

26TH LIMES CONGRESS

The background of the entire page is a photograph of an ancient mosaic floor. The mosaic features a central circular motif, possibly a sun or a flower, surrounded by a grid of squares. The tiles are made of small, light-colored stones, and the overall appearance is aged and weathered. A white ruler is visible at the top of the image, providing a sense of scale.

8.-14. September 2024
Batumi, Georgia

ABSTRACT BOOK

XXVI LIMES CONGRESS BATUMI 2024

8.-14. SEPTEMBER 2024

ABSTRACT BOOK

Dear Colleagues,

we are pleased to present the abstract book, showcasing the diverse research and ideas that will be discussed during this congress. Each contribution reflects the hard work and expertise of our participants, offering valuable insights across various disciplines. We hope this collection inspires meaningful discussions and fosters collaboration.

On behalf of the organizing committee, we thank all contributors and wish you a productive and memorable Congress.

SESSION 1

200 years of coin circulation in Apsaros, a Roman fort in Colchis

Piotr Jaworski, Irina Varshalomidze

The reconstruction of monetary circulation in the Roman fort Apsaros, based on the analysis of several hundred coin finds, including specimens discovered in the last 10 years during the Polish-Georgian excavations carried out in the praetorium area, shows the close connection between the influx of money into the fort and the history of the armed conflicts in which Rome was involved on its north-eastern frontiers. From Nero's war in Armenia to Trajan's Parthian War, the events of the last years of Hadrian's reign, the campaigns of the Severan dynasty emperors in the East, and the naval incursions of the Boranoi on Colchis, these events are reflected in the intensity of the influx of coinage and the main sources of money supply for the units stationed at Apsaros. The paper, which is a summary of ten years of numismatic research on coin finds from the Apsaros fort, will present the latest findings. These are all the more important as the fort at Apsaros is the only site on the Colchis coast associated with the Roman army that has been covered by systematic archaeological research over the years and the economic processes evidenced there, including monetary circulation, may to some extent reflect those of other Colchian garrisons from around the mid-first to the mid-third century.

Ceramic production in Gonio-Apsaros

Marcin Matera

The ceramic production on the territory of the Gonio-Apsaros site was first documented by Georgian archaeologists. They found a ceramic kiln in the south-western corner of the Roman fort in 1997 and dated it to the 2nd–3rd centuries. They identified it as an amphora kiln. In 2023, a Polish-Georgian expedition discovered two more ceramic kilns in the same area, which also belonged to the 2nd and 3rd centuries. One of them was most likely an amphora kiln, while the other one seemed to be used for producing ceramic building materials. Interestingly, the amphora kiln was built on the place of the headquarters building (*principia*) destroyed by the earthquake around 140 AD. A wine press discovered near the fort dates back to the same period as the ceramic kilns discovered in the fort. This shows that after the earthquake (when the headquarters and the

commander's house were not rebuilt), the military role of the fort decreased, but economic activity, perhaps run by veterans, came to the fore. Given the discovery of the production of amphorae and the wine press, with some caution, it can be assumed that an element of this economic activity was wine production, most likely for the needs of the Roman garrisons in Colchis.

Transparent, translucent, and opaque – 1st-2nd century AD glass from Apsaros, Georgia *Marcin Wagner*

The paper will present fragments of glass vessels found during Polish-Georgian excavations in the Roman Fortress Apsaros, built in the mid-1st century AD. Based on archaeological material, we can distinguish three phases of using the discovered stone building and its subsequent remodeling. The first one is related to the reign of Nero (granary – horreum), and the next one is to the times of Trajan (baths – balneum) and Hadrian (Praetorium). The oldest glass artifacts found dating to the first phase are those made in two- or three-partite moulds. One of the best-preserved vessels is a cylindrical “victory” beaker with slightly concave walls, found in the foundation ditch of the horreum. It is blown in transparent, pale green glass and its surface is decorated with floral decorations in two registers. Phases II and III are characterized primarily by fragments of square bottles, unguentaria, aryballoi, beakers with concave walls, as well as ribbed bowls. The entire collected archaeological glass material is supplemented by fragments of vessels dating back to the late Roman period, but they constitute a small percentage of the total collection. These include goblets with folded concave bases and stem lamps. The archaeological research in Apsaros has received financial support from the National Science Centre, Poland (UMO-2017/26/M/HS3/00758).

Non-invasive research of the surroundings of the fort in Apsaros in order to locate the remains of defence systems and reconstruct the archaeological landscape

Radosław Mieszkowski; Stanisław Mieszkowski; Krzysztof Misiewicz

During the survey of the surroundings of the fort in Apsaros, carried out in May 2023, the ERT electrical resistivity tomography method was used, which makes it possible to obtain data not only on changes in the subsurface layers (related to the presence of possible archaeological remains), but also on the geological structure of the area in the vicinity of the fortifications erected here. Thanks to this, it was possible to supplement the information on environmental changes related to the construction and operation of the defence system obtained during previous geomorphological research (including drilling and geological surveys) in 2018–2022. Geophysical measurements in the field were made with the Terrameter Ls apparatus, in a 4x21 electrode system, using the roll-along

method on profiles with a length of 80 to 240 m located to the west, north and east of the preserved fortifications.

Peeking into legionary's pots - military diet in the Roman fort of Apsaros

Paulina Komar, Maciej Sierakowski

The Roman fort of Apsaros (present-day Gonio, Georgia) has been studied by the Gonio-Apsaros Polish-Georgian Archaeological Expedition since 2014. The results of excavations revealed that the fortress was founded during emperor Nero's rule and that it was used by the Roman legions until the mid-3rd c. AD. A wide range of amphoras discovered in Gonio indicates that legionaries based their diet mostly on Colchian products, accompanied with imports from the South-Pontic and Aegean areas. Archaeometric analyses of organic residues (ORA) identified in amphora samples allowed for establishing major suppliers of wine, olive oil and fish products to Apsaros.

Command, experience and origin: warriors from NW Colchis (300-400 AD)

Eliso Baghaturia-Kner

This paper aims to investigate military communities and conflict imagined spaces of NW Colchis during 33–400 AD. While graves containing weapons are generally the case, they still convey fresh perspectives on the military composition of warriors from historical Absilia, mindfully set deep into the communicative mountaineer parts. The paper aims to illustrate what territorial extent applies to graves of Germanic, Chernjiakhov and Przework cultures, and how this allows us to build up a fairly detailed picture of imperial security system in Colchis. Therefore, one of the central aspects of this research is to define the ethnic origins among warriors, with consequences regarding funerary practice, conceptual connections, sensory properties and military mobility. They are key points important in discussing alternative story to answer the question: whether it was a matter of confederate alliances regarding to Black Sea security (including navigable parts of Colchis) or prerequisites to the challenges of dynamic frontier. There is a textual gap to the making direct connections between the growth of Roman power and influence in mountaineer parts of Colchis at a given period. The presented research is based on published archaeological material (from historical Apsilia and Pythius), including my doctoral dissertation. With fresh approaches it brings NW Colchis in wider comparative framework within the context of Caucasian Frontier.

Geoarchaeological research of the Black Sea coastal zone in the area of the Roman Apsaros Fort in Gonio (Georgia)

Leszek Łęczyński, Radosław Karasiewicz-Szczypiorski, Radosław Mieszkowski, Aleksandra Zgrundno, Shota Mamuladze†

The fort Apsaros is located on the Black Sea in Gonio, south of Batumi. Based on references in several ancient written sources and archaeological findings, we know that the origins of the Roman military presence in the area date back to the reign of Nero (54-68). The fort was built on a narrow strip of flat land between the mountains and the sea; to the north of the fortification runs the southern edge of the Chorokhi river valley. The team conducting research at this archaeological site assumed that two thousand years ago, however, the landscape near the Roman fortifications looked very different. There must have been a harbour somewhere near the fortifications. Today, there are no clear surface traces of a natural bay, harbour basin or canal in the vicinity of the fortifications. Since 2014, archaeologists from the University of Warsaw (Institute of Archaeology and Polish Centre of Mediterranean Archaeology) and the Gonio-Apsaros Archaeological and Architectural Site (Cultural Heritage Protection Agency of Ajara) have been jointly excavating the site. Parallel to the archaeological work, environmental research initiated in 2018 is being carried out as part of an interdisciplinary study led by dr hab. Radosław Karasiewicz-Szczypiorski and funded by the National Science Centre (UMO-2017/26/M/HS3/00758). This work is intended to provide answers to the questions of whether there was a functioning sea bay in the area of the Roman fort, what was the course of the Chorokhi River flowing into the Black Sea, and how the coastline was shaped in Roman times. The conference presentation will explain the results of geological and geophysical work carried out in the area of Fort Apsaros. The geological reconnaissance was carried out using a hand-held drilling rig. As part of the geophysical work, electrical resistance profiling was carried out. These investigations were aimed at recognising the geological structure of the area, acquiring material for both geological and diatomological studies aimed at reconstructing the environmental conditions related to the palaeogeographical reconstruction of the area and the influence of marine conditions on the archaeological site. The geological fieldwork was preceded by an analysis of available cartographic material, geological cross-section maps and an interpretation of the potential impact of earthquakes in the area with the identification of the possible impact on the buildings and fortifications of the Apsaros Fort.

What does the pot say? Local kitchenware from Roman fort Apsaros (Georgia)

Natalia A. Lockley

The Roman period is one of the most mysterious periods of the history of Colchis. The beginning of this period is associated with major changes of a political, economic and environmental nature.

The eastern Black Sea coast was of considerable importance, and a stark contrast can be seen in the appearance of Roman troops on the one hand, and in the material culture on the other. To date, studies of pottery from Apsaros between the 1st and 3rd centuries AD have focused mainly on luxury items, imports and amphorae, with a modest discussion of local pottery, leading to general conclusions about the extent and directions of circulation of this category of artefacts. Kitchen pottery, whose production and consumption took place in a different political and cultural landscape, is a good source for understanding the economic and social processes at Apsaros and the relationship between the fort's crew and the coastal inhabitants. The research presented here will discuss observations and findings on local kitchen pottery from the Apsaros fort excavations, mainly from the remains of the so-called praetorium. An important element of the paper will be an attempt at clarification of the interaction between the fort crew and the local inhabitants. The question of who produced the pottery - the people of the fort settlement or craftsmen from nearby settlements? The answers to these questions will allow a new cultural picture to be drawn, as well as contributing to the knowledge of certain aspects of the economy of the region, related to the production and consumption of pottery, and determining the extent and direction of relations during the Roman period at the Apsaros fort and on the eastern Black Sea coast.

Ceramic building materials at the Roman fort Apsaras (Gonio, Georgia). Local or regional produces or imports?

Małgorzata Daszkiewicz, Radosław Karasiewicz-Szczypiorski

Excavations carried out over the past 10 years by the Polish-Georgian expedition at Apsaros Fort, as well as earlier Georgian research, have contributed to the collection of different types of CBM. Among this collection of CBM are mostly unstamped products or products signed by various units of the Roman army. Only some of the ceramics mentioned are associated with specific buildings that functioned in the different construction phases. The fieldwork did not answer some of the research questions on ceramic production. The question remained open as to whether the building materials in question were produced locally and whether local workshops functioned in all the chronological periods highlighted. Laboratory analyses were undertaken to test the hypothesis that CBM (in this case brick and roof tiles) were made locally at Apsaras or in its immediate vicinity. Both fragments of CBM and samples of local day taken from boreholes at the site and from nearby outcrops were analysed. As there was no correlation between the locally available raw materials and those used to produce the CBM, additional analyses were performed on pottery and kiln parts discovered at this site. It was particularly important to analyse samples taken from the kiln structure and to compare the results with those obtained from analysing local/regional days and ceramics.

The results of this analysis were only partially able to verify the formulated hypothesis. The following analyses were carried out: firing test, MGR-analysis, chemical analysis by WD-XRF, thin-section studies in a polarising microscope and SEM fitted with EOS.

Flavius Arrianus in Apsaros. Written sources and archaeology

Radostaw Karasiewicz-Szczypiorski

The governor of Cappadocia - Flavius Arrian - visited Apsaros and other Roman forts on the coast of Colchis around 132 AD. Surviving to this day is a brief account of this inspection, written by Arrian himself. It is part of a description of sailing around the Black Sea. It is known as the *Periplus Ponti Euxini*. How does the reliability of the provincial governor's account compare with the results of recent research? The head of the Gonio-Apsaros Polish-Georgian Expedition will answer this question in his presentation.

New stamps and building activity of Cohors Sagittariorum from Gonio-Apsaros

Tornike Mamiseishvili, Lasha Aslanishvili

The paper presents brick and tile stamps discovered during the archaeological expedition of 2023. The five cohorts named by Arrian at the fortress of Gonio-Apsaros have been the subject of research for years. Ceramic building materials were considered the main source of information. Four cohorts have been identified by archaeologists through stamps on ceramic building materials, and there were different opinions about the fifth cohort. This was due to the fact that a complete stamp, where the inscription could be fully read, had not been discovered until now. It was this year's discoveries that allowed us to fully read the stamps and shed light on this issue. The stamps were found north of the fortress, in the area of the newly discovered underfloor heating system.

SESSION 2

The Roman Military Presence in Olbia Pontica

Roman Kozlenko

The discovery of new Roman forts (Numeruskastell) allows taking a fresh look at the time and events associated with the first appearance of Roman troops in the second half of 1st c. AD, and taking a new level at the debate on the fortifications existence such as Roman limes around Olbia. In the middle of 2nd c. AD, a Roman vexillation appeared in Olbia, which consisted of units of the legio I Italica, V Macedonica, XI Claudia and the Classis Flavia Moesica. A fragment of a new Latin building inscription, with a mention of the propraetor, testifies the entrance of Olbia in the end of 2nd c. AD in the province of Lower Moesia. The Roman garrison in Olbia was located until the middle of 3rd c. AD, as evidenced by Latin inscriptions in honor of the Emperor Philip the Arab, and votive tiles on behalf of the cohors I Cilicum Decianae. On the basis of discovered sites, new areas of the Roman garrison location are revealed, in the form of six barracks, which were added to the defensive wall and tower at the Lower City of Olbia. At the lateral quarter, which belonged to the Roman officer, there were found the bases of the internal columns with the name of the centurion of the legio I Italica M. Emilius Severinus. Fragments of ammunition and equipment, weapons, everyday items, religious artifacts and epigraphic finds confirm the Roman military presence in Olbia. Among cult items the terracotta in the shape of Roman soldiers and eagles are stand out. The terracotta and metal eagles represented the Roman military standards - signum militaris.

Lamps from Olbia Pontica as the possible component of the Roman military presence

Iryna Sheiko

Lighting devices, or lamps, were objects of everyday usage. They are found everywhere on the territories of necropolises, settlements and hillforts of the centres of the ancient world. Being essential items in everyday life, they serve as reliable dating material and can confirm or refute certain events in trade relations between states, and to some extent, the socio-political events that took place. Lamps of the Roman period from Olbia Pontica represent a massive category of material culture. The most interesting items are those that come from excavations at the “Lower City” of Olbia, as well as from the “Lower city of B. Farmakovskiy”, sites “I” and “IN”, which were investigated in

the 1930s and 1940s by L. M. Slavin. According to the available data, on the territory of the Lower City of Olbia the garrison of the Roman army was located. The discovered imported lamps served as everyday items for the soldiers, along with other items. The Aquila Romana image on the shields of these ceramic products is, among other materials discovered during the research of the barracks, a valuable component of the Roman military presence in Olbia Pontica in the mid-1st – mid-3rd centuries AD. The Roman lamps constitute an extremely valuable collection of wares from this period. Taking into account the wide chronological range, the mentioned lamps give an opportunity to trace the main centres of import and the share of local production of the latest stage of Olbia's existence, which is still the least studied. The share of local production of lamps of the first centuries AD, coming from the excavations of the site "Lower City" is 30%. The rest are imports from Italy, Asia Minor, Corinth and other ancient centres.

Underwater archaeological research in Olbia and its chora

Vyacheslav Gerasimov, Oleksandr Smyrnov

Underwater archaeological research in the flooded part of Olbia and its chora, in the waters of Berезан Island, Tendrovskaya Spit and Kinburn Spit. New materials from the research of the international Black Sea underwater archaeological expedition in 2017-2020 are presented.

Roman Army North of the Black Sea. The Case of Beneficiarii

Lucrețiu Bîrliba, Ana Honcu

The Roman presence north of the Black Sea is well attested through inscriptions mentioning especially vexillations of legions coming from Moesia Inferior and through military diplomas. We propose a reassessment of the role of beneficiarii attested in the region. Except for their role as military police, we can connect them to tax collection (the bilingual decree of Chersonesus could be a hint). The roads protection represents another charge of beneficiarii and we try to identify the main roads in the region in relationship with the find spots of beneficiarii inscriptions.

Board Games in Roman Chersonesos Taurica

Oksana Ruchynska

Board games were such a popular phenomenon in Roman times that they became widespread not only in Rome itself and the Roman provinces, but also in the Greek poleis of the Northern Black Sea region, where contingents of Roman troops were stationed. Chersonesos Taurica, which was

vividly described by Pliny the Elder as the most brilliant place of the western coast of Crimea, was no exception in the list of Greek poleis that came under the patronage of the Roman military machine. The findings of various elements of Roman board games are characteristic elements of the Roman lifestyle and culture, which was penetrated in the Northern Black Sea region. This research presents unpublished materials related to board games, discovered by archaeological expedition of Kharkiv University in 1963. The finding was made in the basement of a residential building, located on the territory of the 25th block in the northern district of Chersonesos Taurica. The set of gaming pieces consists of three bone counters, a bone dice, an ornamented bone plate with a hole for hanging and carving on the edges, and an astragalus. All items are kept in the Archaeological Museum of Vasil Karazin Kharkiv National University. The discovered objects, related to gaming practices, show the importance of the context of the find for their interpretation. The report also provides an introductory review of published archaeological data from the urban layers, necropolis, and citadel of Chersonesos Taurica, associated with gaming practices (counters, game boards) that require further interpretation.

About the Roman military presence in Tyras in the 2nd – middle 3rd centuries AD

Oleh Saveliev, Kateryna Savelieva

In the beginning of the 2nd century, after the Dacian wars of Emperor Trajan, the city Tyras became one of the Imperium Romanum strongholds in the region, perhaps part of it. Construction remains related to the garrison, which was located in the citadel, have been discovered here. It consisted of a vexillatio, an auxilia and a classarii, commanded by a centurion. A large number of fragments of roofing tiles with the marks of the legions I Italica, V Macedonica and XI Claudia were discovered on the territory of the citadel. Chemical analysis of the clay of some tile samples revealed their local production. Various items from the 2nd – first half of the 3rd centuries AD were found in the vexillation building, related to everyday life and military affairs. They, among other things,

characterize the equipment of the garrison soldiers. Some types of T-brooches, belt buckles, belt plates and belt ends are distinguished. Weapon details are represented by several bone scabbards of long swords (spatha). It is possible that it was with the military that mortaria with Latin stamps came to Tyras. An interesting find is a horse decoration – an openwork moon.

All finds have numerous analogues, mainly in places where military units were stationed.

Associated with the religious life of military personnel are terracotta figurines of warriors with suspended limbs, marble votive reliefs depicting a Thracian horseman, Diana, Mithra, votive slabs with Latin dedications to deities and turibulum incense burners.

In the 2nd – middle 3rd centuries Tyras politically and economically gravitated towards the Danube provinces of the Roman Empire. The Roman military presence played a significant role in this. The military contingent left the city around the middle of the 3rd century AD, during the period of the “Scythian” wars. The chronology of finds confirms this assumption.

Roman military presence in the Crimea in the epoch of Diocletian and Constantine the Great (end of III — first half of the IV centuries AD)

Oleh Vus, Serhii Sorochan

At the end of the 3rd century AD in the Crimea, the military-political situation sharply worsened. The Roman troops, which in the 250s were withdrawn from Tauric Chersonesos in connection with the breakthrough of the Goths of Kniva across the Danube, returned here again. From that moment on, the Romans were constantly in Chersonese, periodically rotating their troops. The Roman military group in the Crimea was formed from the legions of the protection of the Danube border — I Italian, V Macedonian, II Herculanian, XI Claudian; separate cohorts and cavalry units. The military presence of Rome in the Crimea especially increased during the bloody Chersonese-Bosporan wars of the first third of the 4th century AD. Chersonesos waged these wars with the full moral, political, financial and technical support of Emperor Constantine the Great, and with the direct participation of the Roman army. The Romans created an advanced bridgehead near modern Sudak, from where they launched an offensive against the Bosporans. The legion *Balistarum Seniores* and the Chersonesos militia defeated the enemy at the walls of the capital of the Bosporan kingdom; they captured Panticapaeum and a number of Bosporus fortresses, after which they served as garrison there for some time. At the beginning of the 4th century, part of the Bosporan nobility began to focus on Rome in their policy; Bosporan officials began to take the generic names of the emperors Diocletian and Maximian Herculanian, and the major cities of the Bosporan kingdom were renamed Agrippia and Caesarea. As a result of the hostilities, in the middle of the 4th century a new Roman province (the Tauro-Scythian eparchy) was formed on the peninsula. It should be noted that even in short periods of peace, the Romans were actively engaged in military engineering work, restoring old fortifications and building new ones. The main point of application of their efforts was Tauric Chersonesos. It can be stated that, written sources, epigraphic monuments and archaeological artifacts reliably testify to the direct Roman military presence in the Crimea from the 90s of the 3rd century to the 80s of the 5th century AD.

SESSION 3

A Necropolis in the Hinterland of Sinope

Zeki Mete Aksan, Hazar Kaba, Gülseren Kan Şahin

A part of an ancient necropolis was excavated by the Directorate of Sinop Archaeological Museum in 2015, within the borders of Akgüney village in Gerze district of Sinop province. The location of the necropolis is approximately at the midpoint between ancient cities of Sinope and Amisos, close to the coast of the Black Sea. In 2020 a project was undertaken to study the necropolis finds recovered from the salvage excavation of the museum. Within the scope of the project, the necropolis and grave finds were analyzed as a whole in order to understand the cultural, social and economic characteristics of the ancient settlement to which the necropolis belonged, as well as burial traditions, beliefs in the afterlife and socio-cultural characteristics of the community that lived here. For this purpose, the grave finds excavated during the salvage excavation were documented and the graves were evaluated with the finds they contained. Available data point to a continuous usage of the necropolis during the Roman and Byzantine periods and some interpretations could be made about the burial customs and socio-economical level of the people who lived in this region. Archaeological studies on Sinope and its hinterland have been carried out in different areas for many years, especially concentrating on west and south of Sinope, which revealed important results that provide information about the historical past of the ancient city. This work sheds light on the understanding of a newly found necropolis, possibly belonging to a hinterland settlement southeast of Sinope. The evaluation of the graves and finds of the Akgüney necropolis will surely contribute to past researches and enable us to understand the relationship of Sinope with its hinterland and the rural settlements in its immediate vicinity.

The Sword Building at Komana and Roman Military Presence in Pontos in the 3rd century CE

Deniz Burcu Erciyas

Komana is located in north-central Anatolia, Pontos region. The archaeological ruins indicate a position in the fertile plain of Dazimonitis with a central mound next to the river Iris, and an extensive settlement spread across the plain. The excavations at the mound (Hamamtepe) revealed a multi-layered settlement dating from the Late Chalcolithic through the Ottoman periods. Recently,

Roman levels have been reached underneath the Middle Byzantine cemetery. These levels represent Roman period settlement at the site from at least the 2nd through the 5th centuries CE with very complex and intensive building activity. In this paper, part of a domestic building with phenomenal finds from a secure context, due to a severe fire, will be discussed. In this building, remains of military equipment (mostly weaponry) and personal belongings of a high ranking soldier were found. Based on the coins from a hoard of at least 54 coins, the context can already be assigned a provisional and approximate date of around the late 250s or 260s, sometime in the reigns of Valerian or his son Gallienus. The fate of Komana amidst the '3rd century' crisis is not clear, because there is no written or archaeological evidence. While Komana assumed an urban character already in the 1st century CE, the settlement must have had a continuing rural character with its extensive farmlands spreading across the Dazimonitis valley. Assigning a military character to the site with this limited evidence is not viable for now especially when the coins rather represent an assemblage worthy of a provincial town. It was previously suggested that this house belonged to a military official appointed to collect taxes or impose order at Komana, a widespread phenomenon of the 3rd century. This idea will be revisited in the context of this paper in order to contribute to our understanding of the impact of the Roman army in Pontos.

Remote Sensing and Roman Forts in the Upper Khabur Tributary System: Exploring a Conflict Landscape beyond the Euphrates towards Persia

Edward Dandrow, Julia M. Koch

The Euphrates River and Edessa bounded geographically by the Tek Tek Mountains in the west, Viranşehir (ancient Tella/Constantina) in the north, Kayalı Deresi in the east, and Ceylanpınar (ancient Rhesaena/Theodosopolis) in the south. This area is the northern watershed of the Khabur River or the Upper Khabur Tributary System (UKTS), located in the heart of the Roman province of Osroene. We selected the UKTS both for its historical significance as a conflict landscape in the Roman-Parthian Wars during the reign of Traian and Septimius Severus, the Sasanian Wars with the siege of Edessa by Shapur I and the capture of Valerian in 260 A.D. as well as during the Sasanian and Umayyad invasions in the 7th century, and to fill a significant gap in scholarly knowledge of Rome's frontier organization and territorial administration in this region. Relying on satellite imaging, we identified two (2) large, rectangular "playing-card-shaped" and four (4) small square forts, and a watch tower. Nearly two dozen other sites require further investigation. Besides describing our discoveries, we synthesize them with those of surveys and excavations of Roman fortifications in the east from Tur `Abdin to the Tigris River, along the Jaghjagh River, and south along the Khabur River in Syria in order to further clarify our understanding of the depth of Roman frontier defenses in Osroene and Mesopotamia

Garrisons of the Upper Euphrates area and the Parthian campaigns of the 2nd century CE: the epigraphical perspective

Viktor Humennyi

The epigraphical survey of the Roman-period sites of the Upper Euphrates area which to this day remains a problematic zone for the work of scholars can us help understand the main reasons and forms of Roman military activity that shaped the region in the 1st-2nd c. CE. The administrative and military activities in the East carried out by the rulers of the Flavian dynasty were one of the key points in the modification of the Roman frontier in the area. The transformations that Vespasian and his successors carried out in the East of the Roman Empire, including the Upper Euphrates zone, still cause significant interest and they were fully used by the Emperors of the Antonine dynasty during their military campaigns in the East against Parthia. The campaigns themselves besides their political impact transformed the system of garrisons which formed the core of Roman Limes of the Upper Euphrates. The paper will focus on the question of how the inscriptions left by the Roman military units that served on the Upper Euphrates reflect the different events and the course of the Antonine-period Parthian campaigns in the East along with the question of how the functions of the garrisons situated in the area were connected both with the events of Roman foreign policy in the East and the connections between the Roman army and the local populations of the area. The main attention will be given to the inscriptions of the private and official characters left by the Roman military units and garrisons, and the problems of the impact of the service in the Roman army as a factor of political, religious, and cultural interaction with the local populations and between the units of different origins themselves.

After 387 AD: Psychological Boundaries between Roman Armenia and Persarmenia

İlhami Tekin Cinemre

The Romans and the Sassanids, after prolonged conflicts, divided Armenia into two parts in 387. Although both Roman and Armenian sources provide information about this division, it has never been clear how the new boundary was drawn or whether it actually existed. Moreover, the strong influence of the feudal structure in Armenia deepens the question of the extent to which a feasible border was possible. This study aims to discuss whether the boundary established in 387 is authentic or merely psychological.

From archive to field: New archaeological evidence from the Cappadocian Frontier in Late Antique and Early Byzantine periods

Kerim Altuğ

Roman intervention in the Upper Euphrates Valley revealed with the expansion of the Mithridatic Wars towards Eastern Anatolia. According to textual sources such as Plinius, the first attested construction activities in the area were carried out under the reign of Emperor Claudius. From the moment they arrived, the legions in Satala and Melitene needed a system of roads and bridges across the border to connect the forts. A strategic road network enabled rapid movement of troops and supplies across the Cappadocian Frontier. The remains of two massive abutments of a Roman bridge built with large ashlar blocks over the Kozluk Çayı near Arapgir can be considered among the construction activities of the same period. From this time onward, military facilities were built around the surveyed area, which includes Ağın, Kemaliye and Arapgir in order to strengthen the defense system along the Euphrates River. Substantial military activity along the Cappadocian Frontier was suggested by the limited archaeological excavations such as small fort at Pağnik Öreni and other rescue excavations were conducted before the construction of the Keban Dam between the years 1966 and 1974. According to the reports, there was no material revealed after the end of the 4th century. During the centuries-long struggle between Roman and Persian Empires, the 6th century marks a turning point in the construction activities on the Upper Euphrates basin. At this period, taking advantage of the treaty signed with Sassanian Empire, Justinian decided the rebuild fortifications and roads that were in state of disrepair all along the eastern frontier zone. The results of recent study reveal that Justinian's construction program was also expanded to include some rural settlements. This contribution to the session focuses on the military installations and rural settlements including defended sites identified in the neighboring countryside of Melitene. It aims to review known sites along the Cappadocian Frontier with previously undocumented archaeological evidence.

Roman Expansionist Efforts, Resettlement and Pontic Responses – Negotiating Collective Cultural Identity and Lost Homelands in Northern Anatolian Funerary Art.

Julia M. Koch

During the Mithridatic Wars (89–63 BC) the southern Black Sea region and western Anatolia became the central theatre of war, resulting in Roman capture, displacement, and resettlement of conquered peoples. Following the Roman victory, a chain of Roman cities was founded in the heartland of the former Pontic Kingdom by Pompey (e.g., Pompeiopolis and Zela). Later, after his victory over Pharnakes II, son of Mithradates, at the Battle of Zela in 47 BC, Julius Caesar estab-

lished a Roman colony at Sinope in 46/5 BC. While forced migration, local rebellion and resistance are rarely addressed in Roman writings, commemorative performances and traditional funerary practices of translocated people can be traced in provincial material culture. In Pompeiopolis a uniformly designed group of funerary steles set up as early as the Augustan period likely offers a collective response to Roman resettlement policies in the Black Sea region as this group of anthemion steles is only locally distributed in the southern Pontos, whereas its paragons are to be found in north Pontic necropoleis. This paper aims to focus on the theatres of war in the 1st cent. BC Black Sea region and presents a set of grave monuments from the circum-Pontic World dating to the 1st cent. BC and 1st cent. AD that enables us to approach the social agency of Pontic funerary art to communicate both group identity and cultural memory of lost homelands in the hinterland of the Pontic frontier by applying the diaspora model.

A New Military Settlement in the Territory of Nisibis: Castellum of Hirbereşk and It's Connection With Tur Abdin

Ramazan Bozkurttan

This archaeological study examines a recently discovered military settlement that connects the Jaghjagh Valley to ancient Nisibis. Utilizing remote sensing techniques and surveying methods, we have identified a square-planned building complex situated on a hill approximately 12 kilometers north of Nisibis (Nusaybin). Our primary research objective focuses on understanding the role of Roman-period military installations in shaping the historical landscape of ancient Nisibis and the Tur Abdin region, particularly within the broader context of the Limes --the fortified border of the Roman Empire. The square-shaped edifice, measuring 75x70 meters and primarily constructed with rubble stones, offers commanding views of Nisibis (Nusaybin) to the south, as well as the adjacent regions to the east and west. Subsequent field surveys and drone photography have unveiled a series of meticulously arranged interconnected rooms within the complex, each measuring approximately 5 x 6 meters. Our study sheds light on the nature of military infrastructure and strategic positioning within the Nisibis (Nusaybin) region, providing valuable insights into ancient defense structures. Furthermore, it addresses the understudied region beyond the Euphrates, contributing significantly to our broader understanding of the Roman frontier.

A first Evaluation of the Data From Hadrianopolis' Inner Castle

Ersin Çelikbaş

Hadrianopolis is located 3 km west of Eskipazar district center in Karabük province, in the area called "Viranşehir". The first scientific excavations were started in 2003 and the excavations continue today. As a result of the excavations, a total of 11 structures were unearthed. One of these structures is the inner castle. The inner castle is located at the center of the city. Its excavation was started in 2021 and excavations continue. The total wall length of the inner fortress is around 400 meters. As a result of the excavations carried out so far, the eastern wall of the castle has been completely uncovered. The eastern wall of the castle is approximately 120 m long. The eastern wall of the castle was supported by a total of 8 bastions. An entrance of the inner castle was uncovered on the eastern wall. The eastern gate of the castle is protected by two towers. Excavations were also carried out inside the castle and very important structures were unearthed. Among the structures unearthed, especially the remains of the square structure provided very important data. Many military weapons and tools were discovered during the excavations in the square structure. Among the military weapons and tools, finds such as mask, armor, arrowheads, spearheads and battle axes are important. The most important military accessory is undoubtedly the mask. The mask made of iron is an accessory used by senior officers. It is frequently seen on cavalymen in the Roman army. The fact that the mask was found in Hadrianopolis also indicates the presence of mounted troops in Hadrianopolis. The most important reason why Rome built a comprehensive castle in Hadrianopolis is undoubtedly the fact that Hadrianopolis was an important trade center. Hadrianopolis is located on a trade route connecting the Black Sea to Istanbul. Due to its geopolitical position, it has always been an important trade city. An inscription indicating that Hadrianopolis was an important trade center in the 2nd century AD was found. All these data show the reason for the existence of the inner castle in Hadrianopolis. Architectural remains and small finds unearthed during the excavations of the inner castle indicate that the castle was burned in the 7th century AD. Moreover, an inscription recovered during the excavations mentions that the castle underwent a major renovation in the 7th century AD. In this study, the first data obtained from the excavations of the castle of Hadrianopolis will be shared.

Excavations at Kurul Fortress and Archaeological Evidence for the Historicity of the Roman Invasions of Southern Pontus

S. Yücel Şenyurt

The excavations carried out since 2010 at Kurul Fortress, located on the coast of Ordu province in the Eastern Black Sea region of Türkiye, have revealed important evidence that have shed light on

the Roman invasions in the Anatolian Pontus region. Many archaeological finds and architectural remains unearthed during the excavations have shown that a rocky cult site date back to the beginning of the 2nd century BC was transformed into a stronghold by Mithradates VI in the early 1st century BC. With an altitude of 571 m above sea level and a commanding position overlooking the vast geography, Kurul Fortress seems to be one of the 75 castles said to have been founded by Mithradates VI against the Roman invasions in Strabo's Geographica. The numerous finds of weapons of Roman and the indigenous people of the region found under the heavily burnt layers of collapsed walls witnesses the severe attacks of Roman and the occupation of fortress at the end. Some renovated and unfinished walls, some additional walls and cancelled door entries along with a thick ash layer under the final settlement floors demonstrate the phases of Roman attacks. The cultic materials belonging to Cybele and Dionysos rituals were found in-situ during the long term excavations at Kurul strongly represents the continuity of its religious significance even after it was placed in a military and administrative position. Together with countless coins of Mithradates VI and the other archaeological remains and finds from solid contexts of Kurul excavations offers the historicity of the end of the Mithridatic Kingdom and Roman advent in southern Pontic Area.

Satala: New Excavations and Research on the Eastern Limes of the Roman Empire *Şahin Yıldırım, Bernard van Daele*

Northeast Anatolia is a secluded region in terms of ancient settlements and civilizations. Unlike other ancient sites in Anatolia, it has been the subject of very few archaeological studies. Contrary to the Greek colonial cities that emerged on the coasts in the 7th Century BC, local tribes, which we know from the Anabasis of Xenophon, live in the interior regions. In the Roman period, the road called as Via Militaris, starting from Trapezos and extending towards the inner regions, leads to Satala, one of the legion cities protecting the eastern border of Roman Empire. The border of the Roman Empire was determined as the Euphrates river against the Parthians and Sassanids. Rome established four legion fortresses in the cities of Satala, Melitene, Samosata and Zeugma along the Euphrates border line in Anatolia from north to south. The first legion sent to Satala by Emperor Vespasian was the Legio XVI Flavia Firma. Legio XVI Flavia Firma was sent to Samosata by Emperor Trajan or Hadrian, and was instead permanently stationed in Legio XV Apollinaris in Satala. Scientific archaeological excavations in Satala started in 2017. During the excavations, the walls of the legion castle dated to the Roman period and the remains of military structures dated to the Late Roman and Early Byzantine were unearthed. In addition to these, various structures such as a large church dated to the Byzantine Period and the remains of a bath dated to the Ottoman Period are among the works that can be seen in the city.

The extent and mechanisms of Roman power in the upper Euphrates region during the Principate

Kai Juntunen

The extent of Rome's direct and indirect control of the upper Euphrates region south of the Pontic Alps is still largely unknown. This study attempts to provide some light to the issue by providing a topographical exploration of the valley system south of the Pontic Alps between Satala and Apsarus, and combine these physical elements of nature, that functioned either as barriers or conduits of movement, with the known events during the first and second centuries. The role of the Armenian cantons adjacent to the directly ruled Roman territories is explored, as is the question whether the lords of these cantons ended up having client-type obligations to both the Roman emperor and the Armenian king, or whether they occasionally chose to co-operate with the Romans (as the Romans were the greater power effecting their territories), while officially remaining affiliated with the Armenian kingdom. The emerging image attempts to clarify whether the Roman interference in the regions east of the principle Roman military road running from Trapezus via Satala towards Melitene during the Principate was gradual, or whether it occurred in more abruptly, eventually culminating in the annexation of the region surrounded by Sophene, Cappadocia, Pontus and Armenia proper, by the fourth century (formalized in the treaty of 387 CE).

Preserving the Anatolian Frontier of the Roman Empire: Conservation Challenges and Remarks for a Holistic Conservation Approach

Özge Deniz Toköz, Tonguç Akış

The long forgotten Anatolian frontier of the Roman Empire was essential for Romans to defend against an equal enemy, the Persians. Due to the dams built in the region since the 1960s, the Anatolian frontier heritage has been endangered, but rescue efforts also have started on this occasion. Today, in addition to research on the Anatolian frontier, on which our knowledge is still very limited compared to other frontier sections, it is also necessary to take urgent protection measures against many problems that threaten its components in various ways. This study explores the multifaceted approach required to protect the Frontiers of the Roman Empire in Anatolia through examining its historical significance and the conservation challenges it faces today. These difficulties include primarily the dams in the region that increase due to energy policies, and also complex legal and administrative issues regarding the archaeological heritage in rural areas in Turkey, administrative and ownership regulations, security, urban development, agricultural activities, the Anatolian frontiers being the least researched frontier section, and lack of public awareness. The paper emphasizes the importance of the excavations that have recently begun and continue to reveal

XXVI LIMES CONGRESS BATUMI 2024

8.-14. SEPTEMBER 2024

the eastern frontier heritage of the Roman Empire in Anatolia. The individual restoration works of governmental authorities are also mentioned. In light of a discussion on diverse conservation issues, the presentation will conclusively propose an integration of some recommendations in international conservation conventions in reference to best practices while highlighting the need for collaborative efforts and community engagement. Balanced policies for economic development, sustainable tourism, and conservation are recommended. Finally, interdisciplinary approaches for conservation are discussed to holistically address the complex challenges faced in the archaeological rural landscape of the Roman Frontier in Anatolia.

SESSION 4

Cultural and Religious Interrelations Along the Roman Limes in Algeria: Archaeological and Epigraphic Evidences

Paola Zanovello; Andrea Meleri

The recomposition of cultural contexts in areas where indigenous communities and subsequent significant contributions from external civilizations overlap is a complex and challenging task. North Africa, a vast territory, witnessed the convergence of Phoenician-Punic, Greek, and Roman influences during various phases of antiquity, marked by frequent interactions and systematic occupations across different regions. The focus of this contribution concerns the territory of present-day Algeria, in Roman times included between the provinces of Mauretania Caesariensis, Numidia and Africa Proconsularis. The area reveals a notable concentration of evidence concerning the presence of Isiac and oriental cults, primarily associated with the substantial military presence in sites like Lambesi, Timgad, or Aquae Flavianae. There are however significant instances of the integration of these foreign cults within indigenous communities, particularly at the private level. While existing knowledge often remains fragmented and incomplete, especially in terms of graphic and iconographic documentation, a more accurate analysis of numerous bibliographic sources—mainly from the late 19th and 20th centuries—enables a comprehensive reconstruction and better understanding of the diffusion and persistence of oriental cults in a profoundly Romanized territory. These explorations also unveil an intricate “stratification” of local pantheons, revealing subtle nuances of cultural hybridity, assimilation, and syncretism within the region’s complex religious landscape.

Eastern Libya: limes or buffer zone?

Oliva Menozzi; Eugenio Di Valerio

The Limes in Eastern Libya, which was the ancient Cyrenaica (modern Djebel Akhfar), is completely different from the Roman Limes in North Africa, both for historical, cultural and geomorphological reasons. The area which is indicated as Limes, and its commercial and agricultural vocations characterize a wide and osmotic buffer zone, acting more as a vivacious and polyhedric belt of interconnections, both military, economic, cultural and tribal. The archaeological sites in this wide buffer zone are rich, monumental and also quite peculiar in term of pseudo-urban organization and

cultural hybridization. Moreover, the road network along the limes Cyrenaicus is very interesting, because it is not simply characterized by a single main road running parallel to the coast, but by two, and in some section even three, main roads connecting the region east/west direction and following different geomorphological features of the region. These main ancient and modern 'high ways' were in ancient times reached and crossed by several south-north paths, which were important both for their military role, for their origins and for their trades. The aim of the paper is to illustrate this specific context, its sites, both military and commercial, and its feature as ancient, as well as modern, buffer zone.

Wilderness in the Roman World: reconstructing ecological and social perspectives of wildlife in the Balkan's hinterland of the Limes

Sonja Vuković, Teodora Radišić, Dimitrije Marković, Zorić Bojana, Alexander Michelle

Although human societies started to impact the wilderness significantly since the beginning of the Holocene (c. 11.700 BP), profound environmental changes became more prominent with the impact of Roman economic activity. It worsens in the centuries to come, while in the present era, with the problems of climate change and biodiversity loss, we are witnesses of immeasurable consequences of anthropogenic impact on Nature. The modern environmental issues are contemporary problems, but as they are rooted in our distant past, the understanding of their causes impacts modern conservational efforts. The Balkans are considered one of the important European biodiversity hotspots, both historically and recently, and therefore the studies of the history of anthropogenic impact on its environment are relevant for nature conservation. Through the acquisition of the Balkans, the Roman army established the forts along the Danube, and consequently, it brought the emergence of large civilian and rural settlements and the spreading of the arable lands. Intensification of agricultural production, and animal husbandry, together with other economic activities (e.g. mining, metallurgy) must have brought to intense deforestation and the destruction of habitats of the wildlife. However, the wilderness persisted in the hinterland of the settlements and forts, and wildlife remains in archaeofaunal collections represent part of the evidence of its existence. This paper aims to reconstruct the ecology of wild animals, and their interactions with societies within the Danube Limes in the Central Balkans. By bringing together archaeozoological finds of wildlife from the pre-Roman, as well as the Roman military and civilian sites (e.g. Viminacium, Diana – Karataš), and signature of the stable isotopes in bones related to the animal diet, we will give insights into the landscape and environmental changes brought by Roman acquisition in the Central Balkans, while we will also tackle the economic and cultural significance of wild beasts for those societies.

Buffer zones as a potential tool for politics and war **Krzysztof Narloch**

The concept of buffer zones as a space of separation of two or more potentially hostile entities has recently become one of the dominant issues in discussions about the modern world.

Specialists have already used it many times to reconstruct the history of the Romans especially when describing the relationship of the two great powers, Rome and Persia, and the client states created between them, the so-called buffer states.

Buffer zones can be adapted to the study of phenomena on a much smaller scale, which often involve political as well as military actions on an operational or strategic scale. Unfortunately, they are often poorly attested archaeologically; the absence of settlement does not automatically make an area a buffer zone. Therefore, we often have to depend on allusive mentions by Roman authors.

Study on the Problems and Role of World Heritage Buffer Zones in the Perspective of Urban Development-- Case study on Small Wild Goose Pagoda Site

Zhang Jingqiu

The heritage buffer zone is an essential element of a World Heritage nomination. It is not only an area of geographic space, but also a method to protect the authenticity and integrity of World Heritage properties, as well as to manage World Heritage properties, taking into account the dual responsibilities of conservation and managing development. The buffer zone is a transitional area that connects the heritage core with the “outer” city to harmonize community change and heritage conservation. As one of the sites in the “Silk Road: the routes network of Chang’an-Tianshan Corridor” World Heritage Site, the Small Wild Goose Pagoda is located in the city of Xi’an, and its buffer zone has a large area, irregular boundaries, and a complex composition of communities. With the accelerated development of urban construction in Xi’an, the buffer zone of the Small Wild Goose Pagoda heritage site is facing increasing conservation pressure. Therefore, the protection and management of the buffer zone and the sustainable development of heritage in urban development, as well as how to maintain the integrity of the heritage community composition and other aspects of the heritage buffer zone has brought new research problems. The role of heritage buffer zones includes protecting the value, authenticity and integrity of heritage from damage, balancing the sustainable development of heritage and urban development, and ensuring the implementation of buffer zone conservation management measures, and integrating and coordinating the development of heritage, community and city.

Geomorphology and landscape of Limes

Silvano Agostini

The geological, geomorphological aspects and cultural landscapes crossed and characterized by the Roman Limes are described.

Their different perception is determined today by the degree of conservation of their geomorphological context and by the climatic and anthropic changes that determine it.

Cross Border Identity: Demarcation through Music as a Universal Language?

Friederike T. Kranig

This contribution is a play of thoughts focusing on some characteristic traits of music as both an intra- and interculturally unifying, but at the same time demarcating element in a buffer zone, exemplified by West Syrian Orthodox Christians in Tur Abdin (modern Turkey). The starting point for these considerations is the ethnomusicological field study carried out as part of my doctoral thesis on the possibilities of acoustic staging in late antiquity by using examples such as the monasteries Deyrul Zafaran, Mor Gabriel and Mor Augin. Since Roman times the area around Tur Abdin is stage for national, ethnic and religious conflicts. Constantly changing claims to power have turned the area into a melting pot of different cultures. Even today, Tur Abdin is “something in between”; a buffer zone between Turks and Kurds, between Muslims and Christians, within spitting distance to the Turkish borderline to Syria and Iraq. As part of my presentation, first I would like to discuss the consciousness of tradition used by different groups within this buffer zone as a means of self-legitimation. Living together in a narrow and self-contained space over centuries inevitably entails a cultural intermixture. Even today the resulting desire for independence and demarcation between one group and another is still expressed in many ways; among others, also as to the utilisation of music, the significance of which will be the main focus of my remarks. Despite its universal comprehensibility, music may be used as an identity-forming medium generating a sense of belonging within each group. The significance of music as a research topic for the archaeology of Late Antiquity will be highlighted discussing various possibilities for acoustic staging and their impact on the Christian community. Moreover, this is an attempt to make the commonalities of this cultural world visible and accessible despite its inner demarcations.

The Horns of the Earth, a cultural interface between Egypt and Sudan through the centuries

Francesco Tiradritti

The Egyptians conceived the country on which they lived as a giant cow lying with its head towards south and therefore called the southern borders the “Horns of the Earth”. The natural limit was set in correspondence of the Nile First Cataract where lay the town of Elephantine, a centre of commercial, religious, and cultural exchanges, whose multi-ethnicity is demonstrated by countless archaeological finds. Based on this assumption, Egyptology has placed there its southern limit of competence since its beginnings, recognizing in Nubia, the region south of Aswan, specific characteristics different from those of Egypt. The incorrectness of such an attitude is shown by the fact that for centuries the southern cultures are characterised by Egyptian artefacts and that several signs of the seminomadic populations who lived in the area comprised between the First and the Third Cataracts are found also as north as Gebelein (60 km south of Luxor). In recent times, with the disappearance of colonialist ideology and the revaluation of ethnic groups and cultures different from Western’s, a new consideration of the large region that includes southern Egypt and northern Sudan surfaced. According to that they are nowadays studied as a homogeneous territory and specific characteristics are attributed to the Nubians who inhabit it. The change in attitude was concretized by the opening of the Museum of Nubian Civilization in Aswan, on 23 November 1997, that was also intended as a sort of compensation for the people who once lived in the area now submerged by the waters of Lake Nasser and who were forcibly transferred to southern Egypt and other locations. This intervention intends to investigate the ethnic and cultural identity of this region over the centuries, through the analysis of some of the archaeological discoveries that have occurred in the last thirty years.

Internal buffer zone, policing, logistics? A Domitianic reconstruction of a fort in Dalmatia and its role in a pacified province

Mirko Rašić, Tomasz Dziurdzik

The Roman garrison of the province of Dalmatia was gradually reduced in strength over time, from two legions and a number of auxiliary units stationed in a chain of fortifications to a small force. This reflected changes within the pacified province, but also strategic needs of the Empire, as the departure of some units from Dalmatia can easily be linked to wars that happened in other regions. Less obvious, though, is the rationale behind the choice of which military installations in the province remained in use. One such fort, located in Gracine (Bosnia and Herzegovina), has been the subject of new research for the past few years. Among the findings is an important inscription, most

probably commemorating some reconstruction works in the fort early in the reign of Domitian. We will discuss the new discoveries as well as try to find an answer to why the fort remained in use: was it still holding a buffer zone between the coastal city of Naron and the interior of the province, or were its roles already changing?

A buffer “border” in North Africa: the oasis chain. Literary and epigraphic evidences
Stefano Struffolino; Maria Giorgia Di Antonio

Going beyond the approach of the school that wants to deny or greatly reduce the importance of land routes in ancient Africa, we want to bring attention to those literary and epigraphical evidences which, starting from Herodotean tale, testify to an ever-increasing knowledge and use of the trans-Saharan routes and of the oases as nodal points of an economical, defensive and cultural network between different areas of influence. A shared and permeable demarcation line that from Siwa reaches the territory of the Garamantes, passing through Giarabub, Bu-Njem, Zallah, covering the entire Libyan hinterland and connecting the more internal areas with the coastal cities, also directly influencing the strengthening of longitudinal paths. Old and new epigraphic documents (such as the ostraka from Bu-Njem) tell us of strategic outposts in which the peculiarities of a coexistence of cultures and the evidence of increasingly complex environmental adaptation systems seem to prevail in everyday life over purely military purposes. In conclusion will be presented by Maria Giorgia Di Antonio the data - including the most recent ones - relating to the archaeological, funerary and anthropic context of the Giarabub oasis, a center whose ancient history still awaits to be fully studied and understood, as well as its plausible relationship with the nearby Siwa and its religious center.

