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ABSTRACTS

1. FORTIFYING OUR FRONTIERS

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Fortifications and fortification elements along the *Limes* are the focus of this session. Military infrastructure and fortifications are the essence of the frontier, the base around everything formed and further developed. Either artificial (walls) or natural barriers (rivers) with forts behind connected by network of roads, with small settlements to service and support life of soldiers. For more than seventy years this was the light-motive of the congress. As the congress grew and developed all aspects of frontier were taken more and more into consideration helping us to understand unique nature of *limes*. But, no matter what was studied the core of the frontier remained unchanged, system of fortifications is still the focus of the research of what we now as the edge of Empire.

Crumbled stones and burnt wood – results of the excavation on the Raetian Limes in Laimerstadt (Bavaria)

Andreas A. Schafnitzl

In 2015, a gas pipeline was planned to cross the Raetian *limes* at Laimerstadt near Ingolstadt (Bavaria, Germany). In order to plan how best to protect the heritage, there had to be knowledge about the amount of destruction which the *Limes* had suffered during construction works on an older pipeline in the 1970s. Therefore, an excavation took place in order to see what remained. At the same time, the opportunity was taken to investigate a better-preserved part of the wall in a teaching excavation by the University of Freiburg im Breisgau. At the last Limeskongress in Ingolstadt, the participants had the chance to visit that site whilst work was in progress on one of the excursion days. The wall was in an alleged good condition, in respect to all phases of decay of a heritage can be seen and reconstructed. Furthermore, the steps by which this wall was built without any foundation can be reconstructed, because of the good preservation. The trench of the palisade was filled with two layers of charcoal, which were caused by burning wood. Reddened soil indicates a hot, burning fire. At the time of excavation this caused confusion, especially because the standing posts did not seem to be burnt like the wood lying in the trench. Several ideas have been discussed at the conference to explain this record.

Now three years later, all the analyses are finished and the interpretation completed giving many interesting details about the building and construction of the Raetian border - especially the wooden palisade: For example, it is likely that it was built in some kind of framework, and then burnt standing in the trench in order to conserve the wooden parts which were intended to be under the earth. The procedure of burning and filling can be reconstructed on the layers. The conclusions lead to a sceptical evaluation of reconstructed parts of the palisade. Therefore, a revised experimental rebuilding of the palisade is planned in April 2018, taking into consideration the results of this study.

A new roman early imperial military camp at the lower Lahn

Daniel Burger, Peter Henrich, .Markus Scholz

Since 2012, the Directorate of Archaeology of Rhineland-Palatinate and the University of Erlangen have carried out geophysical prospections in the area of the lower Lahn. An approximately eight ha large Roman military camp with wood-earth fortification near Bad Ems was discovered. It suggests an early dating and/or temporary use. The camp was strategically built on an exposed hill and is not connected to the system of the Upper Germanic *Limes*.

First small excavations of the University of Frankfurt in 2017 provided a possible dating of the

camp into the year 40-70 A.D. Military camps for the lower Lahn area weren't known for this period until now.

Some other new finds of military character in combination with the military camp, create a connecting axis between the Roman Empire and the north-eastern Germanic areas for the middle of the 1st century A.D. This connection was previously known exclusively for the Augustan period (e.g. the sites of the civil settlement of Lahnau-Waldgirmes or the camp of Oberbrechen). An excavation campaign of the University of Frankfurt is planned for the summer term 2018 and aims to clarify selected areas of the camp's internal structure and to gain further insights into the camp's function.

Early Roman temporary military camp near the village of Polenitsa, Sandanski municipality, SW Bulgaria

Sirma Alexandrova

The archaeological survey of the site was conducted in 2016 due to the construction of the "Struma" highway. The stratigraphy showed that the object was single-layered, inhabited for a short time and left voluntarily. There are no traces of enemy attack, natural disaster or burning. The found "buildings" and archaeological material indicate the lack of a common settlement structure. From the small finds most widely spread are iron hobnails from *caligae* soles. They are followed in number by iron tent pegs. Curiously, some of the pegs along with a pavement outline the site of one of the tents, as well as the possible place of another.

The "buildings" found on the site show short living and peaceful abandonment. The hobnails, arrows, coins, and the almost the complete lack of kitchen pottery speak of a brief occupation of the terrain by a military unit.

Most likely, the site is a temporary tent camp of a Roman military unit. The archaeological data is confirmed by written sources. Livius reports that after the victory over Perseus in 168 BC, Publius Nasica was sent with a squad of infantry and cavalry, to bring to ruin Heraclea Sintica and not allow the king to take action. The Roman soldiers remained in the area for about a year and in 167 Heracleia is mentioned once more – for including it along with the bastarni lands in the First Macedonian region.

Our ditches are missing! Camps without defences

Rebecca H Jones

Two recent developer-funded excavations in Scotland have uncovered an array of Roman ovens seemingly without any perimeter defences. These challenge the previously assumed notion that camps in frontier areas like Scotland were routinely protected by perimeter ditches, sometimes quite large in places. That in turn leads to the need to reappraise our existing assumptions about stray Roman ovens – often assumed to be of local Iron Age construction but rarely radiocarbon dated. Are we missing an array of camps with untraceable perimeter defences?

The Roman Gask Project

Birgitta Hoffmann

Over the last five years the Roman Gask Project has been studying the Mearns, a complex landscape in Southern Aberdeenshire to understand the ways in which the Romans may have perceived and used this landscape during their occupation in the late first century AD, and during their campaigns in the second and third centuries.

The Roman remains as currently known consist of the permanent first century fort of Stracathro and three marching camps which occupy very varied terrains from a flood plain site (Balmakewan) to a camp that straddles a whale-back shaped hill (Kair House).

There has so far been an uneasy feeling that the peculiar position of Stracathro - inland and within sight of the largest hill forts in the area - was unlikely to be Rome's final installation to the north and that further forts were likely to be found closer to the coast (e.g. at Stonehaven), which prompted a detailed study of the area from 2011-2017, using local field observation, aerial survey, GIS as well as historical records and geological data.

Crucial for this study was the reconstruction of the original landscape as modern infrastructure projects (like the construction of a number of fishing harbours and long distance roads) and the large scale draining of the ubiquitous wetlands have completely changed the original usability of the area.

The study demonstrated that Stracathro was far from being tactically compromised, but presented a very logical northern end to the Roman occupation of Scotland. It occupies and controls a unique crossing point over a locally major river, and using the surrounding wet-lands in a way that copies the earlier Dutch Rhine frontier, it minimizes the need for glen blocking installations in the surrounding Mounth passes.

How long was the Roman Gask Frontier (and when)?

David Woolliscroft

Recent excavations and still more so aerial and geophysical surveys have suggested that the Roman Gask system continues further north than had been thought: at least as far as the River Isla. At the same time, however, it has also suggested that the dating of the system may be more complicated than had been believed. The paper will present a synopsis of the new evidence and offer an interpretation.

Understanding the design of the Antonine Wall: some problems and issues

W.S. Hanson

There are currently two models to explain why the distribution of forts along the Antonine Wall is so much closer than that found on other Roman frontiers. The first, originating in the 1930s but recently re-asserted, is that it was always intended to look more or less the way it appears to us today, with garrisons intelligently positioned in a flexible response to local conditions. The second, first proposed in the 1970s, is that its original design was broadly based on that of Hadrian's Wall, but rapidly underwent major amendment with the addition of a series of more-closely-spaced and generally smaller forts as a response to local hostile reaction to its construction. This paper will seek to demonstrate why the second model should be preferred.

Thinking small: the role of fortlets in building frontiers

Matthew Symonds

Fortlets are rarely given detailed coverage when it comes to understanding how the Roman military structured their frontiers. Yet these small, versatile installations offered a flexible means to create bespoke fortifications that were carefully tailored to the different challenges created by the desire to achieve frontier control. An assessment of fortlet design and the way in which they were positioned within the landscape reveals intriguing continuities and divergences in use, which carry implications for our understanding of the type of control the military sort to exert. This paper will examine fortlet use on four artificial frontiers: the Upper German Limes, Hadrian's Wall, the Antonine Wall, and the Raetian Limes, in order to identify and isolate varying strategies for fortlet use. This approach reveals a highly experimental phase in which wildly different techniques were pioneered on the earliest artificial barriers, before a consensus concerning the most effective approach to using fortlets emerged in later decades. This process

brings the way in which the Roman military wrestled with the challenging realities of building frontier control into sharp focus.

Burgus-type structures from the frontier of Dacia Porolissensis

Horațiu Cociș

The Roman frontier layout is directly conditioned by the landscape types and features. Every type of frontier is created in that way to exploit at maximum the topographic layers to the advantages of the tactical ones.

The frontier of Dacia Porolissensis is a non-linear one, being a perfect example of how the Romans used the given landscape to place the military installation. Thereby, it was created a spatial pattern of these structures, being established a tripartite form of organization: the first line is represented by auxiliary forts, the median lines is represented by burgus-type structures or middle sized fortification and the third and the most advanced line is composed of watchtowers. A part of my research and the present presentation is focusing on the second type of structures, the *burgi*. By using a large spectrum of methods from epigraphy, topographical survey, aerial survey, GIS analyses and using older excavations, I tried to underline the main functional characteristics of these installation and mainly what is their role in the mechanism of *limes Dacicus*, with special focus on the frontier of *Dacia Porolissensis*.

New LiDAR data on the NW limes of Dacia

Felix Marcu, George Cupcea, Aleksandra Jankowska and Jacek Rakoczy

In the Northwest, the limit of Dacia was the highland chain of the Mountains Meses, which separate the Transylvanian basin from the Pannonian plain. Its summit connects the Apuseni Mts and the Eastern Carpathians, as a natural barrier, a geographical limit between two basins, long of about 60 km.

It is the most spectacular sector of the Roman frontiers here, with visually connected towers built in a network on the crest of the hills, with forts behind, fortlets and earthen ramparts blocking every valley penetrating the chain of the mountains.

Many of the towers have been archaeologically investigated, until recently never topographically mapped. We don't know when the *limes* was built. On Trajan's column there is no trace of such an event and neither in other sources. In most of the auxiliary forts aligning behind the *limes*, evidence dating from the time of Trajan was found. The combined structures of the northern *limes*, meaning rows of towers in different shapes, parallel lines of defense, sometimes a wall, or just an earth rampart are proof of not only the complexity of the Dacian *limes*, but also of a very dynamic chronology. In the few archaeological researches inside the towers, the earliest traces were coins from the mid-2nd century AD.

The new LiDAR evidence on an interval of more than 60 km in the mentioned area reveals other interesting features which prove more phases in building this frontier of Dacia.

Geomagnetische Prospektionen an römischen Militäranlagen im SO Siebenbürgen / Geomagnetic prospections in the Roman Military sites in south-east Transylvania

Alexandru Popa

Within the last years a series of geomagnetic prospections were conducted in the area of the Roman Camps in south-east Transylvania. These prospections were part of the activities aimed at preparing the documentation regarding the Roman *Limes* in Dacia for its submission in the UNESCO Tentative List. We conducted magnetometric measurements in some sites, such as Brețcu, Comolău, Olteni, Baraolt and Boroșneu Mare. The results obtained allow us,

on one hand, to discuss issues revealed by scientific researches of these sites, such as the situation of the “double wall” from Brețcu. On the other hand, this documentation gives us the possibility to manage these sites more efficiently, especially in the given situation, when they are to be proposed to become part of the Universal Heritage, listed in the UNESCO Tentative List within the “Frontiers of the Roman Empire”.

Cigmău – an unusual fort near the imperial border

Cristina Mitar, Adriana Rusu Pescaru, Eugen Pescaru

Although it has been identified since the 19th century, the auxiliary fort from Cigmău was not systematically researched until the beginning of the 20th century.

The fort is located on Mureș Valley, on a small hill, along the former imperial road between Micia and Apulum, c. 30 km east of the imperial border. It is considered that the Roman name *Germisara* includes the SPA resort located 8 km away, the fort from Cigmău and the civil settlement nearby. The toponym of the hill, Turiac (aka the Turkish hill) or Cetatea Urișilor (The fortress of the giants) is consistent with the local legends regarding the ruins of the fort.

Unlike other forts, the unusual elongated shape of Cigmau is generated by the natural plateau on which is located. With a total area at about 2,4 ha, the fort is a relatively large structure for *Numerus Britanicorum Singulariorum*, the military unit quartered here. The large number of *horrea* – type constructions discovered here leads to the conclusion that the functionality of the fort must have been more complex than a military camp. The majority of the objects discovered here date after the Marcomannic wars. The military equipment items are remarkably numerous and diverse, and include besides common types also regional distributed fittings.

Moesia Superior and Dacia during Trajan: Army and Frontiers

Florian Matei-Popescu, Ovidiu Țentea

The province of Dacia was merely a northern extension of the *Moesia Superior* province. After AD 102, the territory north of the Danube seems to have been part of the *Moesia Superior* province. This could be imply merely by regarding the dislocation of the auxiliary units in the area. For example, the units from *Pannonia* could have been enlisted on the Pannonian diplomas as being in expedition. Nevertheless, that was not the case, they were enlisted among the units of *Moesia Superior*. This could lead us at the conclusion, that a part of Dacian territory was from the legal point a view already part of the Moesia superior province. Which were the spheres of competence of the Upper Moesian governor and the ones of that Longinus, mentioned by Cassius Dio, are still open to debate. There will be the task of this paper to research the contribution of the military units of the *Moesia Superior* province to the making of the Dacia province.

Non-invasive prospection of the site Egeta

Perica Špehar

Egeta is a multi-layered site on the right bank of the Danube, in the vicinity of Brza Palanka. At the early 1960s the field prospection was conducted, and about 20 years later the zones endangered by the rise of the river level at the time of erection of waterpower plant Djerdap II were archaeologically excavated. The remains of Roman, late antique and medieval settlements and necropolises were discovered on that occasion, as well as the remains of three fortifications outside the endangered zone. Fortification I, situated on the right bank of Crkveni potok, was detected based on the terrain configuration. Researchers supposed that its dimensions were about 100 x 100 m and dated it to the late 1st or early 2nd century. In Fortification II, on the left bank of Crkveni potok, right above its confluence with the Danube, several probes were opened. It was of rectangular shape dimensions 85 x 30 m, with circular towers protrud-

ing from the walls and one rectangular tower on the west. It was dated to the 3rd/4th century. Fortification III, shaped as equilateral triangle, was likewise detected by the terrain configuration. Its sides were about 60 m long and it was dated to the early Byzantine period. Egeta site has not been excavated since, although it is very important and quite interesting, because on a very small area three forts were detected that guarantee the possibility to study the changes in defensive concept from the time of establishing the Danubian *limes* until its final collapse at the beginning of the 7th century. Therefor in 2017 archaeological explorations of the site were relaunched, focused on field prospection, analysis of modern satellite and aero photographs, some of those made before the erection of Djerdap II, as well as on geomagnetic survey of the terrain. Thanks to the modern methods some irregularities in available field documentation were noted and corrected, that mostly considered their spatial disposition. All fortifications were precisely geo-positioned and their real dimensions were established. Besides, the comparative analysis of aero and satellite photographs enabled the reconstruction of their position in regard to the Danube before the erection of waterpower plant in the second half of the 20th century. Geomagnetic survey also enabled the clearer picture of fortification elements and disposition of objects within the ramparts of Fortifications II and III. This presentation will be aimed as presenting all the gained results.

Exploring Viminacium: New excavations on the legionary fortress

Snežana Nikolić, Ivan Bogdanović, Goran Stojić, Ljubomir Jevtović

Viminacium is located in Serbia, close to the confluence of the rivers Mlava and Danube. Previous investigations of Viminacium included only small parts of the legionary fortress related to the *Legio VII Claudia*, while recent archaeological excavations comprised also the North-western part of its defensive system. During the excavation campaigns in 2002, 2003 and 2016–2018, remains of the Northern (*porta praetoria*) and Western Gate (*porta principalis sinistra*), ramparts, corner and interval towers, as well as a part of a V-shaped ditch, have been excavated. Unearthed parts indicate the details of the ground plan of the defensive system and the whole fortress. Based on recent excavations it was possible to suggest at least two construction phases. A primal defensive system dates back to the Flavian period. It consisted of ramparts made of earth and wooden planks, while the curtain of the ramparts and towers were made of the locally queried naturally baked clay and mortar. The stone fortress was built during the 2nd century AD and its defensive walls were backed with the older ramparts. The defensive system was disrupted during the 4th century AD and along the ramparts graves from the late 4th century were set. Excavated parts of the architecture and related archaeological layers improved our knowledge and understanding of the history, planning and building process of Viminacium legionary fortress, as well as the history of military units that had been stationed there.

New researches of the roman fortress of Mogontiacum/Mainz

Daniel Burger

The construction of *castra hiberna* during the Drusus campaigns across the Main estuary marked the beginning of almost 400 years of Roman troop deployment in Mainz. Compared to other military sites on the Rhine it is surprisingly little known about this important site. This huge gap in the scientific research of the military camp is going to be analysed in a cooperation between the University of Freiburg and the General Directorate for Cultural Heritage Mainz during the next years. A first step was made by the new investigation of the camp boundaries based on new excavations from the past couple of years. Parallel to this work, a register of the findings of all previously known building structures of the Mainz camp was taken. The results of the recently completed evaluation show that the defensive fortifications of the Mainz fortress were much more differentiated in their chronology than previously assumed. Thus, a smaller predecessor site could be proven, which questions a previously stated crew of two legions for the early period of the camp. For the first time an overall digital plan for the Mainz fortress,

based on GIS is now available. The results are the basis for further evaluations of selected aspects of the roman fortress in Mainz.

The internal structure of the legionary fortress of Mogontiacum/ Mainz (Germany) – First insights

Uwe Xaver Müller

The legionary fortress of Mogontiacum / Mainz represents one of the most important and longest continuously occupied legionary garrisons of the Germanic provinces. The military base was founded no later than 13/12 BC as a winter camp for the campaigns of Drusus in Germania. At least since the establishment of the province Germania Superior and the promotion of Mainz to its caput provinciae during the last quarter of the first century AD it evolved to the military centre of the newly established province and persisted – although in certainly modified form – at least until the middle of the fourth century AD. Therefore the soldiers stationed here ensured the Roman rule over Germania Superior for almost four centuries. While the significance of the base as military centre of the province so far is based almost exclusively on scattered references in the ancient historiography and few epigraphic evidences very little is known about its development and the material remains of its garrison. There is no doubt that during its 350 years of existence the legionary fortress and in particular its internal buildings had to be adjusted continuously to changing infrastructural, personal and strategical requirements. Only very little is known about the accompanying structural changes so far. Due to this lack of information a small area excavated in 2014 at the so called “Römerwall” in the northwestern part of the fortress shall be presented, providing first insights into the dynamic history of the legionary fortress:

The early phase of the Augustan occupation of the Rhine zone is represented in this area by a number of centurions’ quarters, which are replacing one another chronologically. Within the late Augustan/ early Tiberian period a major change in the utilisation of space in this part of the fortress becomes apparent. The preceding buildings were torn down, the whole area was levelled and a presumably larger building complex erected instead. Due to the material evidence and features in this building complex referring to the processing of bone and metal it appears to be a justified conclusion to classify this complex as a fabrica.

A second significant change in the utilisation of this area is marked by the latest construction activities noticeable in the excavated area, when one of the main roads of the fortress, the via principalis, was rerouted through this area.

Large scale geomagnetic survey: the legionary fortresses of Vetera I (Xanten/Germany)

Lisa Berger, Steve Bödecker, Friedrich Lüth

In a joint project between the German Archaeological Institute, Berlin and the LVR-Amt für Bodendenkmalpflege im Rheinland, the entire area of the legionary fortresses of Vetera I and the surrounding area are investigated by large scale geomagnetic survey.

My dissertation project examines the structure and genesis of these fortresses. All in all, the analysis of the fortresses can lead to a much wider understanding of the organizational structure of large-scale Roman military installations. Due to the almost complete measuring of the inner structures and the ditches, both the knowledge of the road system, the measurement and internal structure of the fortresses as well as the individual building layouts can be significantly expanded. Based on this, the continuous development from Augustan-Tiberian polygonal fortresses to the canonical rectangular ground plan can be reconstructed in one place. Especially for the so-called camp A-C numerous new information came to light. Where so far only parts of the ditches were known, now also the internal structure and buildings can be proven.

In addition to the evaluation of the magnetogramms, the documentation of the old excavations from sketchbooks as well as selected aerial photographs are included for relevant features.

Large scale geomagnetic survey: the surrounding area of the legionary fortresses of Vetera I (Xanten/Germany)

Steve Bödecker, Friedrich Lüth, Lisa Berger

In a joint project between the German Archaeological Institute (Berlin) and the LVR-Amt für Bodendenkmalpflege im Rheinland (Bonn), the entire area of the legionary fortresses of Vetera I and the surrounding area are investigated by large scale geomagnetic survey.

Beside filling the gaps of the interior layout of the legionary fortresses (see presentation by Lisa Berger) much progress has been achieved in understanding its surrounding area. Where the canabae have been assumed so far, large open spaced rectangular areas are dominating the area. At least two of them are showing the typical layout of an exercise ground with adjoined halls recently identified by Chr. Gugl and J. Trumm as the obligatory campus of each legionary fortress. The presentation will demonstrate the newest results of the surveys and will focus on a still less understood aspect besides castra and canabae: the need of military land use.

Mud Max – Revealing Roman landscape in the modern industrial environment on the Brigetio – Azaum limes section, Hungary

Friderika Horváth, Mate Szabó, Istvan Viczián

There are two legionary fortresses located on the Hungarian section of the Danube *Limes*: *Aquincum* and *Brigetio*. While remains of *Aquincum* are mostly buried under the Hungarian capital, Budapest, *Brigetio* has a more fortunate history and its territory is covered by the modern buildings of Komárom-Szöny only partially. Due to its position, for the centuries-old research of *Brigetio* more non-invasive archaeology (mostly aerial survey) has been available for giving a good insight into the strategically important Roman site and into the land use of its environs. Thanks to the environmental archaeological research of recent years, it also became possible to reconstruct the Roman hydrological and geomorphological conditions of the area, which highlighted a close strategical relationship between the legionary fortress of *Brigetio* and the nearby auxiliary fort, *Azaum/Odiavum* (Almásfüzitő).

Although, *Azaum/Odiavum* has played a key role in regulating the hydrological system of the area, only fragmentary data of the site are available because the 20th-century expansion of industrial facilities has radically transformed its territory and made traditional archaeology impossible permanently.

In our presentation, we would like to reinterpret and expand our knowledge about the Roman fort and its environs based on the information of image-based 3D modelling of archived aerial photographs and present a special example of the Roman strategy and land use on the Hungarian section of the Danube *Limes*.

New finds from the auxiliary fort Lugio/Florentia (Dunaszekcső, HU)

István Gergő Farkas

The Roman auxiliary fort Lugio and late-Roman fort Florentia is a special site of the Hungarian section of the *Pannonian ripa*. The forts themselves are located in present-day Dunaszekcső in Baranya county in Hungary on an endangered loess hill overlooking the Danube. Due to fluvial regulations in the 19th century the erosion of the river increased and gradually drew near to the site.

In the last two decades, there have been several major landslides on the area of the fort, moving tons of the hill and sliding Roman layers. Several institutions have teamed up to save the archaeological remains of the affected site, both by rescue excavations, slowing the degradation of the loess hill and also constant monitoring of the site. I have participated in this task and in this short paper I aim to present epigraphical material from the site as well as stamped tiles. The fort was garrisoned by the *cohors VII Breucorum* c. R. a unit which held a specialist role in

the military organization of Pannonia inferior as they were the largest brick manufacturers and transporters of the region during the 2nd and 3rd centuries AD. Tiles marked by the unit are to be found on numerous sites of the *ripa Pannonica*.

In January 2018 along with 161 other sites on the Danube, the fort Lugio / Florentiana has been nominated as a component part of UNESCO World Heritage Site "Frontiers of the Roman Empire – The Danube *Limes*". Hopefully we will be able to conduct further research on the site and to preserve its condition.

Military and civilian sites in the hinterland of Troesmis

C.-G. Alexandrescu, C. Gugl, G. Grabherr, B. Kainrath

In spite of its importance in Antiquity, *Troesmis* was very little in the focus of specialized archaeological research, being rather the exclusive subject of epigraphy and ancient history studies limited to epigraphic material analysis from the area. Within a multidisciplinary research project conducted between 2010-2015, the still visible ruins of the two fortresses (late Roman and Byzantine) as well as some ruins from the early Roman civilian settlement partially uncovered by a rescue research in 1977, but left unfinished have been documented. Based on the observations made by interpretation of cartographic sources, satellite and aerial images as well as ALS data, have been established research areas for the linewalking and raster survey. Their results allowed the targeted geophysical prospections. The final results of the non-invasive documentation of the central area of the *Troesmis* site were the location of the fortresses of the *Legio V Macedonica*, its *canabae*, as well as some necropolises areas.

The water supply of the settlements in the central area of the site, especially the remains on the territory of the Greci commune, was a subject of special interest, studied on the ground mainly in 2016 and 2017. During the last two years the archaeological research has focused on military and civilian antique structures in the vicinity of the central area of the *Troesmis* site, on the territory of the present-day Greci, Cerna and Carcaliu, revealed by archival information as well as through observations made in 2015 and 2016, using the same methodological pattern of survey followed by geomagnetical prospections. In addition, the data collection from the air by using a drone has been extensively used. The importance of these investigations is especially high, since these areas, although registered as having an archaeological value since the first half of the last century, were and are subject to intensive farming and pastoral activities, and consequently are, the same as most of the tumuli from the region, completely or almost destroyed.

***Limes Scythicus qui latius diffusiusque porrigitur* (CTh. VII 17.1). A commentary on a 4th and 5th century segment of a Danube river frontier**

Mihail Zahariade

After the great second half of the 3rd century crisis at the Lower Danube, the first half of 4th century was a period of relative economic prosperity, reconstruction, and political stability, except maybe some local and temporary disturbances in which the river frontier of *Scythia* was involved. The effects of the solid Tetrarchic and Constantinian interventions on economic, social and political ground in which defence politics played a significant role soon showed its beneficial effects in urban and rural milieu as well.

The real setback in the defence of the existing structures in the province of *Scythia* came not so much after the military disaster from Adrianople, but after the death of Theodosius I, a restorer, as much as he could afford it, of the pristine state of affairs. The 5th century *Scythia* faced a period of serious crisis although imperial administrations attempted to maintain control on the defensive capabilities at a level consistent with provincial and central economic resources. In analysing the characteristics of the 5th century, archaeological, legislation and literary sources are approached. Sites like Capidava, Carsium, *Troesmis*, *Dinogetia*, *Noviodunum* and *Halmiris* are discussed and compared with the state of the urban settlements in the interior of

the province or on the littoral: The juridical sources, provide extra information of exceptional value on the administrative-military and economic realities in the 5th century *Scythia*. Literary sources, although few in number, add important clues on the situation of the period.

Burgus & Quadriburgium. Two Late Antique fortifications in Northwestern Noricum

Stefan Traxler, Gerald Grabherr, Barbara Kainrath and Wolfgang Klimesch

Geophysical prospections in Mösendorf (Vöcklamark, Upper Austria) in 2015 and excavations in Oberranna (Engelhartszell, Upper Austria) in 2017/18 offer new insights to the Late Antiquity in Northwestern Noricum. The burgus of Mösendorf is located above the road between the towns of Iuvavum/Salzburg and Ovilavis/Wels. The quadriburgium of Oberranna is a well-preserved fortlet of the Danube Limes.

Before the Legion arrives – The presence of the Roman army on the western ripa Norica

Gerald Grabherr, Stefan Groh, Barbara Kainrath and Stefan Traxler

The garrison of the *Legio II Italica* in Lauriacum / Enns after the Marcomannic wars is well known for a long time. Priorly a previous stationing of the regiment in Albing, which is located only 5 km to the east across the river Enns, has been assumed. Recent research proved that the legionary fortress of Albing was a futile attempt - probably under the reign of Caracalla - to relocate the *Legio II Italica* to a more prominent location that is better visible from the opposite bank of the Danube.

Aerial archaeology and following geophysical prospections (geomagnetics and GPR) has led to the discovery of a hitherto unknown military camp in Stein-St. Pantaleon quite near to the legionary fortress of Albing. The site provides finds from the 2nd half of the 1st century to the 3rd quarter of the 2nd century containing military equipment and last but not least 7 fragments of at least 6 military diplomas. This makes it absolutely clear that the Auxiliary Camp at Stein-St. Pantaleon is to be regarded as the predecessor of the garrison of the *Legio II Italica* at Lauriacum / Enns.

The sequence of military camps in the area around the estuary of the river Enns (Stein-St. Pantaleon, Enns and Albing) underline the strategic importance of the Danube crossing to the Aist valley in the border region between Upper and Lower Austria and the presence of the Roman troops at this section of the *ripa Norica* even in the early Roman Empire becomes clear.

The fort at Çitköy-Sabus reconsidered

Julian Bennett

This paper sets out previous views on the fort at Sabus on the Euphrates frontier, and puts forward a re-assessment of the site and its visible remains. The evidence is that as originally constructed it was of a regular rectangular form, with an internal area of about 4 ha., and so suitable as the home for an Imperial period *Ala*. That being so, it may not be entirely coincidental that according to the *Notitia Dignitatum*, it was the base for a unit of *equites sagittarii* in the late 4th -early 5th century.

On the edge of the Roman Empire – a defensive system of the south region of Mauretania Tingitana

Maciej Czapski

With the Roman conquest in 1st century AD, the North – West part of Africa became an official province named *Mauretania Tingitana*. Surrounded by the natural barriers – Atlantic Ocean, Mediterranean and the Atlas Mountains – *M. Tingitana* had a unique character because of the natural isolation. The Romans have introduced their farming style taking the land of the local inhabitants making it less available for pasture. In view of the Roman military dominance, local tribes had to accept the Rome's rules and to yield the Roman law. It might be a reason for the conflicts with local societies where traditionally animal husbandry played a key role. Rich merchant cities like Volubilis or *Colonia Sala* needed protection which could be provided by the army. It is significant that no single legion has stationed in *Tingitana* but the relatively large number of the auxiliary units could manage the security of the frontier. But how did the Romans controlled the borders of their territory in that part of Africa? The southern border zone between *Colonia Sala* and Volubilis is particularly interesting because of preserved remains of defensive system. Nonetheless, our knowledge of this system is not complete and some questions still remain without the answers. The idea of M. Euzennat describing the frontier of *Tingitana* as the *limes* frontier is still rather controversial. How therefore the Romans secured that frontier and what was the role of preserved forts in the Volubilis and *Colonia Sala* region? Remains of the forts in Tocolosida, Sidi Moussa, Ain Schkour and Sidi Saïd, as well as those nearby *Colonia Sala* connected with the watchtowers, could be helpful in understanding the security of the frontier. No traces of the military constructions remains between the southern cities is very thought-provoking. Perhaps this frontier has functioned with a different method based on some of the local tribes cooperation with the Roman authorities which can be partially confirmed by the peace treaties found in Volubilis. Researchers on the defensive system of the ancient cities Volubilis and *Colonia Sala* give a very interesting insight into the problem of controlling the southern borders of the province.

1. Euzennat Maurice, *Le Limes de Tingitane. La frontier Meridionale*, Paris, 1989
2. Le Bohec Yann, *Histoire de L'Afrique Romaine*, Paris, 2005
3. Rouland-Mareschal H., „Limes de Tingitane au Sud de Sala colonia”, *l'Académie des Inscriptions et Belles-Lettres*, t.13, 2e Partie, Paris, 1924

The Roman Fort in Hegra

Zbigniew T. Fiema

Ancient Hegra (Madâ'in Sâlih) was a major Nabataean political and commercial town on the Incense Route in the Arabian Peninsula. Following the annexation of the Nabataean Kingdom by Rome in 106 A.D., the town had continued as a Roman provincial centre. Since 2008, the Saudi-French Mission has carried out archaeological excavations at the settlement site. The massive rampart surrounding the town and the south-eastern gate were investigated, the former considered to be Nabataean, i.e., of the 1st century A.D. date, the latter yielding epigraphic evidence on the Roman military presence in the town. The explorations of the southern section of the rampart led to the discovery of a stone-built complex of a regular layout, which turned out to be a Roman fort garrisoned by the occupation forces.

The excavations of the fort revealed that it was constructed in the early 2nd century A.D., featuring massive perimeter walls, a gate flanked by two towers, a well-preserved corner tower and the internal barracks, all of which find good parallels in Roman military architecture. Major remodelling took place in the early–mid-3rd century, exemplified by the blocking of the gate and the construction of small buttresses against the southern wall. The fort appears to have been militarily abandoned by the end of the 3rd century but the presumably civilian occupation continued in the 4th.

The excavations provided produced a wealth of information on the chronology, building techniques and the material culture, including numerous ceramics (also the imported types), un-

common bronze objects, large number of coins and one Latin inscription. The fort in Hegra is a unique monument of this kind in Saudi Arabia, and it confirms the significant Roman presence in the NW part of the Arabian Peninsula.

Tradition and Innovation in the Trajanic Auxiliary Fort at Hauarra (Humayma), Jordan

John Peter Oleson

Twenty-five years of excavation and research by the author at the Trajanic auxiliary fort of Hauarra on the Arabian frontier have yielded significant results concerning the application of a revolutionary fortification design combined with traditional planning procedures. Built immediately after Trajan's conquest of the Nabataean kingdom in AD 106, the fort and its interior structures were carefully laid out in modules of the Roman foot, according to a system centuries old. The rectangular enceinte, however, was provided from the start with 24 square projecting towers, apparently the earliest known example of this type of plan, previously thought to be a development of the third century. The fort was manned by a detachment from the *Legio III Cyrenaica*, which had occupied the Nabataean territory. There appear to have been close connections between this fort and a fort with projecting towers built at the same time by another detachment of the same legion at Madâ'in Sâleh (Hegra), 400 km to the south. Excavations at Hauarra have documented a *principia*, *praetorium*, *horreum*, barracks, water-supply system, and a craft area that may have been a brewery, possibly the only brewery so far documented within a Roman fort. The *praetorium* was furnished with frescoes and mosaic floors with geometric decoration. The fort was abandoned during the Tetrarchy, reoccupied by a smaller force in the early fourth century (probably by a unit of camel-mounted archers), and finally abandoned in the late fourth century, probably as a result of the earthquake of 363. The paper will present the special features of this fort, one of the few well-preserved principate forts in the Near East.

Power Over or Power With? Monumentality in the Desert: the Roman legionary fortress of Udhruh (Jordan)

Mark Driessen

Monumentality in Roman military architecture has both a physical and an emotional aspect. The physical aspect is connected with the furnishing of a selected location with representative buildings and structures, and contributes to the physical monumental manifestation of these buildings and monuments both separately and together as a whole. Monumentality also has an emotional aspect which relates, inter alia, to ideology, troop cohesion, and domination. The intentions of such forms of monumentality are dependent on the builders-planners and on the intended target groups.

This paper focuses on such physical and intentional aspects of monumentality for the legionary fortress of Udhruh (Jordan). The location and layout of the curtain wall assemblages and the *principia* make clear that this military site was a remarkable political and territorial marker in a changing landscape.

2. THE PURPOSE OF ROMAN FRONTIERS: A DEBATE

Session organisers / Chairpersons:

David J Breeze
Christof Fluegel

The aim of this session is to examine several of the different purposes of Roman frontiers which have been proposed. Each speaker has been asked to speak for no more than 10 minutes on one purpose of the frontiers. At the end there will be a vote, and a prize for the “winner”.

To defend the empire: Eberhard Sauer

To prevent raiding: Erik Grafstaal

To control transhumance: Marcus Gschwind

To control movement into and out of the province: Andreas Thiel

To protect travellers in the frontier zone: Alan Rushworth

To keep the troops busy: Simon James

To create an edge to the empire for the Romans: Sebastian Sommer

To serve as a symbol and object of intimidation: Christof Fluegel

Military Architecture as a Symbol and Object of Intimidation

Christof Fluegel

Roman fort gates along the frontiers of the Roman Empire could reach considerable heights of more than 20 metres. Taking into account the local topography of sites (with forts often situated on landscape terraces) the perception was that they were even higher than in reality and they therefore must have created a considerable impression. The representational aspect is true also for the Limes running straight through the “Barbarian wilderness”: this “rigor valli”, which is to be found on various sections of the frontier and was immortalized on contemporary souvenir objects, was a clear message to barbarians: “see what our military force can achieve!”

To protect communications and movement in the frontier zone

Alan Rushworth

This contribution to the debate focuses on frontiers in North Africa to argue that one of the primary functions of military installations there was to protect people travelling in and through the frontier zone.

Successive frontiers in Mauretania Caesariensis were characterised by linear deployments whereby the bulk of the provincial army was stationed along one principal highway which extended for most of the length of the province. This formed a pragmatic response to the elongated shape of Mauretania Caesariensis, ensuring the presence of units able to provide military coercion in all parts of the frontier zone, but secure communications between and movement of supplies to these widely spread units was obviously crucial. The second-century deployment seems to have taken shape during the reigns of Hadrian and Trajan. In addition to the garrison forts, watch towers are known along certain section of the highway. However, rather than marking a frontier line, with the purpose of controlling access into Roman territory, however, these towers are most convincingly interpreted as providing protection for soldiers, officials and others travelling along the highway. It is noteworthy that the known examples are located in areas of rugged terrain where travellers would have been particularly vulnerable to ambush. These were tempting ‘high value’ targets for bandits or disaffected tribesmen. It is likely that the same pattern prevailed when the army moved south to the so-called nova praetentura at the beginning of the third century.

Finally a case can be made that at least one of the longer frontier barriers in the Numidian fron-

tier zone – the Mesarfelta-Tubunae barrier – was at least partly designed to shield transhumant pastoralists from robbery and rustling in rugged hill country and narrow gorges, during their seasonal journeys from the pre-desert to the better watered Tell and back.

The defensive purpose of Roman frontiers

Eberhard Sauer

The weakness of their cavalry exposed the Nervii, a tribe in northern Gaul, to raids by their neighbours. To secure their borders, they planted impenetrable thorny hedges, making quick raiding missions much more difficult (Caesar, Gallic War, 2.17). The Germanic Angrivarii erected a linear barrier to protect their tribal lands, where there were no natural barriers. They used this to take a stance against the Roman army who succeeded in storming it only with difficulties (Tacitus, Annals 2.19-20). A simple tribal barrier could be effective against the might of a mega-empire. Hadrian's Wall and the Antonine Wall occupied, where possible, high ground, and the same is true for late antique Persian walls – all no doubt more difficult to overcome than the basic tribal barriers cited. There are cases of simple linear earthworks proving decisive in war, even in the age of firearms, as late as the eighteenth century. Whilst it is obvious that the prime function of massive investment in border defence was tangible and real military advantage in deterring, decimating, delaying and trapping the enemy – fashion has led modern scholarship to dismiss linear barriers as largely symbolic and not very effective. Mohammad Chaichian (Empires and Walls, 2014), examining Hadrian's Wall and other long walls from antiquity to modernity (some of them operational for centuries) concludes that they 'always signal the fading power of an empire'. President Trump's wall-building ambitions have only reinforced the view that past and present defensive walls are mere follies (Chris Catling, Current World Archaeology 83, 2017: 58). More moderate sceptics acknowledge some benefits, but doubt that any Roman walls ever served as fighting platforms, the army preferring to fight in the open. Yet, no sensible general will put his troops into unnecessary danger. Where terrain and walls could be used to minimise or avoid casualties, it made no sense to raise one's head above the parapet. It is time to tell the unfashionable and simple truth again. Roman walls were no vanity projects, but were built to reduce raiding and make invasion much more difficult and costly, thus protecting the prosperity of the hinterland. And, as long as adequately manned, they largely succeeded in doing so.

To control transhumance

Markus Gschwind

On the basis of the archaeological evidence of High Imperial and Late Roman frontier installations in the steppe regions of the Near East and on the fringes of deserts in North Africa the paper will argue that the main purpose of Roman Frontiers was to control transhumance

3. LONG WAY TO TRAVEL

Session organisers / Chairpersons:

Vladimir P. Petrović, Senior Research Associate, Institute for Balkan Studies of SASA (vladimir.arheolog@gmail.com)

Francis Tassaux, Professor emeritus, Ausonius Institute of the University Bordeaux Montaigne (tassaux@u-bordeaux-montaigne.fr)

Roads and Routes, Stations, Ancient sources, Remains, Fluvial Transportation...

The Roman roads constructed across the territory of Roman Empire exerted an enormous influence on the development of the provinces. Namely, the development of the significant and complex system of ancient roads went through several phases. In the pre-Roman period the oldest roads were preconditioned by the landscape and the needs of the people to travel and trade goods. During the Roman conquests, roads had a prevailing military character. Led by the desire to extend the borders of the Empire to the Danube, in order to consolidate their power and rule on the conquered territories, to prepare the further conquests, to supply the army and population by various goods and to exploit natural resources, Romans built the main roads with different type of stations, recorded in the antique itineraries and inscriptions. Those roads were very often constructed along the paths of the pre-Roman roads. After the establishment of Roman state rule, the road system is used predominantly for the reasons of trade development, travel and postal system (*vehiculatio*). The various aspects of Roman road network include the main and secondary terrestrial communication lines, but also the fluvial transport, especially on the main river courses such as Danube or Rhine.

The study on Roman communication lines is based on the written sources, data from itineraries, travel records and results of archaeological excavations. Regarding the research of Roman road network and stations, as the ancient itineraries are frequently not completely reliable, the contemporary archaeological interpretations are applied. Apart from itinerary communications the directions and characteristics of local communications, that used to connect significant areas with main roads, are also very important.

The road and rivers network within the Illyricum Digital Atlas (IllyrAtlas)

Francis Tassaux

The Illyricum Digital Atlas, sets out this year, as an extension of AdriAtlas, the Antique Adriatic Digital Atlas. Like the latter, it will be made of a database connected to a geo-portal (WebGIS). Its goal is to cover the space between the Greek world and the Danube river, corresponding to the territories and the provinces of Dalmatia, Pannonia and Moesia Superior, from the II century BC and the Late Antiquity. It takes into account all the places named by the antique historical sources as well as all the sites having a certain importance under the historical and archaeological point of view. For example, beyond the set of the cities, it will include all forms of settlement of which we have a plan or a part of the plan. Every site will also have its own detailed file with images and bibliography. IllyrAtlas thus is, at once, an atlas, in the classical sense of the term, and an encyclopedia intended for everyone, published online under the open-access policy.

Within the database, together with the Map of the Sites, there will also be a Map of the Communication Routes, connected too to the geo-portal. This GIS will be much more complex to be compiled than the sites' one. If drawing the road network on a 1:500.000 or 1:1.000.000 map does not pose a problem (even if many paths remain uncertain), the question is much more delicate on a multi-scale map. Since the user will be allowed to zoom in up to big and very big scales, this can lead to aberrant situations where the roads are drawn in acrobatic positions or cannot in any case be topographically acceptable.

It is therefore important to arrive to the precise geo-location of each road, that implies a very difficult work, that involves at once all the modern tools of survey (particularly Lidar and anal-

ysis of multi-spectral images) and the field data, both under constant updates, without leaving aside, the ancient written sources, literary and epigraphic and the medieval, modern and contemporary documentation.

Moreover, it is important to represent the certitude level of a path or of a segment of the road, as well as its hierarchic level (imperial road, secondary road, local road, ...). Finally, we cannot forget the mapping of the navigable rivers, this too being complex enough, both on the scientific and on the technic plan.

To tackle these questions, a research group composed by the database expert Nathalie Prévôt, the geomatician Clément Coutelier and by Sara Zanni, post-doc Marie Skłodowska-Curie researcher, has been gathered at the Ausonius Institute.

De l'Adriatique aux Carpates : voies parallèles, chemins alternatifs, déviations routières

Vladimir Petrović, Mihai Popescu

Dans l'organisation des territoires, la mise en place de l'infrastructure de transport est une constante indispensable. Celle-ci s'appuie sur les réalités du relief, l'utilisation de chemins anciens, les informations humaines en vue de l'ouverture des voies stratégiques, militaires et commerciales, et leur aménagement.

Ainsi, pour supporter et suppléer un axe principal sont réalisées des voies parallèles, des dédoublements qui nécessitent de gros travaux comme le long de la côte Adriatique et dans les Portes de Fer. Le long des vallées sont bâties des voies de pénétration qui, selon les époques, prennent plus ou moins d'importance. Enfin, comme un symbole de l'aboutissement de l'infrastructure nécessaire à la mobilité, on note la création de déviations et de raccourcis.

Back to the Via Militaris east of the Via Nova Traiana in Arabia

Chaim Ben David

In their pioneering publication Brünnow and Domaszewski noted several milestones east of the Via Nova Traiana, especially in southern Jordan. This information was repeated in Thomsen's monumental paper on milestones, where he suggested that they were part of a continuous road that connected the military installations along the eastern limes. In the last decades the existence of this road between Amman and Udhruh east of the Via Nova Traiana was accepted by Isaac and Parker. David Graf noted the fact that the above mentioned milestones are clustered near forts and camps and do not form a continuous line; he suggested that there was no connecting road between the sites and summarized his view by stating that "...The widely separated milestones in the proximity of Lejjun and Jurf ad-Darawish perhaps only marked the approaches to the military camps for travelers... In any case the finds are insufficient for postulating a continuous road between these distant points". Our paper will deal with new information about road sections discovered along this presumed continuous road.

The roads of Roman Dacia. New research, new perspectives

Florin-Gheorghe Fodorean

In the last 15 years, our interest for the Roman roads has constantly grown because new findings were recorded, together with new data concerning some important sectors of Roman roads. Therefore, our paper aims to present this new research. We will focus on the following topics: 1. The origin of the road network in Roman Dacia; 2. Epigraphic evidence regarding the road construction: the milestones; 3. Mapping the roads: evidence of former Roman roads in the modern maps; 4. Roads and the frontiers of Roman Dacia; 5. Forts and roads inside the province; 6. Who built the roads? Military troops involved in the road construction; 7. The road

infrastructure of Roman Dacia: stationes and mansiones; 8. Cities, farms and rural settlements: economy and Road infrastructure in Roman Dacia; 9. The faith of the Former Roman roads after the abandonment of Dacia.

Octavian's Footprints: Hillforts, camps and roads between Burnum and Synodium

Željko Miletić, Silvia Bekavac

Based on the recent field survey of Petrovo polje, the Octavian war campaign against Delmatia in the area between Burnum and Synodium is under consideration again. We are in search of two marching Roman military camps. The first one near village Parčić, is a part of a siege system by which Delmatian Promona was surrounding. The second camp above the villages of Otavice and Gradac we linked with the blockade of the Setovium hillforts situated on the southern slope of mountain Svilaja near village Baljci. Chronological stratification of the Roman road network between Burnum and Salona was considered, complemented by the recently discovered paths connecting the camps.

Beneficarii consularis stationes along the Roman road Aquileia – Dyrrachium. State of research

Ivo Glavaš

The backbone of the traffic system in the province of Dalmatia was strategic military road from Aquileia to Dyrrachium which was the shortest route from mainland Italy to the eastern parts of the Empire. In that direction, on an important place in front of the Roman colonies Iader, Salona and Naronae on the coast of Dalmatia, there was the Burnum – Bigeste system of Roman military camps. After the departure of the legions from Dalmatia and stabilization of the Danube limes second century AD, the roads in the province of Dalmatia did not lose their military significance. Road safety and supply control of the Danube limes after the departure of the legions were in the hands of the members of the auxiliary units and beneficarii consularis which were deployed in stations on key routes.

Legionnaires from the Danube limes were usually deployed as beneficarii consularis to the province of Dalmatia governor's office after the legions would leave the province. At the beginning of the 2nd century there is no early confirmation of stations of beneficarii consularis in the province of Dalmatia, although there are indications of such a station in Doclea where the beneficarius consularis was a member of the VIII.

voluntariorum civium Romanorum cohort until the arrival of the legionnaires of the I. Adiutrix legion from the camp Brigetio at the Pannonia limes to the station in Doclea. A total of fifteen stations of beneficarii consularis have been confirmed in the province of Dalmatia of which eight of them are deployed along Aquileia-Dyrrachium strategic road: Avendo, Burnum, Magnum, Pons Tiluri, Novae, Naronae, Diluntum, Doclea.

None of the stations of beneficarii consularis in the province of Dalmatia has been excavated and so all our knowledge comes from accidental finds of some fifty votive altars of beneficarii consularis and comparisons with finds from other areas of the Empire, in particular with finds of excavated sanctuaries in stations of beneficarii consularis on the Rhine limes and in Sirmium. Based on in situ finds of beneficarii votive altars, it is possible to try to approximate the micro-locations of stations of beneficarii consularis along the Aquileia-Dyrrachium road in Burnum, Magnum and Novae by comparing the data with the locations of such facilities on the Rhine limes and especially with the location of the excavated station of beneficarii consularis in Sirmium, which was located immediately along the western rampart of the city.

The Limes road in Croatia – Known data, new interpretation

Igor Vukmanić

Physical evidence of the Danube Limes road in Croatia are often described as scarce. What is believed is that that Roman road was built in the shortest way between the therein localities. However, due to latest archaeological discoveries and reinterpretation of certain old-ones, the distinguishment between Early and Late Roman, as well as military and civil sites in the area can today be made. With the use of Roman and latter itineraries, findings and traces on the ground, mainly from Baranja territory, then archive and contemporary topography data and also the remains of regional milestones, a new view on the probable line of the Limes road and its relation to Danube sites in modern-day Republic of Croatia shall at present be introduced. While some of the Limes localities in the area seem to be built along the Roman magistral land-route, other could have been built only along the Danube water-way and act as end-points of mentioned road. Conclusively, author of this paper believes that a long section of branch-road, i. e. pathway, in the Country was by far mistakenly interpreted as a part of the main Limes road.

Die Bedeutung des Siedlungsplatzes Gamzigrad für das Sicherheitssystem der Provinz Dacia ripensis

Gerda Sommer v. Bülow

Die befestigte Anlage von Gamzigrad ist eines der besterhaltenen römischen Denkmäler in der Provinz Dacia ripensis. Durch seine geografische Lage kommt dem Ort wahrscheinlich eine wichtige strategische Funktion bei der Reorganisation des Verteidigungssystems an der unteren Donau nach der Aufgabe der dakischen Provinzgebiete zu. An Hand der Ergebnisse gemeinsamer serbisch-deutscher Forschungen im Umfeld des Galerius-Palastes soll diese Frage untersucht werden.

The road to be taken: a GIS-based analysis of the spatial and networking patterns pertaining to the Roman conquest of Sarmizegetusa Regia, Dacia

Ioana Oltean, João Fonte

The upland landscape surrounding the Iron Age Dacian capital of Sarmizegetusa Regia in the Orăștie Mountains (Romania) and the events which led to its conquest by Rome have long caught the attention of specialists and the wider public. However, the traditional research methodology applied until now left open considerable questions of its socio-historical dynamics, including our understanding of networking across a landscape lacking both historical sources and archaeological evidence for ancient roads. Based on existing high and mid-resolution topographic data and on the newly-available assessment of the Late Iron Age and early Roman archaeological landscape, this paper employs GIS-based spatial analysis (site location, mobility and visibility) of above-ground remote sensing data to understand the spatial relationships between Roman military bases, Dacian targets and the wider landscape. This will help formalise and test spatial and historical hypotheses, as an integral part of a wider interdisciplinary archaeological research in order to help build a better understanding of this iconic landscape.

Seek and ye shall find. A spatial approach to mapping Roman roads and buried archaeological sites in the Srem region. The case study of Tapavice site

Sara Zanni, Biljana Lučić, Alessandro De Rosa

The main goal of the “From Aquileia to Singidunum: reconstructing the paths of the Roman travellers – RecRoad” project, developed at Université Bordeaux Montaigne in collaboration with the Sremska Mitrovica Institute for Protection of Cultural Monuments was to detect and map the Roman thoroughfare connecting the Roman cities of Aquileia (Aquileia, Italy) and Singidunum (Belgrade, Serbia) using different sources and methods, including Sentinel-2 multispectral images, historical maps and surface survey results. The attention of this paper will focus on the methodologies applied to identify buried archaeological features and on the results obtained combining data coming from different kind of sources in the Tapavice site (Vojvodina, Serbia): in this area, an archaeological site was identified through remote sensing analysis, while its chronological framing was determined thanks the surface surveys on the ground. The pottery fragments collected show a time-span going from proto-history to the Roman period.

