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ABSTRACT BOOK

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archaeological museum in zagreb

scena amz

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CENTAR ZA PRIMIJENJENU BIOANTROPOLOGIJU
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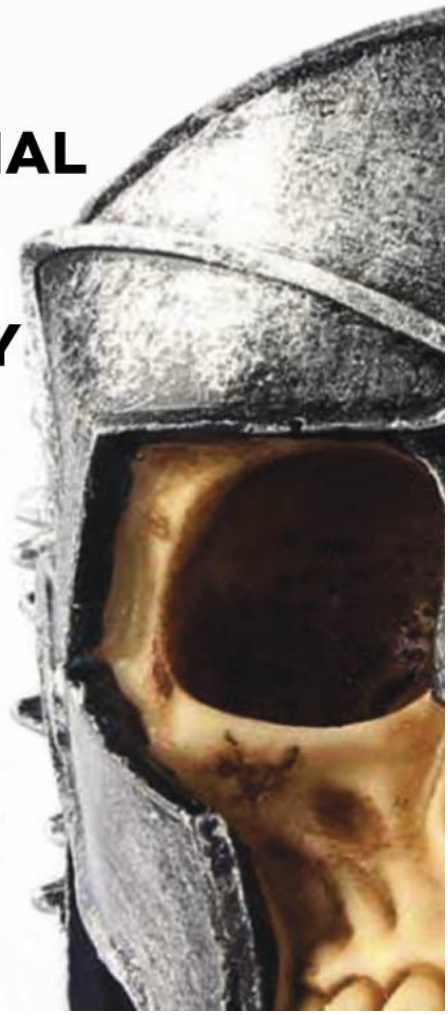
4. MEĐUNARODNI KONGRES O RIMSKOJ BIOARHEOLOGIJI

4TH INTERNATIONAL CONGRESS ON ROMAN BIOARCHAEOLOGY

ICORB



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EDITORIAL

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4th Annual International Congress on Roman Bioarchaeology: Transcending Boundaries

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**Editor-in-Chief

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Editorial

The International Congress on Roman Bioarchaeology (ICORB), with support from the Institute for Anthropological Research, will hold its 4th Annual Meeting at the Archaeological Museum in Zagreb, Croatia, from 31 August to 2 September 2025. Established in 2021, ICORB was developed as a venue to promote interdisciplinary collaboration among scholars working on archaeological remains from across the Roman world and beyond. The annual conference provides an opportunity for international researchers to share ongoing research involving Roman-era archaeobotanical, zooarchaeological, mortuary, and human remains. The conference emphasizes cross-disciplinary dialogue, merging traditional archaeological methods with new theoretical frameworks, and ultimately encourages scholars to ask new questions and push methodological boundaries. Presentations and posters at the annual conference go beyond merely showcasing results; they become springboards for discussion and reinterpretation, with scholars offering real-time feedback on research and theoretical developments. The goal of ICORB is to function as a collaborative engine of ideas, where archaeologists, anthropologists, classicists, and historians engage deeply with shared evidence to treat ancient individuals not as data points, but as lives to be reconstructed and understood. This fuels ICORB's identity as a humanistic science forum, where ideas about Roman-era identity, health, migration, and inequality are constantly tested and forced to evolve.

While much of the research at ICORB takes a population-based approach to the analysis and interpretation of anthropological remains, Anna Osterholtz's keynote address on osteobiography highlights the importance of starting any analysis of the ancient Roman world at the individual level. Drawing upon what Mattingly (2007, 2013, 2023) has termed discrepant experiences in the Roman World, Osterholtz encourages the use of an osteobiographical approach in the Roman period, especially when researchers seek to transcend the predominant Roman narrative - male, elite, urban, Mediterranean-centric - to include peripheral and marginalized experiences (Osterholtz et al., 2025). To this end, many of the papers and posters at ICORB 2025 draw from liminal (e.g., limes) sites, focus on underrepresented groups (e.g., individuals with disabilities), or investigate

transitional periods (e.g., the Hellenistic-Roman transition). Collectively, this work underscores ICORB's commitment to expanding the scope of Roman bioarchaeology—shifting the focus of research from traditionally dominant narratives to illuminating the diverse lived realities of individuals navigating the complexities of life in the Roman world.

Marginalized Voices

The study of marginalized voices in Roman bioarchaeology has gradually emerged as a critical response to traditional narratives that prioritized elite, literate, and male perspectives (Redfern, 2025). Early Roman bioarchaeological research focused primarily on monumental remains and high-status burials, inadvertently minimizing the lived experiences of women, enslaved individuals, children, and migrants. By the late 20th century, however, shifts in archaeological theory—especially with the influence of feminist and postcolonial critiques—prompted scholars to re-evaluate the skeletal and contextual evidence of non-elite populations (Gardner, 2013; Versluys, 2014). Advances in osteological analysis, including paleopathology, isotopic studies, and aDNA research, enable deeper insights into diet, mobility, labor, and health disparities among marginalized groups. As exemplified by multiple papers at this year's conference, the field continues to expand, with increasing attention to intersectionality and ethical representation, ensuring that the diverse experiences of all individuals—not just the powerful—are included in narratives about the Roman past (Bews and Marklein, 2025).

Rural Perspectives

While most of the Roman population lived in rural communities, bioarchaeological work has focused primarily on cemeteries and settlements in urban areas, likely because rural sites are more difficult to locate and modern urban expansion mandates salvage excavations that inadvertently uncovers archaeological remains (Tirado, 2010). However, survey and subsequent excavation work have slowly reintroduced rural perspectives into the Roman-period narrative. In Italy, Sicily, Greece, and Croatia, human osteoarchaeologists and zooarchaeologists evince the importance of understanding diet, mortality, and biological health in the context of rural communities, economies, and networks. Through human remains, many studies at this year's meeting capture the breadth of rural experiences, whether in small, agrarian communities or elite estates, and provide commentary on rural identity or status. Other presentations consider differences in population health based on settlement location as a reflection of possible rural-urban dichotomous landscapes (Sammut et al., 2025).

Violence and the Military in the Roman World

Violence and warfare were deeply embedded in the fabric of the Roman world, shaping not only the Empire's expansion, but also its social norms and individual identities (Novak, Carić, and Osterholtz 2025). For centuries, studies of Roman military culture focused heavily on historical texts, monumental architecture, and elite representations of warfare—emphasizing strategy, imperial conquest, and the successes or failures of military endeavors (Drinkwater 2022). However, these narratives often obscured the physical and psychological realities of violence for soldiers, civilians, and entire populations of subjugated peoples. Recent bioarchaeological and archaeological approaches have begun to address this imbalance by examining interpersonal trauma on skeletal remains, patterns of weapon-related injuries, and the spatial organization of mass graves (Šlaus, Kunić, and Pivac 2018; Lösch et al.

2014). Through paleopathological analysis, researchers are uncovering evidence of repeated stress injuries, blunt-force trauma, and surgical interventions—offering direct insight into the toll of military service and interpersonal violence. Scholars at this conference emphasize the importance of contextualizing violence within broader frameworks of gender, class, and ethnicity, as well as the long-term consequences of militarization on communities.

Life on the Roman Periphery

As most written Roman history reflects an Italian and Mediterranean-centric perspective, life on the periphery–whether provincial regions or the limes–is best illuminated through archaeological inquiry. The study of biological material from archaeological sites has enabled researchers to utilize human, plant, and animal remains to reconstruct the lives and experiences of those considered to be “others” by those residing in Rome. Moreover, the study of biological remains has shown how informative this archaeological research is to create a representative archaeological record that reflects the breadth of life within and around the Roman Empire (Bews and Marklein, 2025; MacKinnon, 2007). Bioarchaeological research along the Danube River in present-day Austria, Bulgaria, Croatia, Hungary, and Serbia has shown how important these landscapes and peoples were to imperial border control, economic stability, and cultural diversity. Such cultural diversity is complemented by archaeogenetic research presented at this conference, for aDNA has the potential to reveal population origins, genetic relatedness, and captures changes to genetic diversity due to major demographic shifts. Overall, from individual osteobiographies to population-level analyses, data from frontier communities continue to transform our understanding of health, mortality, and lived experiences on the geographic periphery of the Roman world and are critical to reframing the Roman world as the mobile and global expanse that it was.

A Mobile and Global Empire

Despite archaeological tendencies to classify past populations into dichotomies such as core-periphery or urban-rural, the reality is that the Roman world was a complex network of markets and peoples (Pitts and Versluys, 2015; Nikita, 2024). Tracing migration on local, regional, and interregional levels through zooarchaeological, human osteological, and biomolecular data underscores how interconnected individuals, communities, and populations were in the Roman world (Antonio et al., 2019; Prowse, 2016; Valenzuela-Lamas and Albarella, 2017). Presentations on strontium isotopes and ancient DNA from individuals in Italy, Hungary, and Poland show how people moved and populations transformed during the Roman period. Mobility of individuals is also revealed by subsistence practices and animal provisioning through zooarchaeological remains, as reflected in studies from Noricum, Pannonia, and Hispania. Exploitation of marine resources into rural Spain, in particular, highlights the extensive and effective trade networks in place during the Roman period.

Periods of Transition

Defining the "Roman Period" chronologically is challenging, largely because Roman rule extended to different regions at different times. For instance, while the Roman Empire was established in 27 BCE on the Italian Peninsula, areas of Southwestern Anatolia did not officially become part of a Roman province until 43 CE (Schuler and Zimmerman, 2019). Further complicating matters, the period following the fall of the Western Roman Empire—traditionally dated from 330 CE to 1453 CE—is

increasingly referred to as the Eastern Roman Imperial Period rather than the Byzantine Period, marking a shift in scholarly convention. Given these complexities, scholars have begun to explore the concept of "transitional periods" as a more meaningful framework for understanding how cultures and lifeways evolved under Roman influence (Bews, 2025). In regions such as Greece and Anatolia, recent studies examine how the transition from Hellenistic to Roman rule affected health and everyday life. Likewise, research in areas of present-day Slovenia and Georgia investigates whether the collapse of Roman authority fundamentally altered the health or demographic makeup of local populations. By moving beyond the rigid chronological categories of Pre-Roman, Roman, and Post-Roman—however they may be labeled regionally—this approach highlights the nuanced, gradual nature of change experienced by those living within Rome's shifting frontiers.

Mortuary Practices

In an empire as geographically vast and culturally diverse as the Roman Empire—encompassing countless populations, languages, and religions—it is unsurprising that burial practices were equally varied. Traditionally, however, Roman mortuary customs were reductively classified into broad categories such as inhumation or cremation, and archaeological reports often prioritized the description of elaborate grave goods over more nuanced lines of inquiry (Trigger, 2006). This approach routinely overlooked the effects of taphonomic processes, the osteological data offered by human remains, and the significance of burials lacking funerary artifacts (Perry, 2007). In recent decades, however, bioarchaeology has undergone a methodological shift. Burial analysis now commonly incorporates archaeothanatology, osteology, paleoparasitology, paleogenetics, and broader archaeological context. At this conference, scholars working on sites across the Empire highlight the value of interpreting mortuary treatment in tandem with post-mortem processes, disease, parasitic evidence, genetic data, and a burial's geographic setting—among other factors. This integrated, contextual approach allows researchers to identify patterns in burial practices across time and space, offering a more comprehensive understanding of identity, health, and social structures in the Roman world. Only by embracing this complexity can we move beyond elite-centric narratives and begin to reconstruct the lived experiences of all members of ancient society.