SESSION 5

Managing pastoralist migration in the Numidian frontier zone during the 2nd -5th centuries CE

Alan Rushworth

This paper discusses several pieces of evidence which illuminate the aims and methods of the imperial authorities in managing pastoralist seasonal migration in North Africa and in particular along a section of the frontier in western Numidia (present-day east-central Algeria). The discussion focuses on two stretches of linear barrier in this area which were identified and studied by Stephane Gsell, Julien Guey and most notably, Jean Baradez during the early to mid-20th century - namely the roughly east-west orientated, ditched and embanked barrier to the south of the fort of Gemellae, known locally as the Seguia Bent el-Krass, and the barrier further north extending roughly north-south between the forts of Tubunae (Tobna) and Mesarfelta. By analysing the evidence collected by this earlier fieldwork, relating to the positioning of barriers, the location of particular concentrations of military installations and the information provided by inscriptions, we can gain a more detailed understanding of the precise functioning of the barriers and associated structures, and the role they played in frontier management along the Numidian limes during the long period between the 2nd and early 5th centuries.

Preliminary results of the first excavation campaign of an unknown antique fort at Maghair Shuyab (Al-Bad, Saudi Arabia)

Brahim M'Barek, Pierre Simeon; Jamal Omar, Guillaume Charloux

A recent survey of the Al-Bad oasis, now in north-eastern Saudi Arabia, revealed the presence of a previously unknown ancient fort. Initial evidence indicated that it dated back to the Nabataean and possibly Roman periods. As part of the cultural development programme linked to the Neom project, Eveha International was commissioned to carry out an archaeological survey in autumn 2023 to verify the archaeological potential of the site. Over a period of 7 weeks, the work provided an initial insight into this ancient fortification. The latter is located on a caravan route, where the Wādī 'Afāl, emerges from a gorge on the Lisan Basin opening onto the Red Sea to the south. This post was intended to control a portion of one of the incense routes, between Aila and Aynuna (Leukè Komê?). The fort is located below Jebel Musalla, where one of the main necropolises of the oasis is located,

with dozens of Nabataean tombs, on the fringes of the urban settlement area, immediately to the east. The aim of this publication is to present the initial results of this study, which have led to a number of hypotheses being put forward concerning the location of the fort, between the ancient town and the necropolis, its typology and dimensions, as well as the components of the fortification itself, its internal organisation and certain neighboring features. Finally, we can put forward an initial proposal for a chronology. This study involved not only stratigraphic investigations, but also geophysical and geomorphological observations, as well as various other analyses.

Byzantine fortifications in Africa Zeugitana in the context of The Moorish Wars

Jan Baxter

The following paper examines the significance and effectiveness of Byzantine fortifications in Africa Zeugitana during the turbulent period known as the Moorish Wars (533-548). The province of Africa Zeugitana was one of the key areas of this conflict, and thus, Byzantine fortifications played a crucial role in maintaining stability and Byzantine control in the region. This study focuses on several case studies (including: Uchi Maius, Mactaris), which serve to examine the strategic importance of these fortifications. The analysis uses interdisciplinary tools, combining the study of material culture, particularly architectural remains and plans, with contemporary, late antique historical sources. The aim is to identify distinct features of individual fortresses and to compare their plans and locations, assessing how these elements affected their effectiveness against a unique opponent such as the Moors. The work outlines the military, economic and political impact that the presence of fortifications had on the region, notably, their role in maintaining Byzantine presence and control over African Zeugitana as well as in protecting regional trade routes and contributing to the stability of the African provinces. Lastly, the symbolic role of fortifications, as visual manifestations of Byzantine authority is also considered. In conclusion, this paper sheds light on the important role played by Byzantine fortifications in Africa Zeugitana during the Moorish wars. Far from being merely defensive structures, these fortifications served as anchors of the Byzantine state, facilitating commercial activity and stability in the time of crisis. They are symbols of Byzantine resilience in a frontier region of the empire.

Routes, water, borders – a comparison of the infrastructure of the Roman and Byzantine borderlines in Syria and Aegyptus/Cyrenaica

Anna-Katharina Rieger

Landscape and climate are the natural factors determining how borders and the military control of the area can work. Peaceful or hostile political entities and the economic relations with them rep-

resent the human factor in establishing and maintaining a border. This is true also for the Roman/ Byzantine border in the MENA-region in late antiquity. The paper will first shed light on the role which life-strategies, economic relations as well as religion played in two zones - the Middle East and Eastern North Africa - played in the formation and up-keeping of the border of the Roman and Byzantine Empire. Since the political and military impact on the Eastern and Southern border differ immensely, the paper will examine and juxtapose the solutions the same administration found in the two environmentally sensitive regions against the backdrop of the autochthonous ways of utilising them.

The Western Desert Section of the Limes Aegyptiacus: A Swiss Cheese Defensive Model *Victor Ghica*

The paper has three objectives. First, it will discuss the contour of the limes Aegyptiacus in the Libyan Desert, trying to demonstrate that in this area the limes is a porous frontier of sorts, but not a border. Second, the paper surveys other stretches of the limes in North Africa and the Levant that display similar defensive models. Finally, an overview of the military administration of this frontier will be provided, dwelling on lesser-known outposts and particularly on the routes connecting the Nile Valley with various other parts of the Libyan Desert.

Periphery under pressure - models of rural economies in southern Jordan in the 6th-8th centuries AD

Tomasz Waliszewski

In a region stretching from the Gulf of Aqaba in the south to Wadi el-Hesa and Wadi Mujib in the north, we wanted to see a land struggling to function on the border between farmland and desert, in a zone that was periodically a heavily militarised area due to its strategic location. The discoveries of the past two decades prompt us to look more broadly at such an interpretation. This presentation will focus on the analysis of the evidence related to the various manifestations of the rural economy during the sensitive period between the decline of the Roman East and the birth of the Islamic Bilad al-Sham, between the 6th and 8th centuries AD. The examples collected will be used to propose models for the functioning of these economies in close relation to examples from similar geographical zones in southern Palestine and Syrian areas. Some of them functioned in relation to military installations or in spaces left by the army.

SESSION 6

Roman imports and Germanic elites - a case study in the settlement Vrbová Lhota (Central Bohemia)

Zdenek Benes, Viktoria Čistáková

The region of the basin of the river Výrovka, a left-bank tributary of the Elbe river on the border of the districts of Kolín and Nymburk during the Roman Period represents an extraordinary concentration of funerary sites of particular European importance (Dobřichov-Pičhora, Dobřichov-Třebická). So far the appertained settlements are an unexploited source of knowledge about the development of these key region in Bohemia during the Roman Period. In recent years, the assemblage from the Vrbová Lhota site stands out among the other settlement sites from the 3rd century AD. The collection of the finds is characterized by a high amount of metal finds, among which the Roman imports stand out: parts of the bronze vessels, bells, fibulas, fittings and bronze anthropomorphic statue. From the site are also known numerous indicators of non-ferrous metalworking activities - these are often interpreted as one of the evidence of the presence of elites who were suppliers of raw materials of Roman origin, but also customers of the finale products. Another evidence of the presence of local elites is rich collection of bronze, silver and gold coins, dated to the 2nd up to the second half of the 3rd century AD. The paper will also focus of the non-ferrous metalworking activities as from the site are known numerous indicator of these activities as slugs, semi-products, cast waste and bronze/copper sheets. One of the most important part of these collection are intentionally broken artefacts and partly melted roman bronze vessels - non-ferrous scrap, that was reused for local production. The assemblage from Vrbová Lhota settlement is dated to the 3rd century AD and documents a close relationship between local barbarian elites and Roman world, that is reflected in multiply imports of not just luxury goods but also non-ferrous scrap.

Between Byzantine and Sasanian Empires? The 'Lakada limes' in Northern Colchis in Late Antiquity (5th-8th c.)

Annegret Plontke-Lüning; Frank Schleicher

In 2010 a huge fortress in Lesale in Northwest Georgia, emerged to the scientific world. The complex is one of the largest fortifications in western Georgia. Building structure and techniques of the

remaining walls point to a dating to 5th-6th c. AD and suggest the construction in context with the Byzantine-Sasanian wars in Lazica and/or the following dispute over Svaneti. Although Byzantine sources mention several fortresses in the mountains north of Lazica today it is not possible to identify the Lesale fortress with one of them. The excavation of one 'tower' on the south-western spur of the hill yielded an unexpectedly large structure (8x9m). According to radiocarbon dating, the destruction of this building by fire took place between 666 and 778. For 735-737, the Georgian Chronicles records an invasion of Georgia by Marwan ibn Muhammad with a siege of the fortress of Anakopia in present-day Abkhazia. The destruction horizon could be an indication of Murvan's devastating move, which is now considered unhistorical by scholars. About one kilometre east of the large fortress, on a hilltop, is a small medieval castle. On the eastern hillslope farmers unearthed bronze items and jewellery from 8th c. BC to 3/4th c. AD which point to a long-lasting necropolis. According to our assumption, the fortifications protected a travel route that led from Phasis via Lesale and Savaneti to North Caucasia. We carried out a "trail search" along the presumed ancient route, assuming that travellers in ancient times used the same routes as transhumant farmers still do today. Our landscape archaeological survey revealed a line of defensive fortifications at the foot of the mountains which obviously were used in a longer period and illustrate the significance of the region. The assumption suggests itself that we are dealing with a Limes installation here, which was intended to protect the Colchian lowlands from incursions from the mountains. We have geographically located numerous of these installations, to design a map of the entire fortification system.

Violence on the edge of empire: Case studies from beyond the Danube

Susanne Hakenbeck

In this paper I present snapshots from my forthcoming monograph *The Danube in Late Antiquity*. In it I explore the role of Europe's greatest river in the later centuries of the Roman Empire in the West (150–500 CE). As a socio-natural locus, the Danube was at times a lived space, frontier and transport route, and sometimes all three. The book investigates the lived experiences of the people along the river, through their material world, environmental settings and relationships with the Roman world.

In this paper I will contrast two borderlands of the Roman empire: the area north of the middle Danube (modern Moravia, Czech Republic) that was ravaged by the Roman army during the Marcomannic Wars in the late second century CE, and the regions to the east of the lower Danube (modern Romania and Ukraine) that have been associated with the Goths in the third and fourth centuries CE. Both areas saw intense interactions with the Roman world, through trade and violence, but these interactions had quite different consequences for the people who lived beyond

the borders of the empire. Roman attempts to establish 'friendly kings' in the region north of the middle Danube led to violent inter-elite competition, while the spoils of raids into the provinces created a system of warlordism, based on patronage and loyalty, among the societies beyond the Lower Danube. In both examples, we can see how the elites of the hinterlands of the empire actively shaped their relationships with Rome.

When Seduni women tell the story of the long-lasting Romanization of the Upper Rhône Valley between 70 BC and 70 AD

Romain Andenmatten, Tristan Allegro, Gwenaël Bertocco, Anad's Deville, Julia Genechesi, Paul-Emile Mottiez, Déborah Rosselet, Nicole Reynaud Savioz

Due to their difficult terrain, the Alps remained a naturally strong border for the Italian peninsula for a long time. However, the Alpine valleys, each a gateway in and out of the peninsula, were important for the Romans to control, at least at their outlets, for both security and commercial reasons. From the early years of the Gallic War, the Poenine Alps were largely surrounded by territories that were part of (or subject to) the *imperium Romanum*. However, independent landlocked territories and an internal border persisted for several decades in this mountainous area, which was ideal for defense.

According to Caesar, the *Seduni* Alpine people came to support their *Veragri* neighbours during the "Battle of *Octodurus*", which led to the retreat of Roman troops from Valais in 57 BC. Written sources are subsequently insufficient to describe the evolution of the four Valaisan populations until they received Latin right and were reunited into one *civitas* for the whole *Vallis Poenina* (Valais and Chablais vaudois) as part of the reforms that were to take place at the latest in the Claudian period. Did the evolution of the material and non-material cultures of the *Seduni* precede or follow their change in status? Could it be a slow progression towards Romanity for territories that did retain their indigenous ethno-political structures and particularities for a time, despite being integrated into the hegemonic Roman empire?

Through the study of six successive women's sepulchres discovered in the area attributed to the *Seduni*, we take a closer look at this century and a half of transition between independence, conflict, and slow integration into an increasingly Romanised world, until most indigenous markers have disappeared. The funerary data presented will be compared with other archaeological finds from the same periods in and around Valais. The various hypotheses concerning the context conveyed by literary and epigraphic sources will also be considered in the discussion.

Looking west: Re-assessing the archaeological evidence for the Roman limes and its hinterland outside Dacia

Ioana A. Oltean; Sorin Bulzan

The frontier of Roman Dacia across the Western Carpathians, with the exception of its northernmost sector, is traditionally interpreted mostly from the perspective of the Roman gold mining operations at Alburnus Maior and Ampelum. However, little is known about frontier and its operation, or about the way in which its presence impacted on settlement and communities living in its immediate proximity. The recent availability of open-access LiDAR data across that region allows us to contextualize the available evidence in order to better understand the settlement pattern outside Dacia and to reassess the nature of their relationship with the Roman limes itself.

Procopius' fort building "on the very borders of Persia" (Minduos / Μίνδουος)

Christopher Lillington-Martin

This paper evaluates topography and archaeology regarding fort/camp building and battlefield conflicts (c.527-41) in the eastern borderlands of the Roman-Persian frontier, between Dara and Nisibis (Oğuz, Mardin and Nusaybin, Türkiye, respectively), at Μίνδουος/Mindouos/Minduos; Σαργαθόν/Sargathon/Sercean/Qesra Serçixanê/Durakbaşı and 10 and 42 stades west of Nisibis/Νίσιβις. It will address Roman military installations outside the established borders of the Roman Empire and Roman conflict evidence outside the 'Limes' (battlefields in non-conquered territory). Sargathon was just east of the frontier in the outer hinterlands of the Roman 'Limes' and Mindouos was constructed too close, for the Persians, to the frontier, within those hinterlands. In c.528 Justinian ordered Belisarius 'to build a fort in a place called Mindouos, which is on the very borders of Persia, on the left as one goes towards Nisibis' (Procopius Wars 1.13.2: δείμασθαι φρούριον ἐν χωρίῳ Μίνδουος, ὃ πρὸς αὐτοῖς ἐστὶ τοῖς Περσῶν ὀρίοις, ἐν ἀριστερᾷ ἐς Νίσιβιν ἰόντι). A link to Maurikios' discussion of, "Building a border fortress by stealth and without open battle" ("Strategikon" 10.4) will be evaluated. A likely location of Mindouos will be expanded upon - the site is close to archaeology in the form of substantial quarries "on the left as one goes towards Nisibis" and it is near to where Procopius places the frontier (Wars 1.10.13-14). Procopius (Wars 1.13.2-4) describes the intended construction at Mindouos as a fort (φρούριον) and a stronghold (ὄχυρῶμα); and then characterises Khusro, the Persian Shāhān shah (Wars 1.16.7), as referring to it diplomatically as a building (οἰκοδομία). A promising link to the archaeology at Persian Sargathon will be explored and the sites of temporary army camps and battlefields, between Dara and Nisibis, will be proposed within the topography.

Sailing along to Brigantium: The Roman expansion in northern Galicia between the late republican and early imperial times

José Manuel Costa-García, Manuel Gago-Mariño, Francisco Alonso-Toucido, Jorge Sanjurjo Sánchez

Tradition has conferred on the territories that make up present-day Galicia the character of the edge of the known world or the last frontier. Supernatural episodes are not infrequently alluded to in those ancient sources that mention various Roman expeditions to this *finis terrae* in the late Republican period. However, archaeological research has confirmed that the Galician area -or, at least, its Atlantic façade- enjoyed solid connections with the Mediterranean world from at least the mid-first millennium BC. These contacts, stimulated by the powerful Punic enclaves in southern Iberia, intensified after the Roman interventions in Lusitania in the 2nd and 1st centuries BC. At this stage, the territories between the Minho/Minho and Douro/Douro rivers probably became a tribal zone, but we do not know how Rome, in the context of growing internal conflict, interacted with the communities further north. It has been assumed that this area was annexed during the 1st century BC, but there is no solid evidence in this regard. On the contrary, the archaeological data indicates that the campaigns mentioned above conform to the predatory models of the late Republican period. Only from the Augustan period onwards it is possible to witness a major process of territorial restructuring. Within the framework of the project “The Arrival of Rome to the *Finis Terrae*”, several archaeological sites in the north-western Galician area have been studied to gauge the impact of the first Roman military presence in the region. The accumulated data and those resulting from other archaeological projects developed in recent years in the Autonomous Community of Galicia allow us to delve deeper into the forms and rhythms of Roman expansion in this area and the effects of this process on the indigenous communities.

Unrest after conquest: The attack on Ambleside Roman Fort

John Reid, Manuel Fernández-Götz

The last few decades have seen a rise in archaeological studies addressing the materialities of the Roman wars of conquest. This work has led to the discovery of a large number of temporary camps, but also to the identification of battlefields and the destruction of indigenous settlements by the Roman army. Less information is available for cases in which the Roman military was subject to attacks as a result of unrest following the initial conquest campaigns. In this paper, we will introduce the evidence of Ambleside Roman Fort, located in the Lake District (northwest England), where sling bullets and other finds point to an attack on the fort by an external enemy. Since 2021, we have been carrying out a research project that has analysed conflict-related evidence collected since

the early 20th century, as well as undertaken new fieldwork (surveys and small-scale excavations). The results of this research strongly support the idea that the fort was attacked at least once during its occupation, testifying to the existence of unrest in the region many decades after the Roman conquest. The paper will also introduce comparative evidence from similar scenarios in other parts of the Roman Empire.

Gods and Coins: Roman objects agency and the Blemmyes

Emilia Smagur, Mariusz Gwiazda

In the first three centuries AD, the Eastern Desert of Egypt was a busy place dotted with Roman quarries and mines, fortlets, and ports facilitating the Indian Ocean trade. Nevertheless, the region remained inhabited by indigenous desert dwellers. This resulted in development of several political and social boundaries, as well as regional and local interactions between the local communities, merchants, and Roman soldiers. These interactions are reflected in the artifacts recovered from Berenike, best known as a Roman emporium. However, the last period of its prosperity is dated to the post-Roman times. Recent discoveries show that after the withdrawal of Roman forces to Syene by Diocletian in AD 298 the port was controlled by the Blemmyes, semi-nomadic people already inhabiting a vast area of the Eastern Desert. Yet, it still remained in contact with Roman Egypt. In this paper, we will examine the agency of Roman objects in Blemmyan Berenike based on finds of two types of Roman artifacts: religious monuments and coins. The former are being found reinstalled in the post-Roman shrines pointing to the transformation from Roman cults to new religious practices. The latter are being discovered scattered throughout the town and were probably used as money beyond the Roman border. The study of interactions between objects and people based on material culture used in contexts of two types: symbolic and economic, will shed a new light on the agency of imported objects in the post-Roman Eastern Desert.

Fossatum Sarmatiae – A Late Roman Economic Border

Alexandru Flutur, Liana Flutur

Recent investigation of the ditches generically called *limes Sarmatiae* led to a partial clarification of their functioning. These linear barriers from the Pannonian Plain, which delimit an area of about 55,000 square kilometers on the left bank of the Danube, have been interpreted as linear fortifications. Their defensive role can be questioned.

Those ditches were primarily obstacles to smuggling livestock. We are most likely dealing with a border under military surveillance, with the role of controlling and taxing the passage of flocks of

sheep into the area of transhumance. It is becoming increasingly obvious that the so-called “Roman ditches”, so named in the early eighteenth century, were indeed late Roman features. Given the archaeological research from 2023 it appears that this system of earthen embankments with ditches dates back to the fourth century BC. *Fossatum Sarmatiae* is similar to *fossatum Africae* and the Roman linear barrier in Syria. The Roman Empire used the space between the Danube and the *fossata* lines as an agricultural and livestock hinterland. The locals of the plains, generally referred to as Sarmatians, were grain producers and breeders of cattle and horses. On the one hand, the purpose of the ditches would have been to protect the lands of the Sarmatians from the uncontrolled arrival of flocks of sheep. On the other hand, earthen obstacles blocked the passage of sheep for shepherds to lead them through specially designed crossing points. From here on they continued their way to wintering places in the *Danube and Tisza marshes*. Some aspects of the functioning of this border are still not clear. However, traces of several small fortifications and a watchtower have recently been identified.

Consequently, we consider that *fossatum Sarmatiae* was conceived by the Romans and built by them together with the locals within the framework of an economic system developed in this marginal area of the Late Roman Empire.

The Romans’ South Caucasian wars AD 522-572—why the Romans provoked war with Sasanian Persia over Lazika and the Caspian Gates

Ian Colvin

This paper considers why the Romans provoked war with the Sasanians over Lazika and the Caspian Gates, a rivalry which in turn brought an end to the client kingdom of Lazika-Egrisi. The South Caucasus was an important borderland for both the Roman and Sasanian empires. The Greater Caucasus mountains lay to its north fronting on to the Ponto-Caspian steppe, and the passes through them provided an important interface with North Caucasian tribes and the steppe world beyond. Sauer’s work on Sasanian frontiers underlines the investment the Sasanians made in the region in the fifth and sixth centuries in Darial and Derbend as part of a larger campaign of fortification. Around the same time, the west of the Caucasian isthmus, comprising the kingdom of Lazika-Egrisi and neighbouring peoples rises in prominence in our Roman sources. Between the mid-5th and the 7th century, the Romans and Sasanians fight a number of wars, and the Laz kings go from being clients of the Romans, through spells of submission to the Sasanians, to a somewhat tighter integration into the Roman Empire, in which taxes were imposed. At some point the ruling Laz kings were replaced as power in the land by a native patricius and a Roman general. Literary sources (including Malalas, Procopius and Agathias) provide detailed accounts of events through

several decades in the mid-sixth century when Lazika was at the heart of Roman-Sasanian rivalry. Archaeological investigation provides a broader view, showing phases of refortification at this time in many Laz fortresses, the construction and endowment of churches, and the supply of Roman military units. Recent work has investigated the probable site of the Sasanian fortress of Onoguris at Khuntsistsikhe. The answer to our question has important ramifications for the evaluation of Justinian's reign and the major literary sources.

Forts of North Omdurman

Mariusz Drzewiecki

The late Antique period was when defensive architecture began to be used on a large scale in the Middle Nile valley (modern southern Egypt and Sudan). The fortifications were diverse, and some were the largest structures ever built in the region. Among the many fortified sites erected at that time, one group stands out. It consists of nine quadrilateral enclosures similar to small forts built across the Roman Empire. They were erected between the Fourth Cataract and the confluence of the Niles, a section of the valley which was never under Roman authority. This gives rise to questions as to who and why built the forts. In search for answers investigations focused on the remains of three forts clustered on the northern outskirts of Omdurman were undertaken in 2018. Fieldwork included geophysical prospection, archaeological survey and excavations. A significant number of small finds and samples were collected, which, after detailed analysis, provided information about the time of construction of forts and added data on how the first inhabitants lived. All investigated forts were a few centuries younger than the closest Roman forts (built in the Egyptian Eastern Desert and Lower Nubia). The three forts were erected in the second half of the 6th century CE, one was soon abandoned but the other two functioned simultaneously for several years, to be abandoned in the middle of the 7th century. Material remains indicate uniformity and lack of complexities characteristic of civil settlements. These were garrison forts. Built by the army and used by soldiers, the defences are probably the material remnants of a conflict between the kingdoms of Makuria and Alwa briefly mentioned by John of Ephesus. They represent a combination of local traditions and inspirations in Roman architecture indicating that the people who built them had wide knowledge of poliorcetics.

The Roman Frontier in Mesopotamia in the Sixth Century and Justinian's Eastern Strategy

Geoffrey Greatrex

There has been a flurry of recent work on the reign of Justinian and on the contours of the eastern frontier in the sixth century. Two schools of thought are perceptible. On the one hand, there are those who believe that the emperor was content to hold the line, strengthening Roman fortifications at the start of his reign while war loomed, then broke out. As soon as the opportunity arose, he concluded a peace and diverted many of his forces to the West. On the other hand, others, such as Peter Heather, have argued that Justinian sought to provoke war right from the start of his reign. This paper will review these two points of view and offer grounds for preferring the first. It will consider in particular the final years of Justin I's reign and the opening years of his nephew's. Much hinges on how we consider Belisarius' fort-building expeditions, where exactly they took place, and what he was trying to achieve: a recent article by Michael Whitby (*Byzantinoslavica* 83, 2023) places one of them at the eastern end of the Tur Abdin, which, if correct, would indicate a far more aggressive Roman policy than is often supposed. The paper will examine in detail both the literary sources, such as Pseudo-Zachariah of Mytilene and Procopius, as well as recent work in the region, e.g. by A. Comfort.

Looking west: Re-assessing the archaeological evidence for the Roman limes and its hinterland outside Dacia

Ioana A. Oltean, Sorin Bulzan

Numerous Roman entrenchments in Scotland are interpreted as "marching camps" where a Roman army supposedly defended itself by digging entrenchments around its daily encampment. This misinterprets what are better called "battle camps", which the Romans constructed when engaged in war against peer adversaries. With an enemy army nearby, Livy writes of enemy armies 1 to 7 miles away, in their own entrenched camp, deep defensive entrenchments made sense. Battle camps gave the Roman commander the choice of declining battle and a base for waging attrition over fodder and supplies or to recover from a defeat. Peer warfare of two concentrated armies manoeuvring against each other petered out as the Roman Empire expanded into tribal areas with lower population densities and fewer towns. Warfare became asymmetric. In Scotland, Dio (76.13) tells us that Severus "fought no battle and beheld no enemy in battle array". Armies only concentrate to fight battles. With no concentrated enemy army, the Roman army spread out to control more territory. At low population densities, the scorched earth defence becomes practical. Distance and non-battle casualties (trench foot) were the main problems that the Romans faced in Scotland. Roman logis-

tics limited the reach of the Roman army, via overworked animals dying. Building corduroy roads and defending convoys of ox-carts became the main activity of the war. Supply convoys shuttled up and down strings of entrenched depots, held simultaneously. Supplies were moved up the line and wounded, sick and prisoners transported back down the line.

The “marching camp” model implies that everywhere the Roman army went it left the archaeology of entrenched camps. By this measure, the army which had conquered the Alps failed to enter the Scottish Highlands. But coin hoard evidence implies the Roman Army penetrated the Scottish Highlands along the Great Glen, refuting the marching camp model.

Transformations in the northern British borderlands: Perspectives from the “Beyond Walls” project

Manuel Fernández-Götz, Dave Cowley, Derek Hamilton, Ian Hardwick, Sophie McDonald

The fluctuating frontier of the Roman Empire in northern Britain represents a key case study for studying borderland dynamics in the ancient world. This paper introduces the preliminary results of the Leverhulme-funded project “Beyond Walls: Reassessing Iron Age and Roman Encounters in Northern Britain”. From 2021 to 2024, the project has been focused on analysing the transformation of settlement patterns and lifestyles in a region extending from south of Hadrian’s Wall to north of the Antonine Wall. This presentation will focus on the work carried out in the four case study areas, ranging from an examination of Iron Age settlement patterns to the study of palaeoenvironmental evidence. By doing this, the paper will also address questions of data representativity, highlighting both the potential and limitations of an interdisciplinary approach at the crossroads between prehistoric and Roman archaeology.

Borderland Dynamics: Exploring Interactions Between Germanic and Roman Worlds in the Middle Danube Region Through Comprehensive Archaeological Data

Marek Vlach; Balázs Komoróczy

During the initial four centuries following the transition of eras, the Middle Danube region evolved into a distinctive borderland zone between the provincial Roman and the Germanic territories. This region became a focal point for diverse interactions, predominantly characterized by peaceful exchanges. While conflict periods constituted a smaller proportion, more or less visible in archaeological record (e.g., Domitians’ Suebian wars and Marcomannic wars), the repercussions of some were profound, shaping the geopolitical landscape. The long-term development of the Middle Danube borderland could be, to a significant extent, reflected through data from the MAR-

COMANNIA dataset, compiled through extensive archaeological research within the Marcomannic settlement zone west of the Lesser Carpathians. This dataset forms part of a broader project-based (Czech Science Foundation) activities oriented, amongst others, to derive quantitatively representative indicators of various developmental trajectories of the Germanic populations in the study area. Through spatiotemporal evaluation of representative archaeological components (settlements, burial grounds), contexts (graves, housing units), and material culture categories such as brooches, coins, and metal vessels, these trajectories illuminate demographic, economic, political, and social aspects of Germanic societies within the Marcomannic settlement zone, providing valuable insights into the development of the complex relations and multifaceted interactions between the Germanic and Roman environments along the Middle Danube Limes.

A Farewell to the Frontier: Trans-European Connectivities in the Roman Empire

Dominik Maschek

In the attempt to transcend the powerful concept of the ‘frontiers’ of the Roman empire, this paper explores the potential for a change in how we view the Roman world in terms of geography and material culture. It starts from the proposition that the term ‘frontier’ stands in the way of a clear perception of how important the big riverine networks and adjacent provinces in central, eastern, and northwestern Europe actually were in the tissue of the empire. Major bodies of Roman troops were both on the move and more or less stationary from the late 1st century BCE/early 1st century CE to the early 5th century CE. The connectivity of the large garrisons by means of riverine networks and road links was considerable, stimulating an intense flow of people and goods across these major thoroughfares, alongside the development of dense patterns of rural settlement (villa landscapes, but also non-villa landscapes). Recent archaeological work suggests that, on the Rhine and the Danube, even the intensifying conflicts of the 3rd century CE should not only be seen as a symptom of crisis and the imperial administration losing its grip on the frontier areas, but as a stimulus for infrastructure improvement, investment, and a continuous funneling of supplies and material goods into these areas. Moreover, the development of important urban centres from a very early moment onwards was associated with specific ‘Roman’ modes of urban life, such as the consumption of wine and olive oil, the creation of public spaces, bath houses, entertainment buildings, temples, or the habit of extramural burial, but also as centres for education, entertainment, conspicuous consumption, and public oratory. Specialised production is attested both in urban centres and in the countryside, organised along the lines of Roman legal stipulations and a monetarised economy. This paper will argue that all these developments were not merely the results of ‘Romanisation’ in peripheral zones, but first and foremost of corridors of movement, routes of

invasion, trans-European trade links (such as the Amber Route), and urbanisation and rural population growth, binding together the Mediterranean and all other regions of the Roman world. Casting doubt on the heuristic value of the term 'frontier', these developments affected a vast geographical area which had fascinated Greek and Roman writers from Herodotus to the early Augustan period.

Not quite beyond the Northern Frontier: Landscape Archaeology between Birrens and Burnswark

Christoph Rummel

The paper presents new results of geophysical research carried out by the RGK between the Iron Age Hillfort of Burnswark and the Roman fort of Birrens/Blatobulgium in East Dumfriesshire and contextualises these within a wider discussion of Roman border zones. With its native centre and surrounding settlements, Roman camps and a permanent fort, this landscape is of particular interest for the study of Rome's impact beyond the linear defined borders: the first Roman presence in the region appears to date to the Agricolan campaigns, but by the time of Hadrian, a permanent Roman fort had been established more than ten miles north of Hadrian's Wall and the defined outer edge of the Empire. Following the creation of the Antonine Wall, the region became part of the Empire. Yet the Roman fort remained garrisoned until the late 2nd century, becoming an outpost beyond the established frontier again following the abandonment of the Antonine Wall. As such, the landscape is of key interest for any study of interaction between Rome and its neighbours within Roman "borderlands" - be they within or beyond the political defined realm of Empire - if that is something we today can even accurately reconstruct. In addition, the relationship between Roman and Native, between the two centres of Roman fort (Birrens) and Hillfort (Burnswark), the latter with Roman camps on either side, has long been a topic of controversy. The new data on settlement patterns presented here provides the basis for a wider discussion of settlement patterns and Roman impact in this particular part of the Empire's borderlands, as well as a re-examination of the relationship between Rome and local elites on the basis of a study area that includes a native centre, multiple Roman temporary installations, a permanent fort and, possibly, the remains of a major conflict zone.

The Role of Foederati and Secondary States in Ireland, Britain and Fennoscandia during the Era of Late Roman Hegemony, c.AD100–700

Russell Ó Ríagáin

This paper will employ the distribution of material culture directly and indirectly imported from the Roman Empire in what might be termed the period of Late Roman Hegemony, c. AD100 -700 to compare how different areas of Ireland, Britain and Fennoscandia were part of a wider socio-political system extending far beyond the traditional extent of the Empire. Based on this evidence and on a re-assessment of the textual evidence, the paper will assess the evidence for the emergence and existence of secondary states in Ireland, Britain and Fennoscandia, and the potential roles played in their formation, maintenance and obsolescence by foederati units going to and coming from the Empire, and propose that they played a major role in the highly dynamic political and cultural situation in these areas beyond the confines of the Empire and its successor states. The paper will focus on four such groups: the Cruithni in northeast Ireland, the Dál Riata in northeast Ireland and northern Britain, the Hlaðir in north-central Norway and the Götar in south-central Sweden. Furthermore, the paper will explore the ways in which material originating in the Roman Empire circulated further within these regions, with a particular focus on Sápmi, Finland and the Hebrides in this respect. Carrying out this work requires setting aside many national myths and taking a source-critical, first-principles approach to the archaeological and documentary evidence on its own terms --a difficult but rewarding process, considering the success of the descendants of some of these groups in sponsoring the construction of layers of narrative complexes reframing their origins and relationships with other contemporary groups.

SESSION 8

The watch on the Norican Danube Limes

Julia Klammer, Stefan Traxler

Numerous Middle Imperial watchtowers and Late Antique *burgi* are known along the Norican Danube Limes. Placed between the forts along the Danube, they are said to have served for the surveillance and transmission of news on border activities. Although some watchtowers have already been destroyed, many have fortunately been preserved and can be further investigated on site. Information about their former existence is often only accessible by a few records. Long sections along the river without any evidence of watchtowers point to missing positions between the camps. Whether these gaps can be explained by a lack of research, destruction of structures, were never existent or can still be found in our landscape is the objective of the project, “Die Wacht an der Donau.”

The project area covers the whole Norican Danube Limes. On the basis of the re-evaluation of archival documents and archaeological records, as well as several spatial analyses, known watchtowers are further investigated and new, previously unknown locations hopefully discovered. Therefore, viewshed analyses in different sections as well as historical river mappings, modern flood calculations, and geological records offer new information about their position background from a macro scale point of view. On the micro scale, investigations of known watchtowers are made to gain deeper insights into their exact locations, architecture and chronological aspects. The proposed paper informs about past project activities, its current state, and future aims.

The Roman military fort in Iža (UNESCO monument) and its connection with Brigetio. Latest results of the Danube River exploration and their comparison with known information

Miroslava Daňová, Klaudia Daňová, Ján Rajtár

The borders of the Roman Empire in the central Danube region were closely related to the course of the Danube River. In the area of the legionary camp of Brigetio (today Komárom- Szőny, HU) and its foreland on the northern bank (today Iža, SK; part of the UNESCO World Heritage Site), the Romans occupied the northern bank of the river for two centuries. There, they came into direct contact with the local inhabitants, whose settlements extended only a few kilometers to the north and

northeast. In this area, the river served not only as a border and an important transport artery but also as a space through which the soldiers on the north bank had to communicate with the camp of Brigetio. Investigations in the riverbed revealed in 2021 the pillars of a Roman bridge, which in the winter of 2022 could be dated to the 3rd to 4th centuries. This paper will present the latest results of the bridge pillar research and the possibility of a coastal zone arrangement near the camp.

Crossroads of borders and interests: a case study of Utus, fortification on the Lower Danube limes

Silva Sabkova

Situated by the confluence of the eponymous river and the Danube, Utus is an auxiliary fort and later city, well-known from historic sources. Utus is initially part of Moesia / Moesia Inferior, founded most probably soon after the establishment of the province. Later it is the easternmost large stronghold of Dacia Ripensis' (and the diocese of Dacia respectively) northern borderline defense. It is probably most notorious as the place of a bloody battle between the Eastern Roman Empire and Attila's Huns in 447, with negative outcome for the Empire. The historic importance of the site is not surprising, having in mind the specifics of its strategic location. Built among the meanders of one of the Danube's larger tributaries, it is also located at the eastern end of the largest riparian lowland in this section of the Lower Danube. Close by, on the opposite side of the Danube is the mouth of river Alutus and the southernmost points of the limes Alutanus and Transalutanus. Despite all this, it has never been properly researched, and the only known plan of the site is drawn around 120 years ago. Thanks to non-destructive means of investigation, previously unknown features of the layout of the site are now revealed. These allow correction of the plan and shed light also on aspects of the spatial and historic development of the site. Together with data on the transformations of the natural environment surrounding the location of Utus, they give a new perspective on the strategic position and role that this fort has in the context of the Lower Danube limes defense system.

Known, but new. Recent discoveries in the legionary fortress of Brigetio

Melinda Szabó, Dávid Bartus

While the legionary fortress of Brigetio is one of the key sites in the province of Roman Pannonia, its inner structure and buildings are almost unknown. Although the retentura of the legionary fortress is almost entirely covered by modern buildings, the praetentura can be researched using remote sensing methods. The northern wall and gate, several roads and buildings have been identified on

aerial photos. In recent years, a geophysical survey campaign has also been initiated, using ground-penetration radar and magnetometer. Over the past few years, systematic excavations took place in the praetentura, based on results of the geophysical surveys. This comprehensive research shed new light on the topography, chronology and building periods of the legionary fortress in Brigetio, including the main roads, gates, the principia, valetudinarium and the baths. In this paper we would like to present the results of geophysical surveys and excavations, which have been carried out regularly since 2015 in the territory of the legionary fortress of Brigetio. During these years, we located the courtyard of the principia and some details of buildings south of it. We excavated a large apsidal building near the porta principalis dextra in the south-eastern corner of the praetentura. Presumably, it was the venue where Valentinian I received the envoys of the Quadi and died in 375 AD. Several rooms belonging to earlier construction phases have been unearthed below the building. The most recent excavations were focused on the area of the northern gate of the legionary fortress and the legionary baths. In the excavation seasons from 2021 to 2023, about 1,800 m² of the bath was unearthed. Several cold and hot rooms, pools, sewers, hypocaust systems and praefurnia were found, yielding abundant find material.

The primipilarii inscriptions from the legionary fortress at Novae and the Late Roman *pastus militum*

Adam Lajtar

Novae, the seat of the legio I Italica, yielded fifteen inscriptions authored by primipilarii, Late Antique officials responsible for the transportation of supplies in the frame of the *annona militaris* from the supplying provinces to the legionaries. The inscriptions, in either Greek or Latin, are all dedications of statues, apparently set up by primipilarii at the end of the successful fulfillment of their mission. They cast an interesting light on the issue of the supply of the Roman army in the fourth – first half the fifth century, and also contribute to the question of the life on the limes in that time.

New Insights on Late Antique Legionary Barracks in Lauriacum/Enns

Fabian Auer

As the only legionary fortress along the Ripa Norica, Lauriacum has long been of special interest to scholars, starting with the first systematic excavations by M. v. Groller-Mildensee at the beginning of the 20th century. As a result of his work, we have an almost complete plan of the fort - or so it seems. The basis for this contribution is an excavation that was carried out in 2017 in the area that

is generally associated with the barracks of the first cohort. This dig made it possible not only to re-examine an area left blank in the early 20th-century plan, with very marked divergences, but also to study the late Roman phase of the contubernia, represented here by the so-called Korridorkasernen (corridor-barracks). These Late Antique barracks, which can also be found in the legionary fortress of Vindobona/Wien, are characterised by the addition of a corridor as a means of entrance. In addition, various modifications of the built structure indicate distinct changes in the utilisation of arma and papilio. The aim of this paper is to discuss the differences between the 20th-century and modern ground plans, as well as the building type itself, in terms of its function in the context of the legionary fortress and the use of space within the barracks themselves.

River, Land and Sea. News from the Scythian Limes

Martin Lemke, George Nuțu

The Scythian limes located in modern-day Dobruja presented both the Roman army back in the day as well as the archaeologist nowadays with specific challenges. Fortunately, the area has enjoyed increased interest in the last decade. In our presentation we are going to sum up the results of these investigations, particularly within the Archaeology of the Limes Maritimus Scythicus project.

The Late Antique Legionary Fortress in Bonn

Christoph Lindner

The Legionary Camp in Bonn was one of the most crucial supply points for the Lower Germanic army and the province due to its geographical location. The strategic position at the border between the Middle and Lower Rhine, along with excellent connections to the hinterland, likely contributed to Bonn being the largest single-legion camp known to us, which also featured substantial storage buildings. With the extensive destruction and associated changes in the province of Germania Secunda during the Late Antiquity, a restructuring of the Bonn settlement area took place. Civilian settlements were (largely) abandoned or destroyed and the remaining population retreated into the legionary camp. Despite some evidence indicating the unrest and incursions of the mid-fourth century AD within the Bonn legionary camp, widespread destruction has not been conclusively identified. Nevertheless, the restructuring of the Roman army led to significant changes in the internal structures of the fortress. Parts of the barracks were either abandoned or repurposed, primarily in the peripheral areas. Extensive changes can also be observed in the Principia and the Horrea at the West Gate. Limes & Legion, a long-term project financed by the North Rhine-Westphalian Academy of Sciences, Humanities and the Arts, provides the opportunity to edit and evaluate the data

from the 200-year-long excavation history of the Roman Legionary fortresses in Germania inferior. The latest methods are used to answer new research questions and break down old narratives. This presentation will focus on the latest findings on the Late Antique legionary camp in Bonn.

Ripae legionis VII Claudia – the 7th Claudian legion and its construction activities in the late antiquity

Ljubomir Jevtović

Late antiquity brought significant changes to the defensive systems of the Roman Empire. Many researchers studied this subject focusing on its numerous aspects, yet rarely simultaneously examining specific units and construction methods and techniques. The focus of this paper will be the reorganization of legio VII Claudia and its construction activities. The primary source material for this study are several hundred published and many still unpublished stamped brick and tiles from this period. The analysis of the epigraphic aspect of the stamps, its context and spatial disposition, testify to the reorganization and the division of the legion; the disposition of these individual units throughout the limes but also to the construction activities of the legion. All of these aspects will be examined and studied comparatively, both on the strategic level as well as on the level of individual units, through the already established construction phases of the Moesian limes.

Treasuries of the Viminacium legionary fortress

Nemanja Mrđić/Mrdjic, Saša Redžić/Redzic, Mladen Jovičić/Jovicic

Viminacium legionary fortress has been excavated since 2017 in continuity and combined results at the several different sections significantly changed understanding of the chronology and evolution of the fortress as well as its final years before abandonment. Last campaigns were focused on the sacellae / aedes of the principia and discovery of two treasuries, finalizing the story of the garrison, changes, and end of this significant stronghold. Hundreds of coins found in generally empty buildings together with architectural changes from one into two treasuries opened new questions on the organization of the Upper Moesian defense system. At least 6 architectural phases from Flavians to Constantine were identified as well as changes of units, with multiple indicators on the consolidation, and the rapid downfall of the Moesian limes during 4th century AD. Large changes that increased monumentality of the building, especially during last phases of the late 3rd and early 4th century testify of strengthening and raising importance of this limes sector after abandonment of the province Dacia. Multiple treasuries lead to the conclusion of likely multiple units present in fortress during late antiquity - decades before being confirmed in the Notitia Dignitatum. Rather early and sudden abandonment of the fortified core zone are yet to be clarified

with excavations of the new reduced defensive complex emerging within the second annex on the far west side of the city. This area that changed from the port into the heavily fortified stronghold is the last stand of Viminacium. This research ultimately has crucial effect on the defining of the borders and zones of the site, now on the UNESCO Frontiers of the Roman Empire - the Danube Limes Tentative List (Danube Limes East Sector).

Controlling the Danube in Late Antiquity. Mobility, topography and imperial policy in Dacia Ripensis between the 4th and 7th century

Ivan Gargano

Dacia Ripensis was one of the provinces that marked the northern border of the Empire during Late Antiquity in the Danubian sector. The great river strongly marked this territory, and this section allowed the connection between the Middle and Lower Danube regions, which occurs at the Carpathians, in the Dordap area, where the riverbed is characterised by the presence of cataractae that made river navigation particularly difficult. In this province, the Danube is also enriched by the waters of the numerous tributaries that flowed through Dacia Ripensis, and whose valleys were crossed by roads that formed an important route network towards the central and southern territories of the Balkan Peninsula. The strategic military and commercial connections possible thanks to the Danube and its tributaries were therefore kept under strict control by the Roman authorities, particularly after the abandonment of Dacia Traiana. This commitment can be deduced from the presence of fortified port facilities, river fleets, and thanks to historical episodes that occurred in this province. They show how the importance of this sector of the great river remained unchanged and even increased over the centuries, becoming vital in the 6th century. This presentation aims to analyse the solutions and strategies adopted by the Roman authority in order to manage the Danube in this sensitive area of the imperial frontier. This will be possible through the analysis of archaeological-topographical data and historical accounts deduced from sources such as Ammianus Marcellinus, the Notitia Dignitatum, Procopius and others.

Strategic aspects of the organisation of the limes zone on the Danube in Noricum

Gerald Grabherr

The Roman surveillance of the Danube line was based on an in-depth analysis of the topographical conditions and a resulting placement of selected troop units in order to guarantee opportune control with a minimum of effort. This of course refers to the military border zone as well as to the

trans-Danubian forefield and the transport axes leading to the north. The lecture will shed light on some new aspects of the organisational background with reference to current field research in the province of Noricum.

Two times two forts. The special topography of two pairs of contemporary Simon Bence, Tino Leleković

Roman military fortifications were not only established against external threats, but also to control strategic locations. Thus, it is important to study the Pannonian limes area of Ács (Hungary) and Zmajevac -Batina (Croatia), where two pairs of castra were built only 6 km away from each other, which is an uncommon emplacement. With GIS-based topographic location analysis we try to find the reason for their closeness and its implications. The topographic similarities of the pair of forts are apparent. Both pairs were in contemporary use during the 4th century AD, around the borders of Pannonia I -Valeria and Valeria -Pannonia II. As it is common in this region, all forts were established on a natural plateau above the floodplain of the Danube. More interestingly one of the pairs of forts was positioned next to the confluence of a major river and the Danube: Ad Mures next to the Concó, and the fort of Batina next to the Karašica. Both of these streams were significant watercourses during historical times and they were also natural barriers in the studied regions. On the regional level, both pairs of forts were located at a logical river crossing point on the Danube and near a possible road junction, where an inner road branched off the limes road (Arrabona-Aquincum; Mursa-Sopianae). According to the viewshed analysis, the Danube and also these roads could be controlled from the forts. In the last part of the study, we summarize all the relevant data regarding the 4th century and also earlier troop history of the forts, based on epigraphic and textual evidence. We conclude with the summary of the topographic, strategic and historical importance of the forts on the frontiers of the Pannonias, and also provide a new interpretation regarding the border of Valeria and Pannonia II.

Vindobona as a prisoner of war camp and center of slave trade

Martin Mosser

In the legionary fortress of Vindobona another special building could be identified during two construction projects of the last years. It is a cellar room reaching up to 5 m in depth and measuring 30 x 15 m, of which one cellar window was found to be completely preserved. At the western end of the building, the lowest steps of a stone staircase leading to an upper floor has been discovered. The room was additionally surrounded by outer walls, which makes it possible to reconstruct a

XXVI LIMES CONGRESS BATUMI 2024

8.-14. SEPTEMBER 2024

corresponding circumferential corridor. At first, a storage building was suspected, but further research now suggests most likely a prison building (*carcer castrensis*) erected in the 2nd century AD. However, a prison of this size is unique on the Pannonian Danubian Limes, and the suspicion that such a building might be connected with the Marcomannic Wars suggests itself. Since Vindobona was one of the starting points for military operations into the Germanic territories, it is debatable whether the troop location was not at the same time a center of slave trade with Germanic prisoners of war.

SESSION 9

Roman watchtowers in Mauretania Tingitana

Maciej Czapski

The territory of the Roman Empire stretched large areas across the Mediterranean Sea, including North Africa. One of its natural frontiers among the African provinces are the Atlas Mountains separating both Mauretania. The southern borders of the province of Mauretania Tingitana ran along an invisible line connecting Sala and Volubilis. Ancient authors testify to the turbulent history of Rome's relations with local tribes in this part of the ancient World. The attention of researchers has been attracted by the issue pertaining to the possibilities as well as the ways of defending such a vast territory. Research on the system of military border installations in Africa has been ongoing since the end of the 19th century, but many questions related to the functioning of individual elements of the frontier control system still cannot be answered with certainty. The topographical diversity of Mauritania Tingitana impacted on the use of a specific type of frontier zone control system that could provide optimal territory surveillance. The Tingitana Frontier Project - conducted by a team of Polish and Moroccan archaeologists - is trying to unravel the riddles concerning the southern borders of the province of Mauretania Tingitana, where the chronology of the founding and the extent of the system of defence have not been established yet. Preliminary results from the last two seasons of fieldworks are supplying us with invaluable insight regarding the security system of the cities of Volubilis and Sala. With this contribution I answer some questions about the existence and the functioning of roman watchtowers in Mauretania Tingitana.

From the North to the South: Dynamic relations between Mauritania Tingitana and ethnic units from the northern provinces

Michael den Hartog

Epigraphic material shows that through the garrisoning and recruitment of troops the limes in Mauritania Tingitana was connected to other parts of the Roman empire including ethnic units from the Rhine region. As attested by inscriptions the Roman army at the limes in Mauritania Tingitana consisted mainly of auxiliary units. One of these units, the Cohors IV Tungrorum milliaria, was recruited from a Germanic tribe that lived in what is now a part of Belgium and a part of the

provinces of Limburg and North Brabant in the Netherlands, the Tungri. Its presence in Mauritania Tingitana is for instance known from a building inscription in Volubilis. With a track record in Britannia and the European continent one would not directly expect Tungrian auxiliary troops in Mauritania Tingitana. In what way can we explain the role of this unit with its roots in the Roman Empire's most northern province at the limes of the southern province of Mauritania Tingitana? Where was it stationed and what did its presence add to the defence of the limes in Mauritania Tingitana? Besides the stationing of Germanic troops from the empire's northern regions at the southern limes in Mauritania Tingitana, the dynamics of the Roman army and the limes also provided for another development in the form of career opportunities for soldiers and officers from Mauritania. For officers, one of these opportunities within their *cursus honorum* was commanding auxiliary cavalry units as a *praefectus alae* and infantry cohorts as a *praefectus cohortis*. In the archaeological and epigraphical records we find officers from Mauritania commanding ethnic units with the rank and file recruited from Germanic tribesmen in the northern provinces Germania Inferior, Germania Superior and Gallia Belgica. How can we explain this and in which way does Mauritania Tingitana compare to the other North African provinces?