4. HOLD THE LINE!!!

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Military strategy and tactics. History, sources, battlefield research

Roman Tactics and Frontier Defence in the Early Empire (1st to 3rd centuries AD)

Andrew Poulter

Although we now know a great deal about forts, with some exceptions, little attention has been paid to how they functioned and controlled a section of the frontier which, presumably, they were ordered to control and, in emergencies, to protect. As early as the middle of the first century a governor could observe that he was responsible for the protection of the right bank of the Danube –ripam quam tuebatur.. However, to understand how frontier defence operated, it is desirable to consider the spacing of forts, their garrisons and logistics (availability of fodder). Only in the 2nd to early 4th century is it known, with a fair degree of certainty, which garrisons were in residence in particular forts, whether cavalry or infantry. Therefore, this study is best limited to attempting to suggest what units could achieve, and the limitations to military control of the river preventing raiding by bandits (latrones). Until the Marcommanic Wars, the second century was largely spared large-scale invasions so the distribution of garrisons must have reflected the need to deal with small-scale interception of enemies crossing the Danube, rather than confronting a significant force. There are cases where, with the onset of barbarian invasions, there were changes in the disposition of military forces but the evidence is largely too disparate to determine if this represented a conscious reaction to a changing military situation after c. AD. 225.

Legionary functions are a more complex and a different issue. Auxiliary units provide sufficient information to reconstruct, in many cases, the distribution of garrisons – and to suggest explanations for their establishment at particular sites. Partly, this can be achieved (for certain sectors) in calculating the distance between individual forts and how it could be adequately controlled. Ethnographic studies and information from early modern military history can be introduced. The distance a cohort on the march could travel has been studied by colleagues in Austria. For cavalry, the closest modern horse which approximates to the size of Roman mounts are Mongolian ponies. For these we have detailed information on the quantity of fodder required and the distance they can travel in a day – half of which, assuming that patrols returned to base every night – would offer some estimate as to whether particular bases could house a garrison able to patrol its own 'sector'. Where this would not seem to be effective, intermediate fortlets or watch-towers could be required, as clearly was the case in Pannonia during the last quarter of the 2nd century where watchtowers were employed. Differences between the spacing of forts suggest that in Pannonia the forts were more spaced out which may explain the regular location of intermediary towers. Comparative studies on frontiers along the western and eastern frontiers are intended to identify common and different approaches to tactical defence. The capability of mounted forces (using data from the studies on modern Mongolian horses) can propose the maximum distances they are likely to cover, assuming that a unit would return to its base at the end of the day. Factors such as the collection and storage of fodder will also be assessed.

It cannot be maintained that an analysis of this kind will provide any degree of certainty as to the actual function of a particular fort. Both the two papyrus scrolls we have (Papyrus Hunt and the example from Vindolanda) prove that individuals or detachments of auxiliary units performed functions which could take them well away from their primary base, even (probably) in 105 during, or on the eve of the 2nd Dacian War. However, such an approach has the virtue of for-

mulating the limits of control provided by auxiliary units. This offers a starting point for regional detailed studies of how the Roman army operated, and stimulate debate about the tactical function of the army on different sectors of the Roman frontier, introducing also the impact of different topographic factors which dictated the character of different parts of the frontier (eg. The Iron Gates).

Traces of Octavian's military campaigns in the north-easternmost part of Roman Italy and western Illyricum

Janka Istenič

Roman military assaults, probably related to Octavian's Illyrian War (35-33 BC), left archaeological traces recovered at three sites in the hard-to-reach hilly area of the hinterland of the Soča Valley (W Slovenia; Istenič, J., Evidence for a very late Republican siege at Grad near Reka in Western Slovenia, *Carnuntum Jahrbuch* 2005, 77–87; Istenič, J., Traces of Octavian's military activities at Gradišče in Cerkno and Vrh gradu near Pečine. – In: Istenič, J., Laharnar, B., Horvat, J. eds., *Evidence of the Roman army in Slovenia, Katalogi in monografije* 41, 2015, 43-73). Recent archaeological research in Slovenia has identified other sites and discovered further evidence from the period between Caesar's proconsulate and the beginning of the Middle Augustan period (15 BC) that are probably also related to the Illyrian War and shed additional light on the Roman conquest of what became the north-easternmost part of Roman Italy and of western Illyricum. The new discoveries also advance our knowledge of the Roman army (military installations, equipment, tactics) in the post-Caesarian to pre-Augustan period, for which archaeological evidence is relatively scant.

My Home is My Fortress - Combat in built-up areas in the Roman Army

Ze'ev Safrai, Ran Ortner

In the abundant Roman combat literature, and in contemporary research, three tactics for achieving victory are described: the battle, the siege and the breaching of walls. The Romans are the attackers and the enemy city is breached. After the walls are breached the war is over, the enemy stops fighting, and the stage of destruction begins.

In the modern world an additional stage of war developed, namely combat in the built-up area itself. The entry of the army into the city symbolizes the beginning of this stage, which is likely to be prolonged. In the democratic world, battles in built-up areas became complicated due to an effort to prevent (or at least to reduce) harm to the civilian population and the municipal infrastructure.

But even armies that refrained even from making such declarations and limitations, sometimes found it difficult to capture large built-up targets.

The modern army finds combat in built-up areas very difficult. It devotes long training exercises to preparations and develops weapons and tactical approaches. And still it's a difficult and exhausting stage, which in democratic countries sometimes ends only years after the war, in court. Of course such problems of morality, public opinion, rhetoric, demagoguery and law were nonexistent in the Roman world.

The purpose of this article is to prove

1. That occasionally there was warfare in built-up areas during the Roman period, in some opportunities.
2. That combat in built-up areas most probably took place in additional cities, but such details about their capture were not preserved.

And to discover:

3. What conditions were required in order to enable significant combat in built-up areas.
4. Whether the leaders of the army understood that there was a problem with combat in built-up areas, and whether they prepared for it (combat doctrine, training, weapons, etc.).
5. Why there is a lack of awareness of this combat method and it is not included in the general

literature from the Roman period.

Combat in built-up areas – the historical evidence

This type of combat is familiar from the following sources:

Josephus's description of the siege and capture of settlements during the Great Revolt, in Gamla and Jerusalem (66-70).

Archaeological excavations in Roman Judea mainly from Gamla, Yotapata and Jerusalem (66-70 C.E.).

A very short and general historical description of the Second Jewish Revolt by Dio Cassius (132-135 C.E.).

Archaeological findings primarily from the Second Revolt (132-135 C.E.), primarily in the Judean plain, and to a small extent in the Galilee, in the Lydda Plain and the Judean hills (very little).

Sparse findings in the rabbinical literature (and the national Jewish memory of the two revolts).

In this article we will bring to a discussion the two major cases of Combat in built-up areas; Gamla and Jerusalem. Gamla was a north highland situated field town, densely built and protected with its steep topography, one massive wall and a labyrinth of narrow steep alleys. Jerusalem was a very well protected city with big population that lived in a very densely populated and crowded built up area. Due to this description, Both cities, served as a big battle zone, as they posed a very problematic and challenging battle ground for the Roman army. Mainly due the fact they forced the Romans to fight in built-up area and subterranean battle grounds. This paper will deal as well with the tactical and strategic meaning and outcomes of this unusual battle grounds for the Roman army. The most obvious one is the fact that the Jewish two revolts (also known as the 'Jewish wars') lasted for a relative long time, much longer when taking in to account the unbalanced military Equation between the strong Roman army and the Jewish military abilities and small population that consisted the Jewish nation during the first to second century (C.E.). In this paper we suggest, that one of the key explanation for this phenomena, is the so called, "Subterranean Jewish tactic" and the built-up area battle ground, formed by the Jewish form of settlement. We also claim that this key explanation, was much wider and spread then it appear in the ancient historical sources. If so, we can also determine that the Roman losses and casualties were much higher then was thought till now. This could bring to a more realistic description of the 'Jewish wars' from the Roman's aspect, as a Many casualties - high intense war.

The battlefield – emphasis on the house and the complex elements

General speaking, The urban communities in the West, and particular the pre-Roman cities, were less crowded than those in the East. In the context of this discussion we would like to focus on the basic unit of the house. we claim that the ordinary house in the Eastern empire differed from that in the West. The 'East' here is mainly the province of Judea. But the houses in the other provinces in the East are similar (Syria Arabia and so on).

Combat in built-up areas – the historical evidence

Historical descriptions

a. The capture of the city of Gamla

The capture of the town of Gamla is described in detail by Josephus Flavius (Wars 4. 1), which is the only historical source for it. In addition, the town has been excavated. The siege lasted for about three weeks. The legions that breached Gamla believed that, that was the end of the combat, but encountered fierce fighting in built-up areas, which forced them to withdraw temporarily from Gamla (ibid. 17). The description indicates that the rebels were not alarmed by the entry of the Romans into the city, but ascended to the top of the steep city.

The streets in Gamla are spread out along the lines of altitude in the city, and the ascent from one level to the next is via steep streets of stairs. The rebels prevented the ascent of the Romans, attacking them from the roofs, and throwing stones at them. The Romans, who had not planned for such situation, went up to the rooftops and captured the roofs of one level, and from there tried to penetrate the courtyards and homes of the higher level. Josephus tells of the collapse of the roofs on which the Romans were positioned, causing them multiply death

casualties and losses.

Today, when we are familiar with the construction method in Gamla, these descriptions can be understood.

The Roman army got confused in the alleys, and despite their large numerical and tactical advantage were unable to capture the city, and consequently withdrew from it.

In effect there was a military situation here that was unfamiliar to the Romans: After the capture of the city the army actually fled. Afterwards the Roman army planned its moves, entered the city and conducted orderly house-to-house combat, from the upper to the lower city, thereby preventing a repetition of their failure. In the 'west', such phenomena are rare or absent. In this paper we will try to explain it.

The subterranean fighting

b. Jerusalem

At the same time, there is evidence of combat on an additional level - the subterranean level. In Jerusalem itself there is evidence that the Jews used underground spaces, cisterns, drainage tunnels and tunnels for escape and attack against the Romans (Wars 6, 7, 3-4 (366-367); 6-9, 4 (370).

The Romans finally understood that, and we have also been told that they broke into these canals and tunnels with the assistance of collaborators, which is how they were able to find and catch rebels who hide in them.

Archaeological research in Jerusalem has recently produced a number of discoveries and impressive evidence of that. A good example is a network of drainage canals in the 'City of David' excavation, beneath a section of a graded street paved with large stone slabs. There are many proofs to this method of fighting during bar-kokhba revolt. (132-135 A.D)

In the Western empire there is very little subterranean hiding and tunnels complexes and the phenomenon is almost nonexistent.

We suggest viewing the aspect of combat in built-up urban areas and the underground hiding/attacking complexes as a newly observed element, that must have caused the Romans, heavy losses in the final stages of the sieges against the Jewish fortresses

We assume that such a scenario of combat in built-up areas also took place in many other settlements, which this information was not preserved. It is not mentioned for the same reason that Vegetius doesn't discuss this stage – out of lack of awareness, and perhaps also because it is included in the major battles for the conquest of the Western provinces.

In addition, we suggest viewing the statement (about the number of Roman casualties in Gamla) as the result of a tactic that was typical and widespread in the Jewish revolts, and was repeated in other places.

Traces of Sertorian's military campaigns in the north-east of Hispania

Jaume Noguera

In the framework of the 2014-17 research project War and conflict in the northeast of the Iberian Peninsula in the Roman Republican period (III-I BC) we have located, after several survey campaigns, four archeological sites in the lower reaches of the Ebro river related to the Sertorian wars. The archaeological finds are very similar: denarii and Iberian coins, clavi caligae, fibulae, some pieces of bronze tableware, and the most significant remains, sling-bullets with inscriptions Q.SERT/PROCOS, alluding to Quintus Sertorius. In addition, they share a strategic emplacement, controlling river fords and road routes. These characteristics confirm these sites as Roman encampments, most of them related to the Sertorian army. These remains have to be connected with other glandes inscriptae found in the middle zone and the high river Ebro. All this evidence seems to be related with the defensive strategy adopted by Quintus Sertorius during the years 77-76 BC, in an attempt to stop the advance of the Pompeian troops. Among other actions, it is worth mentioning the deployment of Perpenna's army in the lower course of the Ebro River (Livy, Per. 91, 22).

Roman garrisons on the edge of the eastern frontier

Emzar Kakhidze, Lasha Aslanishvili

Pontus-Caucasian frontier was formed in order to serve the purpose of reinforcement of Roman positions in the Southern Caucasus and to take the region of Northern Caucasus under good control during the 70s of the 1st century AD. Rome had actually lost Armenia and there emerged an urgent necessity to concentrate much more troops along the frontier territories with Armenia Major, Syria and even along the whole eastern frontier. As to the other one dividing Rome from Cappadocia and Armenia Minor, it was completely modernized and its terminal links were Melitene, i.e. the XII Fulminatae and Satala, i.e. the XV Apollinaris legions with their headquarters. These districts were regarded as the main distributors of Roman garrisons to Pontus, Colchis, Cappadocia and Armenia during the 1st-3rd centuries AD.

The Roman forts built along the eastern Black Sea littoral played important role in the defense of the Caucasian border. Apsarus (modern Gonio, close to Batumi) was one of the most significant places of the Caucasus defensive line where auxiliary units of cohorts II claudiana, I SAGI, C·COH(ors) AVR(elius) C(ivium)·R(omanorum), Coh(ortis)∞(milliariae) and probably vexillatio of Legio X Fretensis were served in the 1st-3rd centuries AD. Another vexillatio of Phasis garrison, VEXFA was stationed at Petra (modern Tsikhisdziri, close to Kobuleti), eastern outpost of Apsarus. A much larger Roman garrisons were located to the west of Apsarus: λογχοφόροι (spear-bearing) from Rhizus (modern Rize), Cohors Apuleia civium Romanorum at Hissoporto (modern Arakli) and Cohors I Lepidiana at Καινη παρεμβολη (new camps) close to Trabzon. All garrisons stood there since 2nd century AD to the turn of the 5th century AD.

There is almost all evidence for present day on the garrisons stationed on the edge of Imperium Romanum, i.e. Lazica (modern western Georgia) and its southern adjacent. Archaeologically are studied only Apsarus and Petra, which played important role in the defense of the southern part of Caucasian frontier.

Tropaea in Gelduba? Neue Befunde zur Bataverschlacht in Krefeld-Gellep

Hans-Peter Schletter

Vom April 2017 bis Februar 2018 fanden in Krefeld-Gellep wieder archäologische Untersuchungen durch das Museum Burg Linn statt. Mit 3,4 ha untersuchter Fläche und mehr als 3300 archäologischen Befunden war es die bisher größte Ausgrabung im Vorfeld des ehemaligen Auxillarkastells Gelduba. Vorrangiges Ziel der Untersuchung war es, die Strukturen und das Umfeld des bisher nur wenig bekannten sogenannten „Nordvicus“ zu erforschen. Daneben wurden jedoch auch zahlreiche Gräber der frühen vorrömischen Eisenzeit und der frühen Kaiserzeit freigelegt.

Im Fokus dieses Vortrages sollen jedoch die neuen Befunde und Funde der bei Tacitus überlieferten Schlacht bei Gelduba im Zuge des Bataveraufstandes im Herbst 69 n. Chr. stehen. Neben verschiedenen Befestigungsgräben, die uns eine genauere Vorstellung von den Feldlagern der römischen Vexillationseinheiten geben, wurden auch zahlreiche verscharrte Pferdekadaver und wenige menschliche Überreste gefunden, die vom unmittelbaren Kampfgeschehen zeugen. Ein neuer Fund eines Helms vom Typ Weisenau lässt die Zahl der Helme vom Schlachtfeld auf drei anwachsen. Die Art der Niederlegung und die vorhergehenden Manipulationen an diesem Helm sind identisch mit einem bereits 1988 an anderer Stelle des Schlachtfeldes geborgenen, typgleichen Stück und sind der Schlüssel zur hier vorgestellten Interpretation. Gedeutet werden können beide Stücke als Teile von ephemeren Tropaea, welche von den siegreichen römischen Einheiten an besonderen Brennpunkten des Kampfgeschehens aufgestellt worden sind. Solche Siegesmale sind literarisch und ikonographisch seit dem 5. Jahrhundert v. Chr. gut bezeugt, jedoch wären die Gelleper Funde der erste archäologische Nachweis auf einem antiken Schlachtfeld.

Garrisons of Syria and Rome's military strategy during the late second-early third centuries CE Parthian campaigns: the case of Dura-Europos

Viktor Humennyi

This paper presents the problem of Roman garrisons in Syria in the context of the Parthian campaigns of the late Antonine and Severan dynasties. The main focus of the speech will be given to the archaeological, papyrological and epigraphical sources from the cite of Dura-Europos. Very little is known about the first decades of Roman presence in Dura. In the Age of the Severan dynasty, the garrison consisted of the vexillations of the legions that were regularly settled in the province of Syria Coelae. That included Legio IV Scythica and Legio XVI Flavia Firma. The presence of the Legio III Gallica and Legio III Cyrenaica in the city during the years 216-220 CE can be strongly connected with the Parthian campaigns of Caracalla. The main attachments in the city were cohorts XX Palmynerorum and the vexillations of the legions settled in the province of Syria Coelae. The papyri documents provide us information about the military activity of it's soldiers including the wars against Parthia.

The military garrison was increased at the beginning of the third century CE – the fact, that was recorded with a number of epigraphical and papyrological sources. The archaeological sources help us to verify this information, for we can see how the military camp expanded in that period that was also followed with an amount of building activity in the area.

Another question of how the Romans dealt with the enemy activities in the region is appearance of the institute of dux ripae. The only information about the office of the military command of the region in the early third century comes from an assumption, that was made by M. Rostovtzeff, who believed that the dipinto from the palace of the dux can be used as source to date the appearance of this office. Nerveless, the papyrological material finds the earliest mentions about this command only in the 240-s CE. The existing evidence can be used to date this office as by the time of military expeditions of Caracalla and Macrin against Parthia or the other possible variant are the wars with the Sasanian Persia.

Has Septimius Severus ever been in North Africa fighting against the Garamantes? A reconsideration of the campaigns of the emperor

Renate Lafer

The chronology of the campaigns of the emperor Septimius Severus and what we know about it ist mostly based on the biography written by Anthony Birley, first published in the year 1971. Most of the modern scholars have adopted his opinions in further consequence. If we look at the sources, however, the chronology as well as some campaigns themselves are not certain and must be reconsidered. Particularly the emperors visit of North Africa in the years 202/203 A.D and the in this context conducted campaign against the Garamantes is questionable. In this paper therefore the informations about his expeditions will be rediscussed consulting the sources.

The Myth of a Legion Lost – The Incident at Elegeia in Xiphilinus' Epitome of Cassius Dio

Kai Juntunen

The paper takes an in-depth look into the Roman defeat at Elegeia (Armenia) in 162 CE, which is presently assumed to have involved an unnamed legion that was lost in the course of this battle. A closer examination of the sources mentioning this incident reveals that the present interpretation suggesting a legion lost in battle is based purely on a singular piece of evidence, namely that of Ioannes Xiphilinus' Epitome of Cassius Dio, and the manner how the modern translations of Cassius Dio have understood the Greek term στρατιόπεδον. The precise meaning of the term in its narrative context is not without doubt, and alternative suggestions have

been presented on previous occasions. Thus, the present study will first elaborate how both Cassius Dio and his later epitomizer Ioannes Xiphilinus understood this term.

How the other, more contemporary sources, such as Lucian of Samosata and Marcus Cornelius Fronto, presented the incident and how it can be understood against the background of the larger political narrative of the Parthian war of Lucius Verus (162–166 CE) will be examined in detail. These sources would seem to suggest that contemporary individuals did not consider the Roman reverse in Armenia as such a massive military defeat as the modern interpretations would make it. Instead, the incident seems to have been taken to have been severe, but not catastrophic from the Roman point of view. The reactions of the Roman government, and especially the actions of Lucius Verus, the newly appointed co-emperor of Marcus Aurelius, would also seem to confirm this view and they seem to cast a serious doubt to any assumptions of a massive military defeat at Elegeia.

The location of Elegeia in eastern Turkey and its strategic importance on the Roman eastern frontier will also be explored. The geophysical realities would seem to suggest that the location played a vital role in the control of the Cappadocian-Armenian frontier, and thus, the history of the site from its first mention in the ancient sources related to the Trajanic times (114 CE) until its disappearance from the sources with the incident in 162 CE will be briefly examined. Taking in consideration all the available evidence, the present interpretation of the incident is challenged and an alternative one presented, one that is more in line with the terminological tendencies of Dio/Xiphilinus and that can be supported by contemporary evidence.

The Frontiers and the Mirror.

Lorenzo Boragno

Archaeological, epigraphical and literary sources provide vital information for modern understanding of the nature of the “limes”: however, the frontiers of the Roman world seem to avoid any analytic categories. “I am perplexed by my own data and my conclusion is a direct contradiction of the original idea with I start” (Shigalyov, in the *Possessed* by Dostoevskij).

This contribution aims to propose a debate on the usefulness of some conceptual tools borrowed by different fields of study, notably the modern strategic analysis and the anthropology, and on the epistemological value of their application for the study of the frontiers of the Roman empire.

The point of view of this debate is primarily politic: imperial leaders looked at the world from the frontiers of their own empire. But what they saw?

Bathurst (*Intelligence at the Mirror – Oslo 1993*) would answer “themselves”: the idea of “mirroring the other” assumes that a community “mirrors” its own *forma mentis* on other communities, especially on potential enemies. Similarly, historians are sometimes tempted to use modern conceptual tools to explain and understand the nature of the imperial frontier policy.

In this sense, it is well known the debate inflamed by the approach developed by Luttwak: adopting ideas from modern war analysis, Luttwak developed an approach that has been judged not respectful of the uniqueness of the ancient world.

Purpose of this intervention is to highlight the theoretical approach of the “strategic culture” as way to frame the analysis of Roman Imperial frontier policy. Since its origins, in the 1970s, the concept of strategic culture has been developed as a means of improving our understanding of why different national communities approached strategic affairs in different ways. As clearly stated by Johnston (*Thinking about Strategic Culture, International Security* 19): “Indeed, strategic culture is compatible with notions of limited rationality (where strategic culture simplifies reality), with process rationality (where strategic culture defines ranked preferences or narrows options, and with adaptive rationality (where historical choices, analogies, metaphors and precedents are invoked to guide choice)”. In particular, scholars collectively known as “the second generation” developed an approach that, starting from the available sources and notably from literature and propaganda, intends to explore the formative processes of a strategic culture. Respectful of the way of use archaeological and literary sources that characterized the study of ancient history, this approach provides a fresh and stimulating point of view.

The Cavalry of the Roman Army in the IVth and Vth century

Krzysztof Narloch

The processes initiated back in the Principate period, which resulted in an increase in the number of mounted units in the structure of the Roman army, accelerated in late antiquity. At this time, new types of horse units were created that took an important place among the *comitatenses* and *limitanei*.

Additionally, at least from the reign of Constantine, the prestige of the riders themselves increased, which was reflected in the recruitment procedure as well as in the equipment used. The ways of its adornment were taken from members of the imperial court by riders who served mostly as a mounted guard of the ruler and spread to the borders of the empire, where a large number of horsemen were stationed.

The main question is whether, along with the afore-mentioned processes, the place of cavalry in the military doctrine of the Romans changed that time and what was its role in military operations. These issues are particularly vital in the frontier areas because the percentage share of mounted units was much higher in “provincial” armies commanded by the *duces* than in the “central” *comitatenses*.

Armamentarium of the I Italian Legion in Novae (Moesia Inferior)

Andrzej B. Biernacki and Elena Klenina

The subject matter of arsenals (Lat. “*armamentaria*”) is still among the least investigated aspects of Roman military camps and cities. In most cases, their locations have been established based on the available few written and epigraphic sources as well as on the occurrence of weapons and military gear.

The past Polish-Bulgarian archaeological and interdisciplinary studies at the site of the legionary camp and the Roman and Early Byzantine town of Novae have made it possible to identify and analyze a number of elements constituting its urban and architectural uniqueness. Polish and Bulgarian missions have exposed a significant section of the *latera praetorii*. The *via quintana* and the *via principalis* divided the camp into three districts: the *latera praetorii*, the *praetentura* and the *retentura*. In the *latera* were the *arae*, the *auguratorium*, the *tribunal*, *horrea* or *carnarea*, as well as the *armamentarium*.

Studies carried out in the course of previous science and research projects related to uncovering the large legionary baths and the bishopric complex in Novae led to the discovery of a monumental complex, the only one of its kind in this part of the Roman Empire, which represents several architectural and construction stages. The team found remains of five monumental pillars, 5.20 × 1.40 m each. Their uniqueness stems from the fact that they were built from rectangular rusticated limestone blocks — a method previously found in Novae only in defensive walls, towers and gateways. Passageways between the pillars are 5.50–5.70 m wide. During the successive stages of the structure’s use, it underwent substantial modifications, which improved its functioning and characteristics. Thus, the passageways between the pillars were neatly replaced with walls and at least eight new pillars were built of stone and brick, of the size of 1.80 × 1.60 m, laid out in two rows of four. The research team has proposed the hypothesis that in the second local stage, the arsenal operated in conjunction with the *fabricae* which produced and repaired artillery for the *Legio I Italica*.

Previous results of long-lasting Polish-Bulgarian archaeological studies in Novae clearly indicate that the main representative structures of the legionary camp were located within the *latera praetorii* to the west of the *principia* in the direction of the *porta principalis*. The fact that an arsenal used to be located in this place, which in the second phase of its operation was connected with the *fabricae*, shows how unique this complex was, situated beside three other crucial complexes: the legionary bath to the east, the alleged *praetorium* to the south and the complex of the barracks, conceivably occupied by a Roman *ala*, to the west.

The frontier defence in Noricum before and after the Marcomannic wars

Andreas Schwarcz

From the late Augustan-early Tiberian period onwards we have to assume a strong Roman military presence from Raetia to the Lower Danube, with the exception of Noricum, where we have up to now no signs of early fortifications along the Danube. But at the end of the Pannonian war in 9 AD the eastern border region of Noricum with the Amber Road, Carnuntum and the Viennese Basin was joined to Illyricum inferius and included into its defense system. The next step in the formation of the Danube Border was done in the reign of Claudius (45-54 AD). Whereas the existence of a fort at Lentia-Linz is still insecure, earth and timber forts at Vindobona and Carnuntum were built in Claudian times. The Danube region became the focal point of the Northern defense of the empire in the time of the Flavians. First earth and timber forts were also built in Noricum at this time. A further development and a thorough regrouping followed in the time of the war against the Dacian kingdom of Traian in 101/2 AD and 105/6 AD and after the conquest of Dacia. In Noricum the forts from Passau-Boiodurum to the most eastern fort in Noricum, Zeiselmauer-Cannabiaca, were first built as earth and timber forts at the end of the first century and rebuilt in stone till the middle of the second century. The Marcomannic wars (166-180 AD) and their aftermath brought again bigger changes on the Upper Danube frontier. Forts which had been destroyed during the Marcomannic wars were renewed along the Danube in Raetia and Noricum. The (temporary) legionary fortress at Albing was already built during the war from 170 AD onwards. Their permanent garrison was to be Lauriacum-Enns-Lorch, where construction work began around 190 AD. The relatively unfortified stretch between Passau and Linz was closed by the watch towers and a fortlet at Ioviacum-Schlögen. The ripa along the Danube consisted out of a chain of forts in a distance of 10 to 30 km between them with watchtowers and signal towers in a distance of 500 m to 2 km from each other. This system was connected by a road along the southern bank of the Danube, which served as a means of communication and of troop movements along it.

Not all the enclosures look the same! New archaeological data for the study of the conquest and occupation of NW Iberia in Early Imperial times

José Manuel Costa-García, David González Álvarez, João Fonte, Andrés Menéndez Blanco, Manuel Gago Mariño, Rebeca Blanco-Rotea, Valentín Álvarez Martínez

This paper summarises the research carried out by the archaeological collective Romanarmy.eu since the celebration of the last Limes Congress in 2015. In this period, our investigations have moved from the detection of new sites by using remote sensing techniques to their systematic ground survey, enabling us to propose new historical narratives about the extension of the Roman state in NW Iberia. The eagerness for scientific dissemination has also been a constant, following a thorough outreach strategy based on the principles of open science: by designing methodologies for both communication and audience analysis we can understand the social impact of the archaeological research according to different parameters.

In the last two decades, the increasing availability of geospatial datasets has transformed Roman Military Archaeology in NW Iberia. As a result, not only several new sites have been documented, but also their distribution is now more homogeneous across the territory, including regions such as Galicia and Northern Portugal, formerly misrepresented. This situation also reveals an important qualitative observation: the existence of military activity outside the areas where the traditional narratives, mainly based on the classical sources, believed it to concentrate.

However, it is still a difficult task to identify the actual military operations carried out by the Roman army here. The surviving Greek and Latin literary sources focus on very specific war episodes and even those best described events, such as Augustus' campaigns against the Cantabrians and Asturians, are characterised by the lack of reliable geographical references and details about the military actions.

Luckily, the potential of Roman military Archaeology for answering many questions related to the conquest and occupation of these territories by the end of the 1st century BC/early 1st century AD is far from exhausted. On one hand, only a limited number of the already discovered sites has been exhaustively explored by archaeological means. Therefore, an important amount of useful data about its function and dating can still be recovered by using appropriate methodologies – if illegal detectorists or agrarian and forestry activities do not erase them before. On the other hand, by studying every site from a landscape archaeology perspective we can understand the rationale behind their construction and the mobility of the army across NW Iberia. Furthermore, these approaches could help us to build up predictive models for discovering new sites.

Some Significant Permutations in the Auxiliary Camps of Dacia

Ioan Piso

The purpose of the present paper is to draw attention on the spectacular displacements inside Dacia of some auxiliary units under the Severans. They appear like series of permutations. For example, the cohorts I Ulpia Brittonum milliaria abandoned under Septimius Severus and Caracalla its camp from Pomet/Porolissum and went probably to Bumbești, in the southern part of Dacia, where we find it under the name of cohorts I Aurelia Brittonum milliaria Antoniniana. Its place in Porolissum was taken by the cohorts III Campestris milliaria, transferred from Drobeta. The place of the cohorts III Campestris milliaria was taken in Drobeta by the cohorts I sagittariorum milliaria, which moved from Tibiscum. In the place of this last troop came to Tibiscum the cohorts I Vindelicorum milliaria. The purpose of such permutations was hardly the need to change the landscape. The explanation seems to be that some of these troops were sent into expeditions to the remotest provinces and frontiers and, when they returned after a couple of years, they found their initial garrisons occupied and had to be relocated.

The Lower Danube and the Balkans: Strategy and Tactics from Hellenistic Republican Warfare to the Flavian Defence-System

Karl Strobel

After 146 BC, Roman armies were fighting in campaigns beyond the frontier of the province of Macedonia against neighbouring tribes and tribal federations. There was no interest in the occupation of territories. Roman Rule was based on a network of allies and treaties. This was warfare in the tradition of Hellenistic campaigning used in the middle-republican wars against Philipp V, Antiochos III or Perseus. This was different from Roman warfare in Spain or Southern France and in North Africa where Roman provinces as permanent and in its territories defined forms of direct Roman rule were the aim of Republican politics. On the Balkans, outside Macedonia (Achaëa became a province only in 27 BC), even in the time of Caesar, although a province in Illyrico was established in 59 BC, of the Triumviri and still in early Augustan times. The campaigns of Crassus 30 to 28 BC did not end in the occupation of territories, only in enforced Roman rule and authority up to the Lower Danube, and Roman legions encamped in the border zone north of Macedonia. The whole system only changed with the campaigns of Vinucius, Lentulus and Aelius Catus and with the organisation of Moesia, first only a military district, an area of command, already after 27, and then a Roman province in the strict sense. But the alignment of the Roman troops along the Danube was only the result of the reign of Domitian.

Recent research activities along the Pannonian Limes in Hungary

Zsolt Viszy

In the last few years the archaeological research on the Roman limes in Hungary was strongly influenced by its World Heritage nomination process. There have been executed aerial archaeological and geophysical prospections connected with field research, but also some small scale excavations to verify and to extend knowledge on limes sites. Investigations have been made in the auxiliary forts of Crumerum, Intercisa and Altinum, in more watchtowers between Intercisa and Annamatia, and in more temporary camps round Brigetio. In the legionary fort of Brigetio a late Roman apsidal building could be unearthed. However, apart from this research activity focused on the WH nomination there have been made excavations in Brigetio, Aquincum, Tokod and other sites partly continuing former research according to the long-time research plan, and also as preventive or rescue excavations. The most important archaeological research could be made in the canabae of Brigetio, where a big building with hypocaust could be unearthed. In the late Roman fortified storage base at Tokod and in the late Roman hillfort at Pilismarót new buildings and other structures could be found and partly excavated. In Visegrád-Szentgyörgypuszta new parts of the watchtower Solva-28 have been excavated, and a new pottery kiln has been unearthed south of Dunaszekcső. A sorrowful situation has been evolved in the fort Lugio in Dunaszekcső, because new, more than 20 m wide stripe of the hill has fallen in the Danube. As rescue investigations or observations were forbidden, only a few new data could be gained in the site.

The work on the international academic project CLIR (Corpus limitis imperii Romani) could be continued first of all through the preparing its international database. It is suitable to maintain both scientific and site managing data, therefor it can be used also to prepare the limes World Heritage nomination file. As it is now ready to use, the uploading of the material can be started. From the numerous scientific papers, evaluating limes sites and finds, let me mention the research on the epigraphic material of Pannonia. A new program was started by Géza Alföldy, to edit all inscriptions of Pannonia in the framework of CIL. The latest volume contains the stone inscriptions of Intercisa, and the volume on the inscription of the southern Hungarian territory is under preparation. At present the volumes have been published with Hungarian commentary, but later they will be published in Latin.

Fleeting Fleets – Who did control the Rivers and Seas?

Christoph Rummel

At the Newcastle congress in 2009, the session on fleets showed that the established classes on the river frontiers Rhine and Danube could not have provided the permanent control and policing actions that are widely believed to have been their main function during the 1st-3rd centuries AD. A regular control of rivers by series of patrol boats can be proven only for late Antiquity. During the height of the Empire, the fleets operating on the river frontier appear to have been small units of auxiliary size that provided specific services, more akin to those of modern pioneer or engineer units, within limited, and very clearly defined, areas of operation. This observation poses the fundamental question – also discussed within several past congress formats – of how river frontiers actually operated and what role the waterways themselves played within these frontier systems or zones. This paper seeks to revisit earlier discussions of the operation and function of river frontiers and the role, or lack thereof, played by waterborne military units on the Rhine and Danube.

A particular focus of the paper will be on the various types of available evidence for military units that were not fleets, such as regular legions or auxiliary units, maintaining naval detachments: as the fleets have been shown not to have had the capacity to provide a controlling or patrolling element, this contribution will posit the question whether such an element could have been provided by other units – or whether river frontier systems actually required regular patrols or controls of the waterways at all.

Classis and its Bases - Viminacium and other ports in defense systems of Moesia Prima and Dacia Ripensis

Nemanja Mrđić

Fleet was always crucial line of defense concerning river frontiers (*rippa*). Number of forts of different sizes and with different garrisons was confirmed to have port either thorough excavations or historic sources. *Margum*, *Viminacium*, *Lederata/Sapaja*, *Taliata*, Hajdučka vodenica, *Transdierna*, *Diana*, *Egeta* and *Aquae* are known for decades are bases of the river fleet. But not just bases - Trajan's canal at Sip and *Statio Cataractarum Dianae* adds to importance of the control of river and its navigation.

Very few inscriptions mention port and fleet comparing to army or auxiliary units. Probably the most important were information from the *Notitia Dignitatum* mentioning of the *praefectus classis Histricae*, *Viminatio* and *praefectus classis Stradensis et Germesii Margo*, in *Moesia Prima* and *Praefectus classis Histricae*, *Aegeta*, and *Praefectus classis Ratiarensis* in *Dacia Ripensis*. For this topic, dedications to the river deities are also important. Among the few confirmed temples that existed are those in Viminacium with the most prominent Neptune's temple. Both votive altars published so far were found *intra muros* in city urban area at different locations. The first was dedicated to the divine triad of Flora, Neptune and Jupiter. The second mentions rebuilding of the Neptune's temple by the *C. Valerius Vibianus – nautarum quinqenalis* with donation of 2000 sesterii.

Recent research is related to the banks of river Mlava and the focus of this paper is Viminacium as a river fleet base. Viminacium port was one of the central strongholds of river fleet in Upper Moesian section of Danube frontier. Although we still have no port excavated, presence of fleet was confirmed in both sources and archaeological finds and buildings located along both banks of the river Mlava. Today by modern terms Mlava is not navigable, but in antiquity short section between city and Danube was accessible to roman vessels. What is more important last annex to the city fortification system from 4th and 5th century was directly related to this port. Special analyze is dedicated to the problem of maneuvering and turning ships in narrow environment since width of river Mlava does not exceed 20 meters.

Location of Viminacium river base was carefully chosen as well as position for the legionary fort. Unfortunately, modern researchers have misfortune that situation along the Danube today is very different comparing to antiquity. In the Danube in front of Viminacium there were twelve river islands that disappeared after building of hydroelectric power plants Djerdap I and II. These islands were suitable to hide invasion force or cover all the movements of the fleet, especially in opportunities like river crossing at the beginning of the first Dacian war.

Danube was in antiquity, as it is today, frontier barrier and major communication and trade root. River Mlava on whose confluence Viminacium was located at, is not a river anymore, old marshy riverbeds are planned to be drained what provide us with possibility for research.

5. A FAREWELL TO ARMS

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Weapons and Equipment Finds

The swords in Roman Dacia

Liviu Petculescu

The recent monograph of the Roman swords includes a surprisingly small number of examples originating in the Dacian provinces. It is therefore of some interest to make an up-to-date study of the swords from the Roman Dacia, as much as some of them are uncommon pieces. In this context I shall deal with the swords blades and handle assemblages but not with their scabbard-fittings since these are very numerous and deserve a typological approach on their own.

Two Trajanic swords have been found: one gladius of Pompeii type in the fortress of legio IV Flavia at Berzovia and a spatha of straight pattern (Streifendamast) in the small auxiliary fort at Rucăr, so far the earliest known Roman sword manufactured through this technical method. Spathae dated from c. AD 180 to 250/70 were found in the auxiliary forts at Copăceni, Hoghiz, Micia (2 ex.), Bologa, Cășeiu. Among them two pieces stand out: the narrow sword from Cășeiu assigned to the cavalry equipment and the one from Bologa having a central band of twisted metal strips, a more elaborated method of pattern-welding (Torsiondamast) attested only since the 3rd century. Besides, one fragmentary spatha was discovered in the fortress of legio V Macedonica at Potaissa and a short sword with bone pommel and handguard in the auxiliary fort at Tibiscum, both also dated in the 3rd century.

As for the handle assemblages I know a bone handgrip from Micia, five bronze handguard plates at Potaissa, Micia, Slăveni, Cigmău, Porolissum or Tihău and two fragments of iron handles of ring-pommel swords originating in Porolissum.

In addition to the relatively rare blades and fragments of handles there are over one hundred scabbard-fittings (slides and chapes), a situation resulting from the difference in survival rates between these two categories of artefacts.

Roman 'cavalry sports' face-mask helmets and the spectacle of pantomime

Boris Rankov

The exquisite face-mask helmets which were worn by Roman cavalry troopers of the first to the third centuries AD remain an enigma to students of the Roman army, despite the significant number of examples which have been discovered to date. It is widely accepted that they are the helmets referred to by Arrian in the *Taktika* (34.2-4) in describing Roman cavalry exercises (*hippika gymnasia*) such as he himself may have attended at Lambaesis in Africa in A.D. 128 in the presence of the emperor Hadrian. If so, then according to Arrian (who at the time of writing was an experienced military commander), they were different from helmets made for battle, which did not enclose the face. The most puzzling aspect about them, which Arrian does not explain, is who or what these figural helmets in the form of a human head, were meant to depict. Many of them could be interpreted simply as representations of young men with a variety of hairstyles; as such, they might be idealised portraits of their wearers or of soldiers in general. In several cases, however, some sort of distinctive headgear is shown, not always military in nature, and much more surprisingly a number of the helmets clearly depict female

heads. Since the appearance of H. Russell Robinson's *The armour of Imperial Rome* in 1975, the most widely accepted explanation of the latter is that some at least of the helmets were used in the staging of mock-battles between Greeks and Amazons, and that the female-face helmets represent either the latter or other eastern female-warrior figures.¹ One recent study which follows this interpretation has seen in this a filtered version of a 'debate on the relative courage of the two sexes, a *topos* in ancient rhetoric.'² Another has likewise taken it to reflect an element of high culture imposed by an aristocratic officer class upon their less-educated but respectful troopers.³ This paper will suggest that these interpretations are misguided, and that the female and at least some of the male masks had their roots rather in Roman spectacle and more specifically in the hugely popular medium of Roman pantomime; these helmets should be seen not as an echo of a high culture distant from the troops who wore them, but as derived from, and themselves a phenomenon of, Roman mass culture.

Marble soldiers on Marcus' column: a comparison of its depictions of Roman military equipment and the archaeological finds

Boris Alexander Burandt

The reliefs of the column of Marcus Aurelius in Rome have often been used to illustrate the arms and armour of Roman soldiers, despite the fact that it was extensively reconstructed during the late Renaissance. During the last decades many of the Danubian limes sites of the Marcomannic wars, the historic background depicted on the column, have been excavated, re-vealing numerous militaria. In my paper, I will first separate the antique parts of the frieze from the additions made during the late Renaissance and then analyse the military equipment depicted on the antique parts, finally comparing it with the archaeological finds from the Danube and elsewhere and resulting in a broad picture of the Roman army under Marcus Aurelius and an impression of Rome's depiction of their forces in state propaganda.

On the origin of mail and the evidence of its early use in the Roman Republic

Martijn A. Wijnhoven

For centuries mail armour was a quintessential piece of military equipment in the Roman army. As with many items, it was not a Roman invention. During the last 150 years of study into arms and armour many different (archaeological) cultures have been put forward as the originators of mail. This ranges from the east in general, to the Scythians, Etruscans, Celts, Thracians or Geto-Dacians. By taking a close look at the archaeological, iconographical and historical record, this paper will try to identify the moment and region of its origin. It will also shed light on the evidence for its use in the Roman Republic and answer the question whether the Romans should be considered early adapters or rather laggards of this new technology.

Weaponry and military equipment from the auxiliary fort of Arcobara

Radu Iustinian Zăgreanu

Until recently, there was a marked gap in the knowledge concerning the weaponry and military equipment (*militaria*) from the Roman auxiliary fort from Arcobara (Ilişua, Bistriţa-Năsăud county, Romania). Recently, a large number of artifacts discovered during the archaeological excavations from 1978 to 2014 were restored and inventoried, only a small part of them being previously published. These finds include a wide variety of arrowheads and arrow shafts, scale and laminated armor, shield fragments, sword fragments, knives, spears, javelins, ballista

1 Greeks and Amazons: H. Russell Robinson, *The armour of Imperial Rome* (London 1975) 108, 124.

2 E. Bartman, "The mock face of battle", *JRA* 18 (2005), 99-119, esp. 115-17.

3 J.E. Lendon, *Soldiers and ghosts: a history of battle in Classical antiquity* (2005) 268-77, 435.

balls, belts, helmets, riding equipment, scabbards and scabbard chapes or helmet fragments, all dating in the 2nd-3rd centuries A.D.

Cavalry equipment finds are extremely rare in the Eastern part of Dacia Porolissensis, revealing an important addition to the already available evidence related to the Roman presence in the region. Arcobara stands out among other Roman camps from Dacia Porolissensis through its great number of finds related to the military, being second only to Porolissum. The extent of the assemblages enabled us to conduct a spatial distribution study, and these data grant us an unique opportunity in understanding the Roman military life in an auxiliary fort at the edge of the Roman Empire.

All in all, the military equipment from Arcobara reveals a fresh insight into the corpora of militia from Roman Dacia.

Weapons and Military Equipment from the Roman camp Novae at Čezava (Serbia)

Miroslav Vujović

This paper deals with finds of weapons and military equipment discovered during the archaeological investigations of the Roman military camp Novae in the Iron Gates gorge. Novae is situated in eastern Serbia, 18 km downstream from the entrance to the Iron Gates gorge, at the confluence of the Čezava river with the Danube. According to Roman itineraries, the Novae castel was situated on the Singidunum – Viminacium – Taliata road, 12 miles away from the settlement of Cupae, the present-day Golubac. It was investigated from 1965 – 1970 as part of the project accompanying the construction of the Djerdap I power plant and the raising of the level of the Djerdap reservoir, during which many archaeological sites were flooded. Apart from the architectural remains of several successively constructed fortifications (1st to 6th centuries), archaeological investigations of the Roman military camp at Čezava also yielded a large number of finds, including Roman weapons and military equipment (scabbard fittings and chapes, cingulum fittings, shield bosses, armor fittings, iron arrow tips and spearheads, clay slingshots and caltrops). No reliable data about the crew of the camp Novae at Čezava survive for the period preceding the 4th century. It was the *Notitia Dignitatum* that located two units here: *Auxilium Novense* and *Milites exploratores*. What units comprised the crew from the 1st to the 3rd century can only be guessed. Judging by the size of the camp and its surface of 1,6 ha, it could have easily accommodated a unit comprising around 600 soldiers, or *cohortes quingenariae*, most probably *equitatae*, which might be attested by the finds of equestrian equipment discovered in the archaeological excavations. A unit of such character was very convenient for guarding river crossings, monitoring the border and controlling the land and river pathways. In that regard mention ought to be made of a fragmented honorary inscription originating from the end of the 1st or the beginning of the 2nd century relating to the construction of the first stone fortification near Čezava. This inscription registers the construction activities of members of *Cohors I Montanorum Civium romanorum*, and probably *Cohors I Antiochensium*, both mixed units transferred to Moesia during Trajan's preparations for the war with the Dacians.

Key words: Čezava, Novae, Roman military equipment, *cohortes equitatae*, *Auxilium Novense*, *Cohors I Montanorum Civium romanorum*, *Cohors I Antiochensium*, Serbia

Weapons in the vicus and the fall of Weißenburg A Comparison between three points of excavations with roman and germanic Weapons at Weißenburg in Bayern (Bavaria)

Frederik-Sebastian Kirch

With the research concerning the big scale excavations of the Bavarian office for heritage conservation in the 1980s in the area of the western vicus recently completed, Weißenburg offers three different areas of already undertaken archaeological research. These are the areas of

the inner fort published in the ORL, the excavations at the northern Gate of the fort, published by Grönke and Weinlich (1991), and the areas of the western Vicus, researched by the Author (2017). Though different in size, number of documented archaeological features, scientific possibilities of research and last but not least time of excavation, all areas offer a range of offensive and defensive weapons. As these are in most cases linked to the 3rd century and an often documented destruction layer, it is most likely to attribute them to the final destruction event of vicus and fort. Therefore it should be possible to draw a more or less detailed picture of the martial equipment of the Roman troops during this event. Although not revolutionizing existing general observations concerning the Roman army in the 3rd century, it might offer further hard data of weapon sizes and uses, in a very limited area and timeframe and therefore serving as basis for further studies. Additionally, several finds of most likely Germanic provenance in the aforementioned destruction layer are attributed to the opponents of the stationed Roman troops, who likely caused the fall of fort and vicus. A comparison between weapons and by that, possibly types of usage and tactics of these foes, might offer a way to learn more about the material and martial aspects of the downfall of the Roman troops in the area of the Raetian Transdanubian Limes.

3rd century cavalry (equites legionis?) equipment illustrated on a few monuments from Dacia Superior

Monica Gui

Figured monuments from Roman Dacia have been primarily discussed from an art-historic point of view, the main focus being on iconography, type of monument, style, workshop and so on. As a consequence of this mainly descriptive approach, important points have been missed out regarding the equipment illustrated on some of the monuments related to the military. The present paper brings forth a couple of soldier representations which are quite exceptional in the repertoire of Roman Dacia, since they depict fully equipped, battle-ready riders. Furthermore, the proposed dating, i.e. the first half of the 3rd century AD, widens their relevance beyond the provincial context, since the majority of 3rd century soldier monuments throughout the Empire illustrate them in 'camp' uniform, with a bare minimum of elements pointing to a military identity. Despite the rather modest artistic quality of the mentioned monuments from Dacia, the degree of detail allows the identification of actual pieces of military equipment, from the riders' arms and armour to horse harness components. Not lastly, their discovery in the environs of the legionary fortress at Apulum, base of legio XIII Gemina, in conjunction with other indirect evidence, could suggest that we are possibly dealing with representations of equites legionis. If this is the case indeed, then they would bring some interesting pieces of information concerning the equipment of legionary horsemen, especially given the overall low number of figural representations attributed to them.

Some thoughts on the construction of the Roman scorpio of the Principate period

Ildar Kayumov

The Greek and Roman torsion arrow-shooter, known as catapulta or scorpio, is arguably the most studied artillery piece of Antiquity. This fact has a simple explanation. Not only do we possess the detailed descriptions of this engine in the treatises of Philon, Heron, and Vitruvius, the figures from the treatise of Heron, the reliefs from the tomb of Vedennius, and the frieze of the Temple of Athena Nikephoros of the Pergamum Acropolis, but we also have a sufficient number of archaeological finds from Ampurias, Caminreal, Xanten-Wardt, Zeugma, Azaila, Cremona, Ephra, and Carlisle, which complement well the theoretical descriptions of the treatises and the visual sources.

However, despite the apparent abundance of sources, many of the questions regarding the

construction of the Vitruvian torsion arrow-shooters remain the subject of heated debates. Unfortunately, because of the indisputable authority of Erwin Schramm and Eric Marsden, who made great contributions to the study of Greek and Roman artillery, parts of their hypotheses transformed into dogmas that veil the eyes of modern researchers. This paper attempts to revise some of the old axioms, such as, for example, the arms design and the module of proportions of these machines, both by taking into account the recent archaeological finds, especially from Xanten-Wardt, and by offering a new look at the old sources, including one of the medieval Arab military and technical treatises.

Roman military cingulum details of Early Principate from a sanctuary Gurzufskoe Sedlo at Mountain Taurica

Maria Novichenkova

A paper is devoted to the analysis of a group of silver and bronze Roman military belt details of Early Principate period from a sanctuary Gurzufskoe Sedlo. Cingulum militaire parts were identified as an integral part of the Roman military outfit of offensive and defensive armour, military suite and camp life items of Late Republican – Early Roman period found in a site connected with the culture of local barbarian population of Mountain Taurica.

The study focuses on determining of details of Roman military belts – pelta-shape buckles, plates, apron studs date by the last quarter of century B.C. – the 1st century A.D. from the sanctuary Gurzufskoe Sedlo. Parts of Roman military equipment were revealed at the sanctuary as deformed one's, mainly in the form of disconnected parts or, particularly, cut on pieces. It is supposed that the finds of Roman military cingulum details as of all constituent of the Roman military equipment found in the site are the archaeological evidences of military-political activity of elite of local population of Mountain Taurica reflected in written sources. Their inflow to a sanctuary is observed as a military booty, later used in rites as votive offerings by tribe elites of Mountain Taurica with a commission of it's ritual damage.

Militaria Lussoniensa. Römische Ausrüstungsgegenstände und Schutzwaffen aus Paks-Dunakömlőd / Roman military equipment and defensive weapons from Paks-Dunakömlőd

Fazekas Ferenc

On the Loessplataeu extending above Paks-Dunakömlőd (on today's Bottyán-hill) there was a former Roman auxiliary fort called Lussonium. The Roman fort was used since the middle of the 1st century AD until the end of the Roman occupation in Pannonia, until the first third of the 5th century AD. The area of the former fort along the Roman limes was the area of systematic excavations for decades, between 1987 and 2011. Archaeological research could clarify not only the ground plan of the fort, but the inner structure and the chronology of its construction phases as well. A large number of finds were brought to light, artefacts belonging to the equipment and armament of the Roman army played a special role to interpret important aspects of the Roman provincial military history and weapon typology and chronology. The lecture presents militaria from Lussonium. In addition to old finds, newly identified pieces of military equipment and defensive weapons, further selected types of finds and artefacts will be analyzed. The rich material (including a Intercisa type helmet fragment, and a helmet fitting with christogram representation) is examined by means of an antiquarian analysis of the typological view taking into account the local archaeological context. The material presented from the fort Lussonium will be compared with another military finds found along the ripa Pannonica and they will be contextualized regarding the phases of Roman military history.

Inscriptions and stamps on Roman weapons and military equipment from the Serbian part of Limes

Jelena Lj. Cvijetić, Ivana D. Kosanović

The presentation is dedicated to the rare examples of the inscribed and stamped weapons and military equipment from the Serbian part of Limes, i.e. provinces of Pannonia Inferior and Moesia Superior or later Pannonia Secunda and Moesia Prima.

