Institute of Archaeology of the Czech Academy of Sciences, Brno
in cooperation with
Department of Archaeology and Museology and the Department of Classical Studies of the Faculty of Arts, Masaryk University

ROMEC XXI BRNO 2025

BODY ARMOUR AND OTHER DEFENSIVE EQUIPMENT

21st Roman Military Equipment Conference
Brno, 2–6 June 2025

BOOK OF ABSTRACTS

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Balázs Komoróczy, Martijn Wijnhoven (eds.)

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The conference and the publication is part of the project „Warfare as a catalyst of innovation. The evolution of Roman armour during the Middle Roman period through the lens of the Marcomannic Wars“ of the Czech Science Foundation (grant No. GA24-11397S) and the project „Material luxury as an expression of social status in protohistoric cultures of Central Europe“ carried out within the Research Programme „The Power of Objects: Materiality between Past and Future“ of the programme framework Strategy AV21.

Institute of Archaeology Czech Acad Sci, Brno

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DEDICATED TO THE MEMORY OF DR. JON COULSTON

INTRODUCTION TO THE ROMAN MILITARY EQUIPMENT CONFERENCE XXI

Warfare was central to the history of ancient Rome, and the outcomes of its many conflicts were deeply shaped by advances in military technology and equipment. The study of Roman military equipment has a long tradition, which goes back at least to the large-scale excavations of military sites in the 19th and 20th centuries along the Roman frontier with the discovery of many Roman militaria. The creation of Roman Frontier Studies in 1949 and its Limes congress solidified the awareness of the impact of the Roman army on the Empire and its frontier zone. However, it was probably H.R. Robinson's 1975 book, *The Armour of Imperial Rome*, that laid the true foundations for Roman military equipment studies by offering a comprehensive study of Roman helmets and chapters on different types of body armour.

In this tradition, the Roman Military Equipment Conference (RoMEC) was founded in 1983. Since then, it has grown into the leading international forum for the study of Roman military equipment. From the outset, RoMEC has welcomed a broad range of contributors, including academic researchers, archaeologists, re-enactors, and independent scholars. Its chronological and geographical scope is likewise deliberately expansive, spanning from the 8th century BC to the Justinian period and covering not only the Roman Empire but also the neighbouring cultures that interacted with it. Over the decades, RoMEC has generated a substantial body of scholarship published in monographs and journals, including the *Journal of Roman Military Equipment Studies*.

The twenty-first edition of the Roman Military Equipment Conference, held in Brno, Czech Republic, from 2 to 6 July 2025, focuses on Roman body armour and other forms of defensive equipment. While our understanding of these objects has grown considerably in recent decades, much remains to be explored. This year's conference highlights the continued potential of defensive equipment to yield new insights not only into Roman warfare but also into broader social, economic, and technological contexts. The breadth and depth of current approaches to this material are reflected in the contributions gathered in this book of abstracts.

RoMEC XXI is dedicated to the memory of Jon Coulston, a pillar of Roman military equipment studies, who sadly passed away earlier in 2024. Coulston's research greatly advanced our understanding of the Roman army and its material culture. His contributions have been instrumental in shaping contemporary approaches to Roman military equipment, and his body of work continues to inspire both scholars and practitioners alike.

The Institute of Archaeology of the Czech Academy of Sciences in Brno is proud to host RoMEC XXI. The Institute has a long-standing tradition in researching the Roman army and its influence beyond the Empire's borders. A key focus of its work has been the long-term investigation of Roman military presence in the territory of the Marcomanni. This includes research on so-called temporary camps, the central fortress at Hradisko near Mušov, and archaeological evidence of how Roman occupation shaped the living conditions and material culture of the local Germanic population. This line of research remains a cornerstone of the Institute's scientific mission.

Finds from southern Moravia and surrounding areas north of the Danube frontier are crucial for understanding the Marcomannic Wars. They represent one of the richest sources of information on Roman military equipment from the second half of the 2nd century AD. Our current research projects have played a key role in making it possible to host this prestigious conference. Notably, these include the Czech Science Foundation–funded project Warfare as a Catalyst of Innovation: The Development of Roman Armour in the Middle Roman Period through the Lens of the Marcomannic Wars, and the project Material Luxury as an Expression of Social Status in Protohistoric Cultures of Central Europe, part of the AV21 research programme 'The Power of Objects: Materiality between Past and Future'.

As we gather for RoMEC XXI, the contributions presented in this book of abstracts reflect the vibrant and evolving field of Roman military equipment studies. The conference provides a unique opportunity to deepen our understanding of Roman warfare, defensive technologies, and the broader implications of military material culture. Through these discussions, we honour the legacy of past scholars and continue to push the boundaries of knowledge in this vital area of research.

Balázs Komoróczy
Martijn A. Wijnhoven

ABSTRACTS

Kristina Adler-Wölfl & Christoph Öllerer

Military equipment from a Roman mass grave in Vienna-Simmering

A Roman mass grave was discovered in Vienna-Simmering in 2024 during a construction project. At least 129 individuals were identified, all of them men, most of them over 1.7 m tall and mostly between 20 and 30 years old. The great variability of the injuries indicates acts of fighting. Findings include a Vindonissa-type dagger with a silver-inlaid scabbard, a cheek plate from a Weisenau helmet and numerous armour scales. Additionally, two lance or spearheads were found, as well as hobnails and a D-shaped buckle. The archaeological evidence is presumably connected to military conflicts with Germanic tribes at the end of the 1st century AD.

Joanne Ball

Victory and defeat on display. Images of 'defeated barbarians' on Roman military equipment

This paper explores how images of defeated 'barbarian' enemies were used on Roman military equipment, particularly helmets and cheekpieces. It considers how these figures were portrayed on the equipment, including both iconography and placement, and explores the potential symbolism behind their usage. The paper will contextualise these images both against other forms of decoration used on Roman military equipment, and with other uses of the 'defeated barbarian' motif in Roman military art. The paper also considers what message or purpose was intended by the use of this kind of imagery, and whether the intended recipients were the enemies of Rome or the Romans themselves.

Mike Bishop

Everything you thought you knew about lorica segmentata may be wrong

Our understanding of lorica segmentata has slowly evolved with every new discovery of finds, from Carnuntum to Newstead, and from Corbridge to Kalkriese, but have methodologies skewed how we perceive the development of this form of armour? This paper seeks to explore an alternative interpretation of the evolution of lorica segmentata. At the same time, it goes on to question more broadly our understanding of the development of Roman military equipment and seeks to provide new light on the production and distribution of Roman arms and armour.

Mike Bishop

Jonathan Charles Nelson Coulston: militarily equipped

This presentation will be dedicated to the life and contributions of esteemed colleague and friend Jon Coulston.

Ivan Bogdanović

The plumbatae from Viminacium

Viminacium was an important military base and the provincial capital on the Danube Limes. This article examines three plumbatae mamillatae discovered in the wider area of the legionary fortress, all of which were found within the Late Roman features. In addition to Viminacium, this particular throwing weapon has also been found in considerable numbers in Serbia, confirming Vegetius' observation about its use by Roman troops in Illyricum. These missiles had flight similar to arrows, allowing the infantrymen, who carried five of them behind their shields, to use them as projectiles on the battlefield.