Advancing Archaeological Science

Lastly, in addition to Roman bioarchaeology serving to unearth and illuminate unwritten or lesser-known histories in the Roman world, the discipline as an archaeological science excels in the application of new methods and techniques (Killgrove, 2018; Scheidel, 2018). Whether from context (e.g., cremains) or preservation, Roman period samples and collections pose challenges for researchers when reconstructing accurate narratives of the Roman past. Minimally destructive analyses, such as stable and radiogenic isotopes, remain a well-tested and informative avenue for diet and lifetime mobility (Prowse, 2025). In this conference, researchers employ multi-isotopic approaches to human remains from Sicily and across the Lower Danube Valley to investigate differential dietary access/decisions by sex, age, and provenance. Additionally, lead isotope concentrations are also utilized in analyses from Romania and Croatia in tandem with osteological and paleopathological data as indicators of possible lead exposure. These and other novel approaches, such as biomolecular analyses of dental calculus (Wright, 2025) and

paleoparasitology (Ledger and Mitchell, 2025), demonstrate not only the versatility of Roman bioarchaeological methods but the relevance of this research in other archaeological investigations.

Conclusion

The people gathered at this year's ICORB will continue to propel the field forward as they share new findings and foster interdisciplinary collaborations through innovative papers, engaging posters, and thought-provoking roundtable discussions. The conference will also provide a vital forum for addressing ethical challenges and exploring responsible approaches to designing, conducting, and publishing research for both academic and public audiences. In an increasingly interconnected world shaped by economic inequality, climate disruption, and resurgent nationalism, the Roman past offers crucial case studies—on empire and identity, migration and mobility, resilience and collapse—that can sharpen our understanding of today's global challenges and inform more nuanced, historically grounded responses in the present.

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KEYNOTE PRESENTATION

Osteobiography in Roman Bioarchaeology: Understanding Roman Life One Individual at a Time

Anna Osterholtz (1, 2)

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Roman bioarchaeology is uniquely positioned to illuminate the lives of individuals in a well-documented socially stratified society. While the Roman written record is extensive, it often reflects elite perspectives, leaving the experiences of women, children, and non-elites underrepresented. Bioarchaeology, particularly through the lens of osteobiography, helps recover these overlooked narratives. Originally developed in the 1970s by Saul and later expanded by researchers like Hosek and Robb to include molecular data, osteobiography synthesizes evidence of life, death, and burial to reconstruct individual life histories. In this talk, I explore how osteobiographical approaches in Roman contexts—combined with population-level analyses—can reveal broader social patterns. I also reflect on the work I have done with my excellent colleagues, highlighting how these narratives resonate with both academic and public audiences, making Roman lives more tangible and bioarchaeology more accessible.

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Archaeobotanical Evidence from a Burnt Storehouse in Philippopolis: Insights into Plant Use and Storage Practices in the Second Half of the 2nd Century CE – the First Half of the 3rd Century CE

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Keywords: Archaeobotanical analysis; granary; plants; storage; military; Bulgaria; Philippopolis; 3rd c. CE
Presentation Format: In-person poster

This study presents archaeobotanical data from a storehouse used by the military personnel stationed along the fortified walls of Philippopolis (modern-day Plovdiv, Bulgaria). The structure, destroyed during the Gothic incursions in the 3rd century CE, offers significant insights into crop processing and provisioning practices prior to the city's destruction. The granary was discovered during excavations in 2017 and further investigated in 2021. More than 10,000 charred plant remains were retrieved from 15 flotation samples collected from the contents of a wooden barrel, large storage jars (*pithoi*), and various ceramic vessels in 2021. The archaeobotanical assemblage comprises seven cereal crops: einkorn (*Triticum monococcum* L.), emmer (*Triticum turgidum* ssp. *dicoccum*), club wheat (*Triticum aestivum/durum*), bread wheat (*Triticum aestivum* ssp. *compactum*), barley (Hordeum vulgare L.), oat (*Avena sativa* L.), and broomcorn millet (*Panicum miliaceum* L.). Pulses are represented by lentil (*Lens culinaris Medik.*) and broad bean (Vicia faba L.). The assemblage also includes seeds of five herbaceous plant taxa, identified as arable weeds. Charcoal analysis reveals the presence of three deciduous taxa – oak (*Quercus* sp.), hazel (*Corylus avellana* L.), and beech (*Fagus sylvatica* L.) – as well as silver fir (*Abies alba* L.). Notably, fir and hazel were used in the construction of the wooden barrel used for grain storage.
Additional finds include wild fruit remains, walnuts, and fragments of woven plant fibers – possibly from a sack – recovered from within the grain deposit in the barrel. These archaeobotanical data contribute to a broader understanding of daily life and plant use in a military context in the period between the second half of the 2nd century CE and the turbulent first half of the 3rd century CE.

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Exploring the Link between Dental Enamel Hypoplasia, Interglobular Dentine and Breastmilk Consumption through Histomorphological and Stable Isotope Analysis

Author(s): Panagiota Bantavanou (1), Elissavet Ganiatsou (1), Tania Protopsalti (2), Stavroula Tzevreni (2), Krino Konstantinidou (2), Stella Vaseiliadou (2), Christina Papageorgopoulou (1)
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Keywords: Childhood diet; dental pathology; weaning; physiological stress
Presentation Format: In-person podium

Dental Enamel Hypoplasia (DEH) and Interglobular Dentine (IDG) are pathological markers that result from insufficient secretion of mineral and organic substances and indicate physiological and metabolic stress during infancy. DEH has been correlated with infections and malnutrition, while IDG has been associated with Vitamin D deficiency. Despite extensive research, the cause of these conditions is not fully understood. In this project, we test the role of breastmilk consumption and weaning duration in the formation of DEH and IDG as critical factors of infant growth and development. For this, 26 individuals from ancient Thessaloniki, mostly dated to the Roman period (168 BCE- 324 CE) were analyzed. Histological sections of the permanent canines were prepared, and the severity and exact age-at-formation of DEH and IDG was recorded microscopically. Stable isotope analysis of nitrogen and carbon coupled with Bayesian mixing modelling was performed on first permanent molars of the same individuals to estimate the duration of weaning and breastmilk proportions, respectively. The preliminary combined results of our analyses show that individuals consuming less than 50% of breast milk during weaning, developed multiple DEH and IDG defects (mean age 2.59 and 2.24 years respectively), mostly formed close to the age of weaning or later (mean age at weaning 2 years of age) indicating that low breastmilk intake and early weaning correlate with the appearance of DEH and IDG. Our findings contribute to an important component of infant health previously poorly understood. This research is part of the ERC-Consolidator Grant entitled CityLife (Project: 101126337).

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Paleopathology of Cremated and Inhumed Human Skeletal Remains at the Necropolis of the Roman city of Apsorus

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Keywords: Bioarchaeology; incineration; inhumation; paleopathology; Roman Period; Apsorus
Presentation Format: In-person podium

The 2022 rescue excavations on the island of Lošinj revealed one of the burial grounds of the Roman city of Apsorus (present day Osor, island of Cres). From here 188 cremations and 14 inhumation burials were excavated. A variety of ceramic and glass vessels, with bronze, iron and bone objects date the necropolis from the last decades of the 1st century BCE until the middle of the 2nd century CE. Anthropological analysis was conducted on both cremated and inhumed human skeletal remains. Standard methodological criteria were used to gather information about the sex and age of the individuals as well as pathological changes. This study will primarily focus on pathologies whose presence was mainly associated with the preservation of bone elements in the grave, i.e., what was the fragmentation status due to the burning process in the incinerated graves. For this reason, it was impossible to calculate the usual frequency of pathologies in the sample, however the occurrence of some indicators of physical stress (Schmorl's nodes, osteoarthritis on joints and vertebrae), indicators of subadult stress (*cribra orbitalia*, linear enamel hypoplasia), and fractures can inform us about some aspects of daily life in the Roman city of Apsorus.

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Reconstructing Life on the Frontier: Paleopathology and the Lived Experience of a Roman Woman with Turner Syndrome

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Keywords: Life course analysis; chromosomal disorder; Carnuntum; paleopathology
Presentation Format: Virtual podium

Classical and historical accounts written from elite, male perspectives have shaped our understanding of the Roman Empire, and as a result the lives of women, the elderly, and those with impairments are often overlooked. This study uses a paleopathological and life course approach to reconstruct the possible experiences of an older adult female from 1st-4th century CE Carnuntum, the capital of Pannonia Superior (Austria). The skeletal remains, referred to as CA-760, were excavated from a simple pit-style grave, often interpreted as indicative of lower wealth or status. The skeleton was examined macroscopically, and any atypical morphology or pathological lesions was systematically recorded. CA-760 exhibited shortened fourth and fifth metacarpals; considerable osteoarthritis in her spine, wrist, and knee joints; as well as vertebral asymmetry and occipital paracondylar processes (a rarely reported developmental anomaly). These features are consistent with skeletal manifestations of Turner syndrome, an intersex chromosomal condition that can impact growth, development, and reproduction. Using a life course approach informed by contemporary clinical literature we interpret CA-760's possible lived experiences from birth through old age to better understand the physiological and social challenges she may have faced as a Roman woman living on the frontier. As a child, CA-760's experiences likely did not differ greatly from those of her peers. However, around the age of puberty, her social experiences likely began to diverge due to the reproductive challenges associated with Turner syndrome. CA-760 contributes to the visibility of intersex individuals in the past, offering insight into the complex intersections of health, gender, and status in Roman society, and supporting a more inclusive understanding of ancient lives rarely represented in traditional narratives.

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Changing Regimes, Changing Lives: A Sex-based Analysis of Population Health during the Hellenistic-Roman Transition in Southwestern Anatolia

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Keywords: Diachronic analysis; social change; paleopathology; lifeways
Presentation Format: Virtual podium

Despite the fact that entire textbooks are devoted to the successes and failures of the Roman Empire, the complexities of life under Roman rule are not well understood. It is clear from the archaeological record that the transition to Roman imperialism precipitated changes to the political, social, and cultural landscape of communities across the Empire, yet exactly how imperial inhabitants experienced these changes in their daily lives remains a matter of debate. The goal of this study is to understand how the transition from Hellenistic to Roman rule in Southwestern Anatolia may have altered local population health and whether it is possible to identify sex-specific changes to diet and disease patterns. Using paleopathological and isotopic analysis, this study examines the skeletal remains of 133 individuals (Hellenistic era n=54; Roman era n=79) from the archaeological sites of Patara, Myndos, Kibyra, Karamattepe, and Halicarnassus. Results suggest that overall population health improved during the transition from the Hellenistic to the Roman period, but males and females do not seem to have reaped the rewards of this change in equal measure. Males appear to be more nutritionally stressed in the Roman period than their female counterparts. Additionally, the paleopathological data indicate that Roman-period divisions of labor beginning during the transition to *adulescentia* may have led to sex-specific dietary practices and/or differential exposure to pathogens. Although females appear to experience improved overall systemic health, changing breastfeeding and weaning patterns, indicated by paleopathological results, seems to have taken a toll on female oral health. The results of this diachronic bioarchaeological analysis will be discussed in the context of local disease ecologies, culinary traditions, child-rearing practices, and interpersonal violence with the goal of illuminating the nuances of daily life in Roman period Anatolia.