We are familiar with circa twenty finds of helmets, swords, spears, slights, parts of military equipment and horse gear, but also with an extraordinary specimen of parade armour, which belonged to the troops stationed on the Roman Limes in Serbia during the Principate and early Dominate. Analyses of the rare seals, that is, of their inscriptions, provide important data on the character of *fabricae* (state *fabricae*, military camp's *officinae*, *fabricae privatae*). On the other hand, punctured and engraved inscriptions on weapons and military equipment are more common and contain more information about the owner, such as personal name, name of the unit (*centuria*, *cohors*), name of the superior officer, and in some cases name of the armourer, which could indicate his possible origin and indirectly the place of manufacture.

Stamps and inscriptions on arms and military equipment from the Serbian part of Limes could provide significant facts important for the study of Roman weapon production and distribution of the units settled in this part of the Roman Empire.

Considerations on the formation and location of military equipment find concentrations in Roman forts stimulated by an armour assemblage from Brigantium/Bregenz (Austria)

Julia Kopf

In 1908, ten iron military equipment items were discovered together in Brigantium/Bregenz (Austria). The functional composition of this assemblage is exceptional, since eight of the pieces appertain to the category of armour, representing parts of shields and helmets. Among them are fragments of four or five shield bosses of rectangular *scuta*. This is the largest ensemble of this archaeologically rare type of *umbo* hitherto known: in his catalogue work on Roman shields, A. Nabbefeld listed no more than 14 examples of this shield boss type (excluding the parade bosses with attached bust), restricted to the curved rectangular *scutum*. The majority of the objects concerned with known provenance derives from legionary fortresses (Carnuntum, Vindonissa, Aquincum) and from forts or garrison towns, in which the presence of legionaries is presumed or at least quite likely (Iža, Dura Europos and new Bregenz). The presented objects from Bregenz are probably preserved because they were burnt and therefore the material could not be recycled. The typological dating of the shield bosses indicates that they were buried during the dismantling of the fort in Brigantium in the early Claudian Period or shortly before. Owing to their discovery in the early 20th century, both the kind of feature and the building context, from which the finds derive, are obscure. Due to the location within the fort, it seems most likely that a barrack or a magazine building situated along the *via principalis* can be located at the findspot. This raises the question about the kind of buildings, in which the military equipment usually was stored. As part of the individual equipment, the weapons and armour in use normally were kept in the *arma* of the barrack buildings. Otherwise special armouries (*armamentaria*) probably functioned as repositories of those pieces of military equipment which were in general ownership by the troops (not of the individual soldier), and of reserve material or disused weapons destined for recycling. The paper aims to present and discuss the military equipment assemblage from Bregenz in comparison with similar find complexes from other forts and fortresses (e. g. Köln-Alteburg, Künzing, Carnuntum and Valkenburg) in order to illustrate the current state of knowledge concerning the formation and location of military equipment find concentrations in Roman forts.

6. PRODUCTION, INDUSTRY AND TRADE

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Economy and Trade / Industry and Commerce. Potentially can be split into several sections: Fabricae, pottery, glass...

The impact of Rome on socio-economic life along the Lower Germanic Limes: blessing or curse?

Erik Timmerman

By way of his Gallic Wars, Julius Caesar had successfully expanded the border of the Roman Empire up to the river Rhine. The native tribes that inhabited the area were now submitted to Roman rule and their territories became part of Rome's world empire. The central purpose of this paper is to find out to what extent the Roman domination of the Lower Germanic Limes transformed the socio-economic landscape of this region in the long term (from the Late Iron Age until the Late Antique period). Did population and urbanization grow? What changed in the way and the intensity in which the natural landscape was exploited? Was there economic growth and, if so, are there also indications that per capita incomes rose? Did such improvements also extend into the lower strata of society, or were they confined to a relatively small elite, only leading to increased inequality? What was the role of the Roman army, the taxation system, infrastructural developments, and other aspects of the Roman political economy? To what extent did variation between subregions exist and how should this be explained? In finding answers to these questions, I will bring together a wide variety of (archaeological) studies in order to better understand the impact of the Roman conquest in this particularly well researched part of the Roman World.

Craftwork in Roman Cologne

Ella Magdalena Hetzel

For more than a hundred years, a vast amount of evidence regarding the flourishing craftwork production of the Roman period has been secured and documented within the urban center of Cologne. This abundance of archaeological source material determines how the economic situation looked like. In that purpose archeological evidence concerning economic clusters will be discussed.

In the archeological magazines of Cologne a wealth of sources for economic evidences is stored. These findings indicate pottery production, glass manufacturing, metal and wood working as well as the processing of animal and agricultural products. Overall 44 pottery workshops and 10 secondary glass huts have been documented. Furthermore, there are scattered features, which correlate to non-ferrous metal industry, processing of marble inlays, production of glue and manufacturing of animal bones as well as bakery production.

In the analysis various economic topics will be treated, which all require different approaches. The research project will deepen the scientific debate connected to the economic structures of the Imperium Romanum. By means of the doctoral thesis modernist opinions will be strengthened and further developed. Through elaboration of single economic curves as well as a view on framework conditions, precise and meaningful results on the economic development will be supported.

Supplying Novae. The logistic network for provisioning the legio I Italica

Martin Lemke

Understanding army logistics is important for understanding the Roman army and the Roman limes as such, and in the case of Novae especially regarding the fundamental and dual role of the Danube as a border and a transport route.

Novae, like other camps and smaller garrisons had been built for specific reasons and the geographical conditions and their influence on supplying the legio I Italica there had been taken in consideration.

The development of Novae and the whole province Moesia Inferior is testimony of planning which included a thorough analysis of what was and was not available in the province and whether stable coordination of army supplies by trained personnel was possible.

I will show the different types of products and raw material required for building and maintaining Novae and its garrison, dividing them into groups by provenance: things produced or acquired on the spot, those available somewhere within the province and such that had to be imported from far away. A welcome addition are the epigraphic finds related to provisioning the first Italic legion. This will result in an outline of the logistic network set up by the Roman army at Novae.

On the relationships between Romans and locals in eastern Black Sea littoral: brown clay amphoras discovered in the fort of Apsarus

Merab Khalvashi

Amphoras constitute 80 % of the excavated artifacts in Apsarus, Roman fort in Gonio, close to Batumi. They were found in separate settings in the cultural levels dated to the 1st-3rd centuries AD. Several types of amphoras can be distinguished including so-called Brown clay amphoras produced in local manufactures.

According to the mouth shape this type of amphoras are divided into 4 variants, and to the toe, into 3 subvariants. New discoveries enable to research the date, origin and evolution of the brown clay amphoras, particularly the one with a ridge on the neck. The copper coins minted on the name of Nero which have been discovered together with this type of amphoras, are an important clue for the dating. Most of researchers link this type of amphoras genetically with Colchian amphoras of Hellenistic period, since the clay is similar, as the petrographic analyses prove.

Nowdays, only ten complete amphoras and several hundred of bottoms have been found. These vessels are found in another points of eastern Black Sea littoral at great extent and are known in southern and northern Black Sea areas as well.

A small kiln which, most probably, produced this type of amphoras was discovered in SW part of fort in 1998. The date of this construction is the second half of 2nd century AD and the first half of 3rd century AD.

Patterns of urban settlement on and behind the Danube Limes - a geographical perspective

Damjan Donev

The study of the urban system of the Balkan and Danube provinces has brought to light a dim pattern in the distribution of the urban settlements in the frontier zone – ca. 50 km of the right bank of the Danube. Along certain sections of the frontier, towns tend to appear at distances of a day's walk from the Limes road, whereas along others, they are pinned on the frontier. It is tempting to relate this ordering of the urban settlements to the presence or absence of double towns on the frontier; a variation that had been most likely preconditioned by the variable population density and agricultural potential of the land behind the Limes. What inferences can be made on the basis of these distributions? In this paper we shall bring together a number

of indications that point out the close connections between the civilian and military sector in the frontier zone. These have been found in the chronology of evolution of the urban system, the coincidence between the founding dates of the civilian towns and the establishment of the Flavian Limes; the epigraphic evidence of the activities of the urban elites in the frontier zone; the spatial patterns in the frontier zone discussed in the preceding paragraph and the quantitative properties of the urban system in the frontier provinces, showing clear signs of a higher level of integration between the garrison and civilian towns. These scattered clues from the urban geography of the Middle and Lower Danube provinces seem to suggest a stable flow of people, goods and capital between the civilian and military sector. Some, but not all of the demographic aspects of this relationship – the recruitment of citizen-soldiers, the settling of veterans – are fairly obvious, but their economic side has remained desperately under-researched. More archaeological evidence of the levels of productivity in the civilian towns in the frontier zone is needed, before this model can be embraced wholly. Nevertheless, it remains a plausible interpretation of the urban infrastructure in the lands along the Danube in the 2nd and early 3rd centuries AD.

Patrimonium caesaris in the Danubian provinces I-III century p.C

Slavtcho Kirov

The aim of the contribution is to point to the different testimonia relating to the imperial estates in the Danubian provinces of Pannonia, Moesia and Dacia during the first three centuries p.C. The study based on the epigraphical or literary evidence will enrich the general studies relating to the patrimonium caesaris. Highlighting the people and the nature of the estates will further improve the knowledge of the organization of the imperial management as well as the impact on the local and the provincial economy in this part of the Roman Empire.

Supplying the Roman Army on the limes of Dacia Porolissensis

Felix Marcu, George Cupcea

In 2017, the Romanian Scientific Authority began the financing of the project called „The Rural Environment of Dacia Porolissensis. Habitat, logistics and supply on the Northern Frontier”. The subject covers many aspects, in the registries of settlements, people, economy and production, supply and, not last, the military, which is the dominant factor on the Dacian northern frontier. The aim is to obtain a functional model of the deployment, function, structure and supply methods of the Roman rural food enterprises.

The idea of this project came in the context in which qualitative research of the Roman society is prevailing in the international academic milieu, trying to decrypt issues more and more enigmatic, as it is the food supply. Roman agriculture, and implicitly food supply was a matter of very small importance in Romanian archaeology, this being one of the departments where we practically are significantly left behind.

In this regard, the more archaeological approach that we propose will have also its limitations. Reliable archaeological evidence itself is very limited, as only about 10% of the total reported sites have been investigated, and not even those in a satisfactory manner. Excavation however, is not our approach. We are proposing an entirely non-invasive investigation, that will stretch on different departments, from field-walking and geophysical surveys to epigraphic analyses. The modern methods of remote sensing, beginning with aerial photography and satellite imagery, till the more thorough and resourceful methods of geophysical surveys, can offer us a great deal of information on these remote and forgotten sites. The final effort will be made to put all the information together in an attempt of developing an extensive rural map of Dacia Porolissensis (villae, villages, farmsteads).

Feeding the extensive army of Dacia Porolissensis must have been a challenging management issue, and this is what we are attempting to at least partially understand.

Comments on the trade in the Late Roman Period

Mateusz Żmudziński

In the late Roman period, finds of camel bones on sites along the Danube are recorded. However, they are single but important monuments. According to the author, thanks to them we have a clear source of information about caravans going from the Middle East to the West.

The praefectura annonae along the limes: A comparison of the administrative structures of the Praefectura annonae along the limes provinces

Juan Manuel Bermúdez Lorenzo

The supply of the army stationed along the various borders of the Roman Empire was ensured from the capital by the supra-provincial structure that headed the praefectus annonae. This idea was already proposed by Remesal in his work on the annona militaris. In this work Remesal studied the characters involved in German limes. In this communication I intend to compare the existence or absence of this administrative structure at different borders throughout the Roman Empire and during the first three centuries of our era. In doing so, we will take the available epigraphy into account. Overall, we want to see if this part of the administration governed from the City has a similar way of proceeding in all the territories conquered by Rome or if it is limited to the Renanodanubian limes.

The Entry Gate of Luxuries in the Province of Dacia; Imports from Lezoux to Micia (Vețel, Hunedoara County, Romania)

Ionuț Bocan, Catalina Mihaela Neagu, Mihaela Simion, Decebal Vleja

The Roman settlement at Micia (which is called nowadays Vețel, Hunedoara County, Romania) is situated on the left bank of the Mureș River, near the modern town Deva, in the neighbourhood of the Vețel village. From geographical point of view, the settlement from Micia is situated on the western border of the Upper Dacia province, on the middle reaches Mureș River.

After the Roman conquest of Dacia, most of the products available at that time were imported into the newly established province. This is clearly the case of terra sigillata, among which the most notable are the imports from Lezoux, Rheinzabern and Westerndorf.

The officinae from Central Gallia are best represented in the imports from the settlement at Micia. Thus, the centre of Lezoux is the place of origin of the largest part of terra sigillata discovered. Most of them belong to vessels with relief decoration.

These finds have a special place within the framework of archaeological discoveries due to the fact that the stamps and the decorative details offer the possibility to identify the workshop in which the object was manufactured, such element being significant in establishing the relative chronology. The analysis was made upon a set of 97 pieces: 62 of that had been discovered during the archaeological campaigns carried out between 1976 and 1986 in the Roman camp at Micia. The rest of 35 had been discovered during the archaeological campaigns undertaken in the civil settlement (1983, 2013–2016).

The objects are now part of National History Museum of Romania collections.

Frontier glass: a recipe and production technology for Romano-British glass bangles in the northern British frontier zone

Tatiana Ivleva, Matt Phelps

The paper discusses a specialised artefact type that provides information on glass technology, the origin of sources and the dynamics of trade and exchange in the frontier region of Roman

Britain. This artefact is a Romano-British glass bangle, a rigid ring shaped adornment made of coloured glass, produced and used in Britain from the mid-first to late second century AD. Eleven fragments of Romano-British glass bangles have been analysed more than 60 years ago, and since then no attempt has been made to rectify the findings (Stevenson R. 1954-56. 'Native bangles and Roman glass' PSAS 88, 216-218). We have conducted non-destructive variable pressure SEM-EDX analysis on 34 fragments from various sites in northern England, Vindolanda, Corbridge, and Chesters Roman military forts, and various native and Roman military sites in southern Scotland. The aim of the analysis was to determine the composition of major and minor elements in glass to understand the manufacturing technology, nature of the colourants and opacifiers, and ascertain the origins of the glass, either local production or imported Roman glass. Comparative analysis of glass fragments from various sites in the northern frontier zone of Roman Britain gave possibility to determine whether one can speak of similar recipes used for the production of glass bangles in similar colours across the northeast of England and southeast of Scotland. This provides us with the information on the trade in glass and production of various glass objects in the frontier section in the outskirts of the empire.

Les bénéficiaires des gouverneurs et les stations douanières en Mésie Inférieure

Lucretiu Birliba

Je suivrai en détail le regroupement station de bénéficiaires-station de douane en Mésie Inférieure, en essayant de voir si c'est spécifique pour la province et d'établir, dans la mesure du possible, une chronologie de cette dualité. Finalement, je vais discuter les possibles tâches des bénéficiaires dans ce contexte.

New evidence of brick production at Viminacium

Saša Redžić, Ivana Kosanović, Mladen Jovičić, Ljubomir Jevtović

During a few decades long period of excavations at Viminacium, a great number of brick kilns has been found, which testify of a highly developed industry of brick production at this site. The kilns have been mostly discovered at the territory of the southern city's necropolis, at the Pećine site, where a production center, consisting of three kilns with a shared porch, has been excavated. A lesser number of brick kilns has been found west and east of the city. During the rescue excavations in 2017, relatively near to the site of this production center, a new brick kiln was uncovered. This newly found kiln represents one of the biggest and best preserved brick kilns at Viminacium so far. The firing chamber, vaulted firing port and grill kiln have been preserved almost entirely and also the greatest part of the furnace chamber. In the layers within the kiln, as well as in the construction itself, lots of bricks with the stamp of the VII Claudia legion and a few examples with this inscription in cursive writing have been found. Next to the kiln, a big pit has been excavated, which represents the mine for the extraction of clay used in the brick-making. According to the small finds, the kiln is dated to the 2nd century.

Circulation of Provincial Coins »Provincia Dacia« at the Territory of Present-Day Serbia

Mirjana Vojvoda, Adam Crnobrnja

The lack of bronze coins of the senate issues in circulation in the Danubian and Balkan provinces at the start of the 3rd century was especially pronounced and was probably the main reason for opening the provincial mint in Viminacium in 239 and subsequently in Dacia in 246. Opening these two mints represented the official way for temporarily solving the problem in the functioning of the Empire's monetary system. However, it seems that the two newly founded

mints had different roles. As shown by comparative analyses of monetary finds of these two mints, issues of Viminacium were intended for broader circulation, while issues of the province of Dacia seem to have been minted solely for the needs of the domicile province. Relatively small presence of Provincia Dacia issues at territory of present-day Serbia, nevertheless shows that they had certain significance in monetary circulation in this part of Roman empire.

Some thoughts about the spread and origin of Wooden artifacts found in Roman contexts in the Netherlands and elsewhere

Silke Lange

In the Netherlands, wooden artifacts of non-native origin are common finds, both in the Roman province south to the Rhine as well as in the North, known as the province of the Frisia. Based on research of the wood species and on woodmaking traditions, these artifacts are most certainly not made by local craftsmen. Similar artifacts, almost identical in wood use and appearance, are also known from Roman sites elsewhere. For example, in Great Britain, France and Germany. The category of wooden finds contains among other things combs, music instruments, Pyxides (small woodturned containers) and sometimes undefined objects. What they all have in common, is that they were imported and produced elsewhere in the Roman empire. Where did these artifacts come from? And how did they manage to reach the different places in the Roman empire and the region of the Lower Germanic Limes? Does the import have any impact on native craftsmanship, does the import increase the knowledge of woodtechnology in local societies?

Research on wood use and production techniques makes it possible to gain insight into the wide network of trade in the Roman empire, into different aspects of craftsmanship and the differences between native and 'imported' Roman traditions.

Evidence of cheesemaking in lower Pannonia and upper Moesia

Ivana Ožanić Roguljić, Angelina Raičković

Evidence of cheese making at sites in lower Pannonia and Upper Moesia are shown in the typical ceramic molds for cheese. We have no written evidence about cheese production in Pannonia and Moesia, and the cheese itself or the woven strainers are archaeologically invisible. We can thus learn about cheese-making exclusively from ceramic fragments. The finds of vessels that we consider to be strainers/molds for cheese allow us to reckon with a production that must have satisfied at least the local demands for this product. It is known that the Emperor Hadrian lived the life of a regular soldier for a while (SHA, Hadrian X, 2) and enjoyed "larido, caseo et posca". This source gives us an evidence that cheese was part of soldier's diet, and most the soldiers were probably able to produce the cheese by themselves. The production of good-quality cheese is considered an art even today, and the case was the same with the Romans and the process itself has not undergone substantial changes. Experiments that follow guidelines from Collumela and other authors show similarities with the cheese making known from ethnology and from the way cheese is made in farms of today.

7. WHAT ABOUT US? EXPLORING THE LIVES OF WOMEN AND CHILDREN ON THE FRONTIERS

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The last three Limes Congresses have featured papers focusing on the role of women, children and families living on the frontiers in both military and civilian contexts in order to address the imbalanced preoccupation with topics related to the “male domain”. The last three decades generally have seen a great deal of attention being paid to the critique of this approach and considerable efforts were made towards exploring aspects of private life and studying population groups other than the ruling male elites and soldiers. Regardless, several important issues remain unexplored. Certain geographical areas of the Roman limes were left out of this research trend to date, and we are at times still left with the continuation of gender and age stereotypes, as well as incorrect attribution and interpretation of various artifacts.

This session strives to address some of these issues by focusing on aspects of private life and social relations on the limes, with emphasis on the lives of women and children. Taking into account archaeological data, historical sources and epigraphic monuments, bioarchaeological analysis and visual culture, we will try to advance our knowledge on the subject and address some of the topics and geographical areas missing from research up to this point. We hope especially to provide a venue to incorporate new data from emerging archaeological research into the current debate on this matter. Paper topics may include but are not limited to: How were families organized and what were the various social roles and routines of family members at various life stages? How was identity constructed through dress, actions and familial role of different members of the family? How did civilian, military or transient families differ or do they live similarly in the context of frontier life? How did other characteristics such as status, wealth and occupation affect the lived experience of these individuals? We hope that papers will incorporate diachronic and comparative analyses as life on the limes changed because of migration, warfare, conquest, and shifting political and economic endeavors.

We encourage multidisciplinary approaches, so scientists from different disciplines – archaeologists, bioarchaeologists, epigraphists, historians, art historians and others – are welcome to contribute to the session.

Women and War: The composition of the Vindolanda Severan-period military community

Andrew Birley, Elizabeth Greene

In the last two decades we have come to understand that women and children were a substantial component of any Roman military garrison and that these individuals could be located throughout the fort or associated extramural settlement. Less often discussed, however, is the presence of these individuals during periods of conflict or even outright war. This paper aims to contribute to this ongoing dialogue by looking closely at the material culture of the Severan period at Vindolanda, a frontier fort near Hadrian’s Wall in England.

The early third-century garrison at Vindolanda (ca. AD 200-212) existed during a period of volatility, when Septimius Severus was pushing northward in an attempt to control the region that is now Scotland. The garrison at this point lived in a small, stone fort that does not conform to the typical layout of a Roman military space. Its internal structures consist only of barrack blocks, workshops, and a praetorium on the edge of the fort, and possibly a bathhouse inside the fort ramparts. There is no known extramural settlement except for the roundhouses to the

east of the fort, which have yet to be fully understood. Nonetheless, the substantial defensive ditch to the south of the fort has produced a vast quantity of shoes that belonged to women, adolescents and children. From the 2016 excavations alone, which produced nearly five hundred shoes from a section of ditch only ca. 25 meters long, around 40 percent of shoes recorded belonged to non-combatants.

This high percentage of non-combatant footwear is striking but becomes even more influential when it is viewed within the wider context of occupation at the site in the period. The associated military barracks to the north of the ditch deposits were first excavated by the Vindolanda Trust in the early 1970s. Unlike the fortlet ditches they were preserved without the benefit of anaerobic conditions, and no wood, leather or textiles survived here. Despite this, the excavators concluded that the barracks may have been 'married quarters' due to the high volume of material culture which could have been ascribed to non-combatants from those contexts. An unusual conclusion to draw at the time, but perhaps a valid one. As the excavations have progressed at the site we can now compare material from those buildings and reflect on how this fits into a wider narrative of mixed habitation in barracks at the site from the 2nd to 4th century. Such a high number of shoes betraying the presence of so many non-combatants, considered together with the architectural evidence of the fortlet and material culture from the barracks, suggests we need to reimagine what the military community looked like at times of volatility or even outright warfare.

At home on the base? Examining the accommodation of auxiliary fort commanders and equestrian legionary tribunes on western frontiers

Claire Millington

In this paper I focus on military praetoria at forts and tribune houses at legionary fortresses in the western provinces under the Roman empire, which it is largely accepted housed equestrian military commanders and their households. Unsurprisingly, with the exception of some officers, these households are all but unmentioned in ancient writings. Direct evidence for individual members of these households is scant, but inscriptions and writing tablets (Vindolanda and Vindonissa), suggest they included their wives, their children, and freed and enslaved men and women.

The archaeological remains of praetoria and tribune houses offer useful evidence to improve our understanding of the relationships between these households, and the wider Roman army and society. Although excavations of fort and fortress praetoria started (with few earlier exceptions) in the nineteenth century, these buildings have not been the focus of study beyond excavation reports, occasional case-studies, e.g., of the courtyard building at South Shields, a few regional summaries, and small sections in synoptic analyses of military installations that continue to shape conceptions of such bases.

This paper will include an overview of fort praetoria and tribune houses from Britain, Germany, Romania and to a lesser extent North Africa, and take a historiographic view of how we have arrived at current characterisations of these buildings, and of their relationship with principia, praetoria from other contexts, town houses and villas. Although modern scholarship often characterises praetoria and tribune houses as private accommodations, inscriptions show that these buildings were paid for from public funds and built by the army, thereby paralleling other permanent structures at Roman military installations. The paper will therefore consider how the form of the praetorium relates to its functions and to ideas about representative, private and public spaces within these military bases. In particular it will challenge the assumption that a consistent and clear spatial separation can be drawn between officers' army roles and their accommodation at forts and fortresses, and consider how praetoria and tribune house archaeology relate to the commanders' roles and act to formalise relationships between these households and the army.

Female religiosity in military settlements in Southeastern European provinces

Anna Mech

The nature of available sources means that most of what we know about the inhabitants of the Roman Empire is mostly reserved to privileged groups of society. This situation is highly visible in the military communities where women – a less privileged group in itself – were also in the minority. Until the reign of Septimius Severus the marriages of soldiers were illegal. Afterwards, women still could not live with their husbands in military camps or forts, but only in military-related settlements such as *canabae* or *vici*. Epigraphic monuments are the best evidence for their presence, both votive and funeral inscriptions. The first of the two groups draws particular attention, as inscribed stones are also one of the few categories of finds which allow any glimpse into female participation in Roman religion. The information that we can derive from inscriptions is of a sort that would otherwise be completely unavailable. From a name we can determine, besides gender: occasionally the social status and cultural background; whether the dedicator was indigenous or immigrant; whether they were citizen or peregrine.

The aim of this paper is to reconstruct the religious life of women who lived in Roman military camps and forts and their vicinity in the Southeastern European provinces of the Roman Empire. The paper will present not only the choices that women made when engaging in religious life but also some important aspects of their private life. Epigraphic sources were set up – among other reasons – to express the social position of the dedicant. Therefore, it is also possible to track the dedicant's ethnic origin, find their husbands and children, or examine the individual intentions of their prayers.

Do expressions of identity draw borders? Case study of female identity in Roman-period Slovenia

Kaja Stemberger

This paper aims to address the ways in which female identity was expressed in the territory of Slovenia between the 2nd and 5th centuries AD, i.e. during the time the *Claustra Alpium Iuliarum* was in place. The main question is how female identities were constructed in the funerary setting. As burials are intentional and deliberate acts, they are sources for studying the identity of individuals as perceived by a community. In this respect, Slovenia is quite unique as it lay on the crossroads of the East and the West; the amber route passed through it, and the stark contrasts between Italy and the provinces are well documented.

I am interested in whether the cemeteries around or in the vicinity of the *Claustra* fortifications are specific in nature and whether female roles are expressed in any characteristic manner. In other words, I seek to explore how the different representations of female identity expressed through the act of burial can draw a border and how different groups of female burials act in spatial relations. I take a broad perspective in terms of which cemeteries I intend to address since what may in a relatively homogeneous or geographically confined sample seem to be specific locally, culturally, or otherwise may actually represent a general trend observable elsewhere in the Empire.

I will focus primarily on female attire since it can function as an extension of the body and a tool to construct identity. Jewellery and functional items such as brooches, hairpins, and belt parts will be included in the analysis. Furthermore, I will take into consideration any tools of trade and other professional tools (e.g. spinning equipment). The assessment of wealth and status will incorporate also the location of the burials inside the cemeteries and the manner of burial.

Recent discovery of a sarcophagus in Viminacium. Evidence of *mors immatura*?

Ilija Danković, Ilija Mikić

The deaths of young individuals is usually perceived as a failure on behalf of the parents, and of society in general. It is regarded that death of a member of these social groups is premature, that it came before they have reached their full potential or before they fulfilled goals expected of them during their life. In various cultures, burials of such individuals differ from the norm, and it can be expected that they should be recognizable in the archaeological record.

One of the categories of this so-called *mors immatura* consists of young women eligible for marriage who died before having the chance to actually get married, with the subcategory of ones who did accomplish that goal but died before giving birth to any offspring. The emotions of relatives of the deceased were often translated into material culture through rich grave furnishings and choice of specific objects, which was the case in the Mediterranean basin in the Roman period. "Exceptionally lavish" graves of young women were identified in recent scholarly articles as the resting places of young women and girls who were denied marriage or childbirth. The latest excavations in Viminacium resulted in the discovery of an intact sarcophagus. In it were the remains of two individuals, probably members of the family that owned the nearby villa rustica. Preliminary bioarchaeological reports showed that one of the skeletons belonged to a female in her early twenties, while the other individual was male over 45 years of age. Gold and silver objects placed with the woman, as well as hairpins made of jet, could lead to the conclusion that she died before getting married, or at least before bearing children to whom she could bequeath the jewelry.

Possible scenarios will be explained through the means of material culture studies and life course theory, and various scientific methods will be employed in order to test the hypotheses presented.

Commemoration of children in the province of Upper Moesia – evidence from limes and its hinterland

Milica Marjanović

Studying of infancy and childhood experiences is essential for understanding social relations in Roman culture. Children had a significant role in Roman society, especially regarding maintaining and passing on traditional family values. Apart from continuing their family name and managing the family's property and affairs, they were expected to retain and improve the social status of their family. Children were obliged to demonstrate *pietas* towards their parents and look after them in their old age.

Romans were confronted with a high mortality rate of children, which resulted in special attention being paid to funerary customs and commemoration. Funerary monuments are an excellent source for studying the attitude toward children in different parts of the Roman Empire, especially since children do not leave behind a significant number of visible traces in material culture. In addition to basic information about their age, name and the possible ethnic origin, tombstones provide insight into a society in which they lived, cultural and social identity of their parents, as well as family relations.

This paper will examine tombstones dedicated to children from the Upper Moesian Limes and its hinterland. The research will be based mainly on analysis of inscriptions and relief representations on tombstones. The aim of this paper is to find out if and how the monuments of children of various age, gender and social background (e.g. families of soldiers/veterans or civilians) differ. Certain patterns in the manner of portraying, commemorative formulas, types and decoration of monuments are likely to be recognised.

Woman at the Edge of the Empire. Case Study: Domitia from Micia (Dacia)

Decebal Vleja

The aim of this paper is to bring to light a possible reconstruction of a fragment/piece of everyday life in the history of one of the most complex archaeological sites positioned on the Western Limes of Roman Dacia. Domitia (IDR III.3/ 48) is an authentic benefactor (evergetes) of Roman Micia, with a story disrupted by the passing of time. Unfortunately, the epigraphic document which recorded Domitia's story was fractured and also lost forever. The challenge of this research is to understand her real relationship with Titus Varenus Pudens, a military commander at Micia, and also a prestigious notable of the provincial capital, Ulpia Traiana Sarmizegetusa. The story of Domitia is just an opportunity for writing about and reinterpreting (in the context of recent archaeological discoveries) the everyday life of women from this garrison, located at the edge of the Empire.

Women in the visual culture of Late Antiquity in the Central Balkans: The inferior sex got a new exterior?

Jelena Anđelković Grašar

In order to explore the lives of women during Late Antiquity in the Central Balkans it would be valuable to look at the way in which their image was portrayed. Thus, visual culture and its methods could be helpful in analysing not only the visual material, but also other testimonies to how they were perceived by ancient society. Their visual image can be interpreted using conventional methods, such as iconology and iconography. However, the image created in the minds of people, i.e. society's perception of Late Antique women, could be comprehended as a mental image. In order to understand and explain these mental images, the use of methods such as cultural anthropology, sociology of art and religion, women's studies, feminist theories, gender studies and body politics will be employed in the paper. By exploring these two types of image it should be possible to uncover some iconographical or social patterns. The transfer of this imagery into specific spheres of life may allow a better understanding of lives of the women in question. The geographical position of the Central Balkans and the historical background of the region will be interpreted as important factors in shaping the image of women, with influences that crossed the borders, via migrations or various religious beliefs. The importance of religious transformation, which began with the arrival of the Eastern cults, and especially with Christianity, had a significant impact on the lives of women and, thus, on the changes in the perception of their image.

Mater Castrorum: representation of an ideal Empress or the rebirth of a Republican ideal woman?

Olga Špehar, Branka Vranešević

Among many titles Roman empresses received, most interesting and debatable is the one dating from the period of the late Empire, that of Mater Castrorum. Marcus Aurelius honored his wife Faustina Minor with this title in 174 AD, as his faithful companion during the wars he led on the northern frontiers. An official role in the military was given to a woman, alongside those accentuating her as a faithful, obedient, modest and affectionate wife and mother. From that moment on representations of Empresses as Mater Castrorum served as an instrument in promoting respected Roman values and indicating a prototypical good wife, whose role was to enable the necessary line of succession, forming a new relationship with the Empire and the

army. Therefore, along with the title, the role and image of empresses changed. The aim of this paper is to establish connections between the apparition of the title and representations in art and on coins. It will also explore how the iconography of those representations functioned within a wider concept of women's roles in the political and religious life of the Empire, and in what way they communicated with the pre-imperial representations of an ideal woman and mother. To what extent did oriental influences contribute to the formation of the Empress's image? In what way did the representations of the empress as a priestess standing beside the legionary standards and pouring libations above an altar, imply the military aspect of her title, as well as several other roles embodied in one person? It will be shown that she was a wife, mother, priestess, comrade, and goddess in her own right, not only as hypostasis of a maternal goddesses, but also crucial for enabling Rome's victories, strength and longevity. With iconographic examples of coins, statues, reliefs, and cameos, many of which originated from the liminal territories of the Empire, multiple roles of a woman embodied in an Empress will be analyzed announcing the dawn of a new era.

Digital Technologies and the Possibilities for Gender and Family Research Along the Limes

Anne Chen

What is the future of research on women and families of the limes? The acceleration of this digital age presents a distinct opportunity for archaeological scholarship, including opportunities to right old wrongs caused by scholarly bias in selection of research agendas, as well as historiographic factors that have led to the marginalization of particular parts of the empire. In this paper I propose to introduce the founding principles, intellectual promise, and challenges (and their initial solutions) of a transnational integrative archaeological database—the Southeast Europe Digital Documentation (SEEDD) Project. This paper will explicitly explore the benefits that such an endeavor holds for research on women and families along the limes, and begin a conversation about how to best ensure that historically-marginalized groups are represented and discoverable in such a resource.

Migration, warfare, conquest, and shifting political and economic fortunes all impacted the fates of women and children along the limes, and a database like SEEDD will more readily enable the diachronic and comparative analyses that highlight such important shifts. Additionally, SEEDD's geographic focus, and collaborative digital 'reference architecture' drawn from multi-national partners, allows for the easy integration of data that is currently largely siloed according to modern political and linguistic boundaries that have no bearing on the ancient contexts. This means that for the first time in our digital era, using SEEDD, it will be possible—and comparatively easy—to gather datasets from modern Southeastern Europe for comparative analyses with other parts of the Roman Empire. And finally, I propose to offer for discussion: what precautions must we take in creating an integrative archaeological database to ensure that women and children, and the issues that concern them, are discoverable in such a database despite the often old-fashioned and biased published studies upon which the database draws?

10. GOING WILD! THE ROLES OF WILD ANIMALS IN LIFE AND DEATH ON THE FRONTIER

Session organisers / Chairpersons:

Sonja Vuković-Bogdanović, Laboratory for bioarchaeology, Department of Archaeology, Faculty of Philosophy, University of Belgrade

Sue Stallibrass, Historic England and University of Liverpool

(ancient texts, bioarchaeology (animal and human bones), iconography, social status, hunting and fishing techniques and equipment, etc.)

Hunting of wild animals in a well-developed agricultural society – the Roman world, is usually considered solely as a sport or entertainment activity of the Roman elite. However, this phenomenon is connected to different aspects of life of the Romans, from heroic to symbolic, from economic to entertaining, etc. Numerous depictions of hunts on monuments, and the mention of hunts in ancient texts point to a meaningful role of hunting in the Roman world. With rapid development of different archaeological disciplines, such as archaeozoology, it is possible to give more answers on human-game interrelations in the past. The session includes a wide range of evidence: ancient texts, iconographic data (mosaics, tombstones, frescoes, etc.), artefacts, burial assemblages, archaeozoological evidence (wild mammal remains, wild birds, fish and molluscs) in order to give answers to a wide range of topics regarding the role of wild animals within the Roman frontiers, such as:

Who hunted at frontiers? Was hunting limited to persons and soldiers of high status? What was the attitude of Roman society to wild animals?

At what level was the concept of “wildness” present in Roman culture?

Economic vs. symbolic role of game in the Roman world. Which animals were hunted for food and which animals were hunted for pleasure (vivaria and Roman games)? How can we tell the difference?

To what extent was game present on the menu? Are there any differences between contributions of wild species within faunal assemblages between urban/rural/military settlements?

Were the hunted animals from other parts of the Empire traded for food and pleasure along the frontiers? Is there any evidence of exotic game within frontiers? Were the animals transported from frontiers to Rome and Italy for big spectacles?

What did hunting strategies and hunting equipment look like? Are there any similarities between ancient texts, depictions on monuments and direct archaeological evidence (artefacts, injuries on animal/human bones, etc.)?

Were wild animals used as material for military costumes at the frontiers? How did the army acquire feathers and furs?

Did wild animals play a role in ritual activities? Were they sacrificed, buried or associated with human burials?

What was the role of fishing at frontiers? Where and where from were fish products transported along the frontiers?

Were wild (migratory) birds also hunted and what for?

We strongly encourage scientists from different disciplines, historians, art historians, Roman archaeologists, archaeozoologists, ichthyoarchaeologists and others to contribute to this session.

Wild animals in the frontier zone: food, fun or fantasy?

Sue Stallibrass

Most people have mixed feelings about wild animals - they can be a nuisance, scary, awesome, mythical or a pragmatic source of food. This was equally true for the inhabitants of the Roman military zone of Central Britain. Some species were probably regarded as a nuisance when they damaged crops or attacked livestock, and some could be a useful source of food, fur or

feathers. The military, and other elite groups, regarded the hunting of wild animals as a sport, a display of status or an expression of military prowess and practice for combat. Philosophically, wild and domestic animals, and wild people (barbarians) and domestic slaves were all regarded as 'non-people' in terms of their political and human rights. The more powerful and dangerous wild animals were often regarded with awe and respect at the same time as being legitimate prey for human hunters, and a few were adopted as mascots or military symbols by legionary and auxiliary troops. Several species were associated with deities, and yet some of these same animals could be paraded or slaughtered in spectacular games in amphitheatres. This paper discusses a range of types of evidence: animal bones, mosaics and ceramic decorations, writing tablets and classical literature to highlight the complexities of people's beliefs and attitudes towards wild animals in a frontier zone that was, itself, only partially tamed.

Venison, spectacles and furs: Remains of wild beasts from Viminacium (Upper Moesia, Serbia)

Sonja Vuković – Bogdanović

Faunal analyses from the Roman city and legionary fortress - Viminacium and its adjacent areas revealed a small contribution of wild animals in comparison with that of domestic animals, which is common for Roman settlements with testified improved husbandry practices throughout the Empire. However, although they are smaller in number, the remains of wild animals contribute greatly to the understanding of hunting strategies, the usage and significance of caught animals and their products, different social aspects and phenomena in the city, the understanding of landscape in the past, but also of phenomena that have ever since attracted attention in Roman archaeology, such as animal fights in amphitheatres. Wild animal assemblage from Viminacium consists mainly of autochthonous animals, such as red deer, roe deer, wild boar, hare, wolf, fox, and in particular brown bears that significantly contribute to the faunal assemblage from Viminacium amphitheatre. There is also a finding of an exotic beast – a leopard's front leg. This paper reviews the findings of wild mammals from Viminacium that have mostly been discovered within the area of the amphitheatre and its surroundings, but also within the settlements located outside the city itself. According to the archaeological context, taphonomic features, such as bone fragmentation and butchery marks, and also traumas on bones, biometric characteristics and age and sex data, the significance and usage of wild beasts in the life and death of people who lived in and around Viminacium and at the Moesian frontier will be discussed. Finally, since some of the beasts have been discovered within the amphitheatre, the questions of treatment of animal corpses after the fights in spectacles and of the supply of wild beasts for provincial amphitheatres at the frontier will also be tackled.

Taking the bear by the tooth!

Monika Mraz

The brown bear is the largest predator of the European continent. Ancient texts, epigraphic and iconographic sources inform us about the importance, the role and the use of a brown bear in the Roman period. In 2012 a rare archaeological discovery of three almost complete bear skeletons was made in a well of the Roman city of Augusta Raurica (Augst/Kaiseraugst, Switzerland). These bear remains are telling us their own story. Cutting marks on the cranial bones, jaws and the upper area of front and hind limbs prove the use of the fur. A very unique treatment can be seen on the canines of one of the bears: The canines have saw marks which were made (by humans) during the lifetime of the bear. Additional tressological and pathological investigations suggest that the bear was held in captivity for a longer time period. The reason behind this could be animal baiting, called *venatio*, as it's shown by Roman mosaics. Furthermore, this paper will discuss other aspects as the origin of these bears, the hunting techniques used to catch wild animals, as well as who was in charge of hunting.

Roman fishing implements from Siscia

Ivan Radman-Livaja, Ozren Domiter

The Archaeological Museum in Zagreb keeps in its holdings a significant number of Roman fishing implements from Siscia, mostly hooks and fishing net weights, as well as less common finds such as tridents. As all of them are out-of-context finds, discovered in the early 20th century during the dredging of the river Kupa, we have to rely on typological and statistical analysis in order to contextualize them.

Following their typological determination, we might reach a clearer view of the range of fishing activities in Siscia, but we may also try to define its productiveness and its importance in the nutritional habits of the population, as well as the role fishing might have played in trade beyond the local level. Typological analysis might also provide data about the role played by the first Roman settlers, i.e. the role Roman soldiers and their followers may have played in the development of fishing craft in this part of Pannonia.

Since no research on this topic has been conducted yet in southern Pannonia, the study of Siscia's fishing implements could be a first step towards the analysis and interpretation of fishing activities in this particular region.

Elephant in the Room

Miroslav Vujović

The paper is dedicated to the find of a small figurine of an elephant found by chance in Orahovac near Prizren in southern Serbia. Although published in several occasions, this extraordinary find has not received the appropriate attention and identification so far. As one of the rare finds of Roman small figurines from the territory of Kosovo and Metohija, the animal is shown in the motion, on a rectangular post with a long tang below it. It was made by the hollow-casting technique in copper alloy with the details engraved. The elephant is presented with clearly shown anatomical characteristics with a trunk raised above the tusks and widespread ears. The figurine is characterized by correct proportions and naturalistic details such as a thick wrinkled skin, open eyes, short tail and wide, finely modeled feet. Judging by the shape of the head and the trunk, the figurine represent an African elephant (*Loxodonta africana*), otherwise most commonly displayed specie of elephants in Roman visual arts. The entire elephant's skin is covered with mesh-cut rhomboidal fields bearing multiple circular impressions. Given the specific and relatively scarce application of the elephant motif in Roman iconography, the author considers the possibility of identifying this finding as a military sign (*signa militaria*). This animal was a solemn symbol of Legio V Alaudae whose stay in Dardania, as well as the historical circumstances in which the military sign would be lost or deposited, were not directly confirmed, either epigraphically or in historical sources. On the other hand, its small dimensions and specific form of the tang, as well as the absence of gilding, suggests the possibility that it may be a military sign of a heraldic-totemic character (*wappentierstandarte*) of a legionary vexillation or an auxiliary unit.

Key words: Military equipment. Roman army, elephant, *Loxodonta africana*, Legio V Alaudae, Orahovac, Serbia, *signa militaria*. standards.

Case of the wounded beast: Red deer tibia with projectile trauma from Viminacium (Serbia)

Dimitrije Marković, Milan Savić

Hunting was usually not one of the main strategies for food supply in the Roman world, especially in the urban centres, such as Viminacium. This activity was practiced both by “regular people” and military hunters, with high diversity among the used weapons, which included regular spears, javelin, long bows and arrows, swords, as well as specialized hunting-spears. During the hunt the animal could have been killed or captured alive in order to be used in spectacles, or kept in menageries and vivariae. Archaeozoological evidence on majority of the Roman period sites at the frontiers, including Viminacium, suggests that the most commonly hunted animal was usually the red deer (*Cervus elaphus*), since, apart from meat, it provided raw material and skin, which were used in different crafts. In 2016, in the trench just outside the west side of the Viminacium amphitheatre, a red deer tibia with projectile trauma was found. The aim of this paper is to try and reconstruct this particular hunt, as well as to pinpoint the type of weapon that was used, based on the morphological characteristics of the fracture. On the basis of those results, a discussion will be made about who the deer was hunted by. Also, a question of potential venatio will be addressed since the said trench was linked to the amphitheatre, and was filled with remains of other wild animals, including bear, wild boar, and even leopard bones.

Hunting on the other side of the Roman frontier: case of the Late La Tène site Židovar

Teodora Radišić

Židovar is situated in the vicinity of the village Orešac, Southern Banat district, Serbia, on the loess plateau above the valley of the river Karaš. In the past Židovar’s surroundings used to be a wetland. The Karaš used to flood wide areas along its banks up to the moment when the Danube-Tisa-Danube irrigation system was established. On the other side is Deliblatska peščara, the largest European desert that was inaccessible until the mid 19th century AD, when the sand was ultimately stabilized by forestry activities.

Židovar is a prehistoric tell site, one of the best preserved multilayered prehistoric settlements in the Serbo-Croatian part of the mid-Danube basin, which is comprised of significant stratigraphic sequences of the Bronze and Iron Ages.

The cultural layer from the Late La Tène period (1st century BC- 1st century AD) is the period of interest of this paper. In this layer three building horizons were clearly distinguished. The latest horizon is characterised by the material of Roman provenance that indicates frequent commercial contacts, which preceded Roman invasions and conquest of the barbarian lands on the left Danube bank. With its dominant position in the South Pannonian landscape, Židovar undoubtedly played an important role in this period.

Present knowledge of the La Tène settlements at Židovar is scarce. This is particularly the case with our knowledge of the subsistence strategies of the inhabitants of these settlements. For that reason the goal of this paper is to present preliminary results of archaeozoological analysis with focus on the wild animals. Given that Židovar can be recognized as a meeting place in the vibrant world of fast circulating goods and ideas, question about role of game animals in the life of the residents of this settlement which is located 20 km from the Roman frontier, should be asked.

A new attempt at interpreting arrowheads from the Roman legionary fortresses Burnum and Tilurium in Dalmatia

Mirjana Sanader, Joško Zaninović, Mirna Vukov

The arrowhead is the most important part of the arrow because its shape can reveal its purpose. The authors of this paper will try to answer whether the particular arrowheads found during the archaeological research of the Roman legionary fortress Burnum and Tilurium were also used for wildlife hunting. Namely, the uncovered arrowheads suggest not only that their shape was designed to cut through as much body tissue as possible, but they may have also caused unusually painful wounds when attempting to remove them from the body. Consequently, such arrowheads could have been used successfully for hunting game.

The authors were inspired to write this article not only by the shape of the discovered arrowheads but also by the remains of the wild animal bones found in Burnum and Tilurium as well as by epigraphic sources referring to soldiers as hunters.

11. RELIGION AND BELIEFS ON THE FRONTIERS

Session organisers / Chairpersons:

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Inscriptions, reliefs, cults both in civilian settlements and forts. Burial rites, cemeteries, death and afterlife.

Epigraphic and archaeological material represent the main sources for insight into religious life and beliefs of Roman army, situated in numerous localities along the Limes frontiers. This session proposes to analyse and interpret different aspects of various spheres of religious and spiritual life of Roman soldiers – official dedications made to Roman emperor and beliefs in connection to the imperial cult, more private dedications to gods in whom soldiers individually believed and considered as their protectors, the degree of the acceptance or resistance to Roman deities, the degree of conservatism and syncretism of indigenous deities with similar Roman ones, cult practices, different cultural influences (from other cultures, provinces etc.), the degree of influence of official ideology to beliefs of Roman soldiers, the role of soldiers in distribution of certain cults etc. In connection to religious beliefs of Roman soldiers is closely connected the sphere of life after death, burial rites and beliefs that can be perceived in different ways of burials of the dead ones, the various grave goods found in tombs and personal beliefs of dedicants for the dead ones, which can be observed in the texts and iconography of funerary monuments. Therefore, all the papers dealing with the various aspects of religion and religious beliefs in Roman army, sanctuaries or sacred places, burials and different beliefs in life after death, mystery religions and the appearance of Christianity as well, new results from excavations, finds and research, are more than welcome to be presented and fully discussed in all its variety.

The Cult of God Mithras on Roman Danube Limes in Lower Pannonia and Upper Moesia

Nadežda Gavrilović Vitas

The existence and practice of the cult of the god Mithras, as well as the existence of mithraea, have been confirmed in the localities on Danube Limes in Lower Pannonia and Upper Moesia. In this paper, an update of already known and published epigraphic and archaeological monuments will be presented, along with the new findings, its interpretation in the local, regional context, with the emphasis on the iconography of the monuments, which in some monuments exhibits certain not often seen traits and details (like for example attribute of pedom or attribute of flagellum carried by dadophores). We shall discuss the possible ways of diffusion of the cult and locations of the workshops and try to resolve some of the questions about dedicants' identity, in the light of the hypothesis established in earlier literature that the main carriers of the cult were soldiers and military personnel in Roman army on Danube Limes in Lower Pannonia and Upper Moesia. We will also emphasize the significance of certain iconographic particularities characteristic for the Mithras' cult in the territories of the Central Balkans' Roman provinces which can be perceived also in some of the material found in Limes localities and try to interpret them in the light of other, so far known analogies in other Roman provinces.

Understanding the Cult of the Danube Horseman: New Approaches

Ozren Domiter

The Cult of the Danube Horseman is colloquial term which describes the phenomenon of cult syncretism widely spread in lower Danube region during the 3rd c. AD and 1st half 4th c. AD. Interpreting the iconography presented on the monuments of the Cult it becomes obvious that two

riders are not central deities, but that the essence of the Cult would rather be the central goddess who their flank. The complete consensus on what deity she might be - was never reached. However, some new proposals of iconographical interpretation suggest possible existence of the iconographical narrative after which the very core of the cult is not the female deity but rather a representative of official Roman Religion depicted in the highest zone of the monuments. In that manner, it is not to be excluded that there is a tendency of revitalization of the Imperial cult during the turbulent time of the 3rd c. AD. Some theoretical approaches stress the possibility that, because of the lack of fully standardized iconography, this is not a cult. The heterogeneous iconographic content of the lead plaques is a reflection of a heterogeneous cultural and religious structure within the Roman army, which was spreading this belief system. On the other hand, some spatial based statistics suggest that this Cult did not belong exclusively to soldiers.

The majority of the monuments of the Cult are represented in the form of lead plaques, and as such were the subject of secret and illicit excavations, deprived of any archaeological context. Out-of-context based studies resulted in 5 non-correlated typologies of the monuments, causing strong cacophony that complicates their understanding. The new, combining typology of the monuments could be the primary and crucial step for better transparency of the artefacts of the Cult and, subsequently, its understanding.

Even though there is no consistent terminology or typology, it is evident that the genesis and diverse iconographic elements of these artefacts unite the indigenous, Oriental and Celtic influences with the official Roman religion at the height of the cult syncretism and most of them were found in the central and lower Danube regions. Described diversity and a combination of various provincial traditions and beliefs, under the auspices of the symbols of the official Roman religion, could indicate a kind of informal ecumenical nature of these monuments without impeding regional cults and traditional beliefs.

What are we missing? On the invisibility of Silvanus Orientalis.

Ljubica Perinić

Silvanus is the Latin deity whose name, translated, probably meant 'the one who manages the forest'. He is the god of the forests, but not of forests in their entirety, in particular those areas which border clearings in regions still to be completely conquered. Therefore he is partially 'civilized' and partially wild, and as such he reflects the experiences of early settlers to Italy, whose descendants took him to the frontiers of the Empire. Silvanus has always been a friendly god who benevolently watched over immigrants in foreign lands. Not only he did he reflect the experiences of the early inhabitants to Italy, but also aspects of religious assembly, or natural human response to the tamed and the untamed, the wild and the civilized. In Pannonia, Silvanus is the most popular Roman deity after Jupiter Optimus Maximus himself, and in the cities of Carnuntum and Aquincum he even surpassed Jupiter.

Items dedicated to Silvanus were found mainly in Roman settlements, and to the north of the province, along the limes. Nearly half of all the Pannonian inscriptions dedicated to Silvanus originate from Aquincum and Carnuntum; other major cult centres include Brigetio, Scarbantia, Savaria and Vindobona, which are all positioned in the zone of the Pannonian limes.

The land-surveyors (*Scriptores gromatici veteres*, I, 302) cite three aspects of Silvanus: domesticus – influencing household agency; agrestis – influencing wilderness and pastures; and orientalis – influencing border protection. From all these aspects it is obvious that Italic Silvanus was a most useful deity, explaining why he became so popular in all his varied forms.

He was very rarely portrayed with other deities, and if he was in their company it was with deities of a similar nature, i.e. the Silvanae (or *Quadriviae*). Furthermore, he very rarely appears paired with one of the official deities of the classical pantheon, and even more rarely with the deities of the oriental mystery cults.

