other geographical origin and have to be interpreted as fashionable name-giving in some other cases. In a frontier province as Rhaetia, the most reasonable explanation for (supposed) non-local people is immigration in the course of deployments of troops, bringing soldiers and their entourage (in our case especially slaves and freedmen of high-ranking military personnel) to a foreign region. An example therefor is Septimius Chaerea, a centurion of the legio III italica. On the other hand, for persons with Greek names

testified by graffiti found in the so-called Monumentalbau in Heidenheim (D) an interpretation as servants of the provincial administration is proposed. In the case of the members of the “Greek community” in Bregenz, living in a period when the Roman frontier had already been transferred to the Danube, another profession has to be assumed. At least for some of them, the small inscriptions themselves as well as their find context provide arguments for an identification as priests. A parallel for that is already known within the province, namely the funerary inscription from Augsburg (D) of the negotiator artis purpurariae and sevir Augustalis Tiberius Claudius Euphras.

Ex toto Orbe Romano – ethnical diversity at the western frontier of Roman Dacia

Eduard Nemeth, Babeş-Bolyai University Cluj-Napoca, Romania

Babeş-Bolyai University Cluj-Napoca, Romania. The western frontier of Roman Dacia was at the same time an external frontier sector of the Roman Empire. This border was watched by quite many auxiliary units recruited in provinces and territories of the Roman West as well as of the East. In some places we see two and even three different units stationed together, either in the same fort or in forts located in the immediate proximity to each other (e.g. Porolissum, Bologa, Micia, Tibiscum). These situations engendered a quite rich ethnical diversity of the soldiers at this frontier. This paper aims to establish the ethnical and/or geographical origins of these soldiers and, where possible, of their families and the possible reasons why units of certain origins have been stationed at this frontier stretch and not in other parts of the province. I will also try and see if there are any hints at the interactions among these soldiers, between them and the civilian population in the vicinity of the forts and the relations to the neighboring peoples.

Life after service: The retirement of the Roman auxiliary soldiers as seen in the light of discharge diploma discoveries

Kai Juntunen, University of Helsinki

The study examines the known discovery locations of discharge diplomas given for Roman auxiliary soldiers in relation to the information they contain. Even though portable items can move over time, it can be assumed that the discovery locations of diplomas usually indicate the rough area (province) where the soldiers had settled down as the diplomas would have been prized possessions of the veterans and kept safe through their lifetimes. Thus, the study attempts to bring some clarity to the question where the Roman auxiliary soldiers settled for retirement upon discharge; did they choose to stay in the vicinity of their service region, or did they opt to return to their home region in case they had been recruited from further away. The circumstances surrounding the auxiliary recruits which could have influenced their willingness to uproot themselves and create new lives in distant parts of the Roman Empire are examined, as are also the instances when service appears to have been just a means to an end – such as earning the Roman citizenship – which was followed by return to the point of origin. Whether there were temporal or regional differences to these settlement patterns is explored, as are also other aspects that could have influenced the decision of the discharged soldiers, such as ethnicity of the recruits or their marital status upon discharge. The emerging settlement patterns can give us some indication of the level of impact the Roman auxiliary soldiers had on the frontiers, whether it was permanent or more minimalistic, lasting only the duration of the twenty-five years of service.

9. FINES

9. FINES. The mechanisms and politics of frontier collapse, and the afterlife of frontier installations

Wednesday, 24 August 2022, Red Room

Session Chair: Rob Collins

Affiliation: Newcastle University, United Kingdom

Session Abstract: The realpolitik of the Western Roman Empire saw its fragmentation and collapse occur throughout the 5th century AD, with different processes of imperial shrinkage and consolidation occurring in the Eastern Empire through the 5th-7th centuries. Historiographic tradition links the end of Roman frontiers with barbarian invasion and settlement and imperial collapse. New archaeological evidence and reassessment of older data has prompted revision of this simple and entangled narrative of barbarian invasion and collapse. Indeed, new scholarship has called for separation of discrete issues and the impact this had on the limitanei and Roman frontiers. This session will address the following questions:

- To what extent have textual sources and national myths pre-determined archaeological interpretation?
- What is the evidence for abandonment or destruction at individual sites?
- How do we recognise barbarians in the archaeological record?
- Is there a difference between Roman occupation of military sites and post-Roman occupation?
- Does the pattern of military occupation match that of urban and rural hinterlands of the frontier?

Who supplied the foederati? Aspects of military equipment production in the Late Roman West

Berber van der Meulen-van der Veen, Cardiff University

Recent works on Germanic foederati in the Lower Rhine region in the later 4th and early 5th century have made great progress in attesting their presence in the archaeological record using a variety of data, such as pottery fabrics (Van Thienen 2016), house plans and diet (Heeren 2016), and gold coin hoards (Roymans 2016). This last study showed clearly how dependent these groups were on these often sizable imperial payments, suggesting the foederati kept close financial ties to the Roman government. This paper will attempt to investigate other areas of material culture that might show this same core-periphery relationship, notably military-associated brooches and belt sets. After all, the arrival of Germanic groups in the region is often linked to the appearance of elaborate belt sets in male graves dated to the 4th and 5th century. (Böhme 1974; Sommer 1984). These belt sets fit in the provincial-Roman tradition of military insignia (Hoss 2012, 29), but their chip-carved decorative schemes are often seen as a Germanic trait. Little is known however about how and where they were produced. For the 4th century, stylistic studies (Swift 2000) and chemical analysis (Van Thienen and Lycke 2017) have shown that crossbow brooches were likely produced by the military fabricae, as they show remarkable standardisation in style/decoration, dimensions and alloy composition. The same might be assumed for 4th-century belt sets on stylistic grounds (Böhme 1974, 93-97), but it remains uncertain whether the fabricae were still active in the 5th century. To see whether the fabricae were ever involved in providing the foederati with belt sets, this paper will present some preliminary pXRF data on the composition of both 4th- and 5th-century buckles and fittings.

Apud limitem Latina iura ceciderunt – processes of continuity and collapse on the middle Rhine frontier and its hinterland

Ferdinand Heimerl, Generaldirektion Kulturelles Erbe Rheinland-Pfalz, Direktion Landesarchäologie

Around 475/477 the bishop of Clermont-Ferrand, Sidonius Apollinaris, wrote a letter to a certain comes Arbogast, who resided in Trier (Epistula IV 17). According to Sidonius, the

Roman law had ceased at the border and the Roman speech had been wiped out from the Belgian and Rhenish lands. By contrast, the bishop praised Arbogast as one of the last bulwarks of romanitas. Without any doubt, this source must be critically reviewed with respect to its historical context. But nevertheless, the letter implies that Arbogast was the sophisticated head of a Roman community who probably still had military resources at his disposal. This paper opposes the literary sources to the archaeological evidence in terms of the latest Roman military activities from Arbogast's residence in Trier to the middle Rhine frontier. While textual sources have pre-determined a collapse of the Rhine border in 406/407 for a long time, more recent studies argue for an intact middle Rhine frontier at least until the mid-fifth century. A short summary on the current state of research will be followed by a reassessment of military activities and fortifications in the surroundings of the former Imperial residence Trier. New evidence proves a usage of certain fortifications until the second half of the fifth century. This study contributes to the debate on differentiated processes of frontier collapse and the afterlife of military installations in different parts of the Late Roman empire.

The abandonment of borders in northwestern Gaul in the middle of the fifth century : role and responsibility of the Franks

Raymond Brulet, UCLouvain

The direct association of the term *limes* with rivers reflects its fourth-century usage, the status of rivers as boundaries plays a role in the new border consciousness in the Late Empire and there is a tendency for the Romans to consider frontiers as territorial and not just as divisions between peoples. But borders are only preserved or protected until they are useful and until there is a military presence to defend them. In the life of St Severinus it is recorded how the military occupation of the border ended in the middle of the 5th century along the Danube. It is not the same outcome that must be expected for northwestern Gaul. We have both a maritime and a river border, a context of early abandonment of territory within the Roman Empire and especially the omnipresence of Frankish people that we find inside and outside the frontiers as enemies or as allies. Thus, researching what the change in terms of border areas could be during the fifth century in northwestern Gaul corresponds to an investigation linked to the history of the Franks. It is therefore interesting to examine the relations between the Franks and the Empire and to follow the steps of their installation and their expansion in Gaul during the 5th century to understand the role that they could have in the protection and in the abandonment of the military border. The archaeological evidence which can be securely dated to the 5th century and related to this issue are controversial. Even if the problem is complex, it is necessary to associate the data which come to us from the frontier zone and the data which coincides in the North of Gaul with the historical advance of the Franks.

"A former military road" – the afterlife of military installations in Trebižat river valley (Bosnia and Herzegovina)

Tomasz Dziurdzik, Michał Pisz, University of Warsaw, Mirko Rašić, University of Mostar

The end of Roman frontiers as a research area is often dealing with large scale processes during a particular, late period of Roman history. However, valuable insight can also be gathered by observing changes on a more local scale – and also by comparing the situation in the 5th century with earlier examples of abandonment of frontier installations. This paper aims to analyse one particular example of an early abandonment of military installations. The ancient settlement in the Trebižat river valley (modern south-western Bosnia and Herzegovina) during the Early Empire was strongly influenced by a road of strategic

importance and the presence of a garrison, both belonging to the defenses of Roman Dalmatia, the so-called *limes Delmaticus* (the term remains heatedly debated), which was gradually demilitarised. On the level of the Trebižat river valley the afterlife of this particular frontier had more to do with changes of a very local nature than Empire-wide processes, as the early 3rd century relocation of the auxiliary unit coincides with profound changes in local settlement patterns. On the other hand, during Late Antiquity numerous defensive installations have been constructed in the wider region, providing another point for discussion of the relations between local and global factors in the collapse of frontiers.

The latest functioning phase of the castra in the province of Dacia

Dan Matei, History Museum of Turda

The official evacuation of the province of Dacia occurred sometime 271-275, most probably in 271. Our paper will tackle the life in the Dacian castra in the epoch of the “military anarchy”, so starting with 235. Different aspects as the diminution of the number of soldiers (due to the external dislocations of a part of the soldiers), the coin circulation, the epigraphical manifestation, the use of the so called *opus tumultarium* and other phenomenon will stand in our focus. We will discuss also some criteria of discerning the traces of life from the last “Roman” years of the castra as opposed to the life of the first post-Roman years. Due to the significant enrichment of the informational block on the Dacian castra in the last two decades, our research has good premises to be carried.

A Tetrarchic Fort underneath the Umayyad Palace of Khirbat al Mafjar at Jericho?

Ignacio Arce, German-Jordanian University

This paper presents the hypothesis of the existence of a Tetrarchic Fort underneath the Umayyad palace of Khirbat al-Mafjar at Jericho (Palestine), based on the preliminary result of a series of remote-sensing surveys carried out as part of the Jericho Mafjar Project in 2014, and the Marie-Curie Research Project directed by the Author at the University of Copenhagen. The orientation, dimensions and shape of these structures would allow interpreting them as belonging to a Roman fort 100m square, probably from Late Roman period, similar in dimensions, size and orientation to those of Daja'aniya, Avdat, Umm al Jimal or Khirbet el Khaw. Written sources mention the potential existence of at least three different Roman installations in the Jericho oasis from the 1st century CE throughout the Tetrarchic period. Legio X Fretensis had its winter camp at Jericho in 68CE in a location which remains a mystery. Apart from this winter camp, a military detachment would have been set permanently in Jericho, to control this strategic oasis, in the crossroads which links Jerusalem to the Jordanian plains to the East, as well as to control the traffic along the Jordan Valley, and blocking the access of Bedouin raiders. These reasons certainly determined the construction of successive Roman installations in the Jericho oasis in later periods. We know from written sources that a Roman fort was established in Jericho in 130CE, which played a role in putting down the Bar Kochba revolt in 133CE. The location of this new military installation would have been in a strategic place at the edge of the oasis, but near to crossroads, and accessible water sources, a description which fits with the location of Mafjar. The confirmation of the existence of this fort under the Umayyad palace, together with the evidence of the existence in the vicinity (if not at the same premises) of a monastery (looted for the construction of the Umayyad palace), would reinforce the model of transformation and change of use of Roman forts from the *Limes Arabicus* put forward by the Author. According to this interpretative model, many of these forts would have been transformed in monasteries (and in some cases palatial venues by the Ghassanids), and later into Umayyad palaces (ARCE, I. 2015: “Severan Castra, Tetrarchic Quadriburgia, Justinian

Coenobia, and Ghassanid Diyarat: Patterns of Transformation of Limes Arabicus Forts During Late Antiquity”, In Collins, R. Roman Military Architecture on the Frontiers. Oxford. 98-122).

The borderlands of Egypt’s Western Desert in late antiquity

Paul Kucera, Qasr Dakhleh Project

Situated along the western periphery of Rome’s Egyptian province, the Western Desert may be viewed as an extensive natural frontier containing border districts or borderlands that were centred on large, populated oases that punctuated this hyper-arid region. Towards the end of the 3rd century CE, three of the oases witnessed a fort-building programme that coincided with the deployments of Roman auxiliary units. The main camps (castra) and the units stationed in them fulfilled a multi-faceted role within the region, not least of which was security related. There is limited information concerning the longevity of the castra as functional bases and the length of time that their garrisons served, though archaeological investigations conducted over the past two decades have brought to light much information concerning the establishment and occupation of the forts. Perhaps unsurprisingly, the 4th century is predominantly represented. One document, a Coptic ostrakon found at al-Qasr in Dakhleh Oasis where one of the castra was located, is particularly intriguing with respect to a possible end point to the strictly military purpose of the fort or indeed a potential changing aspect of the auxiliary unit stationed there. This paper explores this document further in relation to what is known of the late Roman military presence in the Western Desert, with a specific focus on the southern oases, as reflected in the archaeological record and supplemented by documentary evidence. The analysis also extends to include contextual themes such as geography, State interests, security of the region, the threats posed by raiding groups during the following 5th through 7th centuries, socio-economic, religious, and political aspects of life in the oases, the environment, and the abandonment of some oasis sites/settlements and evolution of others, including the afterlife of the forts.

South Shields Roman fort as a case study in transition and abandonment at the end of empire

Nick Hodgson, Independent Researcher

Between 1983 and 2006 the east quadrant (2,000 square metres) of the Roman fort at South Shields, near the east end of Hadrian’s Wall, was excavated, revealing the commanding officer’s house (praetorium), several barracks, and the via praetoria of the fourth-century fort. Post-excavation work on the latest levels has now established a provisional late- and post-Roman sequence. Probably in the 370s an apsidal hall-like building was built over the via praetoria. A possible church identified overlying the principia probably dates to this time. By about 400 the praetorium was much re-configured and used by craft workers. Radiocarbon dates indicate that there was still a settled community living in the fort after 400, and the whole site was re-fortified with a new ditch after the beginning of the fifth century. Parts of the praetorium and the hall building were re-occupied and re-surfaced at some remove from 400, after a period of neglect or abandonment. The sequence ends with the burial in the centre of the praetorium courtyard of two violently killed individuals, probably before 440 according to the radiocarbon dates. Following this, the east-quadrant buildings seem to have rapidly fallen into ruin. They were overlain by Anglo-Saxon burials, indicating Anglian settlement in or near the fort in the seventh to ninth centuries, when there is reason to believe that it functioned as a royal centre. The site seems to have been finally abandoned at the time of Viking incursions in the ninth century. The implications of this remarkable sequence for debates about the fifth century transition on Hadrian’s Wall are discussed.

10. Tales of Glory

10. Tales of Glory. Narratives of Roman Victory

Friday, 26 August 2022, Steigerzaal

Session Chairs: Martina Meyr & Christof Flügel

Affiliation: Städtische Museen Rottweil, Germany

Affiliation of co-organiser: Landesstelle für die nichtstaatlichen Museen in Bayern, Germany

Session Abstract: Since the groundbreaking research of Paul Zanker and Tonio Hölscher it has been generally acknowledged, how deliberately chosen images influenced the public perception of political and military power in Rome. The “power of images” (Paul Zanker), however, soon entered the private realm and was subject of alterations regarding the “reading of these images”, as e.g. illustrated by middle Imperial Roman wedding rings with the *dextrarum iunctio*, a motif which had been originally limited to emphasize the unity of the army in times of Civil War. The significance of this symbol had changed, from public to private. Images of the triumphant rider, an image originally confined to the Emperor, were used in gemstones and on private funerary monuments.

Zanker’s and Hölscher’s ideas were, however, never extensively applied to the art and to small finds in the Roman provinces. Concentrating on the example of Roman victory and how this topic was communicated in Rome and at the Edge of Empire, we therefore explicitly welcome contributions from all fields of archaeology, including Classical and Roman Provincial Archaeology, as well as Numismatics, Epigraphy and Ancient History. Especially questions of how these images were used in the provinces and what mechanisms and means of distribution were used are of particular interest, but also papers on public rituals of victory in Rome and her provinces and on the “propaganda use” of the public realm will be appreciated.

Further Reading:

- Breeze, D., 2016: They think it’s all over. The face of victory on the British frontier, *Journal of Conflict Archaeology* 11/1, 19-39. (<http://dx.doi.org/10.1080/15740773.2016.1260817>)
- Hölscher, T., 1987: *Römische Bildsprache als semantisches System*, Heidelberg (Abhandlungen der Heidelberger Akademie der Wissenschaften, phil.-hist. Klasse 1987 Nr. 2).
- Hölscher, 2018: *Visual power in ancient Greece and Rome. Between art and social reality*, Oakland 2018.
- Zanker, P., 1988: *The power of images in the age of Augustus*, Michigan.
- Zanker, P., 2008: *Roman art*, Los Angeles 2008.

Visualizing Roman Power in the provinces – A look at common features and remarkable differences

Kai Töpfer, Heidelberg University

Images were an important medium of communication in Roman culture and as such ubiquitous, for instance in the form of public monuments, decorations on everyday objects or in private surroundings. The topics and motifs of these images were no less diverse than their possible uses. An unquestionably important and at the same time very ambivalent topic was the Roman rule and the military superiority of the Roman army. While related images from Rome and Italy, which consistently convey the perspective of the rulers, were a subject of intensive Research, the imagery in the provinces has been investigated less intensively and not comparatively. However, a closer look on such images shows that they differ significantly not only from the imagery in Rome but also from region to region. Therefore the main focus of my paper will be on the question whether these provincial images and the mentioned differences can be understood as an expression of a specific regional perspective on Roman rule. Important factors to be considered in this context are for instance the initiators and their social context as well as regional artistic and visual traditions. Taking

these aspects into account, a few exemplary monuments from the eastern Mediterranean provinces and, in comparison, from the Germanic provinces will be examined more closely.

Capricorn in Somerset: an Augustan image at the edge of empire

Edwin Wood on behalf of John Pearce, Dept of Classics, King's College London

The discovery in 2012 of a copper-alloy figurine of Capricorn in north Somerset, south-west England, exemplifies the replication in the remotest provinces of images derived from the Augustan repertoire defined by Zanker. The figure serves as case study in investigating the mechanism by which such images might be replicated. Stylization of the figure's details make it likely that it was made in north-west Europe, perhaps in Britain. Comparison with other representations of this motif shows that this Somerset zodiac figure is not easily paralleled in terms of medium or scale. Its likely votive purpose, as a single discrete image or a component of a larger ensemble, is advocated. Based on the context of its findspot, close to the mineral-rich Mendip hills, two scenarios are presented to explain the dissemination of this specific image, one 'military', the other 'civilian'. The discovery was made near Charterhouse, a key centre for mineral extraction in the Mendips after AD 43. Here imperial interest and military involvement are attested in stamped lead ingots and an adjacent fort in the mid-first century AD. Drawing on other representations of Capricorn in text and image from military sites in Britain and beyond, a possible association with the sacellum of a garrison, perhaps comprising soldiers from the second legion Augusta, is proposed. North Somerset is also rich in temples, the most famous being the sanctuary of Sulis Minerva at Bath, where the influence of Augustan iconography on the temple pediment relief has long been argued. Surviving evidence from other temples in the same region shows Roman influence on images and writing as forms of religious devotion, perhaps centred on Bath as a centre of new practice. In this context Capricorn can be alternatively identified as an offering at a local shrine.

The Vynen Monument and Commemorating a Greater Victory

Michael den Hartog, Province of Noord Brabant, Cultural Heritage Programme

As Paul Zanker has shown, Augustus did much to create his image as a successful and victorious ruler. When they came to power, the Flavians followed Augustus' example and initiated among others an extensive building programme. Victories make good propaganda. Ever since the end of the 1970s, when it was unearthed at Vynen near Xanten, a stone dedicated to Emperor Vespasian and his son Titus has been seen as part of a monument commemorating a triumph of Legio VI Victrix over the Batavians during their epic revolt. In contrast to the much celebrated Flavian capture of Jerusalem, Zangenberg sees the Vynen monument as the only tangible commemoration of their victory over the Batavians. The Vynen monument may seem an isolated find, but it is not alone in the world of Roman epigraphy and Flavian visual propaganda. The object dating to AD 72-73 can be seen as part of a series of building inscriptions along the Roman Limes from the river Rhine to the Euphrates in the honour of Vespasian and Titus. The Vynen inscription also names Aulus Marius Celsus, the governor of the military district of Germania Inferior. Building inscriptions are a means of propaganda for Roman emperors. What role did the stone play in Flavian propaganda as a whole and Flavian propaganda in Germania Inferior in particular? In the turbulent AD 68-70 period the Flavians routed their Vitellian adversaries and installed a new dynasty in Rome. Besides the restoration of fortifications after the Batavian revolt, a thorough restructuring of the legions along the Rhine Limes took place. What did this restructuring look like? What was Aulus Marius Celsus' role? Coins are another means of propaganda. What kind of information can coinage from the legionary camp at Nijmegen add to the understanding of Flavian propaganda and the stone itself?

It's all just propaganda? Victoria depictions and inscriptions on the Upper German-Raetian Limes

Martin Kemkes, Archäologisches Landesmuseum Baden-Württemberg

During the current excavations in the western fort of Öhringen in summer 2020, several statue fragments were found in the fort ditch in front of the south gate. Among them was a winged Victoria, which could have originally been part of the decoration of the fort gate. It most likely belonged to the official representational equipment of the fort and symbolized the absolute claim to

victory and rule of the Roman army, but also of the entire Roman state. Depictions and inscriptions of the goddess Victoria are widespread along the Limes and in the hinterland. They are found, often in connection with Mars, not only in military contexts as evidence of Roman state and army religion, but also in civilian or private milieus. Apparently, the Roman goddess of victory in her Greco-Roman statue schemes was linked to local religious ideas in the course of an “Interpretatio Romana”. Based on the new find of the statue from Öhringen, the lecture will present the depictions and inscriptions of Victoria at the Upper German-Raetian Limes and discuss the complex appropriation processes of the goddess Victoria in the provinces of Upper Germany and Raetia.

Bits and pieces of Rome’s glory in Dacia

Monica Gui, National Museum of Transylvanian History, Cluj-Napoca

Surely, the idea of Rome’s glory had to be instilled not only in the core of the Empire, but also in its periphery, not least in the military communities on the borders. Images were a powerful tool for its conceptualisation. In Dacia, due to its status of marginal and relatively short-lived Roman province, but probably mostly to modern causes, traces of more or less monumental imagery of this kind are conspicuously scarce. However, they are not altogether absent and allow a glimpse into how the idea of Rome’s victory was conceived and displayed. This very partial picture can be supplemented by similar, significant images recurring on more trivial objects, which are often ignored and/or considered self-evident. Large- and small-scale images were indeed complementary, some alluding more at targeted transmission, while others more at reception. The presentation will focus on a set of well-known symbols closely associated with this message and follow their expression in a variety of media. Questions such as inspiration, production and diffusion of image-bearing objects and monuments and the appropriation of these symbols will be addressed. It will be argued that in the particular context of Dacia’s military environment, the visual vocabulary was rather straightforward, even ‘iconic’ (i.e. immediately recognisable), generally lacking the complexities and nuances seen, for instance, in metropolitan architectural and artistic creations. Even at this basic level, the evidence suggests that it must have worked. Investigating how these tropes were potentially used, interpreted and combined (and by who) to articulate the narrative of Rome’s greatness and invincibility can reveal glimpses of the ideological landscape of the province and some of the factors that actively shaped it.

Polychromy and Epigraphic Practice in the Provinces: a view from the Antonine Wall

Louisa Campbell, University of Glasgow

Unique inscribed reliefs from the Antonine Wall, commonly referred to as Distance Sculptures, provide an exceptional lens through which to view epigraphic and propaganda practices on the edge of Empire. These monuments performed a pivotal role in projecting and maintaining Imperial power over the region and this paper will discuss how recent non-invasive analysis revealed previously invisible pigments that once brought these iconic sculptures to life for both Roman and non-Roman audiences. Vibrant colour imbued the inscribed text, iconography and decorative details with an incredibly powerful additional layer of meaning and a restricted palette of pigments was evidently prescriptively applied to different features making their intended messages widely accessible. However, elemental and mineral fingerprinting of pigment compounds confirms selectivity in the way Roman artisans achieved their desired effects on the Distance Sculptures by applying alternatives that were probably more readily available to them on the frontier. Attempts to reconstruct polychromy on plaster cast replicas have encouraged contemporary audiences to re-imagine and re-engage with Classical statuary they have previously been conditioned to see in pristine white marble, but these representations commonly lack authenticity. This paper demonstrates how emerging analytical and digital technologies now combine to permit more realistic digital reconstructions and interpretive explorations of the impact and performance of these unique monuments in their original, colourful, condition.

The painted iconographic programm of Deir el-Atrash fort: Roman control, protection and military presence in the Egyptian Eastern desert

In January 2020, within the framework of the French Archaeological mission in the Egyptian Eastern Desert (MAFDO), a unique painting of its kind was discovered in Deir el-Atrash fort, built along the desert road that connects Qena in the Nile Valley to 'Abu Sha'ar on the Red Sea. This praesidium, excavated and studied by the speakers, is the nearest hydreauma located a few stations before the famous Porphyrites quarries. The coloured scenes extend over nearly 2.4 linear meters on the eastern tower of the fort entrance and on the curtain wall and are dated to the Antonine period. The program includes a rider (hero equitans, perhaps Heron, or a draconarius?) and at least three dromedaries led by a camel driver, identified as a dromedarius or a man in charge of supplies. This unique and well-preserved example of figurative scenes painted on the walls of an Egyptian Eastern desert fortress offers a glimpse of a program presented at the entrance of a military device, which clearly symbolizes Rome's mark and control over the margins of the Empire. After the presentation of the archaeological remains and the painting, the speakers will attempt to highlight all the aspects and questions that are associated with this discovery.

"My face and the Wolf song"

Eva Steigberger, Monuments Authority Austria

The Roman Army was and is considered to be one of the key players in transporting Roman glory into the Empire. Roman military equipment not only serves the purpose of protecting and fighting, it shows Rome's Might and Power and is supposed to put fear into their enemy. Roman equites, as known, were an impressive sight, dressed in shiny armour telling tales of Roman virtus. A new face mask from Carnuntum with its other finds and the Ribchester helmet are fine examples of the

exquisite technique, the care and the love for the equipment, which converts the bearer into the ideal victorious hero of battle sent by the Emperor.

Commemorating the Dead

David Breeze

War memorials and representations of victory at the Edge of Empires This presentation will compare and contrast how the Roman Empire and the British Empire commemorated victory and defeat in monuments. Particular monuments will include Adamklissi and the Antonine Wall, and memorials erected in the 19th century after continental and colonial wars as well as the First World War.

11. Roman military activities during the Republic

11. Recent research into the Roman military activities during the Republic. Archaeological evidence

Session Chairs: Janka Istenic & Angel Morillo Cerdan

Affiliation: National Museum of Slovenia, Slovenia

Affiliation of co-organiser: Universidad Complutense de Madrid, Spain

Session Abstract: The Roman army played an important, often pivotal role in the expansion of Roman supremacy. Evidence of Roman military activities abounds, though the military sites from the Republican are far less well researched than later ones. Over the last two decades, significant progress has been made in this field and it is the aim of the proposed full-day session to get an overview of the most recent archaeological research in the Roman military activities during the Republican period. Most of all, the session is intended for papers presenting new archaeological evidence. Papers on the already published evidence will be accepted only if giving a distinctly new interpretation. The session would also include contributions addressing general questions such as

the impact (the danger/cases of overuse) of ancient written sources on the dating of Republican military sites.

The castellum of Puig Castellar of Biosca (Catalonia, Spain): a republican fortress from the second century BCE

Esther Rodrigo Requena, Joaquim Pera Isern, Cèsar Carreras Monfort, Autonomous University of Barcelona, Núria Romaní Sala, Autonomous University of Barcelona/ ICAC

This paper presents the military settlement of Puig Castellar de Biosca (Catalonia, Spain) a Republican castellum dated in the earliest moment of the Roman conquest in the Iberian Peninsula. The site is settled on the top of a low hill at the confluence of three fluvial courses. From the top of the hill, there is a complete visual control a wider area of the river Llobregós valley, which constitutes the natural pathway between this region and the Segre river, which is the main affluent of the Ebro river. This privileged location gives the site an exceptional strategic function to control the natural corridors in a broad area in the central Catalonia. After a first period the military control, the region was so peaceful that the Roman administration founded the city of Ileso (5 Km away from Puig Castellar) in the last decades of the IInd century BCE. The excavation of the plain upper part of the hill records a distinctive building of 30 by 30 meters, which seems to be the commander's headquarters. The plan of this construction reminds us other buildings of the Principate such as a principia or praetorium, which were common in the Limes military camps. The archaeological excavations at Puig Castellar of Biosca, provide us a very precise dating between the second and third quarters of the IInd century BCE (circa 180-120 BCE). Its organised abandonment coincides in time with the foundation of the Roman city of Ileso in the last decades of IInd century BCE (120-110 BCE).

The Roman army in the Oriental Pyrenees (2nd-1st c. BC): territorial control and management of provincial resources in the High Lands

Joan Oller Guzmán on behalf of Oriol Olesti Vila, Universitat Autònoma de Barcelona

In the last 15 years, archaeological excavations have convincingly identified the presence of the Roman army in the Roman Pyrenees (Cerdanya region, Cerretani Iberian tribe), during the 2nd-1st century BC. As happened in northeast Hispania, also in this high mountain areas a significant part of the Roman army seems to have been settled in a number of key indigenous settlements (some of them oppida, others just roadside sites), such as garrisons (praesidia), controlling the most important roads, territories and resources. These patterns of control can be correlated not only with some war episodes where the Pyrenean key passes were strategic (Sertorian War, Civil war), but also with the interest on the exploitation of some key resources, as minerals, cattle or forest products. This paper will analyze some key Pyrenaean sites, all of them from Iberian origin, where the Roman army was deployed from the middle of the 2nd c. BC. The erection of new walls or new buildings allow to identify the Roman military presence, but also we will point out the identification of some materials -as writing instruments or signet-rings- that could help us to understand the new role of the Roman army managing some key resources (metals, salt, auxilia).

Grociana piccola Roman military fortifications (north-eastern Italy, second-first centuries BC)

Federico Bernardini, Università Ca' Foscari Venezia

Recent investigations identified early Roman military fortifications close to Trieste. They include a main camp – San Rocco –, flanked by two smaller structures, those of Grociana piccola and Montedoro. This paper presents the results of the excavations carried out at Grociana piccola which shows two sub-rectangular ramparts with different orientations. The inner rampart was about 1.5 m large and composed of two revetting walls and a core of smaller stones. An additional line of large stones was discovered about 50 cm away from the northern line of the rampart. In the inner terrace contiguous to it, abundant pottery, including possible late greco-italic and Lamboglia 2 amphorae, was discovered. The low elevation of the rampart suggests it was used as a protected walkway. Such fortification, dated to the second century BC by associated pottery, provides one of the earliest and smallest examples of Roman fort but, despite its small size, the rampart was built using the same

building technique of much larger contemporary military camps. The north-eastern corner of the external rampart was curve and made of an inner wall and an external irregular line of large stones located at about 2 m from the inner structure at a slightly lower altitude. Interestingly enough, just inside the corner of the fortification, a rectangular platform was found. It shows the same height as the internal wall alignment and has been interpreted as a probable tower or artillery platform. The rampart could have been used as a walkway, perhaps defended by wooden structures, housed in the rampart filling and supported by the external irregular alignment. The absence of buildings and pottery, the rough building technique, the abundance of hobnails mostly belonging to the Alesia D type, the clavicula entrances, its regular plan agree with a temporary use of the camp during the mid first century BC.

The Battle of Arausio (105 b. C.). State of research

Loïc Buffat, Yahya Zaaraoui, Matthieu Guintrand, Mosaïques Archéologie

Since 2014, a collective research programme has been working on late-Republican remains of the Lampourdier hill, near the city of Orange (Vaucluse, France). These investigations have uncovered several thousand metal artefacts, mainly militaria, and structures related to a Roman military settlement. These include a defensive earthen embankment nearly 900 m long following the hill's ridge line, projectile piles (i.e. sling pebbles), and pits containing equine skeletons mixed with human remains. South of the plateau, a group of buildings that may be the ruins of a burnt-out fort has been discovered. A large number of weapons were also found: pila, arrowheads, catapult points, helmet fragments, caligae nails, spur points and bridle bits. Few objects of everyday life are also worth mentioning. The important coinage (430 specimens discovered between 2014 and 2020), in particular silver denarii, has made it possible to link the site with one of the great defeats of the Roman army in Gaul against a Germanic-Celtic coalition: the battle of Arausio (6 October 105 BC).

The Roman-Republican camp at Cáceres el Viejo (Spain): old theories and new perspectives

Carlos Pereira, UNIARQ, University of Lisbon, Ángel Morillo, Complutense University of Madrid

Since the work done by A. Schulten and R. Paulsen in the legionary Fortress of Cáceres el Viejo (Cáceres, Spain), in the 20's, that this settlement has been important on the military knowledge. Accepted by ones and denied by others, the proposals of Schulten opened the debate about roman military activities in this area, relating this camp with the Castra Caecilia of the classical resources. Against the certainty of Schulten some claim a more antique construction of the settlement and its eventual relation with Lusitanian wars while others argued about its eventual relation with post-war control of the territory. Later, G. Ulbert made a wider study on the artifacts collected, but likewise he was unable to clarify a precise interpretation of Cáceres el Viejo camp. The chronology was established on the first quarter of the first century BC, corresponding with Sertorian War (80-72 BC). After several years, the advance of knowledge of artifacts and Roman Military subject in general justifies the return to this important settlement, reason why two of us are leading a project in order to (re)analyse all the data and publish an monographic study. This has made possible to gather an international team (Portuguese and Spanish researchers) that is reviewing the artefactual set (placed in three institutions: Museum of Cáceres, Römisch-Germanisches Zentralmuseum and Archäologische Staatssammlung München). In fact, almost half of the set assembled by Schulten was unpublished and Ulbert did not observed it. This work will make possible to build a new and solid understanding of this site, which has already proven to be relevant to the knowledge of Roman Military activities during the Late Republican Period. Here we present some of the results already obtained during the course of the research carried out by this team, which is not restricted to the names presented, in a prelude for the monographic study that will be published. We will advance some outcomes about the chronology, the castrametation techniques, the military supplies (imports and local productions) or about troop's origin.

A maritime frontier in Citerior Hispania during the Sertorian civil wars: a geostrategy story

Feliciano Sala-Sellés, LVR-Amt für Bodendenkmalpflege im Rheinland – Aussenstelle Titz, Sonia Bayo-Fuentes, Archaeologist, Ph Doctor in Humanities Archaeology and Historical Heritage Research Team, University of Alicante, Jesús Moratalla-Jávega, Institute of Research in Archaeology and

Around 77 BC, Q. Sertorius' army decided to build a chain of forts when the Roman civil wars were still favourable. These forts were located on coastal hills at Cabo de la Nao, situated on the southeast coast of Hispania. These forts were located on peaks and had a reduced extension with a simple but well thought of defensive system which was adapted to the local orography. They constituted a reliable surveillance system against senatorial ships sailing between the ports of Ebusus and Carthago Nova. With the help of the Cilician pirate fleet, the fortification of this coastal stretch was designed to prevent possible attacks on the naval headquarters of Sertorius, situated at the port of Dianium, and the looting of senatorial ships sailing along the coast and thus supplying the Sertorian troops.

L'organisation interne d'un camp militaire romain au milieu du I^{er} s. av. J.-C. : à propos du camp F de Lautagne (Valence, Drôme)

Magalie Kielb Zaaraoui, Loïc Buffat, Yahya Zaaraoui, Mosaïques Archéologie

Among the various Roman military camps identified since the 1990s on the Lautagne plateau (Valence, Drôme), Camp F is the one whose surface has been most extensively explored. The excavation carried out between 2014 and 2015 uncovered not only the south-eastern corner of the enclosure ditch and the eastern entrance to the camp, but also numerous remains enclosed within the fortification. These remains have provided essential information on the life of a Roman army stationed in northern Narbonnaise during the middle of the 1st century BC, and about the internal layout of this temporary camp. Indeed, these many archaeological structures, mainly small earthen ovens, were organised in large alignments and dedicated areas could be materialised, in particular major arteries and privileged zones for the installation of Roman soldiers' tents. The various studies and analyses carried out on the archaeological material uncovered from the kilns fillings have also provided a glimpse into the daily life of Roman legionaries.