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Burial Practices and Population Structure in Roman Imperial Cist Graves from Aravoras (Nurallao, Sardinia, Italy)

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Keywords: Roman Imperial Sardinia; commingled human remains; bioarchaeology; funerary practices
Presentation Format: Virtual poster

The emergency excavation conducted in an area known as Aravoras, near the town of Nurallao (Sardinia, Italy), led to the discovery of two large stone cist graves, each containing a single primary burial accompanied by grave goods and a multitude of disarticulated skeletal remains alongside other materials, mostly pottery. Grave goods date back to the Roman Imperial period. A third, possibly disturbed context was also identified, potentially associated with one or more enchytrismòs burials. Building on previously published documentation (*L'Eredità del Sarcidano e della Barbagia di Seulo*), the present study integrates bioarchaeological analysis to offer further insight into the community that buried its deceased at Aravoras. This allowed for the identification of a minimum number of 42 individuals, as well as evidence on population structure, burial practices, and living conditions. The large stone cist graves contained one adult individual each in primary deposition (in one case supine, in the other prone) and a substantial number of commingled remains. The skeletal assemblages suggest successive reuse of the funerary spaces, with earlier remains displaced and repositioned to accommodate new burials. Both discrete individuals—a 30–35-year-old woman and a senile female—show minor healed trauma, as well as severely compromised oral health. The third context, initially described as an enchytrismòs burial, yielded a poorly preserved assemblage of disarticulated remains belonging to a minimum number of eight individuals, including a relatively well-represented adult and five children. Despite the limited archaeological documentation for this context, bioarchaeological evidence suggests a dynamic and multi-phase use of the funerary space, perhaps in part comparable to that observed in the associated cist graves. This case study contributes to the growing bioarchaeological documentation of funerary variability in Roman Sardinia and highlights the interpretive potential of commingled skeletal assemblages for reconstructing social and health dynamics in rural contexts.

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Short and Sickly Lives: An Analysis of a Possible Correlation between Lead Poisoning and Non-Adult Health in Roman Period Tragurium

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Keywords: Dalmatia; pathology; lead poisoning; non-adults
Presentation Format: In-person podium

The modern city of Trogir (ancient Tragurium) is located on the eastern Adriatic coast in the present-day region of Dalmatia. During Antiquity Tragurium was an urban settlement under the administration of the neighboring provincial capital of *Salona*. The city flourished as a trading center, relying on salt and stone production, as well as the agricultural production of the Roman villas system within the centuriated territory of the Tragurium agglomeration. Recent excavations yielded multiple Roman period burials (cremation and inhumation) from several different sites within the city proper. Most of the inhumation burials contained the remains of non-adult individuals. Considering the unusually high percentage of perinates and infants exhibiting various pathological changes such as indicators of metabolic disease including *cribra orbitalia*, porotic hyperostosis, and periosteal bone deposition, we wanted to: (i) examine possible causes of high non-adult mortality, and (ii) determine causes of poor non-adult health in Tragurium. Therefore, we analyzed the teeth of non-adults to get a better picture on the role of lead in explaining the high amounts of pathologies in this assemblage. We used a combination of chemical testing and macroscopic paleopathological analysis to see if there is a correlation between lead levels within non-adult dental samples and pathological bone changes at a local level. We analyzed 45 individuals from two different sites in Tragurium: urban villa rustica (VL, n=8, 1st-2nd c. CE) and city necropolis (CN, n=37, 3rd-4th c. CE). The individuals from both locations show unusually high, but very similar, values of lead: the average value for VL is 23.98 ppm, and for CN is 23.54 ppm. Most of the non-adults with values over 1 ppm exhibit some kind of pathology while non-adults with lesions have higher Pb values than those without. Based on the preliminary data it seems that lead poisoning had a negative impact on general non-adult health in Roman period Tragurium. This study was funded by the Croatian Science Foundation grant IP-2022-10-8558.

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Sex-related Differences in Diet and Mobility in Hellenistic-Early Roman Menainon as Inferred from Stable Isotope Analysis ($\delta^{13}C$, $\delta^{15}N$, $\delta^{18}O$)

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Keywords: Hellenistic Sicily; Roman Sicily; diet; mobility
Presentation Format: Virtual podium

Exploring social differences in the past has long been a major topic in biomolecular archaeology and osteoarchaeology. According to historical sources, men and women in the Greco-Roman period held distinct roles, potentially affecting their access to dietary resources and mobility patterns. However, these sources are often biased and describe the lives of a wealthy minority from a male perspective. Here, we explore this question through biomolecular analysis of skeletons excavated from the rural Hellenistic-early Roman site of Menainon (Sicily). Menainon started to flourish during the Hellenistic period, remaining under the sphere of influence of the Greek colony of Syracuse until the island became the first Roman province. A previous study, exploring dental diseases and dental wear in Menainon found minimal differences in the dietary patterns between sexes, supporting a more equitable community or a community where gendered identities did not affect food consumption. We extend this work further to study both diet and mobility for 50 individuals (25 males, 25 females), examining stable isotope ratios during childhood (dentine, enamel) and adulthood (bone). Preliminary results support earlier studies, showing minimal differences between sexes. Males show slightly higher $\delta^{15}N$ in adulthood and childhood, whereas females show higher values of $\delta^{13}C$ in adulthood and childhood, but only for the enamel. Finally, both sexes show comparable $\delta^{18}O$ values, with the exception of one female individual, who demonstrates a much lower value compared to the average. The results shed light on the life of the everyday people of a rural community during the Hellenistic-early Roman period.

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Illness and Healing in Late Roman Amiternum (Central Italy; 4th–5th centuries CE): A Bioarchaeological Study of Evidence from Skeletal Remains and Dental Calculus

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Keywords: Dental calculus analysis; diet; paleopathology; ancient medical practices
Presentation Format: Virtual poster

In the past decades, dental calculus has emerged as a powerful tool for reconstructing ancient lifeways, offering insights into diet, environment, occupational practices, and, increasingly, therapeutic practices. This mineralized biofilm traps micro-remains and chemical residues, creating a unique archive of everyday resources and healing-related substances. Yet its potential for studying ancient medical practices remains underexplored, primarily due to the difficulties in distinguishing between dietary and medicinal substances. This study presents new results from an interdisciplinary investigation of dental calculus and skeletal remains from Late Antique Amiternum (Abruzzo, central Italy). Excavated from burials in the disused Roman theatre—repurposed as a burial ground in the 4th–5th centuries CE—the sample includes 17 individuals (adults and infants) from 10 graves. Anthropological analysis revealed a range of dental diseases, including caries, abscesses, antemortem tooth loss, and other pathological conditions, such as systemic stress markers like enamel hypoplasia, cribra orbitalia, and periostitis, as well as fractures and osteoarthritis. The high frequency and variety of pathologies make Amiternum an ideal case study for investigating responses to illness through complementary methods, including optical and biomolecular analyses of dental calculus (e.g., plant microremains and biochemical residues). This approach seeks to reconstruct therapeutic strategies during the Imperial period and examine the interplay between diet, disease, and healing in Late Antiquity. By integrating paleopathological data with dental calculus molecular evidence, this research provides new insights into how illness was experienced and addressed at both the individual and community level in Late Antique Amiternum. The findings demonstrate how dental calculus, when analyzed alongside skeletal pathology, can reveal therapeutic strategies, dietary adaptations, and care practices that complement and refine information derived from written and material sources.

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Roots of Collapse: Isotopic Insights into Migration in Roman Period Poland

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Keywords: Human mobility; strontium analysis; Roman period; Barbaricum; migrations
Presentation Format: In-person podium

At the same time as the Roman Empire emerged, the Goths crossed the Baltic Sea, marking the beginning of their long migration through Central Europe towards the Black Sea and the Danube River. Along the way, they became both adversaries and allies of Rome, ultimately playing a role in its decline. This is just one of many examples of how the mobility of populations from beyond the imperial frontiers influenced the course of Roman history. This presentation aims to discuss the current state of research on human mobility within the territory of present-day Poland during the 1st to 5th centuries CE. The study is based on isotopic analysis of human remains from seven archaeological sites, representing a total of 80 individuals. One of the major interpretative challenges is the bi-ritual funerary tradition, which limits analytical potential by reducing the availability of suitable remains and introducing interpretative complexity. The results reveal considerable variation in mobility patterns. At two sites, nearly half of the individuals appear to be of non-local origin, while at the others, most, if not all, individuals were native to the region. These findings raise a question on the nature and mechanisms of migration in this period. While mobility itself is beyond doubt, questions remain regarding how these movements took place.

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Winter is Coming: Climate Change and Maxillary Sinusitis in Britain in the Late Antiquity Little Ice Age

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Keywords: Climate Change; maxillary sinusitis; Roman Warm Period; Britain
Presentation Format: Virtual poster

Clinical studies have found that climate change can majorly affect population health. During the Late Roman and Early Medieval periods, Europe transitioned from the Roman Warm Period (RWP) (300 BCE-400 CE) to the Late Antiquity Little Ice Age (LALIA) (500 CE-900 CE) and became much colder. This poster aims to use maxillary sinusitis (MS) as a proxy for climatic shifts in Britain and to determine whether paleopathology can be used as a climate proxy. This was a data-based literature review using data on MS from published and grey literature from the 1960s until 2024. A total of 229 sites containing 12,829 human remains, with 9,042 adults found across both periods and a relatively even temporal split (RWP n=6049, LILIA n=6780). Overall, there were statistically significantly higher rates of MS in the LALIA (3.64%) compared to the RWP (2.29%), with even higher rates when only adults are considered (RWP=3.04%, LALIA=5.25%). RWP urban (67/139) and rural (72/139) populations show a relatively even split, while LALIA shows higher rates in urban populations (189/247) than in rural (58/247). In both periods, males show higher infection rates than females (RWP:M=73, F=53, LILIA:M=136, F=101). Chronologically and geographically, the 5th-6th centuries CE in the northeast displayed higher rates, suggesting this was a colder time and area. This study has demonstrated the link between climate and sinusitis using novel methods of displaying paleopathological data and shown that paleopathology can be used to measure climate change.

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Dental Calculus as a Forensic and Archaeological Archive: Methodological Advances from the PRIN Project *Roman Calculus*

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Keywords: Late Antiquity; dental calculus analysis; bioarchaeology; paleopathology; forensic analysis; health and medicinal therapies in antiquity
Presentation Format: Virtual podium

Dental calculus (mineralized plaque) is increasingly recognized as a long-term biomolecular archive, both in archaeological and forensic contexts, for its ability to preserve molecular traces of drug use, environmental exposure, and therapeutic practices over time. The *Roman Calculus* project (PRIN 2022) explores the potential of dental calculus, ancient and modern, as a matrix for detecting pharmacological habits, exposure to psychoactive substances, and medicinal plant use in ancient and contemporary populations. A central goal is to assess whether it can be used to detect the intake of psychoactive or therapeutic substances, whether taken for ritual, medicinal, or recreational purposes. The study also aims to evaluate its value in forensic contexts where traditional biological matrices are unavailable. This paper presents the multi-method protocol applied to archaeological samples from Late Antiquity in the Italian Peninsula (1st–6th c. CE) and modern controls (collected from living individuals, including hair, saliva, and dental calculus). The selected archaeological individuals present numerous paleopathological conditions—including dental and systemic stress markers—which make them particularly suitable for testing whether therapeutic substances, medicinal or psychoactive, may be detectable in dental calculus. Analyses include optical microscopy, LC-MS/MS, and GC-MS to identify active compounds such as opiates, alkaloids, and therapeutic/psychoactive substances. The methodology explores three key aspects: (1) preservation and detectability of bioactive compounds in ancient calculus; (2) comparative retention in calculus *vs*. hair and saliva in modern samples; (3) detection thresholds to distinguish chronic from episodic use in both ancient and modern contexts. Preliminary results confirm that dental calculus can retain detectable levels of natural bioactive compounds, including plant-based alkaloids, showing potential for retrospective toxicological analysis beyond the limits of conventional biological matrices. By integrating archaeological and biomedical perspectives, this project aims to redefine the role of dental calculus as an alternative archive for reconstructing substance use, medicinal therapies, and long-term care.