Eckhard Deschler-Erb

Augsburg-Oberhausen Neues Material zu einem altbekannten Militärplatz

Der spätaugusteische Militärplatz von Augsburg-Oberhausen ist vor allem durch die Grabungen von 1913 und sein umfangreiches Fundmaterial mit zahlreichen Militaria bekannt. Ab 2020 erbrachten neue Grabungen zahlreiche weitere militärische Ausrüstung, die im Rahmen des Vortrags vorgestellt werden soll.

Maarten Dolmans

Roman military equipment from the Netherlands

Many Roman militaria found in the Netherlands have only been published in Dutch or are still awaiting publication in local and regional depots. They are therefore difficult to access for (international) researchers and mostly unknown to the general public. The presenter is working on a publication with a catalogue of approximately 1,000 of the most important Roman militaria, including several hundred items that have never been published (such as helmets/helmet parts, swords, daggers, body armour and others). Preliminary results indicate that the finds from the Netherlands, in their diversity and richness, complement the broad picture of the finds from surrounding countries. In the presentation, several previously unknown Dutch finds are compared with finds from other countries.

Petra Dragonidesová

The Germanic warrior social class in the lower reaches of the Morava River region

The Barbaricum area, located in the vicinity of the lower reaches of the Morava River, was situated in the immediate forefield of the Roman frontier. This region was a significant crossroads for long-distance trade routes, including the so-called Amber Road, which greatly influenced the development and conditions in the area. From the outset of Roman involvement, the political, military, and economic interests of the Empire were strongly evident within this region, frequently resulting in various forms of conflict, including military engagements involving the local warrior class. The composition, equipment, and activities of these warriors can be partially reconstructed through analysis of grave goods found in local burial sites.

Eduard Droberjar, Ján Rajtár

Finds of Roman armour among the Elbe Germanic peoples in the 1st–2nd centuries

The paper examines the spread and significance of different types of Roman armour in the territory of the Elbe Germanic region (Germany, the Czech Republic, Austria and Slovakia) in the Early Roman period. Particular attention is given to two key historical events in which the Elbe Germanic peoples (the Suebi, especially the Marcomanni and the Quadi) played an important role, i.e. the 'Maroboduus Empire' during the reign of Emperor Augustus and the Marcomannic Wars during the reign of Marcus Aurelius.

Mihajlo N. Džamtovski, Stefan D. Novaković

A newly discovered sepulchral monument of a soldier with a convivium scene from Kupinovo, Serbia (Pannonia Inferior)

In 2024, during a visit to the medieval church of St Luke in Kupinovo, Serbia, a Roman-period sepulchral monument with a convivium (banquet) scene was identified within the apse wall. While the spolia at Kupinovo have been noted for over a century, this particular monument had never been studied. The limestone monument, featuring a fragmented convivium scene, includes a reclining male figure on a klinē (couch) and a bust of a woman, interpreted as his wife, whom he embraces. In front of the klinē, a mensa tripes (tripod table) with offerings is depicted, slightly shifted to the right side of the scene. Unique iconographic elements, such as the depiction of armour in the background, suggest a military connection and set it apart within Roman sepulchral art, making it unparalleled in both Pannonian and broader Roman contexts. The authors explored iconographic parallels in nearby provinces and reviewed local necropoli to infer its origin, considering its placement within the ager of Bassianae. Although it is possible that the monument originated from a necropolis linked to Bassianae, it could have also come from the nearby municipium Spodent. Despite its poor craftsmanship, the monument reflects multiregional artistic influences, blending motifs from the Greek-dominated areas of the south-eastern Balkans with local Pannonian portraiture traditions.

Mihajlo N. Džamtovski, John Whitehouse

The Roman imperial weapons factory in Sirmium

The Notitia Dignitatum is a Late Roman document listing civil and military posts in both the Eastern and Western Empires. Though its exact dating is uncertain, it was likely compiled around 395 AD and updated until about 408 AD. It includes a list ofarsenals (fabricae) under the Master of Offices, including one for shields, saddles, and weapons at Sirmium (modern Sremska Mitrovica, Serbia) in the Diocese of Illyricum. Weapons factory required iron, wood, and leather, yet Sirmium was not previously known as a metallurgical centre. Iron ore deposits in present-day Bosnia and Herzegovina were exploited in antiquity, with Siscia (modern Sisak, Croatia) serving as the primary hub for processing and transport. This raises the question: why was Sirmium chosen as the site of an imperial weapons factory instead of Siscia, which was closer to the iron sources and had existing infrastructure for production and distribution? Possible explanations include state control of production, centralisation of manufacture, a decline in Siscia's output, or security concerns. Additionally, Sirmium's status as a major imperial city may have influenced the decision. However, the most plausible explanation is that the factory at Sirmium was intended to supplement, rather than replace, private production to support Diocletian's military expansion. This redundancy in manufacturing increased reliability in supply, aligning with Diocletian's approach as an incremental reformer rather than a radical innovator. By establishing a state-run arsenal in a politically significant centre, the imperial administration likely sought to secure weapon production while maintaining flexibility in military logistics.

Mariana Egri

The so-called Vinerea 'hoard' (Alba county, Romania). Contextual, chronological and functional considerations

The so-called Vinerea 'hoard' was discovered in 2015 by a detectorist on the higher Pochia saddle connecting the Cugir and Sălișstea valleys, approximately 5 km north-east of the Dacian fortress at Cugir and around 7 km south-east of the Roman temporary fort at Vinerea, in south-western Transylvania. It consists of 60 different artefacts, many of them complete though badly damaged – offensive and defensive military equipment, tools, surgical instruments, a fragmentary bronze vessel, iron fittings of a large wooden chest, tent pegs, a small lead ingot, and two heavily worn coins. Among the military equipment are four iron helmets (three of the Weisenau type and one of the Weiler type), one complete bronze manica and one almost complete lorica segmentata of the Corbridge B type made of iron with bronze fittings and some leather straps still preserved. A long cavalry sword with some scabbard and hilt fragments, one short dagger with a slim blade, one spearhead and some siege projectiles, all made of iron, were also part of the assemblage. Despite being initially presented as a hoard, the finds were actually found scattered over a larger area that was never ploughed, so their positions were most likely not disturbed significantly since ancient times. That means the assemblage is not a ritual or commemorative offering, which would have been deposited in a single location, or a war booty, which would have been brought to a secure place, for example in the nearby Dacian fortress. The functional analysis indicates that the assemblage combines military equipment specific to the legionaries with tools and instruments that are typical for a campaigning unit. The typo-chronological analysis of the assemblage indicates that it can be dated either to the last stage of the Dacian rule in Transylvania or the beginning of the Roman province in the early 2nd century AD. Besides the detailed typo-chronological, functional and contextual analysis of the assemblage, the paper is also going to discuss its relevance for the wider scientific debate regarding the tactics employed by the Roman army and the local chieftains, and their aftermath in the mountainous area of south-western Transylvania, in the context of armed confrontations that marked the end of the Dacian rule and the beginning of the Roman one.