The aspect of Orientalis in Silvanus' cult is not recognizable from the votive inscriptions and figural monuments representing him. However, the distribution of the votive inscriptions dedicated to Silvanus clearly shows that the aspect of Silvanus as the guard of the borders i.e. Orientalis could have been known to his votaries (soldiers and civilians). The question is: what else are we missing?

The Materiality of Religion in the Civilian Settlement of Porolissum (Roman Dacia)

Dan Augustin Deac

The contribution brings forward eight unpublished terracotta statuettes discovered in different areas of the civilian settlement at Porolissum (Roman Dacia) in the last two decades. These new statuettes depict either Venus or Genius Cucullatus. This paper analyses the iconography of the above mentioned statuettes, and contextualizes them in the local milieu. Therefore, one can highlight the way minor materiality of religion portrays a complex image of the private religious manifestations in the settlement from Porolissum and contributes to a better understanding of the religious behavior of the local population in the larger frame of the religious manifestations in Roman Dacia.

New evidence for the worship of Epona on the Danubian limes

Ivan Radman-Livaja

During a recent revision of collections in the Greek and Roman Department of the Archaeological museum in Zagreb, several unpublished Roman stone monuments came to light, including one altar dedicated to Epona and the Dii Campestris. The subsequent scrutiny of museum's archives established its findspot, the village of Dalj on the Danube, i.e ancient Teutoburgium. The altar was likely erected in the early 3rd century AD by the prefect of the Ala I Civium Romanorum.

Archaeological monuments of Silvanus and his cult community (Mars, Diana, "woodland deities") in part of Danube limes in Serbia

Ljubiša Vasiljević

So far known, the monuments dedicated to the god Silvanus and his cult community (Mars, Diana, "the woodland deities") on the territory of Serbia testify to the one of the most respected Roman deities of this area. Of course, the monuments dedicated to this cult have been discovered also along the part of the Danube limes which is part of Serbia today.

The epigraph and the relief monuments dedicated to Silvanus were discovered in Belgrade (Vracar, Kalemegdan, Zemun), Viminacium (the four monuments, on one of which the Silvanus is worshipped together with Apollo and Diana, while another is dedicated to the "woodland deities"), Guberevac, Stojnik and Smederevo. On the monument, built in the walls of Smederevo Fortress, is a relief with the images of Jupiter, Silvanus and Mars. The figurine of Silvanus was found in Novi Banovci, and the silver chalice with the image of this deity originates from Jabucje near Lazarevac. It is possible that there was a shrine dedicated to Silvanus in the Lower Town on Kalemegdan.

The votive monument dedicated to Mars was found in Viminacium. The statuettes of this deity originate from the Lower Town in Belgrade, Viminacium (two pieces), Dusanovac near Negotin, Pontes and the unknown locality in Podunavlje. The relief images of Mars are presented on the golden ring from Belgrade, the parade armour from Ritopek and sceptres from Viminacium and Margum.

There was a fortification near Karatas on Danube, which bore a name of the goddess Diana (Statio Cataractum Diana). The votive monuments dedicated to the goddess were found in Viminacium (four pieces) and Stojnik. The relief image of Diana are presented on a cameo from Viminacium and a pendant from Guberevac. The statuettes which present the goddess originated from Viminacium and the unknown locality. There are also the symbolic images which may be in relation to the cult of Diana.

The archaeological findings testify to the significant worship of the Silvanus cult community along the Danube limes on the territory of today's Serbia.

Embodied religion: Norico-Pannonian gestural language on funerary monuments

Tatiana Ivleva

On Roman funerary monuments in the provinces of Noricum and Pannonia the right and left hands of deceased were depicted in a variety of gestural combinations. Portraits of individuals exhibit numerous choices in how to have their hands depicted, ranging from index- and middle-finger extended gesture to a gesture known as 'horns-of-the-bull'. The contemporary scholarship often sees these gestures as being signs of Roman citizenship, intellectual superiority, or social status and often accredits them with being attention-getting and, thus, carrying no other meaning than that (Heyn 2010). In some cases, a more positivistic approach is taken, with some of the gestures seen without any particular designation or interpretation except that of a fashion or visual convention (Hainzmann 1991).

The present paper presents the analysis of gestures of hands on ca 500 funerary tombstones found in the Roman provinces of Noricum and Pannonia and dated to the late first-third centuries AD. It decodes hidden meanings behind particular gestures used within the non-verbal medium of funerary monument and proposes that various gestures on tombstones were applied as a form of narration to project particular messages to the audience. Many cultures that made up Roman Empire shared knowledge that the hands and gestures hold power, be it apotropaic and/or protective, or connected to the fertility, rebirth and/or afterlife. It is evident that each culture or tribal entity were deliberately using the gestural language in the art and material culture medium to project and emphasize their aspects of belief systems that were unique to them. The presentation discusses whether Norico-Pannonian funeral gestural language reflected peculiar to the region symbolic and religious beliefs, e.g. the beliefs about afterlife and deities that guarded the entrance to the afterworld.

Hainzmann, M. 1991. 'Schriftrolle und Schwurgestus. Neue Beobachtungen zu einem alten Bildmotiv', In M. Hainzmann, D. Kramer and E. Pochmarski (eds), *Akten des 1. Internationalen Kolloquiums über Probleme des provinziäl-römischen Kunstschaffens*. Wien: VWGÖ, 120-146.
Heyn, M. K. 2010. 'Gesture and identity in the funerary art of Palmyra,' *American Journal of Archaeology* 114, 631-661.

Local cults for Roman use: The sanctuary of Dominus Plester and Diana Plestrensis

Nicolay Sharankov

The paper examines the epigraphic evidence from a sanctuary in Moesia Inferior dedicated to the cult of Plester – a previously unknown deity – and Diana with the epithet Plestrensis. The place of the sanctuary at the confluence of the rivers Beli Lom and Cherni Lom allows us to identify Plester as god of the river formed there – now named Rusenski Lom – which flows into the Danube at Sexaginta Prista, station of the Flavian Moesian fleet. Inscriptions of provincial governors and centuriones regionarii attest the official character of the cult and the importance of the sanctuary. According to two inscriptions, a temple for Diana Plestrensis was initially built under Hadrian and then reconstructed by a provincial governor whose names were subsequently subjected to *damnatio memoriae* and not read by previous editors of the inscription. We are now able to read the names as those of T. Flavius Sulpicianus, a famous person in Roman history, father-in-law of Pertinax and contestant for the throne in AD 193, but previously unattested as governor of Moesia Inferior.

Expressing regional and professional religious identities in Roman army: the case of female cavalry “sports” helmets

Tomasz Dziurdzik

The paper deals with the question of the emergence of wider regional and professional religious identities within the broad framework of Roman “military religion”. Using the case study of so-called “cavalry sports” helmets with female masks, it is argued that in the semi-official sphere of religious activities of soldiers and units one can observe a particular development. Over the course of time, certain elements of equipment, their decoration, use and symbolic meaning were adapted to express the particular religious needs of groups within the army. In the case study, it is argued that the developments within the category of parade equipment should be viewed as resulting from the formation of common religious identities connecting cavalymen stationing on the Danubian limes in the 2nd century CE. Within this group of soldiers, heterogenous in origin, both a professional (through serving in the same branch of the military) and a regional identity appeared. Those common elements of religious identity among cavalymen on the Danube were based around the worship of deities protecting horses and riders, and expressed through the use of helmets with female masks in various cult activities, such as temple or river offerings, chosen according to individual decision. Both the needs and the ways in which they were fulfilled were products of regional connectivity, acculturation, the emergence of a frontier society, exposure to the official military religion and shared experiences of the soldiers in the region. The whole process represents a striking example of a brand new development, where various elements of different origins together with new inventions and ideas were catalysed under the influence of Roman military religion to create a new quality. This final result not only was particular to the soldiers, but also served to distinguish specific groups within the army, showing that the Roman “military religion” was increasingly turning into a set of regionally varied expressions of the needs and identities within a growingly self-conscious social group rather than an official, state way of organising and controlling cult activities.

Votum solvit! – Sanctifications of military personal and a new sacred area in Roman Nida (Frankfurt am Main-Heddernheim)

Carsten Wenzel

The urban settlement Nida (Frankfurt am Main-Heddernheim) was the center of Roman settlement north of the river Main. Originating from the military vicus of an auxiliary fort, which was built around AD 75 and abandoned around 110/115 AD, Nida became the capital of the Civitas (Ulpia?) Taunensium, probably already under Traian. The local authority included the entire hinterland of the limes north of the Main. During the 2nd century AD, Nida grew to the administrative, economic and cultural center of the region. Numerous sanctifications, including the outstanding Jupiter columns, also point to the importance of the city as a religious center. Among the founders of the inscriptions are numerous members of the Roman military. Soldiers of the 22. Legion, as well as men of the auxiliary units represented at the Limes, donated altars and votives. So far, however, there were no sanctuaries apart from four mithraic temples that would have been assigned to the deities handed down through inscriptions.

Since the 2016, ongoing excavations in the center of Nida have produced outstanding new insights. The investigations succeeded in the discovery of a walled sacred area with several small chapels and two large stone buildings, probably to be interpreted as temples. The formerly representative buildings were erected in the 2nd and 3rd century AD on the approximately 3500 m² area. The excavated material gives some impressions of the deities worshiped at the place. A votive to Iupiter Dolichenus makes it possible to answer the long open question as to the location of the sanctuary of this deity. Thus, the origin of the known dedications of Roman soldiers to this deity of Oriental origin in the inventory of the Archaeological Museum Frankfurt should be clarified. The only donor mentioned so far on a newly discovered dedicatory inscription is a duplicarius of the 22. Legion. Besides Jupiter, Mercury, Diana and the horse goddess

Epona have also been documented locally.

Especially the more than 150 “cult pits” on the area promise interesting results for the evaluation. There are many indications that in these structures the remains of offerings were deposited. The objects from the filling of these “cult pits” thus provide unique insights into the ritual practices in the temple district of Nida. They are outstanding findings for the understanding of religious practices in a sanctuary in the Germanic provinces of the Roman Empire.

Religion in the making in Roman Dacia: space sacralisation and religious appropriation on the frontiers of the Empire

Csaba Szabó

Roman Dacia became part of Trajan’s empire in 106 A.D. and in 150 years created a society which produced more than 150 archaeologically, epigraphically attested sacralised spaces commonly known as sanctuaries. This paper will discuss the current notion of lived ancient religion, testing it on a peripheral area of the Roman Empire. The paper will discuss the notion of space sacralisation, as one of the major agencies of Roman religious communication through case studies from Roman Dacia. Presenting sanctuaries and sacralised spaces from primary (private), secondary and public spaces, the paper will emphasize the local specificities of space sacralisation, religious appropriation and the social aspects of religious communication in Dacia.

Ritual Artefacts: Right or Wrong?

Catherine Leisser

As Shakespeare wrote, a rose by any other name is still a rose; yet, when it comes to so-called ritual artefacts - particularly those in the ‘small finds’ category - this is much less likely!

“The term ritual has been used to describe a wide variety of practices, actions and utterances preserved in surviving literary, documentary and archaeological evidence from the ancient world” (REAMR) and the interpretation of its definition remains one that is frequently debated and discussed.

While it is fairly impossible to argue that altars, dedication slabs and the like are not ritual artefacts, the function and meaning of myriad small finds found at sanctuaries and other such places may be rather more ambiguous and opaque.

This paper will review current scholarship and perceptions on ritual and ritual objects and will examine the finds from select cults, such as that of Jupiter Dolichenus and Mithras, in this context.

12. CHRISTIANITY AT THE FRONTIERS

Session organisers / Chairpersons:

Orsolya Heinrich-Tamáská (GWZO, Leipzig, Germany)

Dominic Moreau (Université de Lille–SHS, France)

There is an old myth, still recounted in some of the historiography on Late Antiquity, according to which the Roman army was directly or indirectly involved in the spread of Christianity, usually shortly after the conversion of Constantine. Proponents of that position generally rely on two points: 1- the testimony of the Church Fathers, who are constantly insisting on the receptivity of the soldiers to Christianity, at least from the time of Tertullian; 2- the fact that the Roman army promoted the spread of all kinds of oriental cults, which also implies Christianity.

By this logic, we should be able to observe a degree of Christianisation in the provinces of the Empire which would be proportional to their level of militarisation, at least after Constantine. The “limes” being theoretically the most militarised area in Late Antiquity, it should then be the most Christianised. Should we therefore see evidence of the military outposts as units of Christian propaganda around the Empire? Does the highly militarised “limes” constitute a “weapon of mass conversion”?

It is true that most of the episcopal sees of this part of the Roman world were founded in military camps. Compared to the importance of the militarisation of these territories, the episcopal network was, however, very modest even up to the middle/end of the 6th century, so that the contribution of the army to the spread of Christianity does not seem as obvious as is sometimes assumed.

In order to propose elements of answers to that research question, presentations on all archaeological and historical aspects of Christianity on the border areas of the Roman Empire are welcome in this session. These papers can focus on new discoveries, as well as on the re-evaluation of material already studied, which dates, for most of it, from the 4th to 7th centuries AD. Among the themes that would be interesting to be discussed, we can mention (but not exclusively):

Churches and artifacts with Christian meanings on the frontier and its hinterland

Episcopacy and its impact on the urban fabric

Monasticism and its occupation of the landscape

Christian testimonies in the army

Christianity beyond the borders of the Empire

Pilgrims from the province of Scythia in Ephesus

Dănuț Aparaschivei

The phenomenon of Christian pilgrimage has lately captured the attention of scholars from several angles: in light of the theology, archaeology, art history, sociology, etc. Certain small artefacts (such as the ampullae) belong to the category of objects used by pilgrims. These were acquired by pilgrims from Christian holy places or sanctuaries of martyrs, to take with them the blessings in the form of holy water, blessed oil or even hallowed ground (dust) that has been in contact with the holy characters. With different shapes, but similar functions, the ampullae were sold or gifted by clerics and could be metallic, ceramic, of stone or glass. This paper brings forward for discussion a so called „Asia Minor type” ampulla, with the representation of two Saints, one of whom is the evangelist John of Ephesus. The piece is well preserved and comes from the systematic archaeological excavation conducted in Late Roman fortress of Ibida, in the province of Scythia (Slava, Tulcea County, Romania) during 2016. From a chronology point of view, this finding context is an advantage, as the same archaeological layer produced coins and typical datable ceramic fragments.

In terms of iconography and maybe provenance, the ampulla discovered here is a unique artefact in the Lower Danube area.

The site of Ibida is one of the largest Late Roman fortresses in the Lower Danube region, and the results of the archaeological research demonstrate an intense Christian life here. Besides many typical artefacts, some important Christian features are recorded, at least for the sixth century AD. The monastery complex, which was fully excavated in 1980s, and the basilica from the remnants of which we have only a few fragments, are just two examples that confirm that residents of this city had an active Christian life with important links to famous Christian centres, across long distances, such as Ephesus.

Christian symbols on the weapons and equipment of Roman soldiers

Stefanie Hoss

Since the time of Augustus, the weapons and equipment of the Roman soldier had been highly decorated, demonstrating the confidence and wealth of the professional soldiers, a class in Roman society newly created by the Princes' reforms. As these items were the soldier's property, the decorations on them were personal choices, guided by a sense of 'appropriateness' rather than conforming to specifications from central command. The preferred motifs typically picture gods or their symbols, doubtless thought to offer protection in battle.

While motifs connected to the traditional Roman gods of war, Jupiter, Mars, Minerva and Victory clearly predominate during the whole of the Principate, additional gods from the Graeco-Roman pantheon and a number of Eastern gods appear more frequently from the mid-2nd century onwards, probably reflecting a change in the soldier's beliefs.

Considering this long established preference for symbols of divine protection on arms and armour one would expect that the growing number of Christians in the Roman army (even before the battle on the Milvian Bridge, see Brenneke 1997, Shean 2010) would be correlated with a growing number of their symbols on the weapons and equipment. But the first examples of Christian symbols only appear from the 4th century onwards and are relatively sparse.

In my paper, I would like to show how the decorations traditional on the weapons and equipment of the Roman soldier changed to conform to new tastes and beliefs and why the symbols of Christianity were not used on weapons with the same frequency as the earlier ones from the Graeco-Roman pantheon.

Christians in the Late Roman army of Palestine: New evidence from 'Ayn Gharandal (Arieldela), Jordan

Erin Darby

Although the role of the Roman army in spreading Christianity has been much discussed, archaeological evidence attesting to this phenomenon earlier than the 5th century is lacking. Ongoing excavations in the Late Roman fort at 'Ayn Gharandal in southern Jordan have shed new light on the introduction of Christianity into the Roman military in Palestine during the 4th century.

The site, which has been excavated by the 'Ayn Gharandal Archaeological Project since 2010, was identified in 2013 by the discovery of a monumental Latin inscription as Arieldela of the *Notitia Dignitatum*. It includes a Roman castellum, bathhouse, and other structures at the site. The primary period of occupation extends throughout the fourth century, followed by abandonment and later reuse in the Islamic period as a burial ground.

This paper will describe the evidence for Christianization of the garrison at Arieldela including graffiti in the site's bathhouse and focusing on a newly excavated church inside the fort. The church complex, which includes the primary basilica and a room to its north, lies adjacent to the fort's principia and was used during the course of the fourth century while the garrison was inhabiting the site. It appears to have been abandoned at the same time that the fort and bathhouse went out of use. The site's graffiti and the church constitute an important witness to Christianity among the Roman military, particularly in the years following the Edict of Toleration.

Christians in the fortresses on the Danube: the archaeological evidence of provincia Scythia

Alessandro Teatini

The defensive system of the lower danubian limes in late antiquity was structured within provincia Scythia in an advanced line, corresponding to the last course of the Danube, and in a more backward one hinged on large fortified cities, which from Zaldapa to the south reached as far as Noviodunum to the north, passing through Tropaeum Traiani and Iudaea, but also through minor fortifications such as Ulmetum and vicus Bad(---). Here we intend to concentrate our attention in particular on the fortresses of provincia Scythia which guarded the defensive line organized along the river, in order to define the characteristics of this “Christianity at the frontiers” through the analysis of the archaeological record from the settlements which first faced the burden of the defense of the limes, subjected to continuous pressure especially in the last period of its history.

This analysis will move from the monumental evidences, starting with the buildings of the Christian form of worship, which will be defined in their topographical organization as well as in the architectural and worship characters, then considering the structures of the funerary framework and, finally, the inscriptions and the categories of the movable finds. The picture that emerges from the so far known archaeological record seems essentially functional to the communities that inhabited these settlements, in which the military element obviously played a primary role, while the evangelizing impulse, addressed also to the territories beyond the limes, was perhaps entrusted to the initiative of the important centers located in the more backward area to the east of the Danube and, in any case, it appears somewhat resized during the VI century.

Classical heroes and biblical characters. About the Roman belt found in Zmajevac (Ad Novas)

Vinka Matijević

Within the Croatian part of the Danube limes at the beginning of the 1st century on the Gradac (Várhegy) site, above the village of Zmajevac, a Roman castellum was erected. In time, a civilian settlement with belonging necropolises, formed around this military fort. Necropolis at Mocsolás site was in the focus of systematic archaeological excavations supervised by S. Filipović (Museum of Slavonia in Osijek) from 1999 to 2008. Excavations covered an area of about 1700 m², more than 175 graves containing skeletal remains were documented. The necropolis dates back to the 4th century. As far as we know, it is the largest Late Antique necropolis along the Croatian limes. Anthropological analysis has shown that in almost equal proportions both men and women were buried there, as well as a significant number of children. In this paper we will put emphasis on grave No. 86. This was a grave of a young boy deceased at the age of 11-13. Among already exceptional grave finds, such as gilded crossbow fibula, two gilded belt buckles with rectangular end fittings embossed in vegetative and zoomorphic ornaments, bronze inkwell and late roman glass bottle, there were also six gilded rectangular belt mounts with embossed anthropomorphic ornaments. Embossed characters have been cautiously interpreted as classical heroes Mars, Aktaion (?) and Heracles and biblical characters Daniel (?), Moses (?) and Jonah (?). These representations, its religious symbolism and grave context will be the subject of this paper.

Christian soldiers as martyrs at the Danubian frontier

Reinhardt Harreither

Analysis of the hagiographic texts as sources for military institutions. Main focus is Florianus of Lauriacum.

14. FROM EAST TO WEST MY LEGIONS ARE THE BEST!!!

Session organisers / Chairpersons:

Domagoj Tončinić, Odsjek za arheologiju Filozofskog fakulteta Sveučilišta u Zagrebu (E-mail: dtoncinic@ffzg.hr)

Units, Officers and Soldiers, a personalized history (History of individual legions and auxiliaries, inscriptions, biographies)

Trajan, legio XI and Caius Iulius Quadratus Bassus - the last legatus legionis of Vindonissa (Windisch/Switzerland)

Juergen Trumm

The roman legionary camp of Vindonissa (modern-day: Windisch, Canton Aargau, Switzerland) has seen a lot of large rescue excavations during the last years. Inside the camp, several indications show that the legionary fortress was abandoned around 101 AD by legio XI Claudia Pia Fidelis in a systematic way. In the settlements outside the fort, the quantity of structures and small finds declines considerably with the beginning of the 2nd century AD.

Our contribution aims to link these and other local archaeological features with a well-known historical event and two persons involved: The withdrawal of legio XI from Vindonissa to Brigetio and, later on, to Durostorum, the Dacian wars, the emperor Marcus Ulpius Traianus and one of his comrades, Caius Iulius Quadratus Bassus.

Moreover, it is proposed that there was a sort of ranking of roman legions in the two Germanies, a thesis already suggested by Maria Szilágyi at Limeskongress 1983.

Die Denkmäler der Legio XI in der Provinz Dalmatien

Domagoj Tončinić

Die Legio XI muss neben der Legio VII aus mehreren Gründen als eine der zwei bedeutendsten römischen Militäreinheiten in der Provinz Dalmatien bezeichnet werden. Es handelt sich die Legion mit der längsten Stationierungsdauer in Dalmatien bzw. im Legionslager Burnum. Wahrscheinlich wurde sie während des bellum Batonianum von 6 bis 9 nach Christus nach Illyricum versetzt, und sie ist bis zum Ende der 60-er Jahre des 1. Jh. n. Chr. in der Provinz Dalmatien bestätigt. Keine der in Dalmatien bestätigten römischen Militäreinheiten ist mit so zahlreichen Denkmälern vertreten wie die Legio XI.

Anhand der erhaltenen Innschrift können über 100 Steindenkmäler der Legio XI zugewiesen werden. Den Steindenkmälern müssen noch gestempelte Ziegel zugeordnet werden, die von der Legion in Dalmatien hergestellt wurden. Die ikonographische und epigraphische Analyse der Denkmäler der Legio XI zeugt von ihrer Rolle beim Ausbau der Provinz Dalmatien. – Angefangen vom Ausbau des Straßennetzes in Dalmatien und der Beteiligung an anderen Bauunternehmen, bis zu den Grenzziehungen zwischen lokalen Gemeinden, die von Angehörigen der Legion im Namen des Stadthalters vollzogen wurden, und zu anderen Tätigkeiten im Dienst des Stadthalters.

Die wirtschaftliche Tätigkeit der Legion spiegelt sich auch den Darstellungen auf den Grabsteinen ihrer Angehörigen wieder.

The Cestius Gallus And The XII Roman Legion Campaign to Jerusalem in 66 A.D. and its historical-strategic consequence

Ran Ortner

The military campaign led by Gaius Cestius Gallus at 66 A.D. (below: Gallus) the roman commander in chief and the governor of Syria, from Antioch to Jerusalem attempting to take control and over-run the riots and revolt activities initiated by the Jews in the whole province of Judea. "the Cestius Gallus War Journey episode", is a military-historical event that for most, is not mention and recognize in the appropriate level of importance it deserve, by its high significance, Influence and historical-strategic dimension and aspects to the national-military conflict between the Rome and Judea.

Nevertheless, studies and analysis of the 'Cestius Gallus War Journey episode', by its military-strategic aspects, are very few.

For most, this episode is being mention as a brief historical event and the research references deals with the 'bottom line' outcome of the Gallus campaign. that is – the military outcome. This outcome, often presented as a roman military failure in achieving the journey military goals. By political aspect, bringing to a fast expansion of the Jewish revolt, to higher level (a wide spread war), while posing a great threat on strategic level to the interest and self-existence of roman role in the province of Judea.

In this paper, my purpose is to contribute for deepening our knowledge by a geographical-historical and military-political analysis with conclusions of the 'Cestius Gallus War Journey episode, aspiring to enlighten the major research question; what were the reasons for the journey failure, and the actual state and political outcomes of that failure.

We can already suggest and point out one reason; the 'winter factor'.

On the strategic aspect, it seemed as if the romans basic strategy in this journey campaign was to get to Jerusalem as fast as possible and to take back the control; over the city, knowing that's where most of the Jewish moral and military power is consecrated.

We know from Josephus account, that it took Gallus a relatively long time to obtain full understanding of the severity and full scale of the Jewish uprising in the province of Judea.

This led to a late-linger start (some will say, Delayed Reaction) of Gallus's journey in the month of October 66 A.D. At the beginning of winter. Yet It is known that the romans, whenever they could chose the timing of a military action, preferred not to fight in winter conditions. in other words, in front of us is an unusual case, of a roman war campaign in winter condition that strongly influenced roman's decision making, by creating stressful timing factor, trying to complete romans military actions before the arrival of full winter. It is probable that when the romans Encountered strong Jewish military resistant while approaching Jerusalem area, they decided to redrew thinking they will not complete their mission in the short time they had and due to much stronger then expected Jewish military resistant.

This could be further explained by a set of political pressures over cestius gallus's head originated by the menacing, bad-tempered emperor Nero, that posed great fear by his Notoriously known unexpected reactions to his subordinate Governors while dealing with such conditions. The only historical source to Gallus journey is the well-known Jewish-roman historian, Josephus flavius in his book, 'the Jewish war'. In spite common criticism among many researchers as for Josephus problematic credibility in general, on this specific case, we can find some reassurance that his account could be seen reliable, based on the given fact - reflected through his written accounts, that during the events of Gallus journey, Josephus lived in the city of Jerusalem (as we learn from his other autobiography book) and probably experienced the events he describes (possibly by first hand in very realistic manner).

Josephus gave a pretty good geographical description of the battle ground of the Beit-Horon pass (assent) and Jerusalem area. This could indicate he had a personal knowledge and experience with the topography of the different battle areas he mentioned.

Another interesting important facts and information provided by Josephus, is the rare detailed description of the roman armies in their journeys and in battle tactic. From this account it appeared that the big roman army led by cestus Gallus and its counterparts; auxiliary units and eastern national 'client-kings' armies, given its enormous size and complexity, travel very

quickly by today's standard to Jerusalem. However at the same time we can identify as we read between Josephus's descriptions, the mis-coordinated actions and remarks that can be interpreted as some of the reasons for the downfall of the journey.

In this paper we will also attempt to create an updated (up to date geographical changing conditions) identification of the geographical-historical aspect of Josephus's account of Gallus's journey.

In addition we would like to present a slightly different geographical-historical and tactical interpretation of the course and sequence of the "Gabo – battle" (Gibo'on). We assume that in front of us, is an exceptional one-time Jewish military achievement, of stopping (for some time) and confronting a Roman army that included the glorified XII legion and many other auxiliaries accompanied armies. All this in an open set battle ground condition, that usually is considered to be in favor and at the stronger advantage of the Roman side.

Barbarians on the Edge of Empire – Colouring in the Antonine Wall Distance Stones

Louisa Campbell

It is easy to imagine Roman Britain in monochrome since much of the material culture that survives for display in our museums derives from stone and metalwork devoid of colour. This is particularly evident on the Empire's northwestern Frontier, the Antonine Wall, where Distance Stones were important media for promoting Roman propaganda through epigraphy and iconography.

This paper challenges the perception of these iconic sculptures as static objects devoid of vibrant colours common in other contexts of Roman life. Results from recent non-destructive analysis have identified and recreated authentic colours of pigments that would originally have brought these sculptures to life. The sculptures contain depictions in relief of 'barbarians' as bound captives or being decapitated in the midst of battle as they are being run down by Roman cavalrymen on horseback and the evidence confirms the presence of variations of red to depict blood from the captive warriors and other colours in different contexts.

16. STAND YOUR GROUND!

Session organisers / Chairpersons:

Session proposed by the Scientific Committee or International Advisory Committee – open for applications

Building and Rebuilding of Limes

The African Limes during the Byzantine Period: a Networks Stratigraphy

Lecat Zénaïde

In his Buildings, Procopius enumerates the fortifications Justinian constructed in Byzacena after he had “reconquered” the African territory from the Vandals. These buildings are relatively well known, having been studied by Charles Diehl at the end of the 19th century and, more recently, by Denys Pringle. In south-western modern-day Tunisia, in the High Steppes, they seem to constitute a double “limit” (ἔσχατία), according to Procopius’s word. They form a kind of buffer surrounded by fortifications installed just in front of the few passes that enable the crossing of the High Steppes low mountains.

My PhD thesis, defended in 2014, permitted a reconsideration of all the constructions described as fortified that have been mentioned so far in the Tunisian High Steppes. Thematic surveys were organised, associating studies of the structures surviving in elevation and ceramic collections. This field work allows us to reinterpret some of these forts and “fortlets”. In fact, many do not appear to have had a real defensive function, but some really may have been part of the Justinian network. Indeed, analysis of their forms, of their location choices, and especially of their relationships one with another (examined by means of spatial analysis) show that the Justinian network was probably completed throughout the Byzantine period, perhaps right up until the Muslim conquest. A kind of stratigraphy of fortified networks seems to appear in the Tunisian High Steppes.

A set of about twenty small buildings was highlighted among a corpus of about 300 sites scattered across the region. They may constitute the last network of the Byzantine era. They took the form of towers and are found especially in the centre of the High Steppes, between the cities of Ammaedara/Haidra and Sufetula/Sbeitla. An important battle between the Byzantine and Muslim forces is known to have taken place near the latter city in 647. Sbeitla also sheltered the exarch Gregory and his troops during this same time. My presentation will focus on these small constructions that may have had a defensive role, and on their possible uses.

The Numidian Limes from Mesarfelta to Thubunae: An Interdisciplinary Approach

John Steinhoff

The study of the African fossatum in Numidia has produced significant scholarship on its form and primary function to control the movement of transhumant routes for more efficient taxation. What is often less apparent is when and which military units were associated with the forts that were constructed as part of the operation of the linear barriers. Combining fragmentary inscriptional evidence from Hadrian’s speeches to the African army in AD 128 with a theoretical model of Roman fort design provides insight into the initial phase of the Numidian Limes under Hadrian. More specifically, this interdisciplinary approach reconstructs the auxiliary units associated with the fossatum from Mesarfelta to Thubunae and their arrangement. Alan Richardson’s theoretical model, developed from the research of Roman forts in Britain mostly from the 1st half of the 2nd century AD, predicts which type of military unit an auxiliary fort was designed for from perimeter dimensions. The model is not overly complex but takes advantage of standard features exhibited by forts throughout this period. It demonstrates how a Roman military engi-

neer could calculate the space requirements for all military units, both infantry and cavalry, with a table of square roots and a measuring rod. Furthermore, I tested Richardson's model on forts along the African fossatum and Numidia dated to roughly the same period as those in Britain. I found a strong correlation when compared to inscriptional evidence, allowing the model to be utilized confidently at locations where scant material evidence for occupation remains. The inscription from Hadrian's speeches, recorded on a monument at the parade grounds of Lambaesis, indicates an unknown cohort was inspected on or just before July 7th at Zarai. The Ala I Pannonorum and Cohors VI Commagenorum were both inspected on July 13th but not at the same location. The name Cohors I Chalcidenorum is also found on an unplaced fragment from Hadrian's monument, but their location is secured at Gemellae from a dedicatory inscription to Hadrian from AD 126. I conclude, following the route from Zarai to Gemellae, Hadrian would have addressed the Ala I Pannonorum at Thubunae then the Cohors VI Commagenorum at Mesarfelta. Additionally, the model indicates a division between the infantry and cavalry of Cohors VI Commagenorum among two closely located forts at Mesarfelta, which is further supported by the fact Hadrian only addressed the cavalry portion of this unit.

Modus Operandi of the Odenwald Limes

Michal Dyčka

Ever since the first comprehensive reports about the Odenwald Limes were published, the so-called Strecke 10 have been considered as slightly different from other parts of Roman frontiers. The nature and size of the garrison were frequently put in relationship with local landscape.

Presented paper is an attempt to offer a more complex point of view at the issue. Did the landscape determined the position of towers, Limesweg, Grenzstrasse, individual forts or lastly added palisade? What was the framework that the Romans tried to fit in? Were the individual forts positioned in the way to be easily accessible from neighbouring ones? Were the towers intervisible each with other and together with nearby lying fort(s)?

These broad questions are answerable via detailed Landscape study in artificial environment. Focus is put on graphical resemblance of lines of sight of individual forts, fortlets and towers, convenience of roads on Limes and accessibility of forts from both Barbaricum, Roman hinterland and other Roman sites. Presented study is a result of work with digital terrain model (ATKIS-DGM 1) in programs allowing advanced spatial analyses (ArcGIS, QGIS). Study area is the section of Limes between forts at Wörth and Schlossau.

This work attempts to shed more light on a question whether (and if so, how much) was Odenwald Limes adapted to a specific local landscape, whether there was a lateral signal communication possible and how can be described individual sites of Roman forts in terms accessibility.

Watch out for Watchtowers! Fakten und Fiktion zu deren Rekonstruktion

Elisabeth Krieger

Häufig werden die Neubauten von Wachttürmen als 1:1-Nachbau, maßstabsgetreu oder originalgetreu angepriesen. Doch was ist wirklich über das Aussehen und die Gestaltung von Wachttürmen entlang der römischen Grenze bekannt?

Konkrete Aussagen lassen sich nur zu den durch Ausgrabungen sicher festgestellten Befunden treffen. Besonders die Ausgrabungen der Reichs-Limeskommission zwischen 1892 und 1902 haben den heutigen Kenntnisstand geprägt. Mittels moderner Forschungsmethoden, wie geophysikalische Prospektionen und Airborne-Laserscans (ALS), lassen sich noch weitere Aussagen treffen, die jedoch nur die Grabungsbefunde ergänzen können und weiter reichende Überlegungen zulassen. Durch die Grabungen vom Ende des 19. Jahrhunderts und einige wenige moderne archäologische Eingriffe lassen sich gesicherte Aussagen nur zu den Maßen, zu Mauerstärken, zu teilweise ebenerdigen Eingängen und zu erhaltenen Mauerhöhen treffen. Dies bedeutet nun aber, dass der Großteil der modernen Neubauten sowie auch zeichnerische,

digital-virtuelle und modellbauhafte Darstellungen reine Vermutungen sind. Die dargestellten, nicht durch Grabung belegten Teile solcher Visualisierungen gehen auf unterschiedliche Überlegungen zurück. Für viele Gebäudeteile, wie die umlaufenden Galerien und die Dachform, dienten die Trajans- und Marcussäulen als Vorlagen.

Gerade die 113 n. Chr. geweihte Trajanssäule, die zum Beginn des die Dakerkriege schildernden Bildfrieses drei Wachttürme mit Quaderoberfläche, Zeltdach und umlaufender Galerie an einem Fluss darstellt, wird als bildliche Quelle zur Rekonstruktion von Wachttürmen entlang des Limes herangezogen. Jedoch ist die Übertragbarkeit auf die Verhältnisse am Obergermanisch-Raetischen Limes hinsichtlich der chronologischen und topographischen Einordnung kaum möglich. Die zwischen 176 und 180 n. Chr. errichtete, chronologisch immerhin passende Marcussäule ist als bildliche Vorlage kaum zu nutzen, da sie gerade an der entsprechenden Stelle stark zerstört ist. Auch ist beiden ein propagandistischer Hintergrund zuzuschreiben, der dafür spricht, dass nur bedingt die reale Situation wiedergegeben werden sollte.

Die häufig rekonstruierte Dreigeschossigkeit der Türme geht auf Dietwulf Baatz's Überlegungen bezüglich der Sichtverbindung zweier Wachttürme am Odenwaldlimes zurück und wurde in den meisten Fällen übernommen. Doch können mittels Analyse der aus den ALS ermittelten Digitalen Geländemodellen (DGM) schnell unzählige Sichtverbindungsmessungen durchgeführt werden, die neue Schlüsse hinsichtlich der benötigten Sichthöhe und damit der Turmhöhe zulassen.

Zur Ausgestaltung der aufgehenden Bausubstanz der insgesamt 32 Neubauten von Wachttürmen entlang des Obergermanisch-Raetischen Limes sowie den unzähligen Rekonstruktionen in zeichnerischer, digitaler und modellbauhafte Form lassen sich aus archäologischen Befunden und Funden kaum Aussagen treffen.

Reasons for adaptation a tropaion to the Roman world

Maciej Marciniak

The tradition of seating up a tropaion after the battle is of Greek origin. In the beginning it was the greatest of the captured panoply (complete suit of armor and arms) hung on the tree trunk or on the pole located in the center of the battlefield or in the visible location nearby. Most likely it was an offering to the god to whom the victory was dedicated and as such was protected by law. Those constructions stood in place until they were destroyed by natural causes. However after the Persian wars Greeks started to construct a durable trophies. The most famous ones was set under the Marathon and Leuctra but there were many more. Those were the long lasting monuments of victory that became the recognizable elements of the landscape. We know that this practice was known to Romans. In the times of the Republic the tropaion become the popular symbol of victory in iconography. However Romans do not have the custom of constructing the temporal or "field tropaion" (beside the isolated examples). But since the times of two generals Domitius Ahenobarbus and Fabius Maximus romans started to construct trophies made of stone imitating the famous Greek ones. Also Caesar had built one in Greece. But the most important Roman monuments known as tropaeum was set in the visible places built as a part of a landscape - a permanent memento of victory and a visible sign of power over the area. The best known and preserved to our times Roman trophies in architectural form of the durable commemorative monuments are known from the Col de Panissars, Actium, La Turbie and Adamclisi.

Tuscan and Ionic Order in the Architecture of the Legionary Camp of Novae (Moesia Inferior)

Andrzej B. Biernacki and Elena Klenina

The present paper owes its existence to the many years' interdisciplinary studies of the architectural elements and details from Novae, conducted by archeologists, architects and geologists. Among the 1386 architectural elements and details from Novae covered by the mac-

roscopic petrographic studies of rock material were Tuscan and Ionic-Roman capitals. These architectural elements were classified according to their typological and stylistic characteristics. The comparative investigations of the Tuscan and Ionic-Roman capitals unearthed in Novae have shown a strikingly parallel chronology of their occurrence. All of the Tuscan capitals discovered in Novae so far are made of crumbly limestone. Around A.D. 90, the local crumbly limestone started to be applied in Novae. One of the reasons behind the increased demand for the latter material was that it could be easily encountered in the area of Novae, occurring principally in the valleys of the Danube and its tributaries, including the river Yantra. The same type of limestone was also the usual material for the construction of the walls of the legionary camp in Novae between the last decade of the 1st cent. and the 240s A.D.

Most of the architectural details in the Tuscan order come from the yard of the valetudinarium, dated to the reign of Trajan, and more precisely, to the very end of the 1st cent. A.D. The diameters of the bases of the columns from the valetudinarium were between 36 and 40 cm. In accordance with Vitruvius' prescriptions, the height of a Tuscan column from the valetudinarium would amount to 3.6 m. This conclusion refers not only to the inner yard, but also to the external portico in the western front façade of the hospital facing the via praetoria. Considering the fact that the hospital was built by legionaries of the 1st Italian legion, it is entirely reasonable that its design should apply the Tuscan order, which after all was the native order for the Roman legionaries. Another argument in favor of using it in Novae was the techniques of construction and the available material. More support of this view comes from the Tuscan semi-capital of a very simple shape, which was also discovered in Novae. Originally, it had been at the top of one of the six Tuscan semi-columns of the diameter of 90 cm in the façade of a row of chambers behind the transverse room in the basilica principiorum in Novae, where the chapel of standards was the principal interior. This part of the principia is dated to the times of Trajan (98–117 A.D.). The full height of the Tuscan semi-columns was probably app. 11 m. Forty Ionic-Roman capitals have been discovered in Novae so far. Only five are made of crumbly limestone. Their appearance strongly suggests that originally they decorated a sanctuary of an unidentified Roman deity. This may explain the fact that the volutes of one capital have the shapes of snakes or adders. The biggest Ionic-Roman capital discovered so far in Novae is also made of crumbly limestone. Found in a secondary layer in the yard of the episcopal basilica, it was originally a part of the portico in the yard of the forum militare of the principia. The erection of the principia in Novae dates to the reign of the emperors of the Flavian dynasty (A.D. 69–96), but this capital specifies that the time of the construction of the transverse room in the basilica principiorum was during the reign of Trajan (A.D. 98–117).

A vast majority of the Ionic-Roman capitals from Novae, viz., 35, are made of organogenous detrital limestone, warranting the assumption that they were produced between A.D. 130 and 233, when the quarry in Hotnitsa provided the limestones to Novae, including material for statue's pedestals and tombstones. Their style and workmanship are the closest to those found in the Roman cities in Asia Minor. Thus, stonemasons and builders from Nicomedia and Nicaea, or their successors and descendants, could have been instrumental in the spreading of the Ionic-Roman order in Novae, even if only indirectly, when they worked at the quarry in Hotnitsa and in the workshops which apparently were established near the stone-pit to produce items made of the local organogenous detrital limestone.

Locating the VIth century Βιμινάκιον

Ivan Gargano

The goal of this report is to propose an analysis of archaeological sources, historical written sources, and of geographical features that could help to define the terms of the problem related to the localisation of the civil settlement of Βιμινάκιον during the VIth century. The ancient Roman city of Viminacium, after Empire's crisis of the Vth century, has been regained in 535 A.D., reconstructed and declared episcopal seat on Giustinian's order; a seat under the control of the archbishop of Iustiniana Prima. Such informations are known by the indications that Procopius gave us in his *De Aedificis*, and by the text of *Novellae Iustiniani* which unfortu-

nately don't provide further informations or descriptions about the settlement. It is also known that the city has been definitively conquered in 584 A. D. by an avaro-slave army that in 600 A. D. rejected the remaining imperial garrisons from the region. Teophylact Simocatta provided us these informations using two different words defining the site/settlement of Βιμινάκιον: "city" and "Danube's island". This detail highlights a interpretative problem about the type of settlement and its hypothetical localisation. Archaeologically it is indeed known that the roman city of Viminacium has been discovered in a plain on the southern Danube's shore and not on an riverine island while some VIth century ruins of a fortification have been discovered by the western bank of the Mlava river in a mainland area. In consideration of the absence of stratigraphy not more recent of the Vth century A. D. in the area of the ancient roman city, and of the absence of a VIth century settlement by byzantines ruins there is therefore an important question about the possible location of the civil settlement of Βιμινάκιον and the reasons that pushed Teophylact to use two different terms to describe the site. Through the revision of historical-literary news, of archaeological data, and the comparison with other sites such as Sirmium, a systematization of the theme will be proposed and a hypothesis of localization of the site will be formulated.

17. LIMES IN FINE? CONTINUITY AND DISCONTINUITY OF LIFE IN THE FORTS OF THE ROMAN FRONTIERS

Session organisers / Chairpersons:

Robert Collins, Newcastle University, UK (E-mail: robert.collins@newcastle.ac.uk)

Historiographic tradition insists that the frontiers of the Roman Empire either collapsed in the face of barbarian invaders, or were abandoned in the wake of civil wars. For the Western Empire, this occurred in the 5th century AD, while abandonment or collapse of the Eastern frontiers was a far more drawn out process starting in some places in the later 6th century. As the Empire declined and fell, so too did the frontiers.

Yet, archaeological excavation has contested this narrative. Some forts have confirmed the narrative of abandonment or destruction, but other sites have revealed continued occupation beyond the traditional 'end date' given for a particular province or diocese.

This session will explore the traditional narrative of the collapse and/or abandonment of the Roman frontiers in late antiquity. Papers will explore the diverse data – occupation, mortuary, artefactual, and scientific – to contest or support collapse narratives. Papers will specifically address the following questions:

- What is the evidence for abandonment or destruction at individual sites?
- Does mortuary data support different conclusions than building/site-occupation data?
- To what extent can evidence of abandonment or continued / transformed occupation indicate the history of an entire frontier sector?
- Despite varying chronologies, it is possible to identify common patterns and trends across different frontier sectors?

Who lies there? Late antique inhumation graves at Augusta Raurica

Simone Mayer

According to traditional research, the Upper Germanic limes collapsed in the late 3rd c. AD and the Roman settlements were overrun by Germanic Barbarians who slaughtered every Roman that crossed their way. Although this approach has been criticized and disputed, archaeological research has, in fact, indicated a certain abandonment and decline of large Roman settlements, thus proving a diminishing residential population. Such is the case in the former Roman colony of Augusta Raurica, situated directly at the Rhine limes, close to the present-day city of Basel in north-western Switzerland. The present paper will discuss the late antique and early medieval cemeteries surrounding the castrum, examining the fluctuation of the population and the possible continuity of the site as a settlement area till the 8th c. AD.

But who were actually buried in the cemeteries? Romans, who followed their traditional customs and conventions? Barbarians, who had taken over existing structures? Is it even possible or reasonable to differentiate between ethnicities through archaeological finds, notably grave goods? The paper will give a short overview over the different cemeteries in the area of the former colony of Augusta Raurica, their chronology, indications of the buried populations' cultural background and their potential for further research on the subject of continuity or discontinuity at the limes.

Coins, Chronology, Continuity, and the Castrum Rauracense: New research on the Castrum and its 'suburbium' during Late Antiquity

Anna Flückiger

When assessing Late Roman settlement continuity, several factors such as transformations within the finds spectrum, changes in coin circulation, as well as differing construction methods and the formation of "Dark Earth", are recurrently proving to be a challenge for archaeologists. This not only concerns the Late Roman Castrum Rauracense (CH) and its surroundings, but

other sites along the Northwestern frontier as well.

The project “The Castrum Rauracense and its ‘suburbium’ between the late fourth and the sixth century AD” aims to refine the settlement history for the period and site in question, focusing not least on continuity, whilst also addressing the above-mentioned problems. A recent excavation outside the Castrum walls, where an imperial-period quarry had been abandoned, filled up and superimposed with several Late Roman.

The post-Roman life in the former castra of Dacia – an overview

Dan Matei

In 275 AD at the latest – with some exceptions on the Danube line, kept as bridgeheads – the castra of the province of Dacia were abandoned by the Roman military, as Aurelianus assumed the official abandonment of the whole province. The evolution of the former castra of Dacia in the centuries which followed is to be enlightened to an overwhelming extent by archaeology as any sure literary evidence regarding at least one of them is missing – until the the 17th c. (the possibility that some literary mentions of the 16th century to be related to certain camps is not to be excluded), or maybe was not yet detected. Than, just for the legionary fortress of yerster-year from Apulum, were identified cartographic depictions (one dating in 1687 and the second in 1711), scientifically exploited for the issue of this camp curtain reuse in the Middle Ages.

We will adress in our paper especially the reuse for habitation – and we emphasize reuse for habitation – of the camp structures: the reuse in different measures and ways of some internal structures, of the structures belonging to the curtain (bastions, towers and portals of the gates) and the reuse of some short segment of the curtain. If the interest will be focused primarily on the reuse for habitation of the structures, the situations when the traces of habitation were detected on the surface of the camps (also in the Middle Ages), in places free of construction and apparently, in no relation with the former internal structures, will also be addressed. In this kind of situations, it was maybe the curtain wall that played a role in choosing the surface surrounded by it to settle: the role of enclosing-marking the property or one’s just used terrain, the defensive role against the animals and perhaps in some special situation against the enemies. Or maybe in some of the mentioned situation the curtain wall played no role at all and it was just the hazard in settling inside a Roman camp of yore.

Also other various aspects of the reusing of the camps structures for habitation or settling inside a former camp without detectable connection to the internal structures (but in particular cases in relation with the curtain wall), like the ethnic or the cultural assignment of the individuals involved, will be touched within our presentation.

New research concerning the first phase of the Capidava roman fort (Moesia Inferior)

Alexandru Rațiu, Ioan Caol Opriș

From the Capidava of the beginnings, that of the 2nd century AD, all that remains today are the traces of one of the main gate towers and the first phase of the military baths. The plan of the mentioned tower is specific to the stone forts of the auxiliary troops of the time. Parallels are found in Dacia at Gherla, Gilau, Ilișua or Brețcu. Identified by Grigore Florescu between 1928-1936, the tower was researched much more rigorously in 2015.

The original trajanic fortification, probably repaired after the devastating of the costoboci raid from 170 AD, will be restored from the foundations (a fundamentis) not until the second half of the next century, after the end of the terrible bellum Scythicum. The fort, along with most of the roman towns in northern Moesia Inferior, had been severely affected by the Gothic attacks from the middle of the 3rd century. Gregory Florescu assumed (and some newer or older epigraphs seem to agree) that the general restoration (Phase II) is to be placed in the days of the emperors Aurelian or Probus (270-275 and 276-282). With successive repairs in the following centuries, caused by the destruction attributed to the Goths or Huns in the 4th and 5th centu-

ries AD, the new fort will survive until the beginning of the 7th century.

Our presentation aims at reviewing the state of research regarding the first constructive elements known in Roman times at Capidava: the eastern gate and the baths complex raised in the decade of the great bellum Dacicum Traiani using the tegular material of Leg(io) XI C(laudia) p(ia) f(idelis), but also the most recent results of the archeology intra muros research (Sector VII of the archaeological site). Here, new early roman contexts occurred during the excavation of an edifice with an south-east oriented basilica plan. It measures 26 by 16 m and its functionality seems to be so far that o principia in the 4th c. AD. Its foundations overlap and embed walls laid directly on the natural rock on which the first fortification was erected. The archaeological contexts that correspond to these first constructive elements provided an unexpected amount of material, composed mainly of wine amphoras, but also from fragmented samian ware or military equipment, all dated in the 1st and 2nd c. AD.

The Late Roman limes in the Low Countries: (dis)continuity in a frontier zone.

Berber Van der Meulen

The publication of Luttwak's extensive work on the defence of the Roman Empire (Luttwak 1976), has become central to the study of frontiers in the Late Roman period. His third and final "system" of defence-in-depth is still a matter of debate, especially in the archaeology of the western Empire. The standard narrative describes how the Roman army struggled to cope in the West as a result of the Limesfall of the later 3rd century, and deserted their perimeter defence in favour of a defence-in-depth, with a dual army (comitatenses and limitanei) and fortifications in the hinterland.

Evidence for such a shift in military strategy in the archaeological record, however, has been scarce. Furthermore, Luttwak forgoes any function the Late Roman limes might have had beside defence (cf. Whittaker 1994), and his definition of frontiers is clearly too linear and anachronistic (inspired by the Cold War). The necessity for collapse is a by-product of such thinking (Whittaker 1994, 194).

This paper provides an archaeological survey of the Dutch Lower Rhine region, focussing on coins, crossbow brooches and military architecture. This combined dataset strongly suggests that there is no solid evidence for a sudden Limesfall triggering defence-in-depth, but rather that the Late Roman limes showed great continuity with earlier periods in both form and function.

At the same time, however, this paper would like to argue that the Late Roman limes was not simply an unchanged continuation of the 2nd and 3rd centuries, purely dictated by path-dependency. Innovations can be identified in site location choices regarding natural landscape features and in the functions of individual sites within the broader infrastructure, representing both an adaptation to changing geophysical circumstances and an overhaul of military logistics and strategy. This paper will therefore place both developments in the framework of a flexible limes that adapted itself gradually to a changing socio-economic and political climate, rather than through singular dramatic events.

Rise and Fall of Apsaros (Gonio, Georgia). Latest Findings on the Chronology of a Roman Fort on the Eastern Edge of the Empire

Piotr Jaworski, Radosław Karasiewicz-Szczypiorski, Shota Mamuladze

The Polish-Georgian Archaeological Expedition has been conducting fieldwork within the Roman fort at Apsaros since 2014. The excavation spot was chosen basing on results of geophysical measurements obtained two years earlier. Already in the first field season, the research team found the remains of a balneum, including i.a. a room with a floor mosaic decorated with geometric motifs, constructed probably in the end of the 1st c. AD and rebuilt under Hadrian. Excavations undertaken in the following years showed that in the same spot another building

had been previously located . Based on the discovered architectural remains, it can be stated with high probability that this had been a horreum, built in the last years of Nero's reign or at the beginning of Vespasian's rule. Latest discoveries shed additional light on both the earliest and the later stages of the presence of the Roman army on the Colchis coast as well as on the history of the Apsaros fort itself. The intent of the present paper is to report the new findings on the chronology of the Roman Fort at Apsaros, based on results of archaeological excavations conducted in the past five years. An essential part of the conclusion is based on the analysis of numerous coin finds brought to light at Apsaros recently.