The military establishments in Mauretania Tingitana between the year 40 and 429 AD

Fadoua Benjaâfar

This paper provides a comprehensive overview of the military establishments in Mauretania Tingitana, offering a synthesis and a critical analysis of the political and administrative integration of the province into the Roman Empire from the year 40 to 429 AD. The study focuses on identifying a hundred sites with military significance, including camps, forts, and watchtowers, scattered throughout the Tingitan region.

One of the central themes explored in this paper is the examination of the province's defense system and how it evolved over four distinct provincial periods. This evolution is analyzed through the lens of geostrategic considerations, emphasizing aspects such as surveillance, control, and protection of the territory. To gain a more comprehensive understanding of these changes and developments, the study also utilizes cartographic evidence.

The paper aims to provide a holistic view of how the Roman military presence in Mauretania Tingitana evolved over time and how it contributed to the province's integration into the broader Roman Empire, by considering various factors: geography, strategic considerations, and the available archaeological record.

SESSION 10

Archaeological prospection and excavations in Carnuntum - methodological basics

Mario Wallner, Christian Gugl, Klaus Löcker, Eduard Pollhammer, Silvia Radbauer, Franziska Reiner, Alois Hinterleitner

The last two decades have seen a reorientation of archaeological research in Carnuntum. For decades, activities were concentrated on large-scale excavations, especially in the civil settlement of Carnuntum. In the meantime, a paradigm shift has taken place, triggered by aerial archaeology and especially by the archaeological prospecting project “ArchPro Carnuntum” (2012-2015), in the context of which large areas have been surveyed using geophysical methods. In parallel, field surveys were carried out in the peripheral areas of the canabae legionis as well as in the surroundings of the Roman colony. The extensive find material from the excavations and the field surveys required a systematic recording and classification of the artefacts, especially the Roman pottery. For the statistical evaluation and visualisation of the finds, programming languages such as R and Python are increasingly being used. In 2022 and 2023, a research excavation in the principia of the camp of the governor’s guard (“castra singularium”) could - after a long break - be carried out in Carnuntum in cooperation with the Museum Carnuntinum (province of Lower Austria), the Austrian Archaeological Institute and GeoSphere Austria. The results of the geophysical measurements and the excavations can now be compared with the results of the supplementary geoarchaeological coring. This comparison provides valuable insights into the limits and possibilities of the different archaeological methods.

The fortifications of the Novae Legionary Fortress – a curious lesson on the Roman pragmatism and construction planning

Piotr Zakrzewski

Since the end of the long-term research program - Per lineam munitionum, concerning the re-excavation of the legionary defence system at Novae, there have been presented several papers describing the most important results of the project, such as the chronology or the architectural design and construction techniques. Still, this sizable data set - gathered for over 15 years of field research and augmented with modern methodology and advanced instruments - enables us to analyse those extensive structures also from different perspectives.

New geoarchaeological approaches to studying turf fortification walls

Gillian Taylor, Tanja Romankiewicz, Caroline Orr

The first phases of fortifications are often constructed in earth and turf. Where preserved, especially in wetland conditions, a detailed analysis of these blocks can reveal insight into building practices and labour efforts. Detailed field recording using 3D-photogrammetry as well as lab-based micro-morphology analysing individual turf block under the microscope has gained us immense insight into the processes and preferences of Roman units building with turf in the north of the empire. Building on these initial results, presented and published as part of the last Limes Congress, this paper will now present our new research, using a range of innovative state-of-the-art geoarchaeological methods to maximise what can be extracted from this unique resource. Analysing new and existing samples from three different building periods at Roman Vindolanda, Northumberland (UK), our paper will introduce the results from new micro-sampling and screening the subsoil, topsoil and organic layers of Roman turf blocks, surviving within the fort ramparts. This demonstrated that the turf blocks have more to reveal on the character and composition of the ramparts, as well as the environment from which they have originally been sourced. Our work involved trialling different geochemical and microbiological methods, comparing and contrasting their applicability and efficiency for Roman turfs, including lipid biomarkers, bacterial communities, carbon and nitrogen ratios and phosphate concentrations. This gave insight into land use management over time. Our paper will explore the future potential of applying these methods to different case studies across the empire, where turf blocks are also preserved.

STRATOS – A new software to document (not only) the legionary fortress in Brigetio

Dávid Bartus

The legionary fortress of Brigetio is one of the most important but least researched archaeological sites in Hungary. The systematic excavations have only been started in 2015, together with various non-destructive surveys (GPR, magnetometry, aerial photos, etc.). The present paper will not focus on the otherwise exceptional results of these investigations, but the documentation system developed for the site. STRATOS is a documentation software developed by our Department for the complete field documentation of stratigraphical units, relations, drawings, photos and find material. With the use of the software on-site, most parts of the conventional paper-based documentation can be replaced. The backend of the software is a SQL and PHP based database accessible through our server, while the HTML-Javascript frontend can be run in any browser without pre-installed software. The software can handle all data of the excavation such as sections, stratigraphical numbers, definitions, dating, measurements, descriptions, relations, drawing and photo numbers,

find descriptions, etc. With some fancy functions, such as voice recognition or showing a specific feature on the map of the site, it can highly accelerate the field documentation. All data can be fully searched and filtered, and the whole database can be exported to XLS or other formats, even conventional “paper-like” sheets can be created in PDF. After using the system for years at the legionary fortress of Brigetio, a site with thousands of different stratigraphical units, objects and features, it can be stated that it is a real alternative to traditional documentation methods.

Roman fortification Gerulata in Upper Moesia

Bebina Milovanović, Ivana Kosanović, Bojan Popović

The Roman fort of Gerulata, located in Miroč village on the mountain of the same name, was built on an alternative road across the mountain connected two Roman forts – Taliata and Egeta. Gerulata not only had military but economic character as well, protecting the road used for transportation of different goods, especially ores from nearby mines, and helped avoid the dangerous Danube road (Via militaris). It also cut short the journey for 80 km or 2 days of marching. First archeological investigations began in 2021 and continue still. Before the excavations, geophysical prospection was conducted, by using georadar on accessible locations. Few years later, the research was complemented by LiDAR scanning of the terrain. As far as the excavations are concerned, the focus was mainly on the parts of the northern rampart with the tower next to the Porta Praetoria, western rampart with the tower next to the Porta Principalis Sinistra, eastern rampart with the tower next to the Porta Principalis Dextra and southeastern angle tower with parts of the southern rampart. The research aimed to help define dimensions, shape, type and purpose of the fortification. The results so far show that the fort is similar to those from the early period of Roman domination on the Danube limes and can be dated to the end of the 1st and the beginning of the 2nd century AD. The site is on the Tentative List of UNESCO Frontiers of the Roman Empire – Danube Limes (Serbia) (WHS FRE) (Ref. WHTL-6475).

From the remains of the walls to the defence system of the Viminacium legionary fortress

Ivan Bogdanović

Viminacium was a legionary fortress on the Danubian limes, within the provinces of Moesia Superior and Moesia Prima in the later period. It was the home of the Legio VII Claudia for most of its history. This paper deals with the remains of the defence system of the fortress. Geophysical surveys and aerial prospection preceded the archaeological excavations of the fortress that were

started in 2016 and are currently ongoing. Excavations focused mainly on the defensive curtain walls, gateways, towers and ditches, but they also included the wider area of the principia and the north-western part of the fortress. Recent archaeological research revealed the existence of two main construction phases that date back to the last decades of the 1st century and to the first half of the 2nd century, as well as layers and features from the late Roman period. Based on the above data, it is possible to determine the layout of the fortress. The aim of the article is to explain the way the parts of the defence system were constructed in the different phases. Using the mentioned information, it is able to reconstruct the appearance of the defences of the legionary fortress of Viminacium. The destroyed walls and ramparts, the filled-in V-shaped ditches, graves and buildings from the late Roman period, lead us to conclude that the fortress was abandoned during the first part of the 4th century. The question of the plausible location of the legion in late antiquity will be again addressed in this paper.

Some aspects of design of Singidunum Legionary fortress

Stefan Pop-Lazić

The legionary fortress of the IV Flavia legion lies today under several other Belgrade fortresses from medieval and later periods. In that sense it is rather an issue to understand its shape and design besides the fact that its central part was destroyed by XVIII century bastion fortification. Present state of research points to the conclusion that Singidunum stone fortress was built at the confluence of Sava and Danube in II decade of the II century, by both IV Flavia Felix and VII Claudia Pia Fidelis legions. It was a permanent camp of IV Flavia legion till the end of antiquity. The fortress was built on a rather flat terrain which sloped to the western side. Since that, its SW rampart wall from the first building phase was never discovered, to the contrary, remains of the second phase rampart were discovered, which are not in line with other parts of the fortress. Although a SW rampart wall trace is still missing it could be assumed that the original width of the castra was around 420 meters while the length of 568 meters was calculated according to research on NW and SE ramparts. Length of 568 meters is rather interesting feature, which could be compared to other legionary fortresses like Albing (Austria) and Ločica (Slovenia). After more than 80 years of research, and different fortification elements excavated it is obvious that Singidunum fortress had at least two building phases. The most prominent are the inner and outer towers discovered in NW, NE and SE walls. Second evidence for the existence of two different construction concepts is the relationship between NW fossa and rampart wall direction towards river. Similar features were discovered in other fortresses and forts like Aquincum and Diana.

Unlocking the Secrets of Archaeological Sites and Roman Border Organization on the Croatian Section of the Limes: Harnessing Lidar, Geophysical Surveys, Historical Maps, and Written Sources

Tino Leleković

This abstract delves into a comprehensive methodology aimed at unearthing archaeological sites on the Croatian Limes, with a primary focus on Lidar and geophysical surveys, as well as the examination of historical maps and written sources. While the names of some Limes sites in Croatia are known through the Tabula Peutingeriana and Antonine Itinerary, precise details about the boundaries and appearances of these sites remain elusive. Recent efforts have been directed at gathering accurate data to support their potential inclusion on the UNESCO protection list. Several regions were selected as Lidar testing grounds, revealing concealed archaeological sites and shedding new light on the landscapes surrounding forts. A standout case is the site of Batina, near the Hungarian border, where Lidar provided fascinating insights. Additionally, large-scale magnetometry in geophysical surveys unveiled previously unknown features at select Limes sites, significantly reshaping our understanding of these military outposts.

The processing of historical maps and the analysis of historical written sources is equally crucial. Ancient records, military documents, and travellers' accounts offer detailed insights into geographical features and events related to the Limes, enhancing our understanding of the Roman defence system and administration in the region. When integrated into Geographic Information Systems (GIS), historical maps allow for precise georeferencing and analysis of archaeological remnants. This integration of archaeological techniques, historical maps, and written sources facilitates a holistic and interdisciplinary approach to Limes research in the Croatian region. By blending technology, historical resources, and archaeological discoveries, we are able now to construct a more comprehensive narrative of the Limes in this area. Furthermore, this approach has unlocked fresh perspectives on the local landscape and the organizational intricacies of the Roman border. The newfound data from Lidar, geophysical surveys, historical maps, and written sources has unveiled groundbreaking insights into the terrain's topography and the strategic layout of Roman border fortifications. This multidisciplinary approach has paved the way for further research into the logistical aspects, defensive strategies, and the border's symbiotic relationship with the surrounding landscape, providing novel perspectives on the complexities of the Roman frontier in this specific Limes sector.

SESSION 11

Towards a systematic approach to the assessment of climate risk across the FRE World Heritage cluster to support the strategic management of threats

Rebecca Jones, Jon Day, Scott Heron

The Frontiers of the Roman Empire (FRE) are now recognised through a cluster of inscribed properties on UNESCO's World Heritage (WH) list, with multiple locations and expressions of the shared heritage values. In the face of climate change, an approach is needed that will assist their management whilst still recognising the individual components spread across a vast serial WH cluster.

Such an approach needs to provide information, advice and guidance to site and property managers across differing geographies while also assisting periodic reporting for the properties as a whole in accordance with the World Heritage Operational Guidelines.

The Climate Vulnerability Index (CVI) is an established methodology that has been utilised on the Antonine Wall (Jones *et al* 2023) and applied in thematic approaches to natural WH properties in UNESCO's Africa region (Venkatachalam *et al* 2022) and cultural WH properties in the Indian subcontinent (Venkatachalam *et al* in prep). This paper will present a strategic overview, using CVI methodologies, intended to help managers identify key risks and consider effective adaptive strategies to reduce current and anticipated impacts of climate change.

Conservator's Labyrinth: Challenges in the Conservation of Wall Paintings at the Villa of Theseus in Nea Paphos, Cyprus, Considering Technique of Execution and External Factors Amidst the Challenges of Climate Change.

Anna Tomkowska, Magdalena Skarżyńska

This presentation addresses the threats to the wall paintings preserved on the walls of Villa Theseus, an ancient Roman residence built in Nea Paphos, Cyprus. Villa Theseus was likely constructed in the second half of the 2nd century and underwent multiple renovations. At each stage, the villa featured various decorations, including mosaics, stone cladding, and wall paintings. Multilayered painted plasters were a distinctive element of the interior decor.

Although the interior paintings are only partially preserved, they constitute a significant material for researching the execution technology and can provide insights into various phases of the building's

reconstruction. However, the surviving fragments of painted decorations are in very poor condition, deteriorating systematically over time. To understand the causes of degradation processes, it is necessary to recognize the painting techniques used and the impact of external factors on their condition. During the presentation, the results of analyses of painting techniques and analytical studies revealing the composition of individual layers of plaster will be presented. Considering these findings, we will attempt to discuss the degradation process, influenced by both the complex technological construction and external factors such as rainfall, salinity, and rapid temperature changes due to sunlight. Due to the intricate technological structure of the paintings, their preservation from a conservation standpoint poses a formidable challenge. Considering climate models for Cyprus, the prospects for unprotected paintings in Villa Theseus do not appear optimistic.

Impact of climate change on archaeological leather

Elizabeth M. Greene, Gillian Taylor

Leather artefacts have given us a wealth of knowledge about Roman life, economy and practices. The survival of leather requires specific conditions within the burial environmental, ideally preferring waterlogged and anaerobic (low oxygen) environments. Vindolanda is one of the best examples where these conditions exist and leather is routinely discovered. The ongoing excavations at Vindolanda over the past fifty years have shown exactly how much is missing from dry and oxidized environments, which are far more typical in archaeological investigation. The preservation of leather and wood is critical for a full understanding of life in the past. However, changing climatic conditions impact the burial environment enormously, introducing oxygen into previously sealed deposits. These changes have negative effects on buried leather artefacts and they degrade through chemical processes, namely hydrolysis and oxidation.

In this presentation we will take a diachronic view to investigate the degradation of leather excavated from the 1970s through to the 2020s. Using a combination of experimental methods, which include visual analysis, scanning electron microscopy, pXRF and FTIR, we will compare the condition of leather objects through time. Modern leather burial experiments will be presented that show the degradation of leather under different conditions, which mimic the soil conditions at Vindolanda. Initial anecdotal assessment suggests that the condition of archaeological leather has degraded significantly over the past few decades; this research uses scientific analysis to investigate this hypothesis and demonstrate the results of continued climatic change in the future. The consequences of changing burial conditions and archaeological environments could be dramatic. With the increased intensity of climate change and reduction of anaerobic environments, this resource could disappear altogether from the archaeological record.

Managing the Roman landscape at the fort of Magna under the challenges of the Climate emergency

Andrew Birley, Gillian Taylor

The Roman fort and landscape at Magna, Hadrian's Wall, was once partially covered by peat bog which offered exceptional protection for the buried anaerobic deposits held below it, from the time of the initial conquest by the Roman army into the construction of Hadrian's Wall and beyond. However, over the past decade the Vindolanda Trust, the charity which owns and manages this landscape, noticed a significant change in the vegetation on the site and the drying up of the wetland deposits. This resulted in hitherto buried archaeological features becoming more exposed to weathering and damage by the activities of livestock. In 2021 the Trust took decisive action by drilling several cores across the site and installing a permanent weather station and deep probes to constantly monitor what was happening both below and above the ground. This has offered an unparalleled view into the changes which are mainly hidden and questions the very basic suggestion that if archaeology is buried, it is safe. It has also further raised the alarm about what is happening to other sites nearby such as at Vindolanda itself, where the future discovery of such wonderful artefacts are also increasingly at risk.

SESSION 12

Of Sculptures and Scanners: Integrating Capital and Frontier Commemorative Traditions Through 3D Modeling

Elizabeth Wolfram Thill

The study of sculpture, particularly from the public sphere, has been foundational to the field of Roman archaeology since its inception. Indeed, the prominence of well-known monuments, such as the Column of Trajan or Arch of Constantine in Rome, may give the impression that no further study is needed for these paradigm of Roman art. On the contrary: many of these monuments remain poorly published, and the study of sculpture in the capital and provinces is badly fragmented. As one example, the only dedicated publication of 11 extant panels from a major (unidentified) arch of Marcus Aurelius in Rome dates to 1967. This is despite the fact that the panels are dispersed and difficult to view (3 immured high in a stairwell of the Palazzo dei Conservatori, and 8 in the attic of the Arch of Constantine), and the publication does not integrate the extensive contemporary sculptural record along the Antonine frontiers. 3D scanning, modeling, and analysis in augmented and virtual realities present potential solution to such problems. 3D handheld structured light scanners, with some basic scaffolding, would allow the panels in Rome to be recorded with measurement accuracies exceeding 0.05 mm and texture resolution of 16,000 x 16,000 pixels, all in a manner of days. Similar models could be made of sculptures across the Rhine frontiers, and compiled in a database. A researcher working with the models in the database (or even in VR) could test reconstructions of the lost arch in Rome, analyze the relationships between capital and provincial sculptural traditions in three dimensions, and explore how identity and commemoration varied across the empire, even for the same military conflicts. Thus traditional media and well-known artifacts stand to benefit from new documentation techniques that make possible new research questions and methodologies.

3D Imaging of the Vindolanda Stylus Tablets: Current and Future Technology

Alex Meyer

Advances in imaging technology in the last twenty-five years have had a tremendous impact on epigraphy and documentary studies. The introduction of Reflectance Transformation Imag-

ing (RTI) and Polynomial Texture Mapping (PTM) allowed scholars to record dynamic images of inscriptions and artefacts in situ and in museums for later study. This process continues to be improved upon, largely by higher resolution digital cameras that can record artefacts in ever-greater detail. 3D scanning technologies have also improved exponentially in the last two decades, becoming more portable, more precise, and more affordable. Finally, the proliferation of computerized tomography (CT) scanning has opened new avenues for the examination of minute and hidden aspects of texts. This paper presents results of attempts to use these technologies to recover texts of stylus tablets from Vindolanda Roman Fort. It concludes that no single technology is capable of recording texts under all circumstance and that a hybrid approach is necessary in order to maximize scholars' chances of successfully reading problematic texts. Furthermore, it considers the intersection of the limitations and potential of current technologies and the nature of the media upon which texts are preserved. This is particularly relevant as the resolution of 3D scanning and digital photography (and therefor RTI/PTM) approaches and exceeds that of the human eye, the width of wood fibres and even size of the grains of sandstone. In these circumstances we are forced to ask when improvements in technology will cease to produce further gains and how we can proceed after we reach that point. This paper will start to address these questions and others in the context of the northern frontier.

The Call of Rome: Putting 3D imaging to work on the Roman frontiers

Laetitia Stott, Peter Holms, Barbara Birley, Neil Melton

Sound is a powerful, emotive tool of communication. In the ancient world few objects would have had the impact of a Roman tuba or cornu. But can we take and recreate these instruments and their sounds using modern additive manufacturing techniques using currently-available 3D printed materials? This partnership project, between Manchester University, Middlesex University and the Vindolanda Trust is investigating the use of 3D printed tuba/cornu mouthpieces and windways (tube and bell yards) to help to repopulate the ancient soundscape at sites including Vindolanda and Magna on Hadrian's Wall. Using organological methods, including the study of the surviving mouthpieces, physical instrument remains, iconography, literature and the use of sculptural evidence, a range of working tubae and cornua were produced. These replicas were then played by a modern professional horn player both under studio conditions and in the open air with spectral analyses were then used to measure their outputs, along with human observations gathered from field experiments. Included in the study was the testing of 3D printed materials verses metals such as copper alloys as well as the data being analysed in regard to environmental data including wind, humidity and the overall weather conditions. This paper will deliver the results of this study and

build, through the use of modern technology, musical performance and experimental archaeology, a fuller understanding of the application of sound at the edges of the ancient Roman world.

Exploring Acoustic and Visual Aspects of Roman Camp Rituals: A Case Study of Principia in Novae, Bulgaria

Kamil Kopij, Tomasz Dziurdzik, Adam Pilch, Szymon Popławski, Monika Drab

Inspired by the lively discussions and inquiries sparked by our previous Limes Congress presentation on the acoustics and proxemics of the principia, we have continued our investigations to deepen the understanding of its societal significance. In this paper, we present the results of acoustic simulations and visibility analyses of hand gestures and facial expressions at the principia of the camp in Novae, Bulgaria. We employed digital tools to reconstruct the sound and visual environment of the forum and basilica of the principia and to examine how different gestures and expressions were perceived by the participants and observers of the rituals and ceremonies. Our paper will present the results of our analyses for several scenarios: two involving the placement of the speaker/leader of the ritual in the forum and three involving their placement in the basilica. We will also explore how these results align with the social role of the principia. The reconstructed auditory and visual experiences of soldiers during ceremonies are essential pieces of evidence for addressing a range of issues, including their participation in official military religion, its influence on individuals, and the transmission of orders.

Using 3D Structured Light Scanning to Determine Wear Patterns and Ownership of Roman Shoes

Maria Glanfield, Elizabeth Greene

The assemblage of shoes from Vindolanda Roman Fort near Hadrian's Wall in England provides a unique and stellar opportunity to use 3D imaging to produce archaeological data. The shallow footprint impressions left behind on insoles by the continuous wear of a shoe are usually invisible to the human eye. However, 3D Structured Light Scanning (3DSLS) allows the visualization of these impression patterns, revealing how a shoe was worn and where on the insole the foot sat. This information, in turn, allows us to better reconstruct whether a shoe was owned by a man, woman, or child, and therefore, provides excellent data about the population of this Roman fort and the patterns of discard and loss of the inhabitants. This question is particularly important at a military site because of the questions about women's presence in and around Roman forts that have been debated now for decades. This paper presents the results of research conducted in 2022 and 2023 at

Vindolanda, including the use of post-processing software such as MeshLab to enhance details that reveal ancient footprint impressions on the leather. We hope to provide results that may help other archaeological projects to determine the best workflow and use of project funds if they discover archaeological shoes: 1) What types of shoes (size, style, preservation quality, etc.) rendered the best results and what examples are not worth spending project funds; 2) How the best results were obtained when using 3DLS on leather shoes; and 3) How these results can be used to determine a better estimation of who owned different styles of Roman shoes.

The Use of 3D Imaging on the Shoe Stamps of Vindolanda

Amanda Hardman

The leather shoes of Vindolanda represent a unique corpus of organic material from the Roman frontier. So well preserved are these shoes that in many cases it is possible to identify decorative stamps, impressed into the leather during their manufacture. Examples of these stamped motifs include concentric circles, urns, floral patterns, and in two cases a stamp identifying the maker. Many of these decorative impressions have been studied previously, but recent advances in 3D scanning technology has opened up new and exciting avenues for their investigation. In addition to identifying previously unseen stamps, this high-resolution imagery allows for the application of die study methodology traditionally carried out on coins. Through the identification and confirmation of identical stamps on different shoes, it becomes possible to reconstruct assemblages produced by the same craftsman or workshop. This paper explores the potential of using 3D imaging to improve our study of these stamps and to increase our understanding of shoe manufacturing processes. Although the use of 3D imaging results in an increased corpus and higher level of visible detail of these stamps, challenges remain, including the deterioration of the stamps through weathering and wear. Therefore, this paper will also address the challenges of applying a die study methodology to leather stamps.

3D Imaging at Vindolanda

Rhys Williams

3D imaging and digital technologies provide a tangible avenue toward showcasing and engaging archaeological finds with the public irrespective of distance and delicacy. Furthermore, finds can be digitised with high precision for researchers worldwide, expanding sample collections and expert interactions. This paper explores 3D imaging methodology, followed by applications of 3D imaging and printing for research and public engagement at Vindolanda, UK. This includes online exhibi-

tions on wooden objects with co-curation embedded throughout, a range of skeletal finds, and ongoing research into the leather footwear collection. 3D digital models can be manipulated and viewed comprehensively, uncovering discreet evidence that contribute toward our understanding of communities and heritage on the Northern Frontier of the Roman Empire.

Capture them if you can: Utilising modern technologies in the context of Roman archaeology

Jernej Umek, Rok Bremec, Blaž Kumer, Kaja Stemberger Flegar

In this paper we examine possible applications of cutting edge and bleeding edge 3D visualisation technologies in the reconstruction and interpretation of archaeological data ranging from small finds to entire sites. Among the variety of 3D reconstruction technologies, we focus primarily on photography and video capture. While several software tools are available for these processes, we predominantly rely on Agisoft Metashape for the photogrammetry aspect. The aim of this paper is to evaluate in detail various techniques with regard to recording speed, processing efficiency, time used, and overall performance. This comparative analysis will highlight the advantages and disadvantages of each method based on selected case studies. With the explicit intention of covering the broadest possible range of scenarios, the case studies were chosen from a plethora of sites and small finds discovered during commercial excavations conducted by our company, PJP. Sites range from controlled small-scale settings to large open areas with changing weather conditions and light exposure. The versatility of each capturing method is further assessed with objects made from different materials, such as opaque pottery, translucent glass, and reflective metal. The discussion of each method's inherent strengths and weaknesses, along with practical examples in which one or the other method is superior, will hopefully help inform potential users in selecting the most suitable recording technique according to the specific constraints and requirements of their projects. The use of modern recording technologies greatly facilitates making archaeology more accessible to both the general and the expert public, either digitally and online or through collaborations with institutions such as museums. Even more importantly, however, it makes it easier and more feasible than ever to successfully preserve and safeguard the cultural heritage encompassed by archaeological finds and sites, an aspect that is again becoming increasingly relevant in these turbulent times.

SESSION 13

Virtual reality and reality of Danube Limes sites Viminacium and Lederata within the “Roman Heritage in the Balkans”

Jelena Anđelković Grašar, Selma Rizvić, Snežana Golubović

Paper will present results of the two-stage project „Roman Heritage in the Balkans”, with special focus on VR of two archaeological sites belonging to the Danube Limes Frontier. The goal of the Roman Heritage in the Balkans project was to create a virtual presentation of Roman cultural monuments in Bosnia and Herzegovina, Serbia, Montenegro and Albania showing that the whole area had common cultural heritage. Serbia was presented with Viminacium in year 2019 and Lederata in 2021. All locations were presented through VR storytelling within an application available online and installed in local museums, or at selected archaeological sites. It enables the Internet users and museum visitors to take a virtual walk-through Balkans in the Roman period and learn about monuments preserved only in fragments. Application has educational purpose as well and in the end of the storyteller guiding tour provided by goddess Minerva, there are a quiz questions, to which with correct answers selected exhibits found on locations and digitized through photogrammetry are opened for the interaction. Application had great success and for several years later was presented in various scientific and cultural events throughout Serbia, while at Viminacium it expands the visitors’ experience, especially interesting for young audience. Having in mind that two archaeological sites from Serbia belong to completely different level of protection and scientific-touristic development it would be interesting to discuss application success regarding the raising the awareness of the valorisation of cultural heritage. Thus, the paper will address all necessary questions regarding the application creation, implementation and contribution to its end users.

Heritage Quest AR

Veronika Golanová, Jakub Žaludko , Margareta Musilova

Embark on an immersive journey through time with Heritage Quest AR, a captivating story-based puzzle game that invites players to step into the daily lives of both Roman and non-Roman citizens along the Danube Limes. Set against the backdrop of the 2nd century, players have the opportunity to unravel the joys and challenges of 12-year-old Felix and his family, who inhabit Villa Rustica near

the military camp Gerulata situated in present-day Slovakia.

Immerse yourself in history as the game seamlessly blends fiction with reality, featuring authentic archaeological remains that come to life in mesmerizing detail through the power of Augmented Reality (AR) mode. Explore the secrets of the Vitelli family and experience a unique adventure that transcends time, offering a truly unparalleled gaming experience for history enthusiasts and adventure seekers alike.

Ideas for the sustainability of digital applications - examples of digital interpretation approaches at the Roman frontiers in Bavaria

Veronica Fisher

Particularly with the costly creation of virtual ideal reconstructions, but also other digital products, the question always arises how synergies can be generated and how sustainable utilisation and further development can be ensured. Two project examples from Bavaria are following corresponding approaches. The smartphone app “LIMES mobil”, which emerged from the Creative Europe project “ALApp” (2016-2019), is a long-term project of the Coordination of Archaeological World Heritage Sites in Bavaria. It needs to be continuously updated in terms of technology, content and user-friendliness. In addition, the question always arises as to which synergies can be utilised and generated when creating new content and how this can remain in use in the long term. In the “Danube Limes Adventure” project, museums on the Bavarian Danube Limes developed educational modules especially for schoolchildren, some of which are also based on digital elements. Among other things, the visual novel “Quintana Quest” was produced; a computer game that conveys knowledge about the Bavarian section of the Danube Limes at the time of the Marcomannic Wars on the Bavarian Danube in a playful way. Teaching materials and teacher training courses are intended to bring the project results to the attention of the target group and ensure that the offers are used for many years to come.

Using Internet-of-Things technology to Explore Roman Religion on Hadrian’s Wall

Andrew Roberts, Daniela Petrelli

During the 2016 reinterpretation project at Chesters Roman Fort, Hadrian’s Wall, English Heritage (EH) collaborated with a team of designers from Sheffield Hallam University (SHU) to interpret a collection of Roman archaeological stonework. The Clayton Museum at Chesters is an antiquarian museum devoted primarily to the history of excavation and collecting along Hadrian’s Wall. The team designed My Roman Pantheon (MRP), to run counter to this dominant narrative and instead immerse visitors in the religious practices of the Romans of Hadrian’s Wall. It is an interactive expe-

rience that uses Internet-of-Things technology to harness the psychophysical components of touch. This paper will explore the challenge, process and outcomes of the creation of a sensory experience running counter to the dominant ocularcentric approach of archaeological museums. It will discuss the rationale for selecting Internet-of-things technology above VR or AR, the roles and responsibilities of the team, and characteristics of the co-design process between EH and SHU. Through analysis of visitor observations and questionnaires, it will evaluate the success of MRP in conveying learning outcomes and changing visitor behaviour. It will argue that MRP successfully encouraged visitors to explore the religious landscape of Hadrian's Wall, transformed visitor behaviour away from the hushed reverence to excitement and intra-group dialogue, and restored the archaeological stonework as loci of embodied experience.

From project to process or how to start a revolution in your museum with low budget *Martina Meyr*

In March 2022, the „Dominikanermuseum Rottweil“ was selected as one of four museums to take part in a program called “Museen im Wandel III” (Museums in transition) in Baden-Württemberg/Germany. The application to participate was to submit simply an idea – not a typical project proposal. Our question was: How do we expand the museum experience into the digital space to further provide students with interactive, cross-curricular knowledge and medial skill sets. As primary target group we identified students on secondary school level (12-13 year old). Since the 1980s programs for these groups typically consist of guided tours including practical workshops. With our new process we reduced both elements in scope and included six digital self-learning stations instead with each student working on one of the stations. Since the stations are also part of the permanent exhibition, all visitors will ultimately be able to use them as well. Our main goal therefore was to turn a regular museum visit into an interesting yet pleasant experience while considering knowledge gain as a by-product only. The funding amount was 40.000 € net plus 10% own contribution. By working with a volunteer Maker- and Hackerspace club, we gained skills in media education, game structuring, programming, video shooting and applying artificial intelligence in Form of Avatars. After each step in the development, we conducted testings with students from various school types. As assessment tools we used simple questionnaires, group interviews and feedback by teachers. To develop and implement a new process, our team started by following a design-thinking approach, with user-centered development and testings, and new working platforms. This agile, collaborative and co-creative approach created a huge transformation in working, thinking and behaviour within the team. The whole core team of the museum (5 + 1 Volunteer) was collectively involved in decision-making, and hence new potential was released in each individual member throughout

the process. As outcome of our process, we now offer six stations ranging from creating your own (Roman) coin, shooting photobook in front of the green-screen to slow-motion-clips. For example, we use self-written browser-based programs, low-budget hardware, AI and 3D printing. The final digital items will be transmitted securely and in compliance with data protection regulations with end-to-end encryption. Long-term sustainability and maintenance of components, technology and content is assured for each component can easily and continuously be adapted to the needs of users and progress in research. The next step will be an English version.

IMMERSIUM – The lessons learned from using immersive storytelling in the presentation of cultural heritage

Ljubomir Jevtović, Ivan Bogdanović, Zorica Velkowska

Immersive storytelling is one of the latest trends in presenting cultural heritage. Many archaeological sites and related institutions try to attract audiences and interest in cultural heritage. The IMMERSIUM app for mobile phones was developed as a self-guiding tour guide for Viminacium (Serbia), Emona (Slovenia) and Stobi (North Macedonia) archaeological parks through the project Immersive Storytelling Driven Cooperation for Cultural Heritage Dissemination in Western Balkans. The project involved seven institutions from five European countries and was co-funded by the Creative Europe programme of the EU Commission. The app creation process lasted for two years and comprised of several stages, including extensive preparation work, during which the team defined primary target groups for each of the sites, decided which technologies to use, prepared the content and the storylines, etc. From the outset, the project was met with great interest and enthusiasm from both the public and professional audiences, which was best evident at the opening ceremonies held at each of the sites. In the paper, we will examine each of the above-mentioned aspects through each of the development phases, as well as the final result and the app's current state and utilization. Additionally, we will focus on the shortcomings and give a critical overview of the project and analyse it comparatively, in order to provide a good base for other similar endeavors.

The use of 3D Photogrammetry as a method in analysis and presentation of archaeological artefacts on the example of the archaeological site Viminacium

Stefan Stančić

The topic of this paper will be the use of 3D Photogrammetry as a method in the processing and presentation of archaeological artifacts. The development of digital technologies and software for photogrammetry, used to model archaeological data, gives us new possibilities for analysis and bet-

XXVI LIMES CONGRESS BATUMI 2024

8.-14. SEPTEMBER 2024

ter understanding, visualization, and presentation of archaeological contexts. This article describes the collection, processing, and management of archaeological data at the archaeological site of Viminacium, Serbia. Whether they are very rare, very valuable, very fragile, or very ordinary archaeological artifacts, their digitization is extremely important. Once digitized and properly stored, the 3D model of the artifact can always be used later for publications, exhibitions, and presentations. In addition, these tools allow us to visually preserve the characteristics of archaeological artifacts for future use and facilitate the dissemination of archaeological heritage to the general public. In addition to the documentation value, 3D models of objects play a major role in archaeological presentation. In some situations, object models can be used and presented within a digital reconstruction of an object, such as a Roman house. In this way, its basic function can be shown and the environment in which it was created and used attractively can be evoked. Furthermore, 3D digital models are an effective way to connect local communities with their cultural heritage, while reducing the impact of public visits to endangered or inaccessible sites.

SESSION 14

A new riddle at the Danube - a large-scale motorized geophysical survey of the Roman vicus of Stein, Austria

Klaus Löcker, Mario Wallner, Stefan Traxler, Ralf Totschnig, Tanja Trausmuth-Wallner, Hannes Schiel, Jakob Gallistl, Barbara Kainrath, Gerald Grabherr, Eduard Pollhammer, Alois Hinterleitner

Just north of St. Pantaleon-Erla in Austria, next to the Danube, the fields around a small hamlet called “Stein” have long been known for their Roman finds: stones - indicating Roman settlement activities, numerous pieces of equipment of the Roman army - including 13 military diplomas, scores of coins - dating the site to the time from the late 1st century to an abrupt end around 180 A.D. The location just some seven kilometers east of the legionary fortress of Lauriacum (Enns) and, even closer, to the unfinished military camp of Albing makes the site particularly interesting. First surveys of the site were conducted in 2017 and 2018, including drone photography, hand-operated geophysical and field surveys, as part of the project “Circum Lauriacum”, a joined research cooperation of the Universities of Innsbruck and Salzburg, ArchaeoPublica, the Upper Austria Landes-Kultur GmbH, the Abteilung Kunst und Kultur der NÖ Landesregierung and the Austrian Federal Monuments Office. These showed a previously unknown auxiliary fort and parts of a corresponding vicus, the latter featuring some streets and residential buildings. An extensive scientific documentation and analysis of more than 2000 small finds marked the site as an unique place to study the dawn of Roman border protection. In 2022 and 2023 GeoSphere Austria was able to join the “Circum Lauriacum” project with the objective of using motorized magnetometry and GPR for a large-area survey of the vicus, to study its structure and extent. The surprising results of this survey, like the size of the settlement or archaeological structures one would not expect from such a vicus, shed a new light on the importance of this place at the Roman Danube limes.

Troesmis 2023 - Recent geophysical prospection and geoarchaeological research

Cristina-Georgeta Alexandrescu, Christian Gugl, Mario Wallner, Klaus Löcker, Franziska Reiner, Hannes Schiel, Ralf Totschnig, Alois Hinterleitner

In the archaeological investigations at Troesmis, which have been ongoing since 2010, archaeologi-

cal prospection methods played a decisive role from the very beginning. The evaluation of available remote sensing data as well as large-scale geomagnetic measurements provided initial insights into the extent and structure of the Roman-Byzantine settlement of the 2nd-12th/13th centuries. The geomagnetic measurements, which were carried out with a hand-guided system from the University of Innsbruck until 2017, also made it possible to locate the camp of legio V Macedonica. In 2023, GeoSphere Austria, in cooperation with the Austrian Archaeological Institute and the “Vasile Pârvan” Archaeological Institute, was able to survey the majority of the fortress as well as large parts of the camp suburbs using a high-resolution, motorized radar system (Mira HDR). Numerous buildings within the legionary camp as well as in the centre of the camp suburbs could be identified. The new measurements also show how the Middle Byzantine settlement overlapped or disturbed the older Roman structures. Complementary geoarchaeological coring provided initial information on the subsurface structure, especially on the thickness of the archaeological layers and their recent covering. In connection with the distribution of selected artefacts categories, such as marble cladding and pottery finds, the new investigations also yielded new clues to the location of the Roman municipium, previously known only through the epigraphic evidence, including the two large bronze tablets from the city’s law.

Beyond the Walls: Geophysical Survey of the Vicus of the Castellum at Da’jāniya, Jordan

Jaroslav Bodzek, Kamil Kopij, Łukasz Misk, Nikola Babuci, Paweł Ćwiakata, Edyta Puniach

The late Roman fort in Da’jāniya, Jordan, is one of the largest military installations in the province of Arabia. While the visible remains of the fort date only to the turn of the 3rd and 4th centuries CE, early Roman pottery found during the excavations under the Limes Arabicus Project suggests an earlier occupation. Our geophysical survey, conducted in 2022, aimed to uncover structures extra muros (outside the walls) that could shed light on the history and operation of the fort. We detected several anomalies that indicate the presence of buildings, some of which are partially overlapped by the Diocletianic fort. These findings raise the possibility of a pre-Diocletianic military structure at the site, as well as a more complex vicus (settlement) than previously assumed. In this paper, we will present the results of our survey and discuss their implications for the chronology and architecture of the fort and its surroundings.

Prospecting the roman army in burgos: different techniques, sites and results

Esperanza Martín Hernández, Antxoka Martínez-Velasco

Since 2019, promoted by the Junta de Castilla y León (Spain), a multidisciplinary team has been carrying out a review and update of the catalogue of sites related to the Cantabrian and Asturian Wars, mainly Roman field camps, but also assaulted indigenous settlements, battlefields and isolated finds. The work highlighted the need to make progress in prospecting in order to fill in the gaps in information, but also the importance of the review and fieldwork to confirm the findings.

In 2022 the work focused on the province of Burgos, at specifically focussed on a number of enclosures with special characteristics: Eras del Santo & La Horrilla (Humada), Castarreño (Panizares), Villarcayo (Villarcayo), Calzada & Tortolondro (Sotresgudo). Each one presented different casuistry, which made it necessary to use different prospecting techniques adapted to their needs.

Geo-radar and other non-intrusive analyses are included among the techniques used, thus trying to assess the goodness of each technique in different locations. In any case, field surveys have been carried out in order to confirm the different chronologies in which we are working. The results show different sites that differ in nature from the characteristic Roman encampments.

Keeping in line: a review of 25 years of geophysical survey along the Antonine Wall

William Hanson, Richard Jones, Nick Hannon

This paper will attempt to synthesise some 25 years of geophysical survey undertaken by a number of different practitioners, both academic and commercial, on sites along a single linear monument in Scotland: the Antonine Wall. It will highlight the most important archaeological results and their contribution to our understanding of the Wall. It will also draw attention to the impact of the development of the methodologies applied and inconsistencies in the geophysical responses to archaeological phenomena.

Teaching Geophysics at Roman Frontier - from Basics to Summer School

Paweł Lech, Martina Seifert, Nikola Babuci, Łukasz Miszk

Teaching young scholars how to create the image of subsoil with non-destructive research methods – selecting the most efficient tools, collecting data, conducting research and preparing them for transferring results into a GIS system is a dynamic and multidisciplinary endeavour that bridges the gap between ancient history and modern science education. This paper outlines a comprehensive approach to instructing geophysics, starting from the basic talks and culminating in the organisation of a summer school program. Our talk is based on the experience we gained during

XXVI LIMES CONGRESS BATUMI 2024

8.-14. SEPTEMBER 2024

educational fieldwork at the Archaeological Parks of Xanten (Roman city of Colonia Ulpia Traiana) and Nea Paphos (Hellenistic and Roman capital of Cyprus). We will not only present how to connect individual teaching ideas in field research but also demonstrate the significant impact of our workflow on geophysical education, both in teaching and fieldwork. By combining classroom instruction with immersive fieldwork, our holistic approach ensures that students not only grasp the fundamentals of geophysics but also gain practical expertise, fostering a deep appreciation for both Roman archaeology and the field of geophysics. Ultimately, this educational model promotes a multidisciplinary approach to understanding our past and equips students with valuable skills for preserving archaeological heritage. We would like to show our standards of work, created during Summer Field Schools, and the broader characteristics of international and interdisciplinary projects that they are part of. Finally, as part of our integrated approach, we will also introduce our GIS Platforms and web-based geo-information systems, such as Arches. Through this paper, we aim to encourage scholars to discuss their field teaching practices and share their experiences, especially as the organisers of this panel have suggested that the sustainable transfer of knowledge is key to creating 'new global standards'.

SESSION 15

Royal veterans welfare. Client rulers as patrons and benefactors of veteran Roman soldiers in the early principate

Jean Coert

This paper deals with a phenomenon of the early principate that has so far received little attention in Roman frontier studies: It examines the establishment of veteran colonies in client kingdoms under Augustus and the patronage of veteran colonies in the provinces by client rulers. In my contribution I will show that behind this development was a cunning move by the first emperor. He intentionally settled old army units in these border regions of the empire, including many soldiers who had served his former opponents in the civil war, such as M. Antonius. He thus removed them from the centre of power and made it more difficult for internal Roman rivals to recruit old army units for a usurpation or similar, as once in the civil wars. In addition, the settlement of veterans in the client kingdoms, such as Mauritania, and the patronage of the colonies by client rulers made it immensely difficult for senators to establish patronage and loyalty relationships with these old army units. Thus, the senators could hardly compete financially with the much richer royal benefactors and patrons. Linked to this, Augustus was also able to ensure the provision of the veterans detached from the urban Roman nobility with the help of the client rulers. With these measures, Augustus was able to weaken the connections of potential senatorial competitors to these veteran colonies in the long term. In toto, I will illustrate that in the early imperial period, the royal care of veterans in the periphery was specifically used to prevent the recurrence of civil war phenomena and to secure the position of the emperor in the centre. The paper thus offers new perspectives on imperial interaction with the Roman army beyond the provincial borders and its integration into the peripheral ruling structures of the Roman Empire.

Cavalry in a frontierland? Remarks on a papyrus fragment from a Georgian collection

Adam Łukaszewicz

Latin papyri from the Roman period in Egypt often contain information about military activities. Latin military papyri are usually internal army papers.

The garrisons in the hinterland were not numerous. In some Greek texts centurions appear in the

role of police officers. Cavalry units protected the fringe of the desert and fulfilled also the role of police in the border areas (e.g. Fayum).

A Latin papyrus from the Tsereteli Collection in the Georgian National Centre of Manuscripts in Tbilisi is a small fragment of an internal army document containing names of cavalry units with names of their commanders. The papyrus of unknown date and provenance concerns a mixed group of cavalry (a task force?), probably on the Egyptian fringe of the empire.

Roman Outposts outside of Dacia and Pannonia

Zsolt Visy

Rome regarded the neighboring territories outside the Empire as its own land and depending on the historical situation and the power relations it set up there also military posts. These posts could be temporary or permanent stations. The temporary ones existed mostly during military campaigns, the permanent ones in peaceful times, based on diplomatic treaties and peace agreements. The latter ones served at the same time as commercial stations, too. There are more examples of both kinds along the Pannonian and Dacian front of the Roman Empire. Following the Dacian wars of Trajan military posts were built between Dacia and Pannonia. During the Marcomannic wars many military installations were established in the region of the military operations, and some of them can be regarded as bases for the planned(?) provinces Marcomannia and Sarmatia. It was the time as forts were built opposite to the legion fortresses at Carnuntum, Brigetio and Aquincum. Rome realized the significance of the ancient route running through the corner of the Carpathians and established three permanent forts as outposts in the passes of the mountains, and after the peace agreement of Commodus in 180 AD watchtowers and fortlets along this road between the Danube and the Carpathians, and from there to the Danube at Troesmis. Under Diocletian „*castra facta contra Acinco et Bononia (in barbarico)*”, and a row of bridgehead fortlets on the left side of the Danube. The Great Wall in the Hungarian Plain was erected under Roman control as a demarcation line between the Sarmatians and the Germans. The watchtower near Hatvan and the never ended fort et Gőd belong to the Wall in the 4th century.

The Roman presence on the island of Farasan revisited in the light of the epigraphical sources

Sebastien Mazurek

The island Farasan al-Kubra in the archipelago of the same name, located in the south-eastern part of the Red Sea continues to awake curiosity and interest. Twenty years after the publication of two

imperial Latin inscriptions mentioning the presence of legionary units in the region of the Red Sea, fresh discoveries made by the French—Saudi archaeological team in the past three years in the abandoned village of al-Qusar - both archaeological and epigraphic (one inscription) — have led to significant breakthroughs, pointing to the existence of a Roman military structure. Thanks to the inscriptions at our disposal, our knowledge and understanding of the importance of vexillationes in a military outpost that used to be considered outside the Imperium Romanum has dramatically increased. Epigraphic sources are of great importance not only in assessing the rationale for such a military deployment of this kind in the Red Sea, but also in estimating the dimensions and the layout of the military camp.

It would be valuable therefore to reconsider both previously published Latin inscriptions in the light of the recent findings on the one hand, and on the other to examine the recently found one, an inscription engraved on three faces of a small altar unearthed inside the compound. A scrutiny of all three sources within their archaeological context may cast new light on the military site at al-Qusar, where a Roman garrison was stationed, as well as on the landmarks in the immediate vicinity. New assumptions and proposals will be put forward considering the presence of units from at least two distinct Roman legions, and possible auxiliary forces, on the island of Farasan al-Kuhra in terms of their inner composition as well as their role in this part of the Roman sphere of influence.

Cities against Empires: War and Imperialism in the Third Space in the third century A.D *Ariel Samuel Lewin*

In the stormy third century A.D., some cities on the edge of the steppe, such as Emesa, Palmyra, Hatra and Edessa, were able to militarily oppose the two empires with extraordinary effectiveness. This study intends to discuss why they were able to represent an aggressive third military pole. In particular, the ways in which they fought and the types of military forces they had at their disposal will be examined. Their capacity for warfare, their role as commercial poles and their integration with the semi-nomadic world of Mesopotamia and the Syrian desert made these cities rich and important. For the Romans, the ability to control these cities was an indispensable factor in being able to extend their hegemony beyond their frontiers.

Army-Religious beliefs and trade Between the Orient and the Danube Provinces *Adrian Ardeț*

The Roman presence on the Danube as a natural border represented the policy of Emperor Augustus to create security and stability for the empire.

At the end of the 1st century AD during Domitian's time, the actions taken by the Romans to expand the limes north of the Danube in Dacia are increasingly evident.

A particularly interesting aspect in the evolution of the IV Flavia Felix Legion is its cantonment during the 1st - 7th centuries AD, in the Roman provinces on the Danube. This is why its course on the Danube is known from its presence at Singidunum (Moesia Inferior today Serbia), Bersobis (Dacia, today Romania), Aquincum (Pannonia, today Hungary) or Sirmium. The participation of the soldiers of the IV Flavian Legion in the numerous campaigns carried out in the East of the Empire made it well known on the Danube where it defended the limes until 602 AD. Permanent contact with the East made possible the presence in Roman Dacia of soldiers recruited from Syria with the center at Palmyra. Only from Tibiscum (Dacia, today the village of Jupa, Caraș-Severin county, Romania) come seven bilingual inscriptions and within Roman Dacia temples dedicated to Palmyrian deities are known from Ulpia Traiana Sarmizegetusa, Porolissum. The city of the Desert, called Tadmor by the Semites and Palmyra by the Greeks, was born by the settlement of caravan tribes in the oasis of the Efqa spring in the Syrian desert. At the end of the 1st century AD, it came into permanent contact with the Roman Empire and after Emperor Hadrian visited it, it received in 129 AD. the status of a free city, and in 215 during the time of Caracalla it becomes a Roman colony. Ethnically, the Palmyrenes are combined with the Amorites, Arameans, and Arabs. The city's social structure was tribal, and its inhabitants spoke Palmyrene (a dialect of Aramaic), while also using Greek for trade and diplomatic purposes. We know of numerous inscriptions dedicated to I.O.M. DOLICHENUS, DEUS AETERNUS, MITHRAS, DII PATRII, BELUS, MALACHBELUS or DEUS SOL IERHABOL.