Ferenc Fazekas

Alte und neue Verteidigunswaffen aus Lussonium (Paks-Dunakömlöd, W-Ungarn)

Das römische Kastell Lussonium (Paks-Dunakömlöd, Westungarn) befindet sich im Pannonia inferior, im mittleren Abschnitt der ripa Pannonica. Das Auxiliarkastell war von der Mitte des 1. Jahrhunderts bis zum Beginn des 5. Jahrhunderts n. Chr. in Gebrauch. Zwischen 1987 und 2011 und 2021–2023 wurden an dem Fundplatz systematische Ausgrabungen durchgeführt. Die grossflächigen archäologischen Forschungen haben nicht nur der Grundplan, die innere Struktur, weiters die Bauphasen der militärischen Anlage geklärt, sondern zahlreiche Kleinfunde ans Licht gebracht, unter den diversen Kleinfunden sind auch charakteristische Teile der militärischen Ausrüstung und Bewaffnung des römischen Heeres aufzufinden. Der Vortrag präsentiert militaria aus Lussonium und deren Umgebung mit Bezug auf die Verteidigungswaffen. Das reiche Material (Kammhelme, Körperpanzerfragmente und Schildbuckeln) werden mittels antiquarischer Analyse untersucht. Das vorgeführte Material des Kastells Lussonium wird auch unter den Militaria-Funden der ripa Pannonica kontextualisiert.

Alexandru Flutur

Iron equipment in the Trajanic fortress at Berzobis

The few archaeological excavations in the fortress of Legio IIII Flavia Felix were carried out in small areas. The location, at the end of the18th century, of the current village of Berzovia (Caraș-Severin County, Romania) led to significant destruction of the ancient vestiges. A special feature of this legionary site is its dating to the first two decades of the second century AD. From the headquarters building, an iron helmet and other small pieces of weaponry or equipment were recovered. A gladius was found near the principia. In 2023, the latus praetorii sinistrum, an area where the camp stables most likely functioned, was investigated. Here, in a filling layer, several pieces of iron armament were found: a spearhead (contus), pilum points or arrows, etc. Also discovered were a blacksmith's hammer and a trowel. In recent years, we have concluded that Berzobis was home to a large centre for the smelting of iron ore brought from the neighbouring mountains.

Hannes Flück, Daniel Wacker

They nailed it! Challenging the dating patterns of Roman hobnails from the 1st century BC

Roman hobnails, in particular their diameter and the patterns on their backside, have become somewhat famous in the last three decades, despite their small size. Starting with finds from the battlefield at Alesia (France), the suggestion developed that these features were chronologically relevant and could therefore be used to date the numerous (newly) discovered Late Republican and Augustan sites. However, the analyses to date have mostly been based on statistically non-robust data. The growing number of available complexes with several hundred hobnails makes it possible to place the hypothesis on a reliable basis and re-evaluate it.

Čeněk Fouček, Matěj Lelovič

Comparison of provincial and barbaric military knee brooches in the Central Danube region

This paper focuses on the comparison of knee brooches found in the Central Danube region, based on differences in material composition and metalworking techniques used in their production. This typological group of brooches became highly popular among soldiers during the second half of the 2nd century AD. Due to this popularity, the type became widespread in the regions along the Limes Romanus. This proximity to the empire's borders helped knee brooches gain popularity among the barbarian communities living beyond the limes. These barbarian communities began to imitate knee brooches using the materials and tools available to them. By closely examining the differences between Roman and barbarian subtypes of these brooches, we may gain a better understanding of broader cultural exchange.

Karina Grömer

Introduction into Textile Archaeology with focus on research on Roman military equipment

Textiles are only preserved under specific conditions through the millennia. In addition to specific cases such as preservation in salt, in bogs, or deserts, textile preservation in combination with metal objects (iron or bronze) is particularly important for us. Textile remains are mainly found in graves and hoards, as well as in other deposits with large metal objects. This contribution discusses the basic principles of textile archaeology—what methods are used, how even the smallest textile remains can be analysed, and what conclusions can be drawn from them. An overview is given of our current knowledge of textile culture and textile production in the Roman Empire, which is based not only on the textile remains themselves, but also on other sources, such as pictorial or written sources and textile tools. The case study of textiles discovered in connection with Roman armour will focus on the sites of Carnuntum and Dura Europos.

Monica Gui, Valentin Voișian

A cache of segmental armour from Dacia

The present paper presents an initial analysis of a cache of segmental armour originating from the site at Ulpia Traiana Sarmizegetusa, in Roman Dacia. The cache includes (fragments of) iron cuirasses and armguards, some still preserving mineralised organic remains. The archaeological context allows for a relatively narrow dating and a probable troop attribution. With very few exceptions, the armour is highly fragmentary. Nevertheless, some important preliminary observations can be made at this stage of research regarding the nature of its deposition, the composition of the hoard, the number of armour parts it contained, and their condition at the time of deposition.

Lucas Guillaud

Between form and function. Interpreting a Roman arms deposit in Lugdunum

The capital of Gallia Lugdunensis, Lugdunum, maintained close ties with the Roman army throughout the Early Empire. Recent excavations at the 'Clos de la Visitation' have revealed urban blocks occupied by troops for nearly two centuries. Among the remains was a horreum intended for weapon storage that yielded hundreds of military artefacts. An exceptional deposit from this location, dated to the Neronian rebuilding phase, offers new insights into rarely attested types of armament and invites discussion on possible ritual practices linked to the military reappropriation of public space.

Paul Güldenstein

Improvised or innovative. The Newstead lorica segmentata from Aalen

This paper summarises the latest research on a lorica segmentata find from the auxiliary fort of Aalen, garrison of the ala II Flavia pia fidelis milliaria at the Raetian Limes from around 160 AD onwards. Among its partially excavated interior structures, a mid-third-century makeshift workshop contained a deposit of numerous lorica segmentata fragments—partly enough to belong to more than one set of armour. This particular variation is notable for its decoration of fluted copper-alloy sheets covering the girth hoop closures and the shoulder guard endings. Furthermore, it features a variant hinge construction of the tripartite upper shoulder guards that to date remain unparalleled.

Peter Henrich

Bow or buckle? New research into a so-called Roman miniature weapon and into non-Roman military equipment from Roman sites

Several bronze objects have been known from Roman military contexts since the 19th century, which have been interpreted as miniature weapons in more recent research. However, there are many indications that they are (Roman?) belt buckles. In this context, it is also important to reference medieval and modern metal finds from Roman sites, which have been wrongly dated to the Roman period.

Petr Hlinka

Lorica segmentata in the Balkans. Tracing patterns of production and distribution

This paper presents preliminary results from a comprehensive comparative analysis of lorica segmentata finds from the Balkan region, which have previously been examined only separately, without a unified study bringing them together. By integrating this analysis with the principles of chaîne opératoire—tracing the production, use, and deposition of objects—the study examines how military expansion and other historical events influenced the distribution, quantity, and typological variations of lorica segmentata over time. This approach provides a deeper understanding of its spatial and chronological patterns in the Balkans and offers broader perspective on the logistics of the Roman army.

Stefanie Hoss

Buckle up!

With the first use of the belt buckle in the Republican period, the Roman hip belt had found a fastening method that would dominate the Roman Army for centuries and influence hip belt fastening beyond the borders of the Roman Empire. The belts of Roman soldiers and Germanic warriors share a long history of mutual influence, with practical elements and visual cues from both sides reflected in their design. Objects that must have originated within the Empire have been found beyond its borders, and vice versa. While these interactions have long been acknowledged for Late Antiquity, they actually began in the early 1st century AD. This paper will attempt to trace the main developments.