Roman troops in high mountains / The challenge of establishing Roman hegemony in the Poenine Alps

Romain Andenmatten, Cantonal Office of Archaeology of Valais / RAMHA, Michel Aberson, UNIL (retired), Alessandra Armirotti, Soprintendenza per i beni e le attività culturali, Tristan Allegro, UNIL

The interdisciplinary and archaeological research program around the Site known as Hannibal Wall allows each year to highlight and investigate new high altitude positions (between 2350 and 3100m above the sea) occupied by Roman military (auxiliaries or legionaries) during the establishment of Roman hegemony over the Poenine Alps (between 57 BC and 25 BC). This work is carried out by a joint group made up of the scientific group of the RAMHA association and staff members of the Soprintendenza per i beni e le attività culturali. This paper will be an opportunity to present a synthesis based on the data acquired over the past fifteen years, the latest news, and to discuss the state of the studies in progress. A group of about fifteen researchers from various disciplines is currently collaborating on the preparation of a first volume of synthesis on this work. The sometimes extraordinary state of conservation of the archaeological material on these sites allows studies that are difficult to envisage in other terrestrial contexts (like dendrochronology on wooden artefacts). The comparison with historical sources finally opens up interesting discussions both from a methodological point of view and on the interpretation and dating of certain events which were admitted for a long time (for example the course and the late dating, 16-15 BC of the entry of Valais into the zone of Roman hegemony). Based on the study of a site, research currently in progress has made possible to inventory twenty five positions, of which eleven have been investigated. Are they isolated positions, positions occupied successively or a network of tactical positions in order to occupy a territory? What events or series of events could it be linked to? Are there any links or hierarchies between these positions? These are some of the questions that will be addressed but this research will have to continue...

Archaeological Traces of the Roman Attack of Grad at Nakovana during Octavian's Illyrian War (Pelješac, Croatia)

Domagoj Perkić, Archaeological Department, Dubrovnik Museum, Croatia, Marko Dizdār, Institute of Archaeology, Zagreb, Croatia, Hrvoje Potrebica, Archaeological Department, Faculty of Humanities, Zagreb, Croatia, Ivan Pamić, Croatian House Viganj, Croatia

One of the most important archaeological sites on the southern part of the eastern Adriatic coast is the settlement of Grad, near the village of Nakovana, on the western side of the Pelješac peninsula. The discovered finds, together with the results of field surveys and trial excavations, indicate that Grad was inhabited during the Bronze and Iron Ages, and then again in Late Antiquity. The continuity of human presence at the site testifies to its exceptional location in the Mediterranean landscape, on communication routes that passed along the coast, and also those linking the coast with its hinterlands. Field surveys conducted at Grad have resulted in a number of finds testifying to the dramatic end of the settlement in the 4th decade of the 1st cent. BC. A great number of lead slingshots have been discovered from around the main entrance to the settlement, while a somewhat smaller number of such projectiles have been found within the settlement itself. Furthermore, the catapult bolts have been discovered. Finds discovered from the access roads to Grad and the neighbouring prominent position of Nakovanić include lead slingshots and a fibula of the Alesia type, suggesting that the most intense attack probably came from this direction. The positions of the finds suggest that the Roman army attacked the settlement, which can probably be associated with the operations conducted during the Octavian's Illyrian War (35–33 BC). Historical sources convey brief information about the defeat of pirates on the neighbouring islands of Korčula and Mljet, and about the population having been killed or sold as slaves (App. Ill. 16). Given its location above the Korčula Channel, the settlement of Grad at Nakovana was probably attacked at the same time.

Neue Beweise römischer militärischer Aktivitäten zwischen den Flüssen Krka i Cetina (Dalmatien, Kroatien)

Domagoj Tončinić, Domagoj Bužanić, Mirjana Sanader, Filozofski fakultet Sveučilišta u Zagrebu, Odsjak za arheologiju

Im Küstenhinterland der Provinz Dalmatien standen zwischen den Flüssen Krka und Cetina zwei römische Legionslager, nämlich Burnum und Tilurium, zwischen denen die Existenz der Hilfstruppenlagern Promona, Magnum und Andetrium angenommen wird. Es wird sogar die Existenz einer durchdachten und absichtlich gebauten Verteidigungslinie, des sogenannten Dalmatischen Limes, vermutet, der bereits in die Zeit der späten Republik, spätestens ins frühe Prinzipat datiert wird. Diese Hypothese beruht vor allem auf literarischen Quellen, Inschriften und zufälligen Funden. Die Existenz der zwei Legionsfestungen steht nämlich schon lange außer Frage, aber die Kastelle sind nur aus den Quellen bekannt, und wurden nie archäologisch untersucht. Aufgrund der Notwendigkeit, endlich festzustellen, was im Küstenhinterland zwischen den Flüssen Krka und Cetina geschah, haben wir seit 2018 an einem archäologischen Projekt zu arbeiten begonnen. Als Ausgangspunkt wurde die Hypothese aufgestellt, dass nur ein umfassendes Projekt die Lücken im aktuellen Wissen in Bezug auf diese Grenzlinie schließen kann. Zur Identifizierung möglicher römischer militärischer oder anderer historischer Strukturen wurden zuerst verschiedene zerstörungsfreie Forschungsmethoden eingesetzt. Dabei wurden nicht nur nicht nur literarische Quellen analysierten und interpretierten, sondern auch Luft- und Satellitenbilder, historische und moderne Karten sowie LiDAR-Scans. Unser Ansatz, der über den Rahmen literarischer und epigraphischer Quellen hinausgegangen ist, war erfolgreich, da wir die Existenz mehrerer römischer Militärlager erfasst haben, deren Existenz zuvor nicht bekannt war. Wir wollen bei dieser Gelegenheit die Resultate, die wir aus der archäologischen Untersuchung des adriatischen Hinterlandes zwischen Krka und Cetina erhalten haben, vorstellen. Diese Ergebnisse haben deutlich gezeigt, dass einige der Behauptungen der alten Historiker überprüft werden müssen. Nämlich die Quellen informieren, dass Veränderungen in der eroberten Region stattgefunden haben, aber die ganze Wahrheit ihrer Erzählungen, der tatsächliche Verlauf der Ereignisse, kann nur durch die Archäologie bestätigt werden, und zwar nur dann, wenn die Archäologie über relevante materielle Beweise verfügt.

Ulaka–Nadleški hrib site complex in Loška dolina valley (south-western Slovenia)

Janka Istenič & Boštjan Laharnar, Narodni muzej Slovenije

Ulaka–Nadleški hrib site complex had an important role in the Late Iron Age, late Republic and Early Principate within the wider geo-political context of the region between north-east Italy, western Balkans and Pannonian plain. Hillfort Ulaka was the central Iron Age settlement in the region. It has a long history of research. The same applies for the Roman fort at Nadleški hrib, approximately 500 meters south of Ulaka hillfort. Our research suggested the fort had two occupation phases, the earlier from the Caesarian/Octavianic period and the later from the Augustan period (Laharnar, B. 2013, *Arheološki vestnik* 64, 123–147; Laharnar, B. in: Horvat, J. 2016 (ed), *The Roman Army between the Alps and the Adriatic*, Ljubljana, 85–97). In 2017 another Roman fort has been discovered at Ulaka-tabor at the northern slope of Ulaka hill. Small finds indicate a Roman military attack from the fort on the Ulaka hillfort in the Caesarian/Octavianic period, i.e. contemporaneous with the earlier occupation phase of the fort at Nadleški hrib hill. Airborne LiDAR data analyses and field survey indicate linear features leading from the corners of both Roman forts. We assume these features show Roman military earthworks related to the siege and conquest of the Ulaka hillfort in the Caesarian/Octavianic period. Ulaka–Nadleški hrib site complex is therefore an excellent case study of a conflict landscape from the period of Roman conquest of the region east of the province of Gallia Cisalpina (Italy after 42 BC).

12. Legionary fortresses along the Rhine

12. Legionary fortresses along the Rhine. State of research

Session Chairs: Jürgen Trumm & Steve Boedecker

Affiliation: Kantonsarchäologie Aargau, Switzerland

Affiliation of co-organisier: LVR-Amt für Bodendenkmalpflege im Rheinland, Germany

Session Abstract: During the last decades, countless rescue excavations and other investigations have taken place at the roman legionary fortresses along the Rhine and the surrounding regions of Germania Superior and Germania Inferior. This is true not only for well-known sites like Vindonissa (Windisch CH), Argentorate (Strasbourg F), Mogontiacum (Mainz D), Bonna (Bonn D), Vetera (Xanten D) and Noviomagus (Nijmegen NL), but also for short-existing sites like Arae Flaviae (Rottweil D), Haltern (D) or Mirebeau (F). The aim of the session is to provide an overall overview to the actual state of research, to mention the most important publications and to discuss open questions for further research.

Contributions should not only focus on the military complexe, but should also include civil settlements, cemeteries, roads, manufacturing sites and other aspects. Moreover, the historic significance of each site as well as questions of continuity and discontinuity should be taken into consideration.

Valkenburg ZH – an unexpected Legionary Fortress near the mouth of the river Rhine (The Netherlands)

Wouter K. Vos, Vos Archeo / Saxion University of Applied Sciences, Edwin Blom, ADC ARcheoprojecten, Jasper De Bruin, National Museum of Antiquities (RMO) Leiden

During the autumn and winter of 2020/2021, the remains of a new legionary fortress in Valkenburg ZH at the mouth of the river Rhine near the North Sea coast were unexpectedly unearthed. Earlier excavations in Valkenburg ZH had already revealed much of the Roman past there. Around the Second World War an auxiliary fort was excavated, and later in the 1970s, 1980s and 1990s parts of an extramural settlement, a fortlet, watchtowers and a huge cemetery together with – the connecting element – the Roman limesroad were discovered. The legionary fortress appeals to the imagination, not so much because of the

archaeological remains (although some exceptionally good woodwork has been preserved in the wet soil of the gates and interval towers), but mainly because of its dating. It is dated to the reign of Caligula (AD37-41) and thus makes it very tempting to link its construction to the historical events we know from the ancient sources (Cassius Dio and Suetonius, for example). The idea is that the accommodation of this force has to do with the preparations for the conquest of Britannia. The fortress was in use for a short time, possibly up to and including the actions of general Corbulo, who we also know from ancient sources and who had his legionaries dig a canal between the Rhine and the Meuse in the late 40s and 50s. Here too, the Valkenburg fortress may have played a role. Whatever the case may be, the discovery of this new legionary camp opens a new window on Early Roman history, in which not only the story of the Dutch Rhine delta can be rewritten, but also offers openings to approach the landing and conquest of AD43 from a new military perspective.

The capital that was not

Paul Franzen, gemeente Nijmegen

During a short period at the end of the first century and the beginning of the second century AD, Nijmegen was on par with a select few other locations in the Empire, of which several would later become the capitals of several modern countries. Many others turned into major towns that continued through mediaeval times into the modern era. In Nijmegen this development was halted because the local legion left for the Dacian wars. It never came back and despite some on and off use by several different legionary detachments, and possibly for a short period by the legio VIII Hispana, the fortress on the Hunerberg was never again the driving force that could have made Nijmegen the obvious capital of the Netherlands. The question is of course: why not? Why was Nijmegen abandoned and not Vetera 2, or Neuss or Bonn? In this paper we take a look at the local topography, the different phases in both the fortress and the surrounding military town (*canabae legionis*). We will also consider the size of the settlements and the diversity in buildings and compare them with other contemporary fortresses and towns. Does this provide us with the answer why Nijmegen never became what it could have been?

Military equipment and horse gear from the Flavio-Trajanic castra and canabae at Nijmegen

Vincent van der Veen, Radboud Universiteit

Decades of excavations on the Hunerberg at Nijmegen have yielded an uncountable number of features and finds, including well over 1,000 items of military equipment and horse gear. These items can be attributed to an Augustan military base, a Flavio-Trajanic legionary fortress (*castra*) and its extramural civil settlement (*canabae legionis*). This contribution aims to provide an overview of this fascinating assemblage. Some aspects that are addressed are the function and chronology of the objects, production and recycling of military equipment in both the fortress and its extramural settlement and the question whether military equipment and horse gear can provide evidence for the presence of auxiliary infantry or cavalry. Another important element is a distribution analysis of the items of military equipment and horse gear. Only rarely are a fortress and its civil settlement excavated to a degree that a comparison between the two is possible, which makes this assemblage an ideal candidate for the study of these two communities and the way in which they interacted. By mapping the distribution of various subcategories of the assemblage (weapons, armour, belt fittings and horse gear) we can gain an insight into the use of space in both the fortress and the civil settlement. Finally, by zooming in on the find contexts of the objects we can examine how and to what end objects were deposited and to what

extent their distribution has been influenced by post-depositional processes such as erosion or site disturbance, and differing excavation methods.

Vetera castra and the role of topography. Or why Tacitus was wrong and Augustus right
Steve Bödecker, LVR-Amt für Bodendenkmalpflege im Rheinland (Bonn)

Large-scale magnetometer surveys carried out from 2015 to 2020 at Vetera castra near Xanten-Birten, Germany, covered an area of about 200 ha and allow new insights into the structure of the different periods of the double-legionary fortress and the extramural settlement. In a recent project, a combined interpretation and documentation of archaeological features from aerial photography, magnetometer surveys, LiDAR and excavations has been undertaken. A new detailed plan of the site of Vetera castra provides a new insight in the general layout and development of the site and its landscape in the 1st century AD. In this lecture, the overall structure of this large complex will be explained and the role of the landscape for the position of the fortresses and its extramural settlement in the different periods will be discussed.

Amphora Studies in Xanten: from the local Roman legionary occupation to the imperial supply system

Matheus Morais Cruz, University of Sao Paulo

The city of Xanten (Germany) has great archaeological potential for understanding the Roman presence in the so-called *limes germanicus*. Despite the advance of research in the region, there are still many questions about the internal organization of the sites of Roman occupation, their relations with the surrounding Germanic tribes, and their insertion in the general context of *Germania Inferior*. One of the topics that have been gaining momentum in academic discussion is the influence of the legionary camp “Vetera I” and the “*Civitas Cugernorum*” (*Colonia Ulpia Traiana*) on the Roman military supply system from the 1st century BC to the 1st century AD. Motivated by this issue, this paper aims to discuss, based on reflections derived from the author’s master’s research under development at the Museum of Archaeology and Ethnology of the University of Sao Paulo, the current state of archaeological research on these sites, especially concerning the study of the Roman amphorae found in Xanten and its role in the organization of the military supply of the region and in mediating relations between Romans and natives of the most diverse Germanic tribes.

Adding new pieces – Latest Research in the Legionary Fortress of Bonn

Jens Wegmann, LVR-State Service for Archaeological Heritage

Beside Nijmegen, Xanten and Neuss the *castra Bonnensia* is one of four permanent legionary fortresses attested on the Lower German Limes. It was one of the largest in the Empire for a single legion and played a vital role on this frontier due to its great strategic importance.

The first excavations with scientific ambition were carried out here as early as 1818 by local teacher Dr. Karl Ruckstuhl, financed by the Prussian administration and supported by the Preußische Rhein-Universität Bonn that had been founded that same year. Currently, some 180 excavations, rescue excavations and observations during construction works within the fortress’ area are recorded in the central database BODEON (BODenkmalpflege und DENkmalpflege ONLINE) of the LVR-State Service for Archaeological Heritage in the Rhineland. Yet, due to the present-day urban environment our knowledge of the *castra*

Bonnensia resembles a mosaic. The lecture will give a brief overview of some of the recent research carried out in the legionary fortress that helped adding new pieces.

Vezereos – Bir Rhezen. A Roman frontier post and watering place on the western end of the Tripolitanian Limes

Salvatore Ortisi, LMU Munich, Michael Schmauder, Rheinisches Landesmuseum Bonn, Jan Bemann, Rheinische Friedrich-Wilhelms-Universität

The large military centres on the Rhine have been intensively studied since the last quarter of the 19th century. Above all, the large legionary sites and vexillation camps such as Noviomagus – Nijmegen, Vetera I – Xanten, Novaesium – Neuss and Bonna – Bonn have been uncovered very early and often comprehensively. Many of the large-scale excavations that are central to the knowledge of the military history – not only – of Lower Germania have not been studied and presented until today. Within the framework of an 18-year corpus project applied for at the Union of the German Academies of Sciences, these archaeological sources, which are fundamental for understanding the Lower Germanic Limes, are to be made accessible to international research. A central desideratum of Limes research would thus be fulfilled. In addition to the “traditional” questions about the chronology and (structural) development of the individual fortifications, further aspects such as the spatial effect and the economic significance of the garrison sites as well as their cultural impact should also be discussed. The large camps and their surrounding settlements were of central importance as military, administrative and economic centers for the further development not only of the border area on both sides of the ripa, but also of the wider hinterland. Furthermore, it must be asked to what extent the impact of these sites extended beyond the withdrawal of the Roman military into the Early Middle Ages. The outstanding archaeological and historical data offers the potential to discuss the questions outlined above in selection on the basis of the source material from the four legionary camps in a certain synchronic range and, using the example of Bonn, also in a diachronic depth. The primary goal of the planned German-Dutch cooperation project, however, is the edition of the archaeological sources. In the contribution proposed for session 12 (Legionary fortresses along the Rhine. State of research), the scientific objectives and the organisational structure of the German-Dutch cooperation project applied for by the Universities of Bonn (Jan Bemann) and Munich (Salvatore Ortisi) together with the Landesmuseum Bonn (Michael Schmauder) will be presented.

Hier auch: Webgewichte in den Legionslagern Bonn und Neuss

Tünde Kaszab-Olschewski, LVR – LandesMuseum Bonn

Die Webgewichtsfunde am Hauptquartier der Niedergermanischen Flotte (*classis germanica*) in Köln (CCAA), Stadtteil Marienburg, haben zumindest in Fachkreisen große Bekanntheit erreicht. Sie werden mit Textilproduktion, darunter auch mit der Segelherstellung für die Schiffe der Flotte in Verbindung gebracht. Darüber hinaus lassen Steininschriften aus Köln bzw. dessen Umland einen Zusammenhang zwischen den Webgewichten und der Segelherstellung als plausibel erscheinen. Deutlich weniger bekannt sind dagegen die Webgewichtsfunde aus den Legionslagern Bonn (Bonna) und Neuss (Novaesium), die dann auch zahlreiche Fragen aufwerfen, wie beispielsweise:

- - Kann der Verwendungszweck der Webgewichte, im Hinblick auf die Textilprodukte, konkretisiert werden?
 - Lassen sich hierbei Schlüsse über das verwendete Rohmaterial ziehen?

- Ist der Produktionsort (Töpferei?) der Webgewichte einzugrenzen?
- Können sie ferner typologisch aufgeteilt werden?
- Sind hierzu ggf. auch chronologische Aussagen möglich?

Die Antworten sollen zur Klärung einer bislang kaum beachteten handwerklichen Tätigkeit im Zusammenhang mit den Legionen am Rhein beitragen.

Das Legionslager von Mogontiacum/Mainz – Neue Erkenntnisse zur Umwehrung und Chronologie

Daniel Burger-Völlmecke, City Museum Wiesbaden

Das Legionslager von Mainz gehört mit seiner fast 400jährigen Belegungszeit zu den am längsten genutzten Militärplätzen im Römischen Reich. Die Stationierung von zwei Legionen im 1. Jh. n. Chr. sowie deren Beteiligung an Ereignissen von reichsweiter Auswirkung verdeutlichen die Bedeutung des Mainzer Lagers. Im Vergleich dazu ist über den Verlauf der Umwehrung, deren Bauabfolge und auch über die Innenbebauung erstaunlich wenig bekannt. Grabungen der letzten Jahrzehnte erbrachten neue Erkenntnisse, die das bisher Bekannte in vielen Bereichen revidiert oder in Frage stellt. Im Rahmen einer 2018 an der Universität Freiburg abgeschlossenen Dissertation zur Umwehrung konnten erstmals alle Lagergrenzen sowie ein bislang unbekanntes Vorgängerlager nachgewiesen werden. Neue Hinweise ergaben sich auch zu einigen chronologischen Eckdaten sowie zur frühen Besatzung der Mainzer castra. Darüber hinaus entstand erstmals ein digitaler Gesamtplan aller bisher bekannten Befundstrukturen des Legionslagers.

Rottweil – Ein flavisches Legionslager am oberen Neckar

Klaus Kortüm, Landesamt für Denkmalpflege im Regierungspräsidium Stuttgart (Baden-Württemberg/D))

Unter den Legionslagern an der Rheingrenze nimmt das ca. 16 ha große sog. Kastell I in Arae Flaviae / Rottweil eine Sonderstellung ein. Es ist das einzige, dass in der mittleren Kaiserzeit rechts des Rheins dauerhaft angelegt worden ist. Seine Gründung spiegelt die flavische Okkupation des Decumatlandes und die Etablierung der römischen Herrschaft am oberen Neckar. Die Besatzung stellte die legio XI Claudia aus Vindonissa / Windisch (CH), das als Basis weiterexistierte. Neben Legionären waren zumindest zeitweise auch Hilfstruppen im Lager I stationiert. Mittlerweile wird immer klarer, das Rottweil eine Art Außenposten von Vindonissa gewesen ist. Von hier aus wurden die Operationen im Vorfeld von Rhein und Donau geleitet und die aus dem Rückraum nach vorne verlegten Einheiten befehligt. In Rottweil waren die verantwortlichen Offiziere stationiert. Gleichzeitig mit dem Lager I dürfte Kastell III auf der anderen Flusseite bestanden haben, wodurch sich die Frage nach dessen Funktion bzw. Besatzung neu stellt. Über die letzten Jahrzehnte ist unser Bild von dem Lager dank einer konsequenten Denkmalpflege immer deutlicher geworden. Interessant sind vor allem die baulichen Veränderungen, die im Laufe der Zeit festzustellen sind. Sie deuten auf sich verändernde Aufgaben hin. Ungewöhnlich ist ein großer Hallenbau vor den principia der ersten Phase, die eher den bekannten Vorhallen der Limesastelle gleicht als den gromae anderer Legionslager. Entgegen früheren Vorstellungen war das Lager bis mindestens in die Regierungszeit Kaiser Nervas in Benutzung. Danach wurde ein neues, stark verkleinertes Steinkastell inmitten des alten Lagers errichtet. Diese Truppenreduzierung dürfte mit dem Abzug der legio XI Claudia aus der Provinz zusammenhängen. Dennoch wurde eine dauerhafte militärische Präsenz in Rottweil offenbar weiterhin für notwendig erachtet. Ein spannendes Thema ist auch, welche Bedeutung das Legionslager für die Entwicklung des

zivilen Ortes besessen hat und welcher Zusammenhang mit den namensgebenden „Flavischen Älteren“ bestand.

Vindonissa and its legionary fortress – state of the research

Jürgen Trumm, Kantonsarchäologie Aargau (CH)

In ancient VINDONISSA (today: Windisch and Brugg, Canton of Aargau, Switzerland), extensive archaeological excavations have taken place every year for the past three decades. Since the last research overview, published in 2015, our knowledge about the only Roman legionary camp in Switzerland has therefore increased again. The paper summarizes the most important new facts and formulates future research perspectives. The time span ranges from the late Celtic oppidum to the castra legionis of the 13th, 21st and 11th legion and the castrum Vindonissense of late antiquity. New findings on the civil settlement outside the legion camp, on the cemeteries and streets complete the presentation.

13. Childhood on the Roman frontiers

13. Childhood on the Roman frontiers

Session Chair: Maureen Caroll

Affiliation: University of York, United Kingdom

Session Abstract: Recent studies on aspects of childhood in the Roman world have been reshaping the study of children in antiquity, especially in advocating interdisciplinarity to counterbalance the dominance of literary and documentary approaches towards illuminating children's lives in ancient society. Children's experiences differed according to their location, time, gender, and social context, and great strides have been made in considering these factors in scholarly enquiry. Yet, one important context in which there are serious gaps in study is that of military communities and families on the frontiers in any part of the empire. Growing up in a potentially dangerous location dominated by soldiers and combative professionals, who were accompanied by women and families to varying degrees, depending on time and place, may have influenced and impacted the life of a child in very different ways than in a purely civilian milieu in Rome, Italy or other places distant from the frontier zones. Non-Roman children on the fringes of and outside the empire may have had their lives irreversibly altered as well. There is a clear need for an interdisciplinary approach to the study of childhood in this environment. This session will explore the physical environments in which children lived, including the forts, the *vici*, and *canabae*, and nearby settlements; the objects and material culture given to children; their place in the household and their social connectivity in military and civilian sectors; their role in the families of serving and veteran soldiers; the experiences children might have had, both negative and positive; the depiction of children as Romans and non-Romans; and the evidence for socialisation and gendered behaviour in life and death. It will utilise funerary commemoration and epigraphy, texts, artefactual evidence, visual imagery, skeletal data, and demographic studies.

Onomastics, Children, and Identity on Roman Military Diplomas

Alexander Meyer, Western University

Roman military diplomas are a treasure trove of information. From the lists of units we can reconstruct the movements of cohorts and *alae*, and sometimes locate their garrisons. From the names of the soldiers we can learn about recruitment practices and the administration of the army. Their texts in general also inform us about Roman law. However, the diplomas also provide opportunities for more theoretical and nuanced investigations. This paper discusses the implications of names on the Roman military diplomas. Specifically, it examines the names of the soldiers who received these diplomas, of their wives and, especially, of their children. It is particularly concerned with onomastic practices regarding the dynamics of 'Roman' and 'native'. A survey of the military

diplomas that name children, of which there are over one hundred, will demonstrate that naming practices among families within the communities of the Roman auxilia did not follow a predictable pattern from 'native' to 'Roman', but rather that soldiers with 'native' names and with 'Roman' names gave their children both 'Roman' and natives names. Furthermore, their choice of name-types was influenced by gender. This paper discusses the implications of these practices within Roman military communities and in the broader environment of Roman imperialism and compares it to other epigraphic and literary evidence.

The Sons of Auxiliary Veterans in Roman Egypt: Family, Status, and Experience

April Pudsey, Manchester Metropolitan University

In the small communities of the Fayyum villages of Roman Egypt, we can observe traces of the lives and concerns of veterans of the Roman auxilia. While previous scholarship on Roman veterans has largely focused on their number (Scheidel, 1996) and their social and legal status (Alston, 1995), this paper will examine life from the perspective of their families: in particular the young sons who were expected to continue in their fathers' military footsteps. Scrutiny of papyrological and epigraphic material has uncovered the extent to which veteran communities were forged and operated alongside local communities and studies of the military diplomas awarding citizenship to veterans has uncovered various geographic and social implications of recruitment and veteran settlement (Alston, 1995; Roxan and Holder, 2003). But a wealth of textual, inscribed, and artefactual material relating to boys in these villages allows us to ask other questions: how were boys expected to be socialised into military cultures? How did these expectations manifest in play, learning, religious, and family life? How did their physical environment, and familial and peer relationships, differ from those of civilian children? This paper will bring together a range of inscriptions, toys and other material culture to address these questions. Evidence for children's experience in Roman Egypt uncovers varied concerns according to status, gender, age and location (Pudsey, 2017; Pudsey and Vuolanto, 2016), and a closer examination of the agency and experience of veterans' sons will contribute to a more nuanced picture of children's lives on the frontiers of the Roman empire.

Gendered Futures? Children's Lives Cut Short and Commemorated on the Roman Frontiers

Maureen Carroll, University of York

Recent studies of the archaeological, epigraphic, material, and skeletal evidence for the lives of children in civilian contexts show that a child's prospects were important to family and society and that people were mindful of them. In particular, the deposition of grave goods in child burials and the diversity in the funerary commemoration of the youngest members of Roman society suggest that children, from a very tender age, were invested with identities and a persona of various kinds. In many cases, it is as if the attention paid to the dead child and the way it was remembered was some compensation for a life cut short. An impressive corpus of funerary monuments with texts and images from the militarised zones and frontiers of the Empire is available for study in this vein, however the potential of this material has not been adequately realised. This paper addresses funerary commemoration in the frontier regions as a compensatory device for 'unfinished lives' and premature death. Stone memorials afforded parents the means to project some future qualities of children that could have been developed had they lived longer and fulfilled their family's hopes. A particular focus of the paper is an examination of the significance of dress and gesture in funerary portraits as a reflection of gendered roles and aspired futures of the children of military families and associated groups on the frontiers.

Vulnerable Victims: Barbarian Children in Roman Conflict Iconography

Kelsey Madden, The University of Sheffield

From the early first century A.D., Roman military victories over barbarian peoples were celebrated visually in reliefs decorating monuments in a variety of spaces. Archaeological and art historical assessments of these images have primarily focused on the representation of the male barbarians, often engaged in battle with Roman soldiers. Yet the reliefs on a wide range of monuments also depict defeated families, the fundamental unit of society, with a particular focus on children non-

Roman children. To fully understand the role these non-Roman children played in Rome's conflicts and the message Rome wanted to send by depicting such vulnerable victims of war, we must assess the medium and the genre with which they have been placed. Whilst the presence of non-Roman children has been noted in earlier studies on monuments in Rome, such as the Ara Pacis, there has been little attempt to locate or study depictions elsewhere. As such, there is a serious gap in research pertaining to the representation of non-Roman children in Roman conquest iconography. This paper suggests ways in which gesture, genre, age, and gender play key roles in these depictions. What kind of emotions were trying to be evoked by such imagery? What kind of medium do non-Roman children appear or do not appear on and why? And, are the images of children more politically effective than those featuring only adults? By assessing these images and depictions, we can progress one step further in trying to understand the real-life experiences held by these children and how and why they were so important to Roman propaganda.

14. New research along the Danube

14. New research along the Danube

Session Chair: Gerld Grabherr

Affiliation: University of Innsbruck

Military border control in the procuratorial province of Noricum

Gerald Grabherr, University of Innsbruck, Stefan Traxler, OÖ Landes-Kultur GmbH

New archaeological research and lucky accidental finds in recent years have considerably increased the knowledge about the Roman military presence along the Danube in Noricum for the period before the stationing of the legio II Italica and the subsequent substantial reorganisation. This requires a reassessment of the changed state of facts. On the one hand, previously assumed garrison positions have to be reassessed or deleted from the list and, on the other hand, there are indications of further military sites. Some recently found fragments of Roman military diplomas allow a better understanding of the Roman regiments stationed at the ripa Norica in the late 1st and the first half of the 2nd century CE.

One thing leads to another: settlement development in Stein – Enns

Barbara Kainrath, RA Researchaeology, Eva Thysell, Universität Innsbruck

The military hotspot at the Noric Limes can be located in Lauriacum/Enns and St. Pantaleon/Stein. Before the legion reached Lauriacum the garrison in St. Pantaleon/Stein was responsible for the military control of the crossing over the Enns. In the west of this camp, which was discovered only a few years ago, aerial photographs show the vicus. At the current state of research the chronology of both the camp and the settlement can only be determined by means of scattered finds. But due to the large number of chronologically relevant finds alone (including a large number of militaria representing a unique collection at the Noric Limes) the end with 180 AD is on solid ground. At this time a brisk building activity starts in Lauriacum, which extends the civil residential areas enormously. The developments can be traced in a special way by the example of the so-called Plocher Fields in the area of the southern canabae legionis. For Lauriacum they offer the unique opportunity to study the development of the settlement from the 1st to the 5th century AD. There it shows the change from burial place to residential area and back again. In St. Pantaleon/Stein and Lauriacum/Enns settlement activities strongly influenced by the Roman military are clearly visible. The reciprocal relationship between the arrival and departure of the troops and the civil life accompanying them is impressively reflected here.

A Tale of Three Fortresses

Stefan Groh, Austrian Academy of Sciences/Austrian Archaeological Institute

The legio II Italica was raised in 165/166 AD in Aquileia (Italy) in the course of the Marcomannic Wars (166-180 AD). Within 50 years, this unit establishes three legionary fortresses in Ločica (Slovenia), Enns and Albing (Austria), of which, however, only one (Enns/Lauriacum) is completed and used in the long term. The analysis of all newly generated and available data (geophysics, LiDAR, excavations) yields a conclusive insight into the different construction progresses, functions and military-historical considerations for the construction of a legionary fortress. Ločica, located near Celeia (Celje) on the Amber Road, controls as praetentura Italiae et Alpium access to Italy. Here oversized horrea, valetudinarium, principia and 12 barracks for equites singulares were built. At the time of the construction of the thermae, however, construction ceased around 170/171. Under Marcus Aurelius, the focus of the Marcomannic wars shifted from the hinterland to the Danube limes. Here, as part of a military offensive strategy, a temporary camp was designed in Lauriacum around 171 AD with a ground plan in the shape of a parallelogram adapted to the topography. However, with the abandonment of offensive plans against the Marcomanni under Commodus, the legion remained in this provisional camp until the 5th century AD. Lauriacum, however, was to be replaced by the larger and “well-shaped” fortress at Albing under Caracalla. But in this legionary fortress, only the foundations of the fortification and the principia were built, and construction probably ceased with the death of the emperor in 217 AD. On the base of the three ground plans, it is possible to trace not only the individual building sequences, but also the development of fortification techniques and representative architecture from the late Antonine to the Severan period.

The lime kilns of the legio II Italica in Lauriacum/Enns

Felix Lang on behalf of Stefan Traxler, OÖ Landes-Kultur GmbH, Felix Lang, University of Salzburg

Twelve Roman lime kilns were located immediately north of the castra of the legio II Italica in Lauriacum/Enns. Four of them were completely excavated in course of a road construction by the Federal Monuments Office. In preparation for the Upper Austrian State Exhibition “The Return of the Legion” another kiln (IX) has been investigated in 2016/2017. Kiln IX is exceptionally well preserved with a height of 4.2 m and a diameter of 3.8 m. It is, like the other kilns, undoubtedly connected with the establishment of the legion camp in the last third of the 2nd century A.D. After its abandonment in the second half of the 4th century, Kiln IX served as an oversized “trash can.” Besides countless pieces of limestone, it contained large amounts of rubble (including over 1000 kg of broken bricks), as well as glass and ceramic shards, metal objects and several coins. Numerous animal bones are, on one hand, to be interpreted as food waste and give an insight into eating habits in the Danube Limes. On the other hand, the partial skeletons of mules/horses and dogs also document the disposal of carcasses. The reason why even a few human bones gnawed by animals got into the kiln remains one of the unsolved mysteries. The most interesting group of finds is the “Roman stones,” which are associated with the Hercules cult. They consist of fragments of Hercules statuettes and dedicatory inscriptions to the god. A completely preserved votive altar was dedicated by Aelius Marcellus. He was the *immunis calcariensis* – the military administrator of the Lauriacum lime kilns.

Roman burials on the Croatian part of the Danube Limes

Tino Leleković, Croatian Academy of Sciences and Arts

The paper will focus on the burial customs from the Croatian part of the Danube limes. During the past two decades, nine sites along and in the rear of the Croatian part of Limes revealed remains of the Roman cemeteries. Over 1000 graves have been excavated with clear and accurate context, producing a reasonable basis for the research of the burial rites. Also, due to these excavations, a typology of graves can be given, along with the historical and cultural contextualization of each defined type. The paper will give an insight into the diachrony of the burial customs, using primarily new finds with clear archaeological and chronological context. The article will focus on two features. One are busta, a burial custom that in Pannonia seems to be characteristic for the cemeteries of the 2nd and 3rd in the Limes area. The origin and interpretation of the bustum type of grave have not yet been explained. One theory has it that such graves originated in northern Italy and that the legionaries spread them to the provinces, especially those of the Rhineland and the Danube/Balkan regions. On the other hand, it is possible to perceive the bustum as a funerary feature originating

from the Balkan (southeast Pannonia included) ethnic communities. The focus will also be on Late Roman burials from the 4th and 5th centuries. These cemeteries are frequent in this part of the border zone, revealing the change in social dynamics in the region, representing the militarization of the society. This paper will try to give a satisfactory explanation of this feature and the possible implication of local identities, social status, or ethnic origin on the burial rites for each of the buried individuals whose graves have been discovered.