18. TRANSFORMATION OF LIMES IN LATE ANTIQUITY

Session organisers / Chairpersons:

Sylvain Janniard

Vujadin Ivanišević, Institute of Archaeology, Belgrade, Serbia

Evolution of the frontiers in concept and architecture. Evolution of the army, reorganisation.

The Later Empire (3th – 7th c. A. D.) saw an increased military pressure on the Roman frontiers. One of the constant concerns of the emperors was to guarantee the best conditions for the protection of the imperial territory and the reaffirmation of the Roman power on the Empire's neighbors. This concern led the Roman power to transform in depth its army and its war techniques. But these concerns also entailed the experiment of new principles of disposition and functioning of the troops quartered in the frontier territories, as well as various forms of installations of foreign populations on imperial lands. Both measure are well attested in the narrative sources and thanks to the archaeological documentation furnished by the various military installations on the Roman frontier zones. But, the exact meaning to be found for these transformations of the imperial policy, as well as their chronology and their precise methods of functioning, are the matter of some important historiographical debates.

Another domain discussed for the Late Antique frontiers, quite particularly for the provinces on the Danube, is the place that the civilian population held in the transformations of the imperial military and foreign policies: the State had to mobilize all the economic and demographic resources at its disposal to insure its survival in the 3th century, then the preservation of its power in the next centuries, but can we speak of a militarization of the civil society on the border lands or can we imagine that the public authorities organized the complete transfer of the tasks of defense to these same civil society?

Finally, for a major part of our modern historiography, the failures of the Late Roman frontier policy would have been responsible for the disappearance of the Roman Empire in the West. If the Late imperial frontiers offer a good point of observation to study the fragmentation of the western provinces, their history, seized on a purely military plan, cannot by itself account for the internal and structural motives responsible for the end of the imperial experience in the West. These are, so exposed, the main themes which the organizers of the session dedicated to the Late Antiquity would like to see considered, with due respect to the regional variations and the necessary articulation between documentations of varied – archaeological, epigraphic or narrative – natures.

Spatial, Military and Economic aspects of Roman Defence on the Upper Moesian Limes

Vujadin Ivanišević, Ivan Bugarski

The authors discuss the complex system of defence of the Roman frontier that included, apart the fortification systems, the spatial, military and economic organization.

The defence system integrated the fortresses on the right bank of the Danube, as well as a large zone extending far beyond the riverbanks in both Barbaricum and the Empire. The outer Roman limites are analyzed through the role of the forts on the left bank and especially the ditches in the context of the defence of large territories in the Barbaricum.

The military and economic aspects are investigated following the distribution of fortresses, communications and particularly the organization of the system of the supply of the army.

Late Roman annex in Novae (Moesia inferior)

Agnieszka Tomas

At Novae, before the defensive walls surrounded the discussed place, the area of the annex was the eastern part of the canabae. The eastern enclosure's fortifications were in their major part excavated by the Bulgarian archaeologists in the 1960's, but the internal part of the annex was not excavated until 2016.

The question concerning the extramural settlement and its development into a very interesting phenomenon of the so-called 'annexes', 'enclosures' or 'extensions' is particularly present in Lower Danubian provinces of the Roman Empire. The areas which usually were parts of town's suburbs (suburbia) or civil settlements near legionary bases (canabae), in Late Antiquity were surrounded by defensive walls and included into the main part of the fortress.

At Novae, the southern part of the annex is placed on an elevated area which in some places overlooks the *retentura dextra*. This specific position and closeness to the deep valley of the small river flowing here into the Danube, could have been of particular importance. Another important question is to find out whether the phenomenon of merging military bases and civilian settlements into one, Late Roman fortress was preceded by building the walls of 'annexes' or was the result of it. In case of Novae we are dealing with the entirely new layout of the internal buildings erected at the beginning of the 4th century; the civilian large portico villa was built at the place of the ruined military hospital, while the legionary baths were superstructured by the bishopric residence. At the same time, we know that Novae had its military garrison composed of some cohorts of the First Italic Legion at least until the 430's.

Demilitarizing the Southeast Frontier at the End of Antiquity

Conor Whately

While there seems little doubt that there was a major political militarization of the empire's southeast frontier in the third and fourth centuries, evidenced by the creation and/or refurbishment of forts and fortifications in Egypt, Israel/Palestine, and Jordan, many would argue that the opposite happened in the sixth century. What is less clear is whether this led to widespread militarization in the region. To that end, in this presentation, by drawing on the relatively abundant epigraphic (decrees of Anastasius), legal (Theodosian and Justinianic Codes), literary (Procopius, Pseudo-Joshua the Stylite), papyrological (Aphrodito, Petra, Nessana), and physical evidence (el-Lejjun) I will investigate the degree to which the civilians in the southeast borderlands were militarized at the end of antiquity, for my purposes between AD 450 and 600. In doing so, I will offer a working prosopography of those civilians, family members and otherwise, directly connected to the military in some capacity or the other in the southeast (Egypt, Israel/Palestine, Jordan), with an especial emphasis on Aphrodito, Elephantine and Syene, and Nessana, sites well-documented in the papyri. Additionally, I will address the degree to which those civilians were militarized, by examining their societal and economic militarization, in the case of the former with respect to their incorporation into military duties, and the latter their involvement in the resource mobilization tied to those frontier garrisons.

L'évolution du système défensif du Bas-Danube au IVe siècle et la 'grande stratégie' de l'Empire romain tardif

Maxime Petitjean

L'apparition, dans les sources romaines du IVe siècle, d'une nouvelle division entre unités *comitatenses* et *limitanae*, réparties entre commandements régionaux et *ducaux*, est souvent considérée comme le signe d'une évolution des conceptions stratégiques romaines à l'époque tardive. L'Empire aurait adopté un système de défense en profondeur, reposant sur une combinaison d'éléments fixes et mobiles : les troupes frontalières occupaient des garnisons

fortifiées qui agissaient comme une menace sur les arrières des envahisseurs en cas d'attaque ; les villes situées plus en retrait de la zone d'affrontement servaient de base logistique au regroupement de grandes armées d'interventions, qui n'entraient en action que lorsque l'ennemi, privé de ravitaillement, était dispersé et durement éprouvé par les coups de main répétés des troupes locales. Notre contribution propose de questionner ces changements, réels ou fictifs, en étudiant l'exemple du limes bas-danubien, de la rivière Tsibritsa (Cebrus) à la Mer Noire. Le secteur allant d'Oescus à l'embouchure du fleuve jouit d'une couverture documentaire continue, du I^e au IV^e siècle, grâce à la multitude d'inscriptions, de diplômes, d'estampilles sur tuiles qui y ont été découverts, sans compter les informations fournies par la *Notitiadignitatum* pour le Bas-Empire et les travaux archéologiques qui se sont multipliés ces dernières décennies. Le premier volet de notre étude consiste en une analyse de l'évolution des effectifs et du déploiement des unités stationnées aux frontières, entre le règne d'Hadrien (117-138) et la seconde moitié du IV^e siècle. Cette enquête préliminaire permet de nuancer l'idée d'une densification du réseau défensif à l'époque tardive, tout en insistant sur les possibilités nouvelles offertes par l'architecture militaire « tétrarchique » et le déploiement des unités comitatenses dans les grandes villes provinciales. Le second volet de notre communication propose de mettre en perspective ces changements à travers l'analyse de la première guerre de Valens contre les Goths (366-369 p.C.), racontée par Ammien Marcellin et Zosime.

Early Byzantine Horizon in the Fortification of Pontes – Trajan's Bridge

Sofija Petković

The protective research of the fortification Pontes near Kladovo in Eastern Serbia, caused by the construction of hydro-energetic plant Đerdap II on Lower Danube, in Prahovo estimated the stratigraphy of cultural layers at this site from the end of the 1st to the late 11th century. The final antique horizon inside the fort is dated in the 6th century. Although it was impossible to detect the reconstruction of ramparts and towers of fortification, as well as the buildings inside it, an abundance of portable finds of all kind, dated in the 6th century, was ascertained. The most of these finds derived from the numerous large grain pits transformed into waste pits. The absence of the 6th century cultural layers and solid buildings at Pontes is partly caused by digging in the two horizons of medieval houses and pits, but also could have some other reasons. This raises a question about the function of fortification of Pontes (Transdrombeta) after Justinian's reconstruction of Limes. Based on portable finds and traces of light-material objects, different aspects of the 6th century Pontes will be investigated. We believe that it is not possible to give the final answer without archaeological research of the fortification's surrounding and necropolises.

From the imperial court to the field, Πυργοκάστελλον - Pyrgocastellum. A architectural innovation imagined in Constantinople and implemented by Justinian's men on the border

Brahim M'Barek

English or French, choose as you want. There is only one instance of the term Πυργοκάστελλον -Pyrgocastellum in the antique and late antique literature. In his book *Περὶ κτισμάτων – De Aedificiis*, Procopius uses the word to describe the walled enclosure towers of Constantia, Viransehir (Turkey), one of the main roman fortifications defending the Nord Mesopotamian plain. The description of the work suggests the addition of a third floor, and the building of covered approaches (ανοδοί). As a result, the towers become a defensive scale model permitting to watch over the whole interior of the fortification and to keep the control of the circulations with and to the wall walks. Unfortunately, the Constantia fortification remains aren't well known, and the modern city left no visible traces. Luckily, other parts of Procopius's text, cover more or less detailed descriptions of transformations operated on former towers,

or new ones that could get close to the term *pyrgocastellum*. We can find similarities in the transformations reported by Procopius about Justinian's transformations on the wall of Thrace (Περί κτισμάτων, IV, ix, 10s) and in the ones associated to the reconstruction of Dara, on the Oriental frontier (Περί κτισμάτων, II, i, 17s). The archeological researches provide additional elements to the hypothesis, including a series of sites bringing forward evidence of similar fortified towers. Their dates can be ranged to Justinian's reign, by cross-checking Procopius's texts and inscriptions found in situ, presenting obvious architectural similarities. The main part is dispatched all along the Euphrates river, but we can also find examples on northern sites like Kale i Zerzevan and Dara around Tur Abdin, or a little further west in Chalcis ad Bellum walled enclosure. The site revealed the archeological remains of towers shape coinciding with the Zenobie ones, mentioned by Procopius. A recurring name is Isidorus the younger, one of the greats of the VIth century architecture, who was in charge of the defensive work on the oriental frontier. He makes the link with imperial architects like Anthemius of Thralles, Isidorus of Miletus, Theodorus. They were in charge of the most prestigious and important buildings, with imperial funds, and they also initiated architectural improvement and innovations. We would have then an example of such innovation, and a witness of the half-VIth century poliorcetics.

Foederati – beyond or on our side of the limes? How Romans prefer them

Antoan Tonev

Roman foederati are increasingly in the focus of researchers' interest in the past few decades. In the last years there are so many valuable contributions to this topic that it is now more popular than ever before. Nevertheless there are still so many blind spots in the researches and studies and the proposed paper will try to add one more question to the existing ones. My paper will research one very interesting topic related with the Roman foederati namely "Where Romans prefer their foederati to be – beyond the limes in the so called Barbaricum or on Roman soil?". It is very important to find out if there is some strict Roman policy on this matter or Romans act different depending on every individual case. I will try to research Roman politics towards the foederati on the limes over time and space researching the bigger part of the IV and V century and also investigating different parts of the limes. I will try to research the Roman point of view about the foederati and their preferable disposition on both sides of the limes. Because of this I will study mainly Roman written sources. We should also try to understand if there are some different ideas and concepts about the foederati in the Western part of the Empire and in the Eastern one or both parts share common ideas and policies. Then I will research if there are some differences between the foederati groups beyond the limes and these on Roman soil.

The Roman fort at Arelape/Pöchlarn and its development in Late Antiquity

Sebastian Schmid

Before our millennium our knowledge concerning the Roman fort at Arelape in the province of Noricum – today Pöchlarn in Lower Austria – was quite limited. It was only in the years 2002/2003, 2008/2009 and 2012 that large parts of the fort were excavated. The analysis of these excavations showed that the fort had enclosed a total area of approximately 1,9 ha and that it had been built in Flavian times. During the second and third centuries, a milliary cohors peditata was stationed there. Probably at the end of the third or the beginning of the fourth century, the fortifications were strengthened by the construction of huge fan-shaped angle, U-shaped interval and rectangular gate towers. Inside the fort, no bigger alterations of the buildings could be noticed. Therefore it seems that the excavated area was used at that time by the military in the same way it had been in the past. However, in the second half of the fourth

century, major changes took place: in areas, which had not been built up for more than 150 years, mortar floors were constructed, belonging to otherwise not attested wooden structures. Furthermore one of the older mid Roman buildings was torn down and replaced by new wooden buildings with channel floor heating systems. One of these buildings was even built inside the via sagularis. These new features date to the second half or the last third of the fourth century. They can be explained by the resettlement of civilians in the interior of the Roman fort, where there had been enough place after the reduction of the manpower of its military unit.

Le concept de “limes” dans les sources textuelles antiques / The Concept of “limes” in the Ancient Textual Sources

Dominic Moreau

Français : La définition du terme latin “limes” a été au centre de nombreux débats depuis plusieurs décennies. Au fil du temps, il fut tantôt assimilé de la notion de “frontière” - fortifiée ou non -, tantôt plutôt à celle de “passage” ; il fut aussi associé à une stratégie militaire - globale ou non - ou, encore, considéré comme un terme abstrait, indéfinissable et intraduisible. Beaucoup des définitions proposées jusqu’à aujourd’hui sont valables, du moins dans un contexte précis ; aucune n’est toutefois définitive. Pourra-t-on un jour clore le débat ? Certainement jamais. Sans aucunement avoir une telle prétention, la présente communication propose de revoir le dossier, en se concentrant, à la lumière de l’historiographie, sur des exemples tirés des sources textuelles, de manière à faire ressortir les évolutions dans l’utilisation (y compris non militaire) dudit terme par les Romains

English : The definition of the Latin term “limes” was at the centre of many debates for several decades. Over time, it was sometimes assimilated to the notion of “border” - fortified or not -, sometimes rather to that of “path” ; it was also associated with a military strategy - global or not - or even considered as an abstract, indefinable and untranslatable term. Many of the proposed definitions until today are valid, at least in a specific context ; none, however, is definitive. Can we close the debate one day ? Certainly never. Without any such pretension, the present communication proposes to review the case, focusing, in the light of historiography, on examples drawn from textual sources, so as to highlight the evolutions in the use (including non-military) of this term by Romans.

Militärisch und/oder zivil ? – Zur spätantiken Nutzung des mittelkaiserzeitlichen Kastells von Dormagen (Rheinkreis Neuss/D) / Military or civilian ? – The late antique use of the auxiliary fort or Dormagen

Thomas Becker

Im mittelkaiserzeitlichen Alenlager Durnomagus/Dormagen, gelegen an der niedergermanischen Ripa zwischen Köln und Neuss, fanden in den 1990er und am Beginn des 21. Jahrhunderts umfangreiche Ausgrabungen statt. Die Auswertung der spätantiken Nutzungsphase (2. Hälfte 3. bis Mitte 5. Jahrhundert) ergab sowohl eine Neunutzung der mittelkaiserzeitlichen Umwehrung und den Einbau eines Burgus in die Norostecke des Kastells. Auf dem Kastellareal entstand in der Spätphase eine unregelmäßige Bebauung, die kaum Rücksicht auf die Gliederung des mittelkaiserzeitlichen Lagers nimmt. Befunde und vor allem das Fundmaterial deuten sowohl auf eine militärische wie eine zivile Nutzung in differenzierter Ausprägung, die ein verändertes Konzept in der Nutzung dieses Platzes im Rahmen der Grenzsicherung der Germania Secunda erkennen läßt.

A Tetrarchic Roman fort under the Umayyad palace of Khirbat al-Mafjar (Jericho)? An hypothesis on the location of the missing Roman forts at Ariha-Jericho (Palestina) and the sequence of transformation and reuse of the site.

Ignacio Arce

This paper presents the hypothesis of the existence of a Tetrarchic Fort underneath the Umayyad palace of Khirbat al-Mafjar in 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. 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 C AD throughout the Tetrarchic period. Legio X Fretensis had its winter camp at Jericho in 68 AD 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, blocking the access of Bedouin raiders. These reasons certainly determined the constructions of other Roman installations in the Oasis in later periods. We know from written sources that a Roman fort was established in Jericho in 130 AD, which played a role in putting down the Bar Kochba revolt in 133AD. 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 material remains and evidences 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 into 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 afterlife of the Dutch part of the limes ad Germaniam inferiorem

Harry van Enckevort, Joep Hendriks

Between 165 and 198 the province of Germania inferior was hit by a range of crises (Antonine Plague, raids of the Germanic tribe of the Chauca, the revolt of Maternus, battle for the throne between Clodius Albinus and Septimius Severus). In these turbulent years, the castella on the southern bank of the Rhine and numerous settlements in the hinterland of the limes were abandoned, causing an end to the Pax Romana

Around the year 200, the Romans managed to restore the limes along the Rhine, according to the rebuilding of the previously mentioned castella. Possibly military units were also stationed in the two municipia (Ulpia Noviomagus, Municipium Aelium Cananefatium). Despite the foundation of a few new settlements in the civitates south of the Rhine, it is clear from settlement research that the depopulation that started in the late 2nd century could not be stopped anymore. Politically, it remained turbulent in the 3rd century, which allowed Germanic colonists to settle south of the limes.

Around 270-280 A.D. again the limescastella and many settlements in the hinterland had been abandoned. After Constantius Chlorus had regained control of the area in 293, some new castella (Nijmegen, Cuijk, Rossum) were built in the Batavian area. Presumably the castellum Brittenburg was founded near the mouth of Rhine at the same time. There are no indications that the limescastella between the Brittenburg and Nijmegen, that had been lost a few de-

caedes before, were taken into use again. The *limes* defense system along the Rhine has lost its function. Settlement investigation also shows that the direct hinterland of the *limes*, with the exception of the *civitas Batavorum*, became more and more depopulated during the course of the 4th century.

Finds from the abandoned *castellum* sites along the Rhine show that they were still visited in the 4th century, presumably for the extraction of raw materials, mainly metal, glass and building material.

In summary, it can be said that the fragmentation of both the *limes* and the settlement structure in the immediate hinterland in the northwestern part of *Germania inferior* started in the late 2nd century, and was completed in the second half of the 4th century. Only the Batavian area around Nijmegen was actually part of the Western Roman Empire at the beginning of the 5th century. A narrow corridor along the Maas formed the most important connection with the more southern parts of the Roman empire.

The old imperial *castrum* in a new shape: the Late Roman fort. Case study on Dobruja

Alexandra Teodor

The Tetrarchic military reform was intensively studied in many aspects, such as the increase in the number of the legions while decreasing their number of soldiers, the permanent settlement of some military troops in the *limes* areas, the correlated administrative changes and so on. The physical spaces in which the Late Roman forts took shape were also under the close attention of some scholars. Nevertheless, these forts were never explained properly on their possible precedent in terms of architectural program.

This paper explores a new interpretation of the Late Roman forts taken from another perspective: the functional logic of their general layout. In the effort to understand the spatial relations between the fortifications, the main and secondary gates, the street network and the buildings of some better known forts in Dobruja, a working hypothesis gained contour. If we consider these new fortresses as simple functional schemes, one may learn that they are not much different than the one of the classical *castrum*. The essential elements are preserved: the walls, the gates, even the (more or less) orthogonal intersection of the main streets, also the *principia*, the *praetorium*, the granary and the houses of the soldiers – but not only that. In a closer look, another essential aspect is possibly preserved, which is the way these elements relate, i.e. the functional relations between them. Different, indeed, are the size and the shape of the entire layout, which for many scholars simply meant a completely different image of the fort compared to the (generic) imperial one: shorter and narrower streets, irrigating an irregular contour and therefore variously shaped *insulae* of houses.

As largely accepted, the similarity of the early imperial forts was based on the principle of the easy orientation for the soldiers in any new camp that they temporarily resided in; after all, no two camps in the Empire are actually identical. But following this principle of easy orientation was nothing else than maintaining the same functional scheme. Were these basic principles of orientation and design no longer useful after the military reform? In my reading of the analyzed Late Roman structures, the logic of the earlier *castrum* was actually maintained and adapted to fit the newly preferred defensible sites and perhaps the new organization of the troops.

19. WHO WERE THE LIMITANEI?

Session organisers / Chairpersons:

S. Thomas Parker, North Carolina State University, Raleigh, USA / E-mail: thomas_parker@ncsu.edu

Scholars have long debated the identity of these enigmatic frontier forces in the late Roman period. Who were these so-called “second-class troops” (viz. the *comitatenses*)? When, if ever, did these *limitanei* evolve into a kind of “peasant militia”? What was their military mission and how effectively did they perform this role? To what if any degree were they logistically self-supporting from their own lands versus externally supplied? The rather scanty documentary sources on these frontier soldiers are often seemingly contradictory but there is a growing amount of archaeological evidence (especially botanical and faunal) from various frontiers that significantly supplements and may well challenge traditional portraits drawn from the documentary evidence. It also seems likely that the nature of the *limitanei* varied among the far-flung frontiers of the Roman empire. This session invites papers from all imperial frontiers that may shed light on this question.

New Evidence about the *limitanei* on Rome’s Arabian frontier

S. Thomas Parker

After a long period of neglect, intensive exploration of Rome’s Arabian frontier in the last four decades has yielded a plethora of new evidence. Most of these recent surveys and excavations have focused on sites of the Late Roman (4th-6th c.) period and thus yielded new insights into the *limitanei* who manned the frontier in this period. The insights include key evidence about unit size, military equipment, fortifications, deployment (with implications for both strategy and tactics), and supply. Particularly significant is botanical and faunal evidence suggesting that the *limitanei* were engaged in agricultural production (both cultivation and stock-breeding) from the foundation of the newly reorganized frontier under the Tetrarchy, or more than century earlier than the first explicit references in documentary sources. In short, the evidence could support the notion of *limitanei* from the beginning of their appearance on the frontier, rather than a later evolution as some have suggested. The deployment of these forces strongly suggests that the chief security threat in the region was external (from pastoral Arab nomads) rather than internal (from a restive sedentary provincial population). This is not to deny the likelihood of periods of peaceful “mutualism” between the Roman army and local Arab nomads, but only when a strong government policed the frontier.

Limitanei: the African perspective

Alan Rushworth

This paper looks at the evidence for *limitanei* in Roman North Africa, that is to say the provinces of the African diocese and Mauretania Tingitana, in the 4th and 5th centuries AD. Uniquely, troops in this region, serving under the *comes Tingitaniae* and the *comes Africae*, are specifically labelled *limitanei* in the *Notitia Dignitatum*. However the appearance of the two lists is radically different. Whereas the *comes Tingitaniae* had a series of old-style cohorts and *alae* at his disposition, his counterpart in Africa had authority over numerous *praepositi limitum*, commanders of named frontier districts rather than individual regiments.

However, the differences between the two *comitativa* lists were to some degree more apparent than real. Analysis of the fragmentary evidence relating to their history and composition of the troops commanded by the African *praepositi limitum* indicates that they too largely derived from the auxiliary units of the 1st- to 3rd-century provincial armies. In contrast, the units of the two regional field armies, also listed in the *Notitia* and commanded by the same *comites*,

predominantly consisted of cavalry vexillations, new legions and legionary detachments established from the late 3rd century onwards to serve alongside the old African legion, III Augusta. These African/Mauretanian comitatenses were very similar in composition to the higher ranking regiments of limitanei in other frontier commands, such as that of the dux Britanniarum. Such regiments were accorded higher status than the cohorts and alae and were sometimes termed ripenses during the early to mid-4th century (though strictly speaking this label probably only applied to those stationed along the Rhine/Danube riverine frontiers). Clearly the manner in which the two North African commands evolved had resulted in the promotion of these regiments to the rank of comitatenses at some stage (perhaps even prior to the formal definition of limitanei as a military grade from the mid-4th century onwards). This emphasises that the ranking of troops could involve a significant element of chance or contingent circumstance, with almost identical units eventually falling into different grades.

The paper will go on to examine what the documentary and archaeological evidence can tell us about the role of the African limitanei, showing how their distribution related to the unique requirements of the North African frontiers, and how these troops interacted with the wider tribal society of the frontier zone.

21. LIFE AND HEALTH ON THE ROMAN LIMES

Session organisers / Chairpersons:

Nataša Miladinović-Radmilović, Institute of Archaeology Belgrade (E-mail: miladinovic.radmilovic@gmail.com)

This session includes anthropological research of osteological material from old and new archaeological excavations along Limes. This will imply the impact of historical circumstances on the social and health status of the rural, urban and military populations, their paleodemographic structure, the reconstruction of economic relations and the diet, the level of medical care and protection, intentional and accidental traumas, everyday occupations and habits, relations towards children, as well as the reconstruction of funeral practice.

The appearance of ulcer on one skeleton from Viminacium and the possibility of its' treatment in Antiquity

Nataša Miladinović-Radmilović, Ilija Mikić, Dragana Vulović, Ksenija Đukić

Viminacium (Stari Kostolac) was the largest and the most important city in Moesia Superior (Upper Moesia). It was the provincial capital, administrative, religious, military and trade centre. It was built on a strategic location at the confluence of the river Mlava and the Danube, on the crossroad of both land and river routes with large military and trade potential.

On one of the necropoles of Viminacium, Pirivoj, in grave no. 325, skeletal remains of a juvenile female individual were discovered. The burial is dated into the first half of the 3rd century. The deceased juvenile was laid on the back with hands clasped on her stomach. The orientation of the grave was North–South.

Anthropological analyses revealed traces of osteomyelitis with proliferative periostitis on the left tibia and left fibula. The source of infection was related to a large ulcer on the left tibia. The current appearance of the bone shows poor health treatment of the ulcer and active inflammation at the time of death.

In this presentation, we will also focus on the ulcer aetiology and possibility of its' treatment in Antiquity. Treatments will also be briefly discussed, with preparations based on silver and lead, vinegar, honey, etc.

Case of myositis ossificans traumatica on one skeleton from Viminacium

Dragana Vulović, Ilija Mikić, Ksenija Đukić, Nataša Miladinović-Radmilović

The Roman city and military camp of Viminacium is situated between the villages of Stari Kostolac and Drmno, 12 kilometres eastwards from Požarevac, close to the confluence of the Mlava and the Danube. During its' history, it became the biggest urban settlement and the capital of the province of Upper Moesia (Moesia Superior), later the First Moesia (Moesia Prima). It represented one of the most important military strongholds, not only in Upper Moesia, but it also represented the area from which Roman legions operated in other provinces as well.

On one of the necropoles of Viminacium, Pećine, in grave no. 5785, skeletal remains of a juvenile male individual were discovered. The funeral took place in the Late Antiquity period. The deceased juvenile was laid on the back with hands clasped on his stomach. The deceased's skull was not found. The orientation of the grave was West–East.

Anthropological analyses revealed a fracture of the right femur followed by myositis ossificans traumatica.

Myositis ossificans is defined as a localised formation of heterotopic non-neoplastic bone in muscle or soft tissue. It usually represents one of the complications of fractures, like in our case here. The trauma to the bone can damage the overlying muscle and, occasionally, the muscle tissue will respond to the trauma by producing bone directly in the muscle tissue itself. This

condition is known as myositis ossificans traumafica (post-traumatic myositis ossificans or myositis ossificans circumscripta) and is most likely to occur in response to trauma in young male individuals, and in the femoral (the quadriceps muscles) or humeral region (brachium muscles).

Possible explanations for mass skull burials at Viminacium

Ilija Mikić, Nataša Miladinović-Radmilović, Dragana Vulović, Ksenija Đukić

Viminacium is located close to the confluence of the Mlava and the Danube, near the village of Stari Kostolac. It represents an extremely complex site with a long history of re-search. There was a large number of necropolises in its surroundings: late prehistoric necropolises with bi-ritual burials, several Roman necropolises, also with bi-ritual burials, as well as several necropolises with inhumation from different medieval periods.

In ancient Viminacium, so far, four graves with mass burial, mainly skulls with a slightly lesser amount of bones from the postcranial skeleton, have been found.

In the archaeological context, there are two funeral practices: incineration and inhumation. Within them, we can distinguish individual, group and mass burials. Under individual burials we comprehend the placing of skeletal remains of one person inside a grave pit, a grave construction, or a built tomb. Group funerals involve the laying of skeletal remains of two or more persons, usually members of one family, who are buried at the same or different period of time, into a grave pit, a grave construction or a built tomb. Mass burials involve the storage of skeletal remains of more individuals, usually at the same period of time, under specific circumstances (massive death toll due to natural disasters, massive death toll as the consequence of various epidemics, as well as massive death toll as a result of armed conflicts, etc.). Secondary mass burials are mostly partial, and much more attention and care is dedicated to the skulls.

On one of the necropolises of Viminacium, Pećine, in grave no. 4924, skeletal remains, mostly skulls, of more than 150 individuals were discovered.

In this paper, we will try to explain this phenomenon, on the example of grave no. 4924, and show all possible causes for mass skull burials at ancient Viminacium.

Roman Medicine and Healthcare on the Upper Moesian Limes in Serbia – Archaeological Evidences

Aleksandar P. Simić, Gordana Jeremić

After the arrival of the Roman army the first professional medics probably made their appearance in the territory of Upper Moesia, predominantly in Singidunum and Viminacium. The means of treatment, and therefore the level of medicine, can be knowledgeable from several different sources, while the most accurate data are those obtained by the archaeological discovery of original medical instruments. In ancient Rome more than 150 different types of surgical instruments have been used. More than 300 medical and surgical instruments of various types so far have been found on the Upper Moesian Limes from Singidunum to Aquae.

Roman citizens in Singidunum (Belgrade) lived in good conditions in both the town and the surrounding villages. From archaeological excavations of the area of canabae and castrum, 28 various medical mainly surgical objects have been found. Also several medical objects have been found in various settlements, smaller fortifications or villae rusticae of ager Singidonensis. Even though at the main castrum of Singidunum no hospital has been discovered yet, just south of Belgrade, epigraphy from auxiliary fort Demessus (Guberevac/Stojnik), at the mining area at Kosmaj, has the word valetudinarium inscribed on it.

Presence of some graves of doctors and pharmacists and their discovered equipment testifies that medical care was at the highest possible level in Viminacium (Stari Kostolac), capital of Moesia Superior. In several tombs in Viminacium many surgical instruments from I to III century have been found. Medical instruments of an eye doctor - "medicus et chirurgus oculusarius" were excavated on the southern city-necropolis.

Downstream from Viminacium several surgical instruments are found on different sites: in Le-

darta (Ram), Cuppae (Golubac), Castrum Novae (Čezava), Smorna (Boljetin), Taliata (Donji Milanovac) and at Transdierna (Tekija). At the site of Diana (Karataš) most of the medical instruments have been found dating from the II and III century, mainly made of bronze.

Well preserved traces of sewer system and water pipes even aqueducts were found not only in the town territory of Singidunum, Margum, Viminacium and Taliata but also further away. Interestingly in Singidunum, Margum, Viminacium, Porečka Reka, Transdierna, Diana and Egeta (Brza Palanka) the existence of thermae and balnea was archaeologically or epigraphically documented.

Burial Structures of Viminacium: Building and Construction

Emilija Nikolić, Snežana Golubović

Viminacium, today an archaeological site near Kostolac in Serbia, was the largest Roman city settlement in the province of Moesia Superior and a significant military center founded in the I century AD. Archaeological excavations were mostly performed in necropolises, where over 13,500 thousand graves with cremations and inhumations were researched. Above-ground parts of buildings have been very poorly preserved, due to the war destructions in the ancient period and degradation for the purpose of building new constructions afterwards. Although most of them were looted, the graves and tombs have become the source of the greatest amount of information about Viminacium architecture. They provide us with valuable data on used materials, masonry techniques, constructions, as well as architectural forms.

The southern Viminacium necropolises were extensively excavated during the seventies and eighties of the XX century, but also in smaller scale during the last few years. Burials in these necropolises were performed from the middle of the I to the middle of the VI century. The variety of burial structures were found here, which enabled researchers to set up typologies of its masonry constructions, dated to the period from the middle of the III to the middle of the V century. Since the beginning of the XXI century, eastern necropolises have been researched, offering us more information on Viminacium masonry burial structures.

The numerous masonry graves were discovered in Viminacium necropolises, as well as several overground and underground monumental tombs called memorial buildings or family mausoleums by researchers, having various spatial organizations and forms. According to some of the researchers, the grave with trapezoidal cross-section was the specificity of Viminacium. Most of the wall painted graves had this cross-section.

The simple gravestones of Viminacium have not been preserved in situ, but many of them have been saved being used as building material or spolia in the Middle Ages. It was also done in the ancient period when the gravestones were used for the construction of later graves or city walls. Also, the building material – bricks and stone blocks, originating from various ruined structures, was often secondarily used in the ancient graves. These processes bring valuable information on ways of reusing the structures and materials during the ancient period, but also on the relation of the ancient people to the past.

Settlement Size, History, and Mortality at Roman Viminacium: Testing the Urban Graveyard Hypothesis

C. Scott Speal

It is a widely held view that ancient cities were decidedly unhealthy environments. Some scholars would go so far as to proclaim an 'iron law' in which larger pre-Industrial cities with populations of over 10,000 or so were unable to sustain their numbers without constant immigration from the rural hinterlands due to excessive levels of mortality. Critics, on the other hand, have cited the trend of increasing urban growth over the last several millennia, and the ability of the rural component of urbanized civilizations to grow in unison with their urban counterparts, to discredit this 'Urban Graveyard Effect' as any such general principle.

The present study therefore examined mortality at the city of Viminacium on the Danube fron-

tier in an attempt to test the Urban Graveyard Hypothesis using skeletal remains from a provincial Late Roman context. Given the known trajectory of urban development at Viminacium, which began as a small military outpost on the Roman Limes in the 1st Century and concluded as a large, regionally important political and economic center of some 30,000 persons during the 5th century, it was possible to study changes in health as settlement size and density increased over this period through the examination of osteological material from the graveyards surrounding the ancient city. Associated grave goods were used to assign chronology to 93 skeletons recovered from the immediate vicinity of the city. Recently developed skeletal aging techniques designed to transcend some of the traditional limitations of paleo-demography allowed construction of an overall composite mortality curve for the site, as well as evaluation of changes in survivorship and the age-dependent hazard of death over time as the city grew, through computational survival analysis using STATA analytical software.

Mortality estimates produced through the survival analysis for the 4th Century—associated with the highest degree of urbanism—suggest greater survivorship at that time than during either preceding period. This finding contradicts the tenets of the Urban Graveyard Hypothesis. Instead, analysis found survivorship to be clearly lower during the 3rd Century, and the hazard of death for all ages from adolescence up to around age 60 to be substantially higher during that period, than in either earlier or later centuries. These results tend to suggest that historically specific conditions, namely the Third Century Crisis known from ancient literature and documentary sources, were more influential upon population dynamics than overall settlement size or density at ancient Viminacium.

24. ARTS AND CRAFTS ALONG LIMES

Session organisers / Chairpersons:

Ivana Popović, Institute of Archaeology, Belgrade (E-mail: ivpop055@gmail.com)|

Bojan Đurić, University of Ljubljana, Faculty of Arts (E-mail: bojan.djuric@gmail.com)

Roman Cameos With Female Busts from the Limes Region: Their Meaning and Role in the Political Propaganda

Ivana Popović

In the Limes region about 40 cameos with the representation of the female bust in profile were founded. In contrast to the summarily treated faces, the female hairstyle on the cameos is represented in detail, authentically reflecting the fashion dictated by the empresses. Judging the depicted hairstyle the datation of the cameos were possible: 1) Late Antoninian Period, between 160 and 180; 2) Severan Period, between 200 and 230; 3) Late Severan – Period of Military Emperors, between 230 and 250; 4) second half of the 3rd – beginning of the 4th century. From Viminacium come 10 cameos of this type, but the specimens from Intercisa, Ratiaria, Novae and Durostorum are also known. The stylistic analysis of cameos with the representation of the female bust in profile, observed together with the place where they were found, shows that they were produced in the workshops located in the civilian settlements next to the military camps on Danube Limes which, mostly, originate from the late Antoninian and Severan Period. The answer to the question why this happened at this time could be found in the fact that at first Marcus Aurelius and after him Septimius Severus have transgressed the earlier established rule that the emperors through the principle of adoption do not appoint their successor from the group of their descendants. These two emperors by proclaiming their sons their successors tried to establish their dynasties based on consanguinity. Because of that the wives, the mothers of the future emperors, had a special role. The representations on the cameos are probably the models of these empresses, whose characteristic feature was the specific hairstyle. As the features of the face of the represented women mainly lack any individual characteristics, we believe that they were made on the basis of the models-cardboards with the representations of the empresses, which were in circulation in the workshops along the Danube-Rhine Limes. In the time of Marcus Aurelius the provinces on Danube became very important for the defence of the Empire, and because of their strategic position they came into the focus of the imperial propaganda politics. The military troops from the Danube regions proclaimed Septimius Severus the emperor. He had, as also did his son and heir Caracalla, visited the cities on Danube, appropriating large sums of money for their reconstruction. The number and quality of cameos of this type is declining rapidly at the end and after the rule of the emperors from the dynasty of Severi.

Roman engraved gems from Burgenae in the Archaeological Museum in Zagreb

Iva Kaić

Within the Roman-period glyptic collection in the Archaeological Museum in Zagreb, which contains more than 400 pieces, there is a small group of mainly unpublished engraved gems from Novi Banovci (Burgenae). It consists of 4 intaglios and 3 glass gems, all of which were stray finds acquired for the Museum collection at the end of the 19th and at the beginning of the 20th century. At the site of Novi Banovci, situated on the Danube river in Vojvodina, Serbia, in 1st century AD a Roman military fort Burgenae was built, with many auxilliary units garrisoned there during the four centuries of its existance. The site is well-know for numerous archaeological finds. Engraved gems from Burgenae in the Archaeological museum in Zagreb, although stray finds, can be connected with the presence of military units on the site. They

can also provide a contribution to the corpus of Roman finds from that important military site in Pannonia Inferior.

The Sirmium sarcophagus production on the Danube Limes and the Titel sarcophagus in Timișoara

Bojan Đurić

The sepulchral monuments in the towns and other settlements along the Danube Limes, in the section stretching from Aquincum to Viminacium, are predominantly made of Budakalász travertine. Competing with it in some parts are local or regional workshops using different rocks, one of which is the Sirmium production of formally and materially distinct sarcophagi largely dated to the 3rd century CE. This production supplied the territory of Sirmium, that of the neighbouring Bassianae and wider; one such sarcophagus was found at Singidunum and reveals the production's regional importance. These sarcophagi were made of green pyroclastic rock extracted in the area of the Rajići village, south of Zvornik in the Drina Valley, and transported to Sirmium along the River Drina together with the roughed-out products of Badenian limestone from the Dardagani Quarry near Zvornik. Probably the most enigmatic sarcophagus in Pannonia is that found some time ago in Titel, Serbia, at the confluence of the Rivers Tisa and Danube, opposite the Roman fort and civil settlement of Acumincum. Lavishly decorated, it was long regarded as a unique piece with no clear links to any of the known Pannonian productions. The stone type, however, coupled with a specific formal structure and decorative elements clearly tie the sarcophagus to the Sirmium production.

Entertaining the Empire – Rome's frontiers and the arena industry

Boris Alexander Burandt

The people of the Roman Empire craved entertainment, both in the heart of the Empire as on its frontiers. To visit gladiator fights, or - rarer - chariot races or theatre performances was an integral and frequent part of the life of a Roman soldier. Accordingly, wherever the troops went, an arena was soon built resulting in the fact that there is hardly a single legionary garrison without an amphitheatre or something comparable. The agency of the Roman army in building these is clear – but what about the running of the arena? How did the army purchase the necessary wild animals for a chase in the arena, how were they involved in the training of gladiators? What was the role played by the production and trade of memorabilia in the context of gladiator fights for the legions and auxiliaries? These and other questions will be addressed in the paper proposed here, which seeks to shed more light on the connection between the Roman state and the entertainment industry on the borders of the Empire.

The Entry Gate of Luxuries in the Province of Dacia; Roman Engraved gems from Micia (Vețel, Hunedoara County, Romania)

Mihaela Simion, Decebal Vleja, Ionuț Bocan, Catalina Mihaela Neagu

Micia (Mintia, Vețel, Hunedoara county) represents one of the most complex archaeological sites on the northern Limes of the Empire. This important historical ensemble, composed of the auxiliary camp, the civilian settlement and their specific necropolis is, beyond its military importance, an important production and commercial centre of the province. An important statio of publicum portorium Illyrici, the place where the luxury goods enter the province, Micia is rightfully considered the entrance gate of luxuries for the entire Dacia and not only. Surprisingly, the archaeological material from this site, in terms of what can be considered luxury products, includes the largest number of engraved gems (in archaeological context) discovered across Dacia. They are now distributed in numerous museum collections from Romania, Hungary and

Austria. The present paper proposes to present some parts of this rich material, both published and unpublished, but more importantly, considerations referring to a series of stylistically related features, including the materials they are made of, which may indicate the existence of an engraving workshop at Micia.

Roman Jewellery from South-West of Dacia

Ana Cristina Hamat, Georgescu Ștefan Viorel

The present paper brings into discussion several pieces of jewellery discovered during the systematic research carried out in the south-west of the roman province Dacia- present day Romania, in archaeological sites like Tibiscum- Jupa, Tibiscum- Iaz, Dierna- Orșova, Praetorium- Mehadia, Berzobis- Berzovia and also along the Danube river line. Most of them are discovered in archaeological context, originating both from civilian and military, in the territory of the roman forts and civilian settlements. For example, one ring with the dextrarum iunctio scene comes from the military environment, as it was discovered in the roman fort from Tibiscum or in its environs, and we believe that it can be related to the military presence at Tibiscum and cannot be regarded as an engagement ring, like the older bibliography mentioned. More likely it belonged to a military man or to someone who had a certain connection with the army. An illustration of luxury in the ancient world, jewellery represents one of the elements that provide help in outlining a more complex image of a long gone world. Manufactured from expensive, or, on the contrary, from common materials, a piece discloses its true value only on a closer look. The intrinsic value of the object can therefore be dictated by the context of discovery or even by its former owner, the actual cost being accompanied sometimes by a much greater symbolic price, and even by a moral price, mentioned several times by literary sources. A good example for the at least dual value of jewellery is illustrated by signet ring discovered in Tibiscum or Dierna or by the bulla discovered in Praetorium.

Over time, along with the jewellery discovered in the entire area, a number of workshops producing metal or glass jewellery, including some that worked with precious metals, had been researched as well. All the artefacts are dated to the 2nd – 4th century period, with the help of the discovery contexts, and analogies. Therefore, they all are an important clue regarding the economic life and continuity of the roman civilian centres even after the abandonment of the province by the army and the imperial administration.

Military virtue as depicted on official and personal monuments from the Danubian provinces

Ortolf Harl

Compared to Upper Italy and the Rhine area in the Danubian provinces there are extremely few roman stone monuments depicting the victory of a roman emperor/general or individual. Based on the large amount of stone monuments to be called up in lupa. at the author presents some outstanding monuments and tries to explain the changes of the habit in setting them.

The Tomb With Paleochristian Wall Paintings From Sirmium

Biljana Lučić, Miroslav B. Vujović, Jasmina Davidović

Sirmium as a significant political, administrative and religious center of Pannonia from the end of the third and during the 4th century, plays a unique role in the study of the Late Roman period. Although archaeological research of the ancient city has provided important data on numerous Early Christian cult buildings from this period, larger scale research on necropolises, which could shed more light on this topic, was rarely done.

In the framework of protective archaeological excavations on the site for the new petrol sta-

tion construction, conducted during September and October 2016, there was an opportunity to explore a part of one of the numerous necropolises of Sirmium. The Eastern necropolis, where the research was carried out, was situated around the basilica dedicated to Saint Irenaeus, the first mentioned bishop and martyr of Sirmium. During the archaeological research in 2016, some 70 m southwest of the Saint Irenaeus basilica, a small Late Roman memorial shrine was discovered as well as 12 late Roman tombs. All of them were disturbed and pillaged. The tombs were built of horizontally layered bricks bound with mortar with a hipped- roof. The most luxuriously decorated tomb has been discovered within the memorial shrine. The interior walls of the tomb were plastered and completely adorned with frescoes bearing an exceptional selection of Paleochristian scenes. A scene of a man standing in frontal position between two trees is depicted on the western wall. The man is painted carrying a lamb on his shoulders, clearly indicating the Good Shepherd scene. On the opposite, eastern wall, the representation of four male figures is painted. Three young men are depicted burning in red flames in a front row and one bigger figure behind, presented with arms extended in an embrace gesture. Although partly damaged in the upper zone, it is certain that the scene is a representation of an Old Testament story - the Three Young Men in a Fiery Furnace. At the side north and south interior walls the railing of Paradise is represented. The whole composition is characterized by the simplicity of scenes which clearly emphasize the message of salvation. The exceptional scenes of the Good Shepherd and the Three Young Men in a Fiery Furnace, respectively, reflect the religious program and official artistic influences streaming from the Rome itself via Aquileia and Thessalonika.

25. FIRST CONTACTS BETWEEN THE ROMAN MILITARY AND THE LOCAL PEOPLE

Session organisers / Chairpersons:

Szilvia Bíró (Győr) (E-mail: szilvia.biro@hotmail.com)

Thomas Grane (Copenhagen)

Fraser Hunter (Edinburgh)

Thomas Schierl (Mannheim)

This session seeks to explore the changing nature of relationships between the Roman world and indigenous populations at the time of first contact. As an introduction we will consider the different models – based upon case studies inside and outside the Empire –; how the Roman world dealt with the groups it was meeting in a comparative perspective, and the varied nature of local responses. Main aspects shall be the followings:

- Comparative perspectives on how the Roman military reacted on arrival in a non-Roman area
- Changes in Late Iron Age settlement / settlement structure and what caused these
- Rationale for the positioning of the first Roman military sites
- The nature of early imports / exports
- The role of political or diplomatic contacts

Roman frontiers create new societies in the lands beyond: a shift to pastoral farming and social re-structuring caused by the building of Hadrian's Wall

Nick Hodgson, James Bruhn

Previous publications have argued that the Roman conquest of what is now northern England and southern Scotland encountered a densely settled agrarian landscape, but that this was largely abandoned around the time of the construction of Hadrian's Wall in the early second century AD (Hodgson 2012; 2015). This paper considers the problem of what kinds of settlements and social structures emerged to replace former societies in the area north of the Wall. Several sites can now be recognised in Northumberland and south-west Scotland which are characteristic of the centuries following the establishment of Hadrian's Wall as the permanent imperial border in northern Britain. These successor sites (e.g. Castle O'er Fort in Dumfriesshire (Halliday 2002, Mercer in press), and the final phases Pegswood Moor (Proctor 2009) and St George's Hospital, both in Northumberland) are not as numerous and are morphologically very different to what had preceded them. None have the heavily enclosed rectilinear form of the typical of the later Iron Age in this region. Instead all have complex ditch systems for funnelling, controlling and housing animals, indicating a shift to a more pastoral economy, one where the wealth and power was increasingly based on the control of cattle as a commodity traded to, or requisitioned as a tax by, the Roman imperial authorities. In this respect these centres are reminiscent of the situation at an earlier period at Flavian Elginhaugh, where a Roman fort was abandoned around AD 86 but remodelled as a stock enclosure, argued by Hanson (2007) to have been for the holding and selection of livestock being collected as a form of taxation on a population that was still subject to Rome but no longer under direct military occupation.

The shift in the pattern of settlement north of Hadrian's Wall indicates a severe disruption to the existing landscape and to society overall, bringing an end to a stable social structure characterised by a numerous and widespread nobility, and suggestive of the rapid emergence of new centres of social authority in the 150km immediately north of the Wall.

Finally, the paper briefly considers what analogies for this social transformation can be found beyond other permanent Roman fortification lines of the 2nd century AD.

Allies, Enemies, Partners or Protagonists? Rome and the Brigantes in the First Century AD

Pete Wilson

The history of Northern England in the AD 50s and 60s has long been accepted as being as well understood as the limited literary and archaeological evidence would allow. For much of the twentieth century Tacitus's words and Sir Mortimer Wheeler's work at Stanwick, North Yorkshire, established an essentially binary narrative of a 'Quisling Queen' (Cartimandua) in thrall to Rome and 'noble (if doomed) resistance' led by Venutius, her wronged consort. The size of Brigantia and its strategic location dominating northern England, strategically having the potential to either protect or threaten the northern border of Rome's new province ensured that its status, as an ally or an enemy, would be crucial to the Roman imperial project in Britain. This paper will review that relationship, its physical manifestations and changes that are visible in the material record using the well-known evidence from Tacitus and Wheeler in combination with the more recently published data from Stanwick (Haselgrove 2016) along with the emerging results from the important work undertaken by Northern Archaeological Associates at Scotch Corner as part of the A1(M) Motorway project. Questions relating to settlement form, military supply and trade contacts will be explored.

At the back of beyond? Actual perspectives on the lower Alpine Rhine valley regarding the first Roman contacts

Karl Oberhofer

The construction of a military base at Brigantium/Bregenz (A) in the Augustan Period marked a crucial step in the development of the alpine Rhine valley. The landscape between Bregenz at the Lake of Constance and Curia/Chur (CH) possessed great strategic importance for the surveillance of the route from the regio XI Transpadana to the northern foothills of the Alps. The expansionary policy of the latest republican period led to a temporal occupation of several alpine passes, resulting in the permanent control of the area after the Alpine campaign of 15 BC. The indigenous population of these decades is not clearly traceable in the archaeological record. Considering the previous state of research proposing a huge oppidum at the eastern bank of the Lake of Constance, the effective quantities of features and finds from this period are very small.

Recent excavations brought to light a differentiated settlement structure in modern-day Bregenz. An oppidum or Raetian central site in the lower Alpine Rhine valley from the transitional period still could not be proven, neither by unstratified single finds nor by settlement strata and complexes. The absence of late Latène features nearby the late-Augustan military base and the expansion of the associated vicus in the Tiberian Age shed a new light on the effective settlement situation in the first decades of the 1st cent. AD.

The paper presents a synopsis of the late Latène and early Roman findspots and features in the lower alpine Rhine valley. The actual knowledge indicates a decentral organised settlement structure in the 1st cent. BC experiencing a reorganisation in the 1st cent. AD. According to the ancient historiographical sources the political, military and economical transition of the region should not be understood as an occupation but rather annexation of a sparsely populated tribal zone. The paper attempts to show the initial Roman approaches to impose their administrative system on the tribe of the suggested Brigantii, realized in connection with an economic recovery owed to the Roman military presence.

The latest discoveries and research results of the Roman military presence in Middle Danube barbaricum

Balázs Komoróczy, Marek Vlach, Ján Rajtár, Claus-Michael Hüssen

At the previous Limes Congress in Ingolstadt has been presented the latest state of research concerning the Roman temporary camps within the Middle Danube region, within the of the international project framework. Since then the available information basis has broadened significantly in several aspects. Above all, two new temporary camps in Jevíčko and Brno (South Moravia, Czech Republic) have been discovered, while one of them newly constitutes the northernmost direct evidence of the Roman military presence within region. Besides numbers of other, mainly circumstantial evidences in form of component of the Roman military equipment and weaponry, has enriched so-far registered indirect evidences of the Roman military presence.

Roman Contact und Impact in the Swiss Plateau (100 BC – 20 AD)

Andrew Lawrence

After the Helvetii and Rauraci were defeated by Gaius Iulius Caesar near Bibracte in 58 BC (*de bello Gallico*, Book I) they returned to their original territories in modern-day Switzerland where they were most probably subject to a *foedus* with Rome. In the years around Caesar's death, two colonies were founded on the Rhine and Lake Geneva re-spectively (Augst and Nyon), as a further means of territorial control.

Drawing from this historical framework but also from the detailed state of archaeological research for Late Republican Switzerland, which has recently been boosted by new discoveries and investigations, the paper will, on one hand present methodological considerations on how Roman imperialism can be assessed in the archaeological record and, on the other, it will analyse Roman impact on the settlement landscape of the Swiss Plateau from the early 1 cent BC up until the foundation of the Legionary Camp of Vindonissa in the Late Augustan/Early Tiberian Period.