Owen Humphreys, Peter Bray, Kathryn Murphy, Keith Nyakubaya, Michael Marshall, Barbara Birley

Beyond brass. Copper-alloy chemistry and the Roman military in Britain

The Roman army was a major agent in the dramatic technological changes of the Roman period, particularly those involving metals. For decades, it has been recognised that the Roman military had a unique metal consumption pattern, consuming brass at a much higher level than other social groups in the Roman period. It has been theorised that this may be linked to the Roman state holding some control over the production of brass. However, this understanding is based on very limited data. The major studies of Roman military equipment have analysed under 600 objects from the whole Empire, and there is little 'civilian' data with which this can be compared. The REMADE (Roman and Early Medieval Alloys Defined, research.reading.ac.uk/remade) project is a new initiative that will explore copper-alloys across the UK in the first millennium AD. The REMADE project will create the first UK-wide chemical framework for copper alloys, by analysing over 10,000 objects in collaboration with a diverse range of organisations. To date, over 1,000 copper alloy objects associated with the Roman military have been analysed, including those from major collections at London and Vindolanda. The objects from these sites are more varied than previously suggested, demonstrating a range of technological decisions and changes over time. Comparison with several thousand 'civilian' objects re-emphasises the exceptional nature of Roman military metallurgy, whilst also revealing deep connections and the travel of objects and knowledge in both directions, bringing us closer to a holistic understanding of the flow of metals across the Roman world.

Fraser Hunter

The female face mask from Trimontium (Newstead, Scottish Borders) – a discussion

Excavation of the Roman fort of Newstead produced an assemblage of three cavalry 'parade helmets', including a bronze female face mask. These are often interpreted as depictions of Amazons, but the ornate hairstyle of this example makes this unlikely. This paper will consider the wider question of female depictions on such face masks to approach an interpretation.

Janka Istenič

Segmented and scale armour from Slovenia

Several copper alloy fragments of segmented armour (lorica segmentata) and scale armour (lorica squamata) have been discovered in Slovenia. This paper examines the dating evidence provided by the find contexts of these armour fragments and presents the results of XRF and PIXE analyses conducted to characterise the metals.

Maja Janežič, Phil Mason

Roman military camp at the Obrežje site (Slovenia). Weapons and other artefacts

Between 2001 and 2004, a Roman military camp was excavated along the River Sava near Obrežje, on the road leading from Italy via Emona and on to Siscia, a strategically significant location situated at today's border with Croatia at Bregana. Archaeological investigations revealed a 6-hectare camp (approx. 290 × 210 m) with a well-preserved double ditch on three sides and a single ditch on one side. The construction is believed to be linked to two military actions: the end of the occupation of Pannonia in 14–8 BC and the Pannonian-Dalmatian insurrection in 6–9 AD. More than 700 finds have been classified as military equipment, including Sica-type combat knives, swords, daggers, body armour, as well as horse equipment, and iron tent pegs.

Matěj Kmošek, Martijn A. Wijnhoven

Mastering metalwork. Exploring a newly discovered Roman armour decoration technique

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 (micro-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.

Jovan Koledin

Roman hoard from Sarmatian Yaziges territory

The hoard was discovered by chance near the village of Temerin, which is about 20 km north of the Danube. The site is near the right bank of the Jegrička (Yegrichka) River. All finds were found in a pile, with two breastplates folded over each other on top. No bones or ceramics were found. 472 pieces of bronze scales and two breastplates belonged to the armour. The squamae belong to the von Groller type III/Carnuntum 9. One scale is different and unique among all the scale finds. It probably belonged to the lowest row of the armour or to some special strengthening device. Eleven bronze tin fragments show traces of cutting and bending. The village of Temerin was surrounded by an antique ditch, part of the so-called Small Roman ditch, built during 1st or 2nd century AD.

Bartosz Kontny

Lack of skills or just another technique? On untypical methods of shield boss manufacture in the Barbaricum

Apart from the most popular forms of Barbarian shield bosses hammered from a single piece of iron, occasionally there were also documented much simpler techniques of manufacture. Some of these umbones were bipartite (separate cone and brim), whereas others were made of a profiled sheet of iron bent to form a conical shape (a seam is well recognisable). Their distribution shows that they appeared in different parts of Barbarian Europe, suggesting that they are unlikely to be specific to a particular cultural group. The West Balt cultural circle may be an exception to the rule.

Ana Kovačič

Militaria from Castra. New insights into Late Roman military presence in Eastern Italy

In this paper, we present a corpus of military finds from Castra, a key fortress of the Claustra Alpium Iuliarum. During excavations (2017–2022), weapons, protective equipment, horse gear and military attire were found, dating from the mid-1st to 5th century AD, with a focus on the late 3rd to 5th century AD. These finds firstly confirm a continuous military presence and secondly underline the strategic role of Castra in the defence of the eastern Italian border in the Late Roman period. Furthermore, we compare these finds with material from other Claustra sites, offering insights into Castra's role in the broader defence strategy of Late Roman Italy.

Adam Kubik

Some new data on the helmets of eastern Roman enemies of the period around the reign of Justinian I

The author aims to present and discuss the current knowledge about the helmets of the eastern enemies of Rome based on finds from the Caucasus and the Ruthenian area. Particularly in relation to the complex interactions of the Central Asian regions with Sasanian Iran. The challenges of establishing a typology for Eastern helmets and studying this type of armour in the East will be explored. This applies both to new finds, such as helmets from the Oka or Vychegda rivers, and museum objects that have yet to be properly published.

Véronique Langlet-Marzloff, Benjamin Clément, Florent Duval, Eve Paillaux

A lorica segmentata discovered in Sainte-Colombe, Le Bourg (Rhône)

The excavations carried out in 2017 in the suburbs of the Roman colony of Vienne allowed for the exploration of a food market situated beneath rental apartments, located along the Rhône. Following a violent fire that occurred at the beginning of the year 69 AD, this complex was completely destroyed, but paradoxically, the fire preserved the finds and the remains, providing a unique glimpse into this urban neighbourhood. It was within one of the apartments that a chest, stored in the reception room, was uncovered. It contained a legionary's equipment, including a complete segmented armour, which was damaged by the fire and the collapse of the building. The comprehensive conservation-restoration of this lorica segmentata, carried out by the CREAM of Vienne, was an extraordinary task in several respects. This is the first complete body armour discovered within an archaeological context during a professional excavation in France. The interventions undertaken to unfold and restore it enabled its typological analysis. This example adds to and refines the European corpus, which is mainly composed of examples from Corbridge (England) and Kalkriese (Germany). This complete item consists of 41 iron bands connected by copper-alloy elements (hinges, buttons, tie loops, rivets, spacers, etc.), with their hybrid assembly process appearing to be unprecedented. Additional technological markers, often unparalleled, also attest to the repair of this lorica: old perforations replaced by new leather strap rivets, new riveting with spacers around rosette buttons, repairs to the trilobed hinges, etc. It can therefore be estimated that it presents two distinct usage states.

Vilmos Lenár, Dávid Bartus

Bath of the soldiers, soldiers of the bath. Roman military equipment in the thermae legionis in Brigetio

The legionary fortress of Brigetio is one of the most important archaeological sites in Hungary. After 25 years of systematic excavations in the civil town, a new project was started in 2017, aiming to conduct comprehensive surveys, excavations and topographical analysis in the legionary fortress. Non-destructive methods, such as ground penetrating radar and magnetometric surveys, aerial photography and fieldwalking were used to support and supplement the conventional excavations. Although only one percent of the vast territory of the legionary fortress was excavated in the last eight years (porta praetoria, thermae legionis, parts of the principia and the scamnum tribunorum), several interesting finds have come to light, including militaria. Most of these are of course small finds (buckles, mounts, strap ends, etc.) but in the last few seasons concentrating only on the thermae, a more complex body of artefacts was collected. Among these, we can count at least two different helmets, scale armour pieces, and even a possible pugio. In this paper, the authors aim to present some of the questions and possibilities that arise from the excavation of a previously intact site of significant military importance (and presence), which was in use for four centuries.