Life and death at the edge of the Roman Empire – Archaeological and anthropological data from late antique cemeteries at the Danube Limes

Kristin Opitz, Leibniz Institute for the History and Culture of Eastern Europe (GWZO)

The late antique cemeteries of the Danube Limes have been a source of ever-increasing archaeological and anthropological interest especially since the 1980s. Even though a more comprehensive database has been available since that time, there is a wealth of additional information that has not been integrated accessibly yet. This includes data from morphological skeletal analyses as well as archaeological data, for example, on the structure of cemeteries and grave construction, which, in contrast to grave goods, were often neglected in the past. Without this knowledge, understanding of the cemeteries will be only unilateral and challenging. Based on the late antique cemetery of Ratzersdorf an der Traisen, St. Pölten (Austria), a representative selection of archaeological and anthropological data from the former Roman provincial parts Noricum ripense and Pannonia prima will be analysed in a systematically and source-critically way. The contribution will outline similarities and differences with regard to the surviving material culture, the human bodies as well as the organisation and structure of Ratzersdorf and other cemeteries between Passau (Batava) and the Danube Bend, drawing a more detailed and textured picture of the life and death of the people of the late antique Danube Limes. In this framework, the important aspect of research data management, particularly the digital handling of published and newly generated data, will also be involved.

Military small finds from Castra Ad Fluvium Frigidum (Slovenia)

Ana Kovačič, Maruša Urek, Kaja Stemberger Flegar, PJP d. o. o., Ana Kovačič, University of Primorska (PhD candidate)

This paper aims to present the newest military small finds from Castra, the northernmost fortress of the Claustra Alpium Iuliarum fortification system that shielded Italy from threats coming from the East. Castra is nowadays mostly known as the potential infantry encampment of Eugenius's army before his battle against Emperor Theodosius I in AD 394, known as the battle of the Frigidus. Castra was strategically built near Via Gemina between Aquileia and Colonia Iulia Emona. It was protected by the confluence of the river Hubelj and Lokavšček creek. The settlement predating Castra can be traced back to the end of the 1st century BC, when the area became of interest to the expanding Roman state. Somewhat removed from major towns in the region, Castra likely served as a coach station, meaning that military presence was probably very common, perhaps constant. Between AD 270 and 290, the settlement was heavily fortified with walls and towers. The fortress survived until 451, when it was demolished by the Huns. In this paper, we will present the preliminary results of the recent 2017–2019 excavations inside the fortress. A bathhouse, several storehouses, and a central complex had been unearthed previously inside the fortification; the recent excavations suggest that this cluster of buildings could be interpreted as constituting the praetoria. Besides strong indications for (military related) trade, over 150 confirmed military metal finds including pieces of military dress such as silver trumpet brooches, propeller belt fittings and belt buckles, as well as several pieces of horse gear including one hackamore were unearthed, as were over 2000 iron objects that are currently undergoing conservation. The earliest finds come from the 1st and 2nd century AD, while the majority belong to the 3rd and 4th century AD.

15. Rome's hunger for metals

15. Rome's hunger for metals. Roman mining in and outside the provinces and the part of the Roman military

Session Chairs: Markus Scholz & Daniel Burger-Völlmecke

Affiliation: Goethe-Universität Frankfurt, Germany

Affiliation of co-organiser: Goethe-Universität Frankfurt, Germany

Session Abstract: The development of raw material sources, especially mineral resources, was one of the main motives of Roman expansion plans. This is exemplary by the conquests of Britain (tin) and Dacia (gold). Rome had a special requirement of raw materials, especially shortly before or during the establishment of a province. Especially at those times it was necessary to guarantee the supply of the extensive military juggernaut and to establish the infrastructure and, of course, to stabilise the state finances.

Isotope analyses on lead finds from the early military sites of the Augustan occupation in Germania revealed, the Eifel and Sauerland as regions of origin for example. For this reason, prospecting must already have been carried out in advance of military operations. Further examples are known from the Iberian Peninsula (e.g. Las Medulas ESP, Três Minas PRT), from Britain, from the Balkan region, from eastern Egypt or the foreland of the Germanic provinces, e.g. along the river Lahn (D).

This session looks at the development of Roman provinces from the perspective of exploitable resources and Roman mining. Archaeological, (in)written and scientific sources will be used for this purpose. What role did the military play in the exploitation of the deposits? Were the mining areas militarily secured? In addition, the question must be asked to what extent and under what circumstances Roman troops and state institutions became directly active. When or under what circumstances was the actual mining of raw resources carried out directly by Roman soldiers or organised through contractual partners of the indigenous population? Are there examples where the military was initially active and later took over indigenous contractual partners, in the sense of "start-up production"? Can increased mining activity also be seen in times of strained state finances?

Roman military activity in the gold mining areas of Hispania: an approach from landscape archaeology

Esperanza Martín Hernández on behalf of Brais X. Currás, F. Javier Sánchez-Palencia, Almudena Orejas, Inés Sastre, IH – CSIC

Northwest Hispania was one of the main gold-producing areas during the Roman Empire. The new mining activity brought by the increasing need for gold from the Principate of Augustus generated deep changes in the territorial and political structure of the local communities. These transformations are part of a broader process of organization of the conquered territories. In this communication, we present the relationship of the Roman army with the organization of the provincial territory, paying special attention to the exploitation of gold. Throughout the Northwest of the Iberian Peninsula, abundant evidences of temporary camp structures are documented, showing the intense activity of the army in the area. Some of these camps are directly related to mining activities and sometimes even appear within the mines themselves. The analysis of the epigraphy also reveals a clear relation between the military presence and some of the main gold mining areas, which is clearly observed with the Legio VII units. The management and organization of the imperial gold mines was undoubtedly one of the tasks carried out by the Roman army. His technical training was necessary for the prospecting of gold, the design of the mining operations, the layout of the hydraulic network, etc. The results of the research projects carried out by our research group in different mining areas show that military activity is closely connected to the exploitation of gold. In this communication we defend the need to understand the diversity and complexity of military activity in the Northwest of the Iberian Peninsula, and its diachronic dimension. The Roman army took part in the mining tasks on a technical and administrative level. But the organization of gold mining was just one more of the different tasks carried out after the end of the conquest, consisting on the control, organization, administration, inventory and delimitation of the subjugated territories.

Roman mining in the territory of the Dumnonii, an exploration of continuity and control

Mark Tucker, University of Kent

Metals from the territory of the Dumnonii are well attested in continental and Mediterranean contexts for well over a millennium preceding the Roman conquest of the region, both archaeologically with the Nebra Sky disk and the Haifa ingots, and in literature as the probable location of the mythical Ictis and Tin isles. Dumnonii metal deposits would have been a major factor in the decision to invade Britain, with the thrust west in the period after the initial landings and the occupation of Dumnonii territory point to the value placed on this by the Roman state. The density and placement of Roman forces in the region imply state control of mineral reserves, much as occurred in the Charterhouse lead mines in neighbouring territory. This initial military role in extraction lasted less than half a century and was clearly a phase of initial prospection and extraction followed by a military withdrawal. Finds associated with mining sites show continued activity in the following centuries, long after military activity in the immediate vicinity is proposed to have ended. The cluster of villa sites around tin rich Camborne region, and the possible villa sites surrounding the Exmoor Iron reserves are of particular interest when we consider how these mines were controlled. In this paper I will explore the increasing corpus of evidence for an increased investment in related infrastructure during periods of unrest, in particular during the 3rd century, and how the late coastal cordon blurs the contrast between military and civilian control. I will also explore how the control of these mines changes from military to civilian and finally to a symbiotic relationship between the two, and how these mines initially came into Roman control and the effects of the end of Roman rule in Britain affected the mines.

Die Erschließung des antiken Amselfeldes (Dardanien, Kosovo) durch Rom unter besonderer Berücksichtigung des Metallbergbaus

Felix Teichner, Philipps-Universität Marburg, Gabriele Körlin, Deutsches Bergbaumuseum Bochum, Guntram Gassmann, Deutsches Bergbaumuseum Bochum

The central Balkan region – in other words, today's Kosovo – was of great importance to the Roman Empire because of its rich polymetallic deposits with high silver contents, as a source of valuable raw materials. Previous research opinion, however, held that the administrative and urban development of the region of Moesia Superior and Dardania was only fully achieved at the beginning of the 2nd century AD, with the founding of the municipium Ulpianum on the eastern edge of the Kosovo karst field. Owing to the ongoing exploitation of precious metal resources in the region and to its situation on the important Balkan trade route between Lissus/Leshë and Naissus/Niš, the town became the administrative centre of the Dardanian mining region (metalla Dardanica). Between 2008 and 2012, the Römisch-Germanische Kommission and the German Mining Museum (Bochum), in collaboration with the Archaeological Institute of Kosovo and further institutions, carried out a pilot project in the city of Ulpiana and the Dardanian Mining district. From 2012 to 2015 and 2017-2019, the Deutsche Forschungsgemeinschaft (DFG) funded the mining archaeological and archaeometallurgical research. Further investigations, especially mining archaeological/ archaeometallurgical surveys took place not only in the hinterland of Ulpiana, but also in the vicinity of Novo Brdo in the southeast of Kosovo and the famous mines around Trepça in the north. The aim was to characterize the ore deposits and to find old mining, smelting and processing remains to get an impression of the supply of the ancient city of Ulpiana. Datable remains spread from the Hellenistic and Roman period to younger periods. The field work was complemented by magnetometer prospection, Electrical Resistivity Tomography, and "Pürckhauer" drillings. Some selected sites from several archaeological periods – shafts and smelting places – could be excavated.

Missing Links. The production of iron-made equipment on a provincial scale: the case of Roman Dacia

Lorenzo Boragno, Le Mans Université/ laboratoire CReAAH

Network or centralised system? While it is without doubt that the imperial army consumed an immense quantity of iron to produce weapons, armours and other pieces of soldiers' equipment, the identification of metallurgic facilities is often complex. Because Roman military workshops had no

unique plan, consultation of secondary evidence, such as half-finished pieces, crucibles and slugs (sure signs that metals were worked in situ) is necessary. The distribution of this kind of evidence in Dacia attests to a low-intensity network of fabricae: not every castra in the province has shown consistent traces of workshops, but evidence of metallurgic activities is fairly widespread and relatively frequent in the province's military sites. However, a remaining issue is the implausibility that those small workshops were able to fully supply the army with tools and weaponry. Dacia presents some characteristics that make the region a very suitable case study for this topic. The area was rich in natural resources and iron mines, and extracting sites were under the firm control of the provincial administration and often overlooked by the army. Imperial administration controlled the road network as well through a capillary distribution of military camps and installations along the main roads and along the borders, where soldiers guarded the most important accesses through the Carpathians. Legionary bases and the seats of local governors were at the very heart of this immense "fan," as described by M. Macrea of the province's entire military and administrative system. With this peculiar organization, a state control over the productive chain is theoretically possible, and it is presumable that some centralization was implemented in the area. The paper aims to open a debate on this topic, drawing from results produced from the author's doctorate at Le Mans Université, written under the joint supervision of Alexandru Avram (Le Mans) and Radu Ardevan (Babes Bolyai University of Cluj Napoca).

The "Emerald legio": involvement of the III Legio Cyrenaica in the development of emerald mining in Roman Egypt

Joan Oller Guzmán, Universitat Autònoma de Barcelona

Recent discoveries of the Sikait Project in the Roman emerald mines of Wadi Sikait (Eastern Desert of Egypt) show that the Roman legions were directly involved in the development of the region known by the classical authors as the "Smaragdus", the only source of emeralds within the Roman Empire, currently corresponding, grosso modo, with the Wadi el Gemal National Park. The epigraphic data recovered from some mines in Wadi Sikait concretely shows that the III Legio Cyrenaica had an important role in the extractive process, a hypothesis also supported by the archaeological evidence. This finding has relevant implications in our knowledge about the organization of the Eastern Desert in Roman times, as this legio was one of the three initially established by Augustus in Egypt after the conquest. This paper will analyse the importance of the Roman military in the creation of the emerald mining network in the Egyptian Eastern Desert, trying to determine when this military presence started, which was the exact role of the Roman army, until what extent were they involved in the management of the emerald mines and how they lived in the desert.

Von Bergleuten, Händlern und römischem Militär im Lahntal (D) / Of miners, traders and Roman military in the Lahn Valley (D)

Gabriele Rasbach, Römisch-Germanische Kommission

Since Caesar's time, the Lahn Valley has been the target of Roman initiatives east of the Rhine. Archaeological evidence for this includes newly discovered military camps near Limburg as well as the late Augustan settlement of Waldgirmes or the military camps of the 1st century above the estuary of the Lahn. In addition to the military protection of the empire's territory, the ore resources in this region played a major role in the Romans' actions. Since the pre-Roman Iron Age, the ore deposits (especially iron, copper and silver) were extensively exploited, as evidenced by slag heaps above ground. Geologically, but also in terms of settlement structures (Oppidum on the Dünsberg, which ended around 35/30 BC), burial customs (e.g. burial gardens), but also in terms of small finds, the area is easily comparable with the North Gallic region on the left bank of the Rhine. The Rhine was therefore not a dividing border here. This situation offered the best conditions for direct military or economic influence by the Romans. The "Alteburg" near Weyer-Oberbrechen was long considered a Roman military camp. However, recent investigations show that the area, which was enclosed by a system of ramparts and ditches, is more likely to have been a production site and trading station. Metals were mined and refined in the immediate vicinity. Other sites bear witness to the unbroken tradition of metal processing (Wetzlar-Dalheim). The Roman finds from Weyer-

Oberbrechen show far-reaching connections; however, there is no evidence of regular supplies from the provinces there, just as in the civilian settlement of Waldgirmes. Apparently, neither place survived the pioneer generation. Due to the use or the possibility of siphoning off local metal production until the consolidation of the Limes as a linear boundary in the 1st century, various archaeobotanical and palynological investigations show only minor landscape changes. Rather, the Lahn valley with its various small basin landscapes was an open and accessible landscape from the beginning of the Iron Age. It thus offered the best conditions for a cooperative economy between local miners, traders and the Roman military.

Under the eyes of Roman army: Early Imperial mining on the Lower Lahn river (D)

Markus Scholz, Frederic Auth, Goethe-Universität Frankfurt, Daniel Burger-Völlmecke, Stiftung Stadtmuseum Wiesbaden, Peter Henrich, Generaldirektion Kulturelles Erbe Rheinland-Pfalz

The lower Lahn valley and its significance in the early imperial period for Roman-Germanic relations is marked by the Roman military camps at Lahnstein, Limburg, Oberbrechen and Dorlar, as well as the urban foundation at Waldgirmes. They can all be dated from the late Republican to the late Augustan Period. Since 2017, the Goethe University Frankfurt and the Directorate General of Cultural Heritage Rhenano-Palatinate (GDKE) have been working near Bad Ems as part of a joint research project. An 8-hectare earth-and-timber camp and a fortlet with a stone-founded central building have been researched so far. They date around 40–70 AD. The fortlet is located on a hill at an altitude of about 320 m, the earth-and-timber camp is situated 2 km away on a spur dominating the Lahn valley. Both fortifications had direct visual contact. In the immediate vicinity of the fortlet, the LIDAR scan reveals several ping fields, which are presumably connected to the Roman presence on site. Lead ore and iron-bearing slag were found as admixtures in the mortar of the stone foundations. They can be interpreted as indirect evidence of smelting work in the surrounding area. According to the current state of research, both military installations are considered in connection with the mining traces. Probably, they were part of a military security system for mining. The evaluation of the LIDAR data also revealed several structures that can probably be identified as gallery mouth holes and shafts. Their arrangement could provide evidence of Roman mining activities.

16/17. Dress and adornment

16/17. Dress and adornment in frontier communities

Session Chairs: Ursula Rothe, Anique Hamelink, Dorothee Olthof & Philip Smither

Affiliation: Open University, United Kingdom

Affiliation co-organiser: University of Amsterdam the Netherlands

Affiliation second co-organiser: PRAE (Prehistoric Re-enactment, Archaeology and Education), the Netherlands

Affiliation third co-organiser: University of Kent/English Heritage, United Kingdom

Session Abstract: This session explores the way people living in Roman frontier communities dressed, adorned and cared for their bodies. The theme encompasses various technologies of the body, consisting of objects, practices and products used in the care and presentation of the body. The session aims to discuss how social identities may have been created, maintained or adapted using these means, in the context of the unique nature of frontier societies, where military and civilian, local and newcomer communities coexisted. How did developments in this cultural sphere reflect the changing social and cultural make-up and orientation of frontier societies?

This session aims to address interaction between pre-existing dress, bodily care and adornment practices in the frontier regions and those introduced under Roman rule, as well as such interaction between military and civilian elements. What kinds of practices characterised the different communities, and how, and by whom, were new practices adopted and pre-existing practices transformed, replaced or retained? One of the themes of the session will be to explore the concept

of ‘anchoring innovation’: the idea that the success of new ideas and inventions that affect social life depends on their potential to be somehow embedded (‘anchored’) in pre-existing norms and practices of that society (<https://www.ru.nl/oikos/anchoring-innovation/>).

The session welcomes contributions on a wide range of topics such as:

- dress and dress accessories
- hair removal and hairdressing
- bodily modifications such as tattooing or piercing
- toilet instruments
- cosmetics
- jewellery
- footwear

We welcome papers that go above and beyond mere typologies of objects to explore what bodily practices meant to the make-up and dynamic of frontier communities. The theme encompasses socio-cultural as well as technical innovations and the interplay between them.

In Someone Else’s Shoes: Constructing identities on the Roman frontiers through footwear

Elizabeth Wolfram Thill, IUPUI, Elizabeth Greene, Western University

In the modern world, the social resonance of footwear is widely acknowledged, from the stylized stilettos of Jimmy Choo, to the moral outcry over Lil Nas X’s recent “Devil” sneakers. In the ancient world, footwear likewise played a role in signaling and constructing social identity within the complex milieu that was life on the Roman frontier. The types of shoes claimed by an individual could draw distinctions between—or connections across—distinct social groups, including legionary citizen soldiers, auxiliary soldiers, provincial civilians, and enslaved populations. This went beyond practical concerns such as heavy boots for marching soldiers or bare feet for those too poor to afford shoes. The assemblage of over four-thousand shoes at Vindolanda shows that Roman military officers wore shoes where the elaborate design and potential for social distinction outweighed logistical concerns of protecting the foot. These values were carried through to children’s footwear in the praetorium, potentially even from a very young age. Yet in the same assemblage, shoes associated with rank-and-file soldiers do not demonstrate a similar concern for using the shoes of children to mark social status. On the Tropaeum Traiani, an imperial monument traditionally attributed to frontier military sculptors, shoes are used to draw distinctions among various social groups, from the elaborate caligae of the Roman soldiers to the bare feet of the captive women. But in reiter reliefs and other funerary monuments carved presumably by the same class of artists, the soldiers themselves are shown heroically bare foot. Local provincial sculpture, such as that of Moesia, shows little concern for footwear, leaving feet uncarved or omitted from portraiture entirely. The social power of shoes, both real and depicted, thus varied substantially by context, shifting according to social status, artistic setting, and cultural identity, and adding to the complexity of frontier life.

Dining ‘Roman style’: wearing the synthesis on funerary monuments in the Rhineland and Britain

Anique Hamelink, University of Amsterdam

The importance of the toga to the Romans as a symbol of their identity and culture is hard to overestimate. Its adoption (or absence) in life and art in provincial contexts is therefore an important part of the story of provincial and Roman socio-cultural interaction (Rothe 2019). Yet the prominence of the toga leads us to overlook other types of dress that are equally valuable in this regard. One such underappreciated type of dress is the synthesis, a special Roman dinner costume consisting of a matching tunic and rectangular cloak. Scholarship has either mostly misidentified the synthesis as a toga (e.g. Noelke, Kibilka, and Kemper 2005), overlooked it (Freigang 1997), or only discussed it as a part of Roman dress culture in Italy (Olson 2017). However, the synthesis was not constricted to Italian or Mediterranean context: it appears on the Vindolanda tables and tombstones of men and women along the frontiers of the Rhineland and Britain as part of the iconography of the

funerary banquet. Its adoption and interpretation in provincial contexts is the focus of this paper. I argue that the success of the synthesis as a new dress form in the provinces was due to its embeddedness within Roman dining culture which made it readily acceptable and suitable for the creation and expression of identities in frontier societies. I analyse the role of auxiliary soldiers as early adopters of the synthesis and the interaction between military and civilian elements in the evolution of banquet iconography and dinner dress. Doing so, this paper aims to spark a discussion on the adoption of, and familiarity with, aspects of Roman culture across the range of inhabitants of frontier societies.

Hairy problems – an experimental approach to the possible archaeology of spuma Batava

Hans Huisman, Cultural Heritage Agency of the Netherlands and University of Groningen, Dorothee Olthof, PRAE

Roman sources refer to a specific type of hair care product called *sapo*, *spuma Batava*, *spuma Teutonicos* or *spuma Mattiaca*. This product, which was used as soap but may also have functioned as a hairdye had its origins along the Northwestern Limes. According to Pliny the elder, it was invented by the Gauls, who used it for reddening the hair, but it was also attributed to Germanic tribes. It was made from wood ashes (preferably from beech) and goat's fat, and there were two kinds, a hard and a soft. Among the Germans it was more used by the men than by women. 1st century Roman poets like Martial and Ovid allude to the use of these Germanic or Gaulic hair products by Roman women, sometimes with detrimental results. Apparently this Northern invention made its way into the boudoirs of ancient Rome, influencing the Roman care of the body and perception of beauty. Scholars have differed in their interpretation of this mysterious substance, and variously described it as a kind of pomade or possibly a soap and doubted its power to dye hair. As archaeologists, we wonder if there could be any traces left of it in the archaeological record. In order to get more insight into the nature, manufacture, use and possible archaeological traces of *spuma Batava* we conducted an archaeological experiment with the ingredients described in the ancient sources. The results will be presented in this paper. Pliny *Naturalis Historia* 28; 191(28-47) Juvenal *Satires* 13 (dls.C.I. 165) Martial *Epigrammata* 8-33 (19-21) Martial *Epigrammata* 14-26 Ovid *Amores* 1.14 (1-2; 43-51)

Clothing accessories as indicators of daily life in the Province of Scythia. The case of Ibida walled town in the 4th-5th centuries AD

Dan Aparaschivei, Institute of Archaeology Iași, Romanian Academy

The Ibida fortified complex, in the province of Scythia, built in the 4th century on the site of a former early Roman settlement, has benefited in the last two decades from extensive systematic archaeological research. Among the artifacts identified both in the nearby cemetery (in which about 200 simple graves and family tombs were excavated) and from the excavations carried out in the sectors of the fortress, numerous "small finds" pieces resulted. Many of these are clothing accessories and ornaments characteristic of women's and men's costumes. These are brooches, belt fittings, bracelets, beads, earrings, etc. The find in closed features, such as tombs, of such objects dated in the 4th -5th centuries can provide for a series of very exciting conclusions regarding the social status of the deceased, funeral rites, and the attitude towards death of his/her contemporaries, and sometimes even to ethnic origin. We know very well that judging ethnicity on the basis of this type of artifacts is quite hazardous, given the social dynamics and the production and marketing conditions of this type of goods. However, we have certain pieces that the literature regards as the definite markers of Germanic populations; as an example are the "Levitze-Prscha" subtype fibulae or the triangular head plate and rhombic foot fibulae, part of the series of "Levitze-Tokari" type, dated in the 5th century. In our communication we will focus on a series of artifacts characteristic of the target timeframe, which are the pretext for discussing aspects of the everyday life in this city with a decisive role in defending the northeastern limes of the Late Empire. Of course, within the time constraints, we shall provide a statistical presentation of the types of garments identified in one of the largest cities in the province of Scythia (27.5 ha).

A sign of good relations. Why did Roman soldiers wear the ridge helmets?

Krzysztof Narloch, Antiquity of Southeastern Europe Research Centre University of Warsaw

Late Roman ridge helmets constitute a relatively small and quite homogeneous group of items and as such have been the object of research for over a century. The question of their provenance is quite clear and does not arouse wider discussion. The situation is different in case of interpretations concerning the users of two main types of these helmets, i.e. cavalry and infantry. These helmets, apart from their military function, also had a symbolic value. Their design, decoration and the materials used reflect the social, political and religious changes that took place in the empire in the second half of the 3rd and 4th centuries. The nature of their decoration indicates that the message was addressed to the civilian part of the community. On the other hand, its varied adornments and even the artistic design of some pieces were also intended to emphasize the status of their owners and were to impress their army colleagues.

Survival of Native Dress: A Visual Compendium

Kelvin Wilson

Though the northern border lands of the Roman empire were in constant cultural flux, the rural folk of the Ubii, Cugerni and Treveri nonetheless remained opposing an old fiend: northern weather. Roman era iconography shows that these people wore clothes which covered against rain, packed them against the cold, and when the summer put them outside to work, that they stripped down. Hoods, scarfs, leggings. Scholars tend to think of these coverings as survivals of pre-Roman traditions. And it is likely also more than mere serendipity that we see so many of them repeated in the medieval and even modern eras. They make sense where they were worn — and that which is practical, survives. With a unique series of visual reconstructions, purposely made for this event, this talk will take the viewer back to the far past of rural clothing in northwestern Europe, then forward to pockets of possible survival on its outer edges: to the mountains of Portugal where the Celtic cucullus hood could long still be found, and to the agricultural communities of early modern Britain where dress elements as old as the Iron Age still had common practical use.

18. Reconstructing the Limes

18. Reconstructing the Limes. Roman archaeology as national and transnational heritage

Session Chairs: Saskia Stevens, Richard Hingley & Chiara Bonacchi

Affiliation: Utrecht University, the Netherlands

Affiliation of co-organiser: University of Durham, United Kingdom

Affiliation of 2nd co-organiser: University of Stirling, United Kingdom

Session Abstract: This session focuses on the ways the borders of the Roman empire have been brought back to life and appropriated as meaningful cultural heritage in the various limes countries, since the rediscovery of Roman “civilization” in the sixteenth century. Taking the recent “critical turn” in heritage studies (Laurajane Smith, *Use of Heritage*, 2006) as a starting point, the session will reconsider the meaning and value of Roman heritage. The limes is constructed as a living past by the actions and interests of people, rather than on the basis of any intrinsic archaeological and historic value. Limes sites have not only been used as archaeological monuments, but also played significant roles in the construction of broader meta-narratives regarding the historical development of nations, regions and borders. For example, in the Netherlands the “Batavian myth” was invoked to legitimize the Dutch revolt, informed Patriots during the Enlightenment, and fed into constructions of Dutch exceptionalism. In the UK, Hadrian’s Wall has been used as an allegory for potential British disunity during the recent debates about Scottish independence. In addition, the Frontiers of the Roman Empire World Heritage Site has been used to communicate ideas about European and transnational identity (Richard Hingley 2018).

We invite speakers from the various limes countries to participate in this session. By exploring examples from different countries, a transnational insight can be gained of how Roman frontier sites influenced our modern perceptions of boundaries, from the deep past to the present.

Reception of the Limes in Cities along the Rhine and Danube in the 16th and 17th Centuries

Koen Ottenheym, Utrecht University

With the renewed interest since the late 15th century in Roman antiquity in the Low Countries and the German Empire, the notion of the ancient Limes also grew in these regions. Most important was the correct identification of the antique cities and fortresses along the great rivers. Seniority determined the social and political hierarchy, and a family tree with roots in Roman antiquity was a powerful argument in justifying privileges and claiming territory. This was also true for cities. In the Dutch Republic as well as in the German empire, many cities invoked an age that would go back to Roman antiquity. The reasons behind this, however, differed in both territories: the cities in the Republic were quasi-independent city-states. Within the provincial organisations, especially in Holland, there was, however, a strong competition: the formal hierarchy was determined by the dates of the medieval city rights, but in the background there was another competition about the (fictitious) dates of the foundation of these cities, which were often looked for in the Roman past. In Germany, the interest in a possible Roman city foundation was particularly important for the free imperial cities. These were under the direct control of the emperor and not formally subject to the authority of local or regional princes. As the imperial central authority declined, the pressure of the regional dukes increased accordingly, and some former imperial cities were simply confiscated. From the 16th century onwards, the explicit reference to the ancient foundation of an imperial city by a Roman emperor was used as an authority argument for the claim to urban autonomy. Both in the Netherlands and in the German Empire, these ambitious connections to the past of the Limes were also visualised in new architecture and art.

The Romantic Limes – The current visualisation of Roman archaeology of Forum Hadriani in historical and cultural perspective

Catherine Visser, DaF architects, Marie-France van Oorsouw, Weleer Heritage Communication, Peter van der Ploeg, Swaensteyn Museum, Huygens' Hofwijck

Arentsburg in Leidschendam-Voorburg, one of the WHS, has an interesting spatial and cultural-historic context. This led to a design approach different from other visualisations, where the military rigour and monumentality are represented in a tabula rasa. Our layered approach has been attained through contextual and historical analysis, taking into account the afterlife of the Roman urban infrastructure and cultural presence. Discussion: We are confronted with a complex historical infrastructure represented by fragmentary finds. The Dutch planning tradition responds through systematic and standardised fit for all-solutions. This has resulted in a certain type of narrative and visualisation. We plead and work at a more diversified and engaging practice, looking at the archaeology and landscape itself, but also at the afterlife and cultural reverberations of the Roman legacy. The 17th and 19th century adopted other attitudes towards the Roman past, with Roman history presented as a metaphor (Revolt of the Batavi) but also as example of willpower and taming of the landscape. In that context the Roman past was also interpreted in a moral way (*sic transit gloria mundi*) as many Dutch antiquarians describe the annihilation of the mighty Rhine landscape. Political and cultural elite who built estates in Voorburg collected Roman residues and texts out of fascination with that narrative; among them Constantijn Huygens who even arranged his garden according to Vitruvius' principles. Enters a new figure in Voorburg: Caspar Reuvers, bridging between the position of the old antiquarian and the modern archaeologist. Looking at the imagery he produced we see both: picturesque staging of ruins in modern landscape and scientific drawings based on measurements. Using the word Romantic as a frame, we want to inscribe our visualisation in this long discourse fostering transparency and multiple interpretation. Therefore fragmentary, in dialogue with surroundings, staged as a route (voyage), presenting different narratives.

Educating the masses. National Antiquity and education in the Low Countries (1800 – 1945)

David van Oeveren, Utrecht University

A significant number of schoolbooks, novels, and schoolboards dating from the long nineteenth century contain illustrations and imaginations of the Roman Empire. In my presentation, I will show how these illustrations were tactically used for nationalistic purposes and to create analogies for contemporary developments in The Netherlands and Belgium. Similar work has already been done in British context (see Hingley 2016). I aim to complement this research on educational illustrations by comparing such findings this other nationalistic context, and by including a broader cultural-political contextualisation. Namely, I will supplement my analysis of Dutch and Belgian schoolbooks and schoolboards with additional source materials such as teacher manuals. These show the more complex institutional web and forms of knowledge practices that were necessary for the limes to be 'reconstructed'.

Performing diversity on Hadrian's Wall

Richard Hingley, Durham University, Archaeology Department

This paper explores how ideas about diversity have been used to communicate the cultural significance of England's grand Roman Wall over the past two decades. Frontiers in the modern world are often seen as the tangible elements in divisive measures of control, constructed to limit human movement across their lines. A counter narrative has developed that seeks to communicate particular frontier works, including Trump's Wall, as creative landscapes of engagement that help support human connectivity and encounter. These art and cultural projects seek to counter deeply divisive nationalistic narratives by communicating more inclusive concepts. Heritage initiatives and art works along Hadrian's Wall have also drawn upon such counternarratives since the 1990s by communicating these monumental remains as the locus for celebrations of past and present cultural diversity. Such works have drawn upon population mobility on the Roman frontiers and the cultural complexity of frontier communities to communicate messages that seek to contradict the divisive roles played by tangible frontier works in both past and present. These initiatives help to communicate ideas that support UNESCO's aims to encourage peace and tolerance across the world today. However, such narratives seem directly counter the violent tactics that the Romans often used to conquer and control their empire in the ancient past. The Roman empire, as a transnational entity raises interesting issues about the value of the frontiers as a means of communicating 'postnational' perspectives in a world in which we are deeply challenged by increasingly extreme perspectives about mobility in past and present.

Cologne Praetorium, new findings: The bath of the Governor

Sebastian Ristow, University of Cologne / MiQua, LVR-Jüdisches Museum im Archäologischen Quartier Köln

Since the 16th century, traces of the Cologne governor's palace have been found in the immediate city center, right next to and under the Cologne town hall. The main part of the praetorium was excavated in 1953 and its northeastern section was immediately preserved under the current protective structure. There were follow-up examinations in 1955/56, 1964, 1967/68, 1971 and 1998. The most extensive work is the dissertation by Felix Schäfer, published in 2014 at the Cologne Institute for Classical Archaeology. Schäfer reorganized the findings from periods I–III according to Precht and differentiated them purely in terms of architectural history into his periods A to H. Not included are the late antique phase and the finds, but the building decoration. The first results of the new excavations since 2007 are now being added. The features of the thermal baths presented here have not yet been identified as such. They came to light towards the end of Otto Doppelfeld's excavations in 1953 and were dug relatively quickly and not documented in detail. When viewing the findings as part of their presentation in the new MiQua Museum, which is currently under construction, some rooms in the northwestern area, presumably assigned to the governor's private area, were reconstructed as remains of thermal baths. These "governor's thermal baths" were well equipped, as evidenced by the remains of two mosaic floors, probably from the 3rd century. The features also include a separately heatable octagon. Thermal baths of the same period with central buildings can also be found in Aquincum and Alba Iulia. The lecture presents these findings and gives an insight into the restoration and presentation of mosaics and wall paintings in the new museum in Cologne, which is scheduled to open in 2025.

19. Wall to Wall

Session Chair: Tony Wilmott

Affiliation: Historic England, United Kingdom

Session Abstract: Hadrian's Wall and the Great Wall of China are the subject of a partnership developed between Historic England and the Chinese Academy of Cultural Heritage (CACH) under the title 'Wall to Wall'. This is designed to share information and explore possibilities in the research, conservation and interpretation of the two World Heritage Sites. Two high level seminars have now taken place, the first in 2018 in Newcastle, and the second in Jinshanling, China in 2019. Among those attending these seminars have been Limes Congress regulars, notably David Breeze and Rob Collins. The proceedings of the first seminar have been published, papers for the second are currently being assembled for publication.

Introduction to the Wall to Wall initiative and overview of the Great Wall of China

David Brough, Independent Heritage Consultant

WtoW is a collaboration initiative between heritage managers and academics from Hadrian's Wall and their counterparts from the Great Wall of China. Its purpose is to identify and pursue opportunities for the sharing and exchange of expertise and experience, and for working together to improve understanding, conservation and presentation of the two monuments. In March 2018 the first Wall to Wall Seminar, held in Newcastle, brought together colleagues from the two World Heritage Sites for the first time; this was followed by a return Seminar at Jinshanling, Hebei Province in November 2019. Representatives of Hadrian's Wall have emphasised to Chinese colleagues the international dimensions of its management, as part of the Frontiers of the Roman Empire WHS, and of our understanding of the monument through ongoing archaeological research by colleagues across the former territories of the Roman Empire. Thus in collaborating with Hadrian's Wall they are automatically linked into a far wider community of heritage managers and academics across many countries. This presentation will introduce Limes colleagues to the WtoW initiative and highlight the principal thematic areas identified for project based collaborations between the two WHSs. Potential areas for specifically archaeological collaboration will be discussed in the subsequent presentations of the WtoW session provided by Chinese colleagues. It is hoped that the session will encourage Limes colleagues to explore how they might contribute to and benefit from the initiative as it goes forward. Recognising that many colleagues will be unfamiliar with the Great Wall, the presentation begins with an overview of the Great Wall describing: its different constituent sections built across 15 provincial-level administrative areas of China and constructed during different dynasties over c.2,000 years, in a range of different geographical environments; the different materials used in its construction; and the variety of military architectural features each contain.

Comparison of the Great Wall of China and the Frontiers of Imperial Rome

Yan Li, Yujie Zhai, Xiaoyue Shang, Zhe Li, Architecture School, Tianjin University

The Han, Jin and Ming Great Walls are known as the Three Great Walls. These three empires established the Great Wall defence system to ensure the security of the border. The defence system includes the border wall and its defence facilities, military camp system, postal system, and beacon signalling system, early warning system, border trade facilities, and Garrison Reclamation. The Frontiers of Imperial Rome and the Han Great Wall were in the same period. There are many similarities in the defence system of the Great Wall. Although the Jin and Ming Great Walls are later than the Han Great Wall they retained many characteristics of its system, and their remains are still clearly visible. Based on a field survey of the Great Wall of China and the Frontiers of Imperial Rome in England and Germany and through the comparison of a large number of examples, this paper analyzes similarities and differences between the two in four aspects: the border wall and its defence facilities; the levels and forms of their forts; the line of sight relationships of their early warning and signalling systems, and the structure of their postal systems. The main conclusions of

the article: 1. The wall fortifications of the Han and Jin Great Walls and the Frontiers of Imperial Rome are all accompanied by ditches, and all have wall forts built along the wall, while the Ming Great Wall has fewer ditches and forts built along the wall itself; 2. The forts of China and the West are divided into four levels: the headquarters fort, the garrison forts, the front line fort, and the guard fort, and the scale of each level of these forts is regular; 3. The remains of the Firewood Pile in the beacon tower of the Great Wall of China show that the Han Great Wall system were continued into the Ming Great Wall system; 4. The postal system of the Ming Great Wall is divided into three levels: courier station, delivery station, and express delivery shop, which is more complex than those of the Han Great Wall and the Frontiers of Imperial Rome.