The southernmost outpost of the Roman army at Primis (Qasr Ibrim) under Augustus: New evidence from Greek and Latin papyri

Tomasz Derda, Adam Łajtar, Tomasz Płóciennik

The Roman garrison in Qasr Ibrim (Greek and Latin Primis from the Meroitic *pdm*), ca. 200 km south of the first Nile cataract, was established probably in the winter of 25/4 BC by Caius Petronius, the third Roman prefect of Egypt, after Meroitic attack. The garrison was withdrawn to Hieria Sykaminos, 120 km north of Qasr Ibrim, as a result of the so-called Samos treaty concluded between the Roman state and the Meroitic Kingdom in 21 BC.

In 1974–1984, the Mission of the Egypt Exploration Society (EES) discovered here hundreds of papyri, both documentary and literary, written in Greek and Latin. Only a part of them was published in the 1970s, including the famous Latin papyrus with an elegiac fragment attributed to Cornelius Gallus. Some years ago, the present authors were granted permission by the Egypt Exploration Society to publish the remaining part of the lot.

The changing of military strategies during Marcomannic wars

Stefan Groh

In the course of the campaigns against the Marcomanni and Quades, very different military infrastructures were established in the middle Danube region. New investigations of strategically important sites and military equipment in the Marcomannic-Quadian settlement area indicate a clear change in strategy and troop deployment during the two expeditiones Germanicae (171-173 and 178-180 AD, respectively). While in the first campaign, comparable to the advance in late Augustan times, the focus was on an advance with large legionary troop units and correspondingly large camps, which was obviously very costly, the strategy changed in the second expedition. Now, smaller mobile troop units were used for the most part and instead of larger, long-term legionary camps (hiberna), a dense network of vexillation forts, temporary camps and supply centers was implemented. The goal of this successful paradigm shift was a territorial occupation of the Germanic settlement area and the establishment of a new province. As can be seen from the findings from the “Waffenmagazin” of the Carnuntum legionary fort and from temporary camps, all available resources, including technologically obsolete weapons, were used in this campaign.

Roman traces east of the Caspian Sea: Kara-Kamar?

Fatih İnan

During an expedition organised by Russian and Uzbek scientists in 1988, three inscriptions, one in Greek and two in Latin, were discovered in the Kara-Kamar cave complex near Termez in modern Uzbekistan, on the territory of ancient Bactria. After these inscriptions it was claimed that Roman traces had been found east of the Caspian Sea for the first time. Before the inscriptions found in Kara Kamar, the most easterly known Roman inscription was the Latin inscription on Mount Beiokh/Beyuk, 4 kilometres from the western shore of the Caspian Sea. However, the Kara-Kamar inscriptions carried the traces of Rome some 1700 kilometres further east. These inscriptions, dated to the II-III century AD, have been the subject of various debates in the scientific world. The fact that the inscriptions were written in a corrupted language added to these debates and doubts. Although there are opinions about the Greek inscription that it may be a different language, there is no such discussion about the Latin inscriptions. One of the Latin inscriptions contains a statement that may belong to the XVth Apollinaris Legion. As a matter of fact, the XVth Apollinaris Legion, which had been stationed in Satala for many years, had undertaken missions all along the eastern border of Rome, even as far as the Caucasus. Based on recent studies on Kara Kamar, this study will re-evaluate in historical context what the expressions on the inscriptions indicate, when and by what

means the soldiers of the XVth Apollinaris Legion might have gone to Kara Kamar and whether the inscriptions are true or not. Keywords: Kara Kamar, Legio XV Apollinaris, Roman-Persian wars.

The Control of the Steppe East of Palmyra, A Palmyrene limes?

Leonardo Gregoratti

From the beginning of the 1st century AD until the fall of Zenobia's empire in the second half of the 3rd century the Syrian city of Palmyra played a vital role in the long distance trade connecting the Roman empire with Asia. In order to reach central Babylonia and the harbors of southern Mesopotamia the commercial expeditions of the Palmyrene Trade Lords had to cross the vast steppe territory stretching from the Caravan City eastwards as far as the western bank of the Euphrates were they embarked in order to continue their journey downstream. More than 200 Km separate Palmyra from the river, 200 Km of no man's land. In most of the maps of the Roman Empire in fact the city of Palmyra marks the limits of the imperial domains. On the other side the course of the Euphrates indicates the westernmost limits of the authority of the Parthian Great King, Rome's greatest rival in western Asia. In between all maps present a blank area, an empty desert space supposedly inhabited only by nomadic tribes.

Aerial recognitions carried in the 30s by Antoine Poidebard demonstrated that that land was not empty at all. Photographs taken from the sky discovered a complex system of roads, fortifications watching towers and water supply points closely connected with the natural features of the territory. In the course of the decades the Palmyrene created a system of praesidia in order to assure support and safety to the caravans involved in the trade which crossed regularly that portion of steppe. This territory remained from long time exclusively controlled by the city leading classes since only in later times Roman soldiers were directly employed in the area.

Aim of this paper is to analyze the epigraphical documents from Palmyra and its south-eastern territory in order to better explain which forms of political control were exerted over Eastern Palmyrene and how did they change through time. This paper will try to assess the possibility of distinguishing west of the Euphrates, an area under direct control of Roman provincial authorities from a territory controlled by Palmyrene municipal leadership, a sort of *Palmyrene limes* extending over the most vital areas for the city commercial enterprises. The exceptionality of this form of territorial rule is strictly connected with the exceptional geopolitical conditions in which it was created: a semiautonomous municipal authority between two large superpowers, Rome and Parthia, was in charge of controlling a portion of territory outside the direct control of both of them. The exceptionality of Palmyra autonomous situation found its reason and explanation in its peculiar capacity of controlling a territory characterized by extremely problematic environmental conditions and inhabited

by unpredictable nomadic tribes with which only a community with specific proficiencies like the Palmyrene one would be able to deal, a control exerted for most of its history with limited interference from Roman central authority.

An army for ‘India’? The Roman fleet in the Red Sea

Dario Nappo

The presence of the Roman army in the Red Sea has been stable since at least the time of Augustus. They were patrolling an area that strictu sensu was outside of the limits of the Roman Empire, that never accomplished to fully conquer the Red Sea, but the Roman fleet would be moored at the ports under the control of the Roman Empire, mostly in Egypt, such as Myos Hormos and Berenike. There was a breakthrough in this scenario since the beginning of the second century CE, following the military campaigns of Trajan in Nabataea and against the Parthians. Apart from the conquest of new territories, the emperor enhanced a number military infrastructure in the area, such as the via Nova Traiana and the Channel on the Nile, that also had consequences on the economic life of the Empire. In this era, for the first time a presence of a military settlement in the Farasan archipelago is attested, far beyond the borders of the Empire. The reason of such presence is object of debate among historians but it is certainly to be connected to the overall reorganization of the East under Trajan, possibly left incomplete because of his death. Still, part of his plan had to survive under the rule of his successors, since the Empire reached a level of presence in the Indian Ocean in the second century that was never experienced before, enhancing the trade with India and China. The consequences of this new settlement lasted longer than usually believed, up to at least the third century CE. This paper aims at investigating the connection between Trajan’s activities, the presence of the army outside of the Roman Empire in the East, and the international trade between the Mediterranean and India in the II-III century CE

Inside and Beyond the “limes”: The attitude of the Jewish communities towards Palmyra

Samuele Rocca

According to the Iggereth of Rav Sherira Gaon, Papa ben Nason, identified with Odaenathus, destroyed Nehardea, where lived an important Jewish community, a city located well inside the borders of the Sassanian kingdom, probably in 259/260 CE (570th year according to the Seleucid calendar). This paper shall try to elucidate if this episode generated a common hostile attitude of the Jews living inside and beyond the “limes” to Palmyra. And yet, a passage of Genesis Rabba demonstrates that some Sages associated Odaenathus to the small horn in the vision of Daniel

(Genesis Rabba 6.903 on Daniel 7 -8.). Later on, it seems that at first among Jews the rule of Zenobia aroused Messianic expectations (Midrash Zuta on the Song of Songs 33). However, at least two passages of the Jerusalem Talmud demonstrate that at least some the Jews living in Syria – Palaestina (Y. Terumot 8:10 (46b)/ B. Yebamot 17a), had a hostile attitude towards Zenobia and perceived Palmyra not as a legitimate party but as a foreign power that strived to carve up territories from the Roman Empire. More than that, an in-depth analysis of a passage of Zosimus's *Historia Nova* provides the evidence that the Nasi (Patriarch)'s Gothic Guard, whose existence is attested in the Jerusalem Talmud, supplemented by other paramilitary forces made up by his tenants, stood by Aurelian and helped secure Roman rule in the Near East during this politically unstable period, playing an important, if not decisive, role in the Battle of Emesa in 272 CE (Zosimus, *Historia Nova* I.26 -27). Thus, although it is difficult to discern a common attitude of the Jews to Palmyra, it seems that the leader of the Jews living inside the Roman Empire, the Nasi, stood by Rome, and possibly his stance carried much influence.

Presence of the Roman army on the “Stone Hill” and its surroundings

Oskar Kubrak

The abutment known from the literature as “Stone Hill” is located on the left bank, downstream of the Danube, opposite the Roman camp of Noviodunum, which was the base of the Moesian fleet (*Classis Flavia Moesica*). In the last centuries before Christ, the settlement of Kartal (modern Orlivka) functioned here, and after the fall of the Geto-Dacian fortress, Roman troops were stationed here from the second half of the 1st to the middle of the 3rd century. In the first centuries AD, this small fortification had all the defensive elements - walls, towers and a moat. A vexillatio of I Italic legion, the V Macedonian legion, the XI Claudius legion and as well as the Moesian fleet were stationed here. Excavations at the Stone Hill site began in 1840. Among the finds that may indicate the Roman military nature of the site are surgical instruments found in the tomb. Among the movable artifacts, the most noteworthy is a fragment of high-grade stamped pottery of Dragendorf 30 form. In addition, according to the director of the Odessa Archaeological Museum, Dr. Igor Brujako, about 1,700 Roman coins were discovered at the fortification site as part of official and unofficial archaeological excavations. The fort in Orlivka bordered the Danube River on one side and Lake Kahul on the other, in addition, there are wetlands around the limestone hill. The aforementioned natural elements provided natural protection in ancient times. Taking into account the results of archaeological research, a system of defensive ramparts was established here in the 1st century with the aim of an effective protection system for the Lower Danube section. Such a measure allowed full control of the flow of people and material goods

XXVI LIMES CONGRESS BATUMI 2024

8.-14. SEPTEMBER 2024

ABSTRACT BOOK

into the Roman Empire. During the presentation, I will present the current state of knowledge about the fortification at Orlivka and the defensive ramparts connected with it. I will touch on the significance of the “Stone Mountain” for, among other things, Roman camps located on the other side of the Danube.

SESSION 16

‘Until Death Did Them Part’: Female Identity & Military Marriages on Tombstones from Hadrian’s Wall

Joanne Ball

When creating a funerary epitaph, those responsible for commissioning the memorial were able to curate the identity of the individual being commemorated, choosing which elements of their biography to include in the limited space available. The details were mostly given textually, but could also include visual depictions of the dead as desired. Both men and women were impacted by this post-mortem shaping of identity, but there are often significant differences between the way that each was represented in the funerary record. Which details were selected and which were left out potentially has a lot to reveal about the identity of the deceased, and the people who commemorated them.

Many of the tombstones associated with women from Roman Britain come from the frontier zones, and it has often been assumed that they belonged to/were dedicated by females associated with the military community – wives, daughters, mothers, sisters, aunts, nieces. But did these women identify as members of the military community, and how important were their connections with the Roman army to their own post-mortem self-presentation? This paper explores how the identity of women was portrayed on tombstones from Hadrian’s Wall, and what references were made to their military connections. It considers both cases where the woman was the dedicant of the tombstone, and those where they were the deceased recipient. It considers how women were referred to in inscriptions – by name or title – and their relationship to other individuals mentioned in epitaphs, their visual representation, what other biographical details were included, and how this varied between cases where women were dedicants and recipients of memorials. In doing so, the paper explores how far women were defined in death by their military connections, and what other facets of their identity were incorporated in these permanent memorials ostensibly dedicated to their memory.

Infant burials in late-Roman barracks at South Shields and their significance

Nick Hodgson

Extensive excavation of nine late-Roman (c. 300- c. 400 CE) barracks at South Shields Roman Fort, at the eastern end of Hadrian’s Wall in Britain, was carried out between 1983 and 2002. These exca-

vations are now being brought to final publication by the author. The late-Roman barracks at South Shields were notable for producing a number of neonate infant burials. This paper considers the significance of these burials, contrasting their high number in the late-Roman barracks with the incidence of infant burial in the barracks of earlier periods at that site. The spatial pattern of the burials is analysed and found to be typical of the civilian practice of indoor infant burial in late-Roman Britain. Such neonate burial is no longer thought to be a result of infanticide but much more likely to be a carefully organised and respectful burial rite for infants who did not long survive childbirth. The infant burials signal a civilian presence in the barracks – presumably the families of soldiers. The paper explores the questions of: 1. How widely and at what dates this practice is attested at South Shields and at other Roman forts in Britain; 2. How the identity of the soldiers, women, and babies involved was perceived and expressed in this burial rite. It is hoped that the presentation of this evidence at the Congress will encourage colleagues to bring forward comparative evidence from military sites elsewhere in the empire.

Ethnic and Social Diversity at the Frontiers of the Danubian Roman Provinces. Study Case of Pannonia(s)

Eduard Nemeth

In this paper I would like to discuss the origins and the ethnic diversity of the population at the external frontiers of the Roman provinces of Upper and Lower Pannonia. The border regions were in more ways than one spaces of interaction between various cultures. The paper will attempt to establish if there was a specific impact of this diversity on the fortresses and settlements at the frontiers and if yes, what kind of an impact it was. For this goal the regional or ethnic origins of the people shall be established where possible and, at the same time, an attempt will be made to determine their cultural, familial, and social status, firstly in order to obtain an image of this diverse frontier population and secondly to also establish whether a certain social mobility ensued following their settlement in these areas.

Saviour or Just Another Enemy?: Roman Provincials and Roman Army in times of Tumult

Ceren Pilevneli-Çubuk

The foremost victims of the conflicts that transpired on the frontiers of the Late Roman Empire were the denizens of cities and towns situated in the immediate vicinity of these border regions. While Roman military forces generally played the role of saviours for the inhabitants of these terri-

ories, historical records do document instances in which, under certain circumstances, these forces inflicted greater harm than the adversaries themselves, be they barbarian communities or the armies of the Sassanid Empire. Such occurrences, it appears, became more prevalent, particularly during periods of escalated intensity in operations conducted beyond the borders. This study endeavors to investigate the impact of encounters between the Roman populace residing in border provinces and Roman soldiers, by delving into specific examples, on issues related to identity and allegiance sensibilities.

Living in the shadow of the forts on the Dacian frontier

Monica Gui

In Dacia, the role of the army in the colonization of the territory and the introduction of urban civilization was paramount. This is keenly indicated by the fact that the most typical form of urban or pseudo-urban habitation in the province consists of a settlement next to a fort, a pairing which is also familiar for some of the more developed minor agglomerations. The topographic location of many forts ensured that they became enduring landmarks, embedded in the memory of those societies, irrespective of the subsequent development of the civilian settlements. The daily existence of the latter's inhabitants can be seen in a way as framed between the fort and the cemetery, both of which contributed, albeit at different levels and with different means, at the creation and display of military identity. The fort not only epitomized Roman authority, but its monumentality and outer appearance, whether referring to a particular construction technique or material, inscription, or decoration, intentionally and/or incidentally communicated to approaching onlookers something about the collective identity of the troops in garrison. Conversely, the necropolis offered more personal possibilities of self-definition. In-between, there were other ways in which the military manifested immediately outside the fort walls. Drawing on complementary (although admittedly limited and at times sparse) evidence from the Dacian limes, the presentation aims to inquire into how these circumstances may have influenced the way frontier communities viewed themselves and the terms of interaction between civilians and soldiers. Various groups in various places across the frontier perceived and navigated through the built and social environments differently. Considering the interrelations between these, the aim is to capture something of the experience of living (literally and figuratively) in the shadow of the forts, with broad commonalities, but also within local contexts.

Narrativology of the frontier

Lorenzo Boragno

Generally view as a “space”, a liminal region of socio-cultural and economic interaction, frontiers play nevertheless a deeper and more meaningful role in both ancient and modern historiography. Not only locus of action, frontiers (and provinces) of the Roman empire appear in historiographical as cultural mirrors of vices and values, as centrifugal and destructive forces, and even as agents of change. Can the frontier can be approached as an element of a narrative? And what if we consider frontiers as characters of a narrative? Highlighting the role played by frontiers in large scale and broad scope historiographical works of today can be useful to understand better how our way to approach the topic is endlessly changing. If modern and contemporary examples can easily come to mind, from the now outdated Rostovtsev’s epic tale of a core-periphery struggle to the debate on the jeopardization of the empire during the so called crisis of the III century, looking at frontiers as narrative devices in ancient historiography can provide a meaningful (and exciting, perhaps?) approach to frontier studies. Focusing more on III century and IV century AD historiographical narratives, and toying just a bit with different meanings of “frontiers”, the present contribution aims to explore this possibility. Considering the frontiers of the Roman empire not just as “spaces” of a narrative but as a dynamic element of it can help us to look at the peripheries of the Roman Empire from an embedded point of view, conceptualising the limes as they may have done.

Everyday Strategy: Understanding space, place, objects and identities on the Roman Frontier

Al McCluskey

Traditional analysis of strategic practice along the frontier zones of the Roman Empire frequently correlates classical texts with the form, location and chronology of major military and urban sites. This approach tends to privilege political, military and economic perspectives above those of wider societies. Consequently, strategic decision making on the frontier is often seen as the preserve of elite groups/personalities who undertake the activity on an episodic basis as they align resources to achieve their goals in a simplified ‘Roman v non-Roman’ context. However, recent developments in Strategic Theory scholarship present a significant challenge to this approach. Strategy is now seen as constant, dynamic, multi-faceted process in which all people and institutions create and manipulate identities to navigate daily life in the most advantageous - or least disadvantageous - circumstances. This paper will outline this Everyday Strategy approach, and using the Victor tombstone from South Shields (RIB 1064) as a worked example, illustrate its ability to help us to better understand how space, place and objects are related in a context of constant identity manipulation, both within and between communities.

At the edge of empire and expectations: forts as urban spaces

Catherine Teitz

The frontier more broadly, and forts specifically, have not been a key component of Roman urbanism. Over two decades ago, Martin Millett emphatically argued that frontier forts should be included in discussions of urbanism in Britain. Despite his call, there has been little movement in Romano-British scholarship either to approach forts as urban spaces or to incorporate them into broader urban dialogues across the province. Fieldwork near Hadrian's Wall has demonstrated that some forts and their surroundings were home to a larger and more complex community and that they had extended periods of occupation; both qualities lend themselves to considerations of urban spaces. This paper will consider possible approaches to and difficulties with using an urban lens at frontier forts. It will take Vindolanda as a case study and examine the site's development from the Stone Fort II period through the late Roman occupation. It will consider how the fort's architecture and infrastructure contributed to the creation of urban spaces as well as military ones. At the local level, treating Vindolanda as urban productively complicates the social and spatial dynamics of the place; more broadly, expanding our expectations of urban to include forts changes how we might define urbanism for the Roman Empire.

Frontier towns and forts: urban-military interactions and identities in Carlisle and Corbridge, UK

Jane Harrison

Frontier towns and forts: urban-military interactions and identities in Carlisle and Corbridge, UK
This paper looks at the structuring of frontier identity within and around the strategically-located Limes frontier towns and Stanegate forts of Carlisle and Corbridge, which both lie just south of Hadrian's Wall, UK. Both began as first century forts. The fort at Carlisle seems to have continued in use until the end of Roman Britain with a considerable town located to the east; inscriptions suggest that by the mid-third century the town had become the civitas for the Carvetii. At Corbridge, following a sequence of forts, the military associations of the site changed in later-second century: with the recommissioning of Hadrian's Wall, Corbridge was redeveloped as a small legionary base and supply depot, surrounded by a rapidly expanded and extensive town. Although there are no surviving records Corbridge may also have been a civitas. These frontier towns with their linked forts or military sites were locations where soldiers and civilians interacted socially in a range of ways, relationships inevitably influenced by the proximity of the frontier and the ebb and flow of military fortunes and strategies. Using new data from WallCAP excavations at Corbridge alongside existing research, the spatial relationships between the groups using the towns and forts, and

their connections through trade, industry and leisure will be explored. The question will be asked whether the different military trajectories of the two sites altered the character of social relationships and urban/military identities. The identities forged in these Limes towns and forts will be compared briefly with towns to the south with the aim of highlighting the influence of the frontier on the character of spatial and social urban-military interactions and identities.

Modelling Movement– Approaching concepts of interaction, access and control in military contexts using Space Syntax Analysis

Andy Lawrence

The rapidly growing corpus of complete and detailed plans for Roman military fortifications and their associated extramural settlements is opening new possibilities for comparative studies on the planning, layout, and organization of these sites. Simultaneously, the integration of Space Syntax tools into GIS software is facilitating the analysis of the spatial configuration of the built environment for archaeological research. However, while Space Syntax Analysis has been effectively used in the study of Roman towns and civilian architecture, it has not yet been systematically implemented at site-level within Roman Frontier Studies. This paper aims to address this gap by applying the methodology to fortifications and military architecture, and then interpreting the results within the framework of social behaviour.

The paper will begin by presenting the methodology and toolkit associated with Space Syntax Analysis. Subsequently, a selection of case studies – military sites and specific military architectural forms from all over the Roman Empire and dating from the Early Principate through to Late Antiquity – will be analysed and presented. In a third and final section, these results will be compared and synthesized. The overall objective of this paper is to provide fresh perspectives, not only on general themes like movement and social interaction within Roman military contexts but also on specific aspects such as access and control.

The differences between and within: the use of space inside Roman military bases

Ştefania Dogărel

When considering the use of space inside a Roman fort beyond the purely architectural facets, one thing stays the same regardless of site, garrison or province: with different paygrades come different amenities. Through an overarching look into layout and material culture, this presentation aims to go beyond what seemed reasonable and into what was feasible for soldiers, officers and commanders, who had to make the most of the spaces at their disposal. Can we see some similarities between

a legionary and an auxiliary fort? How conspicuous are the differences within the same garrison? The desired outcome is to see how an encompassing look into social position, internal ground plan and material culture combined displays the life of the garrison.

Who lived in the praetorium of Bologa, Dacia?

George Cupcea, Felix Marcu

Excavations in the *praetorium* of Bologa have restarted in 2012, after more than four decades since N. Gudea explored the fort through very long trenches, touching also shallowly the area where the commander's residence should have been. The plan that N. Gudea proposed then was very peculiar for what one could expect in an officer house, this being the reason of our interest in the area.

After more than one decade of research, we have been able to explore the entire area of the building and draw at least one general plan. Expectations were met, regarding the plan of a rectangular 'Mediterranean' type house, with rooms on the side and a central courtyard. But apparently, the plan was not as regular on all sides.

First, when exploring the front of the building, we were able to reveal a more 'industrial area' apparently belonging to the same phase, which seems to intrude significantly in the harmony of the entire residence. Second, on the edges of the building, several refurbishments were conducted, some of them quite radical, but all made in the 'Roman' way of building and datable in the time of the Roman rule in Dacia.

All the clues lead us to believe that the building, even if it kept a 'regular' plan, has not been an official residence *per se*, or in its entirety. The nature of the finds and the different refurbishments, some of them from the same phase, can give us a totally different picture of the functionality of a building, traditionally attributed to the residence of the prefect.

Always follow your nose! A new fortlet at Mögglingen

Andreas Schaflitzl

In the 1990s, the nose of a bronze statue was found near Mögglingen. As no Roman finds had been previously observed in the vicinity, geophysical prospections were carried out. These revealed a square ditch about 800 m south of the Limes. An initial sondage in 2013 however did not yield any far-reaching findings about the site, instead it only showed that the terrain was already heavily eroded. More extensive sondages were carried out in 2021 and 2022 to clarify the general state of preservation and the nature of the structure: A small fort with one entrance each to the east and

west was revealed, with two gate towers flanking the east gate. The ditch and the backfilling with architectural parts show different phases, indicating a possible conversion of the area.

Recent work on the extra-mural settlements of forts in the Hadrian's Wall frontier zone with particular reference to excavations at Birdoswald, Cumbria (2021-2024)

Ian Haynes, Tony Wilmott

Recent work on the extra-mural settlements surrounding forts in the Hadrians Wall frontier zone has led to a more detailed appreciation of their complexity and functions. This paper seeks to take that appreciation further in two ways. The first will focus primarily on the analysis of geophysical survey results from several sites, the second will be a more detailed discussion of recent excavations at Birdoswald, Cumbria. Discussion of geophysical surveys will begin by introducing work led by Haynes and Turner at two sites, Corbridge and Beckfoot. Significant methodological considerations arising from the analysis of these surveys will be summarised. Thereafter, there will be a short discussion of the lessons deriving from the reading of Biggins and Taylor's seminal magnetometry survey at Maryport in the light of excavations conducted there by Haynes and Wilmott. Excavations at Birdoswald from 2021-2024 by Wilmott and Haynes have been designed to explore the diverse zones that might exist within extra-mural settlements, both immediately north and south of Hadrian's Wall, and complement earlier work by Wilmott at the same site. The second part of this paper will review these findings and reflect further on their implications for our reading of geophysical survey results.

In the shadow of a fort: the Roman settlement at Ostrov (Constanta County)

Adela Băltăc, Eugen Marius

The Roman settlement from Ostrov (point 'Farm no. 4') is located about 2.5 km east of the castrum of the XI Claudia legion headquartered in Durostorum. The research carried out here revealed, in addition to the 21 kilns, more than 50 clay extraction pits (later transformed into waste pits) and three buildings, one of which was a bath. The surveys indicate a development of the settlement on about 24 ha, so that some of the researchers locate here the municipium of Durostorum. From the point of view of reality on the field, this area appears to have occupational nuclei rather than a settlement with a coherent architectural plan. The settlement does not know a moment before the construction of the encampment, nor does it function later than the beginning of the 4th century AD. The large number of stamped bricks, the thermae and archaeological finds clearly indicate a Roman settlement in direct connection with the castrum of the XI Claudia legion, throughout its

existence. The pottery kilns and the very rich archaeological material discovered in the settlement, such as clay objects (various building materials, pottery, terracottas, and lamps), glass and metal items indicate an intense craft activity. The latter is also reinforced by the numerous numismatic material discovered, an activity which is to connect both with the castrum and with a wider trading area. There is no doubt that this settlement (regardless of its status) arose after the arrival of the legion, it is in direct connection with it, and through the settlement of veterans this link is always preserved. The papers will try to put in the light on aspects of this settlement and try to discover its role in the life around the castrum.

In modum municipii? The extramural settlement of Vetera castra in the context of Roman urban development

Steve Bödecker

Recent GPR surveys and ground truthing excavations provide a new and detailed picture of the extramural settlement south and east of the legionary fortresses of Vetera castra near Xanten/GER. In the immediate vicinity of the well-known amphitheatre, a dense extensive urban infrastructure with places, streets, porticoes, bathing facilities and representative building complexes came to light. The lecture presents the new results and explores the following questions: does Tacitus' description of a settlement "haud procul castris in modum municipii" apply to the new discoveries and how did the settlement fit into contemporary Roman urban developments of the pre-Flavian period? The extensive use of stone for in a civil settlement outside the capital of Cologne is surprising for the early first century along the Rhine: does the political situation, especially under Claudius and Nero, provides any hints on building programs? Who was the audience for such massive investments? Who might have benefitted from them, in the province, in Rome?

"A city underneath the city": exploring urban dynamics and residential life within the civilian area of the fortress of legion XIII Gemina at Apulum (canabae / municipium Septimium Apulense)

Anca Timofan, Anca Matis, Andrei Buta, Călin Șuteu, Florian Matei-Popescu

Apulum (nowadays Alba Iulia) was the largest conurbation in the province of Dacia. Apulum is the place where the great colonization that took place after the conquest of Decebalus' kingdom by Trajan is reflected. Apulum is the generic name that includes: the fortress of the Legio XIII Gemina, the seat of the governors of Dacia, two cities and two large necropolises. Fundamental for the unparalleled development of Apulum were the legionary fortress and the highly strategic and at the

XXVI LIMES CONGRESS BATUMI 2024

8.-14. SEPTEMBER 2024

same time commercially advantageous location. The site was situated on the imperial road and at the same time on the navigable sector of the Mureş River. Apulum presents an exceptional situation in the Roman Empire, where a true conurbation took shape. As soon as the legionary fortress was built, a civilian settlement (*canabae*) appeared in its environs and later was awarded the urban rank of *municipium* by Septimius Severus (193-211 CE), *municipium Septimium Apulense*. Our presentation focuses on the discoveries made during the preventive archaeological research carried out in the civilian settlement in 2009, 2019, 2022, 2023, which led to the uncovering of a large part of the residential area near the fortress (*canabae / municipium Septimium Apulense*). Two Roman houses, a part of the Roman baths (*thermae*) and two roads were discovered in an area of approx. 6000 sqm. The houses are preserved well enough to offer a glimpse into the rich urban life. The preventive archaeological research brings important information regarding the urban organization, a vast area being uncovered. The identification of the Roman roads brings important information regarding the street plots and the Roman city life during 2nd and 3rd c. CE. The military diploma discovered during the 2022 research inside a Roman house, brings new epigraphic information about the military status and ethnic origin of the residents.

SESSION 18

Collective singularity: a theoretical approach to the issuing of sepulchral inscriptions of infants and children in the Western Roman Empire, I-III centuries AD

Andrés Cid-Zurita

Sepulchral inscriptions are a motley collection of topics, with certain similarities, as well as differences in their construction and issuance. The present study is a methodological approach to the issues in the epitaphs of infants and children in the pagan West of the Roman Empire between the 1st and 3rd centuries AD. The first approach was focused on the typification of the inscriptions by provinces, taking the databases as a reference; the second aim was to analyse them in a sectorial manner, by means of a chart that considers initial formula, name of the deceased, age, qualifiers, final funerary statement, sex, dedicator, specific place, dating; third, to contrast the singularities and differences by sex as well as by age; fourth, to clarify the emotional emissions that the epitaphs present (either in carmina, as well as traditional formulas).

The Roman burial fields in Nijmegen East

Erik Timmerman

More than a century of archaeological excavations has made it clear that several Roman burial fields existed in the vicinity of the military fortifications in Nijmegen East. Although these excavations have revealed a wealth of information with regard to these burial fields, much of their potential still remains unexploited. The reason for this lies in the fact that a large proportion of the excavations in which burials were discovered have not been worked out in much detail to date. As part of the “Limes und Legion” research project, this is now changing. This paper will discuss the first results of the research into the burial fields in Nijmegen East. An important aim of this research is to find out where different clusters of graves were located, in which period they date, and how they relate spatially to the (military) settlements in the area. In addition, a central question within this study is to what extent it is possible to distinguish military graves from civilian graves. After all, it seems obvious to assume that burial fields near military fortifications were primarily used by soldiers, but was this actually the case? All in all, it can be expected that the analysis of the various Roman burial fields will lead to a significant increase in knowledge about the lives and burial customs of the soldiers and civilians who lived in Nijmegen East.

The Roman Legionary cemetery at Legio – preliminary results

Yotam Tepper, Wiesław Więckowski, Matthew Addams

First discovery of cremation burials was noted by G. Schumacher at the beginning of the last century. More evidence was revealed decades later by the members of Kibbutz Megiddo on the kibbutz hill slope to the east, and during a small excavation held by T. Tzuk (1986) along the aqueduct to Legio. The location of the necropolis around the Roman-Byzantine sites at Legio (a village, a Roman camp, and a polis), the location of the legionary base at Legio (II Triana and VI Ferrata legions) and its cemeteries burial ground was suggested by Tepper, based on the unique characteristics of cremation burials and their distribution in the area (published in 2002; 2007; and forthcoming). Since the cremation was not among the typical burial rites in the land of Israel, it is safe to assume they should be representing a burial of a foreign population other than Jews or Samaritans, residents of the country at that time and, with a high probability represents a burial of Roman legionary dated to the second and third centuries AD. The existence of the northern Roman Army burial ground was recently proved, during salvage excavations held by the Israel Antiquities at the eastern slope of Kibbutz Megiddo hill and two following excavation seasons (2022-2023) held by the Jezreel Valley Regional Project excavations, revealed an extensive Roman cemetery. This presentation will summarize the available information on the cemetery, discuss its localization and organization, burial rites identified, and preliminary results of bio-archaeological analyses performed to date.

The cemetery of the Hadrian's Wall fort of Birdoswald'

Tony Wilmott

The cemetery at Birdoswald is the only one on the line of Hadrian's Wall ever to be excavated. The excavation was undertaken in 2009. The scientific analyses of the remains were delayed by the COVID pandemic but have now been completed. Ten other cemeteries of auxiliary forts in the military north of Britain have been examined, mostly in small areas, mostly under rescue or salvage conditions, and all before modern scientific applications were available. In total 505 burials, cremation and inhumation, have been recovered from this entire area, of which 71 are from the recent work at Birdoswald. This paper will briefly describe the excavation, concentrating on the wide variety of deposit types in what is a relatively small assemblage, and the possible implications in terms of ethnicity, religious practice and personal choice. It will note in particular a female cremation which has direct affinities with the Przeworsk culture of modern Poland. The paper will emphasize the wide range of scientific approaches and their results. Osteological analysis confirms the presence of men women and children, and strontium isotope and concentration analysis has been used to explore their origins. Radiocarbon dating has highlighted a concentrated period of burial c.

160-220 hinting at an epidemic. The nature of the pyre has been examined and detailed charcoal analyses have identified preferred wood species and materials for fuel. Structural nails indicate the reuse of structural timber in later phases. Part-burned decorated timber may be parts of funerary biers. Fourier transform infrared spectroscopy-attenuated total reflectance (FTIR-ATR) analysis has combined with analysis of pyre-melted glass and the human remains to establish pyre temperatures and efficiency. Finally archaeobotanical analysis has identified inter alia a deposit containing carbonised whole exotic fruits including fig, date, and grape. It is hoped that by the time of the Congress this work will be published, with copies of the monograph available for purchase.

Graves with *instrumenta scriptoria* from Viminacium (Moesia Superior)

Ivana Kosanović

The capital of the province Moesia Superior - Viminacium, has been researched for many years. The excavations have unveiled significant remnants of the Roman city, including the *thermae* and amphitheatre, as well as parts of the VII Claudia legion's camp and necropolises with over 14,000 graves. Its prominence as a case study for understanding writing and literacy in the provinces is exemplified by the diverse findings of writing tools that have been unearthed in various contexts at Viminacium, such as urban areas, *castra legionis* and *villae rusticae*. Because of the intense rescue excavations in the last decade, the necropolises were the main focus. These campaigns yielded a variety of writing implements (inkwells, *calami*, *styli*, wax spatulas etc.), both in the graves of children and adults (male and female). Gender attributions, often in the past deduced from grave goods, proved to be a rare occurrence in these new excavations, due to meticulous analyses of osteological material. Noteworthy discoveries include a grave containing a pregnant mother and her child buried with a few *styli* and a wax spatula, as well as a child interred in a lead coffin with a rare find of a papyrus-roll winder. Some graves revealed sets for both *stylus* and ink writing techniques. The examination of these graves offers valuable insights into writing practices within the provinces. In correlation with other objects discovered in these graves, this study aims to investigate their relationship with the expression of professional skills or wealth and status of the provincial elite.

The late antique cemetery of the roman legionary camp

Jana Wertz

Within the context of a dissertation, a section of the Late Antique cemetery of the Bonn legionary camp is being analysed. The military site is of great international importance not only because of its location directly on the Limes, but also because of its continuous occupation for over 400 years. In

Bonn, the increasing influx of Germanic tribes during this period can be traced very well in the cemetery. A total of 345 burials are the subject of the study. The first ones are dated to the end of the 1st century AD. Since the majority of the graves belong to Late Antiquity, a change in burial practices can be reconstructed in particular detail. In the course of time, a typical Rhenish burial custom developed, which also appeared in other places of the Roman Empire, such as Augsburg or Regensburg. This provides evidence of emigration from the Rhineland. At the same time, an intensive migration, also to the Legion, can be clearly established on the basis of the grave goods. Germanic artefacts in particular are frequently found in the burials of late antiquity, but individuals from the Middle Danube region can also be identified on the basis of typical jewellery grave goods. This archaeological interpretation is to be verified in cooperation with the Max Planck Institute through comprehensive strontium and aDNA investigations. The first results should be available at the Limes Congress. This offers a unique opportunity to scientifically reconstruct the settlement of the Rhineland during the entire period of the Roman Empire. The archaeological evaluation of the grave goods clearly proves an increasing immigration from the Barbaricum and the Danube region and at the same time shows the increasing importance of peregrines in the Roman military through the direct connection to the legionary camp.

Building robust chronologies for late antique finds. A multilayered approach to dating late antique burials along the Rhine frontier

Rebecca Nashan

The evaluation of burial sites offers numerous opportunities to advance our understanding of communities living on the outskirts of the Roman Empire. Late antique burial sites like Krefeld-Gellep underscore that interpretation of material culture extends beyond that of funerary culture to broader political, economic, and social changes in the frontier. Furthermore, Krefeld-Gellep is noteworthy as there are only a few published late antique cemeteries from the Rhine region. The lack of published sites has led to the misconception that the territories were widely depopulated, particularly in the rural hinterland. In this paper, I would like to present a new assessment of a cemetery (Gönnheim) from the rural areas of the Civitas Nemetum. The main focus lies in examining the material culture of the 4th and 5th centuries and exploring the continuity of the site in relation to historical crisis events that have been handed down through written sources (e.g. AD 406/7). My methodology rests on three pillars to overcome biases of historical narrative and closely related circular arguments: 1. An in-depth analysis of dating sources for the majority of types; 2. Scientific data in the form of C14 to support the archaeological interpretation; 3. A supra-regional comparison with other burial sites. This multilayered approach allows to refine some uncertainties within late antique chronology and contextualize this rural part of the frontier within a bigger scope.

Viminacium at the Crossroads of the Roman Empire – research of the necropolis

Snezana Golubović, Jelena Andelković-Grasar, Milica Marjanović

Archaeological excavations of the Viminacium necropolis yielded over 14,000 graves with more than 40,000 archaeological artifacts. The greatest number of burials belongs to the period from the end of the 1st to the 4th century. The contemporary existence of cremations and inhumations defines the necropolis as bi-ritual. Both rites were applied simultaneously for a longer period. Cremation was the prevailing ritual during the 2nd and partly during the 3rd century, while inhumation, present already from the 1st century, became the dominant rite by the end of the 3rd century. The most common grave forms with cremation are simple and two-levelled pits with red and grey burnt walls. Considering graves with inhumation the most common are burials in plain pits while those in brick structures and in wooden or lead coffins are represented in a smaller percentage. However, a great number of tombs were built of brick produced in a craft center at the site itself.

Interdisciplinary research during this millennium has led to new and surprising findings. Not just new methods in anthropology (strontium and DNA analysis) in attempts to identify the origins of the people buried in the Viminacium cemetery which were based on archaeological excavation, grave inscriptions, and historical sources, but application of physicochemical analysis of the material used in the funeral rituals (grave inventory, building material for graves, pigments of wall paintings) sheds new light on the understanding of the population of the Roman Viminacium. According to them, the anthropological structure of the population shows extreme heterogeneity. People from all parts of the empire are apparently present, but whether it is a civilian or a military population or even a combination of the two remains is an open question. It proves that Viminacium, besides being the capital of the Roman province Moesia Superior, as the significant military stronghold where the Roman legion Legio VII Claudia Pia Fidelis was stationed, was a meeting place of Eastern and Western cultures.

The normal, the abnormal, and the unnoticed

Kaja Stemberger Flegar

In this paper I am going to address the conceptual approaches in the Roman funerary archaeology of Slovenia. Firstly I am going to establish what is considered “normal” or “standard” in terms of burial manner and grave goods, with special focus on the shift from the early and generally richer assemblages of cremation burials to the later scarcely furnished inhumations, spanning the period from 1st to the 4th century CE. In this context, I will discuss how focussing on graves as something one finds, rather than the product of a ritual process, has led to numerous interpretational issues ranging from semantic ambiguities to classification issues in Slovenian archaeology. In contrast to

identifying what is “normal”, it is relatively easy to single out abnormal practices as “oddities”. In Slovenia, they are more commonly related to burial manner than to grave goods, comprising mostly body manipulations and cenotaphs. However, there is some overlap between what is labelled “abnormal” and what is considered missing from the Roman funerary record of Slovenia, partly due to a genuine absence and partly because the traditional approaches can prevent researchers from noticing, recognising, and properly identifying certain phenomena. For example, due to the heavy focus on grave units, funerary features such as the ancient surface, ustrinae, ritual pits, and reburials are understudied, underdocumented, and occasionally misidentified. Similar issues pertain also to the study of artefacts, for example the documentation of objects in cremations, where in extreme cases only nearly intact items were documented, as well as the lack of discussion of the ritual destruction of objects. In this paper, I am going to present several case studies for these issues and potential ways to address them.

Circulation and stationing of the Comitatus units : the operation of frontier military installations in the Late Antique West (4th-5th centuries AD)

Sylvain Janniard

The purpose of the paper is to present some general observations on the territorial logic of late military settlements, as well as on the characterisation of structures likely to house permanently or temporarily Comitatus and palatine units in the West in the 4th and 5th centuries (fortified agglomerations, forts). These observations will be based on regional analyses in Germany, Gaul and Italy. The work is based on the comparison of several documents: the inscriptions attesting to the presence of active troops, the finds of weapons, the location of fortified installations of several levels of importance, make it possible to draw a cartographic frame, on which are superimposed the testimonies of the movement of the emperors, the expeditionary corps and the situation of the State installations, provided concurrently by documentary and literary sources. The need to station and move Comitatus units has led to a proliferation of potential military installations in the border provinces, often of small size and with redefined architectural morphology, established according to regular patterns. This is due to a new context of recurrent military threats, logistical constraints, the need to protect the main positions that could guarantee the maintenance of lines of communication, and the adoption of new operating doctrines within the Roman Army. These fixed frontier installations are part of a more or less permanent stationing arrangement for the Comitatus troops, but are also part of multiple and related lines of circulation, which the military authorities want to see as regular and uninterrupted. The study of their functioning and maintenance is central to the understanding of the imperial power's ability to defend its territory. The communication will

make it possible to question the analyses of the late defensive system in terms of “defence in depth”, supposed to be responsible for the strategic failure of the Late Roman State (Luttwak).

The Siege of Amida (502-503) as a source of inspiration for innovations in Anastasio-Justinian military architecture. Telling a story behind the walls

Brahim M'Barek

The war between the Eastern Roman Empire and the Sassanid Empire between 502 and 506 occurred after almost 80 years of peace on the eastern frontier. One of the major events of this conflict was the siege and subsequent capture of Amida, the main stronghold in the region at the time. This probably had a traumatic effect on the minds of contemporaries and led to a renewed interest in the construction of fortifications. With the signing of the peace treaty, the empire as a whole witnessed an intense period of military activity, of which defensive architecture was one of the most striking elements. This phase, named by the main emperors who saw its implementation, Anastasius and Justinian, saw the construction of new strongholds on the eastern frontier, while others were restored or updated according to the standards of the time. Thus, of all the elements implemented, the vast majority were mainly a response to the neglect of defensive elements due to such a long period of peace. Roman engineers did what they always did, after each new crisis. However, among the testimonies dating back to this period, there are some that sound different and that have their origins in the very reasons for the fall of Amida. This seems to have been studied in some way and various solutions implemented, not immediately but after a period of reflection and maturation. It can be summed up in this simple idea: hold out as long as possible, even after the enemy has set foot in the enclosure, and make any progress as costly as possible in terms of lives lost. Our aim here is to present the archaeological and historical elements that make it possible to reconstruct this project, from its conception to its completion, through the prism of the men behind it.

Searching for the Late Antique Castellum in Novaesium/Neuss

Carl Pause, Till Lodemann, Andreas Wegert

In the 4th century, the military topography of Novaesium underwent a radical transformation. At the century's outset, military activities in Neuss-Gnadental came to a halt. In this area, numerous castra had been established since the 1st century, with the most recent being an auxiliary fort constructed at the end of the 2nd or the beginning of the 3rd century. This shift can likely be attributed to changes in the courses of the Rhine and Erft rivers, along with evolving military strategies, as human activities relocated to Büchel, a small hill situated on the banks of a Rhine arm in the north.

It is on this hill that the *civitas Novaesium*, mentioned by Ammianus Marcellinus while recounting Emperor Julian's campaign against the Franks, must have been situated. Following its destruction by Frankish troops, the fortifications were restored by Valentinian. Parts of it are presumed to have persisted into the Middle Ages, as a *castellum* is mentioned in the 9th century. To date, the late antique fortification remains unidentified. Nevertheless, the distribution patterns of 4th-century coins, artifacts, and graves, among other factors, indicate that the site should be situated in close proximity to an area that, by the 9th century, gave rise to a royal palace and the Quirinus Minster.

Late-Antique structures in the *porta praetoria* area of the auxiliary Roman fort at Pojejena (Romania)

Călin Timoc, Ștefana Cristea

The resumption of the archaeological excavations of the auxiliary fort at Pojejena, part of the Danubian limes of the Roman Empire, brought new data about the construction, destruction, and remodeling of the *porta praetoria*. The 2019 campaign consisted of a section parallel to the gate, near the northern tower, and especially the 2020 and 2021 campaigns which targeted the gate in its entirety, revealed coins, fibulae, and harness elements that have helped with the dating, but above all they highlighted the level of destruction in the northern tower and inside the gate, with the arson of the internal wooden structure of the tower. At the same time, a later, compact quadrangular structure, made of stone and mortar, was discovered in front of the northern tower, outside the enclosure wall of the fort, as well as an impressive number of stamped bricks bearing the names of leg VII Claudia and IIII Flavia Felix. The current paper aims to present the archaeological evidence of the destruction of the northern tower and the subsequent construction of the platform probably used for defensive war machines, as well as discussions related to dating (Constantine's reform) and the historical context that led to these alteration of the Pojejena (Romania) fort.

Periodization of the fortress construction in the administrative territory of the Roman, late Roman and early Byzantine city of Nicopolis ad Istrum

Kalin Chakarov

Nicopolis ad Istrum is an urban centre found at the beginning of the 2nd century in the northern limits of the province of Thrace (after AD 193 in Lower Moesia). Initially it did not have a fortification wall. The latter was probably built *c.* AD 175 as a reaction of the *Costoboci* invasion in AD 170 – 171. It could be interpreted as a provincial decision and local implementation, because other cities in the province built their fortress walls in that period. At the same time the construction of the wall

reveals some peculiarities that could be interpreted as inexperience in the field of poliorcetics. For about a century *Nicopolis ad Istrum* was the only known fortified site in its administrative territory. The situation changed at the end of the 3rd – beginning of the 4th century when fortresses with classical flat topography started to be built along main roads. The most significant example is the Kale fortress near the modern village of Slaveykovo, situated on the road *Nicopolis ad Istrum – Augusta Traiana*. The Lako fortified site near the village of Samovodene and the probable fortress at the modern village of Butovo are probably other contemporary examples. Their construction could be defined as an imperial enterprise.

At the end of the 4th – beginning of the 5th century a new major period of fortress construction started. It is related to the construction of the first hill-topped fortlets near the villages of Dichin, Dobi dyal, Igljika, the Gradishte locality near the city of Gabrovo. They are transitional forms of fortification between the flat and the mountainous topography.

The latest and most flourishing period of fortress construction started at the end of the 5th – beginning of the 6th century. It is probably part of an imperial programme.

Double click Filling a gap. Minor fortifications in the province of Scythia Minor

Ştefan Honcu

Starting with the reforms of Diocletian and Constantine I, around the Middle and Lower Danube, a new defense strategy of the Empire in Late Antiquity was shaping up. In this specific context, the construction of forts on the hinterland occurs on the territory of Scythia Minor province (“inner fortifications”), the building of small fortifications in the interior, alongside roads, and the fortifications on the limes are reinforced. Our paper aim to discuss the newly minor fortifications that had the role to protect the roman interior roads, great inner fortifications and to be able to aid the first line of Danubian limes. Their mapping clearly shows us that the choice of the place to build the minor fortifications aimed to strengthen the vulnerable areas of the limes, on the one hand, and on the other hand, to create a new defensive system inside the province. In conclusion, we can point out that the administrative and military reform of the Roman Empire was not only focused on modifying the ruling system and its military strategy, but especially on how the new administrative idea can be supported and put into practice in a long term context of innovative decisions implemented by the emperor.

The last breaths of urban life in the border province of Scythia.

The case of the city of Ibida

Dan Aparaschivei

In the present paper we will try to identify the constructive elements, but also the artifacts that can justify the last phases of living in one of the largest cities in the border province of Scythia, Ibida. It is already demonstrated that the breakup of the Danube border was a long process and did not occur suddenly and in a single stage. Therefore, the collapse of the Imperial limes was caused not only by the military situation and external pressure, but also by the economic decline and other more profound motifs. A distinction was made between the degree of persistence of urban organization, namely the expanding deurbanization process and the military control over certain localities in the region. Regarding Ibida, there is numismatic evidences from the last part of the 6th century and even from the first decades of the next one (from Mauricius Tiberius, Phocas and Heraclius). One should emphasize that, if all the issues of Mauricius Tiberius found up to 2009 numbered 6, merely from the excavations of two campaigns in Tower No. I of the hillside fortification, in a very limited area, we discovered 3 more such coins. Until now, the stratigraphic situation recorded in the research of Tower No. I of the hillside fortification F, but also the material finds argue for a revival of habitation after 590 AD, and even an extension of habitation in the city as late as the first decades of the 7th century, perhaps even with a military control over the city. So, it is possible that at least the hillside fort was used until the end of habitation in the area, i.e. in the first decades of the 7th century, a good part of this period also hosting a military unit.