Christoph Lindner

Well armed, richly decorated. A scale armour breastplate from the principia of the Roman legionary fortress at Bonn

During excavations in 2005 in the principia of the legionary fortress at Bonn, the remains of a wooden chest were discovered under the floor of one of the rooms. The chest contained various pieces of military equipment, including a richly decorated breastplate from a scale armour. The front of the breastplate shows both ornamental and figural decorations, framed by a multi-storey architectural motif resembling a columned façade. Remains of the scale armour are preserved on the reverse. This piece is one of a small group of metal plates decorated with relief already known from the legionary fortress of Bonn.

Maciej Marciniak

Do knives point the way? The challenge of deciphering room function through artefacts

This topic explores the interpretation of a room discovered within the Roman fort of Apsaros (Gonio, Georgia) during the Polish-Georgian Archaeological Mission's research. The issue of individual religious practices in the Roman army, especially in the context of lived ancient religion, is still being studied. While the state cult was officially permitted, numerous finds suggest that unofficial religious practices were common. The knives found in the room, made of silver-plated bronze, may indicate a religious function, possibly related to the cult of Jupiter Dolichenus.

Jost Mergen

Follow the fragments. Development and distribution of Niederbieber Type helmets

The eponymous iron helmet with copper alloy fittings was discovered in 1814 within the principia building of the Niederbieber fort at the Upper German Limes (Rhineland-Palatinate, Germany). This heavily protective infantry helmet represents the final stage in the evolution of the so-called Imperial Gallic helmet types, featuring an embossed bowl crafted from a single sheet of metal. Specimens of this type have been found along the Roman frontier and classified into different variants by researchers. Since 2019, an in-depth study of small finds and historical sources has been conducted to trace the helmet's development, distribution, and eventual replacement by other types. The findings offer new insights into this distinctive piece of Roman military equipment and its role in the defence strategies of the empire.

Christian Miks, Maarten Dolmans

Torn splendour – Analysis of a Late Roman helmet with regard to its origin and manufacture

At the centre of this study is a heavily damaged late Roman ridge helmet of the Deurne/Berkasovo type, which has been painstakingly restored over many years. Although neither the context of the find nor its location are known, both the restoration of the object and a parallel reconstruction have yielded interesting new detailed observations and considerations for the still relatively small group of Roman helmet finds of this type of construction.

Im Mittelpunkt der Betrachtungen steht ein stark zerstörter spätrömischer Kammhelm vom Typ Deurne/Berkasovo, der in jahrelanger Arbeit aufwendig restauriert wurde. Obwohl weder der Fundkontext noch der Fundort bekannt sind, ergaben sich sowohl bei der Wiederherstellung des Objekts als auch bei einem parallel dazu erstellten Nachbau interessante neue Detailbeobachtungen und Überlegungen für die bislang noch immer nicht sehr große Gruppe römischer Helmfunde dieser Konstruktionsweise.

Silvia Mustață, Monica Gui, Anca Timofan

Here, there, but where? Remarks on the production of Roman decorated armour

The production of Roman decorated armour has long been debated with no clear conclusion on how it was organised. Various interpretative models have been proposed based on repertoire and style, ranging from the existence of central workshops that distributed their products over vast areas to itinerant craftsmen and local workshops. A definitive answer is not possible at the current research stage, as no workshop has yet been discovered, and little is known about how large-scale workshops functioned. Factoring in alloy composition analyses conducted on several pieces from Roman Dacia, we aim to revisit this discussion and explore future research possibilities that could help answer some of these questions.

Lennart S. Niehues

Defensive equipment and other armoury from a 1st century cemetery in Urmitz, Rhineland-Palatinate, Germany

While the Urmitz pottery is regarded as a leading artefact in the Limes research, the Early Imperial military installations at Urmitz (including the associated civilian settlement with a cemetery), which were occupied from the late Augustan period until the Neronian/early Flavian era, have received limited researched to date. Several individuals buried with shields, spears and other weapons were found here. Armour-bearing civilians at a fort are hardly to be expected, so they might have been soldiers. The question arises as to whether weapon graves are typical for the region at this time or whether a cultural identity can possibly be recognised.

Szilamér-Péter Pánczél, Zsolt-Szabolcs Nagy, Sándor-Richárd-Zsolt Bíró

Armour fragments from the Roman military site of Călugăreni/Mikháza

The aim of this paper is the analysis of Roman scale armour fragments and related artefacts discovered during the excavations at Călugăreni/Mikháza in Mureș County, Romania. During our research, we paid special attention to the typological and functional categories, and traces of repairs andthe production process have also been identified. We also intend to examine the spatial distribution of the fragments and their possible origins.

Andreas Pangerl, Holger von Grawert

A comprehensive metallurgical study of Roman helmets

The aim of this study is to investigate the functional AE alloys used by the Roman military in the manufacture of Roman helmets. Data on helmets of the Niederbieber Type will be presented at RoMEC XXI. The analyses encompass different helmet parts such as bowls, cheekpieces, ear protectors, frontal and cross bars, rivets and studs. Furthermore, data from the analysis of earlier Weisenau Type helmet parts will be presented for comparison.

This is part of an ongoing project aimed at comprehensively analysing 20+ Roman helmets and a large number of helmet parts. The helmets span the period from the 3rd century BC to the 4th century AD, specifically of the types Montefortino/Buggenum, Mannheim/Port, Hagenau, Weisenau, Niederbieber, and Intercisa. Special focus is placed on identifying functional alloys used for parts of these helmets to match them with different functional needs, such as protection from the impact of offensive weapons. Pilot data, recently shown at the Limes XXVI congress, from an AE alloy Weisenau helmet showed a high level of optimisation of alloys for the specific purpose and respective manufacturing techniques. An elastic brass alloy optimised for forging was used in the bowl of the helmet, while the frontal cross bar was cast and hammered using a hardened brass-bronze alloy to optimize protection.

Methodology: We investigated the metal composition using portable x-RFA. The portable X- ray fluorescence analysis (pRFA or xRFA) allows for the examination of the composition of metal alloys without destruction. In addition to Roman helmets, we also investigated other Roman archaeological objects for comparison. In conclusion the growing body of evidence underlines the high level of metallurgical knowledge of Roman armourers.

Xenia Pauli Jensen

Fire, water, earth and air – news on archery equipment from Illerup Ådal, Denmark

The late Jon Coulston once remarked that Germanic archers used ‘nothing more than sticks with strings’ as bows. He was humorously acknowledging new research on the 2nd–4th century Scandinavian bog finds. Here, the oxygen deficiency has preserved a vast array of (amongst others) organic weapon parts including

thousands of arrows and over 100 longbows. Recently, new research using ZooMS analyses of the relatively few arrowheads made of bone and antler has provided surprising results, revealing which animals were used as raw materials.

Veronika Pflaum

Lamellar armours and their parts from Kranj (Carnium), Slovenia

Two nearly complete lamellar armours, dating to the second half of the 6th century, have been unearthed in 2005 in Kranj during excavation of settlement remains of the Late Antique town of Carnium (modern-day Kranj). This paper will briefly present their context, construction, reconstruction and possible interpretations. Six additional lamellae of different shapes, unrelated to the two armours, have been found at three other locations in Kranj, all as settlement finds. These will be presented within their site context and in a broader context of lamellae finds from the surrounding region and Slovenia.