Overview of the Archaeological Survey of the Great Wall

Wenyan Liu, Chinese Academy of Culture Heritage

The Great Wall is the largest cultural heritage monument in China, dating back over 2,000 years and stretching over thousands of kilometers across several different environments and terrains. Since the 1980s, local cultural heritage departments have conducted a variety of surveys on the monument. This article compares the methods and results of the survey of the GW at different stages, and focuses on the National Great Wall Resource Survey (GWRS) organized by the State Administration of Cultural Heritage in 2005. It explains how the NGWRS integrated the results of previous surveys, and resolved the issues of inconsistency and lack of standardisation of previous archaeological surveys. From 2005 to 2010, following a series of work standards concerning survey scope, objectives, content, method, classification and terminology etc., the GWRS managing a huge workload and massive workforce, successfully conducted field surveys of each and every facility and related site of the Great Wall with detailed measuring and data recording. The most prominent feature of this survey is cross-professional cooperation. The survey team was made up of cultural heritage and surveying and mapping professionals. The cultural heritage professionals were responsible for preliminary study and field archaeological works including identification, record keeping, measuring, data sorting and filing. The surveying and mapping professionals were responsible for providing basic geographical information and technical support. It used the method of combining archeology and surveying and mapping technology, inter-disciplinary and inter-professional cooperation, and systematically applying spatial information technology to obtain comprehensive, complete, detailed and standardized Great Wall resource data.

Archaeology of the Great Wall of Ming Dynasty: Qingping Fort Site

Chunlei Yu, Shaanxi Academy of Archaeology

Qingping Fort is a fort in the Great Wall System of the Yansui-Zhen region, one of the nine border defence regions of the northern border of the Ming Dynasty. We have made a detailed archaeological investigation on this fort site and its surrounding environment. Qingping Fort site is located in Jingbian County, Yulin City, Shaanxi Province. This area is an east-west geographical depression, which made it a natural thoroughfare for east-west traffic. Qingping Fort was built to guard this passage. The surrounding area is not suitable for agricultural production due to the sand in Mu Us Desert pushes further eastward including this area by the thoroughfare. As a garrison along the Great Wall of the Ming Dynasty, Qingping Fort also played a role in peacetime, that is, as a trading place between Mongolia and the Ming Dynasty. There was not only official trade, but also folk trade, and even smuggling. Although Qingping Fort was built for military purposes, there was not much military conflict in this area. Most of the time it was peaceful. The Ming Dynasty and Mongolia had peaceful exchanges and cultural integration in this region. This archaeological excavation reveals a remnant of Town's God Temple of the Ming Dynasty, as well as relics of other military and civilian life in the fort. This article focuses on the main concerns of the Great Wall archaeology and interpreting this batch of archaeological data. Yu Chunlei's attendance at the Congress will be subject to official authorisation for him to do so by the National Cultural Heritage Administration. Should he not subsequently receive this approval, then his presentation will be presented by one of his colleagues.

The Centenary of Chinese Archaeology

Jianxin Wang, North West University, Xi'an

This paper traces the development of archaeology in China over the last 100 years. The paper divides this into four stages. The Beginning of Chinese Archaeology (1921~1949), represented by three principal areas of investigation: the discovery of the Yangshao and Longshan Cultures; the excavation of Zhoukoudian in Beijing; and the excavation of Yinxu at Anyang. From 1949~1978, along with the establishment of archaeology majors in some Chinese universities, and the discovery and study of the Banpo and Miaodigou sites, Erligang in Zhengzhou and Erlitou in Luoyang, and a series of ancient Chinese Cities and Tombs, the development of Chinese archaeology entered a significant period of its development. After this period, Chinese archaeology then entered a new stage of development known as the "Opening up of Chinese Archaeology". Between 1978 and 1999, traditional archaeology practices and modern archaeological ideas and approaches combined together in debates within the Chinese archaeological community on the origin of Chinese civilization, and in response to the rapid construction and development of Chinese cities which produced many major archaeological discoveries. At this time, Chinese archaeologists also focused on the research and reappraisal of ancient Chinese History. The paper finally summarises the principal characteristics of Chinese archaeology in the 21st century: its increasing application of modern scientific technologies; its emphasis on the popularisation of archaeology; and its embracing of closer engagement and collaboration with the international archaeological research community. The paper concludes with a summary of the principal themes of archaeological research endeavors in China over recent years, then identifies some current and emerging new themes of research interest being pursued by today's archaeological scholars. These themes are illustrated with examples of recent and ongoing research projects across the legacy left by several millennia of China's vast and rich history.

Large granary found along the Great Wall of the Western Han Dynasty in Hetao area

Wenping Zhang, Inner Mongolia Autonomous Region Cultural Relics and Archaeology Research Institute

Shaliangzi Ancient City, which is located in the northwest of Shaliangzi village, Yuquan District, Hohhot, Inner Mongolia, was one of the closest border towns to the Great Wall set up by the Western Han Dynasty on the northern frontier. Since 2019, The Institute of Cultural Relics and Archaeology of Inner Mongolia and Sun Yat-sen University have jointly excavated the site and revealed a large granary building base, which is the first such discovery along the northern area of the Great Wall, not only filling a gap in the study of the border cities in Han Dynasty, but also marking a significant step forward in archaeology of the Great Wall. The granary building base site is located in the middle of the town and is in rectangular shape. Its remains are 16-rooms wide and 2-rooms deep, with thick external walls around and a double-eave sloped roof, is a single rammed earth building of a large size and a high specification. On the rammed-earth platform, 16 north-south grooves for ventilation were distributed uniformly, with pilasters and pillars on the east and west walls and floor. The artifacts include a large number of large-sized tiles from architectural structures, as well as a pottery pot with a symmetrical stamp "Wan Dan (10,000 dan of grain)" on the bottom and fragments of other ceramic measures. In addition, the flotation from groove soil samples have grain seeds. The building was used in the middle and late Western Han Dynasty, and, after several repairs, was finally destroyed by a fire.

An Innovative Digitalisation Approach to the Intervention Process Management in the Great Wall Conservation and Maintenance Project

Jianwei Zhang, School of Archaeology and Museology, Peking University

Based on the internal connection of three significant concepts regarding heritage sites, 'current condition', 'original condition', and 'intervention', the article proposes a digital approach to the intervention process management during the Great Wall's conservation. The approach advocates using digital technology for the continued model- and image-based data collection and tracking of the section undergoing conservation. The data forms a collection of digital datasets, named the

‘source scene’. Using the datasets, the effects of the conservation process can be scientifically assessed. This approach is applied in the conservation project of the Jiankou and Xifengkou sections of the Great Wall. The application in practice has demonstrated that the ‘source scene’ concept combined with digitalisation techniques can help manage the intervention processes for the Great Wall’s conservation and maintenance. The method can also be an innovative approach to various cultural heritage conservation projects’ management and operational models, as well as an opportunity for public education.

Fragility assessment of the natural disasters of the Great Wall in Ningxia, China

Fei Cheng, Institution of Architecture and Public Arts, Chinese National Academy of Arts, Dong Xiao, Beijing Great Wall Culture Research Institute, Beijing, University of Civil Engineering and Architecture

The length of the Great Wall in Ningxia is about 1500 kilometers and is known as the “the Great Wall Museum of China”. Ningxia has been a fortress contested by the farming people and the nomadic people since ancient times. It has almost always been in the state of taking over the war. The Great Wall was built in Ningxia in the Warring States, Qin, Han, Sui, Jin, Ming dynasties. There are the complex and diverse of the topography, complete geomorphic types such as mountains, plains, plateaus and basins in Ningxia. The Great Wall shows the various crafts and forms, such as earth tamped, adobe laid, stones masonry and so on, according to the local natural earth rock and other materials and their masonry technology. However, each of them has different weaknesses. For example, the tamped earth is not strong and tight enough to resist the scouring of rainstorm, adobe and stones are easy to deform and collapse due to their small volume, poor integrity of base masonry and poor pull engagement with the internal wall core. Ningxia is a semi-arid climate region in the middle temperate zone. Meteorological disasters occur from time to times, such as drought, rainstorm, gale, dust storm, cold wave, hail, lightning, fog, frost, continuous cloudy rain and ice cream. It has also been affected by earthquakes for many times, resulting in the formation of vertical fractures in the tamped earth section and horizontal fractures in the stone masonry section of the old North Great Wall. Through research on the natural disasters occurred in Ningxia, the vulnerability evaluation of the Great Wall is systematically analyzed, which can provide a reference for the conservation of the Great Wall.

20. Basilica and churches

20. Basilica and churches in military outposts

Session Chairs: Dominic Moreau & Ivan Gargano

Affiliation: University of Lille, France

Affiliation of co-organiser: University of Lille, France

Session Abstract: In the absence of ancient texts describing the details of the process of Christianisation in the frontier regions of the Roman Empire, it is often very difficult to understand some of the archaeological finds in that matter. Among them, we can mention the Christian basilicas and other churches built in direct links with medium to small military outposts. This session will analyse, both in archaeological and historical points of view, the Christian buildings of worship found near or inside the documented forts located on the edges of the Empire. The focus will thus be on peripheral military site.

The goal is to document the topographical evolution of the spiritual life of the Roman garrisons between the fourth and the seventh century, by trying to identify the characteristics of what can call a “border Christianity”, together with the changes of the military space possibly caused by its development. The study of religious architecture in these sites is, without a doubt, the most concrete means of achieving these objectives, because data such as a more-or-less marked monumentality, the position with regard to the fort, the chronology of construction or the type of materials used can offer many factors for a deep reflection on the issue, as well as helping to understand the extent and identity of border communities linked to the military context.

The 4th c. Church at 'Ayn Gharandal (Arieldela) and the Emergence of Christian Architecture in the Late Roman Army of Palestine

Robert Darby, University of Tennessee

Since 2015 the 'Ayn Gharandal Archaeological Project has been excavating the remains of a 4th c. church discovered inside the ruins of the Late Roman castellum belonging to the Cohors II Galatarum at 'Ayn Gharandal (Arieldela) in southern Jordan. To date three seasons of exploration (2015, 2017, 2019) have brought to light the majority of a small, but well-preserved apsidal church adjacent to the fort's principia and a complex of inter-connected rooms which some evidence suggests may have served ritual functions, specifically baptism and chrismation. This paper will discuss these discoveries and what we can infer about the lived religious experience of the Roman army on the frontier of Arabia-Palaestina and its role in the spread of Christianity in the 4th c. The 'Ayn Gharandal church, which appears to have been built and subsequently abandoned during the course 4th c., has few regional parallels identified at contemporary Roman military sites with the majority having been built later in the 5th-6th c.. Thus, the discovery of the 'Ayn Gharandal church offers a particularly important benchmark for our understanding the formalization of Christian churches into the architectural landscape of the late Roman army in Palestine. The monumentality of the church, its placement in respect to the principia, and its secondary use of rooms in the fort all point to the significance awarded to the church and the emergence of a new architectural paradigm for the Roman army.

Military churches, remodelled principia or fortified monasteries? A comparative analysis of basilicas in forts of the North African frontier

Alan Rushworth, The Archaeological Practice Ltd, Newcastle upon Tyne

This paper looks at the evidence for churches in military sites of the North African frontier. Our understanding of these structures is hampered by the limited extent of modern fieldwork in this frontier zone. Whilst some basilicas identified within forts have been interpreted as churches (notably at Drah Souid East and Benian-Ala Miliaria), they have also been conceived of as late imperial principia, perhaps co-axially aligned with colonnaded streets, an arrangement observed at military installations on Rome's other frontiers. This study will attempt to advance the debate by comparing the North African sites with recently investigated examples on the Eastern frontier (for example Qasr el-Hallabat in Arabia). Work by Arce and others on the Arabian sites has proposed a sequential site development involving transition from later Roman quadriburgia, garrisoned by regular limitanei, to monasteries under the aegis of federate Ghassanid phylarchs, and then finally to Umayyad desert palaces, all linked to overall political and military evolution of that arid frontier zone. The African case studies presented here will examine how convincing a similar transition from fort to monastery might be, in terms of the surviving structural evidence, and also how the reoccupation of frontier forts by monastic communities would fit into the late and post-imperial trajectory of this particular regional limes.

Late Roman and post-Roman Christianity on Hadrian's Wall: and the remarkable new evidence from Vindolanda

Andrew Birley, Marta Alberti, The Vindolanda Trust

Although largely missed by antiquarian and early 20th century excavations on Hadrian's Wall, the faint remains of late and post-Roman apsidal buildings in military outposts have now been identified and interpreted as potential church foundations at Birdoswald (Wilmott 2009: 395), Housesteads (Crow 2004:114, Rushworth 2009: 178), and South Shields (Bidwell & Speak 1994: 103-104). This growing body of evidence has been supported by more recent excavations at the site of Vindolanda. Here, between 2008 and 2019, archaeologists have uncovered evidence for church buildings and post-Roman occupation on a much more substantial scale, reigniting the debate surrounding the rise of Christianity on Roman frontiers. Set within the context of two phases of sub-Roman occupation (period IXA, circa AD 400-500, and IXB, AD 600+), three new churches have been excavated in the south-eastern and south-western quadrant at Vindolanda, adding to published evidence for a chapel within the 4th century praetorium courtyard (Birley & Birley & Blake 1999: 20-23), and a partially

explored apse in the north-eastern quadrant of the last stone fort. The authors will discuss the morphology and stratigraphy of church building on Hadrian's Wall with a focus on the site of Vindolanda and the contexts of the sub- and post-Roman occupation. Consideration will be given to the materials and techniques used for construction, outlining the emergence of two distinct types of building: an earlier 'Basilica-like' structure, in continuity with 4th century traditions, and a later 'pill-shaped' structure, breaking with the traditions of the Roman military occupation. The paper will also contextualise some of the remarkable artefacts associated with the Christian transformation of the site. These will include a unique and recently discovered lead vessel, inscribed with numerous early Christian symbols. This vessel offers a new perspective into the strength of the wider networks of early Christian communities on Roman frontiers.

21. Funeral at the frontier

21. Funeral at the frontier

Session Chairs: Arjan Ruiter & Lourens van der Feijst

Affiliation: ADC ArcheoProjecten, the Netherlands

Affiliation of co-organiser: ADC ArcheoProjecten, the Netherlands

Session Abstract: A small number of large and well published sites have dominated our idea of what a typical Roman burial is within specific regions. Recent research however, has increasingly shown variation in burial practices and the cemeteries itself. For example, excavations in the Netherlands have made apparent differences in burial practices between, relatively small, stretches of the limes zone. In particular cases this may be visible on the civitas or tribal level. The session aims to promote a comparison on the supra-regional level along the frontier of the empire. This is necessary in order to establish the uniqueness of, or similarities between, certain practices and burial goods. In addition it is to be expected that the significant influx of soldiers and people from the Mediterranean into the limes zone had an impact on the aforementioned aspects.

Regional variation is, not exclusively, expressed through; treatment of the deceased body, material culture in the form of burial goods, the organisation and layout of cemeteries in both rural and urban environments and the visibility through above ground structures, such as tumuli, tombstones, steles and funerary gardens. It raises a number of questions, i.e.: Which regional variations have come to light in other countries along the limes? Do such differences derive from context, i.e. rural, urban or military, or rather from the availability of goods and raw materials? Which aspects of burial practices along the border are anchored in pre Roman burial traditions and developed regionally and which are influenced by outside, Mediterranean, ideas about the afterlife?

The session welcomes contributions on the following subjects: Roman and local beliefs in the afterlife, burial rites, material culture in the form of burial goods, types cremation burials and tomb forms, funerary monuments, funerary gardens, military cemeteries and civilian cemeteries.

Across the Southern Frontier: Roman objects in Meroitic graves at Faras, Sudanese Nubia

Henry Bishop-Wright, Independent Academic

When Octavian entered Alexandria in 30 BCE, Egypt was in uproar. The final decades of the Ptolemaic administration were characterised by dynastic infighting, rising debt, and the increasing involvement of Rome. Consequently, the first task of Rome's newly-installed prefect was to restore order and consolidate the southern frontier at Aswan. Beyond this frontier was the independent Kingdom of Meroë (c.300 BCE – 350 CE) which promptly entered conflict with Egypt. The ensuing Romano-Meroitic War concluded with a peace treaty in 21 BCE and the inauguration of a "frontier zone" between Aswan and the Second Cataract (Lower Nubia). Meroë remained independent and, for the next three centuries, maintained a relatively amicable relationship with Egypt. During this period, Lower Nubia functioned as a conduit for material, political, religious, and social interaction between the two powers. This paper examines the use of Roman objects in funerary assemblages

from a major Meroitic cemetery situated within Lower Nubia, just 150 km south of the Roman frontier. The cemetery – Faras – was excavated in the early 20th century but was never fully published. Its 2220 graves were reassessed by the author in a PhD thesis (2018-21) that utilised unpublished excavation records housed in the Oxford Griffith Institute. Faras' proximity to the Roman frontier granted it access to wide-ranging material networks, hence early Roman pottery, metalware, and glassware were common grave goods. This paper discusses how such imports were only utilised in assemblages if they could be redeployed in local ritual or aligned with pre-existing custom. Despite three centuries of sustained contact with Roman Egypt, there is no evidence that this conservative funerary tradition was significantly altered. Faras, therefore, presents a curious case of cultural resilience on the edge of the Roman Empire and its inhabitants were certainly not acculturated by a "predatory Roman regime".

Overview of burial customs in Roman period Slovenia

Kaja Stemberger Flegar, PJP d. o. o.

In this paper I aim to present the variety of Roman funerary practices across Slovenia from the Roman occupation at the end of 1st century BC until the end of 4th century AD. Mortuary archaeology is not studied as a separate discipline in Slovenia. To provide the necessary context, I will first address the conception of Roman funerary practices in Slovenian archaeology, and the associated terminology and typology. In the first part of the presentation I will discuss the variety of burials in the 1st and 2nd century AD. These predominantly come from urban cemeteries. This period is rich in grave furnishings as well as in terms burial styles. While several aspects are universal – oil lamps, cremation, and simpler burial manners – clear distinctions are observable between the regions into which most of the territory of modern Slovenia was divided in Roman times: Regio X, Lower Illyricum (later Pannonia), and Noricum. The differences between the regions can at least in part be explained by trade and local traditions. In terms of the latter, several cases from modern day Dolenjska, which was a part of Pannonia heavily influenced by the pre-Roman Taurisci and Latobici, are examined more closely. The second part will focus on the period after the shift from cremation to inhumation. The 3rd century offers little reliable material to be discussed, but Late Roman burials from the 4th century AD will be addressed. In the latter period, the burial manner becomes much less variable and the grave goods less numerous. More variety, however, is found in urban settlements, with some of the female graves being exceptionally rich. Last but not least, this paper will attempt to provide a blueprint for the first general overview of Roman funerary archaeology in Slovenia.

Burial in lead sarcophagi on the Roman limes – examples of Viminacium

Bebina Milovanović, Snežana Golubović, Ilija Mikić, Institute of Archaeology, Belgrade, Serbia

Viminacium was the capital city of the province of Upper Moesia and was located on the northern border of the Roman Empire. Thanks to its geographical position it was exposed to centuries-old intertwining of western and eastern influences, which are best reflected through burial forms and grave inventory. During the first two centuries of the new era, the burials of cremated deceased in specific pits of more or less rectangular shape, fired walls that eventually get the second level, and rarely the third. At the same time, skeletal burial of the deceased is performed, most often in ordinary pits or in wooden coffins. Significant changes have been happening since the second half of the 3rd century, when cremation disappeared from the area of Viminacium necropolises and was replaced by inhumation. Burial in lead sarcophagi was present in Viminacium from the 2nd to the middle of the 4th century. In lead sarcophagi, the deceased were mostly skeletally buried. This form of burial is represented in larger urban centers in which, as we have previously stated, ethnically diverse population is represented, but also in smaller places and mines from which lead was exploited, i.e. in which there were raw materials. During archaeological excavations at the necropolises of Viminacium, lead sarcophagi have been found in recent years that have not been analyzed and interpreted from an archaeological and anthropological point of view so far. In nine of the mentioned sarcophagi, the skeletal remains of the deceased have been completely or at least partially preserved. Therefore, a special review in the paper is the anthropological analysis of the skeletal remains of the deceased who were buried in this way.

The rural burial landscape in the hinterland of Roman Nijmegen

Joep Hendriks, Municipality of Nijmegen

Across the river Waal, to the north of the Roman urban and military complexes of Nijmegen, lies the flat and dynamic riverine area of the village of Lent and the Waalsprong. Back in the days, it was part of the greater 'island of the Batavians', directly under the smoke of Ulpia Noviomagus and at c. 15 km northbound of the Limes as the crow flies. For a long time, little was known in detail about this countryside, but during the past 20 years several indigenous Roman settlements and cemeteries have been excavated and partly published. Post-ex analysis is now making progress and it is finally possible to tell more about this densely populated landscape. In an area of more than 13 square kilometres at least six rural settlements have been discovered and five cemeteries (consisting of c. 200 burials), dating to the Early and/or Middle Roman period. Since most of the cemeteries can be directly linked to a nearby settlement, it is possible to analyse the chronological development of these cemeteries in close relation to the habitation rhythm of the local population. Detailed information about the grave constructions, furnishing and physical anthropological data make it interesting to present an overview of these cemeteries, focussing on their differences and similarities, with particular attention for some extraordinary burials and the social aspects of their constitution. The analysis of the burial landscape of Nijmegen-North takes place against the background of questions about its relation with the surrounding Batavian countryside, the Limes zone in the north and the complexes of Roman Nijmegen in the south. For instance, to what extent do the Waalsprong cemeteries differ from other well studied rural cemeteries and areas in the Batavian civitas (e.g. Tiel, Wijk bij Duurstede, Wijchen)? And is it possible to trace back the direct influence of living and dying so close to the Roman town of Ulpia Noviomagus?

Buried with the dead

Frederique Reigersman-van Lidth de Jeude, ADC ArcheoProjecten

In the Dutch eastern river area, just south of the Roman Limes, many large and small settlements and cemeteries are known and are still to be discovered. Up till now at least eleven cemeteries in the area between the rivers Rhine and Waal and three cemeteries along the river Maas dating from Roman times have been investigated by ADC-ArcheoProjecten. The gifts that accompanied the dead in their graves will be the subject of this presentation. Most gifts are ceramics, and the focus will therefore be on the pottery found in the graves. Other kinds of gifts like metal, glass or bone objects will be given less attention, since they occur in far less graves than pottery. The investigations have shown a development over the years from the 1st to the late 3rd and even 4th century AD. This development involves in the first place the change in fabric and forms as well as the quantity of pottery and other gifts buried in the graves. Apart from these general developments the gifts in the cemeteries show differences in wealth and standing. Moreover, differences concerning the local rituals can sometimes also be noted. The investigations also include the choice made by the family and other relatives for certain objects related to gender and age. Although this is perhaps the most difficult to distinguish it certainly is one of the most interesting and appealing questions in order to understand the Roman society and ritual in the course of time. With the analysis and comparison of the burial goods in the above-mentioned cemeteries we can propose answers to these questions.

The significance of bulbous oat grass (*Arrhenatherum elatius* ssp. *bulbosum*) finds in cremation graves along the Dutch Limes

Neeke Hammers, Cornelia Moolhuizen, ADC ArcheoProjecten

Archaeological finds of bulbous oat grass (*Arrhenatherum elatius* ssp. *bulbosum*) have on occasion been associated with grave sites and possible ritual use. The root bulbs are found throughout Northwestern Europe from the Neolithic to the Middle Ages, at grave sites as well as settlements and arable fields, with regular occurrences in Denmark and southern Sweden, the UK and parts of France. While the majority of bulbous oat grass finds in Northwestern Europe date to the Neolithic and Bronze age, the few finds in the Netherlands have all been found at Roman sites along the Limes, in association with cremation graves. This paper will discuss the use of botanical remains as grave goods and (food) offerings in the Roman Age in the Netherlands and surrounding countries,

with a special focus on bulbous oat grass. Furthermore, will we discuss the implications of these finds for the interpretation of cremation rituals along the Dutch part of the Limes.

Life and Death at the Danube Limes. The Cemeteries of Lauriacum/Enns

Lisa Huber, University of Salzburg, Maria Marschler, Andrea Stadlmayr, Natural History Museum Vienna, Stefan Traxler, OÖ Landes-Kultur GmbH

Lauriacum/Enns was the base of the legio II Italica from the late 2nd century into Late Antiquity and the most important military location in the province of Noricum. Several larger and smaller burial sites with a total of approx. 1,500 documented individuals constitute outstanding sources of life and death at the Danube Limes from the 1st to the 5th century. In the course of the Heritage Science Austria-project Life and Death at the Danube Limes. The Cemeteries of Lauriacum/Enns (Heritage_2020-046_LDDL) the Kristein-Ost and Am Lagergraben cemeteries will be anthropologically-archaeologically examined and evaluated together with the already processed cemeteries at Steinpaß, Ziegelfeld and Espelmayrfeld. Due to the permanent exchange between the main disciplines of archaeology and anthropology, as well as the cooperation with other scientists dedicated to parasitology, DNA studies, stable isotope analyses, as well as archaeozoology and archaeobotany, data and information on Noric cemeteries are being gained at a depth and quality not previously available.

A funerary chaîne opératoire at Vindonissa

Ana Zora Maspoli, Lic. phil. Cornelia Alder, Ernst Akeret, Sabine Deschler-Erb, Claudia Gerling, Natalie Schmocker, University of Basel

Vindonissa is the only legionary camp on the present-day territory of Switzerland and one of the best-researched sites in the Roman provinces. In 2012/13, the Cantonal Archaeology of Aargau surprisingly discovered the necropolis Brugg/Remigersteig on the road from Vindonissa to Augusta Raurica and documented the cemetery with 154 burials from the early imperial period over a large area using state-of-the-art methods. The necropolis Brugg/Remigersteig is an archaeological object of extraordinary scientific relevance: Already in antiquity, a landslide buried the necropolis, which was probably mainly used by civilians. This is why the graves are extraordinarily well preserved. An interdisciplinary pilot study investigated two burials from Brugg/Remigersteig: Maximila and Heuprosinis were buried together in a round tomb, which once included a stela. The stela as well as the actual burials, was found still in situ. The inscription on the stela informs us that Maximila Cassia was a Roman citizen who died at the age of 40 and originated from Upper Italy, and that Heuprosinis, who died at the age of 10, was a slave of L. Atilius, who had the tombstone erected for the girl and his partner. The stela pictures a woman and a girl in a shell-crowned arch niche. They are holding hands, expressing their closeness, which is also reflected in their joint burial. Heuprosinis was, as mentioned, the slave of Lucius Atilius, not the daughter of Maximila. The project involved analysis from the disciplines anthropology, archaeobotany and archaeozoology, archaeology, ancient DNA and isotopes. The study aimed to answer questions as: Who were the woman and the girl and what was their connection? Which funeral rites can be grasped with the comprehensive sources? The project leader A. Z. Maspoli will present the results of the pilot study to shed light on this exceptional archaeological ensemble.

22. Speaking of the dead

22. Speaking of the dead. Returning to funerary customs and grave goods from late Roman military burials

Session Chairs: Vince Van Thienen & Sofie Vanhoutte

Affiliation: Ghent University, Belgium

Affiliation of co-organisier: Flanders Heritage Agency / Ghent University, Belgium

Session Abstract: Fifty years after the publication of the late Roman graveyard at the Oudenburg fort by Mertens & Van Impe (1971), and nearly as long since the influential publication by Böhme (1974) on Germanic grave goods in the Late Roman period, it is time to reassess our ideas of late Roman burial customs, grave goods and their chronology (period c. AD 250-450).

During the past half century, our understanding of the Late Roman period has developed significantly, mainly because of the increasing archaeological evidence of its military population. Nevertheless, many of the chronologies for grave goods published in the 1970s are still used as standard references to date late Roman artefacts and their contexts. However, many of these typochronologies and interpretations have become outdated, often tied up in biases based on circular reasoning related to traditional notions of the Germanic immigration.

Since the 1970s and '80s burial archaeology has gradually become less prominent, allowing outdated knowledge to persist into the present-day identification and dating of late Roman military burials (cf. cremation versus inhumation; the uncritical use of numismatic evidence; the correlation between weapons as grave goods and Germanic people). Fortunately, recent studies and techniques can bring new data to the table and allow us to take a fresh look on the identity of late Roman soldiers at the frontiers (e.g. isotopes and DNA) that can be paired with a reinvestigation of the material culture and burial customs.

Given that the most prominent late Roman burials are military graveyards and that they serve as a basis for much of the material chronologies (e.g. Krefeld-Gellep), a re-evaluation of them would not only adjust our understanding of the late Roman military communities at the frontiers, but would also have implications for the dating and interpreting of many late Roman (military) sites across the Empire.

The late Roman coastal fort at Oudenburg (Belgium): from reassessment of new and old burial data towards new ideas on the chronology, identity, and lifestyle of a late Roman military community

Sofie Vanhoutte, Flanders Heritage Agency / Ghent University, Belgium

Late Roman graves of the Vieuxville cemetery (province of Liege, Belgium)

Sofie Vanhoutte, Vince van Thienen on behalf of Olivier Vrielynck, Service public de Wallonie – Agence wallonne du Patrimoine, Fabienne Vilvorder, Laurent Verslype, Université catholique de Louvain – Centre de recherche d'archéologie nationale, Christian Lauwers, Société royale de Numismatique de Belgique

The Late Roman and Merovingian site of Vieuxville is famous for having yielded a funerary assemblage attributed to the first half of the 5th century, discovered fortuitously in 1938 and published in 1956 (BREUER & ROSENS, 1956). The presence of coins of Constantine III and Jovin have made this ensemble a regularly cited reference since. The site also gave its name to a particular type of belt (BÖHME, 1974, p. 61). Other objects from the 1938 find were published in 1982 (VAN OSSEL, 1982). Systematic excavations carried out from 1980 to 1985 shed light on the context of this discovery. They showed that the material published in 1956 did not come from an isolated grave, but from several burials. These tombs belong to a vast cemetery of about 190 tombs used from the beginning of the 5th century to the middle of the 7th century (e.g. ALÉNUS-LECERF, 1986). These excavations have only recently been studied in detail. Despite the various degradations it has suffered over time, the Vieuxville cemetery has proved to be exceptional for the chronology of 5th century burials in northern Gaul, for several reasons. Firstly, most of the graves yielded material. Secondly, the necropolis developed regularly and continuously from north-west to south-east. Finally, several graves from the first half of the 5th century have been dated by coins, which makes it possible to set some reliable chronological markers. In particular, the phase of the 'simple' belts, dated approximately to the middle third of the 5th century, is particularly well represented, with some thirty tombs, eight of which yielded this type of belt. The transitions from this phase to the Kerbschnittverzierte Gurtelgarnituren phase that preceded it, and to the so-called 'Childeric horizon' that succeeded it, are clearly discernible. Bibliography: ALÉNUS-LECERF J., 1986. Le cimetière de

Vieuxville : quelques considérations préliminaires. In : OTTE M. & WILLEMS J. (éd.), *La civilisation mérovingienne dans le bassin mosan. Actes du colloque international d'Amay-Liège (22-24 août 1985)*, Liège (Études et Recherches archéologiques de l'Université de Liège, 22), p. 181-193. BREUER J. & ROOSENS H., 1956. Le cimetière franc de Haillot, *Annales de la Société archéologique de Namur*, 48, p. 171-376 (= *Archaeologia Belgica*, 34, 1957). BÖHME H.W., 1974. *Germanische Grabfunde des 4 bis 5. Jahrhunderts zwischen unterer Elbe und Loire. Studien zur Chronologie und Bewölkungsgeschichte*, München (Münchner Beiträge zur Vor- und Frühgeschichte, 19/1-2). VAN OSSEL P., 1982. Quelques trouvailles inédites provenant de la nécropole de Vieuxville. In : *Varia III*, Bruxelles (*Archaeologia Belgica*, 246), p. 5-15.

Late Roman funerary customs and grave goods on the burial ground at Kozolec (Emona/Ljubljana, Slovenia)

Bernarda Županek, Museum and Galleries of Ljubljana, Špela Karo, Mateja Ravnik, Institute for the Protection of Cultural Heritage of Slovenia, Alenka Miškec, National Museum of Slovenia, Gojko Tica, Tica Sistem d.o.o.

Archaeological investigations in the northern part of Ljubljana have uncovered part of the northern cemetery of the Roman colony of Emona at the Kozolec site. This well-researched Roman city, which lies below the centre of Ljubljana, was constructed at the beginning of the 1st century AD. However, the date of its abandonment is difficult to confirm, as different views on the end of Emona are placing it roughly between the mid-5th and mid-6th century. Throughout its existence, Emona had three extensive cemeteries that lined its main arteries, as was customary in the Roman world. Of these, most is known on the northern cemetery, where the total number of graves excavated thus far exceeds 3000. Investigations at the Kozolec site revealed a part of the cemetery with 61 graves, 16 of which were early cremations, and another 45 inhumations from the 2nd century onwards, most of them dating from the 4th to the middle of the 5th century. In this paper we focus on the later burials and the individuals buried in them. They include 19 male, 14 female and 10 children's graves, while two burials remain undetermined. Although the burial rite does not differ significantly between individuals, the differences in attire and other accessories suggest that a certain number of buried males may have been soldiers and foreigners. According to the objects of attire they could have been members of late Roman military units as well as foreigners of Germanic and/or Sarmatic origin. This is consistent with the observation that in the Late Roman period the wider area of Emona was a military zone established around the *Claustra Alpium Iuliarum*, and with the observation that the density of military material from the wider area is very similar to that from the border areas of the Rhine and Danube.

Challenging late antique chronology – graves as indicators of continuity

Rebecca Nashan, Newcastle University

The research perspective on Late Antiquity is gradually changing due to the growing archaeological knowledge and the prevailing zeitgeist. There is a clear shift away from the concept of omnipresent decline towards the idea of transformation and continuity. However, there is a lack of a robust chronology of material culture that can substantiate this change in the dating of finds and find complexes. In the course of my doctoral thesis, I am evaluating hitherto unpublished and published material evidence from 4th and 5th century Belgian, French and German burial sites in a transnational study. A large-scale database will not only facilitate the reappraisal of dating sources but also clarify possible patterns in burial customs and the composition of grave goods. This paper exemplifies the problematic nature of established typo-chronologies on the basis of so-called key finds from selected, newly researched graves. Due to the absence of more reliable sources, dating approaches emerged at this research stage that are influenced by a historical narrative generated from ancient written sources. These chronological fixed points are still replicated by less critical citation and lead to circular arguments and a pronounced early dating of material culture. The result is a hiatus in the settlement landscape at the beginning of the 5th century AD. Consequently, this creates a distorted perspective on Late Antiquity and limits the interpretation potential of further research questions on topics such as border communities and cultures, ethnicity, identity and religion.

The late Roman grave of the children of the triarch Domitianus at Boulogne-sur-Mer: A re-interpretation

Julie Flahaut, Olivier Blamangin, INRAP, Angélique Demon, Service archéologique de Boulogne-sur-Mer, Christine Hoët Van Cauwenberghe, université de Lille

Excavations at Boulogne-sur-Mer began during the 16th century, but it was really during the 19th century that the Late Antique cemeteries of this city were systematically explored. After a gap of a century, several new excavations have added to our understanding of this topic, in particular those of 1973 and two intervention in advance of development in 2007 and 2008. They are mainly located between Vieil-Âtre/Val-Saint-Martin and Bréquerecque, at the known limits of the occupation on the Gesoriacum-Bononia site. The tombs excavated at Vieil-Âtre in 1888-1889 by Jean-Baptiste Lelaurain yielded a remarkable assemblage: lead sarcophagi, complete funerary monuments, and extremely well-preserved furnishings including an exceptional collection of glassware, ceramics, pewter objects and “black rocks” (shale, jet). Twenty-nine burials have been reconstructed thanks to the surviving documentation (museum catalogues and newspaper articles for instance). Among them, one funerary group attracts our attention in particular, that of the children of the triarch Domitianus, discovered on 27 October 1888. This is the only intact funerary monument in Boulogne-sur-Mer with an explicitly military inscription (CIL, XIII, 3545) associated with grave furniture. Few tombs from Late Antiquity have been identified as ‘military’ in Boulogne-sur-Mer. Claude Seillier made an inventory in 1995 based on the 19th century publications and certain objects held in museum collections in Boulogne-sur-Mer and Oxford. He was particularly interested in the metal objects such as belt fittings and cruciform fibulae found at Vieil-Âtre and Bréquerecque. The study of the funerary ensemble of the children of the triarch Domitianus, belonging to the *classis britannica*, gives us the opportunity to propose a global and contextualised re-reading of an ancient discovery, relatively well documented. Through this burial, it is possible to propose a new interpretation of this group, supported by the furniture and the historiography of its discovery, and thus to shed new light on the historical, military and archaeological context of the site of Boulogne-sur-Mer in the second half of the 3rd century.