Characteristics of Felix Romuliana – Gamzigrad fortifications

Stefan Pop-Lazić

If there is one field where the transition from the High to the Late Roman Empire is significantly visible, it is the field of military architecture. Even though its evolution is gradual, the 3rd - 5th century AD interval (in the Western Empire), or the 3rd-7th century one (in the Eastern Empire), we can nevertheless witness a large number of adaptations of previous paradigms to the new realities. This is also a period of innovations and inventions, in which various technical and functional particularities are emerging, in many areas. Their implementation responds to needs and programs launched at different administrative levels, from the imperial court for the most important ones to the most local initiatives, via diocesan or provincial officials. Some of these projects are the result of programs carefully calibrated before their execution, others are the result of more or less marked empiricism. The study of Late Antiquity fortifications has for long highlighted some regional specifications, such as the use of consistent fortification plans, the association of various tower forms according to

regular patterns, or clear predominances of some architectural shapes. The present session aims to bring together researchers who wish to present and review some of these particularities, while seeking, as far as possible, to place them in a framework based on the decision-making level: Imperial, diocesan, provincial, local. A gathering of all these information could to be bring to light a clearer vision in the process of building at that times. Indeed, comparisons could be made between different kinds of building programs or simply between various periods of Late Antiquity. To what extent one can identify the various decision makers, the institutions or persons in charge of the implementation? Is it possible to draw organisational patterns of late Roman authority in the field of territorial defence? Are these patterns homogeneous, and how do they evolve in space and time? Can one establish links between the construction of fortifications, on any scale, and the organisation of the military administration?

These are all the questions we would like to address by intersecting and converging the views of scholars from a variety of geographical and chronological backgrounds, including historians, archaeologists, epigraphists and architects...

Military architecture in the Caucasian area between Late Antiquity and the Middle Ages: Roman-Byzantine and Sassanid fortifications influences and models along the Limes

Sergio Ferdinandi

The contribution intends to provide the status of the research on the works in progress in Armenia by the *Archaeological Mission of Aruch and the Incastellamento of the Silk Road*. The Mission pursues the task of analyzing the historical evolution both from a commercial and military point of view of the Silk Road, within the long-distance connectivity systems of Eurasia in the late ancient and medieval era, with particular attention to the fortification of the road section that crosses the Caucasian territories. In this context, together with the survey activities for the study and analysis of the fortified installations, various excavation areas were opened, in particular in Aruch, the headquarters of the Mission, and in Shamiram. Aruch, remained substantially within the borders of the so-called Persarmenia until 591, when also the new provinces of lower Armenia, around Theodosiopolis, Kars and south-west of Lake Sevan, were taken from the Sasanids and became part of the Byzantine domains. In the context of the study of the boundary fortifications, the scheme of the *castellum* of Aruch (about 100x120 m.) is particularly interesting. The military quartering function of the site is confirmed by sources at least from the 5th century and the plant has a layout very similar to similar Roman castral plants built in the East along the *Strata Diocletiana*, in defense of the *Limes arabicus*, and in Africa in the Justinian period. Similarly, the ongoing study on castle building in the 7th-11th

centuries is of significant interest. Period in which there is the construction of an important number of fortresses built to defend the main road axes and on the outskirts of the cities which present interesting similarities with the contemporary Byzantine fortifications. A castle system, including Aruch, arose in the 9th century to defend Ani, along the routes and strategic places that led to the location chosen by Ašot III Ołormac' in 961, as the capital of a newly autonomous kingdom of Armenia.

Late Roman Fortifications in villae rusticae - The Example of the villa rustica HA 158 of Kerpen-Manheim (North Rhine-Westphalia, Germany)

Tamara Ruske

The Villa Rustica HA 158 was located in the rural hinterland of Germania Inferior (later Germania Secunda), only 30 km from the state capital Cologne/CCAA. A double ditch system and a palisade fortified the main building. The construction and the end of the fortification cannot be dated more precisely, as in between the 2nd half of the 3rd and the 1st half of the 4th century AD. This is due to the long period of circulation of the individual ceramic forms/types. Evidence connected to the constructors and occupants of the villa comes from the nearby cemetery. A burial with a military belt indicates that the person was possibly a veteran and had experience in building a fortification. However, no other finds which could be linked to the military were found in the graves or the fortification itself. It can therefore be assumed that the fortification was a private undertaking to ensure the protection of the residents. On the other hand, there are fortifications in villae rusticae - known as burgii - which are associated with a state-initiated protective action (e.g. Froitzheim). The paper will discuss the similarities and differences between the fortifications in villae rusticae in the 3rd and 4th century AD in the rural hinterland of Germania Inferior (later Germania Secunda).

The siege of Cremna (Turkey): Rome's war art, strategy and engineering

Salih Soslu

In the Bucak district of the Burdur province in southern Turkey, Cremna is situated inside the boundaries of Camlık Village. The city is one of the Pisidia region's mountainous cities. A defensive structure was built on its west side in the Hellenistic period and repaired in the Late Antiquity. Rome's colonial city of Cremna was captured by Lydius of Isauria in 278 AD, and as a consequence, on the instructions of Emperor Probus, legionary soldiers encircled the city. Romans built a headquarters on the near (west) Boğadiç mountain when besieged the city. Essential archaeological data were gathered from the area where the siege occurred. A few stone cannonballs have been identified, demonstrating that the soldiers stationed here employed powerful weapons to enhance the potency

XXVI LIMES CONGRESS BATUMI 2024

8.-14. SEPTEMBER 2024

of their assaults. An analysis based on mathematical calculations was made using the information provided by the weight of the projectiles, the towers they demolished, the locations from where they were launched, and which heavy weapons were employed. At the same time, it has been observed that a little valley at the west of Cremna has an artificial siege hill. We established that military engineers built this artificial hill to increase the attacks of Roman soldiers as they approached the city and to enable more precise shooting.

In terms of ancient war art, military strategy, and engineering, the tactical moves made during the siege of this city are significant. These developments are also relevant to Anatolian archaeology. This study aims to bring new information on the defense of Cremna and to present the mathematical calculations that allowed us to examine the evolution of the siege.

SESSION 20

The role of silver in Roman diplomacy and frontier politics – a comparative approach

Fraser Hunter

Precious metals played a key role in Roman frontier diplomacy. Written sources regularly mention the use of gold and silver in subsidies, while archaeological discoveries show the wealth of such finds that came beyond the frontier. But diplomacy was only one of several ways that such material could leave the empire, and their distribution over space and time is very uneven, reflecting different circumstances.

Building on recent research projects at National Museums Scotland, this paper will focus on Roman silver, which occurs in European barbaricum from the early first century to the fifth. It will compare the finds from different areas to seek evidence of large-scale processes versus regional strategies; to see whether diplomatic gifts can be differentiated from (for instance) military pay, subsidies, trade, or material taken in war; and to consider the choices made by local societies in this and the effects silver had on them. The main focus will be on the 2nd-5th centuries, ranging from denarius hoards to vessels and hacksilver. Such a large-scale comparative approach allows a much clearer view of the roles of this key metal in Roman dealings with the worlds beyond its frontier.

Gold Medallions in Barbaricum and Late Roman Diplomacy

Aleksander Bursche, Kiryl Myzgin

In the 21st century, due to the mass use of metal detectors, the number of finds of gold Roman medallions from the 3rd and 4th centuries in the Barbaricum area increased significantly. They were a very important element of Roman diplomacy towards the Germanic elites. In our contribution we will present the chronology, direction and main mechanisms of their inflow and redistribution.

Basilissa Ulpia – New Circumstances in Roman-Iberian Diplomatic Relations

Ekaterine Kobakhidze, Natia Phiphia

In August 2001, the Archaeological Institute of Mtskheta discovered a woman's stone-burial №14 in Svetitskhoveli yard. 25 different artifacts are found in the burial, mostly golden and silver grave goods including golden sealing ring, which has a carnelian gem-intaglio. Neatly written Greek inscription is around the gem. The inscription could be read only as an imprint and the text is as follows: BACIAICCA || OYΛΠΙΑΝΑΞΙΑ. The grave goods of the burial suggest 3rd- 4th c. A.D. as a proper chronology of the burial and as scholars believe the person buried, the woman should be a member of Iberian royal family who had some connections with high classes of imperial Rome. T. Kaukhchishvili proposed that Ulpia supposedly had some connections with the family of Ulpius, to whom Emperor Trajan himself belonged, however, she did not specify what kind of connection this should be. The paper proposes a new interpretation of the inscription and attempts to explain the appearance of a name associated with the gens Ulpius in an Iberian settlement. With the help of other epigraphic sources, such as the famous Epitaph of Amaspos, new realities of Iberian-Roman diplomatic relations are revealed. According to our conclusion, Ulpia Naxia is a member of the Iberian royal family, whose ancestor, also a member of the royal dynasty, under specific circumstances clarified in our study, received Roman citizenship and the Roman nomen of the Ulpian family. Perhaps this name has been passed down from generation to generation, as Iberia always had very good relations with Rome.

Roman and Sasanian silverware from Colchis and Iberia: evidence for diplomatic interaction with Rome and Persia

Lana Chologauri

More than a hundred and forty pieces of the late antique silverware have been discovered in the territory of modern Georgia. These items are particularly significant for the study of the cultural and economic development of Colchis and Iberia, and their political and diplomatic interaction with the surrounding commonwealths. The majority of the silverware (95%) represents Roman imports or their local imitations, while only few (5%) relate to the Sasanian state. Second- to mid-third-century burials of the nobility feature only Roman silverware, but silver vessels from Iran emerge in the later third century. The difference in quantity of Roman and Sasanian silverware, as well as the shift in the burial inventory, provides important new insights into contemporary political developments in the region.

Late Antiquity in the Caucasus was marked by military conflicts and shifting political alliances. Rome and Persia vied for suzerainty over Colchis and Iberia, who controlled major trading routes

and strategic crossings of the Caucasus Mountains. The Sarmatians, Alans, Huns and Khazars, sometimes acting in alliance with Transcaucasian principalities, posed a great threat to the Roman and Persian Empires. In Late Antiquity ancient Georgia therefore played a pivotal role in geopolitics and the diplomatic relations between Rome and Iran.

A group of the silver vessels from well-documented archaeological contexts, decorated with the portraits and inscriptions of Roman emperors and Sasanian officials, provide crucial evidence for international diplomatic relations between Colchis and Iberia and the great powers. Late antique silverware from Georgia sheds unique light on the competing strategic interests and diplomatic efforts of Rome and Persia in the Caucasus. They represent the very instruments used by imperial actors to manipulate prospective political partners at the crossroads between Europe and Asia.

Once again on the influx of Late Roman gold coins north of the Carpathian Basin

Arkadiusz Dymowski, Kyrilo Myzgin

Finds of Late Roman gold coins in the Barbaricum area are among the most striking evidence of Roman-Barbarian contacts. They may have come as diplomatic gifts or as payment for service in the Roman army. The cartography of single finds and hoards of Late Roman gold coins (primarily solidi) is an excellent illustration for studying ethno-cultural, including migration, processes in Barbaricum during the 4th – first half of the 5th century. For example, the areas of concentration of solidi from the Constantine and Valentinian dynasties in the Eastern and Central Barbaricum, compared with finds of gold coins of the 3rd century, most likely indicate a gradual shift of the centers of barbarian power to the west. The particular concentration of finds of Theodosius dynasty solidi in the Hungarian Plain shows the significant role of the Huns in the distribution of Roman gold in the Barbaricum. In our presentation, we would like to raise once again the issue of the influx of Late Roman gold coins to the north of the Carpathian region based on the latest data on their findings. Among other things, we would like to address the issues of the latest methods of studying such finds. In particular, the possibilities of using neural networks software (*AICN - Artificial Intelligence Coin Network*) as an example.

SESSION 21

The dreams of an officer

Ivan Radman-Livaja

A votive monument dedicated to the god Somnus by an officer of an unknown auxiliary unit was found in Banoštor in the 19th century. The site was known as an auxiliary fort in Roman times, named Malata till the 3rd century AD when its name was changed to Bononia.

Somnus is the Roman equivalent of the Greek god of sleep Hypnos. The dedicant, a certain Carminius, did not list his full nomenclature but seemingly only his nomen gentile. While he mentions his prefect rank, he did not specify what unit he was commanding. The inscription, rustically executed and without too much information, is difficult to date, but is probably not earlier than the 3rd century AD. One may wonder if Carminius might have been in command of the ala I Flavia Augusta Brittanica milliaria civium Romanorum bis torquata ob virtutem, that was stationed in Malata since Trajan's reign till the mid-3rd century, if not a little longer. Nonetheless, one may wonder why the commander of a milliary ala would be called a praefectus.

In any case, the inscription is an interesting case of personal devotion. Most votive inscriptions erected by military officers may be considered as official monuments, closely related to state religion and the official calendar but Somnus was certainly not such a deity and could hardly be considered as a "military" divinity. Thus, this altar shows deeper personal beliefs of the officer in question, absolutely not related to his official duties regarding the observance of religious obligations in the military, a prime example of material traces of individual spirituality.

The power of many – Organized apparent chaos

Ljubica Perinić

Religion is never a simple matter. The growing Empire did not need only new material resources, but they also needed men. Widening its area of recruitment meant that people from all kinds of more or less different backgrounds were enlisted as soldiers where they needed to spend at least 20 years together. This diversity of men was probably one of the reasons the Roman military calendar was created, the so-called feriale. Today we know that every army unit had a copy of such a calendar with selected celebrations and observances. Paraphrasing Paul Veyne's famous question Did

the Greeks Believe in Their Myths? I would like to address whether the soldiers believed in the state-promoted gods they celebrated with their comrades in the camp or did they have a preference towards their e.g., ancestral gods or local gods (depending on the province they were stationed in). The votive inscriptions from Dalmatia/Illyricum convey a picture that apart from the fact that Jupiter was the most prominent god, to a large extent the number of military votive inscriptions dedicated to the great Roman deities such as Minerva, Hercules, Mars, and Victoria, is very scarce. Since soldiers had complete freedom and flexibility in choosing which god to venerate or worship, their 'divine universe' was exceptionally rich: accompanying military standards were many gods, geniuses, and personifications. Equally diverse were the persons dedicating the monuments, from senatorial officers, and centurions, to ordinary soldiers. How did they make it work?

The beginning of Light

Ana Kovačič, Maruša Urek, Luka Rozman

In this paper, we will present many aspects of a Roman oil lamp discovered at Castra, the northernmost fortress of the *Claustra Alpium Iuliarum* defensive system, which defended Italy against eastern threats. Castra is nowadays mostly known as the potential infantry encampment of Eugenius's army before his battle against Emperor Theodosius I in AD 394, known as the battle of the Frigidus. The 2019 excavations took place inside the Roman fortification and, to a lesser extent, outside of it. The small finds found in the fortified debris layer are consistent with the military nature of the settlement. Relatively few of the finds may be classified as talismans or religious artefacts. Over a hundred fragments of clay oil lamps from the Roman and late Roman periods were discovered, but one of them stood out. This particular oil lamp is an imitation of the classical African lamp type *Atlante X*, and, considering the characteristics of the fabric and slip, it may have been made in Europe, specifically in the North Adriatic region. The fragment merits discussion in view of the decoration on the discus, which is interpreted either as a tabernacle or the tomb of St. Lazarus flanked by two columns topped with human busts. This is the first lamp with this particular motif found in Europe. Dated to the 6th century AD, it is undoubtedly the latest find from this late Roman site. Given the location's historical importance to the interpretation of the Christianity, we think that a more in-depth study of the lamp's motive has merit. This presentation focuses more on the meaning, origin and possible interpretations of the motif than the poster and the article.

Two objects, one shared story: Roman soldiers' religion in the National Museum in Warsaw

Tomasz Dziurdzik

The paper will present a case study of two inscriptions related to Roman soldiers which showcases the challenges in studying objects belonging to a collection with a complicated history, in a country whose territory was never part of the Roman Empire. A votive inscription of a centurion from Germania and a tombstone with a depiction of a soldier sacrificing at an altar from Egypt have entered the collection of the National Museum in Warsaw via the same, rather unusual route. Before the second world war, they were part of a collection of a high school in Braunsberg (East Prussia, Germany), in itself a unique phenomenon, where a classical philology teacher managed to convince the local government to fund his epigraphic hobby under the guise of teaching aids. In 1947, all the inscriptions were transferred from that city, newly incorporated into Poland and renamed Braniewo, to Warsaw. As the archaeological contexts of both objects are not entirely clear, the monuments need to be studied mostly through their own materiality, offering a wealth of data on two religious acts in the military milieu and on the actors involved in them. The discussion will also include the problems that can be caused by enthusiastic, but poorly informed attempts at conservation and reconstruction.

Conrad Schick's discovery and report of an Eagle marble statue from the Jerusalem Temple Mount

Ran Ortner

In 1882 Conrad Schick send his report to PEQ regarding a rear found of a marble 'eagle' figure, found in the area of South East corner of the Temple Mount compound. Shortly thereafter, Schick was able to draw a very accurate description of this exhibit, just before it was shipped from the local Turkish supervisor office in Jerusalem to Istanbul Turkey, where it is being kept until today. Schick's report and drawing was the only testimony for this unique find from an area that was and still restricted for archaeological research. therefore, considered to be very important for research of Jerusalem.

Schick's information has provided later scholars, the possibility to conduct further research and analysis trying to decide the meaning of that statute and what it represents. There are a few suggestions, one of them suggested that the so-called 'Eagle' of Conrad Schick, is actually a vulture 'Aquila' from Roman period. The Vulture was the hallmark and symbol of the Roman imperial army. perhaps could even represent the Tenth Roman Legion, that is believed to camp nearby. In this paper, I would like to further present this line of thinking and to associate the Conrad

Schick Eagle from the Temple Mount, as one of the signs to support my present suggestion that the Tenth Roman Legion camped atop the Temple Mount platform shortly after the destruction of the second Jewish Temple at year 70 A.D.

Reexamining the burial goods of the Ivory Bangle Lady of York: Religious and cultural diversity on the northern frontier at the end of the Roman Empire

Melissa Barden Dowling

In 1901, the intact burial of a prosperous young woman (ST 60) was discovered in York (Eboracum), an important administrative and military center in Britain. Scientific analysis has demonstrated that the woman probably grew up in North Africa then moved to Britain, where she died age 18-23, at some point in the second half of the fourth century CE [S. Leach et al. (2010) *Antiquity* 84: 131-145]. Migrants of probably North African ancestry are well attested in Roman York [S. Leach, et al (2009) *American Journal of Physical Anthropology* 140: 546-561]. She was buried with rich grave goods, including a beautiful blue glass jug, bracelets made of jet and ivory, unusual glass earrings, gold beads, and the remains of a bone mount (probably for a box) spelling out S[OR]OR AVE VIVAS IN DEO (Hail, sister, may you live in god). Early archaeologists assumed the inscription indicated a Christian burial but later study of the grave goods have reopened questions of the woman's religious affiliation [H. Cool (2006) in M. Henig and F. Mee (ed.) *Constantine the Great: York's Roman Emperor: 155-157.*] In Late Roman York, there is scanty archaeological evidence for Christian worship; the bone mount is claimed as one of two known artifacts [P. Ottaway (2011) *Roman York*, Tempus: 137]. But the phrase on the mount is also very similar to those used by worshippers of Serapis and Isis, whose cults were established in York and along Hadrian's Wall. An examination of the goods that accompany the York woman phrase suggest that an affiliation to the Egyptian gods is more likely than Christian. In this slide-illustrated paper, the author will reassess the material evidence for religious and population diversity on the northern border of the Roman Empire.

The materiality of female religious dedications in Dalmatia

Anna Mech

Religious dedications are the best way to study the female religiosity in the provinces of Roman Empire. In most cases, the focus is on the inscriptions, as they provide easily accessible information on the dedicants and their intentions. On the other hand, the materiality of such monuments requires much more effort - e.g. data on the physical elements of such objects is often incomplete and the best way

to obtain them is through autopsy; comparisons with other categories of monuments also requires grueling museum and library work, etc.

This paper will attempt to provide a summary of the results of such an analysis of votive monuments erected by women in Roman Dalmatia, including the physical properties, workmanship, craftsmanship, used material, etc., as well as the limitations of such research. The last factor derives from difficulties with personal access to the museum depots, missing monuments (mostly in the war contexts) or display in the secondary context.

Roman snake vessels: cult, religion or just tableware?

Ivana Ožanić Roguljić, Angelina Raičković Savić

Vessels with applied snakes are considered sacred vessels and associated with various cults. They are mostly related to the cult of Mithras, then with Sabazios, with Liber and Libera, and with the cults of other deities, e.g. Asclepius and Hygieia, or with the household protectors – the Lares and Penates. Vessels with relief depictions of snakes coiling around the handle or body of a vessel were distributed throughout western Roman provinces. They are mostly found on pots or wide-necked jugs with two or three handles resembling kraters. These variants differ in the number of handles and the position of snakes. Vessels with button-shaped receptacles on the handles are also sometimes decorated with applied snakes. Other animals, human figures and symbols sometimes accompany snakes on the vessels. The snake motif or other added symbols are, at times, painted or drawn. Their presence is noted around the Empire, including Limes. In Roman pottery, there are also the same forms of pots without relief decorations, which are probably also part of the tableware, probably for mixing drinks e.g. *conditum paradoxum*.

Mithras of Trapezus – Syncretic Images at Pontic Limes

Nino Silagadze

History of synthesizing of the elements of Roman and Georgian cultures goes back to the antiquity. The so-called Mithras of Trapezus was also worshiped in Colchis. It was the major deity of Trapezus in the 1st-3rd c., the city where two ethnic groups, Colchians and Greeks, lived. Mithras, god of the sun and justice of Iranian provenience, was very popular in the Roman world, especially, among the militaries. Mostly worshipped in the provinces, it was even regarded as the most important official cult in the Late Roman period. There are many various iconographical types of this divinity, widespread in Hellenistic-Roman World and Transcaucasia: images of Mithras as equestrian are preserved on the coins of Trapezus; in some other provinces of the Roman Empire (Germany, Syria),

Mithras was also sometimes represented as an equestrian, while in Thrace a cult similar to Mithras – Thracian horseman – was popular too. The coins of Trapezus in the 2nd -3rd cc. are mostly of the same type – with the portrait of a Roman emperor on one side and Mithras on another. These coins were very rare, till the archeologists in 1958 discovered big hoard of Trapezuntine coins in Bichvinta. Some years later more coins were discovered in Sokhumi and other places in Western Georgia. The image on the earliest coins shows the bust of the god, wearing Phrygian cap and radiant crown, or Mithras bust combined with the half-figure of the horse; later appears the more complicated composition of equestrian, with a fire-altar, a snake, a star, life-tree etc. The evolution of the iconographic schemes is evident - each stage of it is dated precisely according to the Roman Emperors. As to the artistic development, the coins of Trapezus show an interesting mixture of naturalistic and abstractive interpretation of the imagery, synthesized with the mythological images and symbols of ancient Kartvelians.

Hercules in Moeno quiescit – Hercules rests in the river Main. A special bracelet from Hanau, Germany

Simon Sulk

A Roman gold bracelet was found 130 years ago in Hanau on the River Main near Frankfurt (Germany). It has an inscription dedicated to Hercules and is unique in its kind. There was a Roman bridge at the site of the find, so that it is just as likely to have been deliberately laid down for religious reasons as it is to have been accidentally lost. The paper presents the find to a wider audience for the first time and puts forward theories on its loss or concealment.

SESSION 23

Imperial Frontiers and the Value of Cross-cultural Comparison

Rob Collins

Scholars of Roman frontiers are fortunate in the volume and diversity of evidence available to them, accumulated over many decades and centuries of antiquarian and archaeological practice. Indeed, comparison of different imperial frontiers, such as between Hadrian's Wall and the Upper Germanic limes, can be observed from the earliest stages of development of the field of archaeology. This comparative approach has been beneficial to Roman Frontier Studies, expanding our ability to identify 'standard' Roman imperial practice as well as more regional and local diversities. But what are the benefits of comparing frontiers across different geographies, chronologies, and cultures? What are the challenges? The paper will offer an introduction to the session, providing a brief summary of the chronologies and geographies of the Roman, Persian, and Chinese empires that are the focus of the session. It will also highlight the importance of underlying epistemologies and heuristics that frame our understandings of each frontier, arguing that the primary benefit of a comparative approach is that it introduces new questions and perspectives to ask of familiar data, challenging existing understanding, and stimulating growth and insight.

Sasanian Persia's frontier with Rome in northeastern Mesopotamia

Anthony Comfort

The paper will address the frontier between Persia and Rome from around 300 to 600 CE. During this time the two empires were frequently at war. The existence of a frontier in NE Mesopotamia, fortified on both sides, is supposed but this frontier never consisted of a long wall built by either power. It was based rather on isolated fortresses on the Roman side (especially at Nisibis, Singara and Thannouris). On the Persian side fortresses are less well-known in this area, but very large fortified camps have been discovered at Gar Sur, Qohbol and, possibly, at Ain Sinu and Babil/Kebeli. These camps will be compared with other known Persian fortifications and placed in the context of the Roman/Persian conflicts.

Population Policies in the Borderlands: A Comparative Approach to the Borderlands of the Roman, The Sasanian, and the Han Empires

Karim Alizadeh

In this paper first, I will focus on the borderlands of the Sasanian Empire in the Caucasus and will present the archaeological evidence and available textual records regarding the bordering processes in the region. I will argue that the Sasanian Empire renewed deporting population to their borderlands and this state-directed population transformation should be considered boundary-making practice and part of bordering processes. Second, I will do a comparative analysis of the population policies of the Sasanians, the Romans, and the Hans in their borderlands and will demonstrate the similarities and differences in their policies. Using both archaeological and textual records, finally I will try to address the question of why they differed or took a similar path in the population policies along their borders.

Sasanian frontier studies in the twenty-first century

Eberhard W. Sauer, Jebrael Nokandeh, Lana Chologauri, Hamid Omrani Rekavandi, Davit Naskidashvili

In contrast to the long tradition of research on the Roman army, there have been no systematic Persian frontier studies prior to the twenty-first century. Now it appears that in Late Antiquity non-urban fortresses in the Sasanian state surpassed those in the Roman Empire in dimensions. Whilst Sasanian military architecture rivalled that in the Roman world in scale and sophistication, our knowledge of the empire's multi-layered defences is still in its infancy. As recent publications already cover the little we know, this paper will address aspects of Sasanian frontier studies which are as yet not well understood and should be prioritised in future. These include the network of fortifications in the hinterland of frontiers walls and natural barriers, such as the Gorgan Wall and the Caucasus. In Transcaucasia a myriad of small fortifications existed in the hinterland of the defended mountain passes at Derbent and Dariali; yet often it is unclear to what extent these were under the control of the local principalities or under direct state control. Signal transmission between turrets on Roman linear barriers and beacon towers on the Han-era Chinese walls has been explored in some detail, but little is known so far on towers on Sasanian frontier walls. Much research has been devoted to *vici* and *canabae* next to Roman forts and fortresses, but potential civilian settlements next to Sasanian forts have not yet been explored. Mounding next to some forts on the Gorgan Wall suggests that some family member or camp-followers may have lived in the extramural space, and it is likely that the (in part two-storey) barracks filling approximately half of the interior of forts on the Gorgan Wall housed not only military personnel. Further research into the ancient frontiers of Persia, between Rome and China, promises major new insights into ancient geopolitics.

The Great Wall of China and Chinese Imperial Civilization

Cheng Xue

During the Warring States Period, the ancient China began to undergo a qualitative change from the kingdom system to the imperial social governance system. On this basis, a new defense system, the Great Wall, was produced. Most of the Great Walls were distributed in the farming-pastoral ecotone. 2,500 years of interaction, collision and integration between agricultural civilization and nomadic civilization resulted in the historical process that agricultural and nomadic peoples jointly built and formed Chinese civilization. The history of the Great Wall proved that both agricultural and nomadic peoples were the founders of Chinese civilization. The construction of the Great Wall started with military necessity and ended with national integration.

Archaeological observation on the defense function of the Great Wall in the Qin and Han Dynasties

Cheng Yixuan

The Great Wall of the Qin and Han Dynasties were built in some areas with of complex terrains and natural defensive features, which to some extent reflects that it was more of a political boundary at the psychological level on the premise of taking defense function as the main purpose. The main defensive function of the Great Wall of the Qin and Han Dynasties would also change with the exchanges of the North-South War in the Great Wall area. The intuitive embodiment of these changes was the interaction between agricultural and pastoral cultures shown in archaeological remains such as tombs. According to the written historical record of the number of wars between these two cultures in the Great Wall area during the Qin and Han Dynasties, it can be known that the number and frequency of wars were relatively low that period, so the Great Wall provided a fixed interface for cultural and economic exchanges between agricultural and pastoral cultures for most of that time.

To sum up, although the military defense as its main function of the Great Wall in the Qin and Han Dynasties, in a relatively peaceful environment, the Great Wall became a medium for exchanges between agricultural and pastoral cultures. Therefore, the Great Wall not only reflected the conflict between agricultural and nomadic civilizations, but also evidenced long-term and continuous exchanges in economy and culture, which contributed to the formation of a unified multi-ethnic Chinese civilization.

Throughout the development history of cultural exchanges in China's frontier areas, the Great Wall has facilitated the exchanges of national cultures in most times. For the Great Wall of the Roman Empire with the same nature, it may have made important contributions to the cross-regional cultural exchanges of the empire while fulfilling its military defense function.

Landscape Dynamics and Adaptation of the Great Wall of China Amidst Climate Change

Fei Cheng, Dong Xiao, Qian Gao

The Great Wall of China lies within a boundary zone historically separating agrarian and nomadic societies. This zone, known as the Farming-Pastoral Ecotone, functions not only as a nexus for the intersections between these divergent economic and cultural systems but also demarcates China's climatic and population gradients. Notably, the ecotone's positioning closely aligns with China's 400mm precipitation isohyet. Its geographical shifts have been catalysed by fluctuations in climate and temperature, as well as socio-cultural determinants.

Historical climate variations have impacted this ecotone, and consequently the positioning of the Great Wall. Contemporary climatic benchmarks reveal that during the mid-Eastern Han Dynasty (approximately 1st century AD), a 1-2°C temperature increase led to the Wall's northward shift relative to its Qin Dynasty predecessor. A subsequent temperature drop during the late Eastern Han to the Western Jin period (2nd-3rd centuries AD) resulted in a southward shift, evident in the Great Wall structures from the Northern Qi Dynasty. Temperature rises in the Sui and Tang Dynasties (late 5th-8th centuries AD) again prompted a northward ecotone and Wall movement, while a cooling trend from the mid-Yuan to Ming Dynasties (13th-17th centuries AD) manifested in overlaps and close alignments between the Ming and Northern Qi Walls.

In summary, climatic shifts have influenced the spatial dynamics of the Farming-Pastoral Ecotone, thereby affecting the territories of agrarian and nomadic communities for varied activities. These shifts have directly impacted the Great Wall's architectural trajectory, contributing to the multiplicity of routes, alternating uses, and continual reinforcements in its construction. The manifold human activities associated with the construction, utilisation, and decommissioning of the Great Wall have engendered a multifaceted landscape. Recognising the climatic factors that have shaped the Wall's historical landscape can offer valuable insights for future initiatives, such as the development of culturally diverse and environmentally sustainable Great Wall national parks.

The Spatial Distribution of Fortifications in Relation to Rivers on the Great Wall of the Han Dynasty, China

Wang Yao, Xiaoyue Shang, Yan Li

Rivers serve various military-related functions, including providing water resources and facilitating transport between settlements and forts. Some rivers are natural barriers, but when frozen in winter, they provide easy access for enemy attacks. However, there has not been a thorough exploration of

how fortification planning utilized rivers and minimized the risk of river crossing in winter. The focus of this paper is the Great Wall of the Han Dynasty (206 B.C. to A.D. 220) in China, built during the same historical period as the Ancient Roman Wall. The Han Great Wall is over 10,000 kilometers long and showcases how rivers influenced its alignment and design. Through literature review and ArcGIS spatial analysis, this study has systematically examined the spatial distribution relationship between fortifications and rivers under different natural conditions, including the distance of each type and military grade of fortifications from rivers and whether postal and signal routes follow rivers. Furthermore, typical case studies have been chosen to specifically present the relationship between fortifications and rivers, such as the Black River Basin in the western semi-desert region, the Luan River Basin in the eastern mountainous region, and the Inland River Basin in the northern desert region. These cases will then be compared with the use of rivers as communication routes and frontiers in Ancient Rome, such as the Nile and the Rhine to the frontier. This will shed significant new light on the similarities and differences between the Walls and frontiers of the East and West in taking advantage of the natural strengths of rivers. The results of this study will help to explore further how the Great Wall was designed to suit the local natural environment and provide new insight into the similarities and differences between the Great Wall of China and Ancient Roman Walls and river frontiers.

The Role of the Great Wall System on the Silk Roads

Liang Tao

The Silk Roads is a road of integration, exchange and dialogue between the civilizations and cultures of the East and the West, which has made an important contribution to the common prosperity of mankind. It establishes trans-regional and long-distance transportation through the interaction between human beings and nature in a variety of ways, connects a variety of civilization zones, and carries out sustained and wide-ranging exchanges of commerce, religion, science and technology, culture, etc., between the East and the West. It has a wide and important influence and role in the exchanges between nomadic and sedentary, East Asia and Central Asia civilizations. The Great Wall system provided a comprehensive protection for the long-distance trade along the Silk Roads during the long-time, large-scale and long-distance transportation. During the important stage of the Great Wall of China in the Qin and Han Dynasties, the Great Wall system not only played the function of defense in military sense, but also greatly promoted the smooth transportation and prosperous trade of the Silk Roads. It has been clearly documented that the “Guan Shi” within the Great Wall attracted trade interactions and promoted the economic prosperity of the Silk Roads. This paper explores the development and continuation of the Silk Road by studying the Great Wall system during the Han and Tang dynasties.

The energetics analysis of masonry of the Qin-Han wall in Inner Mongolia (China)

Zehao Li

The preservation of early Chinese Great Wall segments has posed significant challenges for archaeologists, making research into the labor costs of wall construction an intriguing and demanding endeavor, based on limited available evidence. In recent years, the development of novel methodologies has opened up possibilities for investigating the labor costs associated with large-scale construction projects. This study combines a statistically grounded method for the analysis of polygonal masonry with experimental techniques to conduct an energetic analysis of the Qin-Han Wall. Through a comprehensive investigation, we have been able to estimate the labor costs associated with the entire Qin-Han Great Wall, shedding light on the labor organization and imperial strategies behind this monumental endeavor. The method proposed here is replicable with the accompanying code and data and can be applied to a range of other studies focused on diverse forms of stone masonry walls.

SESSION 24

Ritualised object-practices at the Roman Iron Age Ölandic cemetery of Sörby-Stör-linge, Sweden

André Nordin

The island of Öland, Sweden, was never part of the Roman Empire. However, the archaeological record on Öland indicate widespread contact with the Roman Empire. For example, architectural features such as dry-stone fortifications (at least 16 known), dry-stone house foundations (more than 1000 known), finds of 360 solidi (more than anywhere else in Scandinavia), and a myriad of objects of Roman manufacture from the close to 700 excavated Roman Iron Age burials (ca 40% of the islands total excavated burials), together indicate the far-reaching impact of the Roman World on the Baltic island of Öland. In this paper, I will explore the varied ritual practices that formed part of the burial ritual in the Roman Iron Age of Öland. As a case study, I will focus on one of the largest cemeteries from the Ölandic Roman Iron Age: Sörby-Störlinge. Of 92 excavated burials, more than half (ca 65) contained objects of various kinds. Of these objects, ca 84 (that is, 25% of the total) constitute pointed and edged objects (for example, swords, knives, fibulae, arrowheads). I will examine how these edged and pointed objects were ritualised as part of the burial process. For example, edged and pointed objects at Sörby-Störlinge were treated in different ways which indicate pre-depositional rituals. Swords were often bent and folded before being deposited in burials, and sharp points on objects were often cut-off before deposition. Many objects were also burned, not always as a result of the cremation pyre. There is also evidence of post-depositional rituals, such as grave re-openings and the removal of deposited objects. The ritualised object-practices at this cemetery will then be compared with contemporary object-practices at other Ölandic sites, such as the wetland-sacrificial site of Skedemosse, and the dry-stone fortifications and house foundations.

The Cult of Hera Along the Bulgarian Lower Danubian Limes

Irina Shopova

This paper draws on epigraphic evidence to explore the rituals, the dedications and the sanctuaries connected with the worship of the goddess Hera along the lower part of the Danubian Limes. Usually, Hera is denoted as a Greek deity and she is not listed among the deities worshipped in military

context by the Roman army, but her presence in the territories controlled by the non-Greek population of the Danubian frontier area cannot be explained as a result of syncretism with Juno's warlike aspect. In the Thracian Roman provinces Hera was not equated to Juno and the scope of this communication is to analyze the meaning of their cult in the Limes territories of Moesia Inferior.

Desert Borderlands: Critical Border Studies and Roman North Africa as a Frontier Region

Sahal Abdi

The role of Border Studies and a greater focus on the role of the frontier zones of the Roman Empire has allowed archaeologists and historians to reconceptualise these areas not just as areas of defence but also as sites that generated new forms of socio- material relations, new ways of expressing personal identities and ritual activities and new ways of considering the impact of Roman imperialism on rural communities in these regions. Understanding these new relations also means getting to grips with the way in which the pre-existing network of communities underwent substantial changes as they adapted to the new realities of Roman imperialism, and the emergence of this imperial structure which were the conditions under which new forms of social relations emerged. To treat Roman North Africa in such terms is to implicitly argue against an intellectual milieu that treats this region through the prism of modern colonial ideology as needing the guiding hand of the Roman Empire, and also as a landscape of violence and conflict, unable to overcome its own base instinct. Such attitudes do not only restrict our understandings of the past, but they also act as the ideological consensus that legitimates current acts of imperial oppression in this region in modern times. Recent work in the region suggests that Roman North Africa was a complex tapestry of people, identities, belief systems, productive work and social relations. This talk will focus on ritual activity as an expression of these identities and interpersonal social relations in the context of how they allow us to conceptualise Roman North Africa as a frontier zone and introducing complexity into our understanding of the region, creating zones of creative exploitation within an overall restrictive structure, and how this can potentially help archaeologists consider the formation of social relations at the imperial core.

Ritual, Rubbish, or Both? Modern Depositions at the Carrawburgh Mithraeum

David Walsh

Recent years have seen a growing interest in the phenomenon of 'ritual litter', whereby modern objects are deposited at ancient sites in a seemingly ritual fashion. However, while this concept has

been subject to study at various prehistoric sites, almost nothing has been said about it in relation to the remains of Roman temples. In fact, this phenomenon is commonplace at such sites, with one notable example being the Temple to Mithras at Carrawburgh.

Carrawburgh was once home to the auxiliary fort of Brocolitia, but all that is evident today are the remains of the temple. The site attracts hundreds of thousands of visitors every year, with some people passing through while they walk the Hadrian's Wall Path that runs next to the ruins, while others come to view the temple specifically. Inside the temple walls, which are up to several courses high, are several replica altars upon which many people regularly deposit items. The objects deposited range from coins and pebbles to rings, bouquets of flowers, painted stones, and even in one instance a replica Mithraic icon. Moreover, one of the altars, which is hollow, is often found to contain candles that have been burnt.

This paper will present the results of a year-long project that has recorded objects left at the temple, observing trends in the evidence, and the impact they have on the site. It will consider how these modern 'offerings' represent an ongoing re-negotiation of sacred space that builds upon the ritual activities that were conducted at the site in the Roman period.

The end of rituals: on the abandonment of sanctuaries in the Limes area of Upper Germany and Raetia

Markus Scholz, Carsten Wenzel

In the course of retreat or abandonment of the Upper Germanic and Raetian Limes territory, the sanctuaries along the Limes and in its hinterland also came to an end. However, no uniform picture can be drawn. Already in the course of the 2nd third of the 3rd century, there was destruction and even desecration of sanctuaries and votive monuments. Who was responsible for this: invading barbarians? Dissatisfied mobs among the provincial population? Targeted provocations by civil war opponents? Which sacred institutions were restored after destruction, which were not? Various structures are associated with ritual closures (clausurae) of sanctuaries. The lecture aims to provide an exemplary overview of the end of sacred sites in the Limes area. Can certain patterns of acting be traced?

German:

Das Ende der Rituale: zur Aufgabe der Heiligtümer im obergermanischen und rätischen Limesgebiet

Im Zuge der Räumung beziehungsweise der Aufgabe des obergermanisch-rätischen Limesgebietes fanden auch die Heiligtümer am Limes und in dessen Hinterland ihr Ende. Allerdings lässt sich kein einheitliches Bild zeichnen. Schon im Laufe des 2. Drittels des 3. Jahrhunderts kam es zur Zerstörung und sogar Schändung von Heiligtümern und Weihedenkmälern. Wer war dafür ver-

antwortlich: einfallende Barbaren? Unzufriedener Mob in der Provinzbevölkerung? Gezielte Provokationen durch Bürgerkriegsparteien? Welche sakralen Einrichtungen wurden nach Zerstörungen wieder aufgebaut, welche nicht? Verschiedene Befunde werden auch mit rituellen Schließungen (clausurae) von Heiligtümern in Verbindung gebracht. Der Vortrag strebt einen exemplarischen Überblick über das Ende sakraler Stätten im Limesgebiet an. Lassen sich bestimmte Handlungsmuster nachvollziehen?

Ritual depositions in the central sanctuary of NIDA/Frankfurt-Heddernheim (Germany)

Frederic Auth

Beginning in 2016, excavations in the central parts of the civitas capital NIDA/Frankfurt-Heddernheim (Germany) unearthed a sanctuary, probably dedicated to Iuppiter Dolichenus, Diana, Mars Alatheo and possibly other deities. This is the only known 'large-scale' sanctuary in the vicus, and due to its size must be considered a central hub for the whole of civitas Taunensium, reshaping our view of the sacred landscape in this part of the limes area.

Numerous pits were found in the entire area of the sanctuary, which are probably the remains of ritual acts. These pits, which can be roughly divided into two types, are usually filled with pottery and animal remains. The pits of type A are typically 1 x 1 metre in size and are filled with a bottom layer, containing most of the finds, and an ashy top layer. They make up the majority of the pits in the sanctuary. Pits of type B are considerably larger and are irregular in shape. They are very rich in finds and are usually filled in several layers. Chronologically, the pits can currently be dated to the 3rd century AD; a more precise classification and dating is the aim of further work. A special focus is on finding out until when the sanctuary was used, respectively when the pits were dug, and whether there is a chronological connection with the abandonment of NIDA-Heddernheim in the last third of the 3rd century AD.

Furthermore, the main question is which ritual acts took place in the sanctuary of NIDA-Heddernheim, which people and groups of people were acting there and whether a change in the practices carried out can be traced on the basis of the pits.

SESSION 25

Fallstudie der östlichen Adria

Domagoj Tončinić, Domagoj Bužanić, Iva Kaić, Mirna Cvetko, Mirjana Sanader, Grenzen vor Grenzen

Nach ihrem Erfolg im Ersten Punischen Krieg interessierten sich die Römer zunehmend für das Gebiet Griechenlands und Mazedoniens und suchten daher nach geeigneten Routen zu diesen Gebieten. Die einzige Alternative zum Seeweg war der Landweg entlang der östlichen Adriaküste. Zu dieser Zeit wurde die Region von einem Volk bewohnt, das von den Römern als Illyrer bezeichnet wurde. Die römische Eroberung dieser Region dauerte vom Ersten Illyrischen Krieg im Jahr 229 v. Chr. bis zur Niederschlagung des dalmatinisch-pannonischen Aufstands im Jahre 9 n. Chr. Zur Sicherung der eroberten Küstenregion, dem Gebiet zwischen den Kolonien Iader und Salona, wo bereits die ersten römischen Einwanderer angekommen waren, errichteten die Römer – von Osten nach Westen – zwei Legionslager und mehrere durch Straßen verbundene Kastelle. In der wissenschaftlichen Literatur wurde diese Verteidigungskonstruktion als Grenze verstanden und lakonisch als dalmatinischer Limes bezeichnet, was bislang zu wissenschaftlichen Diskussionen ohne zufriedenstellende Lösung führte. Dank der Forschung im Rahmen des Projekts „Understanding Roman Borders: the Case of the Eastern Adriatic“ und der Forschung, die im Rahmen des Projekts der Kroatischen Wissenschaftsstiftung IP-2022-10-6994 *Between war and peace. The transformation of the cultural landscape between the Krka and Cetina rivers from Protohistory to Late Antiquity (TiHiTransForm)* fortgesetzt wird, verfügen wir heute über zahlreiche neue Daten, die für das Verständnis der römischen Grenze an der östlichen Adria relevant sind.

Ziel dieser Arbeit ist es zu diskutieren, ob dieser Grenzbereich im Hinterland von Iader und Salona von Anfang an durch das Verteidigungssystem von Legionslager und Kastellen gesichert war. Auch ob dieses Verteidigungssystem von den Römern nach der Niederschlagung des dalmatinisch-pannonischen Aufstands im Jahr 6–9 n. Chr. oder früher im Pannonischen Krieg unter Tiberius (12–11 v. Chr.) oder noch früher in der Zeit des Illyrischen Krieges Octavians errichtet wurde (35–33 v. Chr.).

Borderscaping. Concepts and Practices of Border Making

Alexander Gramsch, Kerstin P. Hofmann

In this contribution we aim to offer an approach to Roman Frontier Studies that expresses the multilevel complexity of borders, from the geopolitical to the social practice and cultural production of border making and crossing. Analogous to space, borders can be understood - inspired by Henri Lefebvre - as a dynamic process of three modes of production which mutually influence and determine each other: the perceived and experienced materialized border; the conceived border as it is represented in signs, maps, texts, and discourses; and the lived border. Thus, borders are material and 'real', perceived, and practiced. Borderscaping, i.e. the production of borders can thereby be seen as an ever-new appropriation of, transformation of and reference to "received spaces" and borders as well as to their representations. They can be conceptualised as assemblages or settings consisting of actors, practices, and material structures or milieus; actors including military, civilian, 'Roman', 'barbarian', dwellers, travellers or "beachcombers" and "frontier runners" – practices like spatial marking, aligning, reifying, maintaining - material structures and milieus ranging from landscape elements to installations of – in the context of *limites* and *ripae* - mainly military character. Conceiving borders in general and early Roman pre-linear frontiers in particular as social (in the widest sense) and interactive allows to study them on diverse levels – e.g. as communicative boundaries, praxeological boundaries, motion boundaries – and in their dynamic genesis and transformation, i.e. turning from "fuzzy", porous, or "liquid" to clear-cut, solid, or "petrified" borderlines to crossed and transgressed boundaries. Thus, an important focus of our paper is the temporal dimensions and the aftereffects of borderscaping.

The territory North of the Danube at the end of the 1st century A.D. and early 2nd century A.D.

Felix Marcu

The area of the Lower Danube was one of permanent conflict for a very long time, due to the numerous population movements, from Dacians-Getae to Celts, Greeks, Germanics, various Asian peoples, Slavs, Bulgarians, etc. The list of conflicts between Dacians and Romans is not long, but in the 2nd century CE, it was already an issue when the most serious plans to deal with the Dacians belonged to Caesar; these conflicts were only settled under the reigns of Domitian and Trajan.

The geopolitical situation of the Lower Danube during the reign of Domitian was beginning to change, with numerous infrastructure investments, such as road and fortification repairs, but also administrative interventions: in 86 CE, as an aftermath of the Dacian conflicts, Moesia was divided into two provinces. Domitian tried to maintain peace through diplomacy, as opposed to Trajan

who did it through annexation, but not for a long time, since Dacia is the shortest-lived province in current Europe.

The conquering army, concentrated especially in Moesia Superior, was very large, but the identified fortifications are just a few. Some of the units were brought here exclusively for the Dacian expedition. How much the Romans advanced towards the north, east, and west, and how much of the territory was still controlled by the Dacians during the two Dacian wars and even under Domitian is hard to tell, but we would like to analyze it with this occasion. It was believed that this territory was reduced to Transylvania, yet the Romans reached farther regions, deep inside Moldova. All Dacian fortresses which were still in existence will cease.

The early imperial army in the Middle Rhine Valley – a “frontier” from RIGOMAGVS to CONFLVENTES

Lennart S. Niehues

In the aftermath of the Augustan campaigns in Germania Magna the Rhine became the north-eastern “frontier” of the Roman Empire, established around 17 AD during the early Tiberian reign. Between BONNA/ Bonn in the north and MOGONTIACVM/ Mainz in the south, the Middle Rhine Valley is mostly narrow and steep. Only in small areas, namely around RIGOMAGVS/ Remagen and CONFLVENTES/ Koblenz, the valley is wide enough to allow a safe crossing of the river. Civilian settlements were founded mainly in this region. Up until the Revolt of the Batavi military bases are located in RIGOMAGVS/ Remagen, ANTUNNACUM/ Andernach, Urmitz (ancient name unknown) and CONFLVENTES/ Koblenz. They served to protect the “frontier” westerly of the Rhine.

For RIGOMAGVS/ Remagen, a late Augustan dendrochronological dating is known. In contrast, early graves and stray finds from ANTUNNACUM/ Andernach and CONFLVENTES/ Koblenz date from the 2nd decade AD onwards. Until now, only traces of the presumed early imperial military presence have been found there. Only in Urmitz, two chronologically detached military bases have been found, that can be linked with different graveyards used by the army and the civilians. Together they prove a Roman presence from the late Augustan/ early Tiberian reign until at least the Revolt of the Batavi.

A connection can be made across all these military bases and their associated civilian settlements in the Middle Rhine Valley. This shows a clear image of the early imperial army at a “Frontier before the Frontier” as a prelude for the Upper German-Raetian Limes.

Was there a Roman frontier in Sardinia?

Patrick Hayes

The *limes* of the high and late Roman Empire have been examined at length in scholarship but the question of Republican period frontiers are often neglected due to their non-linear (fuzzy) nature. Sardinia, as Rome's second *provincia*, makes for an interesting case study in the evolution of the Roman frontier. The island, previously under the dominium of Carthage for over two centuries, was invaded by the Romans in 238 BCE (Polyb. 1.88.5-12). In Sardinia, the Romans were presented with two threats, first, the hostile Nuragic tribes who inhabited the interior of the island, and second, the threat posed by the Carthaginians at sea. This external/internal dual nature of the Sardinian frontier necessitated innovative responses from the Roman administrators on the ground. The response to the threat by sea in particular needs to be re-evaluated in light of recent archaeological excavations in Sardinia's ancient coastal sites.