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Fourth Century Faunal Remains from the Basilica-Church at Amheida (Ancient Trimithis)

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Keywords: Late Antiquity; zooarchaeology; funerary crypts; diet
Presentation Format: Virtual podium

At Amheida (Ancient Trimithis), there is a large villa residence (B1) referred to as the "House of Serenos," who was both a member of the municipal elite and a Trimithis city councillor (Caputo 2020; Davoli 2022). Remnants from his house reveal an association with Roman Mediterranean cultural norms, such as significant pork consumption (Crabtree and Campana 2015), however the inhabitants of a less wealthy home (B2) reveal a more traditional Egyptian household with Hellenistic Greek influences (Boozer 2015). There is also a 4th-century Christian basilica-church (Building 7), which has a collection of approximately 500 faunal remains from the rooms, burials, and wall-fill. The church itself is one of the oldest known funerary crypts in Egypt, and little is known of the cultural identities of the eight individuals buried there (Aravecchia et al. 2015). The quotidian nature of diet has allowed for the ongoing investigation of different food preferences and their entanglements with identity in Roman Egypt. In the Dakhleh Oasis, identities were diverse, and reinforced various food preferences, like meat. Church B7, one of the earliest evidences of churches in Egypt, also contains the oldest set of Christian funerary crypts in Egypt (4th century CE). A new analysis done on faunal material from the 4th-century basilica-church at Amheida (Ancient Trimithis) has revealed a potential difference in pork consumption within the church and, when compared with other locales at Amheida, supports varying theorizations of the church inhabitants' unknown identities.

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History Spares Those Who Stay Low: Multi-Isotopic Analysis of Human Remains from the Lower Danube Valley during Roman and Early Medieval Times

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Keywords: Human mobility; diet; isotope analysis; limes
Presentation Format: In-person podium

The Lower Danube Valley witnessed significant demographic and cultural transformations associated with the movement of Germanic, Slavic, Avar, and Bulgar groups in the Late Antiquity and the Early Middle Ages. These processes brought about far-reaching changes in population structure, culture, and economy. The *Scales of Fragmentation* project aims to explore these transformations, focusing on the decline of the Roman Empire and the formation of new social and economic landscapes in its aftermath. This study examines human remains from four archaeological sites located in the Lower Danube region (Noviodunum, Nufăru, Boldești–Grădiștea, and Histria Capul-Viilor) representing 59 individuals dated to the 4th–9th centuries CE. Stable isotope analyses (carbon, nitrogen, sulfur, and strontium) were conducted to reconstruct diet and mobility patterns. The results suggest predominantly local origins for the studied individuals. Millet played a central role in the diet, with its contribution increasing over time, while the intake of animal protein remained relatively stable. Sulfur isotope data indicate diverse but regionally consistent food sources, supporting the local provision. Strontium isotope values further confirm limited residential mobility. Despite textual and archaeological evidence of large-scale population movements, our bioarchaeological findings reveal a largely local, sedentary population in the Lower Danube region. This raises questions about the scale and character of migration during this period, suggesting that historically visible groups may have represented a small but influential minority, while most communities adapted *in situ* to a changing world.

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Buried in a well: An osteobiographical study of two non-adult individuals from Roman period Mursa (Osijek, Croatia)

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Keywords: Osteobiography; non-adult double burial; well burial; Osijek
Presentation Format: In-person poster

During excavations in 2011 at the former Roman colony, Colonia Aurelia Mursa, in what is now modern-day Osijek, Croatia, the remains of two non-adult individuals were uncovered appearing to have been buried within of one of the colony's water wells. According to direct Accelerated Mass Spectrometry (AMS) dating, their deaths occurred in the mid-3rd century CE. This study will attempt to shed light on the lived experiences of the two individuals through the use of multiple methods. An osteobiography will be the primary method through which the biosocial nature of the individuals' lives will be examined. Demographic data will be collected for both individuals in addition to general information regarding their health. Their mortuary treatment will also be explored to assess its commonality within the society. The combination of biological and chemical data with broader contextual information will explore how the individuals were treated both in life and in death, thus providing insight into their lived experiences. By developing an understanding of how the two non-adults were perceived by their society, we may begin to understand how similar Roman provincial individuals may have experienced their biological and social environment. This study was funded by the Croatian Science Foundation grant IP-2022-10-8558.

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Dead and the City: The Cremations of a Woman and a Child in a Caleti Necropolis During the High Roman Empire

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Keywords: Cremation; early heat-induced changes; unusual mortuary practices; High Roman Empire
Presentation Format: Virtual poster

Since 2021, 22 French researchers were appointed to analyze and synthesize all the data gathered about "Juliobona, the capital of the Caleti" (nowadays called "Lillebonne", in Normandy) and its territory (Spiesser dir. 2021). This research program, promoted by the conurbation authority of Caux Seine, now focuses on the *caput civitatis* itself (Parétias dir. 2024; Parétias dir. 2025). Among other research topics about the material culture, one of the main goals of the program is the study of funerary rites that were utilized in the city, in order to identify possible differences between people. In this regard, the site of the Catillon, explored since the 19th century, and known as being the main necropolis of the town, provides a rich source of data. For example, based on biological criteria, we identified carbonized bones of a presumed mature woman buried without grave goods (Gadacz 2011). This sepulchre, discovered during a field survey (Kliesch dir. 2011), revealed features clearly different from the standards known for this cemetery at the same period (the end of the 1st / beginning of the 2nd century CE), such as those seen in the neighboring burial (Gadacz 2011; Kliesch dir. 2011), or, more recently, in the tomb of a small child known as “Domina’s Grave” (Wech dir. 2022). For our poster presentation, we would like to focus on these two peculiar discoveries that allow us to understand, despite the difficulties of analyzing cremations, that there were indeed differences in funerary practices between adults and children, possibly even between adults themselves, in this necropolis during the High Roman Empire.

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Tarsal Variation in a Late Antique Rural Context from Capo Frasca (Sardinia, Italy)

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Keywords: Tarsometatarsal coalition; tarsal anatomical variants; Late Antiquity; Sardinian bioarchaeology
Presentation Format: Virtual poster

During asbestos remediation within the Capo Frasca military zone (Arbus, Sardinia), archaeological monitoring led to the unexpected discovery of a Roman building—likely with mosaic flooring and dated to the mid-3rd century CE—and three adjacent tombs, clearly later in date and plausibly attributable to a phase between the 4th and, at the latest, the 6th century CE. The small funerary group included four individuals in primary deposition—two adults in a cappuccina-type grave, a single adult female in a second tomb, and a young child in a third—as well as disarticulated remains. Osteological analysis revealed an unusual concentration of congenital and developmental anatomical variants. These include a bilateral non-osseous tarsometatarsal coalition between the third cuneiform and third metatarsal (a fusion resulting from defective separation of tissues during embryonic development), a possibly bilateral *os calcaneus secundarius* (accessory ossicles associated with crescent-shaped notches on the anterior facets of the calcanei; in this case, only the notches are preserved), an accessory navicular bone (an unfused ossification center on the medial side of the foot), and a Stieda or trigonal process (an enlarged and partially unfused lateral tubercle of the posterior talar process). Tarsometatarsal coalitions are rare and often asymptomatic anomalies, with a potential genetic basis and possible functional implications. Although scarcely reported in archaeological contexts, their co-occurrence with other accessory bones—commonly viewed as developmental variants—may point to shared embryological pathways. The presence of multiple anomalies in such a small, potentially related group raises the question of familial predisposition. While future genetic analyses may clarify this, biomechanical and environmental factors must also be considered. This case expands the bioarchaeological record of non-osseous coalitions and highlights the importance of integrating skeletal and contextual data in the study of subtle developmental variation in past populations.

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From the Sea to the Table: The Transport of Products of Marine Origin through the Province of Betica in Late Roman Hispania. The Case of Torreparedones (Baena, Spain)

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Keywords: Molluscs; commercial networks; Roman Baetica; Torreparedones
Presentation Format: Virtual podium

The consumption of marine products in Roman times served as a marker of social status, with delicacies such as oysters regarded as both luxury items and culinary refinements. However, their high susceptibility to spoilage required immediate consumption, which would have demanded an elaborate logistical network. This system likely relied on the empire's vast infrastructure of terrestrial, fluvial, and maritime trade routes. The archaeological site of Torreparedones (Baena, Córdoba), located inland in the Cordoba Countryside region, 170 km from the nearest coast, has yielded a significant record of malacofauna and ichthyofauna in waste deposits from the Eastern Baths and the macellum, both dated between the 3rd and 4th centuries CE. The presence of oysters in Roman-imperial sites in inner Hispania is not unusual. However, the discovery of this assemblage in a Roman city embedded in the rural landscape of the Baetica province presents an opportunity to further explore Roman trade networks during a period of economic and political instability, such as the 3rd century CE. Using predictive models and an extensive reconstruction of Baetica's terrestrial road network, two possible trade routes have been identified: one originating from the Atlantic coast and another from the Mediterranean coast. Based on the estimated speed of available transport methods at the time and the lifespan of the transported shellfish, the Mediterranean route would have been the most efficient. This route would have been integrated into the Malaca-Obulco commercial network, which was centered on the moving of mining products from the Subbetica mountain range. These findings demonstrate the existence of robust trade networks in the Baetica province during a period of instability, possibly overstated in historiographical literature.

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Scupi-A Mass Grave 2694

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Keywords: Mass grave; Scupi; skeleton; decapitation
Presentation Format: In-person podium

In 2011 a mass grave with skeletal remains of approximately 200 individuals, was discovered during the archaeological research of a southeast necropolis in Scupi. Recognizing the significance and rarity of this find, an interdisciplinary expert team was assembled during the field-research works, to prepare the pilot study "Archaeological, anthropological and forensic medicine research of skeletons from the mass grave of Scupi's southeast necropolis." The event likely happened between the 3rd or early 4th century CE known as "The Imperial Crisis" characterized by the rule of military anarchy. Most of the individuals were aged between 20 and 40 years. There is a prevalence of men with medium long skulls, tall and broad faces, robust and tall physical stature. The manner of execution and traces of ante-mortem, peri-mortem and indicators of micro-stress exposure, which are present on the bones, indicate that the individuals were members of the army. The position of the skeletons and the findings of injuries on the cervical vertebrae, lower jaw and the base of the skull, indicating decapitation (*capitis amputatio*) caused by sharp or pointed objects.