Foederati and the villa landscape? small-scale burials in Germania Secunda in Late Antiquity

James Dodd, Vrije Universiteit Amsterdam

The end of the villa landscape in the north-western Roman provinces is characterized by significant transformation. One facet is the use of the villa complex and its surrounding area for funerary purposes. Traditionally, these burials have been divided into large-scale reuse of sites in the Migration period and small-scale transitional burials. The study of these burials, and their relation to foederati burials and the military community have been neglected. This paper will explore this relationship and assessing where more work is needed to develop a picture of the funerary landscape at the interface between military and civilian in Late Antique Germania Secunda.

Solitary and deviant burials in late Antique Tongeren

Steven Vandewal, City of Tongeren

Archaeological traces prove that in the early fifth century events occurred that influenced the evolution of Tongeren (Atuatuca Tungrorum) as a town greatly. Not only did the number of archaeological traces decrease, there was also, for example, a sharp decline in the number of burials in the late Roman cemeteries around the town (although these presumably remained in partial use until the seventh century). Contrary to what has been assumed up to now, namely that the city was virtually deserted in the fifth century, there are indications to the contrary. In this, Tongeren follows a historiographical discussion – about continuity of habitation or not – which has already taken place in several other locations in northern Gaul and Britannia. To persist that Tongeren was a deserted place in the fifth and sixth centuries, however, can no longer be maintained. One of the elements that could lead to a new insight into the development of the town or its habitation during this period are the so-presumed ‘solitary’ burials, found in the town or in the immediate vicinity of the late Roman town wall. What are considered solitary burials seem rather to form part of a pattern. Haphazardly found inhumations appear to be intentional burials, oriented towards certain Roman

buildings or in the vicinity of locations that had a certain symbolism. Apart from being some of the few traces from that chaotic fifth century, these burials give a clue as how the capital of the civitas Tungrorum evolved during the early Middle Ages.

23. Small finds everywhere

23. Small finds everywhere

Session Chairs: Hannes Flück & Orsolya Láng

Affiliation: University of Basel, Switzerland

Affiliation of co-organiser: BHM Aquincum Museum, Hungary

Session Abstract: The smallfinds session at the Limes in Viminacium in 2018 showed clearly the potential of the work with small finds beyond chronology. It seems possible for example to discern settlement with a military context from a purely civil settlement, not only by militaria but also by other smallfinds groups. Other sessions demonstrated successfully, that at least partially, the question of the presence of women in Forts can be addressed by looking at smallfinds. With this session we aim to go a step further. We still want to look at finds groups made of metal, glass, stone, worked bone or terracotta. But we wonder if more is possible, as e.g. the differentiation within a settlement. How are certain smallfinds distributed within a settlement, and what might be the reason for this, beyond the obvious possibility of chronological differences? Can topographical differences of the distribution of small finds within a settlement be explained by social differences, or are there other reasons? How can certain group of smallfinds speak for the function of buildings and rooms? And what are the reasons for differences of the distribution of small finds between different settlements? Are they caused by different networks of distribution, preferences of the population or other reasons? We also look for papers that aim at source critic and discuss the limits of this approach. Papers either based on more traditional analyses of smallfinds or material analyses shedding light on the above-mentioned problems are both welcome.

The Northern Frontier of Britannia and its Coinage

Douglas Carr, Newcastle University

This paper presents the results of my PhD research which examines the numismatic evidence from the northern frontier of Roman Britain. This analysis is the result of the creation of a database containing detailed records for the c.38,000 Roman coins found in northern England and southern Scotland. Previously studies of the coinage from Roman Britain's northern frontier have been on a far smaller scale than that undertaken here. These previous studies have instead largely been restricted to discussions of coins from the military communities based along Hadrian's Wall itself rather than seeking to encompass a broader frontier zone. The study area of this research has included the Wall itself but also its wider setting by covering southern Scotland (Dumfries and Galloway and the Scottish Borders) and northern England (Cumbria, Northumberland, Tyne and Wear and County Durham). This broad geographic area has allowed the examination of the usage of coinage not just amongst the military communities along the Wall but differences in usage between the military and non-military communities inhabiting the frontier and between those living beyond and behind the Wall.

The Roman army on the Rhine and the monetization of the rural hinterland

Rahel Otte, PhD student, Goethe-Universität Frankfurt a. M.

A legionary under Augustus received a stipendium of 225 denarii annually, allowing us to calculate how much Roman money was delivered to the forts on the Rhine frontier in the early 1st century. But what happened to the coins after they were paid out to the soldiers? How and especially how fast did they find their way to the rural hinterland? The presentation is based on recently collected but not yet published data on coin finds from the hinterland of the German part of the Lower Rhine limes, more precisely from the villa landscape in the loess area. The monetization of this area has not been studied yet, as numismatic research in the German Rhineland mainly focused upon the forts and urban centres on the Rhine. The dataset is unique in its composition, since it comprises coin finds that were reported to the German state service for archaeology by amateur metal detectorists, finds from excavations and local museum collections. The main focus of the presentation is upon the distribution and analysis of Celtic and early Roman coins. Of special interest are the series with a strong connection to the military like the bronze coins from Nemausus, the Avancia series or countermarked pieces. The talk addresses questions concerning the spread of coin use and asks what effects the legions had on the rural population in the hinterland. Was the monetization of the countryside caused by and connected to the required surplus production of food and the collected taxes? And if so, when did the monetization take place? Did the rural population in the loess area make use of coins in a market context before the arrival of the Roman army? Or was the Roman army a catalyst for the monetization and the development of a market economy in the loess area?

Military Artefacts in the Civil Province of Britannia, a case study: *Trompetenmuster* mounts

Edwin Wood, King's College London

This paper will examine aspects of my PhD research into Roman military associated small finds that have been found on non-military sites in the South and South-East of England. The study draws on a substantial dataset of finds from controlled excavation as well as publicly recovered objects recorded by the Portable Antiquities Scheme. Totally c.4500 finds, this is a significant body of material that requires interpretation improve our understanding of provincial society. While the date range for my study is from the mid-1st to the 3rd centuries AD, I will principally focus on the 2nd and Early 3rd Century. Using a case study of horse harness fittings from the survey region I will explore whether any of these finds can be interpreted to directly indicate the presence of Roman military personnel. I will also briefly discuss some of the reasons why Roman troops or veterans might have been in the civil province in such large numbers during a period of comparative peace for the region. I will also ask questions of the traditional interpretation of the finds and whether they do truly represent military equipment or more general use, particularly of the horse, among the wider population of Roman Britain.

New insights into the distribution of Roman metal finds with PAN

Stefanie Hoss, University of Cologne

The Portable Antiquities of the Netherlands (PAN) project has been up and running for several years and has already generated a number of insights into metal finds in the Netherlands. Among them is a new distribution map of Roman military equipment showing high concentrations of finds in the Batavian region and in the Northeast (northern Friesland and Groningen). The former was already known through Johan Nicolay's 2007 study 'Armed Batavians', which connected the high number of military finds in the Batavian region with the many Batavian veterans returning home and taking their military equipment with them.

However, both the concentration of military equipment in the Northeast and the similarities of the distribution of military equipment and other metal finds (like brooches) seem to indicate that post-depositional factors must at least also have played a role. This paper intends to investigate these and other factors that may have contributed to the high concentration of Roman military equipment in these two regions in the Netherlands.

Are you not entertained? – Different perceptions of gladiator fights at the frontiers of the Roman Empire as reflected in small finds

Boris Alexander Burandt, LVR-Amt für Bodendenkmalpflege im Rheinland – Aussenstelle Titz

Roman mass entertainment and especially gladiator fights are often seen as a motor of „Romanization“ for the conquered areas and subjected peoples. The events in the arenas combined the desire of the masses for entertainment with the cult for the Roman emperor, and they also offered the local representatives of Rome the opportunity to stage themselves in a popular way. But if one looks merely at the architectural remains of the games, it becomes clear that amphitheatres along the frontiers of the Roman Empire are extremely rare. Hardly any of the garrison towns around the forts for cohorts or cavalry units has a proven arena, although amphitheatres appear almost regularly in the large colony towns and in the vicinity of legionary camps. In order to be able to classify the significance of this lack of arenas along the frontiers for the „Romanization“ and social structures of the frontier regions, it is necessary to look at the small finds, specifically at finds that could be modernly addressed as fan merchandise. Objects of this kind, which show the enthusiasm of the society for gladiator fights, animal chasing or chariot races in the form of oil lamps, drinking vessels, knife handles or statuettes, provide valuable information on how far the indigenous population on the periphery of the empire identified with Roman mass entertainment or just remained insensitive to such stimuli. Quality and materialism of the finds also gives eloquent testimony about the different social classes who were interested in the games in different ways at different times. Small finds from the finds group of fan merchandise thus provide valuable information on topics such as „Romanization“, acculturation, migration and social structure of the frontier regions, which will be presented in the paper with a focus on the north-western provinces.

The Capulets vs. The Montagues? – exploring differences within a settlement through their spectrum of brooches

Hannes Flück, University of Basel, Switzerland

As various researchers, including S. Jundi, J.D. Hill, T. Ivleva and U. Rothe, have shown in recent years, the wearing of Roman-period brooches is not just a question of fashion but also of other statements and ideas. Apart from restrictions due to the availability of certain types of brooches on the market, the decision of which brooches are bought and used is a conscious one. The analysis of fibulae can therefore allow us to draw conclusions on differences in relation to the inhabitants of a settlement. This is true for studies on both inter- and intra-settlement level. As my paper – “Bling for the Fling”, presented at the last Limes Congress in Viminacium – has shown, differences between individual settlements are detectable. Even if the spectra of the fibulae are dominated by the regional signature, it is nevertheless possible to identify specific brooch types, which in turn may be an indicator for military settlements. This paper examines the fibulae from two neighbourhoods of the legionary fortress of Vindonissa (Windisch, CH) and will ask if and to what extent differences in the fibulae spectra can be discerned within settlements. If this is the case, what could be the underlying reasons? In order to clarify any chronological differences between the two parts of the settlement, the coin curves of the two areas are also compared.

Moving on: what material analyses of the Aquincum millstones can tell us about function and the local economy?

Orsolya Láng, BHM, Aquincum Museum, Andrew Wilson, University of Oxford

More than 230 complete or fragmentary hand querns and millstones have been found during the more than 130 years of research in the settlement complex of Aquincum (legionary fortress, Military and Civil Towns, villa estates) Preliminary results of their research (i.e. dating, find location, distinguishing between hand querns and water mills) was presented at the previous Limes Congress in Viminacium, while the detailed material analyses was carried out on them in 2020. Fresh results of these petrographical analyses and the consequences that can be drawn from them concerning the provenance of the raw material and types will be presented this time, together with some topographical conclusions and also shedding light on the local supply of the civilian population and the army on the Roman frontier in Pannonia Inferior. The work is carried out in a cooperation between the University of Oxford and the BHM Aquincum Museum.

24. The Limes Moesiae-Scythiae

24. The Limes Moesiae-Scythiae, dynamic landscapes and places

Session Chairs: Jonathan Quiery & Matthew Previto

Affiliation: Durham University, United Kingdom

Affiliation of co-organiser: Stanford University, United States of America

Session Abstract: The development of the Roman Limes Moesiae/Scythiae between the first and seventh centuries CE wrought profound alterations to the landscape of the lower Danube. The construction of urban and rural settlements, military installations, infrastructure, and other monumental architecture transformed the experience of place by ancient peoples. Moreover, politico-military, religious, and social frameworks engaged with both the geographic and human-made features of this frontier during the seven centuries of Romano-Byzantine occupation and were ultimately remade in turn. As a result, the Moesian/Scythian limes was a dynamic region throughout antiquity as numerous peoples and religions converged here. The recent historical and archaeological research undertaken in the region has demonstrated the vibrant nature of this frontier, as other scholars have revealed elsewhere along borders such as Hadrian's Wall and the Limes Germanicus.

The proposed session calls for papers to examine a broad range of topics that consider the place-making effects and experience along the Limes Moesiae/Scythiae and seeks to create a proactive discussion among frontier specialists from varied academic backgrounds. The session welcomes new insights and perspectives from both methodological approaches and theoretical paradigms that provide a keener insight into the lives of ancient peoples on the lower Danube frontier.

Questions:

- How did the Limes Moesiae/Scythiae become embedded within the pre-existing Iron Age social structures and infrastructures? How were the pre-Roman systems altered as a result?
- How did the shifting politico-military nature in Late Antiquity affect the lives of ancient peoples along the Limes Moesiae/Scythiae?

- How did religious changes impact the experience of place along the Limes Moesiae/Scythiae between the first and seventh centuries CE (pre-Roman–Roman, pagan-Christian)?

The Limes Moesiae/Scythiae According to the Historical Sources

Dominic Moreau, Université de Lille / HALMA-UMR 8164 Research Centre

Relying on ancient textual sources, but not always, contemporary research on Roman borders established a series of conventional names for the “limites” of the Roman Empire (Limes Arabicus, Limes Britannicus, Limes Germanicus, etc.), in order to distinguish them from a regional point of view. Some of these names only appear in Late Antique texts, sometimes only once, but we do not hesitate to use them as if they were attested since the Principate. It is as if a great border strategy had been thought out by the central authorities from the beginning of the Empire, a strategy based on the nature of the provincial ground to be defended. As part of the work carried out within the framework of the DANUBIUS project (University of Lille / HALMA-UMR 8164 Research Centre, France), this paper proposes to examine the designations Limes Moesiae and Limes Scythiae, and to define what the textual sources exactly tell us about them.

From imperial guardians to local patriots: the defenders of Novae (Moesia inferior) in Late Antiquity and their relationship to state, church and neighborhood

Martin Lemke, University of Warsaw

After the difficulties of the third century, the region around Novae experienced a “golden age” in the mid 4th century, but after the battle of Adrianople in 378 new challenges emerged. In the early 5th century, Rome had regained control in the Lower Danube provinces, although the price for this included foederati settling all over the Balkan south of the Danube. In these demanding times a visible shift in the consciousness of the local garrison occurred, which may have been a symptom of a general trend in Late Antiquity, stretched out over centuries, but one that has some striking examples in the archaeological and historical sources concerning Novae, a fort garrisoned by the same trusty legio I Italica since the first century. By the mid 3rd century, the legion had made its name as protector of the larger region, as evidenced for instance by an inscription dedicated by the thankful city of Dionysopolis. But with the legionary fortress becoming a civil town with a garrison (both as a consequence of military reforms as well as a natural progression), other changes took place, to which a number of factors contributed: Christianity (the town became not merely the seat of a bishop, but it had been home for a martyr in the times of Galerius, St. Lupus of Novae), the revival of the Greek language and also the developing consciousness of a community, which resulted from a connection to the land far stronger than it had been for the eponymous Italic legionaries. Thus Novae had clearly developed a distinct identity. It had the backstory of being a sturdy rock in the waves and committed defenders who would refuse to leave their home behind when asked to join a campaign against the Slavs in the late 6th century.

25. The military vicus

25. The military vicus. Everyday life in the vicinity of the forts

Session Chairs: Julia Chorus & Monica Dütting

Affiliation: Research group Roman vicus on the Rhine, the Netherlands

Affiliation of co-organisier: Research group Roman vicus on the Rhine, the Netherlands

Session Abstract: This session focuses on the rise, function, development and population of military vici in relation to the forts in the Roman Empire. Generally, the Roman frontier zone is envisaged rather stereotypically, with military structures such as fortresses with their canabae, forts and watchtowers plus military vici in the vicinity of the forts. However, in many regions our knowledge of military vici, their structures, finds, dates and developments through time, is quite fragmented.

In this session we would like to look in detail into the following questions:

- *Rise and development.* What do we know about the foundation and construction of military vici? When, how and by whom were these settlements built? Were the forts and vici built (almost) simultaneously? Are the developments we can observe in both fort and vicus the same? What is known about the legislation and administration of military vici? And who was responsible for them?
- What was the function of the military vicus? Did it play part in the army's supply system? Which facilities were present and what developments can be observed? In how far do these settlements differ from or align with the forts? Are changes in military occupation of forts reflected in the vici? If the fort and its vicus were not (entirely) contemporaneous: what does this imply for the function and role of the vicus? What was the role of the vicus in relation to rural settlements?
- Who were the builders and residents of the vicus: soldiers or civilians, or both? What clues can archaeological finds give us on the gender, identity and ethnicity of the residents? Can we recognize interactions between the inhabitants of the fort and the vicus (and the vicus and the rural settlements) from the finds? Can changes be observed through time?

Zwischen Lararium und Tempel. Ein Privatheiligtum im Nordvicus von Krefeld-Gellep

Eric Sponville, Museum Burg Linn

In über 80 Jahren systematischer Forschung werden im Bereich des Siedlungsplatzes Gelduba in Krefeld-Gellep das Auxiliarkastell, Bereiche der Zivilsiedlungen, das Feldlager sowie das Schlachtfeld aus der Zeit des Bataveraufstandes und über 6500 Gräber des eisenzeitlichen, römischen und fränkischen Gräberfeldes untersucht. Die jüngste Grabung fand 2017/18 auf einer Fläche von 3,7 ha statt. Dabei wurden über 3300 Befunde und ca. 90.000 Einzelfunde freigelegt. Diese umfassen Bereich des Gräberfeldes, Befunde des Schlachtfeldes und des Feldlagers von 69 n.Chr. aber vor allem den nahezu gesamten nördlichen Kastellvicus. Die Siedlung umfasst eine Fläche von 1,2 ha, zwei Drittel der Befunde sowie den Großteil der Funde dieser Grabung. Die Erforschung des Nordvicus ist von umso größerer Bedeutung als der Südvicus durch die Anlage des modernen Hafenbeckens nahezu vollständig zerstört wurde. Im Zuge der Ausgrabung und im Rahmen der Aufarbeitung konnten sowohl die dreiphasige Siedlungsentwicklung als auch die einzelnen Gebäudestrukturen, darunter Streifenhäuser, Hallenbauten, Handwerksbetriebe und Komplexbauten, erforscht werden. Befunde und Funde die im Zusammenhang mit dem religiösen Leben der Bewohner Geldubas stehen sind bisher in Krefeld-Gellep rar gesät. Im Umfeld der Siedlungen sind dies lediglich ein Mithräum, ein Opferschacht im Zusammenhang mit dem Isis-Kult und eine Cella Memoriae im Gräberfeld, sowie eine Handvoll Einzelfunde wie Statuetten und Weiheinschriften. Umso spannender gestaltet sich der Befund im rückwärtigen Hofbereich eines Streifenhausblocks. Hier wurde ein kleiner rechteckiger Bau freigelegt welcher sowohl durch seine hochwertige Bauweise als auch durch seine aufwendige Ausstattung aus der restlichen Bebauung des Vicus heraussticht. Wie die wenigen aber doch klaren Vergleichsbeispiele von anderen Fundstellen zeigen

handelt es sich um die Überreste eines kleinen, vermutlich von mehreren Hausparteien genutzten Privatheiligtums. Ein weiteres Puzzlestück in Zusammenhang mit dem religiösen Leben der Zivilbevölkerung in Gelduba und der Bevölkerung kleiner Vici im Allgemeinen.

Vulcan, Neptun und Hercules: Götter der Arbeitswelt und ihre Verehrung im Vicus

Dorit Engster, Althistorisches Seminar Goettingen

Thema des Vortrags ist Verehrung dreier Gottheiten sein, die einen engen Bezug der Arbeits- und Alltagswelt im Vicus besaßen: Vulcan, Neptun, Hercules. Der Charakter ihres Kultes in den römischen Provinzen, insbesondere der Germania Inferior und Superior, soll hinsichtlich der Bedeutung für die soziale Struktur und Identität sowie der Verknüpfung beruflicher Tätigkeit und religiöser Präferenzen analysiert werden. Besondere Berücksichtigung bei der Analyse epigraphischer und archäologischer Zeugnisse finden dabei Spezifika der Kultpraxis in den Vici und lokale Facetten der Gottheiten. Zunächst werden Statuen sowie Reliefdarstellungen der Götter analysiert. Ausgehend von Details der Ikonographie soll gezeigt werden, dass diese sich teilweise eng an den griechisch-römischen Traditionen orientieren, teilweise an einheimische Vorstellungen anknüpfen. So lässt sich im Fall des Vulcan nachweisen, dass es sich bei den Weihungen vielfach um die interpretatio romana einer einheimischen Gottheit handelt bzw. der Kult an die Verehrung eines lokalen Schmiedegotts anknüpfte. Im Anschluss werden die Weihinschriften eingehend betrachtet, um zum einen spezifische Charakteristika des Kultes in den Provinzen aufzuzeigen. Zum anderen soll die Stiftungspraxis im Spannungsfeld zwischen Individualität und Kollektivität diskutiert werden. So wird die jeweilige Zusammensetzung der Anhängerschaft inklusive des sozialen Hintergrunds der Stifter – militärisch oder zivil etc. – vorgestellt. Ein weiterer Schwerpunkt der Untersuchung soll auf der Verbindung von Weihungen mit spezifischen Gruppierungen innerhalb des Vicus liegen. Von besonderem Interesse sind in diesem Zusammenhang Stiftungen der vicani sowie verschiedener collegia. Auf diesem Wege soll die Bedeutung der Götter für die religiöse „Landschaft“ des Vicus und des militärischen Stützpunkts aufgezeigt werden. Wie sich anhand einer Reihe von Beispielen nachweisen lässt, konnte Neptun mit Gewerben aus dem Bereich der Schifffahrt verbunden werden, während der Kult des Vulcan bei Metallarbeitern besondere Popularität genoss. Hercules wiederum wurde aufgrund seiner legendären Taten von verschiedensten Gruppen als geeigneter Patron betrachtet. Vor diesem Hintergrund soll abschließend ein Blick auf die sogenannten Jupitergigantensäulen geworfen werden, auf deren Basis, dem Viergötterstein, häufig die genannten Gottheiten erscheinen. Diese besondere Form der Stiftung wird ebenfalls hinsichtlich ihrer Relevanz für die religiöse Praxis im Vicus diskutiert.

Where is this amphora going? Differentiating Roman trade possibilities through vicus and camps supply

Juan Manuel Bermúdez Lorenzo, King Juan Carlos University

Throughout the limes there are many examples of civilian and military cohabitation, but fundamentally, what makes them coincide is trade. Analysing the remains related to the food trade can shed light on a large number of related activities that allow us to see how they developed. This paper aims to answer the following questions: Can we differentiate between vicus and camp amphorae, and can this clarify whether there is private and public, state-controlled trade? In order to do so, we have to look at the amphora epigraphy, which can give us information about the differentiation of the target population and its supply. Combining the dating of the different archaeological sites with the tituli picti found on Monte Testaccio can also facilitate the diversification of casuistry according to the different periods over the two centuries that this mountain was active as an amphora dump. Overall,

the aim is to offer an insight into these commercial relationships that can provide information on their possible differences. In order to do this, it will also be essential to bring together information on the different archaeological sites.

The early-Roman military vicus of Speyer (Rhineland-Palatinate, Germany) – first results

Lennart Schönemann, Albert-Ludwigs-Universität Freiburg, Abteilung für Provinzialrömische Archäologie

In 2018 and 2019, extensive archaeological evidence of the city's history was documented approx. 50 m southwest to Speyer Cathedral. A sequence of Roman strata with features and finds from the 1st to 5th century AD was excavated in Engelsasse. A canal ditch enabled a cross-section through the Roman main road as well as through a strip house with porticus, living area and backyard area. At least ten successive settlement layers were preserved in a layer package approx. 2.70 m high. This excavation is currently analyzed in my PhD-Project about settlement stratigraphy and material chronology of Roman Speyer, which is situated at Albert-Ludwigs-Universität Freiburg, supervised by Prof. Dr. Alexander Heising and funded by Gerda Henkel Stiftung. In addition to an overview on my PhD-project, my paper will focus on the section of early-Roman military vicus of Speyer, which was recorded during the 2018-2019 excavation. The early-Roman military vicus presumably existed until the establishment of the province Germania superior and was replaced by the civil settlement of civitas capital Noviomagus. Initial results will be presented regarding the following points:

- - The uncovered building structures allow conclusions about the type of settlement within the vicus.
 - Within the spectrum of archaeological features and finds, there are both direct and indirect references to production, which allow considerations about economic structures in a 1st century military vicus.
 - The 1st century handmade pottery from Speyer, previously often referred as "Germanic" or "Nemetic", also allows conclusions on the group of users.

The Birdoswald Extra-Mural Settlement Project

Tony Wilmott, Historic England, Ian Haynes, Newcastle University

This four-year joint project by Historic England and Newcastle University has been initiated to examine the chronological and developmental relationships between the extensive extra-mural settlement of the Hadrian's Wall fort and the fort itself. The development of the fort and its cemetery is well known through recent modern excavation, while knowledge of the extramural areas has been limited to an understanding of their extent through geophysical survey. Excavation to the same modern standard will allow a like-for-like comparison to be attempted. It is intended to characterise the settlements to the east and west of the fort, and also to the north, north of the linear barrier of Hadrian's Wall. The first season of work, to the east, was completed in August 2021 (this was a double-length season owing to the cancellation of work projected for 2020 due to Covid). This has already shown an unexpected quality both of multi-phase structural survival and of building sophistication, fully justifying the view that these settlements were the towns of the Roman military north in Britain. Finds material included evidence for social and religious activity, and masses of soot and burnt debris and hypocaust flue material indicated the proximity of the excavated area. The results will be assessed over the next months and the eastern area will be revisited in July 2022, when the area north of the Wall will also be examined. The paper will

examine the background and rationale for the project, and will present the first results to the Congress.

26. In the Empire of Desert, Water is the King

26. 'In the Empire of Desert, Water is the King'. Water, and local peoples on the arid frontiers of the Roman Empire

Session Chairs: Anna-Katharina Rieger & Mark Driessen

Affiliation: University of Graz, Austria / University of Warsaw, Poland

Affiliation of co-organiser: Leiden University, the Netherlands

Session Abstract: The session aims to have a fresh look at the relation of the resource water and the *limites* in arid areas of the Roman Empire. It engages with conceptions and regional appearances of Roman borders in dry zones and takes issues such as resource availability and control, strategic considerations, local socio-economic conditions as well as interaction with local communities into account.

The arid regions of Africa, Cyrenaica, Aegyptus, Arabia and Syria became provinces of the Roman Empire under different historical circumstances bringing Rome into contact with differently living local people; they bordered to different kinds of socio-political entities in the South and East and were part of the distant fringes of the *oikoumene*. Hence, the borders took various shapes in North Africa, Egypt, or along the fringes of the Arabian Desert. Whether along roads with chains of military bases and structures, spotty in the desertic regions, or interconnecting existing landmarks, the organization of these frontiers of the Roman Empire adapted to the local ecological, topographical as well as the socio-economic conditions.

In order to understand the interdependencies of water, demarcation and local conditions in the arid environments of the Roman Empire, the contributions to this session focus on specific ecological and economic conditions of dry areas as frontier zones, such as scarceness of the resource water and the control over it, mobile life strategies, low population and settlement density, which entail methodologically little and spatially spread evidence for past periods. The specific strategic and historical backgrounds in the local environments are considered as well. To this end archaeologists, philologists, ancient historians and scholars from other disciplines like for instance hydrologists are invited to address the following questions:

- implications of arid environments for the organisation of the frontier and pertaining structures and institutions
- interactions with locally employed forms of connectivity (controlling, communicating, moving) and of the perception of water(s)
- handling of the resource water (detection, collection and control, use and distribution)
- impacts of Roman presence on resource availability and socio-spatial organisation of arid environments
- influence of local communities and their life-strategies on the Roman strategies of border control (population densities, settlements and economic potentials)
- reflections on these issues in literary, epigraphic, or administrative texts

The contributors to this session embrace a wide range of regions of the Roman Empire and come from different disciplinary backgrounds in order to complementarily analyse the factor water for the organisation of the arid fringes of the Roman Empire.

A settlement pattern to control the eastern desert fringes late 3rd-early 4th century AD from Jordan to Tur Abdin, military sites, civil settlements, control, development and exploitation of the territory

Brahim M'Barek, UMR 8164 HALMA / Université de Lille

With the fall of Palmyra and Aurelian's takeover of the eastern border of the empire, the empire found itself confronted with the direct management of the security of the desert Areas and steppes which today still mark the limits of the area inhabited by sedentary populations between Jordan to the South and Tur Abdin (Turkey) to the North . Although few sites existed before, others developed from here on, mainly during the period of Diocletian and his Tetrarchic successors. Among these, several are known to have military fortifications associated with a civilian settlement, which was also fortified. Moreover, where data is available, these sites are most often associated with installations that also allowed the control of local resources, mainly water, and thus probably also the practice of agriculture. Some of these sites have been known for a long time in Northern Jordan and along the route linking Damascus to the Euphrates through Palmyra to Sura and some have been the subject of extensive archaeological studies. However, work for a PhD making comparison of aerial and satellite images and archaeological publications, show that the number of these sites as well as the area where such an arrangement would have been implemented could have been more important. We will propose to identify potential origins of this arrangement, to understand its evolution, and to judge its efficiency as well as its durability.

Soldiers and Farmers in Roman Arabia: Evidence of Diocletian's Reforms in the Hinterland of Petra

Andrew Smith, The George Washington University

The third century AD was a period of repeated catastrophes that left a devastating toll on local communities throughout the Roman Empire. Against the background of political instability and poor economic policy, the catalysts were many, which ranged from foreign invasions deep into the heart of the empire, a breakdown in internal trade, plague, and other natural disasters. With the near collapse of the economy, local officials and farmers felt the impact of paying taxes that they could ill-afford. Meanwhile, the military benefited from high bonuses as a series of short-lived emperors fled in and out of power. Also, cities began to stagnate as revenues from their hinterlands diminished, leaving many communities with vast stretches of agri deserti. The problem was particularly acute in Arabia, where farming practices were already marginal due to the arid climate and limited water resources, although the practices of water management were fairly well-developed. The decline of Petra, for example, has been well-documented, and the history of the Nabataeans beforehand as skilled hydraulic engineers is well-known. Diocletian made an attempt to alleviate the economic distresses in Arabia and to revive the regional agriculture. He installed a series of military quadriburgia in the Araba valley to the west of Petra, which stretched from the Dead Sea south to the Gulf of Aqaba. In addition to the security they provided, a key function of these soldiers, it is here argued, was to revive and revamp the regional agricultural landscape with a sophisticated system for managing the water supply. This paper provides evidence from the Bir Madhkur Project west of Petra that sheds light on the role of the military as agriculturalists and hydraulic engineers.

Competition, Collaboration, and Innovation: Organization of the Water Supply for the Trajanic Frontier Fort in the Nabataean Settlement of Hawara (Southern Jordan)

Craig Harvey on behalf of John Oleson, University of Victoria, Canada

A Nabataean king, probably Aretas III, founded the settlement of Hawara in the Hisma desert about 80 km south of Petra in the late first century BC. Despite the low rate of precipitation (ca. 80 mm/year) and the high pan evaporation rate (ca. 3,400 mm/year) the settlement flourished through the harvesting of run-off water guided to cisterns and agricultural fields, and the output of a 27 km long aqueduct that brought spring water from the al-Shara escarpment. Hawara also benefitted from the passage of caravans along the adjacent King's Highway. Soon after the collapse of the Nabataean kingdom and the foundation of the Provincia Arabia by Trajan in AD 106, Roman engineers built a fort at the north edge of the settlement centre, renamed Hauarra, as part of their strategy for control of this new frontier area. The fort was designed for a garrison of about 500 soldiers and their mounts, probably a mix of detachments from the Legio III Cyrenaica and auxiliary soldiers. The supply of water to the fort would have been a primary concern, and the Roman engineers tapped into the Nabataean aqueduct to fill a reservoir and water distribution system within the fort. They also modified the free-flowing Nabataean aqueduct system with a stop-cock and pipe arrangement that fed water to a small heated bath southwest of the fort. The changes to the original system bring up interesting questions about competition, collaboration, and innovation in the changed urban environment of Roman Hauarra. Despite drastically increased demand on the Nabataean water-supply system, its built-in adaptability allowed continued growth of the civilian settlement.

A green desert in the hinterland of Petra: water, agriculture and military control in the Udhruh region (southern Jordan)

Mark Driessen, Leiden University & Fawzi Abudanah, Al-Hussein Bin Talal University

Access to water is one of the greatest global challenges of the 21st century. Scholars from different fields of research around the world are dealing with the ever-growing demand for, and with the severe supply constraints of water. Ancient societies dealt with similar problems. In the Udhruh region (southern Jordan) intriguing transformations in the organisation of water resources, agricultural systems, settlement patterns, communication networks and military control have been observed for the first half of the first millennium. The long-term development of innovative water management and agricultural systems around Udhruh – in the hinterland of Petra – turned the steppe into green oases. The Roman military deployment was enabled by and controlled the available water supplies which were pivotal for the earlier established agro-hydrological systems. This paper focuses on the recent results of our interdisciplinary research, whereby archaeological research is integrated with historical, geophysical, water resources, and chemical soil studies, to reconstruct the antique techniques which were employed to cultivate this arid landscape and the societal conditions that made these possible. From a societal perspective our aim is not only to examine what the key to this water management and agricultural success was in ancient times, but also how this knowledge can contribute to possible sustainable agricultural and water management solutions for future use.

Water and control along the later Roman Empire's south-eastern border

Walter Ward, University of Alabama at Birmingham

The control of water along the later Roman Empire's south-eastern border was imperative for survival. For the communities of Third Palestine, this meant controlling both the flow of

water and who could access that water. The territories of Third Palestine – roughly the Negev desert, southern Jordan, and the Sinai Peninsula – largely lay in zones that could not be farmed through rainfall alone. Communities, such as the towns in the Negev (like Oboda) and in southern Jordan (Petra, Udhruh), constructed elaborate water catchment systems in order to successfully practice agriculture. In a sense, these communities constructed their own oases in the arid terrain. Little information survives to inform us of how access to that water was controlled. Only one document from the Nessana Papyri (32) mentions access rights to water. In the Petra Papyri (17), the ownership and access to a water spout (collected from the roof of a building) were disputed and adjudicated. Several documents in the Nessana (31) and Petra (17, 39) Papyri also indicate that property was routinely demarcated by either water channels or wadis (dry creekbeds that flood during rainstorms). Others mention the ownership of cisterns, reservoirs, and water spouts. Nomadic groups, often called “Saracens” routinely lived and traveled throughout Third Palestine. An inscription found near the Azraq oasis in the province of Arabia notes that a reservoir was constructed because “Saracens” had killed several soldiers who drew water there (Iliffe, QDAP 10 [1942] 62-64; AE [1948] 13). Was there a conflict between the Saracens and the soldiers over who had access to this water? This paper will review the evidence concerning the control of water, both the collection of water and access to that water in Third Palestine. It will furthermore investigate whether there was competition between the sedentary and nomadic populations over water.

Irrigating the land, provisioning the caravans: water decline and military settlement at el-Deir (Kharga Oasis, Western Desert of Egypt), third-fifth century AD

Gaëlle Tallet, University of Limoges, France, and director of the el-Deir archaeological mission in Kharga oasis (Egypt), Jean-Paul Bravard, University of Lyon 2

The site of el-Deir (Oasis of Kharga, Western Desert of Egypt), on the southern border of the province of Egypt, developed around an exceptional fossil water resource, which allowed the cultivation of a vast irrigated perimeter at the service of a cash-crop economy, but also contributed to the supply of caravan traffic, that was necessary for the oasis connectivity. At the end of the 3rd century, however, the scarcity of water seemed to profoundly affect the vocation of the site, whose agricultural perimeter shrank drastically: the construction of a Roman fortress around one of the most important wells of the site (ca 280 AD) questions the imperial policy on the arid frontiers of the Empire and its implication in the various types of circulations through the Western Desert of Egypt. Our contribution will focus on the evolution of the modes of water capture on the site and its impact on the agricultural perimeter. The transformation of the economic model of the Great Oasis, made up of the two depressions of Kharga and Dakhla, from an agricultural model to a mode of exploitation focused on mineral resources (alum, ochre), occurred in a context of increasing scarcity of water resources, that seems to have affected the relations between nomadic and sedentary populations. However, the question of the type of regional policing justifying the erection of a network of fortresses does not seem to be reduced to a simple arbitration of conflicts of use, nor to the protection of an Egypt threatened on its border. Water management seems to have been at the heart of this military settlement, with the fortress playing the role of an organisational pole in a renewed oasis economy.

27. Brickyards of the Roman Army

27. Brickyards of the Roman Army

Session Chairs: Eckhard Deschler-Erb & Clarissa Agricola

Affiliation: Universität zu Köln, Germany

Affiliation of co-organiser: Universität zu Köln, Germany

Session Abstract: The Roman army was not only an effective military machine, it was also a highly important economic force. Especially in newly conquered regions, the sapper units of the legions established new infrastructure or made improvements to the existing one (roads, bridges, buildings, and even entire settlements). The raw materials and products required were mined or produced by the army itself. Brickyards, set up and operated by military units on a large scale, formed an important branch of production in this context.