This paper will discuss several key elements in the development of the Sardinian frontier in the late 3rd and early 2nd centuries BCE, the expansion of a road network, formation of client groups, placement of garrisons and Sardinia's use in a broader naval strategy. Analysis of the archaeological site of Tharros, a Punic-Roman city on Sardinia's west coast will be presented to determine the consequences of Roman dominium at a civic level. Recent excavations undertaken by the Tharros Archaeological Research Project (TARP) suggest a different pre-imperial urban configuration at the site (Ellis *et al.*, 2021). This paper proposes that the city of Tharros was one part of a wider system of highly defensible Sardinian cities which formed a Republican period frontier in terms of its ability to restrict Carthaginian movements in the central western Mediterranean. This is demonstrated by Hannibal's chosen Alpine route to avoid the island and its supporting navy under Cnaeus Servilius entirely.

The creation of the map of Roman frontiers for the FRE project

David Breeze, Rien Polak

As part of the Frontiers of the Roman Empire World Heritage Site project and its associated activities, a new map of the frontiers of the Roman Empire was created. This paper examines problems with definition and chronology in creating a map at this scale.

Fuzzy on the inside. An approach on the function and course of internal borders using the example of the border between Raetia and Germania Superior

Sandra Schröer-Spang

The study of Roman borders mainly focuses on the external borders of the Roman Empire. Thus, the internal borders are often neglected. What do we know about the course and function of provincial borders and their significance for the military, the civilian population and the sense of identity of the province population? Were boundaries of provinces static or did they change? Were they linear or diffuse? What impact did provincial affiliation have on the daily lives of their inhabitants? And what impact did the border itself have on those who lived near it. There will be no general answers to these questions. They will be as varied as the cultures within the Roman Empire, the individual provincial histories and the particular regional circumstances. In this paper I discuss these questions using the provincial border between Raetia and Germania Superior as an example. In addition to discussing previous approaches to the delimitation of these provinces, I also address the methods and results of my doctoral thesis, which I submitted in 2019 and which will be published in 2024. In it I take the approach of approximating the border between Raetia and Germania Superior using GIS-based settlement pattern analysis in the northern part of the Province boundary bordering the Limes.

Rome controls the landscape - observations on the security mechanisms in the southern Rhine foreland of Mainz

Thomas Becker

Das rechtsrheinische Vorfeld des Legionslagers Mainz, also die Mündungsregion des Mains in den Rhein und das südhessische Ried, sind in der ersten Hälfte des 1. Jahrhundert n. Chr. im Focus des Militärs als Cordon sanitaire. Bei der Standortwahl für die bisher bekannten Lager fällt eine Heterogenität auf, die zunächst an eine Zufälligkeit denken lässt. Mit einer zeitlichen Tiefe in der Betrachtung fallen unterschiedliche Konzepte und Ziele für das Militär auf, die in der Sicherung des Raumes oder der Verkehrswege bzw. des Nachschubs liegen. Parallel dazu kann eine Aufsiedlung im Flussvorfeld nachgewiesen werden, die den Charakter eines Zuzugs von regionsfremden Ethnien hat. In der zweiten Hälfte des 1. Jahrhunderts n. Chr. findet sich ein Wechsel im System der Sicherung, die sich beispielsweise anhand einer erhöhten Anzahl kleinerer Lager über eine weite Fläche verteilt ablesen lässt. Der Vortrag betrachtet in zeitlicher Tiefe diese Entwicklung der militärischen Sicherung in einem Gebiet, das naturräumlich durch benachbarte Flüsse und Gebirgsbereiche räumlich klar definiert und damit geprägt ist.

In the first half of the 1st century AD, the area on the right bank of the river Rhine in front of the legionary camp of Mainz, i.e. the region where the Main flows into the Rhine and the so called

“Hessisches Ried” as the adjoining landscape, was the focus of military attention as a “cordon sanitaire”. The choice of location for the camps known to date is characterised by a heterogeneity that initially suggests randomness. When analysed in depth over time, different concepts and objectives for the military become apparent, which lie in securing the area or the transport routes or supplies. At the same time, there is evidence of settlement in the river foreland, which has the character of an influx of ethnic groups from outside the region. In the second half of the 1st century AD, there is a change in the system of defence, which can be seen, for example, in the increased number of smaller camps spread over a wide area. The lecture looks in chronological depth at this development of military security in an area that is spatially clearly defined and thus characterised by neighbouring rivers and mountain ranges.

The command post on the Kops Plateau in Nijmegen. New insights

Harry van Enckevort

In 12 BC, the Romans built a small fortification on the Kops Plateau in Nijmegen, where army commanders such as Drusus, Tiberius, Varus and Germanicus probably lived temporarily before or during their campaigns in Germania. They stayed in a luxuriously furnished praetorium in the hinterland of the frontier zone across the Rhine. After the establishment of the Limes in the Lower Rhine area around 40 AD, this command post was replaced by a castellum, probably housing a cavalry unit (Ala Batavorum?). The excavations of the 1980's and 1990's were never worked out. However, some articles have been published. In 2022, as part of the 'Constructing the Limes' project, work began on the analysis of more than 30,000 features and more than 400,000 finds. Ongoing research is providing new insights into the layout of the fortification and the use of the buildings. It is already clear, for example that the blacksmiths and bronze casters moved regularly during the early Roman period. Several newly discovered buildings outside the fortification were used for different purposes. In recent years it has also become clear that more than ten encampments were established around the Kops Plateau, several of which can be dated to between 10 and 20 AD. Where these built to house units used in Germanicus' campaigns?

SESSION 26

Roman soldiers far beyond the limes – unexpected finds from Central Poland

Bartosz Kontny

The paper presents an analysis of small Roman militaria from the Kuyavia region (Central Poland). The collection consists of elements of horse attire and military costume. Most of them have not been noted in Poland, and they are also unique in the Barbaricum, occurring more frequently in the Supra-Limes area and in the Central Germany. They are dated in the 1st to 5th century and are explained in an ambiguous way. Finds from the 1st century and the 1st half of the 2nd century are not numerous, but they show the position of the area probably in connection with the course of the amber route. The most numerous discoveries from the 3rd century can be explained by the visits of Roman soldiers to the area during the times of the Third Century Crisis. Taking into account analogous discoveries from Erfurt-Friestedt in Central Germany and the discoveries of coins of the Gaulish emperors one may assume that the Romans reached the Kuyavia, namely the central place at Gąski-Wierznbioczany i.a. for the purpose of recruiting. The latest series of monuments are dated to the 2nd half of the 4th- 1st half of the 5th century. It is primarily made up of elements of military belts. They probably bear witness to the return of Germanic warriors serving in the Roman army.

Gimme shelter – on the tactics of the fundatores and the ballistics of their *glandes*

Hannes Flück, Raphael Berger, Claudia Gerling, Thomas Reitmaier, Peter-Andrew Schwarz

Thanks to systematic site surveys in the vicinity of Crap Ses, Surses (CH) over the past 20 years, more than 400 Roman lead sling bullets (*glandes*) have been uncovered in the southeastern Swiss Alps. These, and various other finds are evidence of a skirmish between parts of the IIIrd, Xth and XIIth (Fulminata) legion and local fighters during the Alpine Campaigns of Augustus in 20–15 BC. The distribution of these *glandes* in the investigated area allows for considerations of the deployment/presence of fundatores in the skirmish, as well as the effect they might have had on the enemy/opponent. Nearly all *glandes* bear punches of legions which raises fundamental questions about the organisation and troop affiliation of slingers in the Roman military. Finally, the large number

of glandes found presented an opportunity to investigate the ballistics of these weapons in collaboration with ballisticians from Zurich Forensics, the Ecole des sciences criminelles de l'Université de Lausanne and the Institute of Forensic Medicine at the University of Bern. In addition to the aerodynamic properties of the glandes, the target ballistics (the concrete effects of a body or head hit) are also being investigated using the latest measuring methods. The results indicated that direct hits cause considerable injury to the soft tissues but also to bones.

“Between the anvil and the hammer”: Militaria as part of the archaeology of resistance in Roman Judaea

Guy Stiebel

The two Jewish Wars against the Romans (AD66-73 and AD132-135/6) form a unique test case for the examination of the theme of empire and resistance. Both present a rare combination of historical and epigraphic evidences, written by the vanquished side, alongside rarely persevered finds, in particular arms and armour in the arid Judaeen Desert. Nonetheless, despite the rivers of ink that were spelt over the two events little was the theme of the arms and armour of the rebels the focus of a systematic examination.

The paper aims discuss to these times of crisis, through the study of the militaria, as part of the Archaeology of Resistance. It will shed light on the sources and mechanisms involved in the complex production and the getting hold of arms by the rebels, from underground weapons production, through field-modification to booty. In addition to the typo-technological examination, the paper will further present the manifestations of symbolism and not less the individual “packages of memories” carried by the rebels, for at the end of the day “we are all individuals”...

Mastering metalwork: Exploring a newly discovered Roman armour decoration technique

Matěj Kmošek; Martijn A. Wijnhoven

Roman militaria often showcased contrasting metals for decoration, commonly seen on greaves, chest plates, and helmets. Traditional methods involved using copper alloy as a base and partially covering it with white metal (tin). This technique, known especially from embossed plate armour (Paraderüstung), utilised height differences to apply tinning, resulting in silver and gold accents. A newly discovered technique from a chest armour found in Mušov (Czech Republic) demonstrates a more sophisticated application. Certain areas were masked off, eliminating the need for height differences in tinning application. This paper examines the technical analyses (XRF, SEM/EDS,

metallography, traceology) and experiments used to understand this innovation. It explores potential masking methods and reveals that the Mušov armour represents a wider phenomenon, rather than an isolated case. This study sheds light on Roman military aesthetics and ancient artisans' ingenuity, impacting our understanding of metalworking techniques and their influence on armour ornamentation.

Missing link, secured at the last second - Remarkable weapon finds from a Late Iron Age burial near Meurich (Germany)

Ferdinand Heimerl, Lars Blöck, Magdalena Machura, Stephanie E. Metz

In 2022, the Trier department of the GDKE/state archaeology Rhineland-Palatinate (Germany) was informed about illegal digging in the forest near Meurich, 23 km southwest of Trier. Unlicensed metal detectorist were prevented at the last second from looting a grave. The cremation burial (Latène D1) can be assigned to a group of cremations from the late Iron Age and early Roman period in the Saar-Moselle-Eifel-Hunsrück region, whose common feature are weapons that had been intentionally destroyed. The buried are said to belong to the warrior elite of the Treveri, a gens in Gallia Belgica described in Caesar's "De bello Gallico". The more recent graves from the period after the Gallic War are interpreted as burials of members of the Treveri elite who retained their military habitus and served as auxiliaries in the Roman army (Miron 1984; Haffner 1989). The Meurich burial belongs to the earlier graves of the group and has an extensive ensemble of weapons, such as a spearhead and lancehead, a Ludwigshafen-type sword, a shield and an iron helmet.

The paper first presents the ensemble with a focus on the helmet. It belongs to an unknown type that represents a hybrid of East Celtic helmets and the Port type (Schaaff 1974; Schaaff 1988 and Waurick 1988), which formed the basis for the Roman helmet of the Weisenau type (Bongartz 2013; Junkelmann et al. 2000; Waurick 1988). From a typological point of view, the helmet from Meurich represents a missing link in the development of the Weisenau type, but dates contemporaneously or earlier than the Port type. In a second step, the feature will be contextualised in the Treverian burial group. This raises the question of the socio-cultural background of the buried and their influence on the development of the Early Imperial military equipment.

Roman daggers and dagger sheaths from the Dutch part of the Roman Empire

Maarten Dolmans

To date (anno 2023), 43 pugiones and pugio sheaths have been found in the Dutch part of the Roman Empire, many of them by amateurs. The oldest pugio found in the Netherlands comes from the Republican period, the youngest from the third century AD. Until now only 13 daggers and scabbards have been extensively researched or published with more than just a photo (see for these J. Obmann 2000). In the presentation/paper, attention is paid to the location and original setting of all daggers and scabbards, the discovery conditions, geographical distribution and use by soldiers. The typology, construction, material, ornamentation and symbolism and dating are also examined. Finally, most scabbards are graphically reconstructed and compared with specimens found outside the Netherlands, with some older reconstructions (of incomplete specimens) from the Netherlands being reinterpreted in response to new discoveries.

Few but eloquent: Elements of armour and military belts from Istria

Alka Starac

The subject of the work are elements of armour and military belts from Istria, few but diverse. They are mostly unpublished and can mostly be attributed to cavalry or officers. The only archaeological find of an armour element in Istria is the pointed scale of the feathered lorica plumata used in the Roman cavalry starting from the early 2nd century, with the greatest intensity during the 3rd and 4th centuries. The hypothetical connection of the pointed scale with the armour owned by the Roxolanian king Rasperaganus or his son, who ended his life in exile on an islet in the port of Pula, is considered among other possibilities. Military belts are represented by individual findings of belt plates, a pendant and buckles. The cast openwork belt mount with the apotropaic inscription *SERVES* and the teardrop pendant on the belt terminal belong to the military belt type common at the end of the 2nd and in the first half of the 3rd century. The chip-carved triangular belt mount and the iron D-shaped buckle, as well as the feathered armour scale, all originate from the post-Roman layers in the quarter of St. Theodore in Pula. The triangular belt mount is an element of a chip-carved five-part belt set, it belonged to a military commander or a high dignitary and dates back to the end of the 4th century and the first decades of the 5th century. The iron D-shaped belt buckle from the same site is associated with an ordinary soldier and is dated to the 4th-5th centuries. The copper alloy belt buckle from Villa Dragonera South, although of the same D-shaped type, indicates a relatively higher status and can be attributed to the owner of the villa.

The lorica segmentata finds from Viminacium, an indicator of the earliest construction phase of the legionary fortress

Goran Stojić

Viminacium is located at the confluence of the Mlava and Danube rivers, in what is now Serbia. It was founded during the second half of the 1st century CE as a legionary camp of the Legion VII Claudia. During earlier archaeological excavations, only small parts of the military camp and its surroundings were explored. During the 2019, 2020, and 2022 campaigns, the north western and, to a lesser extent, southern and eastern parts of the camp were researched. Excavations included an earthen embankment used as a sloping ramp between the rampart and the retaining wall. The embankment was built during the second phase of the construction of the military camp, which can be chronologically determined in the first decades of the 2nd century. Excavations of the embankment, as well as several pits under it, yielded numerous parts of military equipment, originating from the same or slightly earlier period. Among the discovered artefacts, the largest number belongs to armour, especially lorica segmentata. These finds make defining the phases in the construction of the fortification easier. They also allow better understanding of the Roman army in early periods of the military camp in Viminacium.

Lorica segmentata finds from the auxiliary fort of Aalen

Paul Guldenstein

From around 160 CE until the abandonment of the Raetian Limes in the mid-third century, the auxiliary fort of Aalen, located at the northeastern edge of the Swabian Alps, was the garrison of the ala II Flavia pia fidelis milliaria. The only partially excavated interior structures of the fort include a storage building north of the principia. In the latest phase of the fort the function of this building seems to have changed. Improvised fireplaces as well as partly melted copper-alloy fragments and slags indicate a makeshift workshop for the reuse of scrap metal. A pit within the storehouse belongs to the same context as the fireplaces in the direct vicinity. It contained a significant amount of metal pieces of which the predominant majority can be related to a lorica segmentata, already fragmented before deposition. The armour fragments can be assigned to the Newstead type in a variation with decorations of fluted copper-alloy sheets covering the girth hoop endings around the closing slots and the shoulder guard endings. Furthermore, the fragments indicate a variant hinge construction of the tripartite upper shoulder guards. The number of tie rings, amounting to dozens, and their various types, might result from their function as expendable parts, or alternatively they could indicate that pieces of more than one specimen of lorica segmentata have been deposited.

This paper shall outline the current and final state of research on one lorica segmentata find from Aalen and its depositional context.

The evolution of Niederbieber helmets: Protecting Roman infantry

Jost Mergen

At the ROMEC 2019 conference in Cologne, Germany, I presented new research on the eponymous Niederbieber-type helmet, which served as the heavily protective standard headgear for Roman infantry during the late 2nd and mid-3rd centuries AD.

Subsequent research on this topic has uncovered many more published and unpublished findings of this helmet type across the empire, with a particular concentration along the frontiers. This presentation aims to provide an overview of the current state of research, discussing the helmet's evolution, its peak of usage, and its replacement by other helmet types. It will also explore the various variants, their potential chronology, and their distribution. Furthermore, it will delve into the significance of this helmet type, which can be considered the final developmental stage of the 'Gallic' or 'Gallo-Roman' helmet tradition.

Beaded rim fittings and other regional peculiarities of the military belt from the region of Lauriacum/Enns (AUT)

Eva Thysell, Barbara Kainrath

In provincial Roman finds, military belt fittings serve as markers for chronological questions, as they are subject to technical developments and formal changes. One large group are long-rectangular fittings that have an empty or accentuated central field, are often characterised by rich openwork ornamentation (*opus interrasile*) and were common in various designs until the first half of the 3rd century AD. The vast majority of the fittings presented so far are examples that were worn throughout the Roman Empire. In contrast, representatives of belt fittings have been identified in recent years for the Lauriacum/Enns area, which not only indicate local production, but whose area of distribution encompasses a clearly defined geographical area. One of these belt fittings is an unperforated, elongated-rectangular type made of extremely thin sheet metal, which is decorated with a bead pattern on the side edges. For these so-called "beaded rim fittings" (dt: *Perlrandbeschläge*), different variations in shape can be identified, which occupy different positions on the belt. Finds of these fittings come both from the civilian settlement area around the legionary fort and from the fort itself. Since such fittings were also found at the Stein-St. Pantaleon site, which can be dated earlier in terms of military presence, a possible dating of such fittings as well as questions about the workshop are discussed.

Ye shall know them by their belts”: ‘aprons’ depicted on soldiers’ tombstones of the late 1st century AD

Martin Wieland

The last phase of the “classical” era of Roman military tombstones in the north-western provinces (i.e. the first century AD) is characterized by more and more simplified depictions of the soldiers and their equipment. Especially the items that are difficult to manufacture (swords, daggers, belts) are now often covered by clothing or only partly shown. A closer look at this comparatively small group of post-flavian tombstones focuses on the belts or, more precisely, the ‘aprons’ that are now displayed in a very reduced form only. Are they pictured in a realistic way, symbolically or rather *pars pro toto*? A long-known (but rarely published) item has been examined again and can now be added to this list; others can now be dated more precisely.

SESSION 27

Production and Supply: coin finds along the German limes

Benjamin Hellings

Contextualizing Roman coin finds occurs in a myriad of ways: archaeological contexts, contemporary/historic academic backgrounds, and numismatic frameworks (which can comprise of a multitude of meanings). The corpus of Roman coin finds grows with each passing year, and new and old data become increasingly available, demanding re-contextualization to better understand find patterns across the Roman Empire and beyond. This paper proposes to take a purely numismatic approach to re-contextualize finds on either side of the German limes by determining the concordance and dissonance of coin hoards but also their counterpart, non-hoarded coins. Much ink has been spilled considering either hoards or non-hoards in isolation of one another or finds from only one side of the limes, but the entire corpus of minted coinage is relevant, and the limes was not a static, rigid, impassable border. Looking at select examples across the Roman era, this paper will consider the extent a three-way relationship between the production of coins, their supply, and subsequent find pattern, exists, and how factors from the 'core', the 'outer ring frontier provinces' and beyond influenced one another.

'Military' vs 'civilian' hoards, antoninianus vs denarius. Are there specific patterns of hoarding based on to the burial environment?

Cristian Gazdac

There is a large bibliography on the financial, economic and numismatic topics regarding the Roman army. For decades debates and complex works on Roman military payments were carried out with fascinating results.

But what was the military currency behavior? How did they react to monetary changes in the imperial policy? The paper is seeking to compare the field evidence between 'military' hoard and 'civilian' ones. 'Military' hoards are those found inside a military garrison or very close to it, within an area of 500m from the walls. The analysis will focus on the hoards ending with coins of AD 244-253. The reason is the introduction of the overrated antoninianus coinage (AD 215) and the period when gradually it became the dominant silver denomination in circulation against the denarius. Are the 'civilian' hoards

indicating that the denarius was still regarded as a coinage with a higher intrinsic value than the silver antoninianus? Can the ‘military’ hoards be linked with the way of payment of stipendia and donativa to the soldiers, meaning that the soldiers’ pay was made mainly in antoniniani?

At the same time, the paper will reveal the benefits of using a large database together with multiple filters of an open-access application, namely the Coin Hoards of the Roman Empire (CHRE) run by the Ashmolean Museum, Oxford. It is a useful instrument for both scholars and those interested in the Roman hoarding phenomenon.

Coins on the Pontic Limes and Beyond: Patterns of Hoarding in Lazica/Western Georgia Tedo Dundua:

Before being totally destroyed, Imperial security system actually had shown three gradual phases of development: forward defense, elastic defense and defense-in-depth. For Lazica at the East Black Sea Coast only forward defense system was applied. Roman hegemony over the small coastal strip was based on a well-manned castellum-system from Pitius to Aphasos. Lazi client-kings, dwelling in the hinterland, largely enjoyed Roman *pax*. Full-time units served the forward defense-system. So, they were to be paid, while Lazi – to receive the Roman money for their economics.

Sea coast has mostly provincial silver of Caesareian issue, municipal copper of Trapezus and Imperial copper money, in the complexes, hoards and as single finds. Hinterland absorbs only Caesareian silver, accompanied by Roman denarii. As to copper absence in the hinterland, there was no need of small trade in Lazica generally. Thus, copper coins could come there for military purposes only, as a part of soldiers’ *stipendium*. The best thing to demonstrate coin hoarding patterns for Lazica in the Roman times is to manipulate with the hoards from Pitius, and some hoards from Lazi hinterland.

a) 149 pieces from Bichvinta/Pitius form a hoard: 2nd-3rd cc. municipal copper of Trapezus – 139, Caesareian silver issues of the same time – 10. Date of the hoard-deposit is 245 as *terminus post quem*. This hoard could emerge due to threat of Gothic invasion from the Crimea in 252. 310 copper pieces of the 4th c. form the next hoard from Bichvinta. Constantius II’s issue is the last one. Obviously, we deal with “military” hoards.

b) Hoards from the hinterland

– Gerzeuli hoard – some 469 pieces (1st-2nd cc.), mostly Caesareian silver issues.

– Eki hoard – 907 pieces (1st-3rd cc.). Caesareian output numbers 775, denarii – 131.

– Sepieti Hoard – approximately 377 pieces, Roman denarii, and small number of Caesareian coins. Severus Alexanders’ issue of, probably, 222 provides a certain date for the hoard.

In hinterland we deal with “civilian” hoards containing “good” coins. So, hoarding patterns varied across Lazica.

Purses, votive deposits or...? Mini-hoards of Roman coins in Barbaricum

Kyrylo Myzgin, Arkadiusz Dymowski

By 2020, at least 537 hoards of Roman imperial denarii were known in the Barbaricum. Hoards of other Roman denominations are rarer, but their number is also estimated in the dozens. As a rule, we are talking about deposits, from several tens to several hundreds and sometimes even thousands of coins. At the same time, small deposits consisting of several coins (up to 10-15), commonly referred to as “purses”, are known on the territory of the Barbaricum. A characteristic example may be the “purses” of denarii found in Scandinavian bog deposits. In the “era of metal detectors”, the amount of information about such mini-hoards has significantly increased, primarily from the territory of Eastern Europe. Often, these are “columns” of 4-6 soldered coins, sometimes with traces of fire. The coins were withdrawn from the “free circulation” of Roman coinage in the Barbaricum, and most probably such deposits played a different function than the large hoards. For example, some mini-deposits of copper denominations may have been ‘bargaining coins’ with which barbarians returned from service in the Roman provinces. At the same time, mini-deposits of denarii may have been individual savings of ordinary members of barbarian communities. Our paper will be the first experience analyzing the findings of such mini-hoards in the Barbaricum, where we will touch upon their composition and the complex question of their functions.

“Moving wealth” – the presence of Roman gold in Barbaricum based on the Trąbki hoard in N Poland

Anna Zapolska

The influx of Late Roman solidi to Barbaricum is a matter of ongoing discussion. It is said that the first solidi reached Barbaricum after the mid-5th c. This wave of Roman gold is linked to the presence of Ostrogoths in Pannonia and their connections with the latest Gothic presence in Northern Poland. This view, however, is a very simplified interpretation of a quite complex web of events, that took place at the end of Antiquity in Barbaricum. One of the best reflections of them is a hoard deposited in Trąbki (Warmia, N Poland), in which together with 5th c. solidi there were found: a looped solidus of Valens, a pierced solidus of Valentinian I, and looped aureus of Gordian III. The hoard comprising of ca. 140 gold coins was the subject of several analyses, but as long as the coins were perceived as missing not much could have been said about them. Now, having over 70 pieces available for analysis, we may conduct more in-depth studies on their preservation state, the condition of holes and loops, the presence of graffiti and other scratches, and last but not least its composition. In my paper, I will present a first analysis of Trąbki hoard and general conclusions regarding gold influx to Barbaricum at the end of Antiquity, which can be drawn from this deposit.

Münzumschlauf in Niedermösien (Moesia Inferior) im Lichte der Münzfunde aus dem Legionärslager in Novae (Bulgaria)

Renata Ciołek

Finds of coins from closed complexes are an important and, in many cases, the only way to draw conclusions about the circulation of coins in individual Roman provinces. In the case of Moesia, the key material are coin finds from the legionary camp in Novae (Bulgaria) researched by the University of Warsaw. The lecture will analyze coins found during the excavations of the Center for Research on the Antiquity of Southeastern Europe at the University of Warsaw, but also from other parts of the camp that have been published. Conclusions will be presented about the model of monetary circulation in the first three hundred years of the existence of the Moesia province.

Detecting hoards in the Hungarian Barbaricum. Hoarding in light of metal detecting activity

Lajos Juhász

The paper wishes to present new coin hoards discovered in the Hungarian Barbaricum in recent years, all found by metal detectorists. The three new assemblages provide a good base for the overview of the hoarding tendencies in the region. Also, the question of the use of metal detecting has to be addressed, since it provides new data but at the cost of no context, limiting our interpretation of the hoards. In many ways we are back to where we were centuries ago, despite the fancy new gear, when only the finds themselves were recorded.

Purses, votive deposits or...? Mini-hoards of Roman coins in Barbaricum

Kyrylo Myzgin, Arkadiusz Dymowski

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some mini-deposits of copper denominations may have been “bargaining coins” with which barbarians returned from service in the Roman provinces. At the same time, mini-deposits of denarii may have been individual savings of ordinary members of barbarian communities.

Our paper will be the first experience analyzing the findings of such mini-hoards in the Barbaricum, where we will touch upon their composition and the complex question of their functions.

Hoarding beyond the frontier: the case of Germania Magna

David Wigg-Wolf

Within the context of the northern frontier of the Roman Empire, crossing the frontier involved a transition between different social, political and economic frameworks. This will also have applied to coins that left the Roman Empire and entered the northern Barbaricum, and thus indirectly to hoards of Roman coins from the region.

This paper will explore if and how the mechanisms of hoard formation and deposition beyond the northern frontier differed from those in operation within the provinces, and what this means for the analysis and interpretation of northern hoards.

Examples of how a comparison of hoarding and find patterns on both sides of the frontier can shed light on developments within the Empire that might otherwise go unrecognised will also be discussed.

SESSION 29

Beyond the Chronology? The Coins from Kalkriese

Max Resch

Discussed as (a possible) localization for the clades Variana, the ancient battlefield of Kalkriese is a very prominent find spot. The coins found there have been an essential aspect in the chronological debate: containing no coin minted after 9 A.D., both proponents and critics of the association of the find spot with the battle in the Teutoburg forest have used the numismatic evidence for their arguments.

In an on-going research project, the coin finds from Kalkriese – both newly discovered and published over the last two decades – are being re-examined and re-evaluated. Containing coins from excavation and prospecting, coincidental finds and long-lost specimen only known from century-old literature, the amalgamation that is the “coins from Kalkriese” begs for a closer look.

This paper aims to present the current state of the project with a special focus on the different circumstances of the coin’s discoveries and resulting implications on further research beyond the chronological focus, specifically on Military pay, coin distribution and circulation.

Hoarding on the Saxon Shore: A reassessment of the 4th - 5th century coinage from Roman Richborough

Philip Smither

In the 4th century AD, on the east and south coasts of Britainia, and the NW Gallic coast, sat a series of fortified settlements known as the Saxon Shore. One settlement, Richborough, is well known to numismatists for breaking the British site coin average with 22,000 coins dating from AD388-402. It has been postulated that large numbers late Nummi on British sites relate to a spate of continental hoarding in the late 4th-5th century and/or maintaining maritime links with major centres in Britain and the Rhineland (Moorhead et. al. 2013).

The site at Richborough has been of interest to academics since the 16th century, when it was written that Richborough produced more Roman money than any site in Britain. It was excavated from 1922-1939 when a total of 56,000 coins were found. The coins were finally published in their entirety in 1981 by Richard Reece. However, since then, there has been little statistical analysis of the list.

The purpose of this paper is to provide an overview of the list and the associated problems with such a large collection that is nearly 100 years old. This overview will demonstrate what we can learn from the list and in particular the late Roman hoards. This paper will include a statistical analysis of the 4th - 5th century site finds and hoards, in comparison to the British background as well as hoarding activity in NW Gaul.

These analyses will start to bring to life a significant collection of Roman coins from one of the most important coastal sites for NW Europe in the Roman Empire.

The Rhine Limes and its influence on the Civitas Tungrorum. The Roman City of Tongeren as a case study

Giel Verbeelen

The Roman city of Tongeren was founded around 10 BC, probably by the military. Although less is known about the city's earliest phase, we know that the town might have been important for the Lower Rhine Region, the Limes and vice versa. Shortly after its military phase, indigenous people started to inhabit the city, but they used Roman coins. The coin pattern of early Tongeren is very similar to those of the camps along the Rhine Limes, which is clearly a sign of a connection (for example trade). Also, Tongeren had immediate access to the Limes via the road to Cologne. This might give us a clue on how quickly people adapted to new situations and saw new opportunities. But also on how far the Limes's influence reached and how the city of Tongeren helped to expand this influence to the rest of the hinterland.

In this paper we want to show what a coin analysis can mean to and contribute to a better understanding of a site that is founded and operated in a military context. This from 10 BC until the early Tiberian period. At the beginning of this period, it is obvious how far the Limes's influence reached, but in the early-Tiberian period a further analysis is needed. Therefore we will also take a look at other Tungrian and Belgic sites and make comparisons to the rest of the Lower Rhine Region.

Visualization and classification of Roman coin finds and their archaeological context: The case of Bad Wimpfen

Matthias K. Kalisch

Located in southwestern Germany where the River Jagst joins the Neckar, the city of Bad Wimpfen has been an important crossroad since antiquity, connecting the cities of the Rhine with the Neckar Region. As part of the northeastern border of the Roman Empire, the military camp of Bad Wimpfen formed the northern-most point of the Neckar Limes and developed into a civilian set-

tlement in the second half of the second century CE. Despite the large-scale excavation campaigns and explorations of the site in the second half of the twentieth century, most of the finds remain unpublished. For this reason, the numismatic material of the site presented in this paper provides a unique opportunity to understand the development of the city Bad Wimpfen from the first to the third century CE as it transformed from a simple military camp to the presumed civitas capital of the region. Regarding the extensive research activities of Roman military camps in the modern state of Baden-Württemberg, a comparison of the finds from Bad Wimpfen with other sites in the region offer new insights into the development and history of the Neckar Limes and beyond. By using modern statistical methods developed and tested on numismatic data of other sites in the German Sprachraum, the visualization and classification of the numismatic material within Bad Wimpfen's archaeological context are the focus of this presentation and highlight the potential of contextualized analyses of coin finds for the study of Roman frontier regions.

Salus Reipublicae: Last decades of the regular coin supply to the limes in the Pannonia Secunda

Katarina Lukić

In the twilight of the western portion of the Empire, the Pannonian limes was in the limelight of the dire events and socio-economic changes. This paper aims to, from the numismatic perspective, examine how these occurrences resonated in the stretch of the Pannonian limes within the province of Pannonia Secunda.

It can be said that the Pannonia Secunda's limes was a rural, and military frontier zone where the army was the generator, while military vici were the drivers of the monetised economy. Therefore, the regular Roman army stationed in the frontier castella is the agent of changes in the studied area. If we suppose that coins in the area came in the form of soldier's pay, we can detect these changes through coin find data analysis from the military sites and their accompanying vici along the limes. This paper presents state-of-the-art research on coin supply and circulation to the Pannonia Secunda's limes in the late Roman period.

Rowan Rip: Coins of the auxiliary camps in the Netherlands (AD 138-330)

Liesbeth Claes, Vincente Fischer de Miranda Rodrigues

This paper will present a recent research project which was carried out under the auspices of the Limes Association of the Netherlands. The aim of the research project was to analyse the impact of the Severan (re)building boom of the Dutch Roman limes (De Bruin 2019), but also to look

at the recently challenged notion of the limesfall of AD 275 (Heeren 2016). To achieve this goal, the project has collected and compared both late second-century and third-century coins and ceramics found in eleven auxiliary camp sites at the Lower Germanic Limes.

In the first part, the paper aims to discuss some pitfalls that the collaborators came across when collecting and analysing coin data. These pitfalls are first and foremost bad registration practices, such as biases against later Roman coin material in the early days and the lack of numismatic knowledge by archaeologists, but also metal detectorists. How to perform macro and micro analyses when a lot of crucial information is lost. What to do when numismatic data can be interpreted ambiguously by the current limited column-based information in digital databases?

A second part of the paper shall present some preliminary results of the numismatic research line of the project. The absence of enormous quantities of coins from these auxiliary camps will be one of the observations, but the differences between the forts at the eastern and western side of the Dutch Lower Germanic limes are also remarkable. Furthermore, the paper will elaborate on some local monetary developments, such as the long circulation time of the Antonine bronzes and the near absence of Antoniniani of the Severan age. The paper will conclude on what the coin finds could tell us about the Severan construction activities and the notorious limesfall of AD 275.

Old Coins, New Questions - Challenges in Analysing Roman Coin Finds

Rahel Otte

The Roman legionary fortress of Novaesium/ Neuss on the Lower Germanic Limes looks back on a history of research of more than a century. More than 5,000 coins were unearthed during the excavations and later published in the FMRD series. The extensive printed FMRD lists may suggest that the coin finds of Novaesium have been thoroughly explored. However, almost exclusively the significance for dating the different phases has been discussed so far - mostly with the aim of proving that the camp was one of the oldest at the Lower Germanic Limes. The linking of the coin series with historical events, such as the mutiny of the troops after the death of Augustus, also played a major role.

But: is the previous presentation in printed lists at all suitable to answer dating questions satisfactorily? Is a link to historical events possible and meaningful? And: is dating really all we can get out of the coin finds? These are the questions addressed by a new research project with the aim of re-evaluating and re-publishing the coin finds from Neuss.

It quickly became clear that the challenges encountered in a re-evaluation of the coin finds from Neuss are by no means unique. The same is true for other military camps in Lower Germany, but

XXVI LIMES CONGRESS BATUMI 2024

8.-14. SEPTEMBER 2024

ABSTRACT BOOK

above all for the rural hinterland, which had close economic ties to the military sites. The paper will therefore deal with these general difficulties associated with the reprocessing of old finds and possible approaches to solving them. On the basis of the coin finds from Neuss and from other sites in Lower Germany, various methods of analysis and their problems will be presented. This will also be the starting point for the discussion in connection with the other papers at the end of the session.

SESSION 30

Study of technology of roman period objects with enamelled and millefiori decoration *Viktoria Čistáková, Zuzana Zlámalová Cílová:*

The presentation is focused on the problematic of production of artefacts with enamelled and millefiori decoration. For project were selected finds, mainly roman period brooches or belt/strap fittings, from the territory of the Czech Republic, Slovakia and Austria. The finds are dated to the 2nd and 3rd centuries AD and belong to the attractive category of roman imports. For the research mainly non-destructive methods were applied, as for example an Olympus SZX9 stereomicroscope was used for to obtain basic documentation of the artefact. For studying structure of glassy material and metal plate was used method of CT scanning. The composition and heterogeneity of the glass and metal was studied by scanning electron microscopy with EDS detector.; LA-ICP-MS was used to determine the chemical composition of the glass, including the content of trace elements. The Raman spectroscopy method was applied to study opacifiers in glass .

Based on the results of this complex research we can interpret and reconstruct the production circle of roman enamels. Trace amounts of certain elements will also be addressed in order to determine the possible origin (Levantine or Egypt) of the raw glass that was used for the enamels. One of the main goal is to study colorants that were used for enamelled colour, as for example red one which may be due to the copper in the form Cu_2O or Cu° . Finds with millefiori inlays were also studied and several specifical productional steps were identified.

Craft as a method to gain insights into Roman woodworking – practical examples *Rüdiger Schwarz*

Archaeological materials from Roman sites along the Limes consist to a large extent of handicraft products, tools and production waste. These are crucial for the understanding of technique, supply and distribution in the Roman provinces and thus reflect the living conditions in many respects. Several aspects of ancient trades can be understood by using traditional archaeological methods and analyses. Nevertheless, in many cases practical handicraft can be a valuable complement to test conclusions based on the interpretation of archaeological findings. Manual labour in general is practical and empirical by its nature, so it is rather evident that a purely theoretical approach may

not be sufficient. This paper therefore aims to address questions concerning the use of experimental archaeology and archaeotechnique for a broader understanding of Roman craftsmanship. Woodworking is of particular interest in this context, as its modern industrialized methods differ fundamentally from the traditional ways of processing wood with hand-tools. Knowledge regarding the tools used in ancient times is as essential as basic knowledge of the anatomy and natural properties of wood. It is here practical craftsmanship comes in to provide researchers with additional information to fully understand the functionality, efficiency and application range of raw materials and tools. Wood- and metalworking in former times were not separated from one another but closely intertwined. For instance, nearly all woodworking tools consisted of wooden and iron components, so ancient craftspeople needed the ability to work with both materials. This is also reflected in the archeological record with tool sets containing tools for different trades. Therefore, the considerations in this context are not limited to wooden products, but also regard iron woodworking tools. The examples presented in this paper link practical woodworking to ancient iconographic sources, the interpretation of artefacts and the explanation of unusual observations regarding certain finds.

Using craft activity to understand social practice on the Antonine Wall

Amy Baker

The study of craftworking and production on Roman frontiers has the potential to shed light on military organisation and communities, social practice and identity in these zones. However, its study is often focused on more functional aspects such as supply and logistics, and a fully rounded picture of craft activity, drawing on the working of different materials and their interactions with each other, is not often considered across sites. This paper will present case studies from the Antonine Wall and wider Antonine-period Scotland to examine craftworking on the frontier zone as a whole. It will draw on social theories of technology to highlight how studying tools and structures related to craft practices at different levels (both personal and in the service of the military) can provide important insights into communities on the frontier. It will also demonstrate the fruits and challenges of uncovering and analysing this data. As a geographically and chronologically contained slice of frontier life, the Antonine Wall has much to tell us about organisation and daily lived experience, and craftworking, as an embodied and deeply embedded activity, is an important part of this.

The military manufacture and distribution of tiles in Vindobona

Tomas Janek

The frequent appearance of stamped ceramic building material has captivated scholars for over a century, particularly for its epigraphic significance. However, the focus has primarily been on stamps, with other aspects of the material being overlooked. The recent development of digital technologies can offer many ways how to extract the new data from the finds and helps to process them quicker and with higher accuracy, than it was ever possible in the past. In some regions of the ancient Roman world, in addition to the research of stamps, the focus of the researchers started also to shift towards the production technologies. This work focuses on the technological aspects of military manufacture of tiles, with a focus on the material produced in the legionary brickyard near Vindobona. The modern methods of data extraction using 3D technologies and visualisation of toolmarks left during production are presented and described. Reflectance Transformation Imaging was used to examine the surface, which allowed uncovering of various surface treatments and specific production methods. New data was also retrieved from 3D models created using photogrammetry. Examination of the plain mesh enabled the filtering out of tile colours and other disturbances, such as a thin layer of calcareous sinter that often covers the surface. The toolmarks can be further enhanced through specific analyses, which are explained in the paper, along with their limitations. Last but not least the work also deals with the problematic of necessary manpower and distribution chains.

An exploration into glass bangle and glass working crafts in Roman frontier zone of Britain

Tatiana Ivleva

The paper focuses on the largely underexplored topic, namely the existence, organisation, and operation of glass bangle workshops in the northern British frontier zone.

First, the paper provides an updated survey of glass working and glass making activities in the region in order to put discussion on the glass bangle craft organisation into the broader regional context. This contributes to the discussion on the existence of multiple glass working industries in the region in the Roman period, where the usual focus tends to be on the metal craft technologies. Second, the paper discusses the organisation of a glass bangle craft itself. It addresses the potential locations where glass bangles could have been manufactured, and the potential connection between this and other crafts in the region producing glass objects.

The paper argues for the existence of distinct and dispersed workshops located mostly in the rural areas with some clustering around military installations and in urban areas, with the addition of a large proportion of itinerant artisans. It seems that the various activities associated with glass

working and production of glass objects have been separated. Each step, i.e., collection of glass for recycling, production and supply of cullet, glass colouring, and production of distinct types of objects, might have been performed by various people and artisans. It is highly unlikely, or at least till the late second century AD, that there existed permanent, supra-regional structures with a focus on glass vessel and jewellery production, located nearby military installations with knowledge and expertise of other glass working crafts.

Loom weights and weaving craft in Viminacium

Milica Marjanovic, Ilija Dankovic

Textiles were invaluable in most past societies and were widely used, from clothing to other everyday items. An increase in the textile production was recorded in the Roman period, when fabrics were made not only in households, but also in numerous workshops, in order to meet the needs. Fabric was usually produced on a vertical loom with ceramic weights used for increasing the firmness of the thread and fabric. Since other parts of the loom were made of perishable materials, loom weights are the only remaining evidence of weaving in archaeological record.

In the territory of ancient Viminacium, loom weights were not only found in the settlement, but also in necropolises. This paper analyzes forms, ornamentation and chronology of ceramic loom weights from Viminacium, as well as their context of discovery. The results shed light on the local textile production and the use of the vertical loom, and propose locations of potential workshops. This kind of analysis is all the more significant because loom weights are not a particularly popular type of finds, and as such have not been of greater interest to researchers so far.

SESSION 31

Things Re-Done at Trimontium

Tanja Romankiewicz, Andrew Lawrence, Gillian Taylor, Res Re-Gestae Trimontio

In 1989, Dr Rick Jones began the Newstead Project to study the multi-period Roman fort of Trimontium, Scotland, within its wider setting. Jones' project involved not only revisiting James Curle's early 20th century work at the fort, but also new survey and excavations of local settlements in the fort's environs, conducted by Dr John Dent. Each thing achieved he labelled Res Gestae Trimontio.

Since 2022, the Geographies of Power project has returned to the Newstead environs archive to answer new research questions on how the Roman army exercised power and domination on local communities, compared to strategies used in other parts of the empire.

The paper will present first results from our re-analysis of the paper records, finds and environmental material, as well as new excavations at one key site, Bemersyde, where two local settlements seemingly operated in the shadow of the Roman fort, but now present a longer and more complicated occupation story than first anticipated.

We will summarise the chances and challenges of excavating old archives and the benefits from collaborating with the original excavators and the local community. We will also highlight the importance of curating old archives which can now be analysed with state-of-the-art geoarchaeological methods and AMS radiocarbon dating. However, our work also shows the need, at least in this case, to be able to return to the field, to clarify remaining ambiguities and answer new questions.

Comprising researchers from the Universities of Edinburgh, Bern, Glasgow and Teesside, as well as from the Trimontium Trust, National Museums Scotland, and the original excavators, our ultimate aim is to bring the Res Gestae Trimontio into the 21st century.

Roman campsa – the sunken roman fort on the danube an overview of oil-lamps

Milica Tapavički-Ilić

In the late 1960ties and early 1970ties, during the construction work for the Đerdap hydro-power plant, a large scale rescue excavation took place. Many Roman forts and other parts of the Roman limes on the Danube were excavated and after the Đerdap lake was formed, they remained sunken

beneath the water surface. One of the forts that shared this destiny is the one that shall be described here. The name of the fort, as identified Notitia Dignitatum and from the work of Procopius is Campsa, called Ravna in the Middle Ages.

This fort was examined over the period of several years, but besides short annual reports and a few other papers, it was never fully published. This fort was established at the end of the 2nd or at the beginning of the 3rd century and over the next four centuries, it underwent several changes. It belonged to the bigger forts on this part of the Danube limes. Although the volume of the fort remained more or less unchanged, the shape of its towers was changed, but also of its gates. Small finds discovered in Campsa made it easier to determine it chronologically, since they belong to the typical finds of this period. They include pottery, oil-lamps, different tools and pieces of weaponry made of metal, finds made of bone and stone, but also an interesting coin hoard from the 3rd century. In this paper, special attention will be given to oil-lamps as chronologically very sensitive and indicative finds.

Disiecta membra. On collecting scattered and forgotten knowledge about Roman stone architecture in Germany.

Katja Roesler

Roman stone architecture represents a unique treasure of cultural heritage that gives evidence of early forms of urbanity in Germany. However, most of it are dislocated building elements (*disiecta membra*), which are hardly known, let alone published. And due to the history of the German States, archival documents, including the documentation of finds and excavations, and publications on Roman stone architecture are often spread over many different places or publication organs. Furthermore, a large number of responsible actors, collections and institutions (humanists, noblemen, antiquities societies, research institutions, cities and states) have become involved. The new academy project *disiecta membra. Stone Architecture and Urbanism in Roman Germany* aims to identify, catalogue, link and evaluate this corpus of remains as well as to conduct research on associated historical and praxeological topics. The project's long duration of 24 years gives the rare opportunity to collect not only big data on Roman architecture but on historical actors and actions involved as well. In collaboration with other projects, institutions and infrastructure providers, we are recording data, that is dynamically published to the research data platform iDAI.world as well as the information system Propylaeum-VITAE. This will provide the scientific community with information, also and especially for the furthering of the history of research at archaeological sites in the former Roman provinces of today's Germany, as well as for a reflexive archaeology of practices and theories. Using case studies, the project will also complement existing research on Roman sites. In our contribution, we would like

to present our approaches to the history of researchers and research practices as well as biographies of objects using the history of research on Roman architecture in *Mogontiacum/Mainz* as a case study.

Found, Lost, and Found Again: Results from the Corbridge Finds Project

Frances McIntosh, Catherine Teitz

Years of hard work by volunteers and staff at Corbridge have produced a museum database of over 64,000 individual records reflecting the assemblage from decades of excavations at the site. The challenge remains to reconcile the museum's holdings with the material emerging from the ground. The Edwardian excavations (1906-14) covered 56 acres, exposing numerous structures, without comprehensive finds recording. Mid-century excavations (1946-80) focused on the central area and were considered to be of the highest scientific quality. Yet they recorded the finds in large groups which, while efficient, has limited the analytical possibilities. The separation of many finds from their context compounds the issues, and it has hitherto been impossible to understand the range and distribution of material across the site.

The Corbridge Finds Project examines the trench-side records of material excavated to connect where the trench was located, what emerged, and what made it to the museum. The project uses computational text extraction methods to parse, standardize, and make digitally accessible the excavation finds notebooks. The first phase of the project has produced a database with more than 23,500 unique records that are searchable by object, material, and fabric. The second phase assigns consistent location information for each record, making spatial analysis possible for the first time. This project highlights the scale of the mid-century excavations at Corbridge, explores the discrepancies between the museum database and the excavated material, and demonstrates a new approach for modernizing legacy data.

Brief insights into the past. Research on the street system of ancient Vindobona in the context of construction measures in Vienna's inner city

Michaela Kronberger, Joachim Thaler

Archaeological research in the area of Vienna's inner city took off at the end of the 19th century. During this period, Vienna resembled a large construction site after the demolition of the Renaissance bastions and in the course of large-scale city regulation plans. These measures go hand in hand with the founding of the k.k. Central Commission for the Research and Preservation of Artistic and Historical Monuments, the predecessor of the Federal Monuments Office. At that time Josef Nowalski de Lilia was hired to record the Viennese soil finds. He made hundreds of handwritten notes on the numerous building measures, which are preserved in the Wien Museum collection. They were

evaluated by Friedrich v. Kenner. His publications are still the basis for archaeological research in Vienna. The re-evaluation of this information, taking into account the topographical situation, has provided a rounded picture of Roman Vindobona over the last two decades. However, many theories were based on circumstantial evidence due to the lack of concrete proof. Now the situation has changed fundamentally. Vienna's inner city is once again the scene of extensive construction measures. The renewal of the infrastructure is causing a network of pipe trenches to be drawn along the most important streets. They provide valuable information to evaluate the research of the last years. In our lecture we will concentrate on the ancient road systems in the area of the legendary fortress and the Canabae legionis of Vindobona.

Today more valuable than ever - the beginning of the research of the Danube

René Ployer

The Austrian Federal Monuments Authority (=BDA) houses numerous records in its archives, as well as some, often elaborate, drawings and plans of excavations at sites along the Danube Limes. The Federal Monuments Authority is the successor institution of the "Imperial Royal Central Commission for the Research and Preservation of Monuments", which was the competent monument authority for the Austro-Hungarian Crown Lands from 1850 until the end of the monarchy in 1918. Even though the initial focus was on the preservation of architectural monuments, reports of archaeological finds and excavations were always included. A large number of these reports were published in the periodical „Mitteilungen der K.K. Zentral-Kommission zur Erforschung und Erhaltung der Kunst- und Historischen Denkmale“ (=MZK). To this day, this journal lives on in the "Fundberichte aus Österreich" (Finds reports from Austria).

The originals of the drawings, sketches and plans published for the reports are largely kept in the archives of the BDA. These documents are now to be digitised in the next few years, imported into the Goobi image database and thus made accessible to the public. One of the advantages is that the originals will not only be scanned in much better quality than in the digitised MZK of the Austrian National Library, but that the images will also be downloadable. Moreover, not all drawings have always been published in the excavation reports, so that one or the other new piece of information can be essential for current research.

The provision of the archive materials should also help to verify old research results. Even if plans more than 100 years old are not georeferenced, some of their site descriptions are astonishingly accurate and can thus be fitted into modern plans. It should not be forgotten that the state of preservation of Roman remains in the 19th century was often much better than today. In addition, many features are no longer present or visible today.