First contacts in Scotland: a review of old and new evidence

Fraser Hunter

The south of Britain saw regular contact with the Roman world for over 100 years before formal conquest. The picture was very different in Scotland, where evidence of contact before conquest is extremely rare. This changed with the rapid advance northwards in the late 70s and early 80s AD. At this time we see a small number of sites in some areas of the country with very rich Roman assemblages; other areas show no such evidence. This topic has seen no sustained analysis since Lesley Macinnes' seminal 1984 paper on 'Brochs and the Roman occupation of lowland Scotland'. Drawing on work over the last 30 years, the issue of pre-conquest contacts and the nature of relations in the late first century AD will be reviewed.

Roman stuff as a medium of diplomacy (working title)

Thomas Grane

An important aspect of Roman foreign policy throughout the centuries were an acute interest in their neighbours. As we know, often enough, this led to unilateral invitations from the Romans to join the empire. But just as often Roman diplomacy was a means to be informed or keep a check on their Barbarian neighbours.

This paper attempts to expose patterns of Roman diplomacy through literary sources as well as particular archaeological finds. As such, one part will consist of an examination of how

the Romans describe the tools of their diplomatic advances. Another part will look at certain objects of Roman origin that appear to have been particularly well suited as mediums of diplomacy. As the base of my examination, I will focus on the initial contact with Barbaricum in the 1st century AD.

JUST TELLING STORIES. Augustus and Central Germany: Illustrating military history or telling another story?

Thomas Schierl

An awareness of objects from the Roman provinces found in Central Germany can be traced back at least to the 17th century AD. Since then the scientific community focussed on the wide range of wellpreserved foreign items found in inhumation burials of the 3rd century AD, but another, less researched horizon of non-local objects of the Augustan period is of equal interest. In contrast to the material of the 3rd century AD, the older items from the Roman provinces are mostly personal and military equipment from Gallia or the 'Empire' in greater sense. Their occurrence in the time of the Roman military campaigns between Weser and Elbe as well as their possible accordance with object groups of the Roman army seem to indicate a link between Roman military historiography and the discussed finds. Without indubitable evidences of Roman military installations in that region, the finds appear to point towards native exchange processes as the most likely explanation of the distribution of these objects. At the same time, Noric-Pannonian dress accessories reached Central Germany and are understood as barter goods conveyed by the 'Kingdom of Marboduuus'. But is an historical interpretation really so straight forward and simple? There could be a more complex one: If we do not try to fit archaeological finds into our historical mould and accepted them as a largely independent and equivalent source of information for historical processes, we can tell an alternative, mostly unwritten, but not less eventful story. The origin of the 'Roman' finds and traces of cultural interaction could point to Roman military operations, a Gallic aristocracy and mobile groups of Germanic warriors who fought for different lords. But can small finds really help us to illuminate historical events, or is it just another story we tell? Using the example of Roman finds from Central Germany, this paper will question the significance of small finds as indicators for historical events or short-term processes (such as mobility) particularly in a time with written sources. To what extent can we use objects as an independent source for an archaeology that is understood as a historical science?

But Gaius, those locals seemed friendlier! The rationale behind the military deployment during the early stages of the Roman military presence in NW Iberia

José Manuel Costa-García

Far from causing a mere accumulation of homogeneous information, the finding of new sites in NW Iberia during the last years has contributed to the exponential diversification of our research topic, allowing us to catch a glimpse of realities simply unknown to us some years ago. Spurred on by the availability of new geospatial datasets, the discoveries have been made at a great speed, and that unfortunately implies that very little room has been left to the analysis and reflection on the new and old data all together.

The study of aspects such as the morphology, defensive system or locational pattern of these Roman military sites allows us to better understand the rationale behind their construction as well as to detect some of the agents which could have caused the adoption of locally adapted solutions. In addition, the implementation of visibility and mobility analyses can help us to identify the dynamics of the Roman military deployment in a given territory through the time. These approaches could not only provide useful data about the actual role played by the Roman army deployed in NW Iberia –a matter of intense debate among Spanish scholars-, but

also contribute to clarify the nature of the interaction between these imperial agents and the local population during the early stages of the Roman presence in the area. A non-homogeneous behaviour is to be expected all across the territory, considering the social, political and economic diversity of the indigenous communities –as it has been stressed by several Late Iron Age researchers in the last decades.

For instance, physical confrontation has been archaeologically attested in some areas -with episodes of violent destruction and reoccupation of hillforts by the Romans-, while the evidence related to these first contacts is subtler in other zones -even the military deployment shows a notable disdain for the proximity of indigenous settlements. But this was not a unidirectional process, and the re-ignition of the conflict in the mountainous regions also forced the Romans to introduce some changes in their original strategy before the area was definitely pacified.

Limes in Serbia - the early days

Milica Tapavički Ilić

The arrival of Romans to the territory of what is now Serbia was a complex process. In certain aspects, local population along the Danube was already acquainted to the Roman material culture. Still, many aspects were completely new to them. In an occupied country and with new inhabitants, local people had to find a way to survive and adapt themselves to the new situation. Those who chose to stay, gradually made contacts with the Romans, initially presumably through trade and supplying. However, those who decided to leave, crossed the Danube and fled to barbaricum. Their role in what was yet to come was also of great importance both for the barbaricum and for the Roman Empire.

Roman Conquest of the Western and Central Balkans in the Light of Recent Research

Dragana Nikolić

The paper aims at exploring important aspects of the impact of the Roman conquest in the vast area between the Adriatic and the Danube (the region of Western and Central Balkans), that is principally based on the author's recent historical-epigraphical researches. A special focus will be put on the establishment of rule and required institutions within territorial units and the transformation of free tribes into civitates – communities organized based on their tribal structure whose inhabitants belonged to the indigenous population and the rôle of the Roman army in these processes. The paper brings forward the most important relevant literary and epigraphic evidence, including an understudied group of sources: the triumphal monuments and documents whose character is principally ideological and symbolical that may, however, have a significant documentary value and shed new light on the events of political history in this part of Roman Empire.

26. RE-EVALUATING OLD EXCAVATIONS: ARE THEY WORTH IT?

Session organisers / Chairpersons:

Orsolya Láng, Aquincum Museum (E-mail: lang.orsolya@aquincum.hu)

Even though, excavations at most sites along the Roman Limes have been going on for 120-150 years now, publishing the several decades old excavation data and finds is always problematic. Different standards of evaluation were used to document excavations from the 19th century onwards ranging from short reports and traditional layer-description methods to writing long “stories” on drawings and find bags... How can data and finds of an early 20th c. excavation be used nowadays for example? Can these various types of documentations be integrated with the more recent researches and re-interpreted according to more modern methods? How can these data be re-evaluated? Could re-evaluation of old excavation documentations lead to the elimination of old topoi concerning a site? What are your experiences?

This section is rather planned to be a methodological one (with case studies), but extremely important, as large amount of data and finds from age-old excavations of Limes settlements still await processing.

Old excavation – new results: examples from the Aquincum Civil Town” – a keynote paper

Orsolya Láng

Excavations have been going on in The Aquincum Civil Town for more than 120 years, many of which still await processing and publication. These researches – mainly from the 19th or first half of 20th century – were carried out according to different standards: in some cases detailed excavation diaries, numbered layers on section drawings can be discovered, while in other cases only a page long description, a few lines on find bags or a few photos remain. How can these old documentations of rather different levels be used/valuated today? Are these materials worth to take a fresh look at? Can new information be gained from them? What methods could be used for this work and what are the results? Do they change anything at all? Could - even in some cases – old theories be disproved concerning for example periodization or function? In this paper, several case studies from the Aquincum Civil Town will be presented, based on these old and recently revaluated excavation materials to see if it works...

The Roman military base at Dura-Europos: from archive and field to new synthesis

Simon James

The Roman base at Dura-Europos, Syria, explored by a Franco-American expedition (1928-37), is the only extensively excavated example of a major class of sites: urban bases which, during the Principate, were an important feature of Roman military infrastructure, especially in the East. Dura's intramural military quarter was a prominent component of life in this 'Pompeii of the East'. The site is also famous for its extraordinarily well preserved military equipment largely deposited during the Sasanian siege which destroyed it c.AD256, and the famous papyri, including records of the resident cohorts XX Palmyrenorum.

Since its excavation Dura's testimony has featured extensively in discussions of the Roman military in the East and in general, and continues to do so. However, the excavations were only partially published, with evidence for the military base in particular largely remaining unstudied in the expedition archive at Yale University Art Gallery (YUAG). Commentators have always been constrained by the limited information and preliminary interpretations in the expedition's incomplete Preliminary and Final Report series.

Having completed a study of the military equipment from the site, the writer began a new project to bring the base to publication. This was a combined exercise in archival research—dealing with so-called legacy data at Yale—and new fieldwork at Dura. The latter comprised inspection and resurvey of the still-exposed remains, supplemented by entirely new work: geophysical prospection of still-unexcavated areas.

The results of the project (fieldwork 2005-2010, archival research continuing to 2017), are about to be published (James, in press). Key conclusions are that: the Roman base was even larger than thought; it grew large decades before the 210s when it was hitherto believed to have been established; it was home not just to soldiers but to a large 'extended military community' of servants and families; and the archaeological evidence indicates a policy of integration rather than separation between Dura's military and civil communities.

This project was only possible because of the support and generosity of the Franco-Syrian mission to Dura (MFSED, fieldwork 1986-2011), and equally of the curatorial staff of YUAG; such institutional and personal factors are critical to the success of 'legacy data' projects. The devastation of Dura by industrial-scale looting during the Syrian civil war also underlines the importance of evidence from old excavations preserved in archives and museums.

James, in press, *The Roman Military Base at Dura-Europos, Syria: An Archaeological Visualisation*, Oxford, Oxford University Press.

Digging in the archives – The 19th c. excavations of J. J. Schmid in Augusta Raurica

Simone Mayer

The Roman colony of Augusta Raurica in present-day north-western Switzerland has been of great interest for researchers since the 16th c. AD. An early discovery were the late antique and early medieval inhumation burials surrounding the castrum rauracense. The cemetery is best known for the excavations of the Landesmuseum Zurich, conducted by D. Viollier in 1907-1913 and published in 1976 and 1991 by M. Martin. Smaller parts of the cemetery have been excavated during the 20th c., most of them are unpublished or only published in preliminary reports.

However, the paper will focus on the excavations in the first half of the 19th c., when the cemetery was first discovered and examined by J. J. Schmid, the local owner of the paper mill. He kept the finds sorted by grave and had an artist draw them, as he was planning on publishing his results. Unfortunately, he died before he finished his work. His heirs sold the collection of finds and drawings to different institutions in Basel and Zurich.

The finds have been inventoried several times over the last 200 years. The original notes that came along with the finds have been lost and are only passed down in the notes of researchers from the 20th c., while the preserved notes and letters are written in old German handwriting. Is it possible to reconstruct the about 150 graves with their grave goods? Is their re-evaluation worth the effort and are they going to help us with modern research analyses?

A pharos-headed pin from Richborough and its implications

Malcolm Lyne

The monument at the Roman port of Richborough (Rutupiae) in Kent takes the form of a rectangular block of masonry measuring 32.7 by 20.4 metres, with a raised cruciform remnant of paving on its upper surface. This structure was convincingly identified in the 1960s as the foundation for a monumental quadrifrons arch erected by Domitian to commemorate the conquest of Britannia and act as a symbolic entrance to the province.

This, however, may not be the full picture. The excavations at Richborough ran from 1922 to 1938 and produced large numbers of finds, only 7% of which were ever published. One of the unpublished items is a copper-alloy pin with its head in the form of a pharos, found embedded in the surface of a road put down at the same time as the quadrifrons arch was constructed.

The quadrifrons arch itself has a 10 metre deep foundation; far greater than would be needed to support such a structure. The Colosseum and Pantheon in Rome have 7.5 and 4.5 metre deep foundations respectively and it is calculated that the Richborough foundation could have supported a stepped pharos more than 50 metres in height.

Such a pharos can be compared with that at Ostia, of which mosaic representations in front of merchants' offices around the Piazza of the Corporations in Ostia Antica show its lowest stage to have had a large central arch acting as a symbolic entrance to Rome.

The barracks of „Ostkastell IIIb” in Straubing/Sorviodurum (Bavaria) and new knowledge about the cohorts I Flavia Canathenorum milliaria sagittariorum

Veronika Fischer

The eastern fort III was located by the Danube river in Bavaria from about the middle of the second century AD until the middle of the third century AD. The deployed troop was cohorts I Flavia Canathenorum milliaria sagittariorum, a partly mounted unit of bowmen.

The results of excavations undertaken in the year 1913 in the praetentura and near the northern porta decumana from 1976 to 1978 in combination with the magnetogram of the inner structures of the eastern fort of Sorviodurum lead to new conclusions about the barracks. This combination results in information about the special contubernia which were at both ends of the barracks and provided exclusive facilities for the officers of the cohorts I Flavia Canathenorum milliaria sagittariorum. Only the combination of older excavation documentations and the magnetometer prospection from 2013 could lead to such results and shows that the analysis of old excavations pays off. Furthermore there are new results regarding the dating of Ostkastell III and about the deployment and structure of the cohorts I Flavia Canathenorum. The magnetogram allows a distinction between the quarters of infantry and cavalry for certain. There are barrack buildings for ten centuriae and for six turmae. This is the most accurate archaeological information about the structure of a cohorts equitata milliaria known to the present day and corresponds well with the written record by Hygin.

POSTER

Demystifying the Roman fort at Gračine (Bosnia and Herzegovina) /

Tomasz Dziurdzik

The site of Gračine (Ljubuški, Bosnia and Herzegovina) has been known and studied since the 19th century, but so far remained poorly understood. Already Carl Patsch assumed that it was a Roman auxiliary fort, but the material evidence, slowly accumulating over the years due to chance finds was not fully convincing. The excavations in late 70s yielded material of undoubtedly military character, but the structures uncovered in the middle part of the site were not understood correctly – and the excavations were never fully published. The ambiguity of the evidence has even led some to stipulate that the site is of a different character, and the presence of a military unit should be looked for in other areas. This problem is of special importance because the military garrison in this region not only ensured the safety of the immediate surroundings, but also of the important city Narona, and the vital road leading to Salona, the capital of Roman Dalmatia – and is moreover intertwined with the discussion on the existence of a “Dalmatian limes”.

During the work of Ljubuški Archaeological Project, which is a Polish-Herzegovinian programme of non-invasive archaeological surveys, and realization of grant by the Polish National Science Centre (grant 2015/19/N/HS3/00886 awarded to Tomasz Dziurdzik from the University of Warsaw), it became possible to undertake geophysical research also on a part of the site Gračine. The results of the electrical resistance survey have revealed interesting anomalies in

a distinct pattern, which were then verified in an excavation by the University of Mostar. The excavated part is a centurion's house, together with parts of two streets on both sides of it. Thus the anomalies have been proved to be created by the remains of two barrack blocks, and the interpretation of the whole site as an auxiliary fort has finally been verified. This allows the discussion on the character of the site to lastly close, ending the long debate with the somewhat pessimist conclusion that the genius intuition of Carl Patsch was right from the very start, while most of the later research only obstructed the view due to its fragmentary nature and lack of proper understanding and publication.

Different methods, different terms: understanding old excavations

Eduard Nemeth

Present day archaeologists encounter relatively often the situation where the site that they are excavating has been investigated before them in one way or another by archaeologists in the past. Sometimes these predecessors have been investigating the site quite a long time ago, possibly 70, 100 years ago or even longer than that. It is thus only natural that the past researchers used quite different investigation methods (let us only think of some of the modern technologies for non-invasive investigations like the geo-magnetic ones or the GPR are just quite recent apparitions in the archaeological set of technologies). Even quite basic excavation and interpretation methods like stratigraphical digging or providing the scale and orientation in the archaeological drawing and photography were not a given – at least not everywhere in the world – say 100 years ago. Similar issues arise when it comes to written archaeological report in the past. From the terms used for describing the excavation technique to the ones for the uncovered archaeological features, the wording of some old reports can sometimes be puzzling or even misleading. The purpose of my paper is to examine the relation of a modern-day archaeologist to his predecessors, the scientific gains, but also the hurdles of this relation, based mainly on my own experience excavating a Roman fort on the southwestern frontier of Roman Dacia (modern place name Vărădia, nowadays Romania) where at least two predecessors have investigated, excavated and reported about, one of them over 100 years, the other one ca. 75 years ago.

Hidden treasures? What you ask is not always what you get

Eva Steigberger

In this contribution a closer look at documentations lying asleep in the archive of Austria's Federal Monuments Authority (Bundesdenkmalamt – short BDA) might bring interesting information to light. The BDA has been collecting documentation as it is required to by law since its establishment in 1850 and some of these informations have not been looked at for many years. What can we still learn from documentation done without modern technology or knowledge? Has it been so bad as some might think or is it just a matter of asking the right questions to find hidden treasures in our archives? Can old documentations provide us with valuable information on how to preserve monuments? Where and how where conservations done before and do documentations of those interventions even exist? Some examples of the Austrian archives might show quite unexpected results.

Niederbieber and early 19th-century research at the Upper-German Limes

Hans Jost Mergen

The Roman fort of Niederbieber (Distr. Neuwied, Rhineland-Palatinate) is one of Germany's most important dated sites in Roman Archaeology (AD 185/194–259/260). The first excavations were carried out in 1791 by Christian Friedrich Hoffmann (1762–1820). Within almost 30 years he discovered the bathhouse, the praetorium, the principia, parts of the stonewall with

its characteristic turrets and various other structures. Spectacular and partly unique finds like the almost complete signum were displayed in the former princely Wiedian collection in the palace of Neuwied. Hoffmann also discovered the northernmost part of the Upper-German Limes. In 1826/27 many of the results were published by the Prussian diplomat Wilhelm Dorow (1790–1845). Extensive excavations (Reichs-Limeskommission [RLK] 1897–1912) and few publications followed. However, the current state of research is still insufficient considering the significance of the fort.

My dissertation project presents a full analysis of the original sources of the late 18th and early 19th centuries. More than 1500 handwritten notes, letters, manuscripts, sketches, maps and drawings show Hoffmann's self-taught methods of archaeological research during the very difficult times in the aftermath of the French Revolution. The documents reveal many unknown details of building structures. In addition, several finds can be relocated to their original site of discovery. The letters shed light on Hoffmann's attempt to establish a scientific network of people sharing his enthusiasm for archaeology or – as it was called in those times – Alterthumskunde. A complete inventory of the former "princely Wiedian collection of antiquities" with many unpublished objects is also presented. The results of the study lay the foundation for further in-depth research on the younger excavations and are essential for a complete re-evaluation of this important Roman site.

Archaeological remains along the Danubian Limes: through centuries of travelers to a new instrument for intercultural dialogue

Nora Lombardini, Elena Fioretto

During the centuries, several campaigns of excavation have been conducted along the Danubian Limes.

Even if, on one hand, it is possible to investigate about the archaeological research carried on, during the centuries, on those remains, in the other hand it can be (interesting to) (considered as an interesting research to) investigate about those travelers that, starting from the XVIII century, took a trip along these borders.

The reasons why those travels took place during the years were different, in different period of time.

Briefly, there is the necessity to mention those travels that have been taken for a pleasure reason, with an ancient curiosity for an "exotic" world.

Then there are the travels, mostly undertaken by architects, in that period of time when traveling was considered part of the architect's education process, as important as studying in the most famous college of European countries.

Moreover, there are those kind of travels, mostly undertook during the XX century, that were brought on by a "political" reason.

About this last case, it can be interesting to underline that in Italy, during the fascist era, all that archeological remains that were expression of the roman age were considered as important symbols of the origin of the Italian culture, where the fascist regime had the intent to have its roots.

The aim of this paper is to investigate about those travels through important documents, as the old books of novels, drawings and photos. The main purpose is to understand the reasons why of these travels in a relation with different methodological approaches.

Indeed, from a modern point of view, they can be considered as a disclosing creation of a sort of network among valuable sites.

The actual value of this paper lies in the necessity to understand how it is possible, nowadays, to find a new interpretation of these archaeological remains no more seen only site by site, but in a precious system of places, where Cultural Heritage and its valorization can be considered as an instrument of intercultural dialogue.

Revisiting Richborough: A reassessment of the excavations of J.P. Bushe-Fox (1922-1938)

Philip Smither

Often referenced, rarely researched, the excavation material for Richborough has sat in various archives since the last volume was produced in 1968. Even at this stage first-hand knowledge of the site was disappearing and only the field notes could be used to produce Richborough V. Since then the site has been researched a few studies, particularly on the objects, and towards wider syntheses on the shore forts in Britain. However, this has most often been done from the published volumes, rather than the archive.

In 2016, an English Heritage project to redisplay the site enabled a PhD study of the military objects and tools. It soon became clear that to understand the site a new methodology was needed to reevaluate the conclusions of Bushe-Fox. With up to date methods a better understanding of the site can now be achieved. Previously unpublished material, a new object catalogue, digitally redrawn maps and plans, and a reassessment of the stratigraphy is gradually eliminating some of the old topoi of Richborough.

In general the conclusions of Bushe-Fox were fairly accurate, and for the time the methods were first rate. With nearly 100 years of hindsight new stories are emerging. Some of the key questions the archive can help answer are:

- What was the function of the structures identified by the excavations?
- What was the character of occupation of the settlement while the quadrifrons was constructed?
- Why did the port town begin to fail?
- Was there any Severan occupation on the site?
- If not, why was the site abandoned from c.AD200-260?
- Who built the shore forts?
- What happened to the east wall?
- What was the character of occupation during the 4th century?
- How did Richborough end?

Many of these questions are being answered and it is clear that we do not know as much as we would like about Richborough. It is worth undertaking the task of revisiting the archives as much of the shore fort story is based around our knowledge of Richborough. It was the most extensively excavated of the British shore forts, and with little good stratigraphy left to investigate the archive of Bushe-Fox needs careful reconsideration.

Bridge over troubled water: The roman bridge in Cologne between old research and new questions

Martin Wieland

The roman bridge across the Rhine between the Colonia Claudia Ara Agrippinensium (Köln/Cologne) and the late roman fortress of Divitia (Deutz) stands out among others because of the irregular distances between its pillars. New research in the course of the nomination process of the Lower German Limes as a UNESCO world heritage site showed that the archaeological data is in parts unclear, contradictory and/or unpublished and therefore leaves open a lot of questions. For example, the published plan originates from the late 19th century and has been copied ever since without being much scrutinized. Another problem seems to be that the dendrochronological results obtained from the timber foundations of the pillars are not corresponding with the favoured founding date of the Deutz fortress – which was the reason for the construction of the bridge.

The paper tries to evaluate the reliability of the available sources, to give a new status quo of the remains and to name options for new research.

27. SAXON SHORE

Session organisers / Chairpersons:

Sofie Vanhoutte, Flanders Heritage Agency (E-mail: sofie.vanhoutte@vlaanderen.be)

Tony Wilmott, Historic England (Tony.wilmott@HistoricEngland.org.uk)

Cross-Channel Connections. The fort at Oudenburg (Belgium) within its wider context: new insights into the Litus Saxonicum.

Sofie Vanhoutte

At the Oudenburg fort, 21st-century excavations on the fort precinct – such recent field research is an sich a unique given for the Channel region – yielded for the first time within the context of the Shore forts, securely datable structural evidence representing the evolution of the mid- to late Roman fort. Integrating all valuable data of old and more recent research, Oudenburg has become a key in the development of the coastal defence system in the Channel region, not in the least of the late Roman ‘Saxon Shore’, and not only on a historic-military level, but also on a socio-cultural and socio-economic one.

The confrontation of the stratified structural evidence of the defensive system and of the fort precinct together with the associated material culture, and the data from the surrounding graveyards and extramural settlement has resulted in a refined fort chronology running from the late 2nd century until the first decades of the 5th century. It can now be firmly established that a unified cross-Channel coastal defence system was installed under Postumus, visually expressed by the defensive stone architecture showing specific characteristics. This unification clearly instigated the cross-channel connection as can be seen in an increase of incoming British material. Under the breakaway British Empire, the Channel divided the shores on a political level, with both the Oudenburg and Aardenburg fort as part of the official Empire opposite to the British Empire. The reoccupation and renovation of the Oudenburg fort under Constantine in a way which visually and strategically mirrors the manner in which the British Shore forts were reinforced, testifies to a general building programme along the Channel. Moreover, the firmly established start date at Oudenburg of c. AD 325-330 may well represent the actual start of the ‘Saxon Shore’ system operating under one command. A clear interruption in the fort’s occupation somewhere in-between AD 360/370 and 380 can be related to troop movements to the East by Julianus in AD 361 or by Valentinianus I in the (early) 370s. The subsequent reoccupation of the fort by non-regular troops, can be closely dated to AD 379/380 and can possibly be related to the actions by Magnus Maximus against Gratianus. The army unit stayed put certainly after AD 411/413, likely until the second quarter of the 5th century, and this evidence of prolonged military occupation sheds new light onto the end of ‘Roman’ military occupation in the North-West.

Recent excavations on the seaward side of the Saxon shore fort of Richborough

Tony Wilmott

Recent excavations and research at Richborough has located the eastern defensive wall of the Saxon Shore fort. This paper will discuss the plan of the fort as now understood, its relationship with the ancient coastline, and the cause of the collapse of the eastern wall.

A Tale of Two Frontiers?: Hadrian's Wall and the Saxon Shore Forts in the 3rd to 5th centuries A.D.

Nathaniel Durant

Constructed along the south and east coasts of England, the Saxon Shore forts boast variable architecture, inconsistent dating and overall an unclear function that have caused them to be seen in the past as anomalies in Roman Britain when compared to the more "standard" and commonly studied forts on Hadrian's Wall and elsewhere in the province. However, while previous scholarship on these forts have largely concentrated on their mural architecture and internal structures, relatively little attention has been given to their military finds. Indeed, the few recent works that do acknowledge the military culture of the Saxon Shore forts conclude that the number of discernable military objects from each fort is low compared with other garrisoned fortifications of Late Roman Britain; an observation which has been interpreted to signify the Saxon Shore forts' reduced operation as military installations in this time period. Proponents of this theory have labelled these sites as "fortified ports" occupied by a token garrison which served more in a logistical role than any sort of military force (i.e. Cotterill, 1993). However, research on military equipment found on the Hadrian's Wall during the 3rd to 5th centuries have traditionally been seen to indicate that their military occupation continued far into the late empire and perhaps even after the traditional end of Roman occupation in Britain in A.D. 410. Through a systematic survey of the military objects at all of the excavated Saxon Shore forts, this paper will demonstrate that a military occupation is actually as equally applicable to the Saxon Shore Forts during the Late Empire as contemporary riverine and coastal forts on Hadrian's Wall and its Cumbrian extension. Thus, rather than viewing these two groups of forts as stark opposites, this paper argues instead to consider both these groups of forts in the same military framework, namely as frontier installations aimed towards controlling and monitoring their respective areas.

'I'm not so (Saxon) shore': Richborough in the 3rd - 5th centuries AD

Philip Smither

This paper focuses on the later 3rd – 5th century occupation of Richborough and what the archaeology reveals about the 'military community'. The approach of this study is primarily through the objects, but also approaches the question of Richborough's place within the local late Roman landscape.

The excavations of Richborough in the 1920s and 1930s revealed the remains of a Claudian beachhead, port town and late Roman shore fort. As the most extensively excavated shore fort in Britain, Richborough is often a benchmark for comparison with the others. However, it is a site often referenced but rarely researched. The small finds collection alone includes over 7000 objects, yet only few studies of these exist. When they have, they have been studied as isolated groups of objects, rather than as a site assemblage. Although this study focuses on the military objects and tools, it also takes into account the other artefact types found alongside to present a better understanding of the site.

Being able to go through the site archives has revealed a wealth of detail that never made it to publication. Through the use of these archives and study of the small finds, more detailed plans of the site have been produced to identify areas of occupation and those who dwelt within the walls. Deeper investigation of the stratigraphy has also revealed more about the construction of the shore fort as well as possible structures sited within.

Overall, this study will produce the first study of the site assemblage, a searchable catalogue for the small finds, and a methodology for future study of the site.

A Roman coastal fortlet or signal station at Reedham, Norfolk, England

Michael Fulford

The church of St John the Baptist, Reedham, Norfolk is located on a low-lying promontory overlooking the reclaimed marshlands where the Rivers Bure, Yare and Waveney meet before draining into the North Sea by the Roman fort at Caister-by-Yarmouth, about 12km to the north-east. The Roman shore fort at Burgh Castle is closer, only some 5km to the north-east. A distinctive feature of the church, marking it from others in the region, is the amount of Roman building material, both stone and brick, re-used in its construction. A significant proportion of the stone is the same grey quartzite (Leziate) as that used in the Roman shore fort at Brancaster on the north coast of Norfolk and can be traced to outcrops in the north-west of the county, a distance of over 100km as the crow flies from Reedham. A programme of geophysical survey has been followed up by test-pitting in the churchyard. This has revealed remains of Roman foundations, severely truncated by medieval graves, including of an apse or tower, indicative of a structure with a footprint of some 30m by 12m (360m²). The use of materials from a distant source suggests the remains are of an official nature, as at early 3rd century Brancaster. This connection with the latter and the absence of closely datable material from the excavations is at present the best indicator of date.

A Revaluation of the Western Shore forts

Mark Tucker

Whilst the southern, eastern and northern frontiers of Roman Britain have been explored in great detail the western coast has been often overlooked when the defences of the island are considered. The defence of the western coast would not only have been required to protect Hadrian's wall from flanking but also to protect the mineral extraction in Wales, Cornwall and especially the Mendip region from Irish raiding. This Irish threat can be seen as a great menace in the ancient literature and has traces in the archaeological record for raiding from the 3rd century onwards. The relative closeness of this threat to the coastal regions compared to the distance of Saxon raiding and the easier access this would afford raiders underlies the need for this defensive chain. In light of recent discoveries at Lancaster and conjectured sites this paper intends to suggest a more complete and extensive chain of defences that has previously been thought.

Excavations at Pevensey Between 1936 and 1939

Malcolm Lyne

The Late Roman Shore-fort at Pevensey in East Sussex has been the subject of a number of excavations over the last 150 years: those by Charles Roach-Smith in 1852 and Louis Salzman in 1906-08 were published but the more substantial excavations by Frank Cottrill and Bertram Pearce in 1936-39 remained unpublished until more than 70 years later.

The unusual non-rectangular shape of the fort has resulted in the suggestion that it is later than the rest of the shore-fort system but Cottrill's excavations show that it was a late-3rd c. creation like the rest of the forts. Fulford's more recent excavations in the 1990s have shown that the fort was constructed by the usurper Allectus between 293 and 296. Work by this author suggests that Allectus failed to complete the fort, although a garrison was installed. The fort was finally completed in the 330s or 340s.

Cottrill opened 14 trenches, including area excavations at the west and east gates and inside the north wall of the fort. The west gate excavation showed the gatehouse to be a very strong barbican-like structure set back at the end of a funnelled entrance between two solid horse-shoe-shaped towers. The gatehouse was demolished during the early-5th c. and its masonry used to create a causeway across the fills of the fort ditch.

Most of the north wall of the fort is very well preserved up to parapet height and Cottrill record-

ed part of the Roman parapet walk with the scars of removed gamma merlons. The southern wall of the fort has collapsed but one of Cottrill's trenches shows it to have been undermined by rising sea levels during the 5th century before the fort was sacked by the South Saxons at some time after 470: an event recorded in the Anglo-Saxon Chronicle as taking place in 491. Evidence for this sacking was found in most of Cottrill's trenches as a layer of burnt daub and ash sealing the Roman levels.

Recent Geophysical Survey at Portus Lemanis

Lloyd Bosworth

The Saxon Shore-era fort of Portus Lemanis, today known locally as Stutfall Castle, was originally built beside a lagoon open to the sea on its southern side. Through a combination of natural silting and the drainage of low-lying coastal land, it today sits some 2.5km inland on a south-facing slope. While substantial sections of the enclosing fort wall remain extant, especially in the north of the fort where they reach a height of 8m in places, the majority of the wall's construction is now lost or buried.

This paper presents the findings of a 6.5 hectare magnetometry survey, carried out in 2015, that covered the whole of the fort's interior and ground immediately exterior to the walls to a distance of approximately 20m. The survey was conducted by archaeologists and students from the University of Kent's Classical and Archaeological Studies Department and helped by local volunteers. It was instigated at the request of a local amateur archaeologist who had been investigating the site for some years previously.

The aims of this project were to use non-invasive geophysical survey to establish, if possible, the original wall lines; locate, if present, any outer defensive earthworks or extra-mural features close by the extant walls; re-locate the bathhouse building and Principia recorded by Smith (1850); map the layout of any buildings and roads within the walls; locate, if present, evidence of the supposed earlier Classis Britannica fort and any associated harbour works or infrastructure. Additionally, it was hoped that the geophysical data would aid in assessing to what extent historical subsidence had damaged the buried archaeology. The survey also provided the opportunity to record the location of all visible wall and wall fragments using an RTK GPS system.

The results have shown that buried archaeological features relating to the fort contain sufficient magnetic variability to be clearly visible in the data. Where the survey extended beyond the walls, the data has a uniform natural appearance with few identifiable magnetic anomalies. By contrast, the fort interior is characterised by a complex pattern of strong responses indicating the presence of much buried archaeology. The monument has been greatly disturbed by major land slippage and this is reflected in the magnetic results with anomalies, though strong, showing much distortion. However, it has been possible to tentatively identify certain features and at the completion of the survey, four of the six stated aims of the project have been fulfilled.

Davies, M. 2017, "The Findings of various Archaeological Investigations at the Roman Naval Fort, Stutfall Castle, Lympe, 2014-16", *Archaeologia Cantiana*, vol. 138, pp. 165-178.

Smith, C.R. 1850, *The Antiquities of Richborough, Reculver, and Lymne*, John Russell Smith, London

The opposite coastline: problems to be solved about continental Litus Saxonicum

Raymond Brulet

This paper provides an overview of problems, issues and discussions about the continental Saxon Shore which may represent a different reality from that experienced by British counterparts. The development of a coastal system during the early third century is not the same phenomenon in the northern and southern coasts of Gaul. The Classis Britannica and then the events of the Gallic Empire and the Carausius' adventures play a considerable role in the creation of

the continental military Tractus. For the fourth century, it is important to understand how the system and fleets evolved and what types of sites, cities and fortresses, were involved in the project. Finally, issues related to the disruption of the system and its abandonment are crucial too, even if the Cities do not change as is the case for Forts.

29. MAPPING THE EDGE OF EMPIRE

Session organisers / Chairpersons:

Richard Talbert,

Boris Rankov, Royal Holloway, University of London

The panel invites perspectives on how, if at all, Romans demarcated frontiers on the ground, for example (and if not, why not?), recorded them on maps or other documents, conceived of them mentally and legally, attached special significance to them, exploited them, or assumed distinctive patterns of behavior in adjacent areas. Reference to the edges of empire in the Danube lands is especially welcome, but the scope of papers is by no means limited to that region. Instructive comparison with the frontier consciousness (or lack thereof) found among imperial powers elsewhere at any period is also encouraged. Should Roman attitudes to frontiers be regarded as at all exceptional in fact? Are there major deficiencies in our understanding, and can effective means be found to remedy them?

Anyone wishing to contribute a paper to this panel should send an abstract of 400 words (maximum) to Professor Boris Rankov (b.rankov@rhul.ac.uk) by 1st March, 2018 at the latest; all applicants will be notified by 31st March whether their papers have been accepted. Papers should last no longer than 20 minutes.

Hiding in Woods. Gaps in delineating the Boundary along Limes Transalutanus

Eugen S. Teodor

A three years research project (2014-2017) was dedicated on topography of Limes Transalutanus, mainly between Danube and Argeş Valley (ca 158 km). This sector is made of three segments: a southern one (up to Vedea River), fully marked by a palisade; a central one, which is a ripa, standing behind a high terrace; a third, northern segment, which should be alike the first, but it is not. Along the mentioned research, our knowledge about that almost 60 km was improved, by a starting 10% from the route, progressing at 25% at the end of the activity. Obviously, we are not that far from the departure point, because the largest part of the route remains unknown, between Urlueni and Piteşti. We are dealing here with a frontier crossing a flat plain, which – theoretically at least – should be marked with an obvious obstacle. But it is not, except some short lines, around 2 km long each.

In the presentation I will reveal the main known traits of the frontier from the first half of the third century, but also the possible reasons for such a mysterious absence. I will question a possible effect of the intensive agriculture, but also alternative approaches, as possible natural obstacles. Today, that field is ploughed, but cartographic documentation, place names evidence, but also pedological data, suggest that the frontier route heading Argeş River was heavily forested, mainly for those latest 60 km.

In order to prove the difficult circulation on east-west movement, across the Romanian Plain, I will display also the distribution of the archaeological sites for a large span of time, from the first century BC to AD sixth century.

Zur Toponomastik der römischen Limeslager an der österreichischen Donau nach den Listen der Limitantruppen von Noricum ripensis und Pannonia prima in der Notitia Dignitatum

Hannsjörg Ubl

Entlang der 335 Stromkilometer des österreichischen Limesabschnittes konnten bisher 13 norische und 6 pannonische Uferkastelle archäologisch erforscht werden. Jedoch ist es bisher nicht gelungen zweifelfrei auch alle ihre Lagernamen zu bestimmen.

Mit einer allein auf die Listen der Kommandostandorte von Noricum ripensis und Pannonia prima in der Notitia Dignitatum gerichteten Untersuchung sollte versucht werden, die herrschende Unsicherheit der Forschung in Fragen der Limestoponomastik zu beenden.

Dazu wurde das Reihungssystem der Truppenstandorte in der ND analysiert und ohne Berücksichtigung der antiken Rangordnungszwänge diese Standorte nach ihrer geographischen Abfolge entlang des Donauverlaufes neu gereiht. Nach einer Abgleichung dieser neuen Standortliste mit einer Liste aller schon am Untersuchungsabschnitt archäologisch erkannten Limeslager, deren antike Namen aus anderen Quellen schon bestimmt waren, ließ sich die neue Lagerreihung und die Namenszuweisungen an bisher namenlose oder in ihrer Namenszuweisung unsicher beurteilte Lager überprüfen, ergänzen oder korrigieren.

Das Ergebnis der Listenkonkordanz ist überzeugend. Es läßt eine archäologisch und geografisch abgesicherte Zuordnung aller in der Notitia Dignitatum des Untersuchungsabschnittes verzeichneten Standortnamen an die österreichischen, slowakischen und westungarischen Donaulimes bekannten Lager erkennen.

Fragezeichen zu Lagernamen, wie noch in der jüngeren und jüngsten österreichischen Limesliteratur üblich, sollten sich künftig erübrigen.

“Limes Sarmatiae” – Ancient maps, new interpretations

Alexandru Flutur, Adrian-Cristian Ardelean

The earthen ramparts, generically termed “limes Sarmatiae” represent a system of ramparts that start in the north from the left bank of the Danube, north of Aquincum and run approximately along the limit between the Great Hungarian Plain and the bordering forested hill areas. In the south, the ramparts stop on the Danube line, in front ancient Viminacium. These earthen ramparts remain open debate, as their role was not yet fully clarified.

This presentation has two parts. Firstly, we shall attempt to rectify in as much as possible the usual map (well established until present) of these ramparts. Secondly, we shall draw certain hypothesises on their functionality.

The map of the “Sarmatae” rampart system was drawn based on a 19th-c. synthetic map, later adjusted by early 60'ies, when the Hungarian archaeologists initiated an extensive programme of archaeological research of the ramparts. These investigations resulted in certain adjustments of the map in the studies areas. Nevertheless, the ramparts' map remained overall that drawn up in the second half of the 19th century. When tracing the “Roman ditches” (Römer Schanze), emerging on the first two Habsburg military maps – see the excellent MAPIRE map portal -, we found there are notable differences between the mapping of these ditches on maps and in current studies. In what the Banat region is concerned, it seems that the third line of ramparts does not exist. In Banat are visible only two lines of the linear “fortifications”; that in the west, the main line and the one in the east, the secondary line, generally lying at a distance of 10-25 km from the first. Other map corrections may be made also north of Banat, where only the line of a single rampart exists.

Current interpretations have emphasized the military and defensive role of the so-called linear fortification. Our hypothesis resumes the view of Professor Alexandru Diaconescu that a key role of these earthen ramparts was to control transhumance. Those who had to stop by these boundaries were the herders, who practiced transhumance. In plain lands, large cattle and horses were commonly herded. Most likely, transhumance was allowed to a certain degree and in controlled manner. For such purpose, crossing locations, namely gates, were set up. According to observations on maps as well as field observations, we believe that some gates may be identified. We do not aim at rendering absolute the role of the transhumance, however, our hypothesis is supported by arguments.

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The Border or its Zone? The Situation in Southeastern Dardania

Carolyn Snively

The publication of *Spätantike und frühbyzantinische Befestigungen in Nordmakedonien: Städte, Vici, Refugien, Kastelle* by Ivan Mikulčić in 2002 provided a view of the types and locations of fortresses in modern R. Macedonia. The delineation of provincial borders by means of *Grenzkastelle* is especially interesting in a small country whose territory includes parts of several provinces newly created in the late 3rd century, i.e., Epirus nova, Dacia mediterranea, Dardania, and maybe Praevalitana, not to mention the shifting boundaries of the Late Antique province(s) of Macedonia. There is evidence to suggest that the borders of Macedonia (II), Dacia mediterranea, and Dardania came together at Asanica, near the village of Tatomir in Kratovo County. Dardania and Dacia mediterranea belonged to the Diocese of Dacia, the province of Macedonia to the Diocese of Macedonia, within the Prefecture of Eastern Illyricum. A look at the southeast corner of Dardania thus defined shows several fortresses that overlooked the border, but more interesting are the features within or running across a broad border zone. The anonymous Late Antique city at the site of Golemo Gradište at the village of Konjuh stood beside an east-west road running through the Kriva River valley and guarded by a line of fortresses; it crossed the border into Dacia mediterranea ca. 10 km from Golemo Gradište. Only a few kilometers to the north a second east-west road, probably the main one, likewise crossed the eastern border. From the city at Golemo Gradište, a road ran south over a pass guarded by fortresses at Pezovo and Gradište to the plain of Ovče Polje; a Late Antique site with a square shape was recently identified beside the road several kilometers from Konjuh. A customs station from the 3rd century, identified by an inscription, was located at Klečovce. The inscriptions from Golemo Gradište and vicinity, mostly Latin but with some Greek, point to a linguistically mixed zone as well as the presence of military personnel. A line of three fortified hilltops, visible from one another, runs parallel to the eastern border of Dardania, but their significance is unclear.

The situation suggests that in some parts of the empire the existence of the border was indicated by the variety of settlements, installations, and structures located in the zone through which the border ran.

A Soldier's Map: Velleius Paterculus on the Limits of Empire

Brian Turner

This paper considers how Velleius 'mapped' the Roman frontier. As a soldier, senator, and scholar (of a sort), he served the Roman empire for some three decades prior to the publication of his history in 30 CE. His military career saw him patrol the Balkan provinces, march along and beyond the Rhine, explore the eastern provinces, and stand on the banks of the Euphrates. Whatever the quality of his scholarship, Velleius' descriptions of the empire's frontiers illuminate a mental map of Roman imperial power.

After briefly illustrating Velleius' tendency to accept contemporary and common tropes of worldwide empire, this paper explores and compares his treatment of the physical geography (especially the rivers and terrain) and peoples on the eastern and northern frontiers, specifically along the Euphrates and along and beyond the Rhine. An examination of his mental conception of these limits of empire and the peoples who lived beyond them illuminates not only his appreciation of Rome's imperial endeavors and rivals, but also his own personal understanding of (and hopes for) the geopolitics of the Roman empire.

Modern scholars have emphasized the fact that ancient historians and geographers wrote in response to the successes and failures of the empire and as a result they had to come to grips with the real and imagined results of imperialism. While Velleius did not write a formal geogra-

phy, like Strabo or Mela, by examining his implicit and intuitive geographic and ethnographic references, he emerges as both a writer immersed in the geopolitical culture of his age, and a military commander who was aware of the harsh realities and difficulties associated with ensuring the security of the empire. He thus illustrates the dichotomy that existed between imperialists and chroniclers that claimed limitless power, and soldiers and participants who better knew the realities on the ground. Consequently, this paper also considers whether Velleius exploited his conception of Rome's frontiers to influence imperial actions.

30. [CONTINUATION OF] BUILDING MATERIALS: ELEMENTS OF CONSTRUCTION, ELEMENTS OF EXPRESSION?

Session organisers / Chairpersons:

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Whether it be by forts, watch towers, or walls, military installations played an integral part in defending the Roman Empire and projecting control over its border regions. The construction of these installations, along with their associated infrastructure and support buildings (such as roads, baths, barracks, horrea, etc.) and the civilian buildings and settlements that followed in their wake, was therefore of the utmost importance. While there are many ways to study these structures, a particularly fruitful avenue of their exploration is through their building material. The construction materials used along the frontiers often depended on the local geography and availability of resources (stone, timber, clay, earth, water, lime, etc.). These installations therefore not only expressed Roman military might, but also represented the ingenuity of its architects, engineers, surveyors, construction workers, and material preparers. Above all, these works embodied the Roman military's capacity to organize the logistics that form the basics of building on such a large scale. In many cases it may also be possible to see the influence of indigenous building traditions on these Roman military installations.

This session focuses on the literal building blocks of the Roman limes, and the people who selected, created and used these elements of construction. We would like to invite contributions which present a specific building material and how it has been used for a specific context, or which consider new methods of analysis. More general contributions are also welcome that explore:

- Where are building materials sourced: locally, locally-adapted, or imported? What does this tell us about who sourced these materials and who used them?
- How are these materials used in constructions: to what extent is regional or local influence present in the building program of the Roman frontier?
- Can we trace developments and innovations? Or experiments, failure, and deterioration of skills and knowledge – in different places, at different times?
- What evidence is there for ephemeral building materials (i.e. timber, unfired clay/bricks, other organic materials), and what can this tell us?
- How can the application of theories, such as chaîne opératoire or network analysis, contribute to the study of these materials or building processes?
- What is the influence of local building traditions on Roman building techniques in new territories, and, what happened to these local traditions once the Romans had established themselves?
- To what extent did the regional geography or availability/lack of resource affect the decisions made by engineers and builders regarding the building material and techniques used?
- What was the role of civilians in constructing the limes? Were they just bystanders or leading participants? To what extent did the military contract out the work or rely on civilians for the sourcing, preparation, or actual assembly of the material?

Ceramic Building Materials from the Roman Fort at Haurra (modern Humayma, Jordan): An Examination of the Manufacturing Processes

Craig A. Harvey, M. Barbara Reeves

Excavations within the Trajanic auxiliary fort at Haurra (modern Humayma) in southern Jordan have revealed a wealth of information regarding the Roman military presence along the southern limes arabicus from the Principate period onward. Through these investigations, the

Humayma Excavation Project has also uncovered a large quantity of ceramic building materials (CBM), including bricks, cylindrical pipes, rectangular tubuli, and roof tiles. In preparation for the final publication of the fort's excavation, a study was undertaken of all collected CBM, and where possible, typologies were developed for each of the CBM categories. This paper will present key findings of this study, which will be presented in full in the third volume of the Humayma Final Reports. Specifically, this paper will focus on the production methods of these materials. Through a close examination of fabric, form, and surface treatment, it has been possible to piece together the manufacturing processes for many of the CBM types. This understanding of the materials' production has allowed for further investigation into local influence on the manufacture of CBM used in Roman military sites and how the production of CBM on the southeastern edge of the empire compares to elsewhere in the Roman world. Ultimately, this investigation provides insights into the identities of the brick and tile makers along the Roman frontier.

“House with a peristyle” from Novae. Centurion house of the first cohort of legio I Italica?

Piotr Dyczek, Janusz Reclaw

During fieldwork in the spot of the wooden barracks of the 1st cohort of legio VIII Augusta, a large stone building erected by legio I Italica. A courtyard with portico and a basin with two conchae were surrounded by rooms of various types. It appears that those in the west wing were for workshops/storage, while the rooms in the north and west were representational in character. From the south the complex was closed by a row bath.

The rich inventory of the building included glass and ceramic vessels, bronze and ceramic lamps, bronze figurines and elements of furniture as well as small marble and bronze statues of religious function. The walls of some rooms were painted. Coin finds, as well as analogies with a Flavian bath from Novae suggest that the building was erected right after the arrival of the legio I Italica i.e. 70 AD. The location of the building in a place where the stone barracks of the 1st cohort of legio I Italica suggest that we are dealing with the centurio's house. The size – currently more than 1000 m² – and luxurious equipment, as compared to other such buildings stress its unique character and open the way for other interpretations as well.

On the trail of ephemeral building materials of the Roman military campaigns to the Middle Danube barbarian territories

Balázs Komoróczy, Marek Vlach, Lenka Lisá, Claus-Michael Hüssen, Ján Rajtár

Romano-Germanic relations in the Middle Danube region during the Roman Period are characterized through the wide range of forms of interaction, oscillating variously between violent conflicts and diplomatic relations. Group of direct and indirect evidences of the Roman military presence during the Marcomannic wars even in remote regions of the Germanic territories has been enriched significantly during the last years and enabled new interpretation possibilities. Available archaeological record provides multiple evidences of substantial large-scale building activities, underlined above all by structures found in the central military base Hradisko at Mušov. Nevertheless, there are also evidences of relatively complex building techniques in case of field camps of temporary nature. Exceptionally important is finding that in case of fortification construction of even the most spacious camps have been used technologically and logistically demanding building material. Such building projects required substantial manpower, organization, and transportation capacities.

The Quarry Inscriptions of Hadrian's Wall

Kathleen O'Donnell

In order to understand the military's involvement with building materials in Roman Britain, there are few better sources than the quarry inscriptions at Hadrian's Wall. The inscriptions have been a source of interest since their earliest mention in print in the early 17th century, but little recent work has been done to consolidate what we know about them, assess their condition, and compare the evidence in Britain to what can be seen at frontier quarries across the wider empire. Thirty inscriptions in total are recorded in the Wall area and their subject and style vary greatly. This paper will look at the inscriptions of the Wall and discuss their content to understand what their purpose was – who wrote them and who was meant to view them. The paper will also look at how these inscriptions relate to other military frontier quarries in the Rhineland and discuss what they can collectively tell us about how the Roman state and its military worked with building materials, and how Hadrian's Wall fits into a pan-imperial context. In addition to being enlightening for reconstructing ancient organisational hierarchies, inscriptions of this type are an excellent way to see evidence of individuals living and working in the Roman empire who would not have been described by ancient authors, particularly in these remote frontier zones where there are sparse historical sources (Keppie 1991, 9). They can also be used to study the religious practices of the quarrymen and the deities associated with working with stone. Over the course of the last four years the author has taken time to visit each of the inscriptions in the field as part of research for an MSc by Research and PhD thesis. Misconceptions about the significance, and even condition of the inscriptions have been present in literature since the early 19th century and echoes of this can still be seen today. In his work 'The History of Northumberland' Hodgson dismisses several of the inscriptions - 'We have not thought it necessary to notice the rude letters carved upon the Combe Crag, which more probably were meant to commemorate a mechanic or a peasant than an emperor.' (Hodgson 1816, 55). Through this paper I will show that even the most seemingly insignificant Roman writing can have substantial historical value, both for showing how building materials were used at Hadrian's Wall, and how these quarry sites compare to others across the empire.

Earthen Empire: earth and turf building in the northwest provinces

Tanja Romankiewicz, Benjamin Russell

Roman architecture is usually associated with the building materials brick, concrete, and marble, a canon primarily derived from Mediterranean models. Such perspectives continue to influence what constitutes Roman architecture but are highly selective. Many buildings across the Roman world did not draw on Classical prototypes, but were constructed of unfired soil-based materials, especially around the Mediterranean and in the Near East, but also in the northwest provinces including Britain, France, the Netherlands and Germany. Since such structures can reflect a continuation of pre-Roman practices, they are crucial sources for studying architectural developments over the *longue durée*, not to mention discrepant reactions to imperial rule. Earth and turf also became common resources for military constructions, in the arid climates along the southern frontiers as well as in sections of Hadrian's Wall and along the Antonine Wall in Britain. These latter building projects resulted in two of the largest turf structures in the world, both recognized as World Heritage Sites. However, no comprehensive analysis of their turf materials has been undertaken to date. A turf wall built in the Alps by Caesar remains similarly understudied. This paper will present the first results of an interdisciplinary pilot project on the adoption and adaptation of earthen and turf building materials along the northwest frontier, comprising archaeological and architectural study as well as structural engineering experiments. Starting with a review of existing research into soil-based materials, the paper will focus on mass wall constructions (i.e. excluding mud bricks) and present comparisons with indigenous/Iron Age building methods in soil-based materials to address potential knowledge exchange and influences from but also upon the local population along and beyond the frontier. The paper will finish with an outlook on future research to address these questions holistically at a larger scale.