Brick stamps and the remains of the brick yards themselves provide essential information with regard to the structure and organisation of the military production of architectural ceramics. Thanks to these studies we are able to understand and analyse an important aspect of the imperial economy in the Roman provinces.

During the proposed session, brickworks of the Roman army from western and eastern provinces of the Imperium Romanum will be presented and discussed. Especially in recent times, more and more attention has been paid to these workshops. We hope that some of the current research on the topic will be presented in the session. The following topics will be important/relevant:

- Topographical position (of the workshops) and relations to nearby settlements
- Infrastructure (working areas, kilns etc.)
- Production range (form and type of bricks, production of other goods like pottery)
- Questions of chronology
- Distribution (trade routes, organisation of trade, civilian or military consumers)
- Operators (legionary or auxiliary)

From loam to kiln, from clay to tile – making Roman ceramic building materials the whole way

Rüdiger Schwarz, Anna Langgartner, Römerkastell Saalburg / Saalburg Roman Fort, Thomas Hauck, Römischer Vicus Eisenberg, Tim Clerbaut, Ghent University

Practical approaches to the production of Roman ceramic building materials (CBM) are until now sparsely represented in the archaeological record, as well as publications on the construction and drift of Roman brick kilns. The available contributions on the topic describe merely parts of the production process. The Saalburg project comprises the whole process chain, extending from the construction of a life-size kiln model, via clay processing, making different types of Roman CBM to firing the products in the wood-fueled kiln, considering archaeological features from the site as far as possible. During the project three kilns have been constructed and fired, in each case with modifications and improvements compared to the previous model. Thereby the whole range of Roman CBM was manufactured, lateres in varying sizes and tubuli for hypocausts as well as tegulae and imbrices for roof coverings. Having started as an educational project in museum mediation, even scientific data were collected during the more recent stages of the project, and the firing was accompanied by extensive temperature measurements. The evaluation of these data allows for further targeted optimizations of the construction and firing. Scientific and technical analyses of the experimentally produced CBM reveal information about reached firing temperatures, quality of the products and allow conclusions concerning the original Roman raw materials.

The insights gained so far are promising and indicate the continuous development of the project towards a controlled chain of production.

Roman military manufacture of tegulae: the production techniques and their transfer

Tomáš Janek, National museum, Prague

This contribution focuses on the development of the manufacturing technologies of the Roman tiles and their transfer between the production centres. The first examined dataset comes from the legionary brickyard near ancient Vindobona. Various production technologies were identified based on differences in the shape of the tiles and treatment of the surface and were statistically evaluated. Standard photo documentation was supplemented with photogrammetry. The aim was to create 3D model without a texture to eliminate disruptive elements such as colour or calcareous sinter. The simulation of various light angles on a 3D model enables enhancement and identification of the traces left by worktools. The treatment of the surface was examined with the reflectance transformation imaging (RTI). Results show that every unit used unique shape of certain parts of the tiles which represents the arrival of a new manufacture technology. However, in several cases the overlap of technologies can be observed. The mutual influence between different working groups could be an explanation. In the case of Legio X Gemina also the material from ancient Noviomagus and Aquincum was examined. It allowed the successful identification of the development of certain manufacturing technologies and their transfer among the fortresses.

Just Another Brick (Kiln) in the Wall? The Newly Discovered Brickyard at Vindolanda and Its Relevance to Brick Production along Hadrian's Wall

Craig Harvey, University of Western Ontario

Recent excavations at the site of Vindolanda, located in the frontier zone of Roman Britain, have brought to light the remains of two kilns that shed new light on the production and supply of bricks and tiles along this Roman frontier. These kilns, located in the site's North Field, appear to be part of a larger industrial complex that also included a series of hydraulic installations such as wells and drains. Although the oven floors of these kilns do not survive, the largest kiln preserves its rectilinear form and stone-built supports, comprising pilasters and a central tongue-support. Such kilns typically date to late first century CE, but excavation of this area suggests they were primarily in operation from the mid-second into the third century CE. Surprisingly for a kiln site, excavation did not uncover large quantities of wasters; however, the presence of fragmentary brick and tile in nearby ash pits as well as a misfired brick of local clay confirm the site's production of this material. Nevertheless, the discovery of a possible figurine mold and what may even be part of a potter's wheel suggests that the production range of these kilns extended beyond brick and tile. This paper presents and discusses this newly discovered brickyard and places it within the wider context of brick production and supply along the Roman frontier in Britain. The seemingly small size of this production centre suggests that it was primarily intended to supply the needs of the site's auxiliary troops and the inhabitants of the adjacent vicus. Similar auxiliary brickyards have been found along this frontier, such as those at Brampton and South Shields, and when taken together, they allow for a more complete understanding of the distributed system of brick production that once existed in this region.

The military brickyard of Xanten: research history and a current status quo

Tim Clerbaut, Ghent University, Marion Brüggler, LVR-State Service for Archaeological Heritage

At the beginning of the 20th century, the remains of a rooftop oven came to light in the neighbourhood “Am Halenboom”, south to the current city center of Xanten. When the area further developed, further discoveries were observed and documented. Particularly in the 1970s the understanding grew of the site who could then be characterised as an large-scale military brickyard. The site has a long lifespan and a strategic position in the landscape in between the Colonia Ulpia Traiana to the north and the military camps of Vetera. Until now, only some small general overviews on the site have been published but the topic still lacks the attention and synthesis it deserves. In 2021, a new collaboration was forged to start a new research project on the site with the goal to study the site and its products in more detail, combining the various ‘building blocks’ documented over the years. The paper tends to present the first results of this study and add the a comparative narrative on military brickyards along the frontier of the Roman Empire in general.

Ziegelproduktion im Norden von Köln – Die römische Ziegelei von Feldkassel

Michelle Rossa, Universität zu Köln

Etwa 10 km nördlich der Colonia Claudia Ara Agrippinensium (CCAA) konnte in bislang zehn Grabungskampagnen zwischen 1963 und 2016, vier kleineren Maßnahmen wie Fundberichten und Baustellenbeobachtungen und einem Erkundungsflug eine römische Ziegelei des 1. Jahrhunderts n. Chr. aufgedeckt werden. Diese wurde im Rahmen eines Dissertationsprojektes aufgearbeitet und in den Kontext der römischen Militärziegeleien des 1. Jahrhunderts innerhalb der germanischen Provinzen gesetzt. Die Befunde umfassen sechs rechteckige Ziegelöfen in unterschiedlichen Erhaltungszuständen, Ausbauphasen und Größen, die das Herz des Handwerksbetriebes bildeten. Hinzu kamen drei Töpferöfen, Fundamente eines Werkstattbaus oder einer Unterkunft sowie vier T-förmig zueinander angeordnete große Trockenlagerhallen aus insgesamt 226 bekannten Pfostensetzungen. Um diese gruppierten sich zahlreiche, teils befestigte, Ton- und Schlammgruben. Auch ein mit Ziegeln eingefasstes Schlammbecken war Teil der Anlage. Das Fundmaterial lässt auf den Betrieb durch die legio V Alaudae sowie einen vermutlich privaten Ziegler mit enger Bindung zum Militär schließen, der seine Produkte mit dem Kürzel MLB kennzeichnete. Der Vortrag beschäftigt sich mit der Stratigraphie der Befunde innerhalb des Geländes und einer möglichen Belegungsabfolge, den ermittelten Jahresproduktionsmengen des Betriebes, dem Export und – nachvollzogen an den archäologischen Befunden – dem Verlauf des Produktionsprozesses. Aufgrund der Vollständigkeit der infrastrukturellen Anlagen stellt der Betrieb eine Besonderheit dar und verdichtet den Kenntnisstand der Baukeramikproduktion innerhalb der Nordwestprovinzen.

Who built the Castra Legionis in Viminacium?

Ljubomir Jevtović, Ivan Bogdanović, Institute of Archaeology Belgrade

Ancient Viminacium was one of the largest agglomerations in the province of Moesia Superior. The strategic importance of its location suggests an early date for its military occupation, yet up to this date, no traces of the early Roman settlement were identified in this area. Recent excavations have shown that the legionary camp was built in the second half of the 1st century AD. Two legions, legiones VII Claudia and IV Flavia, are well attested on the territory of Viminacium by epigraphic monuments and stamped CBM. The recent finds of stamped CBM seem to indicate that the camp was built by the Legio IV Flavia, prior to its move to Singidunum. In this paper, we will analyze mentioned finds, as well as other traces of the legio IV Flavia in Viminacium. Their epigraphic and morphological characteristics, as well as the preliminary results of the comparative analysis of the corpus and the spatial distribution, indicate that their presence was not a result of mere “trade”,

but that they could have been produced on the site. CBM industries of Viminacium were spread across two major production sites, both seemingly run by the Legio VII Claudia. We will re-evaluate the chronology of these sites, their layout, infrastructure, and attribution, as well as the other evidence that could indicate to earliest traces of CBM production in Viminacium.

The Brickyards of Legion IIII Flavia Felix from Dacia by early 2nd century AD

Alexandru Flutur, National Museum of Banat – Timișoara

Legio IIII Flavia Felix left a rich tile material in two sites of major importance for the province of Dacia: Berzobis (the legionary fortress) and Colonia Dacica Sarmizegetusa. The three stamp types emerging at Berzobis are different than those at Sarmizegetusa. Although the stamp text is the same – LEG IIII F F –, they may be divided into distinct types, for each stamp type a particular signaculum being used. The legion's tile material is spread also around the two brick production centres. However, these two areas do not interfere, the distance between the two settlements being of 72 Roman miles on the Trajanic road. The diffusion areas of tiles and bricks are rather larger since in the Middle Age and the Modern period they were re-used as building material. Within museal collections, the origin of some of the bricks was or became unclear over the course of time. Regardless, the LEG IIII F F stamp types were often presented as common for both discussed sites. Obviously, today, the definite presence of the Romans is no longer certain unless stamped tiles come from Roman date structures or archaeological levels. At Berzobis, the study of the tile industry may provide comprehensive results since the entire building material discovered to date belong to Legion IV FF. Its presence in Dacia has been framed between AD 101 and AD 119, yet the brick-making activity may be restricted to the period of AD 106 – AD 117. By early Hadrian's reign, the legion was moved to Singidunum. Furthermore, worth of study are also the parallels between the tile stamps of Legion IV Flavia Felix from the two centres in Dacia and the tile stamps of the same legion from Burnum and Singidunum.

Brickyards of Legio I Italica

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One of the most frequently discovered types of artefacts at Novae – the fortress of the first Italic Legion – is building ceramics, mainly tiles with legionary stamps. Primarily these are the marks of the legio I Italica, but also legio I Minervia PF and legio XI Claudia. The enormous number of tiles needed to cover the roofs of legionary buildings raises the question of where they were produced. There is also the question related to the origin of tiles bearing stamps of legions other than I Italica. Does this mean that they were imported? Or did detachments of these legions produce them in the brickyards of the I Italica legion? In order to answer these questions a prospecting study was undertaken in a radius of about 50 kilometres around Novae in order to determine the locations of the clay and the areas where the brickyards could have been situated. Fragments of roof tiles, the chronology of which could be precisely established, were also analysed. The presentation will address the results of these investigations.

28. Revisiting Roman imports

28. Revisiting Roman imports beyond the frontier. Investigating processes of movement

Session Chairs: Thomas Schierl, Fraser Hunter, Szilvia Bíró & Thomas Grane

Affiliation: Mühlhausen Museums, Germany

Affiliation of co-organiser: National Museum of Scotland, United Kingdom

Affiliation of co-organiser: Museum Savaria, Szombathely (HU)

Affiliation of co-organiser: National Museum of Denmark (DK)

Session Abstract: Finds of Roman objects outside the ancient Roman Empire attracted human attention even before the dawn of archaeological science, and their study has been an important research area even since. Initially, readily-identifiable Roman goods were understood as material evidence of events known from written sources, whereas today we reconstruct numerous – sometimes different, sometimes connected – mechanisms which caused often very heterogeneous distribution patterns of such objects. The causes and contexts of transmission of these items are still extensively discussed, and need to be researched in relation to place, time and context rather than assuming common processes.

On the 70th anniversary of Hans Jürgen Eggers's pioneering book *Der römische Import im freien Germanien*, our session seeks to explore the mechanisms by which Roman objects and ideas moved beyond the frontier. How far was trade a factor, and how was it organised? How can we tell this from other potential processes, such as diplomatic efforts, payment of subsidies, loot, or personal gain from military service? Can we recognise different mechanisms in different times and places, or for different materials? Some regions show indications that Roman objects were valued as raw materials, suggesting an important role of foreign objects as economic resources. Beside the finds themselves, how (and how often) is it possible to confirm the transfer of ideas or techniques? And how did distance affect matters? How did relations across the frontier to the neighbouring zones differ from those with more distant areas?

For the session, papers are welcome which seek to explore the means by which Roman goods and concepts moved beyond the frontier, the ways this changed in time and space, and the implications it had.

Luxury or resources? Roman objects in Germanic settlements – on the example of Ostwestfalen-Lippe

Hannes Buchmann, MLU Halle-Wittenberg, Institut für Kunstgeschichte und Archäologien Europas, Seminar für Prähistorische Archäologie

Since the begin of research of Roman objects in the *Germania magna* the interpretations and theories were strongly influenced by grave finds. But in the last decades it has got obvious that those insights need to be adjusted by settlement finds. For the understanding of the Roman objects it is not only important to focus on the Roman-Germanic relationships, but also on the role of these artifacts within the Germanic communities. For my PhD research I analyzed big settlement excavations of the Roman Iron Age in the region Ostwestfalen-Lippe (Western Germany). This region is located ca. 100 km to the west of the river Rhein, but was still closely linked to *Germania inferior* due to the Hellweg route and the river Lippe which was very important during the Augustean occupation efforts. Ten settlement sites were analyzed, dating from Latène D to migration period, but mostly in the late Roman Iron Age. The first aim was to record all objects of Roman origin so that there is a solid base for further considerations. All in all approx. 750 finds could be described, measured and photographed. Of course, many of them are fragments and therefore sometimes a Roman origin can only be suspected, for example in the case of bronze scraps. The most finds were sherds (ceramics and glass), fragments of millstones, bronze fragments, and coins. But also parts of bronze vessels, attachments, a reins management ring, scales and much more were identified. Especially the number of Roman tools is remarkable –

millstones, a drill, leather knives and a gouge for example. In a second step the Roman finds are set into the context of the features they are from and the indigenous finds from those features. This is necessary to understand the use and meaning of the Roman objects within the Germanic villages.

Dealing with changes of qualitative and quantitative aspects of the imported Roman metal objects within the Marcomannic settlement zone in the era of metal detecting

Balázs Komoróczy, Marek Vlach, Michaela Zelíková, Institute of Archaeology of the Czech Academy of Sciences, Brno

During the last two decades, the use of metal detectors has become a widespread hobby activity of thousands of inhabitants within the Czech Republic. Besides many aspects of this issue intervening in various spheres of archaeology and heritage care, this development has a clear and so far scientifically unrecognized impact on the transformation of the picture that archaeology generates about the material content of various metallic stages of prehistorical development. This impact is extremely evident in the archaeology of the Roman period and is reflected in a significant change in quantitative and qualitative aspects of the spectrum of Roman imports. This shift can be quantified especially in the category of brooches and coins, and they can be best demonstrated in case of some selected residential components. The finds originating through metal detector surveys show previously unknown degree of representation of Roman imports in some stages of the scoped era. This data can thus contribute significantly to the knowledge of culturally conditioned changes in flow of imports of certain find categories and also to a more detailed differentiation of the hitherto very homogeneous image of residential components in the Middle-Danubian Marcomannic settlement zone. Equally important, however, are some find assemblages reflecting individual specifics and indicating non-standard ways of acquisition of metal objects, which occurred mainly as a consequence of the Roman military presence during the Marcomannic wars.

Spatio-temporal patterns and interpretation possibilities of Roman pottery in the barbarian context of the Middle Danube region

Stanislav Sofka, Marek Vlach, Institute of Archaeology of the Czech Academy of Sciences, Brno

The objects of the Roman provenance occur in variable quantity and composition throughout the Germanic context of the Middle Danube region during the significant part of the Roman period. They constitute not only a proxy and indicator of contacts between the Barbaricum and the Roman Empire, but can also serve to identify relations within Germanic society. Therefore, its systematic registration, which is the subject of the ongoing project CRFB in the region of Moravia, significantly enriches the possibilities and potential of future research activities. Pottery, as most numerous category within the imported objects, provides a representative source of information for study of wide range of topics of Roman-Germanic relations and interactions during the Roman Period. Its analysis in spatial and temporal dimensions is being dealt with through the application of various geoinformation and formal analysis (multivariate statistics, GIS spatial analyses etc.). On basis of material processing from this region the question of various type preferences and possible trajectories of its distribution throughout the spacious extent of the studied region of the Middle Danube are about to be addressed. The collection of Roman-provincial pottery from the region and its comparison with other types of imported goods, as well as with neighbouring regions, could mediate further insights into important questions about trade and distribution during the Roman Period.

Asking 'why': exploring motivations behind the movement of Roman goods and concepts into Ireland

Karen Murad, University College Dublin

The movement of Roman material and cultural concepts into Ireland has long been considered to have been brought about through the mechanisms of trade, Irish raiding, or Roman diplomacy. These interpretations help explain the importation of goods and concepts, but they do not explain why it took place in the first place. Complicating interpretation is Ireland's close proximity to Roman Britain. One would expect to find more Roman material and more evidence for cultural influence throughout the Roman period given the nearness of the two islands; the paucity of it – particularly given the stronger presence of Roman material and influence in other, further frontier areas – raises questions about the mechanisms controlling the movement of Roman goods into Ireland. This paper is a report on a PhD dissertation in progress which is attempting to explain this very phenomenon. In this project, Roman material and cultural imports in Ireland are analyzed through the framework of elite emulation. In doing so, the products and legacies of Hiberno-Roman interactions are recast in an Irish context, and the movement of Roman material and cultural products is therefore able to be examined through Irish agentive action. This shifts the interpretation of Roman material in Ireland from the physical mechanisms of movement to the individual and social forces behind them. Centering Roman goods and concepts within Irish narratives of identity, status, and power can help explain why some aspects of Roman culture and material were imported while others weren't, and perhaps even why there are such different expressions of Hiberno-Roman contact regionally across Ireland. This paper will present preliminary findings and identify areas of further research, as well as discuss the strengths and weaknesses of elite emulation as an explanatory framework for Roman material and concepts in Ireland.

The shadow in the North; the influence of Roman metal exports on eastern Baltic communities

Marcus Ady Roxburgh, University of Tartu

The rise of the Roman Empire brought about profound social changes to large parts of Europe, including a vast increase in the production and trade of artefacts and raw materials, greatly influencing the lives of the people living inside the Empire and its frontiers. But much less is known about the impact of long-distance contact with peoples living far outside these frontiers. The eastern Baltic is such a region, where certain aspects of this past event may still be studied. Roman influence is very apparent on the metal personal costume ornaments found here. How and why did these items enter the region, especially in terms of their adoption and ongoing adaptation by local societies? Were goods produced in the Roman provinces really reaching the northern Baltic? Or are they local copies? This important new research investigates whether these past societies were in much closer contact than previously thought, offering fresh perspectives on their place in a global history.

Germani ite domum? Indications for transfer and Germanic reception of Roman military equipment

Suzana Matešić, German Limes Commission

The finds from the Thorsberger Moor in the borough of Süderbrarup in the county of Schleswig-Flensburg, one of the Roman Iron Age weapon deposits in Scandinavia and northern Germany, comprise several thousands of finds, mostly dating to the first half of the

3rd century AD. The biggest portion was deposited within three sacrifices of military equipment but only the deposition dating around 220–240 AD contained Roman militaria. In contrast to other more or less contemporaneous find spots, the spectrum of artefacts from the Thorsberger Moor offers a wide range of Roman military equipment which indicates that a small group of Germans served in the Roman army. The analysis of the Roman militaria has yielded interesting results, e.g. concerning the origin of the weapon parts from specific provinces of the Roman Empire. A wider analysis has revealed regions, that can be described as contact zones between both sides. Furthermore, Roman military equipment had an influence on indigenous Germanic weapon production. In addition to the use of Roman militaria, the adoption of certain technologies as well as decorative motifs can be detected. Some Roman objects were reworked to suit the Germanic sense of style. A peculiarity is represented by a richly decorated scabbard slide into whose cavity of the bridge – as one of the first steps – a small lead sheet had been incorporated. This hidden sheet seems to be interpretable as a curse-tablet (defixio) in the Graeco-Roman tradition and shows a connection of the craftsman or customer with the Roman Empire and therefore the transfer of ideas. The finds from the Thorsberg Moor offer an insight into the material legacies of a group that was apparently an intermediary of Roman culture for the Scandinavian region during the Roman Imperial period.

Hackbronze and Money. Two sides of the same coin on both sides of the Limes?

Anna Flückiger, University of Basel

On either side of the Northwestern Limes, Late Roman archaeological sites repeatedly feature small, intentionally fragmented copper alloy artefacts, or pieces of 'Hackbronze'. Beyond the frontier, their status as Roman 'imports' is often immediately deduced. Equally, their role as raw material for reuse and recycling remains largely uncontested. Originating from the finds of Hacksilver hoards in several parts of Europe, particularly outside the Empire, a large field of research has for years been dealing with the values and meanings of the latter. Meanwhile, Hackbronze does not receive the same attention. It appears that because of their seemingly clear function as recycling material and – compared to Hacksilver – the dispersed find distribution (e. g. within settlement contexts), a wider discussion on the value, meaning and cross-frontier movement of these objects was never deemed necessary. Recent observations paint a different picture. Indeed, there are indications that Hackbronze not only functioned as raw material but also held bullion value and may have served as a replacement for currency. Specifically, the decline of monetary value in the 4th century and the halting of the arrival of new base metal coins north of the Alps by ca. 400 AD may have led to this shift in the value and usage of copper alloy artefacts. Starting from a case study in Kaiseraugst AG (located on the Rhine Limes in modern-day Switzerland), as well as a wider study on published material from inside and outside the Empire, this paper seeks to further explore this field and widen the notion of possible uses of Hackbronze especially for regions beyond the Limes. Particular attention goes to whether, how, and for what period we can trace such an exchange system into – and inside – Barbaricum.

29. Cult & religious practices

29. Cult & religious practices

Session Chair: Dr. Ivan Radman-Livaja

Affiliation: Archaeological Museum in Zagreb

Of pigs and borders: lost in translation, found in interpretation?

Anton Ye. Baryshnikov, Lobachevsky State University of Nizhni Novgorod, Ljubica Perinic, Croatian Academy of Sciences and Arts

Based on the military religious calendar as well as the votive inscriptions dedicated by soldiers it is clear that religious observances created a certain social structure in the life of the soldiers as well as it ensured discipline, loyalty, rewards for certain credits or penalties, and the explanations of traditions. While being stationed in Sisak (Siscia), beneficiarius consularis Lucius Virilius Pupus, erected the monument dedicated to Jupiter Heliopolitanus. In his dedication, there is nothing out of the ordinary that couldn't be found on hundreds of votive inscriptions throughout the Roman Empire. What is compelling is the warning about bringing pigs near or at the monument that is written at the end of the inscription. While we may and will discuss whether that warning was for the accidental passers-by or was it for someone who wanted to honour the same god at the same monument, we are also offering two different perspectives from two sister disciplines. For a historian, this inscription can be utilized for the general narrative about religious cults of the Roman Empire or serve as a curiosity. Nevertheless, the understanding of this particular inscription requires more complex work, where archaeologists, historians, epigraphists do not follow the seductive easiness of 'big' interpretations but look at the evidence as it is. In general, this case once again highlights the need for an interdisciplinary and systematic approach to every source available, but also it indicates the need to revise existing data.

The Danube Horsemen Cult

Ozren Domiter, The Archaeological Museum in Zagreb

The Danube Horsemen Cult is a cult fusion phenomenon dated to the 3rd c. AD and the first half 4th c. AD. The highest density of chance finds is located on the fines of so-called middle Danube provinces. The Archaeological Museum in Zagreb preserves a dozen of such finds, lead plaques in particular. Some of them are well known to the scholars while some of them will be firstly presented in this paper. Combining spatial distribution of the finds with the typology of the plaques, iconographical analysis of depictions and the rare epigraphical evidences, my intention is to discuss the origin of the Danube Horsemen Cult, distribution of its artefacts along the fines and eventually detect worshipers of the Cult or their social affiliation at least.

A puzzling votive inscription by an officer of the cohors I Belgarum

Ivan Radman-Livaja, Archaeological Museum in Zagreb

An unpublished fragmented votive altar dedicated by a decurio equitum of the cohors I Belgarum equitata was brought from Dalmatia to the Zagreb Archaeological Museum between the two world wars. It remained in the storage rooms for many decades and was only recently noticed during the revision and databasing of the stone monuments' collection. While the name of the dedicant, Publicius Clementinus, his rank and unit are clearly stated, the name of the divinity appears in an abbreviated form which cannot be unequivocally interpreted. At first, the most likely reading appears to be [B](onae) D(eae) R(eginae) Aug(ustae) but this interpretation is riddled with uncertainties. Not only there are no analogies for this combination of epithets but it is also a rather unusual votive monument for a Roman soldier. The paper aims to present this monument as well as different, more or less likely interpretations.

Home is where the aedes is. Simulating Roman military identity and loyalty in locations of transition

Kelly Gillikin Schoueri, University of São Paulo/ Maastricht University

Dispersed across Europe, Africa and the Middle East, Roman soldiers found themselves in diverse locations and among hostile locals. As a means of mitigating the stress of this movement and unifying a multi-ethnic group, prescribed military religion was a constant and stabilizing observance. Indeed, an aedes, or sacred shrine, was mandated for the center of every Roman camp as a place to host the standards, the eagle and a bust or image of the emperor. But what about Roman military

personnel on the move? How and where might these symbols of military worship be manifested? What kinds of multi-sensory experiences would be evoked when encountering such mnemonic triggers? Insight into the ways official military religion was maintained outside of the camp may be provided from the case of the lararium from excavations at Area E of Apollonia-Arsuf, a site from late 1st cent. CE Roman-occupied Israel. The Roman style building at Area E has been recently re-interpreted as a Roman mansio or statio for the use of military personnel as a way of ensuring movement and control over a province dealing with the aftereffects of the First Jewish War (66-73 AD). Methods of 3D simulation and accurate lighting scenarios of the well-preserved niche-style lararium indicates an objective, non-verbal discourse between the occupants and visitors of the building. Using this virtual interpretation alongside historical and archaeological evidence and theories of multi-sensoriality, it is argued that the lararium of Area E's building should be considered an aedes for staging Roman imperial symbols of loyalty, duty and worship. Alongside these values, the physical and visual impact of such displays would have also provided a sensation of familiarity for military personnel far from home, in addition to re-orienting them as they move about the province and find themselves outside the official military camp.

30. The Pontic, Middle East and North African

30. The Pontic, Middle East and North African Frontier

Session Chairs: Radosław Karasiewicz-Szczypiorski, Emzar Kakhidze & Piotr Jaworski

Affiliation of co-organiser: University of Warsaw, Poland

Affiliation of second co-organiser: Batumi Shota Rustaveli State University, Georgia

Affiliation of third co-organiser: University of Warsaw, Poland

Session Abstract: Recent archaeological, numismatic, epigraphic and historical investigations into the history of the Roman and early Byzantine forts on the Colchian coast of the Eastern Black Sea as well as on various forms of Roman influence in the countries of the South Caucasus has shed new light on this oft-neglected part of the Roman Empire's frontier. The session aims to make known and discuss the results of these recent studies and thereby to contribute to an improved understanding of Rome's engagement in this part of the ancient world.

Roman watchtowers' system in the light of works of Polish Moroccan mission Tingitana Frontier Project

Maciej Czapski, Radosław Karasiewicz – Szczypiorski, University of Warsaw, Aomar Akerraz, Fadwa Benjaafar, Institut National des Sciences de l'Archéologie et du Patrimoine, Rabat, Layla Es-Sadra, Université Mohamed V-Rabat, Mustapha Atki, Université Hassan II de Casablanca

The Roman province of Mauritania Tingitana, established by the Emperor Claudius in the first half of the 1st century AD, was the furthest African part of the Empire. The province provided cereals, oil, fish products and wild animals to Rome. In a few cities, the local elite lived in houses of the villa urbana type, where magnificent mosaics have survived. Epigraphic sources provide us with information on the raids of neighboring peoples to the border zone and even to cities. On the other hand, we have a few information about the Roman units and their deployment at the provincial borders. The questions concerning the functioning of the border installations still remain unanswered and the system is not recognized today. The Polish Moroccan mission Tingitana Frontier Project, conducting border research in the vicinity of the city of Volubilis, is trying to find answers to these questions. The subject of the statement will be the presentation of the initial reconstruction of the deployment of the Roman observation towers, about which we have not known almost anything to date. Digitally created models of mutual visibility from exposed points, confronted with old and new archaeological data, shed light on the issue of controlling the movement of people and goods between the countryside of the province and barbaricum in this part of the Roman world.

Leisure facilities at the borders. The baths of the roman castellum of Tamuda (Tetouan, Morocco)

José Ángel Expósito Álvarez, Darío Bernal-Casasola, University of Cadiz, Tarik Moujoud,
Archaeological Site of Tamuda (Tetouan, Morocco)

In recent years, new archaeological research has been carried out in the roman fort of Tamuda (northern Morocco), in the frame of the EAT project (Economy and Crafts at Tamuda). A balneum was discovered in the eastern quarter next to the roman fort, which is probably the main baths of the settlement. Other little baths were identified before located in the center of the camp, possibly associated to an attached valetudinarium. These buildings are the only leisure facilities located in the roman fort of Tamuda. In this paper we approach to the activities in these baths, their chronology, the architectural elements as their contexts recovered through their excavations. The result is an interpretative proposal that explains the spaces and their internal itinerary both of them according to the parallels identified in other similar balnea located either inside or annexed to roman forts. Who used these baths? What activities were carried out in them? How was the supply of spring water? These will be the main issues discusses in this paper. Other evidences located in these contexts tell us about the activity developed in the fort. For instance, the defense at the borders is well attested in these contexts by an interesting new inscription associated with the so called Eastern Balneum, reused as an architectural piece located in the channel of drainage of the pool. Some weapons were discovered too in the course of the excavations carried out in these buildings, which show us how the daily live was in this context. In conclusion, this research allows us to properly approach the reality of the leisure facilities in the balnea of this Roman fort.

The Location of the Base of The Legio X Fretensis in Jerusalem after 70 A.D.

Ran Ortner, Bar-Ilan University

Dr Ran Ortner of Bar Ilan University, an independent researcher stayed at OCHJS -The Centre for Hebrew and Jewish Studies of the University of Oxford at 2020 as a visiting scholar, and worked on a Postdoctoral project and research under professor Martin Goodman supervision. His research dealt with the location of the legio dexima Fretensis Roman Legion base in Jerusalem after 70 A.D. this is a key question in a much wider research issue – reconstruct the nature and layout of late Roman Period Jerusalem. The Location of the Tenth Legion base puzzled scholars for as long as 130 years. from the 19th century till nowadays, many different researchers were trying to draw and reconstruct, post 70 A.D – Roman Jerusalem (known as Aeila Capitolina) while discussing the possible location of the Roman Legion base. as it became clear it had central significant influence on the city layout and nature. And yet, there is no agreement about any of the suggested identifications. As none of those researches yielded decisive archeological proofs (camp fortifications, gates, barracks, etc.) or alternative ideas for where those proofs should be. After examining researcher's different views and recent archeological data and consulting with some expert, I would like to suggest a new identification, locating the base camp on the upper temple Mount surface and underneath today's El-Aqsa Mosque. In addition, it is suggested to identified a group of roman 'military buildings' found in the 1970's below the south-west corner of the temple mount and newly discovered building from the 'city of david' excavations, as the vici (canabae) of Jerusalem. This 'military civilian' settlement developed alongside with the camp on the temple mount, according to the west roman province model.

Two Roman Military Conquests at Khirbet el-Maqatir, Israel: Archaeological Findings from the First and Second Jewish Revolts against Rome

Mark Hassler, Virginia Beach Theological Seminary

In 1995–2000 and 2009–2017, a village called Khirbet el-Maqatir was excavated in Israel's central highlands to determine the site's occupational history and material culture. The excavations uncovered fortification walls with defensive towers. The militaria included hobnails, slingstones, ballista balls, a sling pellet, arrowheads, a javelin head, metal blades, and equestrian fittings. The evidence led the excavators to conclude that that the site's late Hellenistic and early Roman settlement was founded in the second century BC, demolished by the Romans in AD 68 CE during the First Jewish Revolt (66–70 CE), temporarily occupied by Roman soldiers soon thereafter, then

occupied by a small Jewish population who reused the hiding complex during the Second Jewish Revolt (132–135 CE) before the site was abandoned until the late Roman and Byzantine periods. The discoveries contribute to scholarship in three ways. First, the Roman militaria helps to reconstruct the Roman army's strategy in the 68 CE attack. Second, one tower had a massive base of 28 × 16 meters, making it one of the largest towers in Israel during the Second Temple period. And third, the research develops our knowledge of historical events; namely, the process of Roman conquest of Judea and the events between the Revolts, including the Jewish hiding complexes.

Tel Shalem – a roman military camp in the Jordan valley

Eckhard Deschler-Erb, Sebastian A. Knura, Archäologie der Römischen Provinzen / Universität zu Köln

The ancient site of Tel Shalem is located about 11 km south of today's Beit She'an (ancient = Nysa-Skythopolis) in Israel. The site is located just above the Jordan Valley in a well-chosen strategic position for controlling the traffic axes. Known to researchers for a long time, the Archaeological Institute of the University of Cologne was able to carry out three excavation campaigns from 2017 onwards in cooperation with project partners in Israel (Israel Museum and Hebrew University of Jerusalem) and Switzerland (University of Basel). Since 2019, these excavations have been funded by the Gerda Henkel Foundation. The results are of utmost interest for the study of Roman military installations in the Middle East. With the help of geophysical prospection, it was possible in 2013 to detect a multi-period (?) camp within two fortifications measuring 2.2 and 2.9 hectares. The current excavations yielded outstanding findings, especially for the most recent phase of the military camp. In the principia, a multi-period aedes with a completely preserved mosaic floor (35 m²) was uncovered, on which, among other things, the name of the unit and that of the commander were noted. In the forecourt of the aedes, an honorary inscription for Emperor Caracalla (to be dated around 209) has been found, on which, in addition to the commander, a previously unknown governor of the province of Syria Palaestina was listed. In addition to the principia, parts of the barracks and a room in the presumed praetorium of the younger fort phase were also uncovered. The current last excavation of 2020 had to be abandoned because of Corona; a continuation is being planned.

Fearing the Parthian threat? Pontic-Cappadocian frontier area and Flavian military policy in the East

Victor Humennyi, Ivan Franko National University of Lviv

The Flavian organization of the Roman frontier in the Upper Euphrates and Pontic areas, first of all, was marked with the administrative changes, one of which was the creation of the large province of Galatia-Cappadocia. A military base was established in Trabzon for the Roman fleet to control the territories of the Eastern Pontus. Legio XII Fulminata was moved from Syria to Melitena by Titus (Ios. Bell. Iud., 7, 18), as early as by the end of 70 CE. In 70/71 CE Legio XVI Flavia Firma was stationed near Satala. The parts of Legio VI Ferrata or Legio III Gallica were also probably located near Samosata. The legions were not only intended to provide Roman control over the Euphrates and the Pontic area, they were the core of a powerful Roman military group in the region that could also perform offensive functions. In 72 CE, Vespasian found it necessary to depose Antiochus of Commagene and annex his kingdom to Syria, and then station a legion there. The size and composition of the garrisons were finally formed apparently in the time of Domitian and remained stable at least until the time of early Trajan's reign. Nevertheless, the garrisons of the East of Asia Minor along with Roman military activity in the Pontic coast are often associated with the nomadic, mainly Sarmatian threat. The paper discusses the military and administrative transformation in the area in an attempt to understand the function of the Flavian military garrisons and communications in its connection to Roman contacts with Sarmatians and Parthians. We can propose that Sarmatian invasions could stimulate the existing transformations but their global goal was to control of the Euphrates area, where the key rival of Rome still remained the Arsakids.

Legio X Fretensis in Colchis? Latest numismatic evidence from the Roman fort in Apsaros

Piotr Jaworski, Faculty of Archaeology, University of Warsaw

The vast majority of bronze coins discovered in the Roman fort in Apsaros on the coast of Colchis are issues of provincial mints of Judea and Syria dated to the 1st c. AD. Particularly numerous among the finds from Apsaros are the 'SC' coins minted in Antioch. The paper will aim to find an answer to the question of when and under what circumstances coins, the natural area of circulation of which was more than a thousand kilometers from Apsaros, were brought into the fort guarding Roman interests in a remote region of the South Caucasus.