Franz Pieler

The iron helmet of Grund, Lower Austria

During rescue excavations in 2013/2014 near Grund in northern Lower Austria, parts of a Germanic settlement were unearthed. The infill of one pit dwelling, dating to the first half of the 2nd century AD, contained a depot of iron objects, among them an iron helmet. The helmet has the shape of a rounded cap and features flat, yet distinctly outwardly curved ear cut-outs on both sides. Along the edge, a row of holes was punched through from the inside at regular intervals. Of the cheek guards, only the suspension hinges remain, the neck guard—if there ever was one—was cut away. In this contribution I will present the find and discuss whether it is a converted Roman helmet or a Germanic product.

Kaloyan Pramatarov

Burial complexes with defensive armament in the province of Thrace during the Principate (1st–3rd century)

In 46/48 AD, the Roman Emperor Claudius established the province of Thrace on a broad territory covering parts of present-day southern Bulgaria, northern Greece, and the European part of Turkey. After the conquest, part of the combat-ready Thracian population was organised into military subdivisions (ala Thracum and cohorts Thracum) and partially quartered in other provinces of the Empire. Besides, in the middle of the 1st century, the return of Thracian veterans, recruited at the end of the 1st century BC, to their homelands began. With the intensification of local recruitment during the reign of Emperor Hadrian (117–138 AD), military service in the auxiliary units attracted more and more Thracians who inhabited the territories of the Roman towns of Anchialo, Pautalia, Philippopolis, Augusta Trayana, and Nicopolis ad Istrum. In the first half of the 3rd century, the civil wars and the frequent barbarian incursions provoked an increase in recruited soldiers from Philippopolis, Serdica, and Pautalia town territories. The epigraphic monuments dating back to the first half of the 3rd century demonstrate the prevalent number of the Thracians in the auxiliary units. The present report overviews the defensive armament – cuirasses, helmets, and shields – discovered in an extra-urban context within the mound burials from the 1st–3rd centuries across the province's territory. An emphasis has been placed on luxurious sets of weaponry within the so-called 'rich graves' group, demonstrating a combination of Indigenous and Imperial forms of material culture.

Elizabeth Robinson

A chaîne opératoire approach to everyday literacy in the Roman world. The tile stamps at the legionary fort of Caerleon (Wales)

This paper investigates production from the brick and tile kiln at Caerleon. It uses a chaîne opératoire approach to explore how the bricks were made, how the stamps were produced, and what their use and discard can tell us about the soldiers living in the fort. It focuses on the handmade wooden brick stamps, comparing them to wooden brick stamps used in legionary forts in Dacia. Of particular interest are the backward brick stamps, made by soldiers who either were untrained in carving the stamps or did not learn the proper techniques during their training. These stamps print backward on the bricks and tiles, yet the finished products were still fired and used in constructions at the fort.

Jennifer Schamper, Peter Henrich

Draco rediscovered. The publication project on the dragon standard of Niederbieber

In 1966, the only known standard in the shape of a dragon's head to date was found in the vicus of Niederbieber fort. Since then, numerous monographs and essays have included brief mentions and pictures of the 'draco'. However, a comprehensive publication dealing with the object itself, the history of its discovery and a comprehensive historical and iconographic categorisation is still a desideratum of research. The idea to fill this gap was born back in 2019 and Jon Coulston could be won as the main author, with a further seven contributions to complement his work. The presentation will provide an insight into the current status and an outlook on how the project can be continued in line with Jon's vision.

Evan Schultheis

A proto-Baldenheim-type helmet from Freiburg-Zähringen? Addressing the issue of Spangenhelm origins

In 1986, a fragment of a helmet cheekpiece was identified from Freiburg-Zähringen, Germany. A similar fragment has also been identified from Grimeton, Sweden. Little analysis has been conducted on these fragments, which do not fit the typical pattern of Late Roman ridge helmet decoration. This paper examines material from the complex of Tarasovo in Russia, noting that these fragments find an analogue in Tarasovo grave 782. This paper concludes that the Freiburg-Zähringen, Grimeton, and Tarasovo fragments represent a predecessor to the Spangenhelm-type helmet. Furthermore, it concludes that the development of the Spangenhelm was the result of cultural interchange enabled by the Hun migration.

Jan Schuster

Roman-inspired Germanic horse gear between Scandinavia and the Black Sea

Recently, several Younger Roman Iron Age complexes with parts of splendid horse harnesses from western Ukraine have come to my attention. Unfortunately, they have been discovered illegally using metal detectors. The artefacts represent the Vimose-type bridle, in some cases accompanied by horse gear that is very similar to that from the bog find at Illerup and from Kazanskaya Stanica in the Kuban region. All assemblages include silver-plated openwork pieces. These fittings are decorated with Roman-inspired motifs—a four-leaf or flash bundle motif, as well as rows of semicircles. They appear most frequently in contexts associated with the male sphere, namely personal equipment, armament, and horse gear. These riders, characterised by their remarkable mobility and seemingly elite status, seem to have maintained extensive networks spanning vast geographical regions. Their interactions with the Roman milieu were not superficial but rather entailed the cultivation of profound connections, fostering a shared aesthetic sensibility that manifested itself in their equipment. The horse harness and bridle finds from Eastern Europe and the Kuban region may appear surprising when considered alongside geographically widespread, stylistically similar discoveries from Northern and Central Europe. However, these finds primarily serve to corroborate a well-established fact: the considerable mobility of Germanic warriors during the Roman Iron Age, particularly in the late 2nd and 3rd centuries.

Eva Steigberger

Man and wolf

The Roman army was one of the key players in spreading Roman glory throughout the Empire. Roman military equipment not only served the purpose of protecting and fighting, but it also reinforced Rome's might and power, and was intended to instil fear in their enemies. Roman equites, as is well known, were an impressive sight, dressed in shiny armour that told tales of Roman virtus. A recently discovered face mask from Carnuntum, associated with other finds, is a fine example of the exquisite workmanship, as well as the care, respect and love for the equipment, which transforms the bearer into the ideal of a victorious battle hero representing the Emperor.

Kaja Stemberger Flegar

Where to safely cross the river? New finds from Carnium Blaž Orehek, Rafko Urankar

The aim of this presentation is to address the role of the early Roman military presence in Carnium (modern Kranj, Slovenia) and its surroundings. We will present artefacts, some of which have never been published, including military equipment and imports from residential and sacral contexts dating from the Late Iron Age to the mid-Augustan period. The data will be further combined with older excavations and discussed in correlation with the strategic role of the settlement, likely a vicus. It was positioned on an elevated rocky hilltop

at the confluence of the rivers Sava and Kokra, and its broader surroundings belonged to the ager of Colonia Iulia Emona.

Kaja Stemberger Flegar, Maja Bausovac, Jure Krajšek

Military treasures of the Savinja River

The Savinja River springs in the eponymous Kamnik–Savinja Alps and flows through what used to be Municipium Claudium Celeia (modern Celje, Slovenia). The combined efforts of professional and amateur researchers have resulted in the recovery of more than 6,000 coins and thousands of other metal objects, dating from prehistory up to the modern era, from a shallow part of the river near the town. There was a river crossing from the Late Iron Age onward, although the date of the first bridge constructed near the town is not known. In this paper, we focus on Roman military equipment, including weapons, horse gear, parts of personal attire, as well as other paraphernalia such as tent pegs.