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Archaeozoological Insights into Late Antique Rural Life at Banjače

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Keywords: Archaeozoology; animal exploitation, taphonomy, Late Antiquity
Presentation Format: In-person podium

This paper presents the results of archaeozoological analyses conducted on animal remains from Late Antiquity uncovered during systematic excavations of Banjače, a rural site situated on the northern edge of the Dugopolje plateau. The site is strategically located near important Roman roads connecting Salona with the provincial border and the inland regions of Dalmatia, and it provides a valuable opportunity to explore patterns of rural life during a transitional historical period. Excavations revealed the remnants of two drywall structures interpreted as workspaces, which points towards domestic or small-scale agricultural activity. The preliminary archaeozoological study aims to shed light on the dietary preferences and subsistence strategies of the inhabitants of the settlement, alongside broader patterns of animal resource exploitation, such as butchery practices, secondary product use, and species selection. In order to reconstruct the post-depositional history of the animal remains, the analysis also takes into account taphonomic observations, e.g., evidence of burning, cut marks, and weathering. These findings will contribute to a more comprehensive understanding of the relationship between humans and animals in the region during the early 5th century CE, thereby providing insights into economic, environmental, and cultural aspects of life in Late Antiquity Dalmatia.

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Living Conditions in the Advent of the Roman Rule in Thebes, Boeotia

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Keywords: Life quality; living conditions; physiological stress; dental pathologies; diet; bioarchaeology
Presentation Format: In-person podium

During Classical Antiquity, central mainland Greece was the setting for significant historical developments that influenced the broader Greco-Roman world. The region experienced a series of major conflicts, shifting alliances, and periods of both prosperity and decline. Boeotia was deeply involved in these events, with its capital, Thebes, standing as a dominant regional power until its destruction by Alexander the Great in 335 BCE. Following this, the region fell under Macedonian control and eventually became part of the Roman world in the 1st century BCE. These social, political, and economic transformations greatly impacted local populations, making Boeotia an ideal case for exploring health and lifestyle changes at the advent of Roman influence. While the Classical period in Greece has been extensively studied from historical and archaeological perspectives, bioarchaeological research on human remains from this era remains scarce—especially in Boeotia, where only three studies exist: two focused on Akraifeia (Nikita et al. 2019; Tritsaroli 2017) and one on Agia Triada (Michail et al. 2017). This study investigates the impact of socio-political transitions on health and diet, aiming to identify differences related to biological sex and social status through the analysis of human skeletal remains from the northeastern cemetery of Thebes.

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Livestock Economy and Provisioning Systems along the Danube Limes: Archaeozoological Perspectives from Noricum and Pannonia

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Keywords: Zooarchaeology; Danube *limes*; Roman economy; provisioning systems
Presentation Format: Virtual podium

This paper explores the supply and consumption of animal products in the Roman provinces of Noricum and Pannonia, focusing on the Austrian section of the Danube Limes. The central aim is to investigate the economic structures and logistical mechanisms that governed the provisioning of both urban centers and rural settlements, with particular attention to the interplay between regional and supra-regional networks. The study draws upon archaeozoological data from eight sites representing diverse settlement types. More than 15,000 faunal remains were analyzed with regard to taxonomic composition, anatomical representation, age profiles, and traces of processing. Osteometric analyses were carried out to examine size variability and to detect diachronic and regional trends in livestock management. Analytical priorities included the identification of so-called “signature fragments” as markers of standardized processing practices, the comparison of urban and rural consumption patterns, and the evaluation of animal size variation as an indicator of economic and environmental factors. The results reveal special deposits of cattle remains in urban assemblages, reflecting centralized demands and systematic butchery. The findings emphasize the complexity and adaptability of Roman provisioning systems, characterized by the interconnection of local autonomy and long-distance exchange. Urban settlements emerge as nodal points in a wider economic landscape, while rural producers and consumers operated within diverse organizational frameworks. Moreover, logistical factors such as preservation techniques and transport infrastructure played a pivotal role in enabling stable supply chains. Beyond contributing to the understanding of Roman frontier economies, this study also offers a nuanced perspective on sustainability and resilience in ancient food systems – issues of continued relevance in modern scholarship.

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What Happened to the Roman Women at the Austrian Danube *Limes*? A New Approach to Interpreting the Female Deficit in the Eastern Roman Cemetery of Ovilava, Austria

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Keywords: Female deficit; Roman burial grounds; Noricum; Danube Limes; Ovilava
Presentation Format: Virtual podium

In historic and prehistoric populations, the sex ratio can often only be determined based on bioarchaeological analyses of cemeteries. In this context, a so-called female deficit has been described, which is in clear contrast to the natural sex ratio found in recent populations. Several explanations of this female deficit have been discussed. In our project we focused on the demography of Roman times burial grounds at the so-called Danube Limes and the Limes Hinterland in today Austria, with special respect of the Roman town Ovilava in northwestern Noricum, today's Wels in Upper Austria. The bioarchaeological and aDNA analyses of the inhumations of the eastern cemetery of Ovilava – the so-called Gräberfeld Ost – yielded a sex ratio of 177 and consequently a marked female deficit, which is quite unusual for a civilian town. A comparison with other Roman cemeteries of this region revealed a wide range of sex ratios among inhumations in Noricum and Pannonia. For Ovilava spatial as well as chronological aspects of the sex ratio were analyzed. Radiocarbon dating allowed a chronological classification of grave sites. In addition, a spatial analysis of the cemetery was carried out using a geoinformation system. Furthermore, the sex ratio of individual age classes, as well as the epochs have been compared. While in the age group below 20 years a female surplus was observed, the proportion of females reduced dramatically with increasing age classes. There was also a clear female deficit in the early Roman and Imperial periods but an almost balanced sex ratio in the early Middle Ages. Furthermore, the sex proportion varied between the cemetery areas. Consequently, a female deficit occurs mainly during the Roman period and in specific areas of the burial ground.

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People from the Villa: An Anthropological Analysis of the Harsánylejtő Site (3rd-4th centuries CE) from Pannonia Inferior

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Keywords: Anthropology; paleopathology; Aquincum; villa
Presentation Format: In-person podium

In the framework of our wider project, in which we explore health and life in the Roman Pannonia, we are also conducting pilot studies on smaller burial sites to learn more about the social structure of local families or smaller communities. Aquincum as the capital of Pannonia Inferior was inhabited by a mixed population: Romanized autochthon Celtic and Illyrian tribes and immigrants of the Empire settled down here as well. Besides military and civil towns, villa estates were discovered in today's Budapest area. For villa estate Csúcshegy-Harsánylejtő site (AD 3rd-4th centuries) is an example from where altogether 30 individuals (half of them subadults) were identified. Based on the paleopathological observations multiple individuals possessed signs of non-specific pathophysiological stress, furthermore other pathologies like traumatic alterations, intentional cranial modification, metabolic disorders were also revealed during the analysis. The alterations were recorded from the aspect of both individual and element count method, so our dataset is more easily comparable with results from other sites representing the civic or military towns of Aquincum area, thus placing our findings in proper context. The Hungarian Academy of Sciences supported this research through the MTA–BTK Lendület "Momentum" Bioarchaeology research project (LP2023-20/2023).

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Tracing Disease, Trauma, and Labor: A Bioarchaeological Study of Girnavaz in the Late Roman–Early Islamic Period

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Keywords: Girnavaz; paleopathology; decapitation; anthropology; Late Roman-Early Islamic Period
Presentation Format: In-person poster

The Girnavaz Mound is situated in the Nusaybin district of Mardin province, in south-eastern Türkiye. The mound in question has been linked to the city names Nabula in Assyrian sources and Navala in Old Babylonian documents (Erkanal, 1983). The site has been continuously inhabited from the Late Uruk period until the Neo-Assyrian period. Girnavaz is comprised of four distinct cultural strata. Superimposed upon these strata is the cemetery, which was utilized during the Late Roman to Early Islamic period. As a consequence of the archaeological excavations conducted in the cemetery dated to the Late Roman-Early Islamic Period of Girnavaz Höyük, the skeletal remains of 148 individuals were unearthed. The skeletal remains of 84 adult individuals recovered from this area constituted the material of the study. In the paleopathological analyses that constitute the subject of the study, the differences of the diseases observed in sex and age ranges were examined. Pathological cases examined exhibit varying values according to age and sex. Porotic hyperostosis (3.5%) and cribra orbitalia (5.8%) were observed in the population during this period, often associated with iron deficiency and anemia. Button osteoma (2 cases) was found in the middle adult age group. Lytic lesions (11.6%) were the most common, with periosteal reactions (43%) also common. Entheseal changes (9.3%) were mostly found in males, reflecting the sex distribution of workload. Schmorl's nodes (19.8%) increased with age. Cortical deformations (5.8%) were more common in females. Traumatic traces included incisions and blows, possibly related to violent events. Deep incisions (e.g., on the skull) indicate decapitation practices. These findings reveal challenging living conditions during this period due to environmental and socio-political reasons.

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A Glimpse into a Rural Community from Late Antique Dalmatia: Preliminary Bioarchaeological Analysis of Tomb 2 from Velić

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Keywords: Late Antiquity; bioarchaeology; diet; ancient DNA
Presentation Format: In-person podium

In the village of Velić near Trilj, located in the immediate vicinity of the Roman military camp Tilurium in the hinterland of ancient Salona, the capital of the Roman province of Dalmatia, the remains of a rectangular building with a semicircular apse and two vaulted tombs have been documented. According to preliminary analyses, the object can be roughly dated to the Late Antique period and interpreted as an early Christian memorial chapel. So far, only a handful of Late Antique burials with human remains associated with rural communities from the province of Dalmatia have been studied by using state-of-the-art analytical methods. Therefore, a discovery of Tomb 2 from Velić provided an excellent opportunity to get a better insight into general health and everyday life of the inhabitants of the Adriatic hinterland during Late Antiquity. To obtain a precise picture of the biological profile of the individuals interred in Tomb 2, we employed a combination of conventional bioarchaeological, lead exposure, ancient DNA, and C/N stable isotope analyses. Tomb 2 contained the remains of four individuals: one younger adult (18-25 years) and three non-adults (3-4 years, 4.5-5.5 years, and 9-11 years). Only the skeleton of a young adult individual exhibited pathological changes: Schmorl's nodes, cranial porotic hyperostosis and dental enamel hypoplasia. Ancient DNA analysis showed that the adult individual is genetically male, while all three non-adults are females – the male is the older brother of two (4.5-5.5 years and 9-11 years) females, while the third female is not related to anyone from the tomb. C/N isotopic values for all four individuals suggest a diet based on terrestrial C3/C4 plants with a very low animal protein intake. Finally, the average lead value for individuals from Velić is 2.65 ppm (1.80-4.29 ppm), which is significantly lower compared to other samples from Dalmatia. This study was funded by the Croatian Science Foundation grant IP-2022-10-8558.