Apsaros Fortress and its surroundings in the 1st and 2nd century AD. The first steps to reconstruction

Radosław Karasiewicz-Szczypiorski, University of Warsaw, Faculty of Archaeology, Shota Mamuladze, Batumi Shota Rustaveli State University

Since 2014, the Polish-Georgian Archaeological Expedition has been conducting joint excavations in Gonio (Georgia). The main goal of the project is to discover the remains of the earliest fortifications and buildings of the Roman fort Apsaros. In cooperation with specialists from other disciplines, the research also focused on searching the remains of an ancient harbour, places of clay extraction for the production of ceramic building materials, a quarry and other traces of land development around the fort. During several seasons of excavations were discovered, among others, stone foundations of two lines of defensive walls and garrison buildings: granary, bathhouse and commander's house. The architectural relics, identified so far, were assigned to three construction phases (Phase 1 – Nero's period, Phase 2 – Trajan's period and Phase 3 – Hadrian's period). All the collected data were used to reconstruct the fort and its surroundings at the beginning of our era.

31. Simulating the Limes

31. Simulating the Limes. Challenges to computational modelling in Roman Studies

Session Chair: Philip Verhagen

Affiliation: Vrije Universiteit Amsterdam, the Netherlands

Session Abstract: The increasing availability of large digital data sets requires archaeologists and historians to develop or adopt new analytical tools in order to detect and understand socio-economic and cultural patterns and to compare these at wider spatial and temporal scales. Simulation and other types of computational modelling are rapidly becoming a key instruments for this type of research. They are used to bridge the gap between theoretical concepts and archaeological evidence. These models can be of an exploratory nature, or attempt to closely emulate historical dynamics, and enable us to understand the mechanisms underlying, for example, e.g. population changes or economic systems.

Despite having access to large amounts of high-quality data, Roman studies have so far been relatively slow in adopting computational modelling, and Limes studies are no exception. The Limes is a particular case since each border region has its own characteristics, environmental setting, cultural background and specific relationship with the 'core' but also shares common features derived from being at the 'outskirts' of political, economic and cultural life. The interaction between these two dimensions is highly complex. Thus, the Limes constitutes an arena where formal modelling methods have particularly high potential. However, key challenges to this approach are i) the proper integration of archaeological and historical data sets; ii) a good understanding of what proxies to use, and iii) the computational power needed for modelling at larger scales.

We invite papers that showcase examples of modelling within the broader thematic setting of the Limes, taking these challenges into account. Suggested topics of interest are the economy of the Limes, urbanisation and settlement dynamics, demography, military campaigns, and relationships between the Limes, the rest of the Roman Empire and the zones beyond the frontier. Statistical modelling, GIS, simulation (e.g., Agent-based modelling), network models and other types of formal approaches are all welcome. Comparative studies are especially welcomed.

Modelling the Social, Economic and Demographic Trends at the Roman Eastern Frontier

Iza Romanowska, Olympia Bobou, Rubina Raja, Aarhus University

For almost 300 years wealthy Palmyrenes commemorated their deceased with portraits set up in elaborate family tombs. Now we can use this wealth of information to reconstruct the historical trajectories of the city's elite. We present an extensive analysis of over 3500 funerary portraits and other funerary data collected in the Palmyra Portrait Project and contrasted with other sources of data on the city's wealth and status as well as the historical timeline of the region. We examine whether the trends in portrait production can serve as a proxy for i) demographic changes in the city population, ii) social transitions or iii) economic phenomena. The results of the analysis demonstrate that broad historical trends in the portraits concur with our understanding of Palmyrene history, but the more detailed patterns highlight the impact of particular historical events over other ones. In general, the funerary data reflects the continuously changing socio-economic circumstances of the Palmyrene elite more closely than its demographic history. Although the outline of Palmyra's history is known thanks to written sources, large archaeological datasets can provide a backdrop to historical events by evaluating their impact on the communities involved. Thus combining historical and archaeological data enables us to gain a deeper and more nuanced understanding of the social and economic transitions that past societies underwent over century-long time scales.

Lost and Found on the Frontier: Modeling Forts and Landscape in Scythia Minor (4th-7th centuries A.D.)

Nathaniel Durant, Husson University

Between the 4th to 7th centuries A.D., the Roman province of Scythia Minor, located in modern-day southeastern Romania, was repeatedly overrun by Gothic, Hunnic, and other invasions from the north, which, according to literary sources, ravaged the countryside and even led to the capture and destruction of several frontier forts and settlements. Although this external stress may have not been on a daily basis, the sporadic yet destructive nature of the invasions coupled with as the repeated indications in the archaeological and historical records of foreign occupation of Roman land, suggest that the system of frontier forts were likely repeatedly modified and developed to combat these persistent threats. There is significant evidence that in setting up their frontier fortifications, the Romans took careful consideration of the surrounding landscape and opted for the most strategically viable locations. This study takes an interdisciplinary and spatial approach to determine which factors in the landscape played a major role in the placement of frontier fortifications during the 4th to 7th centuries A.D. by looking at the province of Scythia Minor as a case study. This project consists of a series of statistically generated predictive models, created from the spatial characteristics of extant frontier forts that reveal the most likely locations of "missing" forts in this province, focusing specifically on Vallis Domitiana and Ad Salices, two sites mentioned in the Itinerarium Antonini that are unattested archaeologically. Through these models and a number of other spatial methods including viewshed analysis, least-cost analysis, and remote sensing, this project addresses how the placement of Roman forts in Scythia Minor changed in this time period and what these changes reveal about the overall military strategies in this province.

Subsistence, surplus and trade along the Lower Germanic limes: modelling rural-urban socio-economic interactions

Philip Verhagen, Vrije Universiteit Amsterdam, Faculty of Humanities

Over the past 10 years, several research projects have focused on modelling the rural subsistence economy of the Dutch part of the Lower Germanic limes in order to answer the question whether the local population could provide the Roman military with surplus food. For this, various modelling techniques have been used, including GIS-based carrying capacity models (Van Dinter et al. 2014), agent-based models (Joyce 2019) and cellular automata approaches (De Kleijn et al. 2018). All these models have pointed to the possibility, if not the plausibility, of surplus agrarian production in the region, further supporting the hypothesis that food supplies for the Roman army were also obtained locally. In these models the investigation of socio-economic relations between the rural population and the urban centres has not played a significant role, even when a strong economic dependency

between the two can be assumed, given the widespread occurrence of imported goods in the countryside and the spatial configuration of the rural settlement patterns. The specific mechanics of economic interaction thus remain poorly understood, leading to divergent hypotheses on the reasons for economic and demographic growth and decline. In this paper I will present a first exploratory model that can be used to simulate rural-urban socio-economic interactions in the Lower Germanic limes. It departs from, on the one hand, understanding and modelling the processes of production and trade for some of the core goods involved, in particular agrarian produce, pottery and building materials. It then focuses on the decision-making processes of producers, traders and consumers: what were the socio-economic goals of these groups, what positions did they occupy, and to what extent could they adapt their economic behaviour to changing circumstances? In the end, this should allow us to identify to what extent dependencies and inequalities arose from internal economic dynamics, or were governed by larger political, social and environmental developments. The model will be applied to the town and surrounding countryside of Forum Hadriani (modern Voorburg), using the economic and demographic evidence and hypotheses presented by Buijtendorp (2010) and De Bruin (2017).

Are all nodes born equal? The application of spatial network analysis to assess the role of rivers in the Roman-era transport network of the Meuse basin

Toon Bongers, University of Ghent

Spatial network analysis has successfully been applied by de Soto in his fundamental study of the Roman-era transport network of Britain and the Iberian and Italian peninsulas.¹ De Soto focussed on the road network to deduce past political decisions, visualise chronological differences, and propose economic consequences. Since then, de Soto's method has been applied to the Roma-Era Scheldt basin to assess the role of the rivers in the transport network.² This study compared transport costs between several important nodes (i.e. agglomerations) and identified areas with a high degree of accessibility. The Scheldt basin was a well-connected region, facilitating exchange between northern Gaul, the North Sea coast, Britannia, and the Rhine frontier. Rivers constituted seasonal south-north oriented corridors essential in minimising transport costs. Nonetheless, the accessibility of sites depended primarily on access to the road network. This paper turns to the transport network of the Meuse basin. The results of this study connect to those of the Scheldt basin, allowing for a more comprehensive regional analysis and a comparison between two distinct regions of the northern Roman empire. The reconstruction of travel times will augment cost distance and accessibility analysis for the early, middle, and late Roman periods. Including settlement-, epigraphical-, and economic data will allow us to validate our results. This paper will produce regional maps that display transport costs, time, and overall accessibility within the network. These results cannot always be taken at face value and constitute (proposed) reconstructions of the past transport system and its economic characteristics. Although based on scientific data, our results are influenced by a general lack of data on Roman roads and Roman-era rivers, resulting in dead ends (i.e. dangles) and poorly documented regions. Furthermore, detailed data on both riverine ports (i.e. nodes) or waterborne goods often remain unpublished.

Exploring Economic Regionalism through Maritime Mobility: The Roman Red Sea and Beyond

Nicholas Bartos, Stanford University

Throughout the Roman period, lucrative maritime networks extended from the Red Sea to the Gulf of Aden and beyond, enmeshing people and goods from the Mediterranean, East Africa, Arabia, Western Asia, and South Asia into mutually constituted webs of production, exchange, and consumption. The development of economic communities at various scales and times across this space was conditioned not only by the differential involvement of regional participants, but also by the preferential opportunities and limitations of seaborne connection. Ancient and historical sources such as the *Periplus Maris Erythraei* and the 15th-century writings of Ibn Majid provide a glimpse into the dynamic marine topographies and diverse sailing technologies that mediated interaction. Yet despite the inaccuracies and incomplete coverage of these accounts, scholarship on the subject remains heavily reliant on the textual canon. Geographic Information System models provide an additional and underutilized perspective to address the various factors that shaped movement and

social formation across the Roman Red Sea frontier. This paper will present a new cost-surface analysis for Roman-period sailing in the Red Sea and the Gulf of Aden, to my knowledge the first attempt to use geospatial software to formally model sailing times in this area and period. It will outline the methodological challenges and potential of a case study that utilizes modern coastal/off-shore wind and current data alongside a proxy for ancient vessel performance at different points of sail. It will then relate the results of voyage simulations between contemporaneous ports with the extant material record, especially ceramic networks. While these combined datasets in part serve to highlight probable missing links and archaeological lacunae, they ultimately reveal the complex human geographies and socioeconomic entanglements at this cosmopolitan edge of empire.

Connectivity and the Roman army on the Lower Danube – a GIS approach

Ioana A. Oltean, D Ciprian Lungescu, University of Exeter

The Lower Danube Roman limes represents a complex archaeological landscape, with numerous military sites along the border of the empire set within a distinct cultural setting and a challenging ecology. Instead of watching over a neat river line, its edges clearly defined and visible to all, the Roman bases were stretching along the border of the Danube floodplain – a flat, up to 30-kilometres wide world of swamps, marshes and lagoons, rushes and reeds, floating islands and wooded patches of land interspersed with winding river channels constantly exposed to silting. This study uses Geographic Information Systems (GIS) spatial analysis, including Least Cost Path and Viewshed analyses, to better understand the positioning and the connectivity potential of Roman military bases in Dobrogea (Romania). The results allow us to assess the ability of the Roman army to function as a coherent system and the challenges to be overcome in order to efficiently control this sector of the limes. Moreover, through a range of scenarios considered, our modelling approach will highlight areas along this limes sector where additional sites may be confirmed by future research.

Modelling supply logistics and strategic aspects of the Roman military presence in the Middle Danube region during the Marcomannic wars

Marek Vlach, Balázs Komoróczy, Institute of Archaeology of the Czech Academy of Sciences, Brno

Campaigning and expeditionary form of deployment of any army inevitably generates a wide range of requirements and needs. In the ancient world, particularly the Roman army excelled in supporting and sustaining substantial armed bodies dislocated and dispatched to all kinds of environmental settings. Roman-Germanic relations in the Middle Danube region during the Roman Period are characterized through the wide range of forms of interaction, oscillating between violent confrontations and diplomatic and economic relations. Despite the conflict periods cover a considerably lesser proportion of time, some of them had far-reaching implications towards the overall relations and geopolitical situation. The most significant Roman-barbarian conflict has occurred during the reign of emperor Marcus Aurelius and is traditionally called the Marcomannic wars. The present state of knowledge gradually tends to comply with the surviving narratives describing the large-scale occupation of the barbarian region. A simple emulative agent-based model was established to address some of the featuring aspects of the Roman military intervention into the barbarian territory during the conflict. Its explicit nature comprises formalized properties of the modelled environment (e.g. geomorphology, movement friction, local population density) and several types of agents (army units, garrisons, on-land/river transportation means). Their movement is solved both using the least-cost path and network structure. Based on the existing data and proxies (archaeology, Roman historiography, etc.) it aims to test assumption about conditions of the Roman military presence in the hostile territory and its occupation, amongst others the capacities to control and supply logistics.

The Weight of Roman Reign

Kira Lappé, University of Vienna

In reconstructing the Limes, new data sets need to be looked at that have been scarcely used or completely overseen in former research. In the interdisciplinary project “The Anthropocene Surge”, the case study of Vindobona – Vienna has been chosen to study the human impact on the ground

from Roman times until today, using uncommon data sets and approaches. Vienna offers a huge data basis with more than 63,000 well cores drilled over the past 190 years, providing deep insights into the city's 2,000 years of history. The knowledge of archaeological strata of the area is complemented by more than 1,200 digitised records of the excavations produced by the Urban Archaeology Division Vienna. As a novelty, both data sets were combined to give numbers to the anthropogenic ground, including thickness, volume, and mass. Challenges include the preprocessing and integration of those heterogeneous data sets and the handling of information that have not been recorded by archaeological professionals (i.e. the description of material and layers of the well cores by drillmasters) and the incoherence in detail and accuracy that often accompanies large data sets. Geostatistical methods (primarily Sequential Gaussian Simulation) are used to interpolate the lower boundary of archaeological-anthropogenic strata, which builds the basis of a 3D model of human-made deposits. By including the materials documented in the well core logs, the change over time is sought to be explored, the layers of the Roman period are thus placed in relation to the later periods of the city and urban development. Although during the last fifty years the accumulation of anthropogenic ground has increased rapidly, the imprint of the Roman reign is still clearly visible in the city's subsurface.

Take me home, Roman road: A model of the Roman terrestrial transport network, Challenges of data collection along the Limes

Adam Pažout, Tom Brughmans, UrbNET Centre, School of Culture and Society, Aarhus University, Pau de Soto, Universitat Autònoma de Barcelona

Itiner-e is an open online gazetteer of ancient roads. It aims to become an online platform for a community of scholars to explore, query, download and edit historical road data, leading to a continually improving resource. The first Roman road data is currently being added within the context of projects Viator-e (<https://viatore.icac.cat>) and MINERVA (<https://projectmercury.eu>). These projects aim to draw on all available historical and archaeological data to develop a model of the Roman road system in high detail across the entire Empire. Existing digital models of the entire Roman imperial transport system exist at a coarse level of detail that is not representative of our current knowledge of Roman roads or of geographical structuring. However, much more detailed regional and local summaries of the historical evidence for Roman roads exist, and the remaining challenges rely on digitizing and integrating these. The resulting dataset can be used to perform GIS and network analyses of specific regions or the empire as a whole and can be improved with up-to-date scholarship by a community. In this presentation, we will introduce Itiner-e and the challenges related to collecting and digitizing empire-wide Roman road data, using the Limes in the Roman east as an example. Particular attention will be paid to exploring best practice of the collection and integration of historical, epigraphical and archaeological datasets. These are highly diverse in their temporal and spatial resolution and in the level of information they provide, ranging from traveller's accounts of the 19th century to the high-resolution surveys of recent decades. We will explore the limitations presented by primary and secondary literature and evaluate the contributions of topographical maps and remotely sensed data.

32. Frontiers of the Roman Empire

32. Frontiers of the Roman Empire. World Heritage across three continents

Session Chairs: Marinus Polak, René Ployer & Stéphanie Guédon

Affiliation: Radboud University Nijmegen, the Netherlands

Affiliation of co-organiser: Bundesdenkmalamt Österreich, Austria

Affiliation of second co-organiser: Université de Limoges

Session Abstract: Since the early 2000s it has been the ambition to create a UNESCO World Heritage Site encompassing all the frontiers of the Roman Empire, across three continents. If the World Heritage Committee accepts the recent nominations of the western part of the Danube Limes (2018)

and of the Lower German Limes (2020), all of the European frontier sections from the Antonine Wall in Scotland to the Hungarian/Croatian border will be part of the World Heritage List by the time the 2021 Limes congress will take place. The nominations of the eastern part of the Danube Limes and the Dacian Limes are expected soon to follow.

It is evident that the frontiers of North Africa and the Middle East have much to contribute to a shared world heritage monument, by their very different landscape setting and their many impressive aboveground remains. It is the aim of the proposed session to strengthen the bonds between archaeologists and heritage experts from the three continents, to obtain a better view of the remains of the frontiers outside Europe and to explore their potential to meet the requirements of World Heritage. Another focus should be the consideration of the possibilities for a common management system for the Frontiers of the Roman Empire.

The session will be open to comparative analyses of frontier sections, to overviews of remains of frontiers outside Europe and their history, of distinctive characteristics of these sections and to preservation and management. Colleagues from North Africa and the Middle East are emphatically encouraged to participate. The session is not intended for papers discussing individual sites.

Frontiers of the Roman Empire: World Heritage across three continents – Context of the session

Rien Polak, Radboud University (Nijmegen, NL), Stéphanie Guédon, Université de Limoges (F), René Ployer, Bundesdenkmalamt Österreich (AT)

This introductory paper sets the context of the session. The history and development of the representation of the Roman frontiers on the UNESCO World Heritage List are briefly outlined, against the background of the concept of World Heritage: the purpose of the List, and why and how the Roman frontiers qualify for it. The main lines for the development of the Roman frontiers as World Heritage were set out in 2004, but a revision of the guidelines of UNESCO necessitated a revision of the strategy in 2017. Since 2021 five frontier sections in Europe are part of the List, stretching from Scotland to Slovakia. It is expected that the remaining European parts will be nominated in the next few years. In the meantime, preparations have started for the nomination of the frontiers in the Middle East and North Africa. In view of the distinct characteristics of the frontiers in these areas the framework used for the selection of frontier sections in Europe may have to be reviewed. This is only one of the many challenges involved in the extension of the concept to other continents. Other topics which will be addressed are the aims and benefits of inscription on the World Heritage List: is it still worthwhile to nominate further frontier sections? And how do we deal with changing ideas on what Roman frontiers were about?

Roman Syria in view of the UNESCO World Heritage Cluster Frontiers of the Roman Empire

Markus Gschwind, Bayerisches Landesamt für Denkmalpflege

Firstly, due to different political, cultural, geographical and climatic conditions, the Roman army applied different approaches of frontier control in Europe and the Near East. Secondly, there were changing approaches in military deployment from the 1st century BC to the 7th century AD, and thirdly, there are differences in monument preservation due to different building materials and different post-Roman settlement histories. All these aspects have to be considered in the context of the UNESCO World Heritage cluster „Frontiers of the Roman Empire“. The paper will attempt to give a rough overview of the aspects of the Frontiers of the Roman Empire in Syria that have to be taken into account to meet the criteria of World Heritage. In this context the question will arise as to whether the criteria developed for the European World Heritage Site „Frontiers of the Roman Empire“ can be transferred one-to-one to the Near East.

Le Limes de Tingitane

Aomar Akerraz, Institut National des Sciences de l'Archéologie et du Patrimoine

“Le Limes de Tingitane” a fait l'objet de nombreuses publications dont les dernières sont celles que lui ont consacrés M. Euzennat et R. Rebuffat. Ces derniers ont consacré leurs travaux sur le système

défense en Maurétanie tingitane, en particulier dans les régions entre Volubilis et Sala. Des prospections récentes ont permis de dresser une carte plus précise du système défensif aussi bien au sud qu'à l'est de la province romaine de Tingitane. L'intervention propose de fournir une synthèse des travaux anciens et récents sur le limes de cette province limitrophe de la Césarienne et de la Bétique.

The Frontiers of the Roman Empire in North Africa

Mustapha Khanoussi, Institut National du Patrimoine – Tunisia

Unfortunately, the interest shown by the European countries concerned in the recognition of the Frontiers of the Roman Empire as part of the cultural heritage of humanity has not yet been shared by the countries on the eastern and southern shores of the Mediterranean. Far from it. Of the eight countries in these regions that have archaeological remains of these frontiers on their territories that remain to this day, only Tunisia has joined the European countries by inscribing the segment located on its territory on the World Heritage Tentative List in 2012. On 11 February 2021, on the initiative of the Permanent Delegation of Austria to UNESCO and in cooperation with the World Heritage Centre, an informal international conference was held by video conference with the participation of diplomats, focal points and experts from the countries involved in the FRE World Heritage project. In response to the aims of the conference, and as a conclusion to my presentation entitled "The Frontiers of the Roman Empire in North Africa" at the conference, I put forward some proposals to engage the interest and participation of the Maghreb and Near East States Parties in this endeavour. The echoes gathered from colleagues, diplomats and archaeological heritage officials from different countries after this presentation give hope that there is today a real interest in the conservation and valorisation of the frontiers of the Roman Empire and that there is an undeniable will to strengthen international cooperation, especially North-South, with a view to ensuring the inscription of the segments of the countries of the southern and eastern shores of the Mediterranean on the UNESCO World Heritage List. My paper aims to return to this issue and to initiate a discussion between experts on these proposals in order to define an action plan for the coming years.

Frontiers of the Roman Empire-UNESCO World Heritage and frontier perspectives

Stéphanie Guédon, Limoges University

The general approach developed for the nomination of the Frontiers of the Roman Empire in Europe as World Heritage is focused on a traditional point of view, that is to say Romano-centric. This focus, based on a long historiography, had major consequences for the way of considering the peoples living near Roman frontiers and their relationships with the Roman world. The renewed discussions on the notion of Roman frontiers, and the interest in the Roman borders all around the Mediterranean and in particular in the MENAT* zone, that present distinctive landscapes and physiognomy, invite us to shed review the approach of the so-called Roman frontiers and their implications in terms of human settlement, not only military. The objective of this paper is to give new keys of understanding that could enrich our representation of the Roman frontiers, their perception as a World Heritage and their preservation. * Middle East, North Africa and Turkey

Communicating The Frontiers of the Roman Empire: European Interpretation Frameworks as a Blueprint for the North African Limes?

Christof Flügel, Bavarian Museums Service Munich

The approach of Interpretation Frameworks (IF) for selected sections of the Frontiers of the Roman Empire World Heritage site has now been successfully implemented in several sections of the FRE, starting from Hadrian's Wall and the Antonine Wall, as well as in Austria and Bavaria and along the Dutch Lower German Limes. An IF is currently being drafted for the ORL. In the first part of the paper we will present the general principles of IFs. The second part will focus on the questions can these principles can be transferred to the sites of the North African Limes or what solutions may be feasible for communicating this important section of the FRE to the general public, taking into

account our experience in creating the archaeological park “Quartier Didon” at the World Heritage Site at Carthage (Tunisia).

Living Danube Limes

Ivana Ozanic Roguljić, Mislav Fileš, Institute of Archaeology, Zagreb, Croatia, Nemanja Mrdjic, Insitute of archaeology, Belgrade, Serbia

Living Danube Limes is an EU funded Interreg Danube Transnational Programme project and focuses on connecting, enlivening, researching, preserving, and highlighting the Roman Danube Limes as a transnational cultural heritage of enormous significance to create a sound foundation for a future European Cultural Route. Living Danube Limes stands for valorizing cultural heritage and fostering sustainable tourism by living the common heritage on the Danube Limes as the basis for a cultural route. The project consortium comprises 19 universities, private and public companies from 10 Danube countries, and 27 associated strategic partners. Outputs of the project are the reconstruction of a Roman Danube ship of the 4th century AD. The ship is going to be built using a Roman tool replica, and it will cruise down the entire Danube in 2022 to highlight the connecting character of the Roman Danube Limes. Various research gaps will be closed by applying modern non-invasive archaeological geo-prospection at chosen pilot sites. A Living Danube Limes app will be created to host a comprehensive and easy-to-access archaeological and historical catalogue of the Danube region. Virtual and augmented reality reconstructions of the original Roman Limes infrastructure will be created from the data of the geophysical prosecutions at the project pilot sites and will then be hosted on the Living Danube Limes app. The establishment of a transnational museum cluster will further the typical presentation of the Roman heritage in the Danube Region. The Institute of Archaeology from Zagreb (Croatia) and the Institute of archaeology from Belgrade (Serbia) are project partners in the consortium, and in this paper, we will present the results achieved during the project duration.

From Limes Invisibilis to the UNESCO World Heritage Property – The Danube Frontier in Serbia

Ivana Kosanović, Milica Marjanović, Nemanja Mrđić, Institute of Archaeology, Belgrade

In recent years Roman limes in Serbia became part of a phased, trans-national UNESCO world cultural heritage project “Frontiers of the Roman Empire”. In 2015 a tentative list with sites from Serbian part of the limes was submitted to UNESCO. The national Working group for the nomination of Limes was founded in 2019 by the National Commission for cooperation with UNESCO. These two milestones were turning points for the further development of this complex cultural property in Serbia. Most sites on the Limes have been forgotten and neglected for decades, up to the level that legal protection or cultural property status were never resolved. Today, the importance of the limes is slowly but surely being recognized by both the government and local authorities. Many actions have been undertaken with final goal to improve the state of the limes – the process of legal protection, conservation and presentation of individual sites has begun on many sites. On several sites drone imagery and geophysical surveys have been conducted, while some of them are systematically excavated for the first time. The digitization project of old field documentation from limes has begun, as well as making of the archeological map of Serbia, with limes sites as a test sample. Major project of underwater Sonar surveys in the area of the Iron Gate gorge was conducted, resulting in determining the state of preservation of the remains and a more precise position on the sites. Sites that were submerged in 1970 after building of the Djerdap I Hydroelectric power plant dam are proved to still stand. Several national and international projects were initiated in recent years, such as Itinerarium Romanum Serbiae, Danube Limes Brand, Living Danube Limes, Modeco 2000, all of them directly or indirectly affecting the improvement of the conditions, promotion, visibility, and recognition of the limes. All of these endeavors will hopefully provide the limes sites the attention they deserve and ultimately result in their inscription on UNESCO world heritage list.

Developing a management system for the FRE WHS?

Rebecca Jones, Historic Environment Scotland

When the Thematic Study and Nomination Strategy was presented to UNESCO, it proposed a management system and overarching framework to support international collaboration: A Frontiers of the Roman Empire World Heritage Cluster. This is the first such initiative for World Heritage. “[the Cluster] will enable us to expand from individual sites and properties to an overarching European monument, which may grow to include parts from other continents in the future.” (Ployer et al 2017, 107.) If you consider that the founding mission of UNESCO in 1945 was to advance peace and security by promoting collaboration among nations through education, science and culture, transboundary WH properties should be held up as a paradigm of that desire to ‘develop friendly relations among nations’ and ‘achieve international co-operation’ (United Nations 1945, Chapter 1, Article 1). Yet the realities of both modern-day geopolitics and the necessary bureaucracy that is required both for inscription and staying on the World Heritage list, has resulted in various challenges and a change from the initial vision of a single World Heritage property covering some 20 countries to manageable segments, each defining their own Outstanding Universal Value as a Frontier of the Roman Empire. But the desire to somehow manage these together as a ‘cluster’ meets those high-level aspirations for countries to cooperate on the identification and management of their shared cultural heritage. This paper will consider common approaches for a management system for the FRE cluster, looking at the methods used by other transboundary WH properties.

33. General Session I

33. General Session I

Session Chair: Dr. Harry van Enckevort, Dr. Tatiana Ivleva

Affiliation: Municipality of Nijmegen, The Netherlands

Affiliation: -

Session abstract: The general session will deal with subjects that do not fit into the other sessions because of the issues raised. Given the importance of these subjects, they deserve a place on the congress programme. Therefore, this session offers a wide range of interesting papers.

The Roman Aqueduct of Noviomagus

Paul Kessener, Radboud University / independent researcher

Although since over a century it had been thought from the existence of man-made valleys to the east of the modern town of Nijmegen (the ancient valleys Kerstendal and Louisedal) that an aqueduct provided Noviomagus with water, it is only in the 1990's that a first attempt was made to envisage a route map. When from additional investigation it appeared that water could have flown only in reverse direction a new route map was set out that unexpectedly included three unexplained earthen dams and a shallow ditch in the woods to the east (Cortendijk, Swartendijk, Broerdijk, ditch Marienbosch). This led to a research project initiated by the Dutch Cultural Heritage Agency (RCE) followed by publications in 2005 and 2011, concluding that the investigated route plus the earthen artifacts were in all probability related to an aqueduct running from springs in Berg en Dal to the Roman Castra on the Hunerberg at Nijmegen, although no physical remains of a water channel had been found. Subsequently the route was given the status of Rijks Monument. However, because of the ‘non-existing’ channel doubts arose, leading to speculative articles in local and national press. Then, in 2017 RAAP published a report on behalf of the (successful) application for the Lower German Limes to be accepted in the Unesco World Heritage Program, with additional supportive arguments about the presumed Noviomagus aqueduct. Finally, in 2020 – by pure chance – a section of the aqueduct on the spot where its route was envisaged came to light, eliminating any doubts about the historical water way, its channel thought made of wood. The 5 km Noviomagus Aqueduct for the Flavian Castra at Nijmegen is the largest still visible monument of the Roman Limes in the Netherlands.

Depictions of Fortifications in Roman Art as source for their reconstructions

Paper based on the same material, but mainly dedicated to the peculiarities of these masterpieces of art should be presented in conference "Actual Problems of Theory and History of Art IX" in Saint-Petersburg (25-30th of October 2020). The main topic of Limes paper is examination of these depiction as sources for reconstruction. We will not touch this topic in Saint-Petersburg conference, or will touch very briefly. That is why our answer is "No". Abstract of Paper (max 300 words):: There are many examples of fortifications' depictions in Roman art. The goals of this paper are to classify the examined depictions, to analyze their features and meanings and to reveal the details of the fortresses' architecture, about which there is little information in the archaeological databases. The depictions can be divided into several types according to the branch of visual art and the objects containing the depictions. Simplified axonometric views of whole cities or frontal elevations of gates depicted on coins, medals and in codices. Models imitating Roman forts: ceramic incense burner (Egyptian museum, Turin), clay model of a watch-tower (History museum, Regensburg) and two rectangular bronze braziers. The first one looks like a small square castellum with an open courtyard, and the second one is shaped like a round tower or a Roman mausoleum. Depictions in frescoes and mosaics. There are two main types: the depictions of cities or gates which are close to those on coins and in codices, and floor mosaics with the images of square wall enclosures often connected with labyrinths. Belt buckles shaped like gates. One of them (middle of III century), which was found near Abritus, is of particular interest. Sculptural depictions. They are the reliefs in the Trajan's Column and the Column of Marcus Aurelius, the city wall's depiction from Tabula iliaca, the so-called city-gate sarcophagi and early Christian ivory reliefs depicting cities' walls as architectural backgrounds. The examined examples contain important information about the design of the Roman military architecture. For example, one can see either flat roofs of the towers convenient for artillery, or considerable variations of towers' tops: cone-shaped, small domes etc., even rotundas. There are also some depictions of the galleries on the walls' and gate's tops and the others peculiar features.

Evidences of practice camps in Hispania: the Legio military complex

Angel Morillo, Complutense University (Madrid), Brais Curras, Almudena Orejas, IH-CSIC, Agostino Nobile

Finished the conquest of Hispania, a military policy based on long-term occupation was established. The deployment of the Roman Army in the northwest of the Iberian Peninsula was maintained during centuries. Military field training on castrametation and manoeuvres were undoubtedly habitual activities of the troops and part of their disciplina, as is known from literary sources. In this paper we present archaeological evidence of practice camps in Hispania. We pay special attention to the new complex of San Andrés de Rabanedo/León, in the surroundings of legionary fortress of Legio (León). Research based on remote sensing techniques (historical aerial photography and LiDAR) and fieldwork has allowed identifying up to 18 Roman military camps. Here we propose an interpretation as practice camps, arranged on a flat platform, with a great visual dominance over the Bernesga valley and the legionary fortress. Some of these practice camps are partially preserved, they show different orientations but all of them share the typical rectangular plan with rounded corners. They are located 4 km from the place occupied successively by legio VI victrix and legio VII gemina. The camps are also placed around the Roman road from Legio (León) to Asturica Augusta (Astorga). After the analysis of the Legio military complex, here we propose a model for the archaeological characterization of entrenchment camps, which can also be observed in other Spanish military sites such as Villamontán or Castrocalbón. Proximity to a military legionary fortresses and the relationship with the road system seem to be definitive elements. The existence of unfinished camps or the construction of different sizes and orientations are also indicative features. Several similar clusters are known throughout the Empire, especially in Northern provinces.

The last legion on the Limes Delmaticus – VIII Augusta

Željko Miletić, University of Zadar Department of Archaeology, Silvia Bekavac, University of Zadar Department of Art History

Recent archaeological research has provided arguments in support of the thesis that a vexillatio of LEG VIII Augusta was stationed in the area of the Burnum on the Limes Delmaticus, after Leg IIII Flavia Felix left Dalmatia for Domitian's Dacian War. In the layers from the first construction phase of the military training camp (campus) from Claudius' time, there are tegulae with the LEG XI CPF stamp, and in the second with the LEG VIII AVG stamp. Intensive brick production, and thus construction activity of the unit indicates that the possible reason for stationing the legion (or one its vexillatio judging by only the few tombstones of active soldiers) in Burnum is the logistical preparation for Trajan's campaign in the Second Dacian War. Food, water, and an accommodation were to be provided for the Praetorian cohorts and the manpower and livestock of the expeditionary army on their way through the province of Dalmatia. In Trajan's period, a water supply facility was built in Iader with the funds of the imperial fisc. An unknown military building whose roof was covered with tiles of the VIII Legion once stood in the municipium of Asseria, and a military training ground was renovated in Burnum. One of the few scenes on Trajan's Column depicting a journey through Dalmatia takes place in Burnum. Part of the retinue that welcomes Emperor Trajan, who arrives from the colony of Iader via the municipium of Asseria, are two soldiers depicted in a stylized fortress in one episode on Trajan's Column. The authors recognize them as legionaries of Legio VIII Augusta. At the latest after the end of the 2nd Dacian War, with the departure of the VIII Legion, Dalmatia became a provincial inermis.

Semi-rigid scale armour. New insights into a classical Roman armour through a systematic study of the evidence

Martijn A. Wijnhoven, Vrije Universiteit Amsterdam

Scale armour had already been around for centuries when the Roman army started using it. The army soon made it their own, modifying and perfecting it to their particular needs in warfare. One such adaptation was the introduction of semi-rigid scale armour during the Antonine period. Instead of having to rely upon the scales being fastened to a base-garment, the scales were now permanently fixed to each other by metal wire. The gain was a much more stable armour, less prone to wear or accidental loss of scales. However, as indicated by its name, the new armour type was also much less flexible. Although the concept of semi-rigid armour is familiar to most specialists, not much else is known. The main culprit is a lack of systematic study that takes into account the entire body of evidence, instead of focusing upon one or several archaeological finds. This paper will demonstrate that there are many insights to be gained by adopting such an approach.

Challenges for Auxilia Veterans in Going Home

Jared Kreiner, Christopher Newport University

The question of veteran settlement, especially of former legionaries, is widely discussed in Roman military studies. These discussions have largely focused on the question of where veterans tended to settle, in the frontier zone near military camps or in their homelands. For the former, in addition to statistical analysis of inscriptions and military diplomas, scholars have frequently assessed the positive reasons for veterans staying near where they had served, namely that these frontier zones are what former soldiers had known for most of their adult life, their potential business connections, and an unwillingness to uproot their families. Little, however, has been stated concerning the potential negative reasons for veterans of auxilia units deciding to not return to their homelands. My paper addresses this gap by examining challenges veterans of the auxilia could have faced when they served at great distances from their homeland. Specifically, in my paper, I will be looking at potential financial and travel challenges auxiliary veterans could face in the early Principate in order to shed more light on choices of veteran settlement. I argue that rank and file auxilia veterans requiring long-distance travel to go home, especially across seas or several provinces, encountered significant financial and travel related issues and dangers, namely the risks and costs of long-distance travel in light of no discharge bonuses and low pay rate compared to officers and legionaries, questions of geographical knowledge, as well as physical limitations if they were wounded or impaired. In conclusion, this paper, by closely examining the question could they actually get home, sheds new light on rarely acknowledged issues in veterans' decisions of where to settle upon retirement.