Castrum and/or municipium? The history of identifying the Aquincum civil town and the ideas of the pioneer archaeologists

Orsolya Láng

The Aquincum civil town, its construction periods, architecture and buildings have all been well known among scholars ever since the first excavations started in the 1880s. These pioneer investigations brought to light the civilian amphitheatre (north of the settlement), the two main roads (north-south, west-east), most of the public buildings (forum area, macellum, bath buildings) as well as private dwellings (strip buildings and a peristyle house).

However, most of these excavations mainly concentrated on the eastern part of the town while significantly less was unearthed in the western part of the settlement. Due to the different morphological situation, the much better preserved fortifications on the western side, and the fact that the town centre was located in the eastern zone, the first archaeologists working on the site concluded that there must have been a castrum on the western side while its canabae lay to the east. Even though this idea soon faded as more and more data was obtained during the ongoing excavations and the picture of a fortified civil settlement with a rectangular plan emerged, the question was still there. Recently, results of a large-scale geophysical survey carried out in co-operation with the ÖAI as well as a few small-scale excavations took us back to the original point: could it be that the pioneer archaeologists were actually right? Can we talk about a castrum in the area of the later civil town of Aquincum?

This paper will examine excavation data, finds as well as the results of the above mentioned survey in order to find out more about the western part of the Aquincum civil town and its periods.

Reviewing water supply of the Roman legionary fortress Tilurium

Domagoj Bužanić, Domagoj Tončinić, Vinka Matijević, Mirjana Sanader

The supply of water is one of the most important aspects of military logistics. Although the Roman army could have carried water on the march, they generally did not carry water in quantities sufficient for extended periods of time. Instead, they collected water in the area where they set up camp. Although collecting water can be a solution for supplying the army in short-term or even seasonal camps, permanent and larger camps often used similar or identical solutions for water supply as cities. In this paper, old and new available data, collected within the Croatian Science Foundation project IP-2022-10-6994 Between war and peace. The transformation of the cultural landscape between the Krka and Cetina rivers from Protohistory to Late Antiquity (TiHiTransForm), are analysed together to try to reconstruct the probable way of water supply in the Roman military fortress Tilurium. This work presents old and new available data collected within the Croatian

XXVI LIMES CONGRESS BATUMI 2024

8.-14. SEPTEMBER 2024

Science Foundation project IP-2022-10-6994 Between war and peace. The transformation of the cultural landscape between the Krka and Cetina rivers from Protohistory to Late Antiquity (TiHi-TransForm) were collected, analyzed together to reconstruct the likely route of water supply in the Roman military fortress Tilurium. Tilurium was built in the hinterland of Salona, on a hill near the strategically important crossing over the river Cetina. Material from the site has been collected and studied by various scholars since at least the beginning of the 20th century and systematic excavations have been carried out at the site for more than 20 years. However, the outlines of the fortress water supply are still largely unknown, mainly because there is only sporadic evidence of the water supply infrastructure.

SESSION 32

Tibaaliyin landscape project. a roman road and its settlement at the edge of the limes in the eastern aurès (Algeria)

Jacopo Turchetto

For some years now, the Department of Cultural Heritage of the University of Padova has been mapping the archaeological heritage along the limes Africanus, in the territory gravitating around the Aurès massif in north-eastern Algeria. In February 2023, a survey along the valley of oued Zeribet/Al Arab, about 5 km to the north of Khirane, in the heart of the wilaya of Khenchela, renewed the interest towards the so-called Tibaaliyin site, linked to the Vitellii family in Roman times.

The interest is justified by the fact that this area was located along the strategic axis of connection between the two sides of the Aurès Mountains and, specifically, between the southern area, at the edge of the desert, gravitating on the limes between Badias, Thabudeos and Gemellae, and the northern area, structured around the Theveste-Mascula-Aquae Flavianae-Thamugadi route (which represented the backbone of the road system of Numidia, as well as the privileged route of the Romanisation processes in central Algeria).

The launch of targeted non-invasive archaeological-topographical research aimed at mapping the archaeological and geomorphological evidence of the middle valley of oued Zeribet/Al Arab, will allow for a better understanding of the topographical development of the site, the layout of that 'mountain' road and its connection to the river, the relationship between the route and the Roman road system of southern Numidia, as well as the interplay among road, site and natural resources. The new data will therefore allow the investigation of aspects related to everyday life, mobility, and transport system in the Vitellii valley.

Eine unbekannte Staatsstraße (via publica) im Hinterland von Köln (An unknown state road (via publica) in the hinterland of Cologne)

Tünde Kaszab-Olschewski

Im Sommer 2023 wurde durch das LVR-Amt für Bodendenkmalpflege im Rheinland, Außenstelle Titz, eine mehr als 100 Meter lange Strecke von einer bislang unbekannten Staatsstraße auf der Jülicher Lössbörde, im Hinterland von Köln (CCAA) vollflächig freigelegt und dokumentiert.

Mit einer Straßenbreite von über 30 Metern gehört diese zu der Gruppe der Staatsstraßen (via publica) auf dem Territorium der Provinz Germania inferior, wie die Ost-West verlaufende via Belgica (oder gelegentlich auch via Agrippinensis), die Südwest-Nordost ausgerichtete via Agrippa oder die am Rheinlimes (ripa) entlang führende via Militaris (oder Limesstraße). Obwohl Indizien und aktuelle Forschungen schon früher auf die Existenz dieser Straße hingedeutet haben, stand ein archäologischer Nachweis bislang aus.

In Zusammenhang mit der Straße sollen mehrere Fragen mit Hilfe einer gründlichen Analyse geklärt werden: So ist zunächst einmal das Endziel der Straße zu suchen. Denn auffälligerweise läuft die neuentdeckte Straße mit ihrer Nord-Süd Ausrichtung nicht auf Köln (CCAA) zu. Hat das etwa chronologische oder eher organisatorische Gründe? Deshalb auch sollen im Spiegel von historischen Daten die Erbauungszeit und anhand der vor Ort geborgenen Funde - wie Münzen und Militaria - die letzte Phase der Benutzung geklärt werden. Des Weiteren ist nach dem technisch-materiellen Aufbau der Straße und ihre Einbettung in die römischen Kulturlandschaft zu fragen, denn auch ein Teil der umgebenden Besiedlung (Häuser, Brunnen, Bestattungen) wurde hier archäologisch erfasst.

Road or River? Investigating Transport Systems for Ceramic Goods between the Stara Planina and the Danube in Moesia Inferior/Thracia in the 2nd/3rd Century AD

Lina Diers

It has long been common consensus in the research debate about Roman Moesia Inferior/Thracia that the pottery production centres in the territory of Nicopolis ad Istrum supplied not only the main urban settlements but also the wider region between the Stara Planina and the Danube on a north-south, and the Osam and Yantra rivers on a west-east axis throughout the 2nd and 3rd century AD. A research project that is currently being conducted at the Austrian Archaeological Institute in Vienna now for the first time aims to verify this assumption with an encompassing multi-disciplinary approach: On one hand, archaeometric analyses based on a broad database of pottery finds are used to not only solidly outline the production characteristics from the 4 main production centres (Varbovski Livadi, Pavlikeni, Butovo, Hotnitsa) but also establish the distribution throughout the wider region by correlating the results from the production centres with finds from urban and rural sites (Novae, Nicopolis ad Istrum, Lyaskovets, Radanovo, Gorna Lipnitsa, Kozlovets). On the other hand, least-cost-path analysis based on the known road sections in the region and seasonal data on water levels, flow velocities, and overall river discharges for the region's main rivers - which are being utilised to assess the possibilities and feasibilities for river instead of/in combination with road transport - is implemented to back up the pottery analysis results in an attempt to establish a

more complete picture of the region's economic systems, the flows of ceramic goods, and the organisation of transport. The presented paper focusses on this second pillar of the project, introducing the geography of this area of interest between the Stara Planina and the Danube and the available dataset for Principate-times roads and rivers. Further, the applied methodology is presented, discussing both limitations of the available dataset and possibilities for a sound cost-surface design.

A New Proposal for Geo-archaeological Dating Method for Milestones - A Case Study from the Scythopolis Region

Ofer Stein

The method of dating milestones has primarily relied on inscribed milestones. This method is supported by various research types, including the excavation of road infrastructure, military and civilian structures, historical texts, and geographical analysis. The Israel Milestones committee's archive documents ca. 850 milestones, but only ca. 25% of them are inscribed. As a result, most milestones remain undated. In my proposal, I suggest exploring a new comparative approach that combines interdisciplinary research, including geological, archaeological, and geographical elements, incorporating fieldwork and archival work. The aim is to offer an epigraphic dating for uninscribed milestones. This proposal is based on the comparison of supporting data. This data includes rock type, texture, stone dimensions, quarry origin, and quality. Roman roads cover vast distances, but not every point along these roads allows for the carving and installation of large monolithic milestone, which typically stand around 2.5 meters tall and weigh hundreds of kilograms. Thus, it seems that milestones were carved at a specific location and then transported to their final designated spot. Additionally, during a new road construction or renovation, milestones were carved from a particular quarry, allowing for the creation of a series of stones with the same textual characteristics along the road. The next time the road was renovated, the specific location changed (not necessarily the quarry), hence different types of milestones were used. The selected case study is the Scythopolis region due to the number of Roman roads originating from the polis (six), the quantity of milestones found in the area (232), and the number of inscriptions on these stones (71). The substantial preservation of these findings and the opportunity to examine them closely in proximity to their original locations make this proposal feasible.

Wheels or no wheels: suitability of roads for vehicular traffic in Judaea and Arabia

Adam Pažout, Tom Brughmans

It is agreed that the Roman army employed wheeled vehicles for transport both in peace time and on campaign, as is evidenced e.g., on the columns of Trajan and Marcus Aurelius in Rome. Israel

XXVI LIMES CONGRESS BATUMI 2024

8.-14. SEPTEMBER 2024

Roll postulated the theory that the Roman army relied on vehicular transportation in Judaea and Arabia in the 2nd and 3rd c. CE, taking for granted that Romans always built roads suitable for vehicular traffic. The theory of continuous abandonment of vehicular transportation in the Near East in favour of pack animals, and especially camels, from the 4th c. CE onwards stands unchallenged since R. W. Bulliet's 1975 book 'The Camel and the Wheel'. Yet, in light of relative lack of historical, epigraphical, and papyrological evidence for wheeled transport pertaining directly to the Roman Near East, what do we really know about the importance and prevalence of the wheeled traffic therein?

This paper aims to answer the question through an evaluation of 2,000+ kms of Roman-period roads in Judaea and Arabia that were digitized in high-resolution in the course of project MINERVA. The digitized roads represent both main and secondary roads in various environments ranging from the coastal plain to the desert highlands. The principal variable that is observed is the maximum slope of the road which is the primary factor limiting vehicular traffic. However, the effective slope limit is influenced by both the vehicle employed (two- or four-wheeled) and the weight of the load and may vary from 5-16% incline. The analysis shows that more than 180 km of roads exceeds 16% incline, including approaches to legionary camps in Aelia Capitolina-Jerusalem and Legio, making them difficult to pass for vehicles. The issue of extent of vehicular transportation in the Roman Near East is therefore still not resolved.

SESSION 33

The horses of Gelduba. New data on 193 horse skeletons from a Roman conflict landscape of the year 69 AD

Boris Burandt, Monika Schernig-Mráz

In the 1980s and then again 2017/18 a large area next to the later Roman garrison of Gelduba (today's Krefeld-Gellep) at the Lower Rhine Limes was excavated and remains of a large conflict landscape were documented. It was possible to link the archaeological finds with Tacitus' report of a battle between the revolting Batavians and Roman forces during the year 69 AD. Part of the huge amount of finds are 193 horse skeletons. During the last years these skeletons have been analysed in different ways. Due to that, solid data is available, such as body heights and areas of origin of the horses. With almost 200 individuals the Krefeld finds are of an extraordinary statistical relevance - especially for archaeological context - and they give a profound idea on what type of horses were during the early principate.

„Er hat ein Haus, ein Hündchen und ein Pferd...“ / „He's got a house, a dog and a horse...“ (after Astrid Lingren's Pippi Longstocking) Eva Steigberger

Alfred Galik

Excavations in Saladorf, Lower Austria, in the hinterland of the Danube Limes yielded a late Roman cemetery that included two animal burials, both with skeletons of horse and dog. Saladorf is near three cavalry garrisons. The paper will investigate, how these animal burials and their context might offer new insight in the fate of Roman cavalry horses after their service.

The animal burials differ significantly in both horse and dog. One shows, what is to be expected along the Danube limes, but the other is quite remarkable and the trail leads to North Africa. The first horse bones are of typical equine stature and of adult age. The horse was in good health-condition and showed only a broken and healed rib fracture. The dog was of medium size with a withers height of about 56 cm and the individual was definitely older than five years. Metrical analyses of long-bones and skull measurements indicates a type that resembles the shape of a Setter or better matching a Dachshund

The other dog's skull showed a conspicuous elongated and narrow form indicating a low cranial height and it came clear that the individual resembles a dog of a Wind hound-type. The second horse

appeared also quite unusual, its long and slender scull with pronounced orbitae contained heavily abraded teeth, indicating an older individual. The long bones appear to be rather long, slim and narrow. Some broken but healed ribs and typical vertebrae pathologies of a “riding” horse show. The horse typus seems to be similar to Arab horse breeds. In addition to these animal burials, the human graves also reveal interesting traces of veterans from the Roman army and their household with female earrings made in Syria and a very typical household ware from the region in late Roman cremations.

Where have all the horses gone? The whereabouts of the mounts of Roman cavalry units
Andreas Thiel

As with other military equipment, the former target stock of cavalry horses within the Roman army can be easily estimated. At the same time, the natural life expectancy or service life of the mounts indicates how many of them had to be taken out of service each year. Assuming that a horse was used for 5 to 10 years, an ala quingenaria, for example, had to replace at least 50 of its existing mounts per year on average. Added to this is the replacement of injured or sick animals. What happened to the horses that were no longer fit for active service?

Using archaeological as well as ancient and modern written sources, the paper attempts to develop models of the fate of Roman cavalry horses after their retirement from active service. In a second step, these models will be compared with archaeological findings from various sites along the Roman frontier and examined to see whether and how they correspond to the models developed. Particular attention will be paid to the horse graves found at many Roman military sites.

To live and die side by side - The conceptualization and utilization of equines by the Roman Imperial army on the basis of depictions / Seite an Seite leben und sterben - Konzeptualisierung und Verwendung von Equiden durch das römische Heer der Kaiserzeit anhand von Darstellungen

Goldie Nagy

Horses, as well as their hybrids, the mules, played a vital part in the workings of the Roman military. Both battle tactics, as well as the (logistic) organization as a whole would not have worked without deploying equines. This project aims to cast a light on their utilization and conceptualization in Roman military context by investigating their depictions on public and private reliefs, and comparing it to archaeological realities such as military tack. There is a focus on the regions along the Danubian frontier, as the long border required numerous amounts of animals to parole it and therefore yields rich archaeological contexts. For the same reason many private reliefs of military members in terms of

equestrian tombstones can be found there. Furthermore, military conflicts in the region are featured in two major narrative public reliefs in Rome, the column of Traian and the column of Marcus Aurelius. The paper shall focus on the vast number of equines depicted on the public reliefs. They show horses as well as mules, battle mounts as well as beasts of burden. The animals partake in various situations from standing by in scenes of lustratio, adlocutio and suchlike, to participating in construction of military infrastructure; from being ridden into actual battle to finally carrying away spoils of war after victory, they are present in almost every aspect of the war depicted. Therefore, the paper aims to not only investigate the depicted utilization of equines on these public reliefs, but also to cast a light on their role and conceptualization within the narrative depicting the Roman military. In terms of utilization it is particularly concerned with the depiction of the equine beasts of burden, transporting goods on their back or via carts, as these animals are particularly important for essential logistics, but have been mostly ignored.

Cavalry Rations on the Northern Frontier in Britannia in the First Century AD

Susan Rands

Rations provision is one of the most important responsibilities of a military commander, especially one in command of any cavalry element. Cavalry mobility and speed were integral to Roman military success and the health and fitness of the horses were fundamental to that success. Horses have simple but specific dietary needs, which have changed little over time, and must be fed according to workload if they are to remain fit and healthy. Study of forts along the Tyne-Solway isthmus has provided insights into how the dietary needs of Roman military horses were met in terms of grazing, forage and barley rations. Also indicated is the interplay of equine requirements and force disposition. The potential for the territoria of each fort to provide adequate grazing for the horses of resident units at different times in the forts' histories varied, and environmental evidence from around Vindolanda reflects changes in equine strengths at the fort across time. Grazing could be supplemented by hard feeds of grain and beans, and barley was a standard feed for Roman military horses. The Carlisle ink tablet, Tab. Luguval 1, (Tomlin 1998) has been scrutinised for what it reveals about barley issues to the turmae of the quingenary ala Gallorum Sebosiana on active duty at Carlisle at the end of the first century AD. Calculations based on the numbers given in Tab. Luguval. 1 provide a consistent figure for daily barley rations, calculations which have been applied to the soldiers' rations to similar effect. The calculated barley ration, considered in the light of advice on barley feed in Xenophon's *Art of Horsemanship*, the *British Army Manual of Horsemanship 1937*, and modern equine nutritional science, not only provides further evidence of the size of horses used by the ala Gallorum Sebosiana, but also the workload they might have encountered.

SESSION 34

Via Nova Traiana - facilitating movement 4

Mette Lang

Roman transport infrastructure has long been studied by scholars, and in recent years the true complexity of the Roman road network has been increasingly recognised. This paper examines the role and function of the Roman transport infrastructure in facilitating mobility along the eastern Roman frontier. The main focus is on the Via Nova Traiana, in modern-day Jordan, in the first three centuries CE.

Following the Roman annexation of the Nabataean kingdom and the formation of the new Provincia Arabia in 106 CE, the Romans invested in improving pre-existing local infrastructure. One of these major investments was the construction of a new highway, Via Nova Traiana. The new road incorporated the old Nabataean caravan routes in a new improved infrastructure and played a great part in aiding movement in the region.

This paper addresses the development of regional transport infrastructure in the first three centuries CE, how this development affected the region, and how the Via Nova Traiana facilitated movement between selected local sites. Using the latest data on infrastructure along the Roman frontier, this paper seeks to examine Roman transport in a wider historical context to gain deeper insight into whether and how the improved infrastructure and geopolitical developments in the region might have influenced each other.

Past geopolitics in the borderlands: New research on military and trade presence at Khirbet al-Khalde – Wadi al-Yutm, Aqaba Governorate

Craig Harvey, Emanuele Intagliata, Rubina Raja

The archaeological site of Khirbet al-Khalde (ancient Praesidium) is situated in the Wadi al-Yutm, approximately 26 km northeast of Aqaba, in modern Jordan. The site's location along the route of the Via Nova Traiana and the presence of a perennial spring made Praesidium a convenient stopping and control point for trade between the Red Sea and the Hisma desert to the north in antiquity. Featuring both a rectangular fort with corner towers and an adjacent enclosure interpreted as a caravanserai, the site was occupied from the Nabataean to the Byzantine periods. In 2023,

the 'Khirbet al-Khalde Archaeological Project' undertook its first multi-scalar survey campaign to explore the site's history, its level of resilience, and its possible role in the long-distance caravan trade over the *longue durée*. The project employed a multi-scalar methodology that included surface collection, the study of old reports and photographs, laboratory analyses, and drone imagery coupled with a detailed damage assessment. Through this approach, the first results from the project already show a better understanding of the chronological development of the site and the nature and function of its remains. This paper aims to present some of these results, with a specific focus on the relationship between the fort and the presumed caravanserai. Although the presence of a fort and a caravanserai at the same site is not unique in the region, it would be the first occurrence of this kind in the southern stretch of the Via Nova Traiana. These circumstances make Khirbet al-Khalde a unique site to explore the relationship between the military and long-distance trade in the Roman period and beyond along this section of the Roman frontier.

Local goods for Roman army: an archaeometric study of „Colchian” brown-clay amphoras from Apsaros (Georgia)

Andria Rogava

Brown-clay Colchian amphora represents one of the characteristic features within the Antique and Late Antique period material culture of the eastern Black Sea coastal region. Previous studies have succeeded in creating an elaborated typo-chronological framework for these transport containers and, based on petrographic analysis, also shed some light on the aspects of their production technology and provenance. However, the low representativity of the archaeometric samples, spanning a long production period (mid. 4th c. BC - 7th c. AD), and the scarcity of comparative raw materials did not allow the differentiation of some possible recipes (fabrics) with certainty, as well as the precise and convincing determination of production centers/areas.

The current research focuses on the Roman period (1st-3rd c. AD) brown-clay amphoras from the castellum of Apsaros, where they constitute around 50% of the total amphora assemblage from this period. By analyzing 62 samples, together with the clay samples collected in the surrounding region of the southeastern Black Sea coast (Georgia and Turkey) the paper explores the technological variation and aspects of provenance more extensively and therefore tries to better understand patterns of the garrison supply.

SESSION 36

Roman Period Jewelry from South-western Georgia

Miranda Turmanidze

Since Ancient times, people have adorned themselves with jewelry. It seems to be one of the first signs of symbolic thinking. Over the centuries, the material, form and style of jewelry have gradually changed. The jewelry is very conservative in its content, although its external form has often changed. The main types of jewelry, such as finger-rings, bracelets, brooches, necklaces, earrings and tiaras, were eventually formed in the Bronze Age. Similar to other works of art, jewelry often represents one's beliefs, ideas or social status. The jewelry presented in the Roman age tombs which was discovered in the territory of South-western Georgia (Pichvnari, Makho, Kapandibi) is distinguished by its diversity and abundance. The samples authenticated here (earrings, necklaces, bracelets, signets, beads) are diverse in terms of form and processing technique, but they are united by the main stylistic feature of the Hellenistic and Roman Eras – the objects are decorated with colorful stones (earrings, rings, pendants). This means both – setting plain and cut gemstones into jewelry, depending on the Intaglio or cameo design. Although the latter is not confirmed on our monuments. Coins are considered to be the absolute dating artifacts of the tombs discovered in the territory of south-western Georgia and their dates are further confirmed by some other types of jewelry (seals/signets).

The Roman and Early Byzantine Amphorae from Eastern Black Sea Littoral

Merab Khalvashi, Nino Inaishvili

Totally 12 types of amphorae were discovered at the fort of Apsarus. They are made in manufacturing centres of Colchis, Italy, Cos, Rhodes, Sinope and some still unclear centres of Aegean world and eastern Mediterranean.

Seventeen basic types and several varieties of *terra sigillata* are identifiable in Apsarus again: bowls, cups, plates, small pots, jugs, etc. The produce of the western Roman manufacture centers was first discovered there, dated to the second-third quarters of the 1st century AD. Generally, the Pergamean group predominates. The produce of Samos and Syria-Palestine also occur. A red-gloss plate dated to the 4th century AD was discovered in Pichvnari. A contemporaneous, but slightly different variant was found in Tsikhisdziri.

The bulk of the *loutheria* brought to light at Apsarus are Sinopean wares. Two varieties of one type are identifiable. 1st have been discovered in the cultural layers of the end of the 1st century AD and the first half of the 2nd century AD; 2nd dated to the 2nd-3rd centuries. Heraclea Pontican *loutheria* also are found. Sometimes local brown-clay specimens, made by the imitation of Sinopean *loutheria*, are also encountered in the cultural levels of the end of the 2nd century and the 3rd century AD. The same production is attested in Tsikhisdziri as well.

Nine varieties of one type of lamps are identifiable again at Apsarus dated to the 1st-3rd centuries AD. Their bulk are Pergamean wares; Samian lamps are also occur; Western European ones widespread in Carnuntum, Trier, Mainz, Aquilea, Windoniza, etc. form a small group. Their bezels bear various ornaments, one shows Eros. Lamps with similar decoration have not been found in Georgia elsewhere, except Apsarus. The given specimen discovered together with a coin of Nero.

Roman Imperial and early Byzantine period glassware discovered in southwestern Georgia

Tamar Shalikadze, Emzar Kakhidze

The present paper represents study of glassware obtained in the southwestern Georgia's littoral in particular: Apsarus, Zanakidzeebi, Makho, Tsikhisdziri, Pichvnari and Vashnari.

Roman glassware discovered at Apsarus dated to the 1st-3rd centuries AD is numerous: early varieties are unparalleled in other sites of the eastern Black Sea area due to the fact that its bulk are made in western Mediterranean manufacturing centres. Some are manufactured in the eastern Mediterranean region as well. It should be noted that their number were increased since 2nd century AD. Glassware dated to the 2nd-3rd centuries AD are discovered at the vicinities of Apsarus in the villages of Zanakidzeebi and Makho.

Glassware obtained with the grave goods of the early Byzantine period, discovered on the territory of the Pichvnari fifth-century BC Greek necropolis have been found in small numbers in the eastern Black Sea area. *Unguentaria* must be made in Syrian workshops, probably Dura- Europos.

Early Byzantine glassware has also been found during excavations at Vashnari, yielding fragments of spotted glass, a plate, an *unguentarium*, glasses and window-glass. They are dated to the 4th-5th centuries AD, and are regarded as products of the eastern Mediterranean area, namely, Syria-Palestine.

Two fragments of a glass, a tetrahedral carafe-like vessel, spotted glass, an *unguentarium*, a lamp, and window-glass of eastern Mediterranean production were found at Petra Justiniana. Glassware of the early Byzantine Period have been discovered on the territory of the fort of Apsarus too. The group is not numerous. They find parallels in material of Tsikhisdziri and generally are datable to the 6th century AD.

Roman Coins from South-western Georgia

Irine Varshalomidze, Nino Dzneladze, Lasha Aslanishvili

In the 1st-4th centuries AD Colchis was part of the Roman Empire. Accordingly, Roman garrisons were stationed in the forts located along the coast. The study of Roman military incorporation in the Eastern Black Sea littoral would not be complete without considering numismatic data. Due to the political situation, money minted in different provinces of the Roman Empire was circulating in western Georgia during this period. Roman coins have been found in the parts of southwestern Georgia where the Roman garrisons were stationed: Petra-Tsikhisdziri, Gonio-Apsaros, and also in their surrounding area - Makho, Charnali, Chakvi, Supsa, Ureki, in the form of hoards or separate units. About 800 coins of this period were collected. Some of them were discovered during archaeological campaigns, such as, for example, the material of Gonio, Tsikhisdziri and Makho (archaeological expeditions of Gonio-Apsaros, Petra-Tsikhisdziri, Makho), and some of them were found by chance. In the museums of Kobuleti, Ozurgeti and Lanchkhuti, about 30 coins minted in the Roman Empire of the 2nd-4th centuries discovered by chance are preserved.

The coins are kept in the funds of the Gonio-Apsaros Archaeological-Architectural Complex of the Ajara Cultural Heritage Protection Agency, the Batumi Archaeological Museum, the Khariton Akhvlediani Museum, museums of Kobuleti, Ozurgeti and Lanchkhuti. They are unexplored and unpublished.

Archaeological Survey of the Early Christian Basilicas of the Kingdom of Iberia

Nodar Bakhtadze, Vazha Mamiashvili

This Paper is dedicated to the archaeological research of the early Christian basilica complex revealed on the territory of the former city of Nekresi (Georgia, Kakheti region). The research was carried out by the expedition of the Georgian National Museum for the last 10 years, under my leadership. The length of its central, three-nave hall (36 m) considerably exceeds all basilica-type churches known in Georgia until now. With the architectural analysis of authentic constructions revealed as a result of the excavations, it became clear that this large basilica was designed in late Roman and early Byzantine canonical style. It must have been built by the efforts of the clerical and civil rulers of Iberian Kingdom at the end of the 4th century and the beginning of the 5th century. A bit later the excavations led us to one more discovery: it was unearthed that this Church had been built on the ruins of an even earlier Christian basilica of up to 25 m long. These Monuments, as soon as they were discovered, revived special interest among the researchers of the ancient Georgian church architecture, Because the Georgian historic chronicles give an account of the construction of a remarkable church in Nekresi city by the Iberian king Trdat in the second half of the 4th century.

Based on these new objective facts, the theory developed in Georgian fine art experts' circles in the first half of the 20th century, which is still considered credible today, can be considered groundless: according to this outdated hypothesis, for one and a half century after proclaiming Christianity as the state religion, the builders in the Iberian Kingdom ignored widespread norms of Christian Church design in the Roman Empire, due to a dependence on the local architecture tradition.

The Palace of Dedoplis Gora: The residence of an Iberian Nobleman of the 1st century (New discoveries)

David Gagoshidze

The Roman military campaigns in the 1st c. BCE - 1st c. CE created a new political reality in the Asia Minor and South Caucasus. Roman legions defeated the powerful southern neighbors of the Kingdom of Kartli (Caucasian Iberia) - Pontus and Armenia - and confronted Parthia. In this long-lasting conflict between Rome and Parthia the Kingdom of Kartli found itself on the Roman side. After Pompey's campaign, Kartli received the status of ally of Rome. Archaeological excavations revealed that the Dedoplis Gora Palace at the southern end of Dedoplis Mindori (Central Georgia) was built in the late 2nd c. BCE. A ruler must have resided in the palace who probably governed a royal domain in the environs of Dedoplis Minodori. Lying 3 km to the north of the palace, grandiose temple complex, contemporary with the palace and directly connected to it, may have been the family sanctuary of the kings of Kartli and whenever the king and the royal family went on a pilgrimage to the temples at Dedoplis Minodri, Dedoplis Gora Palace would have been their temporary residence. A severe earthquake followed by a conflagration destroyed the palace and the temple in the late 1st c. CE. The burned and melted mass of the upper floors of the palace caused the preservation of the ground floor. The earthquake and the fire were so sudden and strong that the residents hardly managed to take anything with them. That is why the finds are so rich and diverse. Almost 7000 artifacts from 23 rooms, including furniture, weapons, statuettes, household tools, vessels in many materials, ornaments, and coins, are now in the Georgian National Museum. They allow us to trace the relationship of the Kingdom of Kartli (Caucasian Iberia) with the outside world, first of all, with Rome and its eastern provinces.

SESSION 38

A glass bowl decorated with ribbons from Apsaros, Georgia

Bartłomiej Kukla, Marcin Wagner

Archaeological research in the Roman Fortress Apsaros on the eastern coast of the Black Sea has been conducted since 2014. During the excavations, Polish archaeologists from the University of Warsaw managed to uncover the remains of a building dating from the times of Nero to the reign of Hadrian.

The presented glass material from these excavations will be limited to one category of vessels, which are bowls with ribbons (Isings form 3), made in the cast technique. Most of the identified fragments belong to bowls or cups decorated with long ribbons (Isings form 3A and 3B). They were mainly blown from natural-coloured glass, only a few examples indicate the use of coloured glass, such as amber and cobalt blue/white mosaic glass.

Archaeometric analysis of fragments of ribbed bowls clearly showed that these vessels were made in Syro-Palestine, and therefore, it seems, they were brought with the legionnaires who came to the Fortress Apsaros. The archaeological research in Apsaros has received financial support from the National Science Centre, Poland (UMO-2017/26/M/HS3/00758).

An insight into animal exploitation at the Roman legionary fortress Tilurium

Ivona Jukičić, Domagoj Tončinić, Siniša Radović

The Roman legionary fortress Tilurium is located in the central part of the modern village of Gardun near the town of Trilj, in the Split-Dalmatia County, Croatia. As on, one of the two Roman legionary fortress found in Dalmatia, the other being Burnum, Tilurium is crucial in the context of the arrival of the Roman army into Illyricum and their activities in the province of Dalmatia. Systematic archaeological excavations began in 1997 and have yielded important data on the architecture of the fortress, as well as numerous artefacts, including animal remains. This paper shall therefore focus on the archaeozoological analysis of animal remains from Tilurium. Previous research conducted on archaeozoological material from Tilurium and other Roman sites in Croatia has been of a smaller scope. Thus, this study aims to represent the first extensive archaeozoological research of the Roman period in Croatia. A detailed analysis of this material will complement existing knowledge about

the presence of certain animal species in the entire region. The primary objective is to determine the frequency of individual animal species and their age and sex. The preliminary analysis shall provide insight into dietary habits, animal exploitation, and environmental data. Furthermore, through the analysis of damage to animal remains, the taphonomic history of the archaeozoological material will be reconstructed. This shall in turn provide a broader picture of the coexistence of soldiers and animals from the end of the 1st century BCE to the mid-3rd century CE in the area of Tilurium, aiding in the understanding of economic, social, and cultural aspects within the legionary fortress.

Soldier's Everyday Life on the Limes of the Middle Danube

Petar Kojadinović

During the last century, a considerable number of Roman defensive structures along the middle Danube were investigated, which are today located on the territory of modern Serbia. Archaeological research has provided insight into the functioning of this complex defensive system, and its evolution through the centuries of existence, and clarified many important historical events that took place in this area. However, the daily life of the Roman soldier remained insufficiently investigated. For most of the four centuries of the existence of the Danube border, despite the frequent barbarian incursions and civil wars, the Roman soldier spent the vast majority of his service in peacetime conditions and performing routine tasks. With that, the focus of this lecture is an attempt to reconstruct the everyday life of soldiers on the Roman border, that is, parts of the provinces of Lower Pannonia and Upper Moesia located in present-day Serbia. As historical sources provide very little data, the main source for researching this issue was obtained from the analysis of available archaeological evidence. The routine of soldiers at the limes can be generally divided into two groups, i.e. regular military duties, which could vary depending on unit type and its location; and free time, which in this case is much more difficult to study for several reasons. When analyzing the regular tasks of the Roman army on the Danube, most information is obtained by studying the architecture of the researched fortifications, archaeological finds and epigraphic monuments. These provide data about everyday tasks, including guard duty and patrolling, exercises or military simulations, hunting, but also customs and construction activities. Additionally, a modest number of special archaeological finds, discovered along the above-mentioned part of the limes, provide insight into the leisure time of soldier. The obtained results allow us to partially unveil the everyday life of the Roman army on the Limes.

Fast, efficient and impressive: The construction of the principia and praetorium as large-scale timber buildings in the Augustan camp at Marktbreit

Birgit Nennstiel

The permanent camps in the northwestern provinces were initially built of timber and turf, with internal buildings in earthfast post construction. The abundance of timber in the region allowed for immediate construction, ensuring rapid site security and further development of the area. However, research on Roman army timber buildings is limited due to the ephemeral nature of the material. Identifying the remains of timber constructions is challenging: They are revealed almost exclusively by soil discoloration and are often overlaid and disturbed by later periods.

However, the Roman camp at Marktbreit (Mainfranken, Germany) is one of the few sites where the remains of the initial timber buildings have been traced with rare clarity. Archaeological excavations (1980-90) uncovered the almost complete foundations of several large representative buildings in earthfast post construction in the center of the camp, including the central principia and the praetorium. The state of preservation and the detailed excavation documentation allowed for a new in-depth analysis of the architectural features as part of my recently completed Ph.D. in building archaeology.

My research has provided new information not only about the actual construction of these extraordinary timber buildings, but also about numerous construction-related processes, such as planning, site preparation, surveying, material procurement, communication, site coordination, and the extent to which the individual legionary sqads were responsible for their own construction work. All in all, they point to a deliberately chosen construction method that allowed for a highly efficient and optimized use of all available human and material resources in terms of construction economy, without limiting the design and architectural ambitions of representative large-scale architecture. This is evident not least in the wide range of architectural design possibilities that have been explored through digital modeling.

Barbarians in the Roman army? A new research in North Hungary at the frontier of Pannonia province

Krisztián Tóth

The western part of Nógrád county (North Hungary), the so-called Nógrádian Basin is located around 20 kms from the Ripa Pannonica, but until recently its archaeological research has lagged behind the rest of Hungary. In addition, the basin is a triple border zone between the Roman Empire and areas inhabited by Germans and Sarmatians. From 2020 I started topographical research in this area mainly with local people with archaeological interests. The aim of this project is to explore

archaeological sites and integrate interested people and individuals with metal detectors into the cultural activities of the county museum. During 4 years of research several barbarian settlements were localized, which slowly delineate the former network of settlements of the Roman Period. Many more roman objects have come to light from the settlements than in the rest of the county. In addition to roman coins and terra sigillata vessels, these finds are mainly carriage parts, armour fragments, horse harnesses, military belt attachments and weapons. It can be seen already in the early stages of this research that the people living in the area of the Nógrábian Basin had a close relationship with the Roman Empire. The nature of this relationship remains to be clarified. The aim of this study is to present the methodology of the research, the roman finds found so far, and to suggest interpretative possibilities.

Loyalty carved in Stone: Pro salute imperatoris Dedications from Moesia Inferior and the Severan dynasty

Adrianna Gizińska

The pro salute dedications to the emperors from the Severan dynasty, known from Moesia Inferior, form a significant group. These inscriptions contain the formula pro salute imperatoris or similar variants, incorporating the official titles and names of the emperors and their family members. A statistical analysis of these inscriptions aims to provide an overview of the current knowledge, offering a quantitative evaluation of dedications to specific deities and members of the imperial family. This analysis delves into various aspects, including the involvement of the administrative apparatus—both military and civil—and the social composition of the dedicating group. Furthermore, an attempt will be made to answer the question: are these inscriptions a product of imperial propaganda, or were they internalized by the subjects? Do these inscriptions represent the subjects' loyalty to the emperor and the imperial family, reflecting their hope for the continuity and stability of imperial power, thereby constituting acts of loyalty par excellence?

Ancient iron smelting on both sides of the limes. Research of a young scientist

Adam Telązka

Iron has played a significant role in the socio-economic, as well as political and cultural development of societies since the beginning of the Iron Age and its influence continues until modern times. The ability to produce this metal determined progress in all areas of the economy, from construction to agriculture and breeding, and easier access to iron weapons and protective equipment often determined the advantage on the battlefield and, consequently, political importance.

Iron smelting, which is the first stage of the metallurgical process, can be defined as a sequence of activities leading to the transformation of naturally occurring ore into a metal billet. The product obtained in the blast furnace, after its treatment (cleaning) at the forging stage, was then processed in blacksmith workshops into a wide range of finished products, including all kinds of tools, parts of clothing and decorations, and weapons. Both in the areas ruled by the Roman Empire and further abroad, the production of this metal could and probably influenced the dynamics of changes in the world at that time.

In the presented work, the author will present what metallurgical activity could have looked like in the Roman provinces - on the example of one of them - and in the areas outside the Limes of the so-called Central European Barbaricum.

Common features and differences in the way work is organized by various units will be presented, thanks to which - from the point of view of a young researcher - it will be possible to start a discussion on the changes that may have taken place in these areas and what impact the mastering and improvement of iron making skills had on it.

Two ballista bullets from Marina el Alamein. What can we see about the presence of Roman army troops?

Andrzej Szotek, Karolina Warecka:

Marina el Alamein, which is located on the Mediterranean coast about 100 kilometres from Alexandria, has not been associated with any evidence of a Roman military presence. Current research suggests that the remains of a prosperous city have been found here. This suggests that the city may have derived its wealth from maritime trade. It is possible that the port located here served to stop ships coming from the Apennine Peninsula or other parts of the Mediterranean. Recent discoveries have raised the question of whether or not there was a Roman military presence within the boundaries of the city. Ongoing research in the ruins of the H39 dwelling house has uncovered two round stone bullets, probably used as ballistic ammunition. The context of this discovery is surprising, as the potential projectiles were found in the drainage channels that drained waste from the domestic toilet. It is astonishing that ballistic projectors are being used in this city.

To answer this, we need to look not only at the chronology of the partially exposed house itself, but also at the surrounding area, from a different perspective than we have done so far. According to current research, the H 39 house was built during the transition from the first to the second century A.D. and was abandoned in the third century. A chapel dedicated to Commodus was built in another residential building nearby. The presence of small Roman troops guarding the trade route along the coast may have coincided with the appearance of signs of imperial worship. Com-

modus was not highly regarded in Egypt because of political events. However, he did have the respect of the army, which may be an explanation for the ad hoc appearance of the shrine. Little is known about the movements of the legions in the areas to the west of Alexandria, but the sources can be used to try to locate them. This paper analyses archaeological and historical data in order to investigate the presence of Roman legions to the west of Alexandria, and in particular to explore the possibility that Marina el Alamein was a place where legionaries were stationed.

The most important question we want to answer is whether we can attempt to recreate the presence or rather the protection of the communication and trade routes by Roman troops. Marina el Alamein, which lies on the shores of the sea, is surrounded by desert to the south. The question arises as to whether a potential threat to the city and the smoothness of trade and safe travel from Paretrium to Alexandria could not have arisen from the desert. If so then the proper limit of Roman control over this part of northern Africa would have been along the coastline. Hence the attempt to control the littoral zone west of Alexandria. In such a view, Marina el Alamein must have been a foothold for patrols, or small detachments providing protection and security in this part of Egypt.

Sentinels of the Republic: Early Roman castra as a model for later frontiers

Daniel Nykjær Andersen

In the 4th-3rd c. BCE the nascent Roman Republic underwent a transformation from being one of many small Italic states on the Apennine Peninsula becoming a major political and military power. During this period, older fortifications in Rome were restored and expanded while new fortified sites appeared in the hinterlands of the city. The restoration and expansion of the so-called Servian Wall is by far the largest and most impressive of these fortifications but the construction of fortifications at Ostia and La Giostra should be of interest to any researcher interested in Roman frontiers, since these localities had features reminiscent of the later more famous castra of the Principate and Dominate eras. Indeed, both their layouts and location in what constituted Rome's early frontier and their proximity to waterways or roads reinforce the suggestion that these formed part of an early fortified frontier to the south of Rome. The primary threat to the area would have been the Samnites, against whom Rome fought three wars during this period. The swiftness of the Samnite forces forced Rome to restructure its army in order to engage in a new and more mobile type of warfare in which forts and roads would become increasingly important. It is consequently tempting to propose that these forts would have been very early examples of the later castra.

The paper is based on my master thesis which investigated the fortification of Latium in the period 375-275 BCE. The central question is whether the new fortification in and around Rome could have constituted a part of a larger centralized fortification network, not unlike the later limes. In

line with current approaches in fortification studies, it focused on how fortifications engage with their environs and how they constituted an important piece of infrastructure in the early Roman expansion.

Antler combs from Moesia Superior adorned with zoomorphological motifs – tiny masterpieces from the Migration Period

Eleonora Pawlikowska

Antler combs represent the most prevalent artifacts within the category of cosmetic tools unearthed along the Danubian Limes at sites dated back to the Migration Period. The archaeological findings in the region of Moesia Superior exhibit a remarkable degree of variety, yet the majority of these artifacts can be broadly categorized as unilateral three-layer combs adorned with horse protomes. One particularly remarkable discovery stands out in this context – a comb featuring a bell-shaped handle embellished with a subtle representation of a Cervidae. The diversity of findings belonging to this group is reflected in their construction solutions, ornamentation and the quality of workmanship. This unique collection underscores the dynamic cultural exchanges and the amalgamation of various barbarian and Roman influences during a period marked by substantial population movements. Regrettably, in many instances, the archaeological context does not provide precise datings of these items. The examination of the decorative motifs and construction techniques can provide valuable insights into the sources of inspiration and cultural connections of the individuals who crafted and used these instruments – it's worth noting that combs held a particularly intimate significance for their owners, making them highly personal items.

Excavated, but (not) forgotten. The cemeteries of Brigetio in Pannonia province

Rita Olasz

The Roman town Brigetio is located on the Danubian limes in Pannonia, on the section between Aquincum and Carnuntum. Until now, Brigetio's research has been mainly topographical in approach, complemented by various economic, artistic, and social aspects while the cemeteries have been mostly left out due to incomplete processing. My PhD thesis focuses on the funerary system, the use and extent of the cemeteries of this town. The burials of Brigetio have been excavated for almost 100 years now, but from the early days of research most of the documentation is incomplete or missing, and most of the finds have not been processed or published in their entirety. Unfortunately looting and graverobbing was also present in the area, so many finds originally coming from burial context are hard to identify or trace back. Up until recently, no one knew for sure the exact number

of graves that had already been excavated, so my goal is to collect and study all the known burials from Brigetio. By now I have already gathered and processed more than 1500 of them. Most of these graves belong to the canabae, but that is because the area of the military town was researched better and more frequently. The full evaluation of the burial system will also allow for a better understanding of the specific local customs, the different ethnicities and the social structure of the settlement. Finally, the cemeteries of Brigetio will be comparable with those of other Roman towns along the limes. In this paper I would like to present my work to date, with a particular emphasis on the importance and methods of incorporating old archaeological records and previously excavated finds into research, and how to make the most of the slightly relevant available information.

Exploring the different lifeways of the Roman Dacia population by a multidisciplinary approach

Dominika Schmidtova, Ștefania Dogărel, George Cupcea, Ricardo Fernandes:

The exploration of food consumption trends in Roman Dacia is predominantly undertaken by ceramic researchers, with archaeozoological and bioarchaeological experts often contributing less to the discussion. Equally, whilst burials are frequently employed as a robust source of data for studies regarding identity and material culture, they are rarely considered for providing a more comprehensive insight into human lifestyles. Our project is devising a strategy to unite these two different facets, with an aim to illuminate the dietary practices and overall human mobility within the Dacian border regions during its tumultuous terminal era, using stable isotope analysis. Our focus area is the Apulum necropolis - the former base of the Dacian governor and the XIII Gemina legion. During this presentation, we aim to share the preliminary findings and future direction of our multidisciplinary project. The project is designed to study the lifestyles of the diverse society gathered within the metropolitan expanse of Apulum. The methods employed include an anthropological investigation, stable isotope analysis, examination of burial types, and small find assemblages. This variety of methods will supplement traditional approaches to the subject by introducing a wider exploration of quantitative and qualitative features, such as a description of the demography of the researched population and any prevailing pathologies, their diet, potential mobility patterns and deeper insights into identity and/or gender presumptions.

SESSION 39

An archaeozoological survey at the former bus station- An insight into the nutrition, economy and trade of the Romans living at the Limes in Neuss

Maria-Magdalena Mancini

An archaeozoological survey at the former bus station, within the Roman vicus area of Neuss. What is archaeozoology? Archaeozoology is an interdisciplinary field within archaeology that, due to its methodological approach and specific focus on the processing, analysis and recording of animal bones from different, archaeological find complexes and contexts, can make and reconstruct a deep, interpretative statement about animal husbandry, the animal-human relationship, possible rituals and beliefs, nutrition, wealth, economy and trade of the settlement population at that time, in addition to pure archaeology. However, it is also inevitable that the archaeological interpretations must be considered and linked together with the archaeozoological results as well as with other interdisciplinary archaeological fields. Since only in this way, on the one hand, the significance of the results can be achieved and, on the other hand, a variety of specific research procedures, a further perspective of the interpretations and statements promises, which in the best case can close and complete research gaps. In the context of the lecture an insight into the nutrition, the economic way and the trade of the Roman population living at that time at the Limes is to be presented. With regard to the economy, the husbandry (diseases and pathologies), the use (agriculture, livestock and draft or transport animals), the processing and further processing of the animals will be addressed. In addition, it will be looked whether hunting plays a subordinate role for the meat supply.

In Front or Behind the Ditches? Mounds as a Standard Element of the Fortifications of Roman Forts

Markus Geschwind

Plans as well as reconstruction drawings of Roman forts in excavation reports or textbooks clearly show that the defence systems of the forts consisted of a curtain wall with gates and towers that was protected by one or more ditches. The ditches covered a considerable area and were an element that decisively determined the visual appearance of Roman forts.

They were dug deep into the ground and in most cases backfilled by agricultural activities in post Roman periods. They are usually well preserved, easy to recognise, well recorded by archaeological excavations and formed a standard element of the fortifications of Roman forts throughout Roman military history.

In regions, which are not suitable for agriculture, the ditches can still be seen on the surface today. The evidence of very well preserved mid Roman sites in Scotland and the Syrian desert shows that the they were reinforced by mounds heaped between and in front of the ditches.

Although by its very nature, comparable evidence from sites in arable land is missing, the presentation aims to show that there are very good reasons to reconstruct Roman forts of the second and third centuries AD with mounds and ditches. In addition, the paper will examine whether, and if so how, these findings are also relevant for fortifications of Early Imperial and Late Roman forts.

The questions addressed in the paper are not only of academic relevance but also important for the mediation of the UNESCO World Heritage cluster Frontiers of the Roman Empire, because many virtual ideal reconstructions will soon have to be made for the nominated and newly inscribed World Heritage sites between the shores of the North Sea and the Black Sea.

Roman Metal Lamps from Baden-Wuerttemberg

Martin Dietrich

As important everyday objects, lamps were widespread throughout the Roman Empire. This is why Roman clay lamps have been found quite frequently during archaeological excavations. Metal lamps, on the other hand, are much rarer finds, due to their material. The high cost of the metals meant that these objects were not affordable for everyone and were therefore produced in smaller numbers. In addition, the recyclability of the material meant that metal lamps were often melted down to be reused. The large number of roman clay lamps is one of the reasons why they are well researched today, while there is still a lot of work to be done about lamps made of bronze and iron. Especially the archaeological context of discovery should receive greater attention. This paper will show which types of metal lamps exist in the German federal state of Baden-Wuerttemberg, a border region of the Roman Empire, through which parts of the Upper German-Raetian Limes run, and in what context they have been found.

Was There a Roman Settler Colonialism? The Evidence and What it Means for Decolonizing Roman Archaeology

Matthew J. Previto

The study of Roman frontiers and colonization continues to change the field of Classical archaeology. By employing diverse research practices, archaeologists of the Roman provinces have shown how “writing from the margins” can fundamentally change a discipline and understandings of the past. Yet, Roman frontier archaeology still lags other archaeologies in the diversity of its members and in access to its various forums. This lag is caused by a continued siloing of Roman archaeology in general, both in institutions and in its research aims, and it continues to obstruct attempts at a systemic decolonization. I argue that Roman frontier archaeology would benefit from a much wider and more consistent engagement with current approaches regarding the study of colonization in the wider field of archaeology. To that end, here I explore the usefulness of one of these paradigms, settler colonialism, to the study of the limes, and how it contributes to the project of decolonization. Despite the field’s willingness to engage with a variety of paradigms formed in the cotemporary academic epoch, it has remained curiously quiet on settler colonialism. This appears to stem from the sentiment that applying this concept to the Roman world is anachronistic. While there were certainly differences between Roman colonization and its modern counterparts, there were also enough similarities that warrants a rigorous analysis. In this paper, I employ the concept of settler colonialism as a lens to reinterpret evidence from sites on the northern frontier. I conclude that while the Roman Empire was certainly multimodal in its colonization practices over time, there were processes that we may label as settler colonialism and that this has implications for both our research and the larger discipline.