Bricks! Bricks everywhere! - Roman legionary production and distribution of building ceramics

Tomáš Janek

This paper focuses on legionary production and distribution of building ceramics on the middle Pannonian part of Limes Romanus. The case study is based on production from the legionary fortress of Vindobona and its surroundings. The objective was to create a model which would reflect how the production and distribution worked in this area in the past. The final model combines two approaches.

The first approach is based on theoretical calculations of production size and difficulty of transport. The input data are taken from published literature including ancient sources, brick inscriptions and experimental archaeology. An approximate amount of necessary material for construction sites was calculated along with the time necessary to produce this material depending on the available manpower.

The second approach is based on analysis of material from the sites. The dataset consists of finds from the legionary brickyard and fortress, selected auxiliary camps and from buildings placed in barbaricum. Altogether the dataset consists of more than 5000 finds. The methods chosen for evaluation of the finds were strictly exact in their nature. The focus was not only on classification of the brick-stamps but also on the processes held during the production itself. The stamp classification is based on computer comparison of their proportions, which enabled me to identify identical stamps. The correct reading of badly preserved stamps was enhanced by RTI (Reflectance Transformation Imaging). Using these methods, it was possible to create groups of identical stamps not only within one site, but also across the whole distribution area. It was possible to determine the origin of the clay using a combination of petrographic analyses of the material from the brickyard near the legionary fortress and from the material distributed to sites, sometimes hundreds of kilometres far. Large amount of the material comes from old excavations where only building ceramics with stamps were collected and the information about stratigraphy is often missing. To be able to interpret these material groups, the approximate ratio between stamped and unstamped bricks was calculated, based on in situ finds from the legionary brickyard in Vindobona. This ratio helps to determine what amount of construction material the group of stamps represents and if this group is large enough to be considered as part of a building phase. The achieved values are entered into the theoretical model, enabling to create a specific scenario for each construction site.

Stone extraction for Vindobona – regional infrastructure and economic relationship by the example of a legionary garrison in Pannonia.

Martin Mosser, Michaela Kronberger

The interdisciplinary project „Stone monuments and Stone Quarrying in the Carnuntum – Vindobona Area“ aims to acquire new knowledge about Roman economic and settlement history, art, quarrying and infrastructure through the integration and analysis of archaeological and geological data. Preliminary examination of approximately 200 Roman stone objects, including all types of artefacts from works of art to plain building materials, suggests that three quarrying areas were significant for the supply of stones to ancient Vienna. Based on historical maps and airborne laser scans potential quarrying regions around the Roman city and legionary camp of Vindobona were selected and representative samples taken. Evaluating the geological results from an archaeological point of view, the following conclusions can be made: It seems that as a first step after the installation of the Roman legionary fortress, the building material was quarried from the margin of the Alpine region, including the Vindobona vicinity. Moreover, algal limestones from the Leitha area played an important role as raw material for sculptured stone monuments, such as gravestones, altars, etc.

GIS-mapping of all known archaeological sites of the area of north-western Pannonia, as well as the analysis of aerial photographs and airborne laser scans are pinpointing potential quar-

ries and highlight their necessary infrastructure. Equally important is the consideration of possible transportation routes. Interactions with Carnuntum, the provincial capital of Pannonia superior, in terms of exchange of goods as well as cultural or artistic transfer, are exciting sets of issues. Additionally, GIS-based low cost analyses calculating possible likeliest routes are an important instrument for supporting those examinations.

Newly discovered Germanic farmyard with Roman-style buildings in Slovakia

Erik Hrnčiarik, Milan Horňák

Department of Classical Archaeology of Trnava University in Trnava and company VIA MAGNA s.r.o. conducted a rescue archaeological excavation at the location Podunajské Biskupice at the end of 2017 and beginning of 2018. The remains of a Germanic farmyard, which had been part of a larger settlement, have been investigated. The farmyard was enclosed by a wooden fence, which reached the depth of 40 cm at the most from the point of discovery. The fence probably enclosed all four sides of the farmyard, but in the south-east, east and northeast only fragments have been recorded. A system of a large number of irregularly arranged pits of various sizes and depths have been recorded in front of the northern, eastern and southern sides of the fence. The pits were relatively shallow (ca. 15-20 cm from the point of discovery), with most of them respecting one another (forming three parallel rows), but some of them in superposition. Judging from the relatively shallowly sunken fence and pits, it may be assumed that they served only to demarcate the area within the settlement, and were not remains of a fortification system. The inner structure of the farmyard was formed by six wooden rectangular buildings, whose foundations have survived in the form of trenches and postholes. These were arranged along the inner sides of the fence, with a courtyard left in the middle of the farmyard. The superposition of buildings II and III, and V and VI attests to at least two building phases of the farmyard. Germanic settlement was recorded also north and south of the fence; one Germanic hut was excavated in the north, and three huts in the south. The huts south of the farmyard had a typical oval ground plan with a six post construction. West and south of the farmyard, two rows of postholes were recorded on each side, orientated in the same direction as the fence – likely the remains of two above-ground houses with a post in ground construction. Material culture from this settlement phase consisted mainly of typical hand-made and wheel-made pottery. The finds include a small number of imported pottery as well as characteristic fourth-century glazed mortaria. Other finds include a Germanic comb, glass fragments, clay spindle whorls, and an amber pearl. The excavated structures, in particular their size and form, are a clear evidence of imported Roman building methods in a Barbarian environment. In terms of chronology and territory, this newly discovered farmyard complements the network of analogical centres of the Germanic elite such as Mistelbach (A), Cifer-Pác (SK) and Milanovce (SK).

31. BATH BUILDINGS

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Together with amphitheatres, military bath buildings were erected near forts and in legionary camps to enable the soldiers to enjoy their favourite leisure activities. Indeed, bath buildings are vastly more common than amphitheatres in connection with military installations, regardless of whether these are situated on windy and wet Hadrian's Wall or in the hot and dry deserts of Africa. It seems that the pleasures of a visit to the bathhouse - including the nicely decorated and warm rooms, abundance of clean and warm water plus the pleasure of meeting friends for a chat - seem to have been judged to have such an overriding importance that even the smallest forts aspired to them.

Whereas amphitheatres were also used for military parades and show fights of units against each other, bath buildings had no direct military use beyond ensuring the health and happiness of the soldiers. We can thus conclude that the regular occurrence of bath buildings near forts and in legionary camps is a sign of the central position the bathing habit had in Roman society and an indication of the importance of the soldiers as a class within that society. Both were on the rise during the 1st century AD and gained their full importance in the early 2nd century, retaining it for at least two hundred years.

But a number of issues on the social habit of bathing and the resulting buildings are still unanswered in the military sphere and this session will invite contributors to ask questions such as:

- were military baths restricted to soldiers or could all inhabitants of the legionary camp or the fort and vicus bathe there?
- was the bathhouse of a given fort or camp of a size that allowed all the soldiers of the unit to take a bath there every day or every two days? Or was the bathhouse only for a few of them?
- as these buildings are technically challenging to construct, were they built by specialists within the Roman army, a travelling 'bath building corps' or perhaps by civilian contractors?
- can we determine differences between military and civilian bathhouses of the same region – either in the architecture or the decoration?
- which of the countless activities recorded for non-military bath buildings in towns and cities such as eating and drinking, exercising, getting a haircut, consulting a doctor, listening to lectures or poetry readings and satisfying one's sexual desires may have been available in military bathhouses?
- how was the location of the bathhouse determined when it was built outside a fort or inside a legionary camp – were positions chosen for easy access to water or other location advantages specific to bathhouses or were military considerations of a higher importance?

Military Baths and Local Adaptation: A Case Study of the Auxiliary Baths of the Cohors II Galatarum at 'Ayn Gharandal (Arieldela), Jordan

Robert Darby, Thibaud Fournet

Since 2010, archaeological investigations of an exceptionally well-preserved military bathhouse belonging to the Cohors II Galatarum have been underway at the site of 'Ayn Gharandal in southern Jordan under the auspices of the 'Ayn Gharandal Archaeological Project (AGAP). Built as new construction in ca. 300 AD near the mouth of the Wadi Gharandal to serve the nearby castellum, the builders of the bathhouse were forced to consider not only the topographical challenges posed by the surrounding landscape but the broader environmental conditions and extreme aridity in the desert environs of the Wadi Arabah. This paper examines the architecture of the auxiliary bathhouse at 'Ayn Gharandal within its broader regional contexts

and the influence that both local building and bathing traditions had on its design. Further, it seeks to answer who was responsible for constructing the baths and what their association with the Roman army may have been in the hopes of providing new avenues of research regarding military baths in other frontier zones.

Baths on the Frontiers of Roman Dacia

Britta Burkhardt

This paper is a synthesis of the most relevant data regarding the archaeological research of small Roman bathhouses (*balnea*) situated along the military frontiers of the Roman province of Dacia. In the Roman world, the Latin term *limes* was understood as the summation of a linear fortification system, forts of information about imperial public baths, which represent an institution with an important role both in private and public sectors. Considering that provincial Roman architecture in a military environment is largely based on defensive structures, the topic of baths situated in this environment raises new questions and possibilities. Who used these baths? Soldiers, civilians, soldiers and civilians, in what order? To what extent did women have access to these facilities? Our paper wishes to discuss these questions and more.

Roman military baths from Capidava (2nd – 3rd c. A.D.)

Ioan Carol Oprea, Alexandru Rațiu and Tiberiu Potârniche

Recent research on Capidava military *thermae* (2017) was carried out as part of a restoration and tourist development project for the fort precinct and the extra muros space, in the area where a site/tourist information center was constructed. This area is located eastward from the fort, about 100-200 m from the Main Gate. As early as 2015, preventive research on an area of about 1,800 sqm identified 375 archaeological complexes: 186 inhumation tombs, 133 pits of various forms and functions, 28 parts of stone walls, 5 dwelling structures, 2 combustion structures, 7 outside vents and 11 drainage systems.

The research was resumed in 2017, with the clear aim of gathering all the available information on the ground and exhausting the contexts throughout the area occupied by the baths used by the auxiliary troops stationed here in the 1st and 2nd c. A.D. (about 800 sqm). The unequal information resulted from previous unpublished research (1988-1993) has added to it several categories of archaeological contexts: Medio-Byzantine dwelling elements (6 dwellings or huts, equipped with hearths) and 7 medieval tombs.

By re-excavating and cleaning the debris from all the rooms and installations related to the thermal edifice two construction phases of the baths could be clearly identified. They correspond to two channels of water evacuation, documented with the stamps of *Leg(io) XI C(laudia) p(ia) f(idelis)* and *Leg(io) XI Ant(oniniana)*. Other stamps were discovered also: *Leg(ionis) V Mac(edonicae)* and *Leg(ionis) XI CL(audiae)*, which suggests repairs or extensions of the edifice during the 2nd c. A.D., after the initial construction moment. Several *cocciopesto* floors and *praefurnia*, pools and rooms with unclear functionality are unevenly preserved, being affected by late Roman and Romano-Byzantine dwellings and tombs dating from the 10th – 11th centuries.

Noteworthy is the fact that the military baths from Capidava are among the very few military *balnea* known in the final section of the Danube *limes* in Moesia Inferior.

Body Function and Life Process of a Roman Building: Viminacium Baths

Bebina Milovanović, Emilija Nikolić, Dragana Rogić

Viminacium baths, excavated from 1973 to 1974 and from 2004 to 2007, were in use from the second half of the 1st century AD until the end of the 4th century AD. Periods of the building life are confirmed by changes in masonry techniques and the existence of wall paintings with

multiple layers, as well as by dating of pottery and numismatic finds. The aim of this paper is to analyze all these pieces of evidence, trying to find common causes for their occurrence.

During excavations, five apses (pools), a central hypocaust space and peripheral facilities of the building were found. Although the building has not been fully excavated yet, periods of construction can be distinguished, where every subsequent building was built on the previous one. The focus of this paper will be given to specific rooms that were probably in use only until the end of the 3rd century when the life of the baths was interrupted for a while (while other parts of the building were renewed and used until the end of the 4th century). According to the direction of the partially excavated walls of the rooms and geophysical research conducted around them, it can be presumed that the baths were included in the bigger city complex. Excavations in the nearby area conducted in 1902 and 1973 showed the existence of residential quarter where life lasted from the 2nd to the 6th (or 7th) century, but where also the 1st-century layer was found.

Viminacium baths are the oldest Roman baths to have been excavated in Serbia thus far and they are very important for the research of bath culture during Roman times in this territory. They are also, along with the nearby amphitheatre, the only large public building having been excavated to the great extent in Viminacium so far. Considering that the amphitheatre was presumed to be founded as a military one, but later incorporated into the city getting also civic function, we can argue about the function of the 1st-century layer of the baths and its possible use by soldiers of Viminacium legionary fortress. They also offer unique information on the everyday life of Viminacium inhabitants which formed a unique multicultural society. Future excavations will provide us with more information important for the research of its life which was inextricably bound to historical events that caused development and splendor, but also destructions and renewals of Viminacium.

Thermae Maiores – The military bath of the legio II Adiutrix in Aquincum

Gabriella Fényes

In the area of today's Budapest twenty-five Roman baths have been excavated in the explorations of the past 240 years. The monumental bath building of the Aquincum based legio II Adiutrix, according to an inscription the *Thermae Maiores*, was the largest of them. The bath was erected at the intersection of the two main roads of the legionary fortress. Stretching over an area of more than 16,800 square meters the floor plan of these baths is bilaterally symmetrical. According to the archaeological excavations we know about 48 rooms of this bath. It consisted of a porticus, a palaestra, a big natatio, changing rooms, frigidarium with basin, two nymphaeums, another frigidarium with cold water basins, a round sudatorium and another sweat bath with an apse, four tepidaria, and an oblong caldarium with two niches for rectangular basins surrounded with praefurnia.

This bath was built under the reign of Trajan or Hadrian, when the legionary fort was built in stone. It was rebuilt several times in the Roman period. One inscription proved a big reconstruction in 268 A.D. (CIL III 10492). It was rebuilt also in the second half of the fourth century and became the residence of the military leader of the province. In this period a new little private bath was constructed near the former military bath.

Running water was supplied from springs 3.5 km north of the bath. The water was conducted by an aqueduct, which was built by the legio II Adiutrix in the same time as the military fortress and the bath. The sewage of the large pool was led in the drains of a huge latrina. Waste water was drained into the Danube.

The ruins of the bath give information not only about the water supply and the heating system but also the daily life there. The archaeological finds, for example a strigilis, inform us about the Roman bathing habits. The *Thermae Maiores* was not only a hygienic bath, but with the military hospital nearby provided facilities for healing and recreation, which is proved by inscriptions and reliefs.

Dishing the dirt on the textile tools found in Roman (military) baths

Judit Pászttókai-Szeőke

In her publications about the small finds from Roman bathhouses, both public and military, A.M. Whitmore (2013. and 2016.) called our attention to the occurrence of textile tools among them (e.g. whorls, weights, needles and weaving tablets). She also outlined several plausible possibilities for the interpretation of their presence. First, they were not used as cloth working tools at all, but as medical or hairdresser instruments, door-weights etc; according to her other explanation they were used for producing textiles or rather mending garments as a pass-time activity either by the bathers themselves or some slaves or attendants, but she also offered the possibility that this kind of activity could have been part of a commercial service in the baths. A somewhat different approach and interpretation of these textile tools would be offered by this present paper, based on the recent research on the textile tools found in connection to the textile refurbishing workshops of Pannonia (in Savaria and Siscia), and emphasizing both the rather overlooked importance of corporeal and sartorial hygiene in densely populated e.g. military as well as urban contexts and the tragic consequences of their lack for e.g. ancient armies.

My bath is in my fort? Bath buildings in military context in Noricum and Western Pannonia

René Ployer & Eva Steigberger

In this contribution, bath buildings within or close to military installations at the Norican and Western Pannonian Limes will be examined more closely. The question is raised as to whether there are differences in location, size, design and interior fittings of the bath buildings in fortlets, forts and legionary fortresses. We follow the question when were baths built inside and outside the military facilities. Was the size of the baths proportional to the number of soldiers that used them? And who was allowed to use the bathing facilities? Can small finds give information about this? Baths within forts have been built by the soldiers themselves, but who built the baths outside the military installations in the surrounding vici? Furthermore, the question of modifications and changes to the bath buildings during their useful life should be investigated.

33. PRESENTING THE ROMAN FRONTIERS

Session organisers / Chairpersons:

Dr Nigel Mills (Heritage Consultant)

Dr Christof Fluegel (Archaeology Museums, Bavarian Department for Museums)

The 'Presenting the Roman Frontiers' sessions reflect the growing interest in expanding the Frontiers of the Roman Empire World Heritage Site and in using the opportunities offered by the Congress to discuss and to share best practice in the four key areas of Management, Protection, Public Presentation and Sustainable Development. With the extension of the UNESCO World Heritage Site to include all the frontier countries along the Rhine and the Danube planned for 2020, this Congress in Serbia provides an opportunity to focus on some particular themes.

The UNESCO declaration (<http://unesdoc.unesco.org/images/0023/002338/233892e.pdf>) on the protection and promotion of museums and their collections provides an important underpinning for matters relating to interpretation and the visitor experience. In particular, UNESCO recommends "supporting the increased role of museums in heritage preservation, social, educational and economic development and enjoyment, as well as in sustainable development and intercultural dialogue".

Visitor research

Visitor research helps us assess how we present Roman frontier sites to the public, looking for ways to engage new and different audiences, with the ultimate goal of helping us to manage and protect World Heritage and enabling it to contribute to sustainable development. A particular issue is that often World Heritage Status is seen as having a negative impact, as a constraint on development. Understanding our audiences may help us to address this issue, and help more people see World Heritage Status as a positive. An alternative viewpoint might be that we need only cater for interested visitors, focusing on the presentation of academic information rather than reaching out to engage with wider audiences.

We would welcome contributions which focus on recent research into existing and potential visitors to Roman Frontier sites and museums. We hope this focus may act as a stimulus for sites and museums to undertake research over the next 12 months and to use this as a basis for discussion at the congress in Serbia. We suggest that qualitative research, exploring visitors' views, insights, perceptions and experiences is of particular interest and importance.

Particular questions we would like to address include:

- What do visitors and potential visitors think about the Romans?
- What do visitors think about existing sites and museums, and the way they are presented to the public?
- How are sites and museums along the Roman Frontiers using audience research to influence the way they present information?
- What are the sorts of stories and interpretation techniques that most appeal to visitors?
- Are modern technologies such as smartphone apps and multi-media application helpful and do they generate new and perhaps younger visitors?
- How do visitors perceive the value of 1:1 'reconstructions' and how can these be accommodated in the context of international charters such as the Valetta convention?
- What are the barriers to visiting? What would encourage potential visitors to visit?
- Does the interpretation, and the stories we tell, impact on visitors and provide lasting memories?
- Is Roman heritage valued? If so, how and why? If not, then why not?
- Areas for general discussion and debate could include whether it might be helpful to reach agreement on some aspects of joint standards and/or best practice (e.g. agreeing some overall approaches and principles such as adopting the presentation principles of Interpret Europe – <http://www.interpret-europe.net> – agreeing language options).

Partnership working (for exhibitions, tourism, interpretation, marketing etc)

The second theme is that of partnership working. This is of especial importance for the ongoing management of the Frontiers of the Roman Empire World Heritage Site. Management of the different sections of the WHS within the many different countries necessarily involves complex partnerships and the need for different professional and non-professional groups to work together in ways they have not previously experienced. World Heritage Site management brings together archaeologists, academics, planners, tourism officers, education specialists, politicians, local businesses and many other stakeholders. We invite contributions that explore and share examples and experiences of good practice in partnership working to protect, manage and present our Roman Frontier heritage, to promote protection, understanding and engagement and sustainable development.

Examples could include:

Professionals in similar disciplines working together (e.g. academics, professionals)

Professionals in different disciplines working together (e.g. archaeologists and tourism specialists)

Professionals working with non-professionals (communities, amateur archaeologists, local people)

Key questions that might be addressed include:

- How does the partnership work?
- What are the objectives
- What are the benefits?
- What are the outcomes?
- What are the difficulties?

Roman Frontiers in the UK: assessing what visitors value about the Roman past

Richard Hingley, Kate Sharpe

This paper arises from the 'Ancient Identities' project (<http://ancientidentities.org>), which is exploring public attitudes to the Iron Age and Roman past in the UK through a mixed digital and ethnographic methodology. We are addressing the UK and will report in this paper on some of the initial results of our

ethnographic research which is being undertaken at six Iron Age and Roman open-air museums across the UK. Initial interviewing has been undertaken at Vindolanda and we are planning comparable work on the Antonine Wall, perhaps next summer. The aim is to assess what visitors think about the Iron Age and Roman-period populations and what motivates them to visit ancient monuments and museums. We also seek to address the extent to which Iron Age and Roman heritage is valued and the variety of reasons for this. Although the ethnographic research is aiming to elicit open answers, the project also builds on earlier research that has argued the need to build a more critical perspective into the presentation of Roman military (and civil) heritage (cf. Mills 2013; Polm 2016, 230–1). The displays of the Roman army at several museums across the UK suggests that the organisation is often promoted as having had an enabling impact by building roads and infrastructure and creating the conditions for peace. Much recent academic research has built a rather more critical perspective about the Roman military, including ideas of dispossession, slaughter and prostitution (Mattingly 2006). To what extent might such negative messages potentially be discourage visitors? Can we find ways to tell more critical and nuanced stories about the Roman frontiers in such a way that it encourages public interest and involvement (Hingley 2017)? What do the public think about the materials that we display?

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Viminacium: public presentation and visitor research

Snežana Golubović

The Viminacium Archaeological Park was opened in 2006. Since then, it has been visited by more than one million people of various ages and nationalities. At the very beginning, there were three objects possible to visit and in the meantime the number is increased thanks to the fact that archaeological research continued and led to new discoveries that were almost immediately presented. From the very beginning, various surveys were conducted with the aim of determining the best ways of presentation, depending on the age and nationality of the visitors. As we were aware that Archaeological Park is some kind of living organism that has to evolve together with the visitors following their wishes and expectations lot of inquiries have been conducted - some of them within international project for special type of audience (e.g. senior visitors, tourists from cruise ships, etc.).

Various opinions, suggestions, inquiries, impressions obtained by the different questionnaires were analyzed. Surely, it depended on whether they were foreign tourists arriving by the Danube or if they were the most numerous audiences - pupils of primary and secondary schools. Special attention was committed to the school children cause after several years, the visit of Viminacium entered into the regular program of pupils' excursions. That enabled us to do another important research of how the visit to Viminacium influences to the knowledge of Roman culture acquired in regular education with regard to the presentations of trained guides and inclusion of virtual reality during last year.

Welterbe als Chance – oder wieso die Römer auch in Krefeld waren

Jennifer Morscheiser

Das Museum Burg Linn in Krefeld wird in der Bevölkerung – nicht zuletzt auch durch den Namen begründet – nicht in erster Linie als römisches Museum, sondern zunächst als mittelalterliche Burg wahrgenommen. Dies ergab zusätzlich zu den subjektiven Ein-drücken eine repräsentative Umfrage der Universität Düsseldorf im Jahr 2017. Die 6500 Gräber der römischen und fränkischen Zeit, das Kastell und die histo-risch/archäologisch belegten Schlachtfelder existieren im Bewusstsein der Bevölke-rung ebenso wenig wie in dem von Lehrern. Damit verteilen sich die rund 50.000 Besu-cher des Museums zu 4/5 auf die Burg.

Durch die umfangreichen Grabungen auf 3,7 ha im letzten Jahr, die medial sehr auf-merksam begleitet wurden, ist es gelungen, zumindest auf den Umstand hinzuweisen, dass grundsätzlich schon Römer in der Gegend waren. Ziel des Museums ist es nun, diesen Schwung zu nutzen und durch die Bemühungen, dass der Niedergermanische Limes als UNESCO Welterbe eingetragen werden soll, sich als Standort für Limes und Römer in der Region zu etablieren und langfristig Schulklassen davon zu überzeugen, dass Römer nicht nur im 50km entfernten LVR- Archäologischen Park Xanten zu erfah-ren sind.

Dabei verfolgt das städtische Museum eine mehrgliedrige Strategie:

- Zum einen wird bereits seit 2015 in einer „Limesarbeitsgruppe“ eine regelmäßige Information zu dem UNESCO Antrag durch Presse- und Öffentlichkeitsarbeit durchgeführt. Mindestens einmal im Monat werden Limesthemen in den lokalen Medien, aber auch über die sozialen Netzwerke wie facebook verbreitet.
- Im Museum wird – je nach Grundsatzentscheidung der Stadt über Form und Um-fang – ein

Ausstellungs- und Informationspunkt zum Limes eingerichtet.

- Auf dem Gelände des römischen Auxilliarkastells wird als Ergänzung der Muse-umsapp ein auf AR basierter Guide eingesetzt, der den Besuchern das unter dem Boden verborgene Bodendenkmal virtuell begreifbar macht. Zusätzlich soll dort in den nächsten Jahren ein archäologischer Landschaftspark entstehen.

Die sich in der täglichen Museumsarbeit stellenden Fragen sind nun: wie bekommt man in einem Industriegebiet, dem Krefelder Hafen, eine touristische Infrastruktur geschaffen, die so attraktiv ist, dass sie zum Verweilen mit Familien einlädt, Kindergruppen dort aktiv werden können und Radtouristen ihr Etappenziel finden. In dem Vortrag sollen die aktuellen Lösungsansätze vor- und zu Diskussion gestellt werden.

The Mittelfranken-Limes-App: audience research and testing

Christof Fluegel

The well preserved North Danubian Limes of Raetia in the district of Middle Franconia (Bavaria, Germany) has a total length of about 60 km and runs through a mainly rural area with only two small towns with 20.000 inhabitants each. The “Limes Mid Franconia App” was launched in 2014 after a three year development process and has rapidly become the prototype for mobile smartphone-applications on the transnational Frontiers of the Roman Empire World Heritage Site. Other users of the app and platform include Historic Environment Scotland for the Antonine Wall the “Advanced Limes Application (ALApp)” which are both currently being developed. Promotion of the initial version of the app “Limes Mid Franconia” was not as effective as hoped. Market testing was also lacking in the initial development phase as is often the case for visitor research in Germany. Recognising that market testing was a lost opportunity in the initial development phase, in 2017 we developed a project to test user acceptance and user friendliness of the app in a collaboration project with the chair of museology of the university of Würzburg. The small sample does not allow us to draw wide-reaching conclusions but does demonstrate the usefulness of such research and gives us clear pointers with regard to visitor ‘likes’ and ‘don’t likes’ which will be used in the further development and improvement of Limes-Apps in the ALApp-Framework. For Bavaria the site of Eining-Abusina, where the Raetian Wall joins the Danube Limes, will serve as a regional testbed.

The Antonine Wall: digital resource development for new audiences

Patricia Weeks, Lyn Wilson, Al Rawlinson, Carsten Hermann, Erik Dobat

Established as part of the Frontiers of the Roman Empire World Heritage Site since 2008, the Antonine Wall has a plethora of traditional interpretive approaches laid out along its length. Museum displays mix original and replica artefacts alongside interpretation panels; sites feature interpretation boards, small descriptive signs and branded route markers. All are designed to appeal to traditional audience demographics and, in the main, do their job well.

But what of new and emerging audiences, those who are growing up in the new technological age, and for whom digital is king? Over the last 10 years, several phases of community consultation and visitor research on the Antonine Wall have demonstrated a growing desire for new forms of engagement with information about the cultural heritage. A continuing theme has been digital; the desire to see more information provided on and off site for use in a variety of non-prescriptive ways.

How can digital better present Heritage and, more importantly, World Heritage. Is it site interpretation or is it also a new form of marketing? Are all of our audiences actually going to physically visit or, as is the real likelihood, does digital offer us the means to engage even more widely, by reaching an international audience experiencing our site from the comfort of their own armchairs? And how are these audiences going to share their views with us? It is unlikely to be through the more traditional mediums of on-site paper based surveys. Instead, do we need to start looking more closely at our following on social media, at the ‘likes’ we get

for posting particular forms of content? Do we need to focus on online surveys? What useful information can we glean from download details and comments on our app storefronts?

This paper will look at the journey to understand audience needs along the Antonine Wall that culminated in the development of the Antonine Wall app. It will summarise the history of both consultation / research and technological development that lead to the app, discuss approaches to defining content for new audiences, and share some experiences of users to date along with observations on the process. It will also introduce some 'lessons learned' from the project and set out how these are being applied to future digital engagement proposals.

Between archaeology and cliché – a study on Roman military reconstructions and reenactment

Boris Alexander Burandt

In addition to reconstructed buildings along the Limes, such as watchtowers or palisades, replicas of Roman military equipment and of everyday objects, are becoming more and more common in the mission of imparting knowledge on the Roman frontier to the general public. They are presented in exhibitions or by reenactment-groups and -associations in the whole of the Empire, from Scotland to Bulgaria. However, unlike the reconstructed architecture, so far there has been hardly any discourse on the quality and the historic accuracy of both the individual pieces and the presentations as a whole. This paper will try to provide a brief overview of the current landscape of this form of knowledge transfer and will hopefully be able to initiate a critical discussion between archaeological scholars and museum educational officers.

Another focus will be the question of how to help key institutions along the Roman Limes with making scholarly responsible decisions in purchasing these objects or in dealing with reenactment-groups while organizing museum festivals or theme days. Because what is the use of painstakingly studying archaeological sites and finds, if the visitors of many World Heritage sites only see common clichés of Roman antiquity repeated?

Turma! Hadrian's Cavalry Charge in Carlisle

Mike Bishop

'Turma! Hadrian's Cavalry charge in Carlisle' was the highlight of an events programme that accompanied the Hadrian's Cavalry exhibition, a unique Wall-wide dispersed exhibition that ran from 8th April to 10th September 2017. The exhibition explored the strategic and symbolic role of Roman cavalry and daily life for the military units. The ambition of 'Turma! Hadrian's Cavalry charge in Carlisle' was to bring together for the first time in perhaps 1,500 years a full troop (turma) of 30 Roman cavalrymen to perform drill and training exercises described in Hadrian's adlocutio and the *Ars Tactica*. The objectives were twofold:

- to create a historically accurate impression of a turma on the parade ground, as an exercise in archaeological research and reconstruction
- to create a dramatic and engaging spectacle that would attract and entertain a wide range of audiences, not just academics and those interested in the Roman period

Whilst the emphasis was on historical accuracy, it was also essential to attract a wide range of existing and new audiences. A measure of compromise was inevitable, juggling these potentially competing objectives within a tight budget that needed to cover the costs of equipment, the riders, their horses and supporting infantry, performance infrastructure and personnel and project management. This paper explores these issues and the success of Turma! in both appealing to audiences and contributing to archaeological research. A short film about Turma! will be available to be shown at the Congress.

Cement for the limes. Interpretation Framework and Curatorship for the Dutch limes

Tom Hazenberg

An coalition consisting of the Dutch and German siteholders (North Rhine-Westphalia and Rhineland-Palatinate, Gelderland, Utrecht and Zuid-Holland and the National Cultural Heritage Agency) works full swing to finalize the Lower German World Heritage nomination file for the Limes. Heritage organizations, great and small and local governments are particularly involved in this process developing in the Limeszone a public-oriented and attractive structure of heritage education, recreation and tourism around the limes theme. This has been quite successful: new visualisations, visitor centers, signposting for cycling and walking routes, information boards, artworks and a load of books and websites have seen the light.

Developing the attractive limes is done in the Netherlands in a typical Dutch way. Private initiatives take up the challenge financially stimulated by local, regional and national governments. This resulted in a network configuration in which dozens of small and large organizations, governments, companies and enthusiastic volunteers realize projects. This method is positive because the limes no longer only appeals to archaeologists but acquires a wider societal basis. The disadvantage of this non hierarchical organisation is the resulting diversity in visual imagery – close to cacophony -, that is usually accompanied by a somewhat superficial interpretation of the specific heritage values. As a result, the limes doesn't present itself sufficiently as a coherent and complex archaeological and historical structure. One could say the public presentation of the limes misses in authenticity.

This critical observation, shared by many, led to the a series of inspirational and didactical guidelines. One of them was to draw up an interpretation framework based on the Interpretation Framework of Hadrian's Wall. This is an instrument that helps to make the translation between archaeological / historical scientific research on the one hand and narratives that engage and challenge the public on the other. The Interpretation Framework starts out with an inventory per location of the archaeological objects and scientific notions. The central part of the Interpretation Framework is the narrative of the limes. It has the Statement of Outstanding Universal Value as a starting point but broadens into an overarching storyline in seven themes in which the historical and social context of the limes and the after life are also discussed. The IF is intended to be used as an inspiration and guide. With the help of this instrument the Dutch limes, which forms a vast monument consisting of many locations and many stories, become richer and more varied to the public while deepening with detailed facts the connecting core; the limes as a large-scale military infrastructure.

In order to stimulate the use of the Interpretation Framework, a two-person limes curatorship has been set up in the follow-up. The Limes curators support local organizers and site managers with the interpretation framework. Special attention is given to positioning/branding a specific location or region (presentation unit) and taking care of the presentation and public approach, in line with the public's expectation of the Limes location in question.

Tom Hazenberg, will on behalf of himself and Catherine Visser, present the Interpretation Framework for the Dutch Limes and will illustrate the first experiences with its implementation. Is it indeed possible to have the framework acting as cement for the limes in such a unruly and stubborn lot?

The Hadrian's Cavalry Dispersed exhibition

Bill Griffiths

Hadrian's Wall World Heritage Site has 11 museums, managed by five organisations, interpreting the Roman army along its length. In 2017 these organisations came together to host an ambitious 'dispersed exhibition' exploring the often overlooked role of the Roman Cavalry. Hosted across 10 of the museums (1 was closed for refurbishment) the exhibition displayed iconic examples of the decorative equipment of the Roman cavalry from public and private collections across Europe. This was accompanied by extensive education and events pro-

grammes, including the recreation of a full cavalry Turma. The exhibition and events illustrated that the cavalry were very much a show element of an army that overall was very comfortable with providing spectacle, in an Empire that demanded it in so many aspects of its life. The exhibition was created in part to demonstrate to funders and other stakeholders that the various bodies responsible for public interpretation of Hadrian's Wall could work together. This paper will explore the creation of this unique exhibition, and offer 'dispersed exhibitions' as a model for promoting the FRE World Heritage Site.

The Romans deep in barbaricum. Conception, current state and perspectives of the Roman military monuments presentation in the Czech Republic

Balázs Komoróczy, Pavla Růžičková, Marek Vlach

In Czech archaeology the Roman military monuments represent a very specific minority group, which research and presentation is determined by various conditions. Almost exclusively they are dislocated in the southern parts of Moravia, whereas in larger part they represent short-term evidences of the military operations – so-called temporary camps. Despite their presentation is not impossible it encounters several objective obstacles. The only site with more stable and complex presence of the Roman military architecture is Mušov-Burgstall. The uniqueness of this site rise requirements to the monument heritage protection is sometimes in contradiction with efforts to make it accessible to the public. Despite being somewhat exotic the topic of the Roman archaeological monuments is perceived also within the Czech society with considerable attention, whereas the narratives, which we would like to mediate through them necessarily have to reflect wider context than it is in case of many such monuments at the limes. The Institute of archaeology of the Czech academy of Sciences, Brno is determined not only to long-term scientific research of the site, but also deeply engaged in presentation activities during the last years. Within the presentation there will be presented steps, which has been already realized and also outlined the perspectives of development in the future.

Working with the local community on the Roman Limes. First steps in developing a sustainable site management framework

Andrea Chiricescu

Romania is one of the countries that is currently preparing the documentation of inscribing the Limes found on its territory on the UNESCO Tentative List, in the context of the growing interest, at an international level, in expanding the Frontiers of the Roman Empire World Heritage Site. The Romanian Ministry of Culture has already established a National Limes Commission, whose funding is mainly oriented towards researching the yet not researched parts of the Dacian Limes, mapping its sites and drawing up all the necessary documentation for a successful bid. One of the greatest challenges consists in matching the UNESCO requirements with the Romanian reality. The paper presents some examples on how to work with different segments of the community that currently lives on the Limes area, establishing a dialogue between research and community. One of our main goals is to make the voice of the community be heard, especially that it is one of the stakeholders that will be directly and greatly impacted on all levels of inhabitancy by the listing and existence of a new UNESCO site. Some of the already implemented projects as well as the new proposals presented in this paper show how the community could be involved in activities carried out within the actions of the National Limes Commission and its representatives in the territory, arguing the importance and necessity of such a cooperation already in this very early stage of preparation. The paper presents specific examples related to the small steps taken in rising awareness among those local communities that live on or very close to a Roman camp, in the eastern part of Transylvania.

Limes-App Hessen „Explore“ – moderner Weg der Denkmalvermittlung / Limes-App Hesse „Explore“ – a modern way of heritage transfer

Thomas Becker

Im Rahmen einer Forschungs Kooperation zwischen der Hochschule Rhein-Main und der hessenArchäologie im Landesamt für Denkmalpflege Hessen (beide Wiesbaden) entstand das Konzept einer App zur Vermittlung des hessischen Abschnitts des UNESCO-Welterbes Limes. Grundlage bildet die Anbindung an das Kulturlandschaftsinformationsportal KuLaDig (www.kuladig.de), über das Fachinformationen zu den einzelnen Bestandteilen des Denkmals zur Verfügung stehen. Der Anspruch der App geht aber weit über die fachliche Informationsvermittlung hinaus, da als Zielgruppe neben weiterbe-affinen Personen auch andere Gruppen angesprochen werden sollen. Die App erschließt dem Nutzer auf verschiedenen Wegen das Denkmal. Touristische Informationen werden ebenso präsentiert wie die spielbasierte Wissensvermittlung am Denkmal. Das Konzept basiert nicht auf einer statischen, abgeschlossenen Wissens- und Vermittlungsbasis, sondern soll sich dynamisch weiterentwickeln.

Visitors in bowler hats and baseball caps – Aquincum then and now

Dániel Kővágó

The paper going to be held in the „Presenting the Roman Frontiers“ session will be different from other topics because instead of archaeological findings or historical facts, the possibilities and methods of dissemination of knowledge of a highlighted museum alongside the Hungarian Limes Line will be in the focus. We will walk around the possibilities and the risks as well. I am going to explicate the differences and changes of the visitors's social parameters according to the local citizens' knowledgement about the Roman Heritage of Budapest. We are going to examine the new ways of marketing based on the results of the surveys made by the museum. A basically new type of marketing will be presented: how can we build up a brand on a famous historic character or a whole museum.

34. ROMAN EGYPT

Session organisers / Chairpersons:

Steven Sidebotham, University of Delaware, College of Arts & Sciences (E-mail: ses@udel.edu)

Results of Fieldwork at Berenike (a Ptolemaic-Roman Port on Egypt's Red Sea Shore): 2013-2018

Steven E. Sidebotham

Excavations in 2013-2018 concentrated on Ptolemaic areas (hydraulic and urban defenses) on the northern and western sides of Berenike and early to late Roman areas in the southwestern harbor including industrial facilities, trash dumps, installations, Roman era ship timbers and a temple complex. Other excavations continued in the early Roman trash dump/animal cemetery north of the site and in a warehouse or administrative building also at the northern end of the city. In addition, excavations began to uncover what appears to be a tetrapylon at the intersection of a north-south/east west street towards the eastern edge of the city.

A major area of concentrated excavations took place in the Isis temple (early-late Roman) at the highest point in the city center. Here, abundant architectural, epigraphic and sculptural evidence documented protracted activity in the first through third centuries AD that recorded not only devotion to Isis (and, to a lesser extent, Serapis), but also reflected the intense maritime commerce that was the city's *raison d'être*. We also recovered evidence of nineteenth century European, British and American explorers who dug into the temple in their hunt for antiquities. Results of the 2013-2018 excavations provided abundant evidence (faunal, botanical, architectural, epigraphic, numismatic and sculptural) for an urban population with a range of ethnicities and social status, including those wealthy enough to have household pets (mainly cats, but also dogs, monkeys and baboons) and to make elaborate dedications in the Isis Temple.

New Greek Inscriptions from the Temple of Isis at Berenike

Rodney Ast

Excavations conducted in 2015 and 2018 at the Red Sea harbor of Berenike have unveiled numerous Greek dedicatory inscriptions from the first - third centuries AD that were originally set up in the forecourt of the site's central temple, which was devoted to the goddess Isis. Many of these inscriptions are directly related to long-distance trade activities that were conducted at Berenike, and they reveal important aspects of Rome's direct involvement in trade on this eastern limes. This talk will survey the recent evidence with particular attention paid to the people attested in the inscriptions. Concentrating on them, we can learn much about their networks and about the interests of the various stakeholders, from merchants to sailors to provincial and imperial agents.

Controlling the Mons Smaragdus: The Presence (or Absence) of the Roman Army in a Productive Frontier Region

Joan Oller Guzmán

This communication will focus on the issue of the military presence in the Mons Smaragdus region. This territory, located in the Egyptian Eastern Desert, was the only area in Antiquity that provided the Roman Empire with the semiprecious stone called emerald. Thus, the importance of this frontier productive region should imply the presence of regular troops controlling the production and commercialization of the emeralds, especially if we consider the example of the Roman quarries. However, for the moment the archaeological evidence does not seem to fit with this hypothesis and the presence of praesidia or evidence related with military is rather

scarce. On this premise, this work will try to summarize the different evidence that we dispose about the presence (or absence) of the Roman army in this area, analyzing which implications these elements have for understanding the structure of the emerald production (property of the mines, status of the workers, commercial and logistical issues, etc.). For this, the results of the last archaeological works in the site of Wadi Sikait will be especially taken into account.

Survey of the Berenike-Nile Roads 1987-2015: The Highways, Military Installations, Mines and Quarries

Steven E. Sidebotham

Surveys conducted by teams from the University of Delaware and University of Michigan for nearly three decades along and adjacent to the Ptolemaic and Roman roads linking the Red Sea emporium of Berenike to ports on the Nile at Edfu and Coptos documented 70 sites. The bulk of these were forts (mostly on low ground) that guarded precious water supplies and supported local garrisons patrolling the region or protecting mining and quarrying operations near the roads. The survey also documented quarries (mainly hard stone) and mines (mainly gold and emerald) near these roads, which allowed transport of these precious minerals from remote desert locations to the Nile valley.

There is evidence of use of at least portions of these roads in prehistoric and Pharaonic times, but these highways reached peak operations in the early Ptolemaic and especially in the early and late Roman periods. They were not paved nor were there any milestones. Route marking cairns, graves, some watch towers and segments cleared of surface detritus and serving as windrows indicate clearly the courses of these desert routes, at least until very recently.

Pleasure and Entertainment on the Roman Frontier

Julia Lougovaya-Ast

Stationed in the network of small forts and fortified water stations that punctuated the roads of the Eastern Desert of Egypt, Roman soldiers, and whatever support personnel the camps had, apparently found time to spend on education and entertainment. In this paper I focus mostly on non-documentary texts, from hymns to gods to erotic musings, that have been uncovered over the last couple of decades in these forts as well as at ports and quarry sites situated in this frontier region and explore possible circumstances of their production and circulation. I also draw some comparison with another region of the limes from which an abundance of non-monumental textual evidence survives, namely that of Vindolanda.

The Blemmyan record in Berenike of the late period (4th–6th centuries AD)

Iwona Zych

With its cosmopolitan record of an international emporium, Berenike on the Red Sea has generated much and repeated interest in all and sundry foreign goods and ideas that passed through it at all stages of its 800 year history. The archaeological record for the late period in Berenike is extensive, encompassing virtually all the material culture categories, including architecture, pottery, glass, basketry, beadwork, leather crafts and others, needed to make an assessment of what everyday life was like in this harbor town in the late 4th to 6th century AD. The paper will focus on this evidence, concentrating on the non-Roman artifacts, excavated from household and religious contexts, in an effort to identify the indigenous element(s) in the living culture of the port in the period in question. This will lead to an assessment of the role that the Blemmyean polity flexing its muscles in the Eastern Desert to the south and east of Berenike, whose presence in the material record from the excavations is marked, could have played

in the life and governance of the harbor at this time, its rise from a period of decline in the later second half of the 4th century to its denouement before the middle of the 6th century AD.

Trade routes, raiding, and mining: thoughts on the Blemmyean desert state in Late Antiquity

Julien Cooper

The idea that there existed a tribal-based desert 'state' in the region inhabited by the Blemmyes, south and east of Egypt, has been long entertained in the scholarship. But beyond passing mentions, few scholars have attempted to define or anatomize this state, its political organization, its society, and more pressingly, its economy. This is hardly surprising, as the evidence for a unified centralized Blemmyean state is still debated in the literature, and scholars have generally not looked to desert worlds of Northeast Africa for politically unified complexes. Situated between Roman Egypt, Meroitic and Post-Meroitic Nubia, and Aksumite Ethiopia, the Blemmyean polity has been lost in the history of Northeast Africa.

This paper will take a positivistic view of the evidence for a Blemmyean state, arguing for a unified tribal confederacy emerging in the desert space in the third and fourth Centuries CE. This research will delineate the main features of this state, and explain how a politically organized nomadic elite used various wealth making apparatuses, notably mining gold and emeralds, access to trade routes, as well as raiding, to bring wealth into the desert and bring new power to a tribal elite. This tribal elite turned the desert society into an extractive regime. Through analysis of textual sources, and new archaeological sources in the desert heartland of the Blemmyes, it will be shown how these tribes were attracted by the magnetic pull of the Red Sea trade routes and its international trade, slowly integrating these tribes with the Roman economic system. With the changing fortunes of Red Sea trade routes, this paved the way for a unique dynamic between the Blemmyean state and Roman Egypt.

Babylon of Egypt: the Reconstruction of the Diocletianic Fortress

Peter Sheehan, Dmitry Karelin, Maria Karelina, Tatiana Zhitpeleva

This paper is dedicated to the virtual reconstruction of the Late Roman fortress of Babylon, located in the district now known as Old Cairo. The fortress is mentioned in the *Déscription de l'Égypte*, and has been explored and recorded since the end of the nineteenth century. From the 1990s onwards archaeological investigations have accompanied conservation work and the lowering of the groundwater level in the area, and the results of this work and its importance to the origins of the city of Cairo have been published.

Babylon was a typical Diocletianic fortress for comitates; *Legio tertiadecima gemina* may have been quartered here. However, it displayed a number of unique features:

- it was constructed over the earlier Trajanic-era stone harbour at Babylon where the Amnis Trajanus joined the Nile. The entrance to the canal was flanked by the massive round towers of the Diocletianic fortress.
- archaeological and historical evidence indicates that a bridge over the Nile led to the western gate of the fortress.
- the massive size and strength of the fortifications were much more solid than those of any other Diocletianic fortresses in Egypt, which might be explained by the strategically important position of Babylon at the apex of the Nile Delta.

The recent archaeological work has shown that much of the southern part of fortress survives today below ground. Above ground the southern gatehouse is preserved largely intact, with the Coptic 'Hanging Church' (*Al-Mu'allāqa*) built over it. The two round towers also survive, one of them within the Greek Orthodox Church of St. George (*Mari Girgis*)

The aim of the reconstruction is to show the architectural and constructional peculiarities of the southern gatehouse and of the round towers flanking the Amnis Trajanus, and also to present the possible view of the fortress from the Nile.

35. SMALL FINDS ASSEMBLAGES AS A MEANS TO UNDERSTANDING SOCIAL AND ECONOMIC PATTERNS WITHIN THE SETTLEMENTS CLOSE TO ROMAN CAMPS

Session organisers / Chairpersons:

Hannes Flück, (E-mail: Hannes.Flueck@archaeologe.ch)

Paul Franzen, (Paul.Franzen@tele2.nl)

The last Roman Frontier Studies conferences (Limeskongresse) treated us to several different approaches towards the military vici, the canabae legionis and the towns. Topics like their legal status, the topography of the vici or their economic function(s), all had their place at the RFS. Recently, and outside the RFS, several comprehensive studies were published on (parts of) the canabae legionis at e. g. Carnuntum or Vindonissa.

So far, the small finds from all these sites took a back seat. We define small finds here as those finds, that come in reasonable numbers, e.g. metal finds, glass, worked bones, stone etc. Is it possible to use small finds beyond their obvious dating purposes, and to add to our knowledge on military vici and towns? With several large scale excavations since the 1980's at our back, with their emphasis on stratigraphy and the combination between finds and features, we think this should be possible.

For instance, the following questions could be put forward:

Is there a difference in the small finds assemblages from the canabae and military vici to those from the purely civilian sites which exist in close proximity to the forts and fortresses?

Which similarities and differences can be seen in the assemblages between these sites (vici and canabae) and the forts and fortresses?

Can we differentiate social classes within the canabae and military vici, or is it all the same?

The same question could be applied to the purely civilian sites on the Limes, and how do they compare with the canabae and military vici?

Have we any idea what a typical assemblage is, for any of these sites, i.e. what is the norm?

Are there certain categories of small finds that are especially well suited to answer some of the questions above?

And of course we are open for any other stimulating questions along the lines sketched here.

Proposals, including an abstract of not more than 500 Words in English can be sent to:

Hannes.Flueck@archaeologe.ch and Paul.Franzen@tele2.nl.

What can small finds do for you?

Weights as an indication for trade and commerce and as a means to determine whether the context is military or civilian.

Paul Franzen

Two large-scale excavations in Nijmegen, carried out in the last quarter of the 20th century, have yielded unusual high numbers of weights. Unusual high means here: well over 400 weights, a number that so far nowhere else has been recorded. Most of these weights are made from lead and date from the first century AD. In combination with the coinage also found, they present a clear pattern indicative of commercial zones, where mainly goods were traded that weighed less than one Roman pound (libra). Where in one case the pattern and context are what we would expect, in the other case it raises questions as to our understanding of the character of the settlement: is it military or civilian?

Bling for the fling – a fibulae assemblage from the canabae legionis of Vindonissa and its interpretation

Hannes Flück

The scientific value of fibula is four-dimensional: Chronology, gender, social status and regionality. Using a similar method to that of coin graphs, brooch assemblages from various settlements can be compared, with the focus on other aspects than chronology. Using an assemblage from a series of excavations in the canabae legionis of Vindonissa/Windisch CH as a point of departure, a corpus of over 7000 brooches from the Lower Rhine to the Danube was collected, with the aim of not only exploring discrepancies between the settlements but also setting a “norm” for each region. Significant differences between assemblages from civil settlements, canabae legionis/military vici and legionary camps were thus able to be shown; especially regarding the proportion of Aucissa fibula. However, it also appears that the military camps were not completely immune to the influences of the surrounding areas, as might be assumed. (Translation A. Lawrence)

Glass in the military settlements: between local production and luxury acquisitions

Birgitta Hoffmann

Compared to pottery and metalwork, glass (and the associated glass beads) occupies a middle position, still ubiquitous enough to allow for comparative analysis between settlements, but of a low enough volume to allow for settlement wide analysis. Consequently, given the numerous glass reports from the Britain and the European Roman provinces, we are now able to compare assemblages between different sites.

This paper analyses the evidence for local manufacture of vessel glass and glass beads from military vici/canabae and the general profile of glass use within these settlements, to understand if the glass of the military auxiliary vici and the canabae differs in its functional composition or whether the higher amount of luxury glass is solely a function of the larger size of the canabae.

Finds distribution analysis and the relationships between fort and annex at Flavian Elginhaugh, Scotland

Anna Walas

The analysis of distribution of finds at the fort and annex at Elginhaugh, Scotland sheds light on the issues of production and consumption at this Early Imperial cavalry base. The analysis of finds highlights differences in the use of the annexe and the interior, shedding light on differentiated upkeep regimes, patterns of rubbish disposal and other spatial practices of a cavalry regiment in campaign. Artefactual signature within the defences provides insights into how finds assemblages can aid our understanding of food consumption practices through differences in the distribution of coarseware and red slip ware. The patterns of deposition of glass vessels and decorated versus undecorated red slip ware prompt considerations regarding the social stratification of a military community in campaign context, while the distribution of mortaria sheds light on issues of production, storage and management of movement within the cramped space of the fort and between the fort and the annexe. Owing to the site's early date, the paper provides a rare insight into the activities and functioning of Flavian army adding a valuable example to the existing portfolio of finds analyses in the Rome's Northern provinces and extending their reach both geographically and chronologically. An in depth analysis is facilitated by the pioneering at the time of the site's excavation use of total station and high precision stratigraphic information allowing to tie in individual finds to distinct phases of usage. Drawing on this and the short chronology, with a limited cycle of reuse and redeposition, the

paper touches on methodological considerations regarding both the limits and the potential use of destruction deposits to study uselife practices. The paper will add to the debate in the session through stimulating the following questions: How does the finds signature of a military unit in campaign compare to that of a permanent military community? What can a campaign site add to our knowledge of differentiated finds deposition processes between the intramural and extramural areas? Could some of the visible differences been associated with the different perception of the intramural versus extramural area by the military authorities and can these be discerned from the density and distribution of artefactual evidence?