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Development of a Multimethod Approach for Identifying Ancient Human Parasite Infections

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Keywords: Paleoparasitology; parasite infection; ancient DNA; gastrointestinal infection
Presentation Format: Virtual podium

Gastrointestinal parasites preserved in archeological fecal samples provide evidence for parasite infections in human populations as far back as the Neolithic Period. However, microscopy, the sole method used in most studies, has major limitations including the inability to make species-level identifications and difficulty identifying poorly preserved eggs. This research aims to overcome these limitations by applying sedimentary ancient DNA methods paired with hybridization capture using a parasite-specific bait set. These methods were applied to 26 fecal samples known to contain preserved parasite eggs collected from 14 archaeological sites across Europe and the Middle East dating between 6400 BCE–1500 CE, in order to compare parasite diversity in the Roman period to earlier and later time periods. Parasite DNA was recovered from 35% (9/26) of the samples, all of which dated from the 2nd c. BCE onwards. Microscopy recovered parasites not identified using ancient DNA methods in 18 samples. Nine samples contained roundworm (*Ascaris* sp.) DNA alongside microscopically identified eggs. Six samples contained roundworm eggs without DNA recovered. Whipworm (*Trichuris trichiura*) eggs were found in 11 samples, with *T. trichiura* DNA in two samples, one of which had no preserved eggs. *Dicrocoelium dendriticum* DNA and eggs were found in one sample. Samples were more likely to contain preserved DNA from roundworm when egg concentrations were more than 30 eggs per gram. Roundworm DNA recovered from samples that contained decorticated roundworm eggs allows us to explore the varying morphology of ancient eggs. In the pre-Roman period, taxonomic diversity included a mixed spectrum of zoonotic and parasites spread by ineffective sanitation. We see a marked change during the Roman and medieval periods with an increasing dominance of parasites transmitted by ineffective sanitation, especially roundworm and whipworm.

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Fragmented by Transformation: Differential Taphonomic Attrition at Nadin Necropolis

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Keywords: Fragmentary remains; Romanization; bioarchaeology; bone density
Presentation Format: In-person podium

The nature of skeletal material, such as bones' density, influences element survivorship in archaeological contexts contributing to challenges with analyzing fragmentary and commingled human remains. Despite their condition, surviving skeletal feature representation has proven reliable for gleaning data from difficult contexts. Furthermore, studies have successfully examined bone persistence indices through analyses of bone segments and their density. Likewise, this study analyzed fragmentary bone from a Liburnian Iron Age necropolis in Nadin, Croatia to understand bone density mediated taphonomy and identify representation outside of expectations. This study compared published approximations of bone segment density (BMDc), to landmark occurrence (count), an important component used in the determination of MNI (minimum number of individuals), and bone preservation captured by the percentage of completeness (%C). Attrition was measured using landmark specific attrition (%LAI= (xPP- PP)/ MNEexp), a modification of the bone representation index (BRI). Results suggest that overall, long bone (humeri, ulnae, radii, femora, and tibiae; NISP= 149, 138, 119, 184, 135) survival aligns with expectations of density mediated attrition; though, humeri, radii, and tibiae had moderate, non-statistically significant correlations between attrition (%LAI) and density (BMDc) (Pearsons r= -.54, -.92, -.73, -.83, -.67; p(.05)= .09, .03, .11, .001, .07). Previous examinations identified low representativeness of all long bones with high levels of fragmentation. The local material and landscape transformations at Nadin highlight the impact of cultural and ritual interactions between indigenous Liburnians and Roman allies. Considering these factors, skeletal preservation was likely influenced by the complex interplay between natural processes and biocultural practices at the necropolis. Deliberate actions, such as burial reuse, are difficult to validate with post-inhumation disturbance. However, approaches like those utilized here provide a taphonomic baseline for comparison with subsequent biocultural realities, informing the archaeological record on periods like the Roman expansion into the Eastern Adriatic and Balkans.

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New Evidence for the Presence of Tuberculosis in the Barbaricum of the Carpathian Basin: A Case with Tuberculous Meningitis from a Sarmatian-period (2nd–3rd Century CE) Storage Pit from Kiskundorozsma–Daruhalom-dűlő II (Hungary)

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Keywords: Tuberculosis; paleopathological diagnosis; endocranial granular impressions; Sarmatian period; Carpathian Basin; atypical burial
Presentation Format: In-person podium

The aim of our study is to present a newly identified case of tuberculosis (KD429) from the Barbaricum of the Carpathian Basin. The relatively complete and fairly preserved skeleton of a 15–19-year-old individual was discovered in a Sarmatian-period (2nd–3rd-century-CE) storage pit at the Kiskundorozsma–Daruhalom-dűlő II archaeological site (Hungary). The bone remains of KD429 were subjected to a thorough paleopathological evaluation, during which all skeletal elements were macroscopically examined with the naked eye. Both the skull and postcranial skeleton of KD429 showed bony changes that are very likely caused by tuberculosis. In the skull, endocranial granular impressions (GIs), abnormally pronounced digital impressions, and abnormal blood vessel impressions were observed. In the postcranial skeleton, signs of hypervascularisation (enlarged vascular foramina) were registered on some vertebral bodies. The presence of the aforementioned endocranial alterations in KD429, especially GIs that are pathognomonic features of tuberculous meningitis, implies that this juvenile individual suffered from tuberculosis at the time of death. It cannot be excluded that the spine of KD429 was also affected by the disease as enlarged vascular foramina on the vertebral bodies have been described as probable signs of early-stage spinal tuberculosis in the paleopathological literature. Reports of archaeological cases with tuberculosis, like KD429, can provide invaluable information about the spatio-temporal distribution of the disease in the 1st–5th-century-CE Barbaricum of the Carpathian Basin – KD429 represents one of the earliest known Sarmatian-period cases of tuberculosis and is the first reported from the Maros Angle of the Lower Tisza Region. At the current state of research, the reason for KD429's exclusion from the "normal" burial custom is unknown and it remains an open question whether their unusual treatment at death is connected to their disease (tuberculous meningitis) and its accompanying signs and symptoms (e.g., confusion, personality or behavior changes, hallucinations, and seizures).

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Mapping Inequality in the Roman world: A Geospatial and Network Model Approach to Evaluating Population Health

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Keywords: Paleopathology; meta-analysis; geographical information system; connectivity
Presentation Format: In-person podium

For this exploratory paper, we explore whether differences in population health between settlements in the Roman Empire can be observed through geographic location and overall connectivity. To do this, we analyze settlement connectivity (as a proxy for resource inequality) in conjunction with paleopathological data from 72 imperial Roman period sites (100 BCE-500 CE). Ten biomarkers of stress were tabulated and assessed: childhood stress (enamel hypoplasia), metabolic conditions (cribra orbitalia), oral health (caries, calculus, antemortem tooth loss, abscess, periodontal disease), non-specific immune response (periosteal new bone), biomechanical wear (non-vertebral osteoarthrosis), and trauma (antemortem fracture). Connectivity was operationalized through geospatial positioning of sites in ArcGIS, distance to nearest site and distance to Rome according to ORBIS (orbis.stanford.edu) map estimates, and "in" and "out-of" major Roman road network designation. ArcGIS interpolation maps and hot spot analysis denote higher frequencies of dental lesions in Italy and continental Europe with notable variability in enamel hypoplasia and periosteal new bone. Spearman's correlations between lesion frequency and distance (in days) to both nearest town and Rome were not significant, nor were pathological lesion frequencies between ORBIS (i.e., highly connected) and non-ORBIS sites. Despite some variability in ArcGIS results and lack of significant differences using ORBIS data, this exercise presents a novel approach for operationalizing and incorporating settlement connectivity with paleopathology to provide a more global perspective of population health in the Roman World.

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Unravelling the Mystery of M141: A Multi-disciplinary Re-assessment of Commingled Human Remains Outside the City Walls of Romano-Byzantine Ibida (Romania)

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Keywords: Isotopic analysis; commingled remains; Danubian *Limes*; osteoarchaeology
Presentation Format: In-person podium

Commingled assemblages of human remains present the most complex and often neglected deposits in biomolecular archaeological research. This study employs a multi-disciplinary approach (chaîne opératoire theory, archaeothanatology, osteology, isotope analysis, proteomics), including the first multi-isotopic (C, N, S, Sr, O, Pb) study of any Roman period site from this region, to re-examine a suspected 'massacre of outsiders' in a commingled deposit (M141, MNI=37) discovered at the Romano-Byzantine Limes fortress Ibida (Romania). Detailed analysis of the human remains reveals that M141 is a secondary deposit, comprising adults and non-adults, both sexes and minimal perimortem trauma. Isotopic values for carbon and nitrogen from bone collagen and bulk dentine identify distinct dietary histories with many of the individuals from M141 consuming C4 foods, likely millet, in contrast to the C3 dominant diet of contemporaneous high-status individuals and the general necropolis population. Sulphur, strontium and oxygen isotopes of tooth enamel identify potential non-local individuals within M141 and the necropolis. Lead isotope concentrations from tooth enamel are variable; some individuals from M141 and the necropolis present minimal anthropogenic exposure (Pb ppm <0.5), suggesting a possible "non-Roman" cultural origin. While the high-status group consistently presents Pb ppm>0.5, suggesting long-term Roman cultural influence. Altogether, there is negligible evidence suggesting that the M141 group was massacred. The inclusion of the M141 group in isotopic analysis has unmasked the range of diversity exhibited at Ibida, aligning with current narratives of diversity along the Roman *limes*, underscoring the underappreciated role of commingled deposits in reconstructing complex human experiences.

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Mosaic of an Ancient Roman City: The Preliminary Results of the Anthropological Investigation of the Aquincum Military Cemetery Bécsi Út 68-86 (1st-4th Centuries CE)

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Keywords: Late Antiquity; Acquincum; mortuary practices; bioarchaeology
Presentation Format: In-person podium

Excavations conducted under Budapest have revealed the cemetery of the Roman town of Acquincum in several pilot excavations. The largest of these is the Bécsi út 68-86 site, including approximately 800 burials of both inhumation and cremation practice. In ancient times, a road ran along the route of the Bécsi út (Vienna Road), and the area west of it, towards the Buda Hills, served as a site for interments from the first century to the early to mid-fourth century. This temporal span, encompassing over two centuries, is indicative of the area's historical significance. The excavation area facilitates a more comprehensive investigation of the context than was previously possible. This area showed a higher density of burials when compared to previous observations. The cremation burials and skeletal graves were in several layers that intersect each other multiple times. Based on the low quantity and also the poor quality of the burial finds, the cemetery may have been utilized for burying individuals of lower socio-economic status. However, the possibility that looting and displacement of the buried objects during grave disturbances cannot be disregarded. The anthropological investigation, initiated in 2024 and still ongoing, has already yielded significant insights into burial practices, health, and living conditions of the population that resided in the area. The preliminary report encompasses the biological data of 170 skeletons and 120 cremated remains. The mortality profile of the cemetery reveals a proportionately higher non-adult percentage (38.5%) and a significant male proportion (36.7%). The analysis of cremains provides a distinctive, large-scale perspective on the cremation process in the Roman city of Aquincum. This presentation aims to provide a clearer picture of life and death in the Pannonian Province by placing this material within the bioarchaeological context of previously analyzed sites and the current research agendas in Hungary.