Orsolya Szilágyi

The case of the unreliable narrators. The funerary inventory of Caius Valerius Ursus

The sarcophagus of Caius Valerius Ursus was found in 1840 at the Roman site of Micia. This is one of the very few known sarcophagi from Roman Dacia that also had an inscription. Moreover, the funerary inventory was also recovered, containing items that could very well have belonged to a soldier: armour and weapon fragments, jewellery, etc. Several contemporary authors have written about the finds, giving different descriptions. Who was Caius Valerius Ursus? Why did he have gilded and silvered objects in his grave? And, more importantly: how much information can we recover about these missing finds?

Sabina Veseli

Selected militaria from Albania. An insight into army presence and influence

This presentation will explore selected Roman militaria finds from Albania, positioning them within the broader context of Roman military defence in the Balkans. It will address the lack of previous studies on these artefacts and highlight their significance in understanding the presence and influence of the Roman army in Albania. It will examine specific military costume typologies recovered from funerary or possible funerary contexts, as well as from civic and habitation sites. Militaria have been sporadically addressed in Albanian scholarship, and their use among civilians remains a topic of debate. However, these artefact types—widely recognised as militaria—can be confidently linked to the military sphere, as suggested by their associated material in funerary contexts. Similarly, examples from civic or habitation contexts, based on analogies elsewhere, may be associated with military activity or individuals serving within the Roman state administration. These typologies offer valuable insights into the presence of the Roman army and state bureaucracy in the territory of ancient Albania, as well as the potential recruitment of local populations into military service for the Roman Empire.

Gabriele Viola

Scales of war. Considerations and hypotheses on the use and difference between lorica squamata and lorica plumata, between Rome and Parthia

The aim of this contribution is to present a paper concerning a key category of Roman military equipment—scale armour (lorica squamata)—in relation to the still poorly contextualised lorica plumata, which continues to raise numerous questions. Particular attention will be given to parallels with defensive military equipment from the Near Eastern, concerning Parthians and Sassanid, whose development of this armour type may help clarify its development and terminological definition in Roman sources.

Despite certainty about the presence of squamae as key component of one of the typologies of body armour used in the Roman army from the beginning of the first Imperial age, and certain consistency in the literature on this topic, their link with another typology of body armour, lorica plumata, is yet to be consistently determined, as is their role and development in the economy of the relationship between different type of body armour for the Romans. This paper seeks to outline the problem by considering the perspective of military equipment from the Eastern empires that faced Rome over the centuries, in an attempt to establish useful points in the debate concerning this form of body protection, allowing us to trace the possible instances of re-elaboration and reciprocal technological advancements between two empires.

Mojca Vomer Gojkovič, Iva Ciglar

Traces of military equipment from Poetovio

Poetovio had a military camp in Roman times, and the Ptuj Ormož Regional Museum contains many objects associated with the Roman army. The legacy of the Roman army in Petoviona is also evidenced by the tombstones, edicule, sarcophagi and ashtrays, as well as the dedication plaques of the lapidary. For centuries, the ancient Amber Route wound its way between the North Sea and the Mediterranean through the picturesque landscape between the Haloze and the Slovenske gorice. At the crossroads of the thoroughfares, the prehistoric Amber Route, the navigable Drava River and the riverside paths that linked the Alps, Central European, and Pannonian worlds, the ancient city of Ptuj developed at the favourable river crossing. The favourable location of Poetovio at the Drava river crossing was already a strategically important point at the time of the Roman invasion of our region, first to the Drava and then onwards to the Pannonian plain to the Danube, and thus also the headquarters of Roman military garrisons as early as the beginning of the 1st century. Throughout the 1st century, Petoviona was the seat of legions, VIII. Augusta, then XIII Gemina. The events of 69 AD, when Petoviona is mentioned for the first time in written sources (Tacitus), had an impact on its role, importance and also on its economic development. After the departure of the legions, the town was given the rights of a colony and the title of Colonia Ulpia Traiana Poetovio. It reached its heyday in the 2nd and 3rd centuries. The most recognisable are the Poetovio Mitraeums,

shrines to the god Mithras. The third mithraeum, discovered among the villas on the Upper Brego, is the largest of all the Petovio mithraeums. The dedications, which were made during the last phase of the construction of the third mithraeum, were mainly carved by the soldiers of the legions of the V Macedonica (V Macedonica) and the XII Gemina (XII Gemina), for their own benefit and for the benefit of the Emperor Gallienus, which proves that in the sixties of the 3rd century, there was a strong army detachment in Petoviona, led by the commander Flavius Aper. The sanctuary was still in use in the first decades of the 4th century.

Charles Vuillermin

Shields, wood and iron remains from late-2nd-century site in Lyon's cohort camp (France)

In a destruction layer related to the Battle of Lyon (197 AD) hundreds of iron binding and reinforcing strips from shields were excavated in the armamentarium of the XIIIth cohort camp. Half of them present wood remains preserved through corrosion. An innovative approach has allowed for the reconstruction of the shield shapes based on the wood remains, as well as new hypotheses regarding their intentional destruction. An ongoing study is now focused on the wood through microscopic observation. The goal is to better understand the manufacturing method and to conduct an anatomical identification of the species, which will allow further exploration of wood selection and supply.

Miroslav Vujović

Scale armour finds from Roman castel Rittium (Serbia)

This paper deals with the finds of scale armour discovered during recent archaeological research at the site of Gradina in Surduk. The investigations included the remains of the Roman military camp Rittium, located on a high loess riverbank in Syrmia (Srem), which controlled an important section of the Danube Limes in Lower Pannonia from early 1st to 4th centuries AD. The archaeological research revealed remains of north-eastern rampart walls with two rectangular towers, several buildings and internal communication. On the same occasion, various archaeological small finds were discovered, including no fewer than 70 scales of lorica squamata which undoubtedly testify to the presence of the Roman army. Scales were mostly made of copper alloy and correspond to the well-known Groller types (III, IV and VIII).

Jana Wertz

A fresh look at the Ehrenbürg-Jamoinge-Garnitur. New findings and interpretation

The paper revises the Ehrenbürg-Jamoinge-Garnitur, focusing on a previously unpublished object from Bonn, which is being analysed as part of a dissertation on the Late Antique cemetery of the legionary camp at Bonn. The Bonn piece serves as a key object for the division of the previous type into two sub-types. One with a clear focus on the Rhineland, with a possible production site

in Bonn. The materials and type of decoration also seem to differ. Additionally, the associated burial and its scientific analysis provide insights into trade and migration patterns.

Martijn A. Wijnhoven

Breaking tradition. What Roman scale armour was—and wasn't

The Roman army is traditionally envisioned wearing three main types of body armour: the lorica segmentata, mail, and scale armour. Unlike the first two, of which complete specimens have been found, scale armour has only been recovered in fragments. Traditionally, these remains have been interpreted as parts of a scale-covered shirt, assumed to offer full-torso protection. Nevertheless, no single archaeological specimen of such a complete shirt has been discovered to date. A reassessment of the collective evidence for scale armour from the archaeological record challenges this view, leading to a fundamentally different understanding of scale armour. This paper presents new evidence suggesting that the Roman military used an additional type of protective gear, distinct from a scale shirt, which has remained unrecognised until now.