Small finds and environmental evidence from the seating ban of the Chester amphitheatre

Tony Wilmott

Excavations on the Roman amphitheatre from 2004-2006 recovered a large assemblage of small finds, bulk finds and environmental material within the built up, earthen, seating banks of the first of two amphitheatres. This building was constructed in the later Domitianic – Trajanic period, as attested by the clear dating evidence of the samian ware (terra sigillata) and coinage. The seating bank was composed of refuse derived from the legionary fortress and the canabae legionis. The character of the assemblage may suggest that the deposition of the seating bank coincides with the change of legionary garrison, with the departure of legio II Adiutrix and the arrival of legio XX Valeria Victrix in the late AD 80s, and may derive from a clearance operation at this time. The fortress at Chester was established c AD 71, so the finds material relates to activities which took place in the first couple of decades of the existence of the settlement. The small find assemblage will be compared to assemblages from other Flavian forts and fortresses in Britain in order to examine similarities.

Vicus on the Rhine: the mini-vici of the Lower Rhine between Utrecht and the sea

Stefanie Hoss, Julia Chorus, Julie Van Kerckhove and Carlijn van Maaren

The forts on the Lower Rhine have long been known to be a little strange: they sit exceptionally close to each other and close to the river Rhine. Also, many of them are just half a fort, with the retentura missing. In addition to that, the finds indicate that they may have been occupied only seasonally, probably during the season in which it was possible to use the high seas. Because the Rhine and Meuse delta were used as the main 'harbours' for sailing to and from Britain, the Rhine was the main transport highway that needed to be secured.

But not only the forts are strange, their vici are also somewhat curious. Our current information seems to indicate that they were exceptionally small, some just a very few houses - less than 20 in some cases. Could it be that this is another result of the seasonal occupation of the forts? Most of the vici are only known from old excavations, which have never been analysed or adequately published. A group of Dutch researchers working together in the project "Vicus on the Rhine" wants to change this by analysing and publishing the old excavations and their finds in order to enable us to describe the foundation, development and function of these vici and find out more about the lives of the people of the vici and their interaction with the people from the fort and the surrounding region.

The paper will present the project and its first results.

First steps on a long journey: preliminary results of the research on millstones from the settlement complex of Aquincum

Orsolya Láng, Andrew Wilson

Excavations carried out in several parts of the settlement complex of Aquincum (legionary fortress, Military and Civil Towns, villa estates) have so far revealed more than 200 complete or fragmentary hand querns and millstones of different types. Most of them were discovered reused in secondary contexts, but some were found in their original position (i.e. courtyards of town houses or villas). The cataloguing of this group of finds has just been completed (although new ones keep coming in from ongoing excavations), and therefore detailed research on the types, material and economic significance has only just begun (in a cooperation between the University of Oxford and the BHM Aquincum Museum). This paper presents the preliminary results of this work on the find location and dating of these stones, as well as distinguishing between hand querns and water mills. This paper explores the potential of this neglected group of Aquincum finds, and especially what it might suggest about the extent of the use of water-powered milling on the Roman frontier in Pannonia.

36 GENERAL SESSION

Hic non finit Imperium Romanum. The concept of “no-frontier”

Aránzazu Medina González

The aim of this intervention is showing a new perspective of the Roman frontier concept. To that end, there are two main objectives. On the one hand, a theoretical review of the border's concept in which it will be analysed contemporary and ancient sources and its influenced on the researches about Roman frontiers. On the other hand, the proposal of a new notion: the “no-frontier”.

In order to achieve those purposes, this work has been divided in three main axes. In the first one, it will be done a global analysis of the connotations and ideas that the concept of „border” has generated such as linearism, materiality, militarism, barbarism, etc. In the second one, it will be done a study of the terminology used within this field and the frontier ideology of Greco-Roman authors. Finally, it will be presented the study case of the border between Baetica and Tarraconensis provinces, in Southern Spain, an example of a „no-frontier” concept.

Was Durostorum a seat of the governor of Moesia Inferior province?

Peti Donevski

The aim of this paper is on the base of the available epigraphical and archaeological data to answer the question was Durostorum a seat of the governor of Moesia Inferior province or not. Three inscriptions where governors of the province were mentioned and a comparison with Pannonia where the governors had there residences in the canabae legionis were the evidence that Durostorum was a capital of the province according to some scholars.

On the other hand the building where the inscriptions were found does not meet necessary requirements of a residence of a governor as it is the case with other places. Besides no other inscriptions connected with the entourage of the governor or bricks with stamps of the units of his guards were discovered. That and examples from other Roman provinces lead to the conclusion that on this stage of knowledge it would be rashly to accept Durostorum as a capital of the province.

37. ROME AND BARBARIANS

Searching life in death. A specific community in Roman Dacia - Alburnus Maior.

Catalina Mihaela Neagu, Mihaela Simion, Decebal Vleja, Ionuț Bocan

The archaeological researches from 2001-2007 at Alburnus Maior (Roșia Montană, jud. Alba), had as a result the investigation of the most consistent and unitary lot of cremation graves of the Dacia Province (over 1400). The analysis of the ritual elements and the funeral rite combined with the analysis of the epigraphic sources, but more importantly, with the processing of an enormous quantity of archaeological material, made it possible to record a specific funeral behavior, connected to the peculiarities of an entropic community, colonized here primarily for the exploitation and processing of gold deposits. The paradox of archaeology, according to which human behavior is understood especially through the understanding of death, is more visible here than anywhere else. This paper, therefore, proposes to introduce in the scientific circuit new conclusions from this exceptional site in the frontier province of Dacia, from the perspective of historical development.

In the service of Rome? - Mobility and ethnic interpretation of the shield bosses with a star-shaped flange and faceted / fluted bowls

Marko Jelusić

Hardly any other ivory carving has been the subject of so many scientific studies over the centuries as the diptych of a young late Roman officer and his family, which is part of the cathedral treasury of Monza in northern Italy. Over the course of this long scientific discussion, the main focus of interest was to recognize well-known historical personalities in the depictions - especially in the male one. First and foremost, the alleged "habitus barbarus" of the trousers and a long-sleeved tunic, as well as the "un-Roman" armament, led to speculations regarding the origin and ethnicity of this man. In the course of former studies, especially the shield boss with its unique hybrid shape, a star-shaped fold and a fluted bowl, was interpreted as (East) Germanic or even - based on earlier distribution maps - as a "Vandalic" testimony. Due to this historical assignment and the supposedly absolute dating of the ivory diptych of Monza, the faceted shield bosses were even considered to be main finds from the Danube area. In contrast to former stalemated interpretations that aimed to identify historical personalities, this lecture will present a new interpretation approach based on a first-time-compilation of all known shield bosses with star-shaped folds and faceted/fluted bowls. This is supported by previously unidentified finds and image sources, which suggest that objects from this find category are of Roman provenance. As R. Warland and Ph. v. Rummels already clearly and credibly proved that the displayed allegedly "barbaric" clothing is rather the official style of a late Roman dignitary, the armament also loses the last component, which was considered genuinely "barbaric".

What makes a barbarian? Studying barbarian material culture on Roman monuments

Fraser Hunter

What role did material culture play in defining barbarian identities on triumphal monuments? Too often modern researchers make simplistic assumptions about the meaning of supposedly ethnically distinctive items such as torcs, draco standards or carnyces, to identify barbarians as Celts, Germans or Dacians. This paper will present results of a large-scale study which reveals changing interpretations of barbarian material culture over time, and stresses the need for a close contextual analysis to understand how barbarian groups were perceived and portrayed.

POSTERS

The Mouth of Yantra River at the Lower Danube. Fortifications and Settlements from the 1st to the 6th c.

Sven Conrad, Lyudmil Vagalinski

When planning the fortification system of the limes along the Danube, the Roman army had always had a special focus on the mouths of bigger tributaries.

Although the mouth of Yantra is situated in the most southern, and for that reason – much endangered section of the Danube, the written sources don't mention a fortress at the mouth of Yantra.

Despite this, at least a temporary fortification could be expected to have existed in the first decades of Roman occupation, although it is still not discovered. The field surveys carried out in the last two decades, recently continued by a newly established joint Bulgarian-German team at Tash bair hill at the western side of Yantra River, revealed some traces of military and settlement activities in the 1st c. The possible absence of a Roman fortification at the mouth of Yantra River could be explained by the fact that in the early years the province of Moesia reached up to Yantra River only. Up to now, only civilian settlements have been registered at the mouth of Yantra River, dating from the 2nd and 3rd centuries.

The late Roman and early Byzantine fortress of Iatrus was finished by Constantine I, although the plans for the reconstruction of the limes along the Danube and the building of new fortresses could be very likely set up during the reign of Diocletian. The regular unit *cuneus equitorum scutariorum* mentioned in the *Notitia Dignitatum* was replaced by semi-military troops, among them very likely *foederati*, at the end of 4th c. at the latest. After the collapse of the settlement system along the lower Danube in the end of the 4th c. and the beginning of 5th c. the neighbouring settlement areas at the limes were abandoned. Now the habitation was more or less limited to the fortifications and their immediate vicinity.

According to reports from different authors, Iatrus still played an important role in the defence system at the lower Danube during the 6th century. The phrurion *Latarkion* mentioned by Theophylactus Simocattes must be located somewhere between Iatrus and *Novae*. Up to now a site in the western outskirt of the village of Novgrad, Tsenovo municipality, is the only one which can be considered for its localization.

The late Roman fort of Guntia / Günzburg (Raetia secunda) – 4th century grave inventories reflecting evidence of migration and cultural exchange

Sophie Hüdepohl

The late Roman site Guntia / Günzburg in the province of Raetia secunda is the subject of my PhD thesis (supervised by Prof. Dr. Michael Mackensen at Ludwig-Maximilians-University Munich). Guntia was situated to the east of the confluence of Iller and Danube, therefore it was located in the outermost border area at the western end of the late Roman Danube Limes. From the Tetrarchic period onwards, the main task of Guntia was to guard a strategically important river crossing mentioned in historical sources (*transitus Guntiensis*). Latest finds belong to the mid 5th century, when the *Notitia Dignitatum* lists the unit of the *milites Ursarienses* being garrisoned at Guntia.

In addition to remains of a late 4th century fort, located directly at the water front, the main sources for the late Roman period of Günzburg are two cemeteries lying to the east and to the west of the fortification. The burial grounds at the sites Ulmer Straße and Oberstadt have been excavated in various campaigns between the 19th century and 2008. While the latter solely contains late Roman graves, the cemetery at Ulmer Straße was in continuous use since the 1st century AD. Altogether, approximately 140 burials can be dated to the late 3rd to mid 5th centuries. A significant number of them contains grave goods of non-local, respectively

Germanic origin. Based on well-known literary sources, this is generally associated with the presence of foreign mercenaries serving in the late Roman army.

Detailed analysis of the archaeological evidence eventually supports the hypothesis of immigrant soldiers for some of the burials, but also emphasises that a differentiated investigation is necessary. For many of the examined burials, we also have to take into account cross-border exchange and mutual acculturation processes as reasons for the presence of finds from Germanic territories – especially in remote areas such as Günzburg.

Aside from a general presentation of the dissertation project, this poster aims to discuss those topics based on selected case studies.

Where did Valentinian die? New excavations in the legionary fortress of Brigetio

Dávid Bartus

The legionary fortress of Brigetio is one of the most important Roman sites in Pannonia, however, systematic archaeological investigations have been started only in the last years. In 2015, we have located the courtyard of the principia, while one year later a campaign of low-altitude aerial photography was made in the praetentura of the fortress. The most interesting result was the discovery of remarkable traces of a large apsidal building near the porta principalis dextra. In summer 2017 the building was partly excavated with very impressive results. The apsidal building has massive stone walls and hypocaustum, its total area is more than 500 m². According to the brick stamps, the erection of the building can be dated to the first years of the 370s, and it can be connected to the fortification works of Terentius and Frigeridus, under the last years of the reign of

Valentinian. We have obviously no proof whether the emperor died there or elsewhere in the fortress, but that is the only identified building datable to the Valentinian age so far, and the large, impressive building could be used as a „consistorium”, mentioned by Ammianus Marcellinus.

The Roman fortress and the detachment of Legio VII Claudia from Cioroiu Nou, Dolj County, Romania

Dorel Bondoc

The Roman vestiges from the village Cioroiu Nou, located in Cioroiași Commune, Dolj County, Romania, are among the most significant in the south-west area of this country. In the village mentioned above it can be seen in particular a fortification of considerable size (235 x 140m), inside which there is a bath-house build by a detachment of the Legio VII Claudia.

The presence of this military unit at Cioroiu Nou is certified by an inscription, many stamped bricks and tiles, and by a number of weapons and pieces of military equipment. Given the fact that the basic camp of the Legio VII Claudia was at Viminacium (today Kostolač, in Serbia), in Moesia Superior province, it becomes more difficult to explain why it was felt the need of displacement in southern Dacia, at Cioroiu Nou, of a military detachment from another province. The archaeological materials found are most important and can provide reasonable answers or explanations, regarding the questions related to this spectacular archaeological site.

The lower Danube Limes in Bulgaria between the rivers Iskar (Oescus) and Yantra (Iatrus) during the first century of Roman occupation (1st c. AD): Relationships between the fortified system and the landscape

Silva Sabkova

The Danube riverbank of today's central northern region of Bulgaria is characterized by alternation of sections with very steep vertical slope and widely opened riparian lowlands. The section in question is also characterized by the presence of several major tributaries – Oescus, Utus, Asamus and Iatrus. These distinctive landscape features defined the configuration of the Roman's fortification system since the early days of their dominance over the territory (the beginning of the 1st c. AD).

The Romans have always sought for an adequate response to local conditions, finding concurrence between their general strategy and the particulars of the surroundings. The analysis of the Roman fortification concept carried out by different authors through the years has revealed that river mouths, fords and places where the character of the terrain changes are locations whose defence was usually a priority.

All known early fortifications in the researched section (Oescus, Utus, Asamus, Dimum and Novae) are built at locations that comply somehow with these rules. It seems however, that there are some missing links and that there may be some fortified locations still unknown to the science. The recent "rediscovery" of the probable location of the 1st century Asamus by S. Torbatov supports such suggestion.

The proposed paper is looking into the strategic qualities of the locations of the known early fortifications in the area between the rivers Iskar (Oescus fl.) and Yantra (Iatrus fl.) in relation to the landscape features. It explores also the pattern behind the initial fortification concept of the Danubian frontier in the region in response to the characteristics of the surroundings at a larger scale. By analyzes of the landscape and the emerging pattern behind the fortified system it becomes possible to outline probable spots of other fortifications that may still lay undiscovered to this day.

Offering to the Gods – A Ritual Deposition and Other Forms of Religious Communication in Vindonissa

Sabine Deschler-Erb/Regine Fellmann/Andrew Lawrence/Michael Nick/Jürgen Trumm

In 2016, during an excavation outside the southern defenses of the legionary camp of Vindonissa, a ritual deposition was discovered. The find spot is located in the vicinity of a road leading to the valleys to the south of the camp, in an area with otherwise no religious architecture. The deposition consists of a completely preserved cooking pot, 21 oil lamps (with a further lamp beneath the pot), 21 coins and the remains of at least 22 burnt femora. In a first step, by examining the finds and their arrangement, our poster will present this new deposition and offer a possible interpretation. In a second step, other forms and sites of religious communication in Vindonissa will be highlighted. Insight will be given into the impact the arrival and withdrawal of the troops had on the religious communication in around the camp, and also how the ritual activity of the military and civilian communities may have influenced one another.

Slaves in Teutoburgium?

Nina Gostinski

This paper presents shackles found in Dalj (Teutoburgium), which are kept in the Archaeological Museum in Zagreb. Iron shackles have been identified during the revision of the Dalj collection of The Greek and Roman Department in 2017. Unfortunately, the archaeological context data is lacking, but there is no doubt about the findspot. Such shackles were normally used to restrain convicts, prisoners and slaves. Thus, they are not likely to have been used for

military slaves (unless there were some disciplinary issues, but this remains purely speculative), but they certainly could have been used for prisoners of war. Such finds on military sites raise series of questions that have to be thoroughly discussed, without necessarily providing clear and definite answers.

Fishing at the Upper Moesian frontier: Remains of freshwater and migratory fish from Viminacium (Upper Moesia, Serbia)

Ivana Živaljević, Sonja Vuković – Bogdanović, Ivan Bogdanović

The site of Viminacium, a legionary fortress and the capital of the Roman province Upper Moesia/Moesia Prima, is situated on the right bank of Mlava river near its confluence with the Danube. Its location and the vicinity of water suggest that fishing must have contributed (at least to some degree) to the diet of its citizens and legionaries. However, fish remains are fairly scarce in the Viminacium faunal assemblage, represented only by a few dozen of bones (in comparison with several thousands of mammal bones). This is primarily a consequence of hand - collecting of animal bones. Nonetheless, although much fewer in number, fish remains offer insights into fishing and fish supply practices in this Roman city and consequently in the Upper Moesian frontier in general, as the Viminacium faunal assemblage is the only one analysed in this part of the limes. The largest assemblage comes from the area of the city itself – the Roman amphitheatre and its surroundings, but also from settlements located outside of the city and fortress. Fish remains include those of catfish, cyprinids, pike, as well as migratory sturgeons (including its largest representative – the beluga sturgeon). In order to understand the significance of fishing and the role of fish in the diet at the Upper Moesian frontier, we will look into contextual data, taxonomic composition, taphonomic data and biometry of fish remains. We will further discuss possible supply routes of highly valued fish in Roman times - large beluga sturgeon at the frontier and inland. We will also take into account the archaeological findings of fishing equipment from Viminacium, particularly fishing hooks and weights used for fishing nets. The diachronic changes in fishing practices (from the 2nd until the 4th century AD) will also be discussed, namely the differences in the spectrum of species and fishing equipment with respect to certain periods.

A Stronghold of the Lower Danube's Hinterland: New Fieldwork on the Fortifications of Zaldapa, Bulgaria

Brahim M'Barek, Dominic Moreau, Nicolas Beaudry

with the collaboration of

Georgi Atanasov, Valeri Yotov, Albena Milanova

Zaldapa is largest known Romano-Byzantine stronghold of the hinterland of Romano-Byzantine Scythia and Moesia Secunda. The city was known in the sixth century as the birthplace of General Flavius Vitalianus († 520), who rebelled against Emperor Anastasius I and contributed to the rise of the Justinianic dynasty; later sources also mention the city as an episcopal see. The city's irregular walls followed the topography and defended a large, densely built plateau structured by two main thoroughfares running NNE-SSO and NNW-SSE. The site was explored between 1889 and 1910 by the fathers of Bulgarian archaeology, Karel and Herman Škorpil; Romanian archaeologists carried limited excavation between 1913 and 1940; and in 1949, a cistern was exposed NW of the defended perimeter.

Since 2014, Georgi Atanasov and Valeri Yotov have been excavating a large church thought to be the city's cathedral. While the city walls were planned, summarily described and dated to the 4th century, they remain to be thoroughly studied, together with the other military structures of Zaldapa. This poster introduces an international archaeological project launched in 2018 to study of the Christian and military landscapes of Zaldapa. It will present and discuss the results of its first field season, focusing on fieldwork carried in the NW part of the city's defenses.

How to trace and date the Roman roads? A case study from the territorium of Antiochia Hippos

Adam Pažout

Although the physical remains of Roman roads and milestones in the Golan Heights are known at least since pioneering work done by Gottlieb Schumacher in the 1880s they drew little scholarly attention. To date only short summaries of Z.U. Ma'oz and of the Golan Survey are available; both of which indeed raise more questions than answers. Particular lacunae in our understanding of the Roman roads, mainly in the southern Golan, pertain to the development and chronology of the road system. Another question arises concerning the actual continuation of the known road stretch westward.

The current research concentrates on the Roman road system in the southern Golan, encompassing southern part of Gaulanitis district and territory of the city of Antiochia Hippos. The research is undertaken in three phases:

- 1) GIS analysis locating best optimal routes in the region using cumulative focal mobility network approach. The results are used in concordance with historical topographical maps as a tool for field survey evaluating westward continuation of the extant remains of the Roman road.
- 2) Survey of the physical remains of the various stretches of the ancient roads focusing on the characteristics of road construction methods, materials and dimensions; which may help in distinguishing stages of development of the road system and identification of Roman and later roads.
- 3) Metrological study of the milestones and their comparison with milestones from provinces of Judaea and Arabia may clarify the dating of anepigraphic milestones and thus allow dating of the road system as well.

The combination of these analyses seeks for better understanding of the development of Roman road system in the region where provinces of Judaea, Syria and Arabia converge and of the Roman army involvement in the territorium of Antiochia Hippos and the Gaulanitis district.

Stone made projectiles found in the Roman fort of Mehadia (Caraș-Severin County, Romania)

Simona Regep

During the archaeological researches patroned by the West University carried out during the last decade inside the Roman fort of Mehadia, three stone projectiles were found, in the deepest inhabited level at 0,15 - 0,40 m in depth, having 5,2 to 9 cm in diameter. To these we add one piece found by Professor M. Macrea between 1942-1948 (having 10 cm in diameter). The shape of these projectiles is round, bearing visible craft marks. Two of these projectiles were found in the central area where the craft center of Mehadia developed. We consider that they were realised in an workshop found within this area beside one pottery workshop (with two furnaces and a clay basin), found near a bronze workshop (also with a furnace). The importance of these discoveries from Mehadia is underlined by the fact that they were discovered in the last habitation level dating from Constantine the Great time (first half of the 4th Century), when the entire fortification was rebuilt. The closest resemblances to these, that correspond from the chronological point of view are the projectiles found in Capidava, Topraichioi, Sucidava-Celei. We must add that they have the same shape and weight with pieces found dating from the classical imperial age and that they were common to Roman Dacia at Porolissum, Arcobadara (Ilișua), Buciumi etc.

The military unit that was stationed in the fortification of Mehadia, during Late Roman epoch, is not epigraphically attested, but we have to suppose that in a similar way with Dierna, the one from Mehadia integrated itself in the area belonging to Legio XIII Gemina.

The Roman Army in the Lower Danube and Balkan Region

Kira Lappé

In the second and more notably in the third and fourth century CE, so-called barbarian groups started to cross the Danube Limes and invaded, pillaged and plundered the Roman provinces of the Balkan region. As a member of the project „Scythica Vindobonensia“, I write my PhD thesis about the situation of the Roman army in the two provinces of Moesia inferior and Thrace on the eve of the incursions as well as the changes and adaptations that were caused by them in the following two centuries. Besides the archaeological sources, with the military diplomas for the second and the inscriptions for the third and fourth century, epigraphic sources are among the most important ones to enhance our knowledge about the identity and stationing areas of troops in this region. The aim of my poster is to give an insight into my ongoing PhD thesis, which investigates the effects of the recurrent incursions on the Roman army in the studied area. This includes changes in the stationing and the composition of troops as well as the stationing of army units in civil contexts.

Layers of Vindobona

Kira Lappé, M. Meszar, K. Hornek, M. Wagreich

The term Anthropocene stands for the time of the rising anthropogenic influence on the Earth System and has become a symbol of the anthropogenic global change. Anthropogenic deposits under cities such as Vienna stretch from pre-historic and historic to recent times and are caused by a combination of human and geological forces. Based on the legionary camp of Vindobona at the Danube limes, the first massive layers in the city area of Vienna stem from the Roman times.

A new project, financed by the WWTF (Vienna Science and Technology Fund), investigates the growth of the Anthropocene signal in the urban environments of Vienna. “The Anthropocene Surge” (ESR17-040) is a unique interdisciplinary project, combining natural sciences, humanities and art, which is regarded as a chance for a holistic view on the Anthropocene, its stratigraphy and perception.

Besides geochemical investigations, which aim at detecting trace metal contamination and establishing a genetic classification of anthropogenic sediments, one of the key tasks of this project is the implementation of the geological and archaeological data into a geographic information system (GIS). This data derives from more than 60.000 well cores and the whole digitised documentation of the archaeological excavations produced by the Urban Archaeology division Vienna. Objective is the creation of a 3D model of the Roman and later historical anthropogenic layers, showing not only their present form but also their evolution in time.

By this 3D model and by an essay film, which will be created accompanying the research and reflecting on the trajectories of the Anthropocene within different fields and methods, a new way of making archaeological data and results accessible to the general public is sought to be achieved.

Scrawl, scribble, doodle – killing time in military tileries of Roman Dacia

Monica Gui

Beyond very general information, there is not much to start from when trying to catch a glimpse of the everyday military life of the Roman soldiers in Dacia. One very direct source, however, is represented by various more or less legible/intelligible inscriptions and drawings made by the soldiers themselves on unfired bricks and tiles. This type of material is found in numerous forts throughout Roman Dacia and in some cases it is a testimony to the men’s interests, aspirations, pastime activities, or simply to how they amused themselves or idled away time. To this effect, the current poster intends to present a wide range of scrawls, scribbles and doodles - from jokes, writing exercises (sometimes manifesting downright frustration), to improvised gaming boards and playful drawings, all giving away something of the life of their authors.

„Borderland Christianity” – Small finds and their significance on the Hungarian section of the Danube Limes (4th –5th centuries)”

Réka Neményi

„Borderland Christianity” – Small finds and their significance on the Hungarian section of the Danube Limes (4th –5th centuries)” This poster investigate the Christianization of the Roman frontier in Pannonia in the 4th –5th centuries, especially focused on the Hungarian section of the Danube Limes, the two border-provinces of the Late Roman Empire (Pannonia Prima and Valeria). Many early Christian small finds can be discovered in Hungarian museums which derived from the Late Roman limes region, they serve as relevant archaeological sources while investigating the Christianisation of this era. In some cases we have the opportunity to give new interpretation of the earlier published materials put the recent publications to account. My research deals these artifacts with Christian symbols, emphasizing the chronological, methodological problems and the relevant difficulties of the interpretation.

Gagra temple in the system of Pontus limes

Suram Sakaniya

The present Abkhazia, like its historical territory, is rich in numerous monuments of various eras. After the wars of Mithridates with Rome in the first century BC, Colchis and the territory of Abkhazia, like most of the south-eastern coast of the Black Sea, started incorporating into the system of Pontus Limes. It was the most clearly manifested in the era of the formation of the imperial form of government in Rome. The first archaeologically documented Fortresses-Castellas of I-II centuries appear in Sebastopolis, the current name of the city of Sukhum as well as in Pitius (present name of Pitsunda). Not all fortresses of the Pontus Limes located on the territory of Abkhazia have been constructed simultaneously.

We believe that Castella Fortresses appeared on operational necessity. However, Pontus Limes begins to strengthen in Abkhazia in the Byzantine era. It is at this time that many Castella Fortresses in Abkhazia are being restored and expanded, for instance, the fortresses of Sebastopolis and Pitius. At the same time the new ones are being constructed both in Gagra, Tsandripsh and Ziganeas (Gudaa).

Christian churches are being constructed in many fortresses of the Roman-Byzantine era and Abkhazia is no exception in this regard. The Gagra temple, constructed within the eponymous Castella Fortresses of the late Antiquity, belong to the early Christian era. According to the researchers, in ancient times the Greek city of Nitike/Stennetika has been mentioned on this place. The remnants of the fortress of the late Antiquity in Gagra, despite a number of significant changes in the XIX century have been preserved quite well. It is constructed on the very shore of the Black Sea, at the mouth of the river Zhoekvara, at the very foot of the mountain. A plan of the Castella Fortress has a shape of a rectangle close to a square. Of all the walls of the fortress, the eastern wall with a stone arch was better preserved. Roman large-scale square masonry is clearly visible.

Inside the fortress, an early Christian one-nave church with side extensions was preserved; however, it was substantially rebuilt in the middle of the 19th century. The church was constructed with large blocks. The masonry of some sections of the walls of the temple and fortress is almost the same, which gives us the opportunity to assume the simultaneity of their construction. Especially that Gagra plan of the church before its reconstruction, fixed by Dubois de Montpéreux in the first half of the XIX century, in its absolute form repeats the well-known Roman and Byzantine basilica churches with a protruding semicircular apse of V-VI centuries.

Fortifications of the Inner-Caucasian Limes in Abkhazia

Alik Gabeliya

At the turn of the eras, several fortified areas (limes) have been created to protect the north eastern regions of the Roman Empire, adjacent to the Caucasus: “Cappadocian” - by the name of the Roman province in Eastern Anatolia, covering the land border of the Roman province (T. Mitford); “Pontus” - a chain of the Black Sea fortifications with garrisons to guard the approaches to the empire and ensure the safety of navigation on the Pont River (V. Lekvinadze). According to S.M. Perevalov, the Cappadocian and Pontic limes represented a single cordon line, called the Caucasian Limes, which included the entire stretch of the north eastern Roman limes from Melitena to Pitiunt and performed important functions of foreign policy. The Caucasian limes served as a pillar of Roman power in Asia Minor and Transcaucasia, as well as a strategic foothold for the foreign policy of the Roman Empire in the Middle East.

The Roman Empire constantly carried out military reform to effectively protect its borders, sometimes the empire entrusted the protection of its borders to the local population of its provinces, paying them big money for it. The Byzantine Empire, the successor of the Roman state, relied on the fortresses of Roman Limes in its struggle for fortification in the Caucasus; has restored some of them, frequently using local fortresses such as Tsibilium, Tsakhar, Trachea, Shapky, Pal, Gerzeul etc.

As established by specialists, all these fortresses were combined into one new defensive system, forming a fragment of the Internal Caucasian limes. Its paramount task was to guard passages in the gorges (Lat. *clausura*), through which the roads led to such important coastal fortifications of the Byzantines as Apsar, Phasis and Sebastopolis. Simultaneously, the old Roman defense system has been restored and deployed along the sea, throughout the entire territory of the empire; the limes that represented a single continuous system of external limb of the Justinian era appeared once again.

Thus, it can be assumed that the Pontic Limes, especially in combination with appeared in the middle of the 1st century AD of the internal foothill line of fortresses in the territory of Abazgia, Apsilia and Misiminia, Lazika “Inner-Caucasian Limes”, was a grandiose defensive line, designed to protect the Byzantine provinces including Western Transcaucasia from the attacks of nomads.

Moving Supplies in the Roman Dobrogea

Stephen Matthews

The Dobrogea represents a compact study region in which it is possible to model the transport needs of providing food to the Roman garrison. A comparison of the position of archaeological sites recorded on the Romanian national database of sites – cImeC – against the well-researched road network can be carried out within ArcGIS. This program can produce pictorial representations of travelling distances to particular garrisons as irregular polygons representing individual days’ travel according to the road network. Archaeological sites within particular polygons can be said to have been best placed to serve the particular fort from which the polygon was produced. Then using simple algorithms within Excel it is possible to model the impact of providing animal feed to the traction animals. These algorithms can be adjusted to accommodate different vehicles travelling at different speeds. From this process it is possible to assess the efficiency of certain vehicular combinations and the relative merits of using fewer mule-drawn vehicles that would have required a greater quantity of feed, over slower oxen-drawn vehicles that would have required less arable to be turned to feed. It is also possible to model within Excel the effect of moving supplies from particular ports to the garrison forts. The power of the algorithms allows one to adjust key variables: yields, size of garrison, productivity of workers, and the number of workers to a site. The end result is a series of models which offer suggestions as to the most likely scenarios in terms of yields, productivity and agricultural population.

Hidden gems: Roman finds in the PUG-collection in Utrecht

Joanneke van den Engel-Hees, Herwin van den Engel

Since 1841 the Provinciaal Utrechts Genootschap van Kunsten en Wetenschappen (PUG, Provincial Utrecht Society of Arts and Sciences) has acquired an impressive archaeological collection, with the main focus on finds from the province of Utrecht. This collection tells us a lot about Utrecht's Roman past. It contains finds from no less than three Roman castella along the Rhine Limes: Vechten (Fectio), Utrecht (Traiectum) and De Meern.

Vechten, to the southeast of Utrecht, is one of the earliest Roman castella in the Netherlands, built under the emperor Augustus. A large portion of the Roman finds in the PUG-collection comes from this important site.

In 1995 the PUG-collection was conveyed to the care of the Department of Heritage of the city of Utrecht. Part of the collection is exhibited in the Centraal Museum in Utrecht. The collection was leading a somewhat languishing existence: there was no complete inventory and a lot of valuable objects were in danger of deteriorating. Therefore a plan was made in 2007 to improve the state of the collection. The main goal of the project is make an complete digital registration of all the objects, so both the public and the scientific community will be able to enjoy the collection online.

Between 2011 and 2015 the public could see the work on the collection for themselves in an open workplace exhibition about the PUG-collection in the Centraal Museum. Visitors of the museum could take a look behind the scenes and ask questions to the curator. There were archaeological workshops for children with real Roman finds.

Our aim is not just to show Utrecht's antiquities to the general public, but this special collection is also a rich source for scientific research. Many important researchers have found their way to Utrecht in the past, for instance for the terra sigillata. Even though the information about the find circumstances only rarely complies with modern requirements, the objects from the PUG-collection can still add a lot to modern archaeological knowledge. They are still relevant. Fortunately we see a renewed interest from specialists who want to study objects from the PUG-collection.

Stone extraction for Vindobona – regional infrastructure and economic relationship by the example of a legionary garrison in Pannonia

Martin Mosser

The interdisciplinary project „Stone monuments and Stone Quarrying in the Carnuntum – Vindobona Area“ aims to acquire new knowledge about Roman economic and settlement history, art, quarrying and infrastructure through the integration and analysis of archaeological and geological data. Preliminary examination of approximately 200 Roman stone objects, including all types of artefacts from works of art to plain building materials, suggests that three quarrying areas were significant for the supply of stones to ancient Vienna. Based on historical maps and airborne laser scans potential quarrying regions around the Roman city and legionary camp of Vindobona were selected and representative samples taken. Evaluating the geological results from an archaeological point of view, the following conclusions can be made: It seems that as a first step after the installation of the Roman legionary fortress, the building material was quarried from the margin of the Alpine region, including the Vindobona vicinity. Moreover, algal limestones from the Leitha area played an important role as raw material for sculptured stone monuments, such as gravestones, altars, etc.

GIS-mapping of all known archaeological sites of the area of north-western Pannonia, as well as the analysis of aerial photographs and airborne laser scans are pinpointing potential quarries and highlight their necessary infrastructure. Equally important is the consideration of possible transportation routes. Interactions with Carnuntum, the provincial capital of Pannonia superior, in terms of exchange of goods as well as cultural or artistic transfer, are exciting sets of issues. Additionally, GIS-based low cost analyses calculating possible likeliest routes are an important instrument for supporting those examinations.

This is the first time to study the construction technology of the beacon tower in the Han dynasty in xinjiang of China. It is of great significance to understand the construction technology of rammed earth in xinjiang.

Xue Cheng

This poster gives a full picture of the ramming technique of the beacon tower which is represented by the Kizilgaha beacon tower in the western regions of the Han Dynasty from three aspects that are ramming history, ramming way and ramming process. At the same time, in this poster, the author figures out that the ramming technique used in the constructions in the Western Regions along the Silk Road was introduced from the Central Plains region, by comparing the Kizilgaha beacon tower with the Central Plains Han Great Wall and the Hexi Corridor of the Han Dynasty. At that time, the craftsmen and soldiers brought advanced ramming technique to the Western Regions through the Silk Road. Meanwhile, with the changes of the environment, the ramming technique introduced from the Central Plains formed a new technical character, which was a fusion of ramming technique of the Central Plains and the local construction technique.

Moreover, the new technical character laid an important foundation for the development of rammed earth buildings in the western region.

Using the objective and plenary data to analyze and demonstrate the relationship between the construction of Ming's Great Wall, the climate changes and wars of the agricultural and nomadic peoples.

Tong Yangyang

The Great Wall is a linear cultural relic with national characteristics, is the outcome of the ancient Chinese political entity and the national relation development, and also witnesses the power shift between agricultural and nomadic groups. Because of the specific climate, rainfall and landform of the Great Wall's area, agricultural and nomadic peoples all gathered there. Ming Dynasty is the last peak session of the construction of the Great Wall. Meanwhile, in Ming Dynasty, the defense facility and the engineering technology of the Great Wall have reached to the peak. Based on the survey of the Ming Great Wall since 2006 and the statistical data of wars' times and the climate changes, the author found that constructions of the Great Wall are always along with the increasing temperature and the invasions of the nomadic peoples. This correspondence resulted from the fact that nomadic economy was at that time dependent on its climate and its mutual complementary relationship with agricultural economy.

Aspects of Roman imperial power in Transcaucasia

Michael Speidel

When referring to the region known as Transcaucasia, i.e. the countries on the southern slopes of the Caucasus mountain range stretching from Roman provincial territory on the Black Sea in the West to the Caspian Sea and the regions controlled by the Parthian and Sassanid Empires in the East, Roman narrative sources in Greek and Latin usually mention the ancient kingdoms of Iberia and Albania in the same breath. They convey the image of a distinct and unitary strategic sector, which they set apart from the Roman Colchian coast and the politically and historically more prominent kingdom of Armenia further South. A string of Roman forts along the Colchian Black Sea coast has led some scholars to speak of a Roman 'Caucasus frontier', while others take the same forts to disprove the principle of linear frontiers in Transcaucasia. Rome's interests and investments in the South Caucasus as well as the methods, by which the Empire intended to control the region, not only remain among the least researched but also among the least understood of all frontier regions of the Imperium Romanum.

This poster proposes to present a project at the Archaeological Institute of the University of

Warsaw, which aims at reassessing the narrative and epigraphic evidence in the light of recent archaeological and historical research with the aim to analyse Roman investments, and Roman political, military, and economic interests in Transcaucasia and Roman strategies of control in this region.

Exploitation of wild animal resources on the Limes in Upper Moesia

Gordana Jeremić, Selena Vitezović

Wild fauna had an important role in the Roman culture; some of the animals were particularly valued and had symbolic, religious significance. Hunting as activity had an important role beyond purely economic; it was also connected with status and prestige. Wild fauna also provided diverse resources – meat, fur, etc. Especially important raw material were red deer antlers, used for variety of purposes since the prehistoric times. In the Roman period, the use of antlers varied considerably from region to region and in different periods, depending on local preferences and needs.

In this paper will be offered an overview of the antler production and use on the borders in Upper Moesia province. In Singidunum, on the location of the Castrum, an antler workshop was discovered, with large quantities of antler segments with traces of manufacture. In the Iron Gates region, antler artefacts were discovered at several fortifications, and the typological repertoire included awls, needles, spindle whorls, etc. Particularly numerous are combs (pecten), discovered at several sites, including Saldum, Diana, Novae, Pontes, and mainly originating from Late Antiquity period.

Digitizing Ancient Epigraphic Heritage: Project EpiDoc XML Encoding of Roman Inscriptions from Serbia

Dragana Nikolić

The project EpiDoc XML Encoding of Roman Inscriptions from Serbia: Digitization of Ancient Epigraphic Heritage carried out by the Institute for Balkan Studies of the Serbian Academy of Sciences and Arts and funded by the Ministry of Culture and Information of the Republic of Serbia focuses on research, training, digital documenting and digital edition of Roman inscriptions from the territory of Serbia (the Roman province of Upper Moesia and parts of Lower Pannonia, Dalmatia and Thrace). The project's primary aim is to form a national e-archive of inscriptions that will be encoded in EpiDoc TEI-XML format. This collection of digital corpora will represent a completely new epigraphic edition that is furthermore born-digital and ready for interchange. The project is envisioned as a core for networking and intensifying the collaboration between research and cultural institutions. It is ment to educate, inspire and instigate collaborative work and new concepts in epigraphic research.

The last frontier. The extra muros civil settlement from Noviodunum. The beginning of a new research

Marius Streinu, Aurel Stănică, Alina Streinu

We intend to illustrate the results of the ongoing research in the civilian settlement found East of the ancient city of Noviodunum. Through this research we aim to understand the development of civilian settlements around the major urban and military centers on the outskirts of the Empire, but also of the military, social, economic and cultural life issues of the people inhabiting them.

Roman quarries on the Northwestern border of Dacia. The sandstone and volcanic stone quarries of Porolissum

Mátyás Bajusz

The scientific research of stones, as prime building material and the provenience of these have been almost totally neglected throughout the scientific research of Dacia province. Only three or four researchers could be enumerated starting from the end of the 18th century and 19th century who were intrigued to study and note the most important quarries of the region. Currently I am studying the stone as the base building material in Dacia and the process of its mining. My actual project is to map all the quarries serving the settlements and fortifications of the north-western border of Dacia Porolissensis, and based on the location of each site I am trying to model the possible roman routes of the transportation of the mined stone. In addition to these my interest is widened to the social background and human resources of the process of quarrying. Concerning the aforementioned area, I managed to identify 18 quarries of four different kinds of stone, of which now I am presenting some of those which served Porolissum, so only three quarries of sandstone and volcanic stone will be discussed. The situation is complicated by the fact that a certain percent of the quarries are currently active, or have been used throughout the centuries, so during the research has rise a need for the methods of geology and ethnography too.

The Danube limes fort from Pojejena in a new light of non-invasive prospections

Călin Timoc

Archaeological research at Pojejena were start again after a long break of almost 40 years. In this first campaign we used the geomagnetic prospecting, surveying and soil resistivity to see the archaeological site size and state of preservation of the fortification. We also watched using aerial photography to identify traces of walls, soil prints of architectural structures that might be visible in the field. The control section that we made in the civil settlement, in the close neighborhood it indicated a fairly compressed stratigraphy, the sequence of habitation levels not exceeding 90 cm deep. The archaeological material resulted largely boils down to ceramics, especially late roman pottery pieces.

Production of Olive Oil and Wine in the Vicinity of Limes Delmaticus

Jana Kopáčková

Almost the whole Eastern Adriatic coast, lined with hundreds of islands, is mountainous and quite inhospitable but the climate is very suitable for olive and wine growing. In Roman times, these two agricultural items formed the basis of local economy and trade.

This poster is focusing on the group of production centres located in the vicinity of the Limes Delmaticus (the line of military fortresses of Burnum, Kadina Glavica, Andetrium, Tilurium and Bigeste in the area between two rivers Krka and Cetina). Those military bases became a very important element of the colonization process in the newly created Province of Dalmatia at the beginning of the 1st century AD.

The soldiers of XI. legio (Burnum) and VII. legio (Tilurium) collaborated on the construction of new road system at the time of Publius Cornelius Dolabella (14 - 20 AD); those roads simplified the penetration of new inhabitants into Dalmatian countryside where new settlements were established in this time period.

Rapid development of the planting of olive trees and grapevines started in the context of the newly created villae rusticae in the 1st half of the 1st century AD; in the begging on the islands and in coastal areas and later also in hinterland. These villae were established by colonists mostly from Italy. The indispensable part of new inhabitants was made up by veterans from

Imperial army who earn part of a land after long military service (*missio agraria*). The area around rivers Krka and Cetina was quite densely inhabited in Antiquity (*vici*, *municipia*, *villae rusticae*). This poster will provide a new comprehensive map of the civil settlements in the area around the Limes Delmaticus in the relation to the production of olive oil and wine and evaluate the unique status of this area according to its proximity of the capital city of Salona. Location of the production centres in this area shows us some interesting patterns which are visible on the newly created map; relation to the main roads, larger settlements and geomorphological structures. One of the main questions is if the amount of local production was large enough to supply olive oil and wine to the army or were both liquids imported from other parts of Empire? These and other questions will answer this poster.

La situation des femmes sur le limes danubien de la Dacie entre religion et implication sociale

Mariana Balaci Crînguș

Sur la frontière d'une province, la présence de l'armée et implicite ses traces sont très claire. A côté de l'élément militaire, dans les localités qui se trouvent sur la ligne du Danube, a cote gauche, on connaît aussi la présence féminine, pas très nombreux, mais dans certaines situations assez présent et surtout actif. Je me réfère, par exemple, la présence des femmes dans la vie publique de Drobeta, ou elles sont organisées dans un collège religieux. On rencontre les femmes mentionnés sur les feuilles d'or gnostiques de Dierne, ou bien sur des autres monuments funéraires, dans des diverses rôles. Sont intéressantes aussi les mentions avec les femmes comme héritées et les implications juridiques découlant de ces aspects. La présence féminine, bien que modeste, elle existe et elle mérite d'être analysé sous des angles différents pour une image plus claire de la puissance financière et sociale de la société romaine, même à la frontière de l'Empire.

Perforated coins from the Aquincum-Graphisoft cemetery

Lajos Juhász

Perforated coins are very rare amongst Roman coins usually only accounting for less than 1% of the total number, not taking into account the late Roman coins in barbarian context. Their greatest proportion was found in the Graphisoft cemetery east of Aquincum's civil town, where these amounted to 8% of the total coins. Interestingly enough these were predominantly found in child inhumations and cremations, which in itself raises a series of interesting questions. The number of perforations also differs from one to three pointing to different function or ritual use. In some cases the use as bracelets or necklaces could be observed in connection with glass and amber beads. Unfortunately in most cases such information could not be gathered. The interpretations are hindered by the very fragile state of conservation of the human remains. The need for perforating a coin is also interesting, since it required some skill. The holes also differ technically, since some of the perforations were made with a nail, in other cases they were drilled. Two coins even show the eye of the emperor pierced through using a small and precise drilling technique. This level of detail on a small, but difficult surface raises the question of ritual mutilation of the coin and the portrait itself. Pierced coins are quite rare in the whole of the Roman Empire, with a few examples in Gallia and Germania. Their greatest concentration is found in both Pannoniae and Moesia Superior. The best parallel for the Aquincum cemetery comes from Viminacium itself, where the Više Grobalja yielded a number of perforated coins. Here they were also mostly found in child graves, which points to a common burial custom and belief on this stretch of the Danube.

Sex, Risk Allocation, and Roman Patriarchy: Excess Male Mortality on the Danube Frontier

C. Scott Speal

Excess mortality associated with the human male—meaning a populational disadvantage in life expectancy relative to females—has been found to be more or less the norm among modern and recent historical post-Industrial populations. Discovery of this phenomenon has led to some debate as to whether the condition is a ‘natural state’ of the human species tied directly to the biology of sex, or a product of cultural and environmental conditions—and therefore variable over time and space. Unfortunately, researchers have been faced with a dearth of demographic information from the ancient world that could be used to determine exactly how far back this ‘normalcy’ of excess male mortality extends among humans. Recent development of dramatically improved skeletal aging and paleo-demographic techniques has allowed deeper investigation of the time depth of the sex differential in mortality. The availability of large numbers of well-preserved skeletal remains from cemeteries surrounding Viminacium on the Danube frontier permitted examination of the phenomenon in the specific context of the Roman Limes of Late Antiquity.

As Viminacium had origins as a legionary encampment on the Danube Limes, and retained that military function to some degree throughout its existence, one expects a male dominated populace and some considerable degree of excess male mortality associated with the hazards of military service. Juxtaposed with the social ideology of Roman patriarchy however—widely recognized to have emphasized and celebrated masculinity to a rather extreme degree—questions arise as to whether their political and social dominance provided Roman males the ability moderate or ameliorate altogether their mortality disadvantage through increased access to resources and allocation of some risks to females. Social archaeologists have well established that elites or factions in power have a cross-cultural tendency to use their position predominantly to benefit themselves when the opportunity presents.

Computational survival analyses based upon skeletal age-at-death estimates were run to investigate differences in mortality by sex for a sample of 297 individuals recovered from Viminacium graves dating from the 2nd through the 4th Century AD. Results indicate a very pronounced excess male mortality among the ancient population. This finding is not consistent with notions that Roman patriarchy provided any type of ‘risk-buffer’ to males, as some have proposed, at least not on the Danubian frontier. Other skeletal indicators of systemic stress are also examined to investigate the relative impact of various vectors of mortality that may have influenced the disparity.

Establishing the Health Correlates of Social Status on the Danube Frontier using Grave Construction: The Viminacium Mortuary Complex

C. Scott Speal

Archaeologists have long sought to establish a connection between social status in life and mortuary treatment in death. This theoretical relationship is of central importance in our understanding of the past both for determining the presence of social hierarchy among ancient cultures for which political organization is poorly understood, and to better understand the consequences of social stratification among cultures for which hierarchical organization is already established. Unfortunately, very few archaeological studies, if any, have managed to empirically demonstrate this theoretical connection under conditions of known past status hierarchy in order to validate it.

The well-established Roman propensity for ostentatious display of wealth in both life and mortuary behavior provides a nearly ideal situation to test the Tainter Principle—which maintains that those individuals holding higher status in life will tend to draw greater investment in funerary treatment upon death—under known conditions of intense social hierarchy as described in Classical literary documents. Given the equally well-established principle that individuals of

greater socio-economic status within modern human populations tend to enjoy an elevated health status over those of lower rank due to increased nutritional access and cultural buffering from health hazards, it was possible to pose an empirical test of the Tainter Principle under provincial Roman conditions using a skeletal sample from cemeteries surrounding the Late Roman city of Viminacium.

The analyzed sample consisted of 297 skeletal individuals recovered from 254 interments for which grave form information was available. An ordinal scale of mortuary investment was constructed for the various grave types observed in the study based upon the assumed level of effort each grave type would require to construct. Skeletal data including estimated age-at-death, presence of lesions considered indicative of adverse health conditions, and long bone measurements either contributing to or correlated with corporeal stature and robusticity, were obtained from each individual. Various statistical tests confirmed significant positive correlations between greater levels of investment in grave construction and the respective health variables of mortality, indicators of morbidity, and measurements of skeletal robusticity at Viminacium. These results validate the assumptions of the Tainter Principle for the set of mortuary features examined—which are also found across the middle Danube region during Late Roman times. The author hereby defines this set of mortuary features as the Viminacium Mortuary Complex. By corollary, it is also established that the provincial social hierarchy had significant health implications for populations living on the Roman Limes.

Archaeological Characteristics of Sarmatians Limigantes Culture

Stanko Trifunović

In the Late Roman period, massive colonization of the Pannonian Barbaricum happened. Great number of settlements is documented, often on large areas, with the semi-dugouts and aboveground structures, as well as necropoleis with inhumations, with different characteristics. Throughout Roman written sources, according to the description of the lifestyles, it can be understood there were two ethnoses, and that their relationship had the ruling – slavish character (Free Sarmatians and Slave Sarmatians – Limigantes). Parallel observation of the written sources and archaeological facts clearly connects Limigantes with the mentioned settlements. Material culture of the settlements shows sedentary population, with agriculture and cattle-breeding as the basis of their economy. Pottery, especially kneaded and on the slow wheel, leads us to the search for origin and connections of the bearers of the culture to the contemporary cultures of Central and Eastern Europe.

Simple connection of the Sarmatians in written sources and superficially analyzed archaeological findings lead to the wrong interpretation of the culture in question as entirely Sarmatian, and it misrepresented Sarmatians in Pannonian Barbaricum as inhabitants of the settlements practicing agriculture.

A small secret of the sea-silk from Szemlőhegy (HU)

Judit Pásztókai-Szeőke

Sea silk is the product of the fibre beard of the Mediterranean fan shell, *Pinna nobilis*. Although this fine, golden shimmering fibre has been processed since the Antiquity (textual evidence), the 4th century AD textile find from Aquincum-Szemlőhegy was the only material evidence of its production and usage before the 14th century. Although the find itself was destroyed during the World War II, it had been thoroughly investigated and published by the botanist Hollendorfer before that. This report is widely referred to by the researchers of archaeological textiles, but a very important detail about its textile structure has been overlooked so far. Based on the testimony of this written evidence, the aim of this poster is to discuss what kind of textile technique could have been used for the production of this exquisite piece of Roman textile.

The *extra muros* residence in Novae (Sector VIIIA)

Pavlina Vladkova, Julia Valeva

Novae was founded as a legionary camp on the *Limes Moesiae*. It expanded into civilian settlement around its *canabae*. The most prosperous time for Novae was the period of the Severan dynasty. Our study will address the painted decoration of the rich house *extra muros*, which was presumably the residence for high officials staging temporary in the camp. The residence has several building phases. The largest part of wall paintings come from rooms B and D. Reconstructions of the preserved fragments yield the possibility of reconstructing the decorative system of the painted walls which consisted of fields divided by vertical bands. So far only vegetal motifs have been recognized on the fragments. There are also embroidery borders, reminiscent of the Fourth style. Precious evidence about the building and repair phases give the fragments with multiple painting layers. The house was destroyed during the Huns' incursions in the beginning of fifth century.

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