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Health and Mortality in Upper Moesia: Bioanthropological analyses of Human Skeletal Remains from the Southeastern Necropolis of Ancient Singidunum

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Keywords: Singidunum; skeletal remains; antiquity; Upper Moesia
Presentation Format: In-person podium

Ancient Singidunum was a significant urban center in the Roman province of Upper Moesia from the second half of the 1st century CE, situated along the major route connecting Sirmium and Viminacium. The archaeological site at the corner of Kosovska and Vlajkovićeva Streets, in the modern-day center of Belgrade (Serbia), underwent rescue excavations in 2023. The excavated area represents part of the southeastern necropolis of Singidunum, aligned along the ancient road to Viminacium and dated between the 2nd and 3rd centuries CE. Sixteen inhumation graves were uncovered, including both simple burials and stone sarcophagi, with varying orientations, most commonly NW–SE or N–S. The graves contained few or no grave goods, with only occasional coins or jewelry fragments. This paper presents the preliminary results of the bioanthropological analysis of 20 individuals discovered from the necropolis, most of whom were poorly preserved. Of these, three individuals were identified as male, six as female, and one as a non-adult; biological sex could not be estimated due to preservation issues in ten skeletons. Paleopathological findings include diffuse idiopathic skeletal hyperostosis (DISH) in one individual (grave 9), probable idiopathic meningitis indicated by endocranial changes (grave 8), a suspected penetrating wound affecting the right pelvic bone in the area of the sacroiliac joint (grave 10), and a peri-mortem blunt force trauma to the frontal bone. Markers of early life stress were observed in four adults. Although based on a small and fragmentary sample, this study represents the first and only bioarchaeological investigation of ancient Singidunum, offering valuable insight into health, disease, and mortality in one of the key urban centers of Upper Moesia during the Roman period.

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An Interdisciplinary Approach to the Study of Life and Death at Roman Aptera, Crete

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Keywords: Collective burial; paleopathology; Roman Crete; rock-cut chamber tomb
Presentation Format: In-person podium

Aptera was an important center in the Roman period, as demonstrated by its strategic position above Souda Bay, the impressive architecture still visible at the site today, and finds that rescue excavations over the years have produced. Due to the nature of rescue excavations, with a lack of funding for studying the material, as well as the generally poor preservation of bones from the site, no bioarchaeological research has previously been conducted from the extensive cemeteries that have been excavated, dating largely from the Archaic to Roman periods. The relatively good preservation (though admittedly still highly fragmentary) of the human skeletal remains from a Roman rock-cut chamber tomb on the Dousemertzi-Kelaïdi plot within the ancient West Cemetery of Aptera, presented an opportunity for a proper osteoarchaeological investigation of the individuals interred there to be conducted. This paper is the initial overview of the results from the osteological, paleopathological, and isotopic ($\delta^{13}C$, $\delta^{15}N$, $^{87}Sr/^{86}Sr$ and ^{14}C) analyses, combined with the archaeological evidence. With the human remains of a minimum number of 18 individuals of a wide range of ages found on benches, in niches, and on the floor of the chamber, this tomb also offered an interesting opportunity to investigate the sequence and longevity of its use, likely for a family group across some generations.

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A Bioarchaeological Study of Multiple Burials from the Imperial Funerary Complex of Via Appia Antica 39

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Keywords: Rome; funerary rituals; paleopathology; Imperial Age
Presentation Format: In-person podium

The funerary complex of Via Appia Antica 39, just beyond the Aurelian Walls in Rome, has revealed several distinct funerary structures and well-preserved skeletal remains. Of particular interest is the western hall of Building 2, which features marble-clad *formae* and terracotta sarcophagi, with multiple inhumations. In this study, we present the results of bioarchaeological and archaeothanatological analyses conducted on three multiple burials located within this building. Radiocarbon dating indicates that these individuals date from the 2nd to 3rd centuries CE, extending into the 4th century. The first burial contains four individuals associated with particular funerary rituals, while the second and third burials each contain three individuals. Preliminary observations revealed an adult male with spina bifida, thyroid calcification, inflammatory processes, cervical hyperlordosis and multiple enthesopathies. One elderly female individual shows osteoarthrosis, while a subadult exhibits enamel and dental hypoplasia along with cranial lytic lesions, which are indicative of physiological stress or developmental disorders. All phases of the excavation were examined through close collaboration between archaeologists and bioarchaeologists, with the objective of recovering comprehensive data and ensuring no detail was overlooked. Indeed, the application of innovative technological approaches to this context has enabled advanced analyses of burial practices, integrating excavation and anthropological data. These findings contribute to the understanding of Imperial funerary customs and the health status of the buried individuals, highlighting the importance of interdisciplinary approaches in reconstructing lifeways and mortuary practices of Roman culture.

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Moving Beyond Migration: Interdisciplinary Approaches to Mobility in the Ancient Mediterranean

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Keywords: Ancient DNA; Roman Mediterranean; isotopes; mobility
Presentation Format: In-person podium

"Migration" often serves as the dominant explanatory framework in archaeogenetic interpretations of past population change, yet mobility occurs in diverse and context-specific patterns, encompassing a range of modalities and motivations. This project examines how archaeogenetic studies can explore various modes of mobility, beyond migration, especially through interdisciplinary collaborations and the integration of historical, archaeological and bioanthropological sources. We identify challenges in the study of mobility patterns - such as equifinality that arises from working with small, geographically heterogeneous datasets and the specter of culture-historical archaeology's fixation on migration - and suggest possible solutions, such as developing a shared terminology across disciplines. To illustrate the theoretical points raised above, I reanalyze archaeogenetic data from port cities of the Mediterranean in the context of complementary information from allied disciplines. Port cities are an excellent arena to shed light on the diverse patterns of mobility, as they are important sites of interaction between the maritime world and the hinterlands beyond, between local and diasporic populations. The primary case study will be insights gained from archaeogenetic and mobility isotope data for 20 individuals from Isola Sacra, the necropolis for Rome's primary trading port. The complementary nature of these two analyses, combined with insights from archaeological and textual sources, provides a complex picture of mobility in the Roman world which could not have been fully understood from either source alone.

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Roman Funerary Ritual in Rural Italy (Corinaldo, AN): An Integrated Approach Between Anthropology and Archaeology to Trace Lifecycle and Biological Sex Differences

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Keywords: Roman bioarcheology; funerary ritual; rural necropolis; Italy
Presentation Format: In-person podium

Differences in funerary ritual based on biological sex and age-at-death are investigated in the rural necropolis of Contrada Nevola (Corinaldo, Italy). The variables considered were the type of grave goods, the distribution of tombs within the necropolis, and the burial type. These are investigated in relation to anthropological data to ascertain how much funerary ritual is influenced by biological sex or age-at-death. The necropolis is composed of 18 females, 25 males, and 37 non-determined individuals (due to the poor state of preservation). According to historical sources, the classification of the lifecycle differed between males (*infantia, pueritia, adulescentia, iuvenes, seniores, senes*) and females (*infantia, pueritia,* fertility, fertility decline, menopause). No statistical analysis was conducted due to the restricted sample, and the interpretations are based on crude and true prevalence. The quantity of grave goods among females increases with age, whereas the opposite trend is observed in males and subadults. A degree of similarity in quality and quantity of grave goods is noted among non-fertile women, young males, and infants. Constructed tombs are more frequently associated with younger individuals, both male and female. Female burials appear more carefully arranged, particularly in terms of the typology of grave goods. The placement of drinking vessels within the tombs delineates three distinct groups, which likely correspond to two phases of occupation. From a ritual perspective, no clear topographical distinctions based on biological sex or age-at-death are evident. Differences between males and females also emerged from anthropological analysis, which will be correlated to the archeological data to provide a broader interpretation of the funerary ritual. The results are preliminary because the necropolis is still under excavation and the chronology of all the tombs has not yet been established. Nonetheless, the reliability of the model could be evaluated by means of a constant increase in the number of tombs.

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Cremation and Burial in the Roman Empire: The Northwest Necropolis of Siscia (Croatia)

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Keywords: Anthropological Analysis; Cremated Bones; Bone Histology; Northwest Necropolis of Siscia
Presentation Format: In-person poster

Burned human remains from archaeological sites pose a significant challenge for anthropological analysis due to fragmentation, deformation and thermal alteration. The research examined the burned remains of humans and animals from 21 graves from a Roman-era necropolis in Siscia (Sisak, Croatia). These graves have been dated to the 2nd and 3rd centuries CE based on the various objects found as grave goods. In two of the graves, the remains were preserved in urns, while the others were buried in grave pits. The preservation of bone material was poor due to the activity of various taphonomic processes. The amount of material in each pit was extremely low. The macroscopic evaluation focused on the morphology, coloration, and fracture patterns of the bones. Additionally, histological analysis was conducted to assess microstructural preservation, estimate the age at death, and identify the origin of the bone tissue. The burning temperatures were estimated based on changes in color and structure. Histological analysis allowed for a more precise distinction between human and animal bone fragments, as well as an estimation of the age at death. Additionally, burnt animal bone fragments were discovered in several graves alongside human bones. Macromorphological differentiation proved unreliable; however, histological analysis facilitated the taxonomic classification of animal remains into categories, including birds, ruminants, and rodents. Macroscopic indicators, such as crescent-shaped fissures, confirmed that the body was burned in situ rather than through post-cremation deposition of the bones. The results presented confirm that histological analysis, although minimally destructive, significantly enhances the bioarchaeological interpretation of burned remains. When used in conjunction with macroscopic methods, it provides essential information regarding the age, pathology, taphonomy, and taxonomic classification of both human and animal remains. Additionally, it enhances our understanding of Roman-period funerary practices in Siscia. The analyses and participation in this congress are financed by the Forensic Science Office of the University of Zagreb.

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From the Dark into the Light: A Recent Find of a Late Roman Cave Burial near Lipnik, Continental Croatia

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Keywords: Speleological objects; Late Antiquity; human remains; mortuary practices
Presentation Format: In-person podium

Much of Croatia's landscape consists of a karstic environment, which is rich in caves. Many of these caves have been visited for various purposes in the past, yielding abundant and diverse archaeological remains. In recent years, renewed interest in archaeospeleology has led to new discoveries and re-analyses of earlier finds, particularly human skeletal remains from the Bronze Age. However, the use of caves as burial sites in this region also continued into the Roman period. Although this practice in the Roman Empire was not widespread, most known burial cave sites are located in present-day Israel, Spain, and the United Kingdom. Over the past two decades, several caves in Croatia have been identified as burial sites from Antiquity, most of them dated to the 3rd century CE. These are often associated with the so-called "Plague of Cyprian", a pandemic that affected the Roman Empire during the second half of the 3rd century CE. In 2025, a team of archaeologists and speleologists explored a recently discovered site beneath Gubački Peak, near the village of Lipnik in the Pokuplje region of Croatia. The cave is a vertical shaft approximately 21 meters deep, with a bottom chamber measuring about 3 x 1.5 meters. At a depth of 10 meters, a horizontal opening, forming a small chamber where disarticulated human remains were found, along with a well-preserved Roman period dagger. Our aim is to present the preliminary results of the bioarchaeological analysis of the human osteological remains, newly acquired direct radiocarbon dates, and the artifacts recovered from the cave beneath Gubački Peak. These findings will be discussed in the context of similar sites from the Roman provinces of *Pannonia Superior* and *Dalmatia*, as well as within the broader framework of caves used as funerary spaces across the Roman Empire. This study was funded by the Croatian Science Foundation grant IP-2022-10-8558.