The late Roman coastal fort at Oudenburg (Belgium): new research developments

Sofie Vanhoutte, Vince Van Thienen, Jasper Deconynck

Archaeological excavations in the first decade of the 21st century led to many new insights into the coastal fort at Oudenburg. These insights contribute to the knowledge on the fort’s evolution, its relation to the other coastal forts and its role in the military history of the North Sea and Channel region, as well as the spatial and functional organisation of the successive fort periods, the socio-economic networks and the socio-cultural identities of the fort communities. Our understanding of the identities of the late Roman fort occupants has also advanced significantly from the reevaluation of the chronological and socio-cultural data from the late Roman graveyards. In addition to the burials excavated in the 1960s, the discovery of a previously unknown third late Roman graveyard in 2014 has opened up new avenues for research.

Most recently, in the summer of 2023, a new excavation was carried out in the town centre of Oudenburg, situated at the centre of the fort. While the results are still preliminary, the presence of a large stone building presents a new and important piece of the puzzle to further reconstruct the fort's inner organisation.

On a Missing Ring in the Circumpontic Travel of the Ritual of Rising on a Shield from the Early Medieval Caucasian Albania

Artak Dabaghyan

The report is centered on the following description of the shield-rising ritual in Caucasian Albania, joining this isolated fact and the historical context around it to the decades long research of this ritual. The source is from the late 7th century part of the *The History of the Caucasian Albanians* by Movses Dasxuranc'i, ch 36: "When sorrow and grief had abated somewhat, and when the calamitous disaster had been somewhat forgotten, the lords of the clans (tear'k' tohmits'), the governors (kusakalk'), administrators (koghmnakalk'), grandees (metsametsk'), lords (naxarars) and all the princes of this land assembled in the presence of the great archbishop Eghiazar and conferred about the peace and prosperity of the land of Aghuania. They occupied themselves with diligent thoughts about the governance of the land. They decided to elect a certain senior naxarar who had been honored with the imperial title of ex-consul (apuhiwpat) and had acquired the rank of patrician. His name was Varaz Trdat, son of Juanshir's brother Varaz P'eroz. Readily and with sincere willingness the princes of the land and the kat'oghikos greatly hurried to expedite this election. All the grandees, with their banners showing animal emblems hoisted, and to the sound of trumpets, placed him on the golden shield and raised him up three times, shouting words of praise." (emphasis added-A.D.)"

The paper, which may be added upon request, places this unique description into the context of late Roman and early Byzantine history and culture, adds details to the ways how the rite, first recorded in Tac. Hist., has survived to the late Byzantine period through cultural transfer across the Caucasian mountains.

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

Mark A. Hassler

In 1995-2000 and 2009-2017, a village called Khirbet el-Maqatir was excavated in Israel's central highlands to determine the site's occupational history and material culture. The excavations uncov-

ered fortification walls with defensive towers. The militaria included hobnails, slingstones, ballista balls, a sling pellet, arrowheads, a javelin head, metal blades, and equestrian fittings. The evidence led the excavators to conclude that that the site's late Hellenistic and early Roman settlement was founded in the second century BC, demolished by the Romans in AD 68 CE during the First Jewish Revolt (66-70 CE), temporarily occupied by Roman soldiers soon thereafter, then occupied by a small Jewish population who reused the hiding complex during the Second Jewish Revolt (132-135 CE) before the site was abandoned until the late Roman and Byzantine periods. The discoveries contribute to scholarship in three ways. First, the Roman militaria helps to reconstruct the Roman army's strategy in the 68 CE attack. Second, one tower had a massive base of 28 × 16 meters, making it one of the largest towers in Israel during the Second Temple period. And third, the research develops our knowledge of historical events; namely, the process of Roman conquest of Judea and the events between the Revolts, including the Jewish hiding complexes.

Bridging the North Sea. Connectivity in the North Sea basin in Roman and modern times

Tom Hazenberg

Archaeologists, volunteers and civil workers of eight regions in four countries around the North Sea have a consortium with the goal to produce an archaeological research programme and interpretation plan of the North Sea basin in Roman times, raising awareness among modern coastal residents of their maritime heritage, the North Sea's historic role in connecting the area, and how to present challenges such as rising sea levels were dealt with the past. Central theme of Bridging the North Sea are the themes of Coastal Communities, Changing Landscapes, Exchange and Material Culture and Connectivity.

The Bridging the North Sea project aims to set up an innovative transnational network of scientists, scholars, civil workers, commercial organizations, museums, curators and volunteers along the coast of the North Sea Basin covering four countries to start with: United Kingdom, France, Belgium and the Netherlands.

Troop movements in Dacia in the 3rd century AD

Ioan Piso

In the 3rd century the military diplomas are missing and so our documentation about the provincial armies is incomplete. At least four items will be examined. The first is the so-called «knock-on effect» in the case of the legions. Beginning with Septimius Severus legionary vexillations moved

eastwards or westwards only the half distance to the front, replacing in Dacia legionary vexillations which moved further and reached the destination. It is, for example, the case of the legions III Italica, VII Gemina and III Gallica. The second problem dealt with is the moving of auxiliary units throughout Dacia.

When a unit returned from an expedition, it could happen that it found its camp occupied and had to move into another camp, which will be inaccessible for the first occupant and so on. Such a relationship existed between following cohorts: I Vindelicorum – I sagittariorum – III Campestris – I Ulpia Brittonum. Thirdly, we shall try to find out the newly founded units, like the mysterious ala electorum or the cohorts VI nova Cumidavensium. Finally, we shall examine the contribution of Dacia to the mobile army organized by Gallienus.

The Battle of Frigidus: archaeological evidence found at last?

Janka Istenič, Vesna Tratnik

Several ancient authors report on the battle between the Emperor Theodosius I and the usurper Eugenius that was fought at the River Frigidus, in September 394. Most researchers agree that the eastern and western armies clashed somewhere between the Hrušica Pass (Ad pirum) and Ajdovščina (Fluvius Frigidus) in western Slovenia. Until recently, however, no archaeological traces of the conflict were known.

In 2021, it came to our attention that an amateur metal detectorist unearthed 14 plumbatae and other militaria in different locations east of Ajdovščina, in an area covering c. 0.5 km² in total. The ensuing systematic field survey of a wider area, conducted with the participation of the finder, has confirmed the reliability of his information.

The paper discusses the archaeological evidence consisting of the recovered artefacts and the results of the trial trenching carried out at the site complex in 2022. It also evaluates them in light of the information that ancient written sources provide on the Battle of Frigidus.

Memories of Dacia. Private archaeological collections and the rise of antiquarianism in 19th century Transylvania

Orsolya Szilágyi

Before the professionalisation of archaeology in 19th century Transylvania, the collection and occasional documentation of finds was done by antiquarians. The remnants of Roman Dacia came to light frequently during agricultural and infrastructural works of the time. Nobles were oftentimes fascinated by the treasures of the Roman province, the inscriptions and tomb fragments adorning castle and mansion

gardens. Some of these collections have been lost to history, the items never to be seen again. However, the accounts and manuscripts of travellers and antiquarians of the period allow them to be reconstructed and put into context. Such documents help us with the recovery of invaluable information about life in Dacia. This presentation will focus on the most notable private collections from 19th century Transylvania.

Keeping up with the Nabataeans? The Decorative Wall Paintings and Mosaic Floors of the Hauarra Praetorium

Craig A. Harvey

Strategically located on the southeastern edge of the Roman Empire, the site of Hauarra (modern Humayma, Jordan) was home to one of the earliest forts constructed by Trajan's forces in the newly organized province of Arabia. Within this auxiliary fort, excavation of the commander's residence, or praetorium, uncovered the remains of a lavish suite of rooms, paved with geometric mosaics and further decorated with vividly coloured frescoes. Although highly fragmented, careful reconstruction of the surviving painted plaster has revealed elements of the original motif: panels of imitation marble divided by stylized columns and garlands. So faithful were the painters to the natural appearance of marble veneering that it has been possible to identify the exact types of decorative stone being imitated. Despite this opulence, a small Greek graffito scratched into the painted decoration reveals a longing for further urban comforts: "χορους δεω" "I miss [or "need"] dancing troupes". This paper presents these mosaics and the reconstructed wall paintings and places them within their regional context. Although comparable decorative arts from military installations is extremely rare in the Roman East, stylistically similar mosaics and paintings have been found in elite residences at Petra and its environs, roughly 45 km north of Humayma. While earlier than those uncovered in the Hauarra fort, these comparanda reveal the existence of skilled local craftspeople and suggest that the mosaics and wall paintings of the praetorium were produced by local workshops. This decoration, although primarily intended for the enjoyment of the fort's commander, was also visible to those being entertained in the praetorium, including members of the local elite. This paper thus also considers the extent to which this decoration was used as soft power directed towards local Nabataeans.

If you build it, they will come – new visitor centres at the Lower German Limes

Erich Cläßen, Jennifer Schamper

Along the UNESCO World Heritage Cluster "Frontiers of the Roman Empire" in total c. 14.000 ha or 140km² of buffer zones have been declared to serve one or more of purposes in accordance with UNESCO and ICOMOS guidelines. Depending on whether *limites* or *ripae* are concerned, the

definition and delineation of buffer zone boundaries differ and furthermore buffer zones have been adapted to the local circumstances within sections of one world heritage site (e.g. FRE – Upper German-Raetian Limes, FRE – Lower German Limes). These differences require – above all – distinct approaches in heritage management. Our paper will give an overview to the principles of defining buffer zones along the FRE and an attempt is made to describe the challenges this has created using examples from different parts of the FRE in Germany.

Six Seasons of Excavation at the Castra of Legio VI Ferrata, Israel

Matthew J. Adams, Yotam Tepper, Mark Letteney

In 2023, the Jezreel Valley Regional Project (JVVP) conducted its sixth season of excavations at Legio, the base of the Roman VIth Ferrata Legion in Israel. The base is one component of the sprawling site of Legio-Megiddo, which includes the well-known Bronze/Iron Age tell, the first to third century CE Jewish Samaritan village of Kefar `Othnay, Roman Legio, Byzantine Maximianopolis, and early Islamic to Ottoman Lejjun. The legionary base was occupied from the early second to early fourth century CE. Excavations suggest an orderly exit of the legion and the systematic abandonment and dismantlement of the military infrastructure.

The 2013 Season confirmed the location of the historically attested legionary base as hypothesized by earlier scholars based on historical data and archaeological surveys. The 2015-2019 and 2023 seasons focused on the center of the base in the headquarters compound, the principia. While many features of the compound are typical of such components of permanent legionary bases around the empire, several unique features of the principia at Legio offer new avenues for research into the function of these buildings within the administrative and community life of the Roman army. Further work has been conducted in the Legionary cemetery and the military amphitheater adjacent to the base. This presentation will summarize the work of six seasons of excavation, providing the latest results from the field.

Mind the Gap: Questioning Our Understanding of Coastal Defence In Northern Britannia in the Later Roman Period

Pete Wilson

The archaeological literature relating to some aspects of military responses to threats to Roman rule in Britannia can be extensive as, for example, in the case of the so-called ‘Saxon Shore’ forts located on the south and south-eastern coasts and the Yorkshire ‘Signal Stations’.

On the east coast a gap exists between Brancaster, located on the north Norfolk coast, and Brough-

on-Humber leaving The Wash and the whole of the coast of Lincolnshire seemingly unprotected. North of Brough the first known coastal military site is the 'Signal Station' at Filey, although it is probable that the 'lost site' of *Praetorio*, known from *Iter I* of the Antonine Itinerary, was located east of Bridlington having been lost to the sea. A fort near Bridlington could have partially bridged the Brough—Filey 'gap' in coastal military sites. The existence of the so-called 'Signal Stations' extending north from Filey, which McCluskey has argued were located to control potential landing grounds, calls the coherence of later Roman military arrangements into question. Landing grounds near some 'Signal Stations' would only give access to fairly inhospitable and relatively scarcely populated moorland areas; which raises the question - why protect such locations and leave the 130-150+ kilometres of coast between Bridlington (or possibly Filey) and Brancaster largely unprotected? The loss of *Praetorio* may partially illustrate the answer as areas of the coast south of Teesmouth have suffered massive erosion. However, the results of Rapid Coastal Zone Surveys funded by (the then) English Heritage in the early 2000s demonstrate that explanations are probably more complex. Results, particularly in Lincolnshire, suggest that deposition, not erosion, may have been a locally dominant factor in coastal change. This paper will consider the evidence for, and implications of, that possibility in association with alluviation, direct human impacts and known site locations.

Birsama: Unraveling the Economic, Military, and Administrative Dynamics of the Roman Negev

Alexandra Ratzlaff; Erin Brantmayer

In the marginal zone of the Negev, a primary objective was the exercise of authority to uphold and regulate the economy. This region witnessed intense trade activity, initially dominated by the Incense Route under the Nabataeans and later assimilated and adjusted by the Romans. The Roman presence expanded by strategically positioning their armies, preserving the original Nabataean 'guardian nodes' along the trade routes. Notably, Birsama (Horbat Be'er Shema) in the northern Negev evolved into a significant Late Roman military site. A substantial quadriburgium fort was established there, transforming it into a flourishing Late Roman and Byzantine community. Our exploration of this site furnishes valuable insights into the development of the Roman military and its integration into the broader Negev network during the Late Roman and Byzantine periods. The Birsama Exploration Project's survey and excavation efforts aim to elucidate how the Roman army employed the site as a pivotal economic and administrative hub, in close proximity to the port at Gaza. Evidence from the vicus extramural community shows a focus on industrial activities, specifically pottery production and wine processing. Within the immediate vicinity of the fort new evidence suggests urban villas or mansiones. Eventually, Birsama served as the headquarters of a re-

gional dux, offering a unique opportunity to compare the development and function of a provincial administrator with those in other provinces. This paper will draw on evidence from excavation and historical sources to show the intricacies between the development of the Roman army at Birsama and the complex trade networks of the Negev and beyond.

When is a boundary not a boundary? The strange place of the Mediterranean between Roman antiquity and today

Samuel Agbamu

The Mediterranean was at the centre of the ancient Roman world. Many of the opening acts of Rome's path to regional hegemony were staged in and around what Rome came to consider its own sea, or *mare nostrum* – 'our sea'.

This paper asks why, when, and how the Mediterranean came to be seen as the boundary between Europe and Africa. It sketches out a history that begins with Roman expansion across the Mediterranean before turning to postclassical conceptualisations of the sea which anchored themselves in Roman antiquity. Chief among the moments considered is the representation of the relationship between Christian Europe and Muslim North Africa and the Middle East as a restaging of Rome's conflicts with Carthage. It was during the period, roughly the sixteenth century, that the Mediterranean began to be conceptualised as a frontier between Europe and Africa, with what was once Rome's *mare nostrum* becoming the outer boundary of the European empires that posed themselves as Rome's heirs.

The next chapter of this story involves modern European colonialism in Africa. At this time, the Mediterranean once more became a vector for imperial expansion, rather than its outer limit. However, after the period of decolonisation in Africa and the increasing anxiety of migrants crossing from Africa to Europe, the Mediterranean again became the southern limit of Europe.

The focus on the Mediterranean offers a transhistorical approach to thinking about frontiers, and problematises the myth of Europe and the constructedness of Greek and Roman antiquity on which it is built. This paper approaches the concept of *limes* from the margins. By centering the experiences of people who cross the frontiers of Fortress Europe today, the paper foregrounds the intellectual responsibilities of researchers of ancient borders to those whose lives are shattered by the violence of modern ones.

Coin Finds from the Retentura of the Legio I Italica Camp in Novae

Szymon Jellonek

During seasons 2022 and 2023 conducted by Expedition Novae from Faculty of Archaeology of the University of Warsaw more than 250 coins were discovered in Novae. The exploration occurred in the rear division (retentura) of Legio I Italica camp, an area that had not undergone extensive investigation before. Coin discoveries can provide fresh insight into the camp's chronology in this area. There are a few chronological horizons that can be identified. First, there aren't many first- to second-century imperial coins. Next, a quarter of all discoveries are provincial coins from the first part of the third century. There are several debased antoniniani from the late third century. Coins from the fourth century make up the majority of the collection (more than 50%). Additionally, few Byzantine coins were discovered.

The purpose of the paper is to clarify how far the findings from the retentura suit the pattern of coin circulation in Novae and Moesia.

New and old Castra

Maruša Urek, Ana Kovačič, Luka Rozman

Fortress Castra was strategically built on the Via Gemina between Aquileia and Colonia Iulia Emona. It was protected by the confluence of the river Hubelj and Lokavšček creek. The settlement predating Castra can be traced back to the end of the 1st century BC, when the area became of interest to the expanding Roman state. Somewhat removed from major towns in the region, this location first served as a coach station (Fluvio Frigido), meaning that military presence was probably very common, perhaps constant. Between AD 270 and 290, the settlement was partly demolished and a new heavily fortified fortress was built. The fortress survived until 451, when it was demolished by the Huns. Since the seventeenth century, researchers and antiquities lovers have been attracted to the remains of the Castra fortress, and the first archaeological excavations took place during WWI. For most relevant research took place in the second half of the 20th century, when the fortifications were studied and several sites in the old city centre were excavated. This research was concluded with encyclopaedic articles about Castra and an exhibition. In this paper we will initially address the results of earlier excavations, which included the excavation of a bathhouse, a potential temple, multiple storehouses, and the so-called atrium house. Subsequently, we will present the findings from the most recent excavations conducted inside the fortress between 2017 and 2019. A portion of the 2019 excavations were conducted on sites that were excavated in the 1960s. The main focus will be on the presentation of new excavations related to buildings discovered during older excavations. Particular attention will be paid to the extensive and multiphase building complex that was excavated in the city square.

Individual and group identity and their imprint on the material culture. Case study on the eastern limes of Roman Dacia

Szilamér Pánczél, Katalin Sidó

Before the professionalisation of archaeology in 19th century Transylvania, the collection and occasional documentation of finds was done by antiquarians. The remnants of Roman Dacia came to light frequently during agricultural and infrastructural works of the time. Nobles were oftentimes fascinated by the treasures of the Roman province, the inscriptions and tomb fragments adorning castle and mansion gardens. Some of these collections have been lost to history, the items never to be seen again. However, the accounts and manuscripts of travellers and antiquarians of the period allow them to be reconstructed and put into context. Such documents help us with the recovery of invaluable information about life in Dacia. This presentation will focus on the most notable private collections from 19th century Transylvania.

POSTER SESSION

The first comprehensive metallurgical study of Roman military diplomata – Constant alloy quality was maintained by the Roman military administration over 200 years from ca60-260 AD

Andreas Pangerl, Robert Lehmann

Initial hypothesis of this investigation using X-ray fluorescence analysis (pRFA) was that expected changes in the metal alloy composition of bronze Roman military diplomas over time might serve as a chronologic reference for other Roman archaeological objects made of bronze such as coins, tabulas, military objects, statues etc. Military diplomas – citizenship documents for non-citizens serving in the Roman military in auxiliary units – seemed most suitable for this, as they were all manufactured in Rome, and dated by month and day and through two consules. The analysis of more than 500 Military diplomas showed however that there were no major changes in alloy composition over the 200 years investigated, from ca 60-260 AD. Rather the manufacturers kept the bronze alloy constantly in a narrow range of 8+ % tin and above 20 % lead. This functional lead bronze alloy must have been chosen to optimize the mass production process for the metal plates, which are usually between 0,5-2 mm thin, and to allow optimal engraving of the diploma text on both sides of the plates. This continuity was kept up by the imperial administration regardless of cost throughout multiple crises into the middle of the 3rd century AD (with exception of a short period of ca 10 years during Marcus Aurelius' reign in which no bronze diplomas were issued at all).

Reviving Roman Army Religiosity: Digital Reconstructions of Statues and Sacred Space in the Principia of the Legionary Fortress at Novae

Agnieszka Tomas, Jakub Kaniszewski, Wiesław Więckowski

Digital reconstructions of sacred space in the principia of Novae are based on the archaeological data obtained during excavations carried out by Tadeusz Sarnowski since 1970. The key idea behind the holistic approach applied to this study was to examine the architectural remains, inscriptions and places of their possible erection, as well as fragments of bronze statues found in the building. The digital methods were used to recreate the shape and size of the building and the inscribed

monuments and building inscriptions within their architectural context. The final results presented in the form of digital images and a dedicated website allow to examine the inscribed monuments in their context, but also to analyse military religiosity as seen through “lived ancient religion”.

Roman military paraphernalia recently found in Barbaricum, near the southeastern limes of Dacia

Dragoş Măndescu, Ion Dumitrescu

More than a quarter of a century ago, Liviu Petculescu presented at the Limes Congress held at Zalău (1997) a meticulously prepared report on Roman military equipment found in Barbaricum in the proximity of the Dacian limes. Today the amount of data has been significantly enriched, mainly due to two factors: discoveries made with metal detectors (a reality that seems to be out of control in Romania) and salvage excavations carried out on huge areas, as a result of large infrastructure projects. The poster presents for the first time such discoveries of Roman military pieces (military accessories, fibulae, spurs, a casserole, etc., including what appears to be a groma weight or pondus) found in recent years in Barbaricum, outside the south-eastern limes of Dacia, in the southern half of today's Romania, in Argeş and Olt Counties. Some of the pieces are stray finds, others were found in an archaeological context during the salvage excavations coordinated by the authors (within the Argeş County Museum's contract archaeology frames) in the settlements of the native population belonging to the Militari-Chilia culture. All this new and consistent batch of Roman artifacts of unequivocally military background raises again questions related to the relationship between the barbarian lands and the Roman army in the vicinity of the limes.

The Presence of Rome in Muntenia. Archaeological Evidence of the Interaction between Romans and Barbarians on the Teleajen Valley

Bogdan Ciupercă, Cătălin Dîscă, Tudor Hila

At the beginning of the 2nd century, following the Dacian wars, the emperor Trajan conquers and annexes Dacia, including today's territory of Muntenia, generally bounded to the north by the Carpathian Mountains, to the south by the Danube River, to the west by the Olt River, and to the east by the Siret River. Included in the empire as part of the province of Moesia, this acquisition will not be a lasting one. Not even two decades later, at the beginning of Hadrian's reign, this was abandoned.

The present presentation aims to highlight the most important discoveries made in recent years on the corridor of Teleajen Valley. An important route that ensured the passage from Central Muntenia

over the Carpathians since prehistoric times, this corridor was also used by the Romans. During the wars for the conquest of Dacia, the route was probably used by one of the columns that advanced from Moesia to the Intra-Carpathian area. Later, the corridor was used to ensure the connection between the new province and the south of the Danube, as shown by the Târgșoru Vechi, Mălăiești and Drajna de Sus forts.

In recent years, a series of important discoveries have been made on the corridor of Teleajen Valley, both through archaeological investigations and stray finds. Among the discoveries are imported products typical to the Roman world, pieces of military equipment, but also new marching camps, previously unknown in field literature. These discoveries complete the overall picture of Muntenia as part of the Empire and bring new insights into the relations between Barbaricum and the Roman world

On the Border between Political Agreements and Military Actions. Roman Policies in Muntenia Reflected in Archaeological Discoveries

Cătălin Dîscă, Tudor Hila, Bogdan Ciupercă

Largely delineated by the Carpathian Mountains towards the north, the Danube River towards the south, the Olt River towards the west and the Siret towards the east, the territory known today as Muntenia had a long and fluctuating relationship with the Roman Empire.

Already from the 1st century BC, Roman military actions north of the Danube and population transfers to the south of the river are reported. During the 1st century AD the relations between the Romans and the populations north of the Danube fluctuated between peace and military conflicts. In the beginning of the 2nd century, following the Dacian wars, the emperor Trajan conquered and annexed this territory. Included in the empire as part of the province of Moesia, this acquisition will not be a lasting one. Not even two decades later, at the beginning of Hadrian's reign, this territory was abandoned. During the following centuries, however, this territory will periodically return to the attention of the Roman authorities, the relations oscillating, as in the first century, from political agreements to energetic military interventions. However, these oscillations are difficult to specify in detail only on the basis of literary sources, since they are rather scarcely attested. In this context, the archaeological discoveries made in this area during the last century and at the beginning of this century compensated to a certain extent these shortcomings of the ancient texts.

The present presentation aims to highlight a series of archaeological discoveries, some older, some very recent, which can be correlated with the political and military strategies that the Roman Empire pursued in today's territory of Muntenia. The time span covered extends broadly from the reign of Augustus to the breakup of the Hunnic confederation.

Justinian's authority in Slovenia – militaria and lead seals from Zidani gaber

Vesna Tratnik

The mountains in south-eastern Slovenia include Zidani gaber, a ridge that holds the remains of a Late Antique settlement. It lies in an area removed from the lowland passage between Italy and Illyricum, and the main communication leading from Aquileia via Emona to Siscia, which was exposed and therefore fraught with danger in Late Antiquity. Although remote, Zidani gaber is nevertheless strategically positioned on route to the northern Adriatic.

The Late Antique remains at the site begin in the 4th century, with artefacts we associate with Roman soldiers and officials. In the late 5th or early 6th century, the settlement was enclosed with a fortification wall, a church was built, as were several houses that abutted the fortification wall. Among the artefacts from this time are gilded bow brooches and belts with close parallels from sites dating to the Gothic rule in Italy.

For the wider area, historical sources show that the Byzantines took the province of Dalmatia with most of Liburnia and the province of Savia, previously under the Goths, by AD 539/540 at the latest. The modern-day central and western Slovenia thus formally came under the Byzantines, though we have no irrefutable archaeological evidence of direct Byzantine civilian or military rule.

The evidence from the hilltop settlement at Zidani gaber includes three lead seals with the portrait of the Emperor Justinian I, a fragment of a gilded Baldenheim helmet, iron plates of lamellar armour and Byzantine coins. The militaria may have belonged to officers, while the imperial seals and other artefacts suggest contacts with the Byzantine court, but possibly also that the settlement was under the administrative or military jurisdiction of Justinian I.

The stamps of the XI Claudia legion discovered in the settlement at Ostrov (Constanta County)

Eugen-Marius Paraschi-Grigore, Adela Bâltâc, Ioana Paraschiv-Grigore

The Roman settlement at Ostrov (point 'Farm no. 4') is located approx. 2.5 km east of the castrum of the XI Claudia legion from Durostorum, where three buildings with various functions, including a thermal bath, five clay pipelines, 21 pottery kilns, and numerous waste pits were investigated. Among the finds are also many bricks or pipes bearing the stamp of the XI Claudia legion. The poster presents and analyzes these stamps only from our research (The Roman settlement at Ostrov (point 'Farm no. 4') is located approx. 2.5 km east of the castrum of the XI Claudia legion from Durostorum, where three buildings with various functions, including a thermal bath, five clay pipelines, 21 pottery kilns, and numerous waste pits were investigated. Among the finds are also many bricks or pipes bearing the stamp of the XI Claudia legion. The poster presents and analyzes these

stamps only from our research (over 40 different items). Also, we try to make a typology and a useful comparison with the stamps of the XI Claudia legion, from other discoveries from the province of Moesia Inferior. over 40 different items). Also, we try to make a typology and a useful comparison with the stamps of the XI Claudia legion, from other discoveries from the province of Moesia Inferior.

Old finds from the area of Bassianae - an overview

Hana Ivezić, Jana Kopačkova

Before the collapse of the Austro-Hungarian Empire the archaeological finds from the Danube area stretching from Osijek (Mursa) to Zemun (Taurunum) were usually dispatched to the Archaeological department of the Croatian National Museum and due to that fact, a fairly large collection of Roman finds from the Danube limes is kept nowadays in the Archaeological Museum in Zagreb, numbering many thousand objects. The ongoing revision of old collections allowed us to (re) discover those finds which are currently being catalogued as a first step towards publication. Among them are quite a few finds from the area of Bassianae, as well as likely from Caput Bassianense, by far the largest Roman fortification in southern Lower Pannonia. There are several phases of occupation, the first smaller fort being from the 1st century AD, but the most extensive rebuilding and enlarging took place in the second half of the 3rd century AD. Not much is known about garrisoning units, the cohorts I Thracum civium Romanorum pia fidelis was likely transferred to Bassianae, i.e. to Caput Bassianense in the late 3rd century AD and remained there till the late 4th century AD. Nonetheless, considering the extent of military facilities in that area, the fort there was not meant to house just an auxiliary cohort or ala since it could easily have accommodated a full legion. It is unlikely that any of the Pannonian legions was permanently stationed there but they may have deployed vexillations there on a more or less permanent basis during the 3rd century, especially during the second half of that century. While an overview of old finds in the holdings of the AMZ is not likely to provide answers to questions about the garrison of Bassianae and Caput Bassianense, it may give a better insight to the military presence in that area.

Vision, Movement and Access on the British Frontier: A GIS study of Roman surveillance and counter mobility

Matthew Clark

The content of this poster explores the role of surveillance and control over access in pacifying the northern frontier zone of Roman Britain, supported by new GIS spatial analysis data. The static

linear features and fortifications of the Roman limes systems can appear symptomatic of a shift towards a more passive, defensive and cautious approach to military engagement. However, the presence of northern gateways in the milecastles of Hadrian's Wall and wallimbedded forts suggests that the Roman military had not given up control over the lands beyond the frontier. Visibility and mobility studies on the frontiers, conducted with digital landscape archaeology methods, allow for a new spatial perspective to shed light on the exertion of Roman power beyond the linear boundaries. My data focuses on modelling the viewsheds of Roman frontier towers and local mobility to compare locations of Roman visual control with the position of potential movement corridors. Roman control over these routeways would have prevented the development of unwanted regional networks and allowed Roman troops to perform rapid strikes, patrols and shows of force. The purpose of my research is to highlight how the towers and forts of the Roman limes are better understood as tools to securely extend the reach and influence of the Roman military to pacify contested lands. Instead of being passive defences, the frontier systems used targeted surveillance to actively control movement and access to space and exert Roman authority. The pressure of constant surveillance on daily life and the threat of military force on any hints of anti-Roman sentiment solidified Roman control throughout the frontier zone.

Hermes-Thot in Lower Pannonia

Ozren Domiter

This paper aims to present known figurines dedicated to this syncretistic deity along the Danube stretch of Lower Pannonia. Even though Mercury is among the most popular deities along the Pannonian Limes and its hinterland, a fusion with Egyptian Thot in Lower Pannonia is quite seldom and presented almost exclusively on metal figurines. This paper tends to explain reasons beyond this low incidence and practical function of those figurines while offering more accurate dating frame.

A mirror into the past: popularizing Limes through modern art and photography

Andrej Kapcar, Silvia Novacikova

Limes undoubtedly belongs to the most popular research subjects among scholars throughout the world. While on one hand Limes is enjoying a lot of academic interest, on the other, many native citizens often don't even know about its existence and importance in their own country. Our project aims to bring information about Limes to the population through aesthetical means, which in our opinion, is often the entrance gate to the subsequent search for more factual information. With the assistance of art photography, we are visiting the most known Limes points, as well as more

obscured, hidden places connected to Limes, in an attempt to create a visual narrative, which will be intriguing and captivating even without the initial textual introduction. Building on an international collaboration, our current aim is the aesthetic mapping of several sites in Slovakia, Austria, and Hungary, to introduce this cultural heritage from a different perspective. Trying to avoid the usual technical photography and bring our project closer to the realm of art, our visual output is more about the capturing of the emotional resonance connected with said sites, presenting them as a captivating place worthy of visit and inquire more about. In our poster we'd like to present the current results of our work, as well as the ideas it was built upon.

Das LANDGRABEN-Projekt: Man-made river landscape - Roman interventions in the water system of southern Hesse Henrik Leif Schäfer

Elena Appel, Thomas Becker

The River Landgraben in southern Hesse (Germany), which runs from the Odenwald through the "Ried" (reed) up to the River Rhine south of Mainz, was long considered as an artificial watercourse which dates back to the early modern period. In recent years, however, there has been increasing evidence that several Roman sites are directly linked to the River Landgraben. Investigating this connection and the time of building is the task of the LandGraben project, funded by the German Research Foundation (Deutsche Forschungsgesellschaft), which is carried out by the Darmstadt branch of the HessenArchäologie (Part of the Hessian State Office for Monuments and Sites), by the Johannes Gutenberg University Mainz, the Christian-Albrechts-University Kiel and the Goethe University Frankfurt. A wide range of archaeological, geoarchaeological and geophysical methods are used to search for the Roman stream and to clarify its role for the different Roman sites. Of particular importance are the auxiliary fort and vicus of Groß-Gerau "Auf Esch", which are surrounded by the River Landgraben to the south and west. Here it follows the course of an oxbow lake from the Paleo-Neckar, before heading straight west towards the River Rhine across the Lower Terrace. Furthermore an area located southeast of Groß-Gerau-Wallerstädten is in focus, where, in addition to several military camps from various phases of the first century, extensive anthropogenic water interventions can be proven. Lastly, the Trebur-Astheim site also shows strong interference with the course of the water during the Roman period. An early camp dated to the Augustan-Tiberian period is clearly cut through by the river Landgraben, with the southwestern edge of the camp being completely washed away, while in the same area a burgus built under Emperor Valentinian was constructed directly exposed to the river. The project aims to prove the Roman origin of the Landgraben and how it continues to shape the surrounding landscape until today.

Was there a Roman Frontier in the Indian Ocean?

Bridget Buxton, Caesar Bita, Alexandra Ratzlaff

When Gaius Caesar set out on his ill-fated campaign to the East at the end of the first century CE, he was acclaimed in verse as the conqueror who would finally confirm that Rome was bounded by Ocean on all sides (Antipater of Thessalonica 46). It was not just a poetic fantasy: Augustus claimed global imperium extending to Ocean in the Res Gestae, and whatever image of the known world appeared on the Augustan Porticus Vipsania presumably was not viewed as a contradiction. Rome's oceanic frontiers arose out of an ideological framework for imperium that stressed access (through roads or temporary penetration) and appropriation (through networks of trade), anchored to terrestrial waypoints marked by symbols of Roman presence (altars, temples, forts, and towns). This vision of Empire is articulated in Res Gestae 26-31, building upon Julius Caesar's claim that a trackless region (e.g. Germania) could be considered conquered if penetrated to an extent adequate to satisfy Roman "honor and necessity" (B Gall. 4.19.4). The Indian Ocean was a similar trackless geography where projections of Roman dominance were likewise more aspirational than physical, but the Peutinger map's depiction of a Temple of Augustus on India's Malabar coast indicates what the physical might look like at key waypoints on the periphery. Despite the literary evidence for a Roman metropolis at Rhapta in Anzania, the Peutinger map seemingly preserves no equivalent icon of Roman presence along the central East African coast. So was there a Roman 'frontier' at Rhapta, and how did the oceanic expanse beyond figure into their global imperium? This study seeks to reconcile the ideological framework of Rome's ocean-bound vision of empire with the limits of a physical maritime frontier illustrated by new archaeological evidence from the sub-equatorial regions of the Indian Ocean.

Provincial coin finds in Novae (Bulgaria)

Renata Ciolek

Finds of provincial coins in Novae are an extremely important and, above all, characteristic element of monetary circulation in the Moesia Inferior province. Each Roman province is characterized by its set of coins of different provenance, depending on their location in relation to the central mint in Rome. They are a kind of "brand" of the province. The poster will present the most interesting and unusual finds of provincial coins from excavations conducted by the Center for Research on the Antiquities of Southeastern Europe at the University of Warsaw.

Cantabrian Wars in Palencia (Castilla y León, Spain). New contributions to the knowledge of the Cantabrian war

Esperanza Martín-Hernández, Antxoka Martínez-Velasco, Kepa García-Martínez

The revision of the series of orthophotos and Lidar data is making possible to complete the catalogue of Roman field camps in the north of the province of Palencia, in what was the territory of Cantabri in the Historic period. Three new camps have now been added: Los Terreros (Foldada), Los Cascajos and La Espina (Salinas de Pisuerga).

All three are good examples of the patterns of Roman castrametation adapted to mountain warfare. In all cases, priority was given to the choice of sites on high ground or on broad, clear summits in the surrounding area. However, such sites are irregular, which necessitated adaptations in the layout of the camps. In all cases, however, there is a common pattern, a common thread, which reflects the existence of basic principles, a manual, when it comes to fortifying a site. Wherever possible, a rectangular plan design is chosen, but if the terrain requires it, it is modified. In any case, the shallow defensive system based on the agger built with materials from the site itself, the preference for straight lines in the layout and the presence of accesses at defensible points, preferably placed in clavicle, is maintained.

These camps, together with those already known in the area, are also of interest as they allow us to track the tactical movements of each military unit on campaign, as well as the volume of troops moving on each occasion, the alternative routes of communication and possible objectives. All this information, in turn, allows us to trace the strategy employed by the Roman army to subdue the last independent peoples of Hispania.

Stone Projectiles from Roman Fort Apsaros, Georgia

Oskar Kubrak, Lasha Aslanishvili

Stone balls are commonly found on archaeological sites associated with the Roman army. They present a great variety of sizes and were used for siege engines, as a projectiles for a slingshots and large metal arrowheads.

During the archaeological research in Roman fort Apsaros were discovered 115 stone balls of various size and weight. This collection has been analyzed and organized according to the diameter and weight. The results were compared with the published research over stone balls from other places where the Roman army stationed. The stone balls from Apsaros were compared to the information about the ballista and their projectiles from the work of Vitruvius (Vit. De Arch. X,11.3).

All stone balls found in Apsaros have been arranged in the chart. The coordinate system shows the relation between the mass and diameter for the individual bullets. By using this method we found

the better distribution of the collection of the stone balls into five groups, as opposed to three groups as previously thought. In all cases, where it was possible, it also has been proven place where projectiles in the fortress were found. Localization of findings was compared with probably localization of the Roman fort Apsaros from the first centuries of our era.

The research of stone balls from Roman fort Apsaros was able thanks to cooperation of the Polish and Georgians archaeologists during Gonio-Apsaros expedition. Joint expedition is conducting by the Institute of Archaeology University of Warsaw, the Polish Center of Mediterranean Archaeology of University of Warsaw and the Cultural Heritage Preservation Agency of Adjara.

Underwater surveys of the Limes Maritimus Scythicus project: an overview

Karolina Trusz

Since 2017, underwater surveys have been conducted off the Black Sea coast, from the Danube Delta to Lake Razim. The poster will comprise the state of the research and assess archaeological remains gathered during the underwater expeditions at the Danube bed in its delta, around the ancient city of Argamum and the island of Biserciuca in the nearby Razim-Sinoe lagoon, with special focus on selected sites on the Romanian Black Sea coast.

How the wooden barracks of the 1st cohort of the legio VIII Augusta at Novae were built

Piotr Dyczek

During excavations conducted in Novae by the Center for Research on the Antiquities of South-eastern Europe of the University of Warsaw, in the area east of the principia the remains of legionary wooden and earth buildings. was discovered All archaeological data indicate that these are the remains of double barracks of the 1st cohort of the legio VIII Augusta. The structures were made of wood and earth. The preserved remains of these buildings allow the reconstruction of the plan of the barracks and the centurions house. It is also possible to determine the materials from which they were built, the method of construction, interior furnishing, and finally their demolition by the legio I Italica that arrived in Novae later.

Lucius Artorius Castus and the British troops

Željko Miletić, Silvia Bekavac

The promotional path of Lucius Artorius Castus, who ended his career with several ad hoc assigned and unusual military positions during the time of Marcus Aurelius, is fixed. They were recon-

structed under the names *dux legionariarum et auxiliorum Britannicorum adversus Armenios* and *procurator centenarius provinciae Liburniae*. The position of *praefectus (castrorum) legionis* that he previously held in Britain and the command of the legionary vexillation and auxiliary troops, *cohortes* and *alae Brittonum* and *Britannica* in the Parthian War could have been the substrate for the character of King Arthur.

End of Second Dacian War and post of *praefectus vehiculorum*

Silvia Bekavac, Željko Miletić

Trajan emerges victorious from the second Dacian War, in which he acquired enormous spoils of war. The confidential job of transporting and shipping thousands of slaves and tons of precious metals was entrusted by the emperor to Quintus Marcius Turbo in the position of *praefectus vehiculorum* which has since been fixed in the *cursus honorum* of the knights.

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The early Roman cemetery of Potzneusiedl (Burgenland, AT) – inhumations of autochthonous inhabitants in the hinterland of the later Danube border

Lucia Clara Formato

The necropolis of Potzneusiedl (Austria) was discovered about 15 km south of Carnuntum and thus not far from the Danube. It is the only example of an early Roman inhumation group in this region. In these graves, strong local, Late Iron Age influences can be detected. For this reason, these graves are the only link to the immediate pre-Roman period that can be found in the archaeological record of this area. The first graves were laid out from the Tiberian period onwards, i.e. directly in a period in which the first Roman military actions in this area are detectable in the archaeological evidence. At the same time, this was before the provincialisation of Pannonia and the establishment of a stable Roman imperial border.

This cemetery was evaluated within the framework of interdisciplinary research both archaeologically and bioarchaeologically (anthropology, archaeozoology, archaeobotany, ancient-DNA). The graves of the buried women contain, among other things, fibulae and jewellery that are typical of the local “Noric-Pannonian costume”. Some grave goods as well as the archaeozoological remains indicate an exchange with southern areas such as the Magdalensberg and Upper Italy. The examination of the textile remains also proves that this cemetery is from a time of change from pre-roman to roman handicraft traditions.

Clear processes of adaptation to Roman burial customs only become apparent at this site in the 2nd century AD. At this time, the tradition of cremation burial was applied.

Contacts between the Roman Empire and the Kingdom of Meroe - only the exchange of goods or also the transfer of technological ideas. Laboratory tests of ceramics from the excavations of the Archaeological Museum in Gdańsk in Sudan.

Elżbieta Kołosowska, Małgorzata Daszkiewicz

Sudanese Nubia was never a part of the Roman Empire. However, when Egypt became a Roman province, it fell under the influence of the Roman Empire.

The historian and geographer, Strabon, mentions military clashes between “Ethiopians” and Romans in the first century BC, which ended in a peace treaty between the Meroitic Kingdom and the Roman Empire at the turn of the 21 and 20 BC. Quite harmonious coexistence between the two countries enabled the development of trade.

Did contacts between the Kingdom of Meroe and Rome were only limited to the trade, goods exchange or did they also engage the export of Roman technologies? The archaeometric examinations of the ceramics found during the excavation works carried out by the Archaeological Museum in

Gdańsk are a partial attempt to answer those questions. The excavations were conducted in the area of the 4th cataract on the Nile and in the temple complex in Awlib, located near the capital of the Kingdom – Meroe.

Laboratory analyses were conducted to verify the hypothesis whether Roman technology innovations had an impact on the changes in the ceramics technology recorded in the Meroitic and post-Meroitic periods within the territory of Nubia. They included: MGR-analysis, thin-sections studies in polarizing microscope an scanning electron microscope, chemical analysis by WD- XRF and estimations of physical ceramic properties (open porosity, water absorption and apparent density).

The Presence of Rome in Muntenia. Archaeological Evidence of the Interaction between Romans and Barbarians on the Teleajen Valley

Bogdan Ciupercă, Cătălin Dîscă, Tudor Hila

At the beginning of the 2nd century, following the Dacian wars, the emperor Trajan conquers and annexes Dacia, including today's territory of Muntenia, generally bounded to the north by the Carpathian Mountains, to the south by the Danube River, to the west by the Olt River, and to the east by the Siret River. Included in the empire as part of the province of Moesia, this acquisition will not be a lasting one. Not even two decades later, at the beginning of Hadrian's reign, this was abandoned. The present presentation aims to highlight the most important discoveries made in recent years on the corridor of Teleajen Valley. An important route that ensured the passage from Central Muntenia over the Carpathians since prehistoric times, this corridor was also used by the Romans. During the wars for the conquest of Dacia, the route was probably used by one of the columns that advanced from Moesia to the Intra-Carpathian area. Later, the corridor was used to ensure the connection between the new province and the south of the Danube, as shown by the Târgșoru Vechi, Mălăiești and Drajna de Sus forts.

In recent years, a series of important discoveries have been made on the corridor of Teleajen Valley, both through archaeological investigations and stray finds. Among the discoveries are imported products typical to the Roman world, pieces of military equipment, but also new marching camps, previously unknown in field literature. These discoveries complete the overall picture of Muntenia as part of the Empire and bring new insights into the relations between Barbaricum and the Roman world.

On the Border between Political Agreements and Military Actions. Roman Policies in Muntenia Reflected in Archaeological Discoveries

Cătălin Dîscă, Tudor Hila, Bogdan Ciupercă

Largely delineated by the Carpathian Mountains towards the north, the Danube River towards the south, the Olt River towards the west and the Siret towards the east, the territory known today as Muntenia had a long and fluctuating relationship with the Roman Empire.

Already from the 1st century BC, Roman military actions north of the Danube and population transfers to the south of the river are reported. During the 1st century AD the relations between the Romans and the populations north of the Danube fluctuated between peace and military conflicts. In the beginning of the 2nd century, following the Dacian wars, the emperor Trajan conquered and annexed this territory. Included in the empire as part of the province of Moesia, this acquisition will not be a lasting one. Not even two decades later, at the beginning of Hadrian's reign, this territory was abandoned. During the following centuries, however, this territory will periodically return to the attention of the Roman authorities, the relations oscillating, as in the first century, from political agreements to energetic military interventions. However, these oscillations are difficult to specify in detail only on the basis of literary sources, since they are rather scarcely attested. In this context, the archaeological discoveries made in this area during the last century and at the beginning of this century compensated to a certain extent these shortcomings of the ancient texts.

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Belt-sets with ring-shaped buckles from Viminacium (Serbia)

Saša Redžić

Sets containing ring-shaped buckles, as well as with buttons with calotte-shaped heads were named "Ringschnallengulum". Buckles from Viminacium were mostly made of a copper alloy, but there are specimens made of silver or ivory. Since such types of belt-sets and their parts were most frequently discovered along the Roman Limes, we can conclude that their main users were soldiers. Direct proof of that are the numerous images on tombstones. The fact that they were not worn exclusively by soldiers is indicated with finds of such belt-sets in graves of children and women in the cemeteries of Viminacium. In accordance with specimens from the graves found alongside the coins, this type of belt set can be dated from the last third of the 2nd century to the end of the second third of the 3rd century. The great frequency of finds of ring-shaped buckles, buttons, strap

terminals with a ring in the middle and fittings that are usually part of the belt sets, in the territory of Viminacium, perhaps indicates that there was a production centre in this area.

Ibida – a fortified system in the province of Scythia

Mihaela Iacob, Dorel Paraschiv

The construction of the defensive system from Ibida-Slava Rusă built at the beginning of the Dominant period - a system that includes the great fortress of Ibida (an area of 24 ha), the annexed fortification – (3.5 ha) and the observation tower (on the Harada hill) - show the importance given to this territory located on the imperial road that connected the fortress of Noviodunum with Constantinople and at the intersection of all the roads that connected the centers on the maritime limes with those on the limes- the Danube. Archaeological data (ceramics, monetary circulation, buildings, the streets and bridges) show us a strong city with a prosperous economic life and a military and administrative role. The city has experienced critical moments after the time of Valens, when, in the battles with the Goths, the emperor himself was killed (year 378): a treasure is buried, the traces of strong fires are identified stratigraphically in Ibida.

The 5th century, with invasions of some populations attracted by the mirage of Constantinople, turns out to be a relatively prosperous period for Ibida. Located in the shelter of a fortified lines that doubled (from Enisala to Peceneaga to the Danube) the Danube limes, Ibida now knows a period of some peace, so that the currency enters the local market without interruption, erect buildings – e.g. the auditorium, commercial exchanges are carried out, basilicas and funerary monuments are built, etc. The coming to power of Anastasius will also prepare a period of unprecedented development in Scythia, in the time of Justinianus: the fortification is rebuilt from the ground up. The increasingly frequent attacks of the Avars and then the Avar-Slavs during the time of Mauricius Tiberius and the emperors who succeeded him put the fortress in difficulty. The constructive effort during the time of Mauricius Tiberius, in the area of Curtina P would be the last... the fortress is gradually abandoned, and the urban life ends at the beginning of the 7th century.

The end of the pottery production in Viminacium? Ceramic material from castrum

Angelina Raičković Savić, Ana Mitić

In the territory of the military camp in Viminacium, archaeological research has been carried out since the 19th century, intensifying in recent years. Obtained results contributed to the establishing of the chronology of the construction of the camp, as well as the interpretation of the socio-military-political situation in this part of the Limes. During 2018, systematic excavations were carried

out in the area of the western rampart of the camp, resulting in the discovery of the western gate of the camp, as well as the defensive trench and several edifices. These buildings were constructed in the area of the trench, which lost its defensive function in the Late Roman period. The existence of kilns in the immediate vicinity and inside one of the buildings, as well as the archaeological material found in one of the rooms, could suggest an economic activity. Many ceramic vessels with specific texture and different shapes, as well as the presence of the ceramic lamps and weights, could imply pottery production related activities in the Late Roman period in Viminacium.

Jozef Mertens, pioneer in late Roman military archaeology in Belgium
Sofie Vanhoutte

Jozef Remi Mertens (1921-2007) was a pioneer in late Roman archaeology in Belgium. While he led excavations at over 130 Belgian sites of different periods and organised important excavations in Italy, one of his greatest achievements is the archaeological discovery of the Roman coastal fort at Oudenburg and his excavations at the related late Roman graveyards. He attended the Limes Congress since 1959 where he proved to be one of the first great interpreters of the late Roman period in Belgium.

Tadeusz Sarnowski – archaeologist, epigraphist, historian and more (film)
Piotr Zakrzewski, Anna Mech, Tomasz Dziurdzik

Professor Tadeusz Sarnowski (1945-2019) was one of the most notable Polish scholars of the Roman limes archaeology. For decades, he directed the excavation of the legionary fortress and late antique town at Novae, but he also carried out extensive investigations in area of Chersonesus Tauricus in Crimea. Yet, his contribution to the research on Roman frontiers was far more extensive and included studies on the history and epigraphy of the Lower Danubian and Northern African provinces, and the Black Sea area. Although very principled and traditional in many respects, he was also a great proponent of advancements in methodology and documentation techniques as well as other innovations. And perhaps most importantly, he mentored several generations of students, many of whom now specialize in the limes archaeology.



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