Alchester: Life in a fortress of the AD 40s

Eberhard Sauer, Edinburgh University

Alchester, some 15km north of Oxford, has yielded Britain's earliest Roman tree-ring dates (of autumn AD 44), early evidence for the import of new foodstuffs, such as millet, and a tombstone of a veteran of Legio II Augusta. Whilst these highlights are now well known, post-excavation has yielded a wealth of new insights into this pivotal base at the heart of the Midlands. Much progress has been made in analysing the copious small finds and their spatial distribution over the trenches in the main fortress and annexe. Iron Age coins were used as small change alongside Roman currency and an Iron Age wine-strainer was used to prepare a Mediterranean-style beverage. Yet, whilst there is much evidence for close economic exchange with local communities, the garrison took no chances and defended the approaches to the fortress with sharpened stakes – a feature commonly found in contested territory more than in pacified lands. The exact location of most pieces of armour and weaponry has been recorded and their spatial distribution sheds new light on the garrison. A cache of phalerae and a chamfron, stripped off most of their silver, from the defensive ditches raises questions as to the circumstances that led to concealment. The fortress boasted a flowing water supply, mirroring similar infrastructure at forts in Germany. A site of technical innovation at a major crossroads, it evolved after withdrawal of the army into the largest town in the area – no doubt a result of many veterans staying behind. Being of similar date as, and with many architectural parallels to, mid-first-century military sites on the Lower Rhine, such as the fort and fortress at Valkenburg, Alchester should be of great interest to participants at the Nijmegen Limes Congress.

Recent research of Roman military intervention during the Marcomannic wars in the territory of today's Moravia

Michaela Zelíková, Balázs Komoróczy, Marek Vlach, Institute of Archaeology of the Czech Academy of Sciences, Brno, Gabriele Rasbach, German Archaeological Institute, Romano-Germanic Commission, Frankfurt am Main

Although one phase of intensive joint research activities towards the Roman temporary camps in the Middle Danube territory of Marcomanni has recently been concluded, the cooperation between the Institute of Archaeology of the Czech Academy of Sciences, Brno, and the Romano-Germanic Commission of the DAI in Frankfurt am Main continues with an innovated strategy. Field activities, especially in the form of geophysical surveys and other non-invasive or less invasive methods (e. g., metal detector prospection), currently focus on detailed knowledge of the core of the Roman military occupation during the Marcomannic wars in the vicinity of the well-known site Mušov-Burgstall. Significant new results include, for example, the discovery of a new temporary camp in the cadastre of Drnholec, which presumably represents another element in the system of strategic protection of this central base. The newly discovered fortification structures at Burgstall indicate unprecedented dynamics in the Roman army presence at the site while generating new hypotheses and impulses for the following stages of research. The specific and unique degree of interconnectedness of the Roman military structures and the local Germanic community also makes it possible to formulate new questions and hypotheses about the extraordinary impact of the Roman military presence on the development of the whole Central European Barbaricum at the turn of the Early and Late Roman periods.

Reconstructing Heron's Cheiromballistra: A Century and a Half of "Getting It Right"

Ildar Kayumov, Archaeological Society of the Republic of Bashkortostan

Since 1860s a short technical treatise entitled «Ἡρώνης χειροβαλλίστρας κατασκευή και συμμετρία» attracted attention of such Greco-Roman artillery researchers as A. Vincent, V. Prou, and R. Schneider. In 1970s, E. Marsden and D. Baatz made an important contribution to understanding the handheld throwing engine described in the treatise, the

cheiromballistra. The archaeological finds of the last 50 years from Romania, France, Morocco, and Bulgaria also played a significant role. But it was the last two decades that saw particularly heated debates around the construction of the cheiromballistra and witnessed multiple physical reconstructions. A multitude of theorists and experimenters, such as A. Wilkins, A. Iriarte, C. Miks, M.J.T. Lewis, D. Campbell, T. Rihll, B. Meißner, S. Seppänen and others, focused on the following major issues:

- - What was the diameter of the torsion springs of the cheiromballistra?
 - Is it acceptable to enter conjectures into the treatise?
 - What was the purpose of the crescent-shaped piece attached to the rear end of the stock and was it a withdrawal-rest of the gastraphetes type for the draw of a bowstring?
 - How powerful was this engine and did it have a tripod base?
 - Did the cheiromballistra arms rotate outside or inside of the torsion frame?

This paper provides a critical evaluation of the discussion and attempts at resolving most of the above issues with consideration of the tests of the author's own reconstruction.

Reading the Roman inscriptions exhibited in Lower Germany; in Latin and in English, Dutch or German translation

Dé C. Steures, independent researcher

The user of the app is standing in front of a Roman inscription or finds a picture of it in a publication, and takes a picture: frontally, filling the format, the whole stone. A photo comparison with a database on the internet then brings to light the texts connected to the photo that looks most like it: Latin, exactly as on the stone; Latin, with all abbreviations and damages completed; and a line-by-line translation in the working language chosen by the user.

Now, an app is a vulnerable thing. As soon as the provider changes a comma in his source code, the app will not work anymore. The author will therefore present a dummy of a book with all 750 inscriptions treated this way to publishers. At the time of writing this abstract I have almost arrived at that point. In the book, inscriptions are presented per museum from Katwijk to Remagen. For a simple notation of the Latin I follow the example of the museum in Cologne.

Roman Waterworks in the Rhine-Meuse delta

Jan Verhagen, VU-University, Amsterdam

Within the natural system of the Rhine-Meuse delta (the Netherlands) Romans have created a shipping infrastructure through the construction of canals and dams and also harbours and quay works. This paper presents the main findings of the author's thesis on Roman waterworks, which consists of a literature review and the results of field investigations by the author. The archaeologically most intensively investigated infrastructural element so far is the Canal of Corbulo (ca. 50 AD), between the estuaries of the Rhine and Meuse-Waal, mentioned by classical writers. Also three possible Roman canals, not mentioned by classical authors, have been identified in the subsurface of the delta. This contrasts with the Dam and Canals of Drusus (12-9 BC), which are mentioned by two classical authors and of which no remains are found. It is supposed that this is caused by the position of the works of Drusus within the fluvial system, which has almost completely eroded their remains. Research should then target on more indirect data. An investigation was conducted near the

Roman delta bifurcation of Rhine and Waal, where Drusus' Dam was situated to influence the water division between the Rhine branch and the Waal. The recent investigations have provided a better insight in the subsurface, with the locations of newly discovered Roman period river courses and temporary military camps, in relation to the already known washed-out castellum remains. Another investigation was conducted in the area of the Utrechtse Vecht, which is considered the most plausible option of a large number of hypotheses about the location of Drusus' canals. Here, extensive coring research has been carried out on a part of the Vecht river that may have originated as a canal and may have evolved into a river course as a result of river water inflow.

34. New Research Moesia

Session Chair: Phil Nemanja Mrđić

Affiliation: Institute of Archaeology

Legionary fortress at Viminacium and the Principia of the VII Claudia Legion

Nemanja Mrđić, Milica Marjanović, Snežana Golubović, Institute of Archaeology

Viminacium and its legionary fortress were the most important military stronghold in the Upper Moesia. Systematic geophysical surveys have been conducted since 2001 covering almost entire area of the castrum. Preliminary excavations were done in 1882 and 1902, and work on legionary fortress in Viminacium continued about 100 years after that – in the 2003 parts of Porta Praetoria were excavated. First systematic research begun in 2016, when segments of the ramparts closing the area between West and North gates have been researched, along with the gates and towers. Most recent research were focused on principia and excavation begun in 2020, in southeast corner of the building, moving northwards towards opposite corner. Proton magnetometer provided us with outer walls of the building and some details within. Ground penetrating radar was used in the northeast section giving detailed information on state of preservation and further distribution of rooms. Excavations resulted in documenting parts of the forum, tribunal, portico, and multiple rooms along the south and east sides. Sections of heating and water supply systems were also excavated. Multiple building phases are identified and correspond to the chronology of the castrum previously established. One coin hoard discovered in room 3 dates potential disaster into the years after 330 AD, but no final destruction phase of the building and castrum is yet defined. Latest results as well as quantity of finds suggest that Viminacium fortress was rather abandoned than destroyed.

What did and what did not change in the fortification system of Novae (Lower Moesia) – the legionary base of legio VIII Augusta and I Italica?

Piotr Zakrzewski, Polish Centre of Mediterranean Archaeology University of Warsaw

The legionary fortress of Novae was set up over the southern shore of the Lower Danube in the province of Moesia by the Eighth Augustan legion. Established probably around the reign of emperor Claudius, it was the easternmost legionary base in the European part of the Roman limes at the time. The first fortification system defenses were composed of loess rampart with a palisade placed on top together with wooden square towers and a system of V-shaped ditches. Available information indicate that they remained in use without significant alterations until the departure of the Augustan legion in AD 69. After the arrival of legio I Italica, probably in AD 72, in the beginning of the 2nd century AD the entire military base underwent many alterations. Most notably, the main camp buildings and the defensive structures were rebuilt in stone. Although the changes greatly affected the architectural design and defensive properties of the new fortification system, the layout and localization of its main elements were apparently very similar to their earth and wooden predecessors. Thanks to the extensive archaeological works conducted at the site between 1960-1990 by the Bulgarian-Polish Archaeological Expedition and a decade-long post excavation project *Per lineam munitionum*, devised and led by the late Tadeusz Sarnowski, it was possible to recreate

the history of both fortification systems, including their building sequence, later alterations, repair and maintenance works made until they fell into disuse at the beginning of the 7th century AD.

Is Anybody out there? Viminacium Legionary Fortress in Late Antiquity

Ivan Bogdanović, Ljubomir Jevtović, Institute of Archaeology, Belgrade

Viminacium was an important military base, located at the confluence of the Mlava and the Danube rivers, within the province of Moesia Superior and Moesia Prima in the later period. During most of its history, it was the home of the Legio VII Claudia. According to recent archaeological excavations in the North-western part of the fortress and broader area of the principia, it was possible to define two main phases of the construction, as well as layers and features that date back to the late Roman period. This paper deals with the appearance of the legionary fortress in Late Antiquity. Based on destructed walls and ramparts, the filled V-shaped ditch, graves and buildings from the late Roman period, it is possible to suggest that the fortress was abandoned during the 4th century AD. In this paper, we will discuss the reasons for its abandonment, while we will also tackle the question of the plausible location of the legion in Late Antiquity.

35. New research Dacia

35. New research Dacia

Session Chair: Dr. Rada Varga

Affiliation: Babes-Bolyai University

The present session brings forth a series of new researches and undertakings regarding the *limes* and military life in province Dacia. Ranging from questions of provincial borders to analyses of Roman camps, and from contextualization of small finds to interpretation of monumental inscriptions, the presentations highlight multiple aspects of the Roman military presence throughout the history of Dacia.

A battlefield of the Dacian Wars

Felix Marcu, The National Museum of Transylvanian History

Much has been written on the annexation of Dacia and the subsequent organization of the conquered territory into a Roman province, being a topic of choice recurrent in the scientific debate. By the exceptional number of the involved forces, the Roman army's effort in the Dacian campaigns most likely exceeded that of the famous Jewish War. The main battle was fought, once again, at Tapae and Trajan won a bitter victory. He spent highly probably the winter in a large marching camp located in the area of the future Colonia Dacica Sarmizegetusa. We have little information on Dacian and Roman fortifications in general and even less on the events of 101-102 AD, when the Romans spread in Țara Hațegului, after the victory of Tapae. Only in one case the location seems certain, as it is for instance at Cioclovina-Ponorici where a very complex system of earthen works was registered. Here impressive traces are mentioned already in the first half of the 20th when I. Martian noted the existence of 'remains of cyclop walls'. Nonetheless, the most interesting situation is found in the vicinity, at Ponorici, where beside the Dacian fortress from Piatra Roșie traces of defensive ramparts rows are also signalled, probably dating from the Dacian wars. The ramparts are a few kilometres long and probably belong to the moment of the Roman siege. We will present an analysis of the recent Lidar measurements, aerial photography and field survey works which have brought to light many other interesting building works of the Romans, indicating that here was the main hotspot of the Dacian Wars.

Die Ausdehnung und die Grenzen der Provinz Dakien

Zsolt Visy, University of Pécs

Die Erforschung der Ausdehnung und der genauen Grenze der Provinz Dazien hat eine lange Geschichte, aber dank der neueren Forschungen und Überlegungen lassen sich diese Fragen als gelöst betrachtet werden. Dieser Beitrag nimmt die östliche Grenzlinie und den sogenannten “Limes Transalutanus” unter Lupe, und beweist, dass dieser Linie nie eine Provinzgrenze war, sondern ein seit geräumiger Zeit benutzter Weg, der von Donau zu Donau führte, welcher in der Römerzeit die Gegend von Nicopolis ad Istrum mit Troesmis zusammenschloss.

The Batavian riders of Roman Dacia: between ethnic and cultural identity

Rada Varga, Babeş-Bolyai University, George Bonnegru, National Museum of Alba Iulia, Cristina Crizbăşan, University of Exeter, Imola Boda

Identities are situational constructs which often mould on specific historical experiences, resulting into continuously changing concepts that adapt to background situations and phenomena. In the case of auxiliary units, their identities were constantly transformed under the phenomenon known as mobility, which led to their transfers across the Empire over time, bearing consequences on their identities. This paper aims to understand the identity construction process in the auxilia under the pressure of mobility, by exploring the link between people and objects in the context of ala I Batavorum milliaria in Dacia. The ala was stationed here from 136/138 (AE 1997, 1782), up until – most probably – the abandonment of the province, during Aurelian’s reign. The seat of the ala was the present-day Războieni-Cetate (Alba County), situated approximately halfway between the headquarters of legio XIII Gemina at Apulum/Alba Iulia and the fort of legio V Macedonica at Potaissa/Turda. Excavations commencing in 2017 until present have provided data regarding the site’s planimetry, pottery production and imports, epigraphy, and numismatics. The present research uses their material culture in order to address its pertinence to identity and resolve questions on Batavian background and its preservation within their later auxilia throughout the 2nd and 3rd c. AD. Was there a Batavian nucleus preserved, even during the 3rd C? Are the prominent Batavian military families still present in the auxilia during the late 2nd – 3rd centuries and can we find material traces of their presence? What did the Batavian troops materially bring from the Low Rhine, and why? Which artefacts are identity defining from our point of view, and which were from theirs? How did the units influence the (material) culture of their new homes, and (how) can we see the local recruitment and local specificities?

Revealing the function of a building through inscriptions: the case of the carcera in the fortress of Apulum, Dacia

George Cupcea, National History Museum of Transylvania

Extensive rescue excavations of the last decade in the Citadel of Alba-Iulia, which overlaps the legionary fortress of Legio XIII Gemina, have produced several interesting archaeological and historic results. One of these cases is a one-room extension of an apparent barrack block in the retentura dextra, researched in 2010, in which several iconographic and epigraphic monuments have been found. All of them, being cult dedications, to Nemesis and Mars, have lead the authors of the excavations to believe that the place in discussion is some kind of a sanctuary, erected by soldiers, inside the fortress. However, by assessing the information provided by epigraphic texts, more precisely the ranks of the dedicators and the divinities, I have reached completely different conclusions. By gathering similar evidence from other legionary fortresses in the Empire (e.g. Lambaesis, Carnuntum etc.), of dedications to Nemesis, inside the fortress and of dedications made by this particular type of officers (evocati and salariarii), I propose that the space has a totally different function – that of a seclusion, penitentiary space, in which the sentenced to death would spend the last part of their life awaiting for the execution, in this case performed by soldiers, in the military arena.

36. Germany

Session Chair: Clive Bridger

Affiliation: retired, (formerly Amt für Bodendenkmalpflege im Rheinland, Xanten)

From Caesar to Late Antiquity – Landscape archaeological research in the vicinity of the Hermeskeil fortress (Rhineland-Palatinate, Germany)

Sabine Hornung, Patrick Mertl, Universität des Saarlandes Lars Blöck, Marvin Seferi, GDKE Trier

The Late-Republican Roman fortress at Hermeskeil – one of the very few known sites from the time of Caesar's conquest of Gaul – has already been a focus of archaeological research for more than one decade. Recent work has now shifted towards understanding its function by trying to measure the possible impact of this massive Roman military presence on native Late Iron age settlement structures – ranging from the suggested abandonment of the nearby oppidum "Hunnenring" at Otzenhausen to the temporary development of a more decentralized settlement system in the second half of the 1st century BC. Particularly remarkable is a supposed cultic reflection of the events during the Roman conquest in a Late Iron age and Early Roman sanctuary next to the fortress. Furthermore, recent landscape archaeological research allows us to better understand possible lines of continuity into the Imperial period. Of particular interest is the emergence of the Roman settlement landscape with a Roman vicus developing as a new central place in the vicinity of the former fortress. Its early coins series is once more reflecting strong connections with the Roman military, pointing towards a possible presence of soldiers in the Augustan period. Systematic field-walking and large-scale magnetometry have also provided new insights into rural settlements in the Western Hunsrück. While there are only some stone-built villae rusticae, a large number of wooden buildings – archaeologically visible mainly by their stone cellars – have now been identified as well. This Roman settlement system seems to have survived – on a somewhat reduced level – far into the latter part of the 4th or sometimes even the 5th century AD, while illustrating once more the presence of military officials in Late Antiquity.

The rediscovery of Augsburg-Oberhausen

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The augustean findspot of Augsburg-Oberhausen (Bavaria, Germany) was discovered in 1913 between the gravels of the river Wertach. It consists of more than 6000 metal objects (military equipment, tools, fittings, jewellery, keys and much more), coins, and ceramic fragments from the last decade BC and first decade AD. Because of its outstanding quantity and quality the published material was widely known in archaeology and used as a reference for augustean military places, but due to poor documentation of the findspot many questions concerning chronology, character and development of the place remained unsolved. After more than a century the findspot was rediscovered recently and investigated under the authority of the city of Augsburg. The work on the site has not finished yet but we can give a first overview of the results and finds and show new perspectives. The numbers of finds have increased impressively. Because of intensive use of metal detectors especially more small metal objects like shoenails are recorded. More than 900 coins, and several hundred fragments of imported finewares will give new chance for a more detailed dating of the site and for better understanding how it was supplied. Of special interest are several wooden construction elements and rich faunistic and botanical remains, because in 1913 no samples were taken. For the conservation, documentation and analysis of the vast material a research cooperation with the Universities of Cologne, Munich and Frankfurt and the RGZM Mainz was initiated.

Claudius oder doch Agrippa? Zur Bedeutung des sog. Ubiermonuments in Köln

Tilmann Bechert, retired (formerly Duisburger Stadtarchäologie)

Seit der eingehenden Behandlung des sog. Ubiermonuments in Köln durch S. Neu (*Thetis* 4, 1997) scheint klar zu sein, dass dieser ursprünglich freistehende Sockelbau weder als Hafen- oder Molenturm, noch als Teil "der frühen Umwallung der von den Römern initiierten Ubiersiedlung" anzusehen ist (Eck 2004). Stattdessen lasse er sich seiner Funktion nach (so Neu) "problem-los in die Reihe römischer Grabbauten" einreihen. Ähnlich urteilte auch H. Galsterer, als er in dem "erste(n) bekannte(n) Monumentalbau der Stadt .. eher ein monumentales Pfeilergrab" erkannte, "als ein(en) Hafenturm" (Galsterer 2001). Doch wer könnte der Tote gewesen sein, dem die hohe Ehre zuteil wurde, weithin sichtbar am Rheinufer vor der Front der römischen Neugründung *Ara Ubiorum* auf den Sockel gehoben zu werden? Dazu bietet der Autor eine mögliche

Lösung an. Ausgehend von dem Kölner Altfund eines Marmorkopfes von nahezu doppelter Lebensgröße, der rund 100 m vom sog. Ubiermonument entfernt aufgefunden wurde, kommt der Autor zu dem Schluss, dass der um 5 n. Chr. oder kurz danach errichtete Sockelbau am ehesten eine Kolossalstatue des M. Vipsanius Agrippa getragen haben könnte, dem nach seinem frühen Tod im Jahre 12 v. Chr. an zahlreichen Plätzen des Reiches Ehrenstatuen errichtet wurden.

Strange things afoot. A group of unusual burials under the CUT by-pass, Xanten

Clive Bridger, retired (formerly Amt für Bodendenkmalpflege im Rheinland, Xanten)

2005 to 2008 the Rhineland State Archaeological Service undertook rescue excavations before the construction of a by-pass around the Roman city of CUT (Xanten). After years of restoration and documentation, the excavated 79 cremation graves of the mid-1st to the mid-3rd century are ready for publication. 74 graves lay in an area near the main road overlying the Roman road Xanten – Nijmegen, of which 59 could be ascribed to nine categories of cremations. Most prolific were 21 small, heavily burnt pits I've dubbed 'pseudobusta'. Whereas six busta measured 1.72–2.24 m by 0.84–2.08 m, the 'pseudobusta' were only 0.60–1.60 m by 0.38–0.75 m, yet only three contained children. They belong to the Mala Kopašnica-Sase type I commonly found in Moesia and environs but hitherto unrecorded in Xanten. Eight graves contained no human bones (two animals), whereas 66 housed 73 individuals: ten children, six juveniles (3 female), 11 adult men, 17 adult women; the gender of 29 persons (21 adults) remain undetermined. The total weight of burnt bone amounted to 16.3 kg, or 275 g on average. Three graves contained burnt bone above one kilo, the average for the busta was 346 g, the 'pseudobusta' 218 g. Four persons lived over 50 but nobody reached 60. Nine persons displayed diseased or injured bones. 23 graves contained bones from 24 animals. The graves contained 16 urns, 156 burnt and 110 unburnt grave-goods plus detritus. Unusual objects for the region included two indented pots with handles (one a face-pot), two terracotta figurines, a tin-plated dish, a bell and a strap-junction from horse-gear, plus several non-wheelturned vessels from Flanders and two Rhodian wine amphorae. The majority date ca. AD 70 to 180. There are indications of associations with the military, i.e. busta and pseudobusta, face-pots, the strap-junction, the age at death.

New Research on the Funerary Landscape of the Arnsburg fort at the Upper German Limes

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In 2020 a new excavation project was started in the southern cemetery of the Arnsburg fort (Giessen County) due to severe threats of modern ploughing. A huge bustum burial furnished with exceptional grave goods was uncovered that can be attributed to a military officer of the 1st Aquitanian cohort (c. 90–160 AD). In this paper we will present the findings of this bustum burial and its related sepulchral architecture lining a street of tombs running towards the central Wetterau region. As a result, cross-cultural contacts to the Pannonian limes in Hungary and new insights into the cultural identity of the deceased will be illuminated in a trans-regional perspective. In a local view of the military landscape in the Wetterau Plain and the Taunus Mountains the funerary rites recently attested at the Arnsburg auxiliary fort will be contextualised.

Maximum insight with minimum intervention – New research at the Roman fort of Ruffenhofen

Sandra Schröer-Spang, Römisch-Germanische Kommission des Deutschen Archäologischen Instituts, Daniel Burger-Völlmecke, Stiftung Stadtmuseum Wiesbaden, Mathias Pausch, LIMESUM

Since 2021, the RGK carries out fieldwork on different sections of the Frontiers of the Roman Empire within the framework of the research project "Limites. Borders, Routes and Spaces of Interaction". This aims to generate new and comparable datasets on Roman Frontiers, their installations and settlement patterns on both sides of the frontier line from different regions. These will serve to develop a better understanding of border systems, the relationship between military and civilian spheres and interactions between Rome and its neighbours. One case study in this research project is the region around Ruffenhofen, where the RGK has been active since 2015. Excavated in 1892 by the Reichslimeskommission, the fort and its hinterland have never been built over, which means that

the fort, vicus and necropoleis remain preserved almost completely. Since 2005, the site is part of the UNESCO World Heritage Site Upper German-Raetian Limes and protected from destruction by agriculture or construction. This is an optimal position in matters of heritage protection, but limits further archaeological investigation, as large-scale invasive activities are no longer possible. For the RGK, this offers an optimal opportunity to test and apply new technologies across the entire spectrum of different non- or minimally invasive methods available in-house. These include UAV based aerial surveys with various sensor arrays as well as large scale magnetometry based on a quad-supported 10-sensor system, and direct-push-drilling. Analysis of drill cores makes it possible to address stratigraphic questions and forms the basis for chemical and DNA analyses. The 2015 and 2016 fieldwork provided new insights regarding the dating of the fort and the unit stationed there. Further drilling was carried out in 2021, the results of which are still pending. A new magnetometry survey carried out in 2021 provides new insights into the previously known plan of the ensemble of fort, vicus and necropolis. The excellent preservation of features offers the chance to compare and develop different non-invasive investigation methods. The paper will present the results of the non- and minimally invasive research carried out by the RGK at Ruffenhofen so far and its perspectives for the future.

Das spätrömische Castrum auf dem Aachener Markthügel

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Eine seit langem in Aachen vermutete spätrömische Befestigung konnte erst durch Grabungen zwischen 2011 und 2015 identifiziert und lokalisiert werden. In früheren Jahrzehnten bereits entdeckte Bestandteile der Anlage wurden jeweils nicht in einen entsprechenden Zusammenhang gebracht. Graben und Wehrmauer wurden nun aber an mehreren Stellen nachgewiesen. Über die mindestens zweiphasige Innenbebauung ist allerdings noch wenig bekannt. Errichtet wurde das Castrum über einer münzdatierten Zerstörungsschicht der Jahre 275/276 n. Chr. Diese ist auch außerhalb des Castrum an verschiedenen Stellen des vicus Aquae Granni nachgewiesen. Die im Fundament rund 5,30 m breite Wehrmauer ruhte auf einer Pfahlgründung, war mit Rundtürmen versehen und beschreibt ein sich dem Kreis näherndes Polygon, welches rund einen Hektar umschließt. Die Anlage ist vergleichbar mit den Kastellen von Jülich, Jünkerath und Bitburg. Über die Funktion oder die Art der Besatzung ist nichts bekannt. Da die Besiedlung des Vicus außerhalb der Wehranlage aber kontinuierlich bis in das frühe Mittelalter hinein fortbesteht, handelt es sich nicht um eine Siedlungsreduktion infolge unruhiger Zeiten. Die Kontinuität zeigt sich auch daran, dass die Wehrmauer Teil der Pfalz Karls des Gr. wurde: Seine aula regia wurde über der Südflanke des Castrum errichtet. Vieles spricht dafür, intra muros auch die bisher noch nicht lokalisierte Pfalz Pippins d. J. zu suchen. Damit lässt sich Aachen gut mit Nimwegen vergleichen, wo ebenfalls aus dem römischen Castrum die frühmittelalterliche Herrscherpfalz entstand. Erst im 12. Jahrhundert wurden die Mauern der Wehranlage endgültig abgetragen.

37. Roman Britain

37. Roman Britain

Session Chair: Dr. Tanja Romankiewics

Affiliation: University of Edinburgh

The Integration of Public Baths into Post-Military Colonia and Civitas Capitals in Roman Britain

Amanda Hardman, Trent University

In their discussion of the archaeological remains beneath the colonia baths at Lincoln, Jones et al. (2003: 42) acknowledged that “[t]he relationship between [fortress] baths... and their replacements or equivalents in the colonia period needs further exploration.” This paper seeks to help clarify this relationship by examining the construction of public baths at the post-military sites of Exeter, Colchester, Wroxeter, Gloucester, Lincoln, Chichester, Leicester, and Silchester in Roman Britain during the 1st and 2nd centuries CE. It will do so by investigating four scenarios by which new public

baths could be integrated into the pre-existing urban landscapes. These scenarios include the continued use of legionary baths during the life of the town, the conversion of military bathhouses for civilian use, the construction of new civilian baths in the same location as the legionary baths in order to make use of pre-existing bath infrastructure or building materials, and the construction of baths afresh on a site that was not previously occupied by a legionary bathhouse. This paper will also consider the reasons behind building baths “ex novo” and argue that cost and suitability as well as the purposeful destruction or natural decay of legionary baths were likely the primary reasons for doing so. In addition to contributing to the urban histories of these settlements, this paper will also shed new light on the processes affecting the widespread adoption of Roman baths and bathing in this frontier region.

Dying outside the gates

Pete Wilson, Rarey Archaeology

This paper is inspired by the discovery of a military-style *bustum* burial within what appears to be one of the civilian cemeteries of *Delgovicia* (Malton/Norton, North Yorkshire). The burial, which dated to the period from the mid-second to third centuries, was undoubtedly that of a soldier, or former soldier, given the presence of fragments from fretted openwork belt plates and a baldric mount amongst the pyre goods (Cool and Greep 2021). Following a brief description of the *bustum* burial this paper will examine evidence for other apparently military burials from Britain found away from recognised, or probable military cemeteries and consider what they may tell us about the lives of those buried and their place in the military and civilian communities of which they may have been part. H.E.M. Cool and S.J. Greep 2021 ‘The finds from the cremation burial’, in J. Philips and P. Wilson *Life, Death and Rubbish Disposal in Roman Norton, North Yorkshire: Excavations at Brooklyn House 2015-16*. Archaeopress Roman Archaeology 77, 187-199

An academic versus a craftsman: A story of ups and downs in making replicas of Romano-British glass bangles

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The paper discusses the series of experiments conducted together with the experienced glass artisan to make replicas of Romano-British glass bangles, seamless ring-shaped adornments made of coloured glass produced and used in northern Britain from the late first to late second century AD. The questions that the paper addresses are a) what does the maker of a replica of an archaeological artefact have to say about how he experienced the production of a glass bangle; and b) as the craftsman had never before produced a seamless glass bangle and only attempted it with the presenter’s guidance, how might his experience inform us about training of craftspeople and the craft development on the frontier of Roman Britain? The work with the modern experienced artisan has provided compelling insights into the process of craft development and craftspeople training on the outskirts of Empire. Most likely the makers of glass bangles had to follow the material and learn from it. Trial and error would have been key and indeed attempts to produce a seamless glass bangle with insufficient skill or poor knowledge of the material have been detected for at least 12 fragments. Moreover, it became clear that the craft of bangle making did not develop in a progressive sequence; instead, the craftspeople responsible and the craft itself went through multiple phases of self-discovery, learning by doing, trial and error. These processes were not confined to one place or one workshop but rather occurred simultaneously across the frontier. This underlines that the development of craft does not follow a linear sequence but very much depends on the developing knowledge of the craftsman involved in the making process.

Game as cultural bridging. The case of the Batavians at Vindolanda

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It is well known how game can be a powerful tool for bridging different culture by creating new social spaces. It is the case of Vindolanda where, during the Adrian’s reign, some cohorts of auxiliary troops, mainly Batavian, were quartering. These soldiers were peregrini (non-Roman citizens) and were still strongly tied to the customs of their homeland. A peculiar kind of pottery (produced in the

lower Rhine area) is attested in Vindolanda and texts of wooden inscribed tables found in the site allow us to know that these formations were very conservative from a cultural point of view, also maintaining their cooking habits. In this scenario it is surprising to find in the same place, many ludic items of Roman typology as dice, game counters and tabulae lusoriae, proofs of ludic practices carried out by soldiers. It can show how game have been the easier way to put in contact people with different cultural backgrounds. For Batavians of Vindolanda, game could be the first step into a new way of life, a life as *cives romani* (status that they would be reached at the end of the twenty-five years of duty in the Roman army).

Vallum via Castelli: Insights into Hadrian's Wall via re-used Roman stone fabric in medieval castles Rob Collins, Newcastle University

Though still a largely extant monument in the landscape, Hadrian's Wall does not survive in any more than a fragmentary state, relative to its original height. Centuries of scholarly observation and debate have catalogued key metrics of the Wall: the thickness of the curtain; different styles of building for foundation; and integration of structures into the curtain. Yet, there are hundreds of post-Roman structures proximal to the Wall that made use of the Wall's ruinous condition as convenient quarries providing ready-made building stone. This paper will draw on work undertaken by the Hadrian's Wall Community Archaeology Project (WallCAP) at Newcastle University to consider what observations can be made about Hadrian's Wall from those structures that have re-purposed its fabric, focusing primarily on two late medieval castles: Thirlwall Castle (Northumberland) and Drumburgh Castle (Cumbria).

New fieldwork discoveries on Hadrian's Wall

Matthew Hobson, Frank Giecco, Wardell-Armstrong LLP/University of Leicester

This paper presents the results of a magnetometer survey undertaken by Wardell-Armstrong at Carrawburgh Roman fort on behalf of Historic England. The results include a possible fort annexe (0.8 ha) and a more extensive extra-mural settlement (c. 4 ha). Known from written sources to have been called 'Brocolitia', the fort at Carrawburgh has for some time been known to have been unique among the forts of Hadrian's Wall. Unlike the other forts, it was built over the top of the Vallum, which had to be levelled and backfilled prior to its construction. In the 18th and 19th centuries significant archaeological discoveries on the western side of the fort, confirmed the existence of a garrison settlement. In the post-war period aerial photography reinforced the view that Carrawburgh belonged to a group of frontier forts whose extra-mural settlements were situated on one side alone (Salway 1958, 230 & pl. 25). The new geophysical results, however, now allow us to demonstrate that Brocolitia's settlement surrounded the fort also on its southern and eastern sides. Forts along Hadrian's Wall have generally been found not to have possessed annexes. The traditional explanation for this has been that the space between the Wall and Vallum adequately served this purpose. The jewel in the crown of the geophysical survey results, however, is the identification of a 0.8-hectare rectangular area adjacent to Brocolitia's eastern rampart. This area is free of the strong, negative magnetic anomalies characteristic of the surrounding civilian settlement (indicative of walls, foundations, and piles of rubble). Several possible interpretations of this area are discussed in relation to the known presence of an equestrian garrison at Brocolitia (Sommer 2006, 103). One is that the fort's unique situation, built over the top of the vallum, required a fort annexe, or some form of militarized zone outside of the ramparts. The results complement the recent discovery of a large Roman camp to the west of Brocolitia, identified through analysis of LiDAR imagery, and are characteristic a surge of new research that is transforming and deepened our understanding of the frontier zone, enabled by digital technologies (Jones and Leslie 2015).

The Selection of Geological Material for Hadrian's Wall

Ian Kille, Community Geologist, Hadrian's Wall Community Archaeology Project, Ston Sourcing and Dispersal

The variety of materials used to construct Hadrian's Wall are mostly of geological origin. Each of these components in the Wall's construction – dressed stone, undressed stone, lime, aggregate and

clay – may be categorised in some detail using geological criteria. By understanding the nature of these components and comparing them to the geodiversity available in the vicinity of the Wall, it is possible to build a more complete picture of the relationship between the Wall and its landscape.

To develop our understanding of the variety of Wall materials used, an audit of the types of geological material used in the Wall has been carried out. Geodiversity data from British Geological Survey maps and previous research has been collated. This data has been extended through visual observation augmented with petrographic information from thin sections and geochemical data from a portable XRF.

All of this work has been carried out within the Hadrian's Wall Community Archaeology Project where expert resource has worked in partnership with trained volunteers to enable a larger dataset to be gathered. Previous research on potential quarry sites has also been extended using trained volunteer resource working with GIS and archive data.

This information has been used to enhance our understanding of the decision-making processes involved in the Wall route-planning, and sourcing, and transporting building materials for the Wall. The locally available geodiversity and what was actually used in the Wall construction shows the many factors which constrained and informed the choices made by the Roman legions in sourcing material for constructing the Wall.

Military Construction Strategies on the Limes: New Insights from Geoarchaeology

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The Roman military made abundant use of turf to build fort ramparts and linear boundaries, especially in the northern provinces. Despite this, the way in which turf was used in construction projects – its sourcing, arrangement, and structural properties – has rarely been examined in detail. In order to rectify this gap in scholarship, especially the application of geoarchaeological methods such as micromorphology to explore what turf can reveal about construction strategies, the Earthen Empire: Earth and Turf building in the Roman North-West project (Leverhulme Trust RPG-2018-223) has examined samples from a range of military sites in Scotland, England and the Netherlands. In this paper, we will present our methodology and results. We will focus on data from two main case studies: Vindolanda and the Antonine Wall. We will also explain how our methodology will be used to better understand the context and construction of the new legionary fortress at Valkenburg, working with colleagues Wouter Vos and Lourens van der Feijst. The results of analysis at these sites allow conclusions to be drawn about source locations and wider landscape management, the cutting and procurement processes, details of the construction technique itself, and even tool uses by different military units. Differences between sites point towards a refinement of practices over time. Our work also shows the complexities of construction in turf, the ways in which turf and timber materials were combined, and steps to maximise efficiency in labour and material use. These conclusions have important implications for current interpretations of Roman military building practices, the planning and execution of specific projects – such as the Antonine Wall – but also the wider role of earthworks in consolidating military presence. By highlighting the effectiveness of geoarchaeological analysis for interrogating turf structures, this paper will also demonstrate the importance of integrating such methods into future excavation plans.