Edwin Wood

Special military advisors. The Chichester and Fishbourne militaria

There is a small but not insignificant collection of Roman militaria from the town of Chichester and nearby Fishbourne. Alec Down interpreted this as evidence for a legionary base under the early Roman town and Fishbourne is usually considered a supply base for the advance of Legio II westwards under Vespasian. However, the assemblage could be argued to represent an earlier Roman presence, as much of the militaria could equally be dated to the Tiberian period. If so, what were Roman troops doing in Britain at this time, and is there evidence from elsewhere in south-east England for Romans before the coming of Rome.

POSTERS

Katarzyna Czarnecka

Chainmail fragments found in graves from Barbaricum – function, distribution, origin of the custom.

In addition to the relatively rare finds of more or less complete chainmail, small fragments or single links appear in the Barbaricum area, found in the graves of women and children. This custom has been observed in the Przeworsk culture area – probably mainly due to the prevailing funerary rite requiring the submission of numerous and rich grave goods. Nevertheless, this is not a phenomenon specific to this culture – such finds also appeared in the Chernyakhov culture area, in Sarmatian cemeteries, and even in cemeteries within the Roman Empire – which requires a new interpretation of this phenomenon.

Zsófia Zsuzsanna Kelemen, Mónika Kurunczi

New fragments of lorica squamata from the territory of Aquincum

In the years 2020–2022, we had the opportunity to excavate approximately 11,340 m2 on the western edge of Budapest, Hungary. We unearthed a civilian settlement dating from the 1st to the 4th century AD, which belonged to the territory of Aquincum. The pit-like features of the vicus were replaced by the stone building and enclosing walls of a villa rustica. On the eastern edge, a gravel road led up the hillside. Remains of lorica squamata, an interesting feature of military character, were found. We will examine the relationship between the armour fragments and the civilian settlement. In what context could it have reached the civic milieu? We will also examine the dating possibilities of the finds in the light of the stratigraphy of the multi-layered site.

Aleksandra Kruglova, Sophie Freitag

Roman military equipment of Augusta Treverorum (1st and 2nd century AD)

So far, only very few early imperial militaria are known from Augusta Treverorum (Trier). As part of the processing of large private collections, two courses of the Archaeological Institute Cologne documented numerous militaria and parts of horse harnesses from the 1st and 2nd centuries AD from the Trier city area at the Rheinisches Landesmuseum, Trier. The militaria (protective and assault weapons) as well as parts of a horse harness are classified typochronologically and analysed in their regional context. By comparing finds from other locations in Gaul, this study examines the extent to which early imperial horse harness fragments can be clearly classified as either military or civilian and whether the presence of early imperial militaria in the civil settlements of Gaul represents an exception or a common occurrence.

Gerhard Pastircak, Andrej Žitňan, Lenka Horáková, Andrej Sabov

Roman military equipment finds from Gbely (Slovakia)

Rescue surveys triggered by mechanical logging in Gbely began in 2020. Later, in 2023, archaeological excavation followed. Overall, several sites with significant Germanic settlement were identified there, mainly from period B2/C1 to C1. Hundreds of metal artefacts were recovered from the site. Among them were parts of Roman military equipment, which is the subject of this poster. In particular, there are numerous fragments of lorica squamata.

Kaloyan Pramatarov

Cavalry helmets with face masks discovered in burial context in the province of Thrace (1st–2nd century)

Helmet masks have been discovered in the eastern and western provinces of the Roman Empire. They are associated with an elite fashion trend during the 1st–3rd centuries AD. In the Roman world, these helmets used to have defensive and parade functions and were worn by elite horsemen, part of the auxiliary units, during spectacular horse and battle games (hypica gymnasia) and were precepted as a symbol of aesthetic preference, bravery and combat skills of their owners. In the province of Thrace, helmet masks have been found exclusively within the context of rich mound burials containing complete sets of offensive and defensive armament from 1st–2nd centuries. The present poster displays the main characteristics of the helmets found at Vize, Chatalka, and Plovdiv, together with the graphic reconstructions of the weaponry and equipment of the buried military individuals.

Ivan Radman-Livaja

Lorica squamata fragment from Cornacum

The fragment of scale armour from Cornacum (modern-day Sotin in eastern Croatia) is a typical example of a later type of scale armour, likely appearing from the second half of the 2nd century AD, characterised by the connection of all adjacent scales with wire, without attachment to the lining. This fairly large fragment was first published in 1912 and, although occasionally mentioned in scholarly literature, it has not been the subject of any further scrutiny or detailed study, and neither has it been re-photographed nor redrawn. Thus, this poster may serve as a valuable contribution to the study of this interesting artefact found in a Pannonian auxiliary fort.

Petcu Radu, Ingrid Petcu Levei

Defensive military equipment discovered at Ulmetum – Province of Scythia

Located in the centre of the province of Scythia, the fortification of Ulmetum is first mentioned in ancient sources by Procopius of Caesarea in his work De Aedificiis. The name appears on the list of fortresses from the province that were renovated by Emperor Justinian in the 6th century AD. Founded as a vicus in the 2nd century AD, the settlement experienced more or less continuous development until the end of the 6th century AD. Recent archaeological research carried out on the perimeter of the Late Roman fortification, has highlighted two major periods of habitation:
1. From the end of the 4th century AD (the moment when the construction of the defensive system begins) to the third quarter of the 5th century AD (c. 380/390–470/480). This period is characterized by three main phases of habitation.
2. From the second half of the 6th century AD to the beginning of the 7th century AD (c. 540/550–596/600?), where two phases of habitation are identified.

Saša Redžić

Late Antique belt sets with propeller-shaped fittings from Viminacium

Belt fittings in the shape of a propeller consist of a central circular part and two trapezoidal extensions. In most cases, they are made of copper alloy and attached to a leather strap using two or four rivets. Belt sets with fittings of this type can feature buckles and strap ends of various shapes. The fact that belt sets with propeller-shaped fittings are often found along the Roman limes leads us to conclude that their users were primarily soldiers. Direct evidence for this includes their depictions on tombstones, sarcophagi, as well as the representation on Constantine's Arch. Although there are indications that propeller-shaped fittings were also used during the 3rd century, it can be said that their most prominent use began in the mid and second half of the 4th century, while in a slightly modified form, they were also used during the 5th century. The four belt sets that are the subject of this study, found in graves at the Viminacium necropolis of Više Grobalja, can be dated to the mid and second half of the 4th century.

John Reid, Stuart Campbell

Small things forgotten

Renewed investigations at Trimontium (Newstead, Scotland) have revealed many small fragments of body armour, particularly helmet rivets, tie rings, and turning pins. XRF has added to our understanding of the metallurgy of these artefacts and how they relate to other larger sections of equipment. These tiny objects, often overlooked, are almost entirely absent from Curle's original excavation notes and have mostly come to light through modern metal-detecting. They have a significant role to play in helping identify and refine the dates of occupation of the fort and the possible constitution of the garrison.

Katalin Sidó, Szilamér-Péter Pánczél

Your shoes, our evidence

Military footwear was an important part of a soldier's equipment, design to ensure safe and easy motion of the soldiers. In Roman Dacia, hobnails are the most commonly recovered element of footwear, but there are some other artefacts that can provide better insight into the topic. On the eastern limes, several bricks with footwear imprints have been recovered, some with complete, and others with partial imprints. Additionally, in certain archaeological contexts, footwear imprints could be recorded. There are very few examples when the environmental conditions preserve organic material. However, in 2024, during excavations at the military fort of Călugăreni/Mikháza, fragments of Roman footwear were recovered from a well. The present research aims to structure the available data, considering footwear types used in this part of the limes.

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