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Bioarchaeological Insights into Diet and Genetic Diversity in the Roman Colony of Castrum Novum (Santa Marinella, RM)

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Keywords: Stable isotopes; ancient DNA; paleogenomics; central Italy
Presentation Format: Virtual poster

This study focuses on *Castrum Novum*, a Roman colony founded in the first half of the 3rd century BCE (264 BCE?), located in the coastal area of Central Italy near Rome (Santa Marinella). Through a multidisciplinary approach combining stable isotope and paleogenomic analyses, we investigate how diet, mobility, and genetic diversity shaped this ancient community. Despite evidence of human presence since the Neolithic, the site gained prominence during the Roman Republic, also thanks to the construction of the Via Aurelia and the monumentalization of its fortifications. The Imperial period saw development of the habitative nucleus in a proper city with the construction of thermal baths, a forum, a theatre, and one of the largest Peschiera fishponds in the Mediterranean. Archaeological excavations in the site have uncovered ten burials dated between the 3rd and 5th centuries CE, yielding skeletal remains of 18 individuals (15 adults and 3 non-adults). Stable isotope analysis was performed on collagen extracted from 12 human and 5 faunal samples (cattle, pig, horse, and unidentified ovicaprids). All samples demonstrated good collagen preservation (≥0.12%). Carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) isotopic values suggest a predominantly terrestrial diet for both humans and fauna, with humans exhibiting limited marine protein intake—an unexpected finding given the site's proximity to the sea but coherent with other population of the same period of Lazio region. This may indicate that marine resources were primarily allocated for trade or elite consumption. Ancient DNA was extracted from teeth and petrous bones using a silica column-based protocol, and double-stranded libraries were prepared for shotgun sequencing. Low-coverage genomes (≥0.1X) were successfully obtained for 5 out of 8 individuals. Ongoing analyses aim to assess the genetic variability of this population through comparison with existing genomic data from other Roman sites.

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An Osteoarchaeological Study of the Late Antique Site of Cortijo Coracho, (Lucena, Córdoba, Spain) Through Grave Goods

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Keywords: Osteoarchaeology; Cortijo Coracho; Late Antiquity; grave goods
Presentation Format: Virtual podium

Funerary spaces allow us to learn a large part of unwritten history through the application of archaeological methodology and techniques. In this way, they allow us to understand the beliefs of a society and its adaptation to ritual changes. In this presentation, we will present the characterizations resulting from studies of funerary rituals, the grave goods with which individuals were buried, and the bioarchaeological studies that took place during Late Antiquity in the city of Lucena, Córdoba, Spain, through research conducted with the local Archaeological Museum. The Cortijo Coracho necropolis features an associated basilica with a chronology ranging from the 4th to the 8th centuries CE, dated from the different periods that show the adaptation of this religious building to different rituals, from the Roman Imperial period to the Visigothic period, including a brief Byzantine period. Likewise, burial typologies support this chronology, which ranges from the late Roman imperial era to the arrival of the Germanic peoples. 297 burials were recovered, each containing more than 400 individuals. These burials were modestly structured, reused, and contained few grave goods. The objective is to demonstrate the connection between burial systems, grave goods, and the physical characteristics of individuals during the Germanic period in ancient Baetica in Hispania, in order to gain a more comprehensive understanding of their conception of funerary ritual.

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Genetic Insights from Soldiers of the Sertorian War in Hispania

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Keywords: Ancient DNA; ossicles; preservation; legionaries
Presentation Format: In-person podium

The Sertorian War was a spillover conflict in Hispania between the years 80 and 72 BCE, stemming from the end of the civil war in the Roman Republic in the Italic peninsula. Quintus Sertorius was the popular Marian general leading the anti-Sullan forces in Iberia and controlled Hispania for the better part of 10 years with military success. The Sertorian coalition was comprised of Roman exiles escaping the Sulla's proscriptions but also won over the native Iberian tribes. The year 75 BCE saw a clash between Sertorian forces and a pro-Sullan army led by a young Pompey at the Battle of Valentia. This event is referred to in Plutarch's Parallel Lives book dedicated to the Life of Pompey where he states that ten thousand men died. In the decade of the 1980s and early 2000s various archaeological interventions in what used to be area of the forum of the city of Valencia uncovered a layer of destruction associated to this battle. In this layer among copious amounts of weaponry several bodies of likely soldiers with evidence of torture and violence were discovered. The state of preservation of the bones was very poor but it was possible to recover ancient DNA from some of the Sertorian remains as well as other Roman burials from the city. The overall results to be presented will aim to inform archaeologists of the prevalence of survival of auditory ossicles in skulls and how by targeting the ossicles, even badly preserved samples from Mediterranean contexts can yield sufficient ancient DNA results with very minimally destructive techniques. We will also provide insight into the (genetic) profile of the soldiers fighting in a potentially very diverse army composed presumably of mostly native Iberians. This project is funded by the European Union’s Horizon 2020 research and innovation program under grant agreement No. 101034324.

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Archaeobotanical Evidence from Deultum and Heraclea Sintica: Plant Use in Everyday and Ritual Contexts

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Keywords: Bulgaria; Heraclea Sintica; Deultum; archaeobotany; plant use; subsistence; ritual contexts
Presentation Format: In-person poster

This research presents archaeobotanical data collected between 2013 and 2023 from the archaeological sites of Deultum and Heraclea Sintica. The plant remains – mainly charred grains, seeds, and wood fragments – were recovered from diverse contexts including burial complexes, domestic areas, and spaces surrounding fortress structures. The assemblages include a wide variety of taxa: cereal crops (bread wheat, barley, rye), legumes, and wood species (oak, pine, ash). A notable finding is the identification of imported species, such as *Pinus pinea* (stone pine), which suggests Mediterranean trade connections and cultural exchange. In burial contexts, particularly elite graves, ritual plant use is evidenced by the higher presence of such non-local taxa. At Deultum, the inhabitants' diet was primarily cereal-based, with bread wheat, barley, and rye being the dominant staples. There is strong indication that legumes were also cultivated. The analysis confirms the use of hulled wheats (e.g., Triticum aestivum/durum), which became more widespread in the region after the 1st millennium CE, along with an increased reliance on rye. From Heraclea Sintica, nearly all samples contained charred wood remains from a variety of species – pine, poplar, oak, hornbeam – along with almond and peach fragments. The presence of almond is particularly intriguing due to its identification as *Amygdalus webbii*, an endemic species native to parts of the Mediterranean (Albania, Greece, Turkey, the former Yugoslavia, Italy, and Spain). Of special interest are two well-preserved fragments of bread. Their elongated shape and the coarsely ground grains allow for the identification of the ingredients used: bread wheat (*Triticum aestivum*), einkorn wheat (*Triticum monococcum*), and millet (*Panicum miliaceum*).

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A Case of Disability in a Roman Community from the Necropolis near the Contemporary Village of Slana Bara, Vidin Region, Bulgaria

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Keywords: Roman; bi-ritual; necropolis; Lower Danube
Presentation Format: Virtual poster

A vast burial site from the Roman period near the contemporary village of Slana Bara, Bulgaria is investigated during rescue archaeological excavations held in 2020 - 2021. In total 82 grave structures are studied. After preliminary results complexes date in the second half of 3rd-first half of 4th c CE. Practiced burial rituals on the necropolis include cremation and inhumation of the dead bodies. The cremation is held on pyre outside the grave complexes with burned remains placed in urns or pits. The necropolis presents a population, which developed in the period on Lower Danube in relation to the Roman towns of Bononia and Ratiaria *(*Colonia Ulpia Traiana Ratiaria*)*, last one the capital of Dacia Ripensis at the time. Standard anthropological methods are used in investigation of the cremated and inhumed bone remains aiming to ascertain age and sex. Where more information was available are obtained more anthropological characteristics used in stature reconstruction and detailed individual analysis. In 26 complexes are registered burials held with inhumation ritual. Human remains from these complexes present more data for anthropological investigation and detailed description of life path of examined individuals. Specific changes, documented on skeletal remains from grave complex # 1/189, present a developed pathological condition. The individual identified as a young female lived with advanced disability. The complex of changes on bone remains of this individual makes it possible to hypothesize a potential case of osteogenesis imperfecta. One other skeleton presents less advanced similar changes.

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The Last Defenders: Human Remains Found in Storage Pits at a Late Antique Fortress near Dimovo, Bulgaria

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Keywords: Late Antiquity; post-mortem trepanation
Presentation Format: Virtual podium

Rescue archaeological excavations during the 2021–2023 seasons unearthed a Late Antique fortified settlement (late 4th–6th centuries CE) located atop a hill. From the late 4th to early 5th century CE, the fortified settlement contained numerous storage pits and likely served as a provision depot. Around the mid-5th century CE, the site suffered an enemy attack, evidenced by the remains of burned buildings. The settlement was subsequently abandoned until the 6th century CE, when it was rebuilt and remained active until the century's end. Human remains were found in 10 of the multiple storage pits dug into the hill's bedrock. The skeletons' posture and placement resulted from body deposition without any burial rituals. Some skeletons remained in their primary, articulated position, while others were disturbed – some yielding only single fragments during recovery. The pits contained varying numbers of individuals: some held single remains, while others contained fragments from two or three bodies. In total, skeletal remains of 14 individuals were documented. Standard methods were used for age and sex estimation. Most individuals were adults. Ten individuals were estimated as male, one individual a probable male, and individuals were too fragmentary for sex estimation. One of the pits contained fragments from a small child, also undetermined sex with used anthropological methods. Three skeletons showed clear evidence of peri-mortem trauma. One skeleton displayed post-mortem manipulation, resulting in a heart-shaped bone fragment extraction.

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Reading the Dead: Archaeothanatology and the Social Lives of Individuals from the Eastern Cemetery of Roman Alexandria

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Keywords: Archaeothanatology; Alexandria; eastern cemetery
Presentation Format: Virtual podium

Over the last ten years, rescue excavations conducted within the eastern cemetery of Alexandria have revealed more than 130 burials dating to the Hellenistic and Roman periods. These findings offer valuable insights into the funerary customs and social structures of one of Egypt's most important ancient cities, which functioned as a major cultural and commercial center during the Greek and Roman eras. This presentation focuses on the application of archaeothanatology — the study of death, burial, and post-burial processes — as a key method to better understand life and death in ancient Alexandria. Specifically, the study analyzes ten burials from the 2nd century CE, applying archaeothanatological criteria to reconstruct original burial settings and identify human activities and environmental factors that influenced their current preservation. Detailed examination of skeletal articulation, spatial organization within graves, and evidence of post-depositional alterations allows for differentiation between deliberate mortuary practices and natural taphonomic effects such as soil displacement, water infiltration, and biological activity. The diversity observed in burial practices — including body orientation, use of grave goods, and a sign of ritual behavior — sheds light on the religious beliefs, cultural norms, and social identities of those interred in this part of Alexandria. Additionally, environmental aspects specific to the Nile Delta, like fluctuating groundwater levels and sedimentation, have played a crucial role in the state of preservation and archaeological interpretation. By integrating archaeological, osteological, and taphonomic data, this research provides a deeper understanding of death and burial in Roman-period Alexandria, highlighting how ancient communities balanced cultural traditions with environmental challenges within an urban context.

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Unveiling the Origins and Genetic Makeup of the "Forgotten People:" A Study of the Sarmatian-Period Population in the Carpathian Basin

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Keywords: Archaeogenetics; population genetics; Roman Period; Sarmatian Period; migration
Presentation Format: In-person podium

The western part of the Carpathian Basin was integrated into the Roman Empire at the beginning of the 1st century CE. The territories east of the Danube were however occupied by Sarmatian nomads, who migrated there from the Pontic-Caspian Steppes. They remained key players in the political landscape of the region until the arrival of the Huns in the 4th century, after which they vanished from the historical records. The large number of archaeological finds left behind by the Sarmatians indicate a considerable population size during their occupation with a possible enduring impact on the population history of the region. The genetic composition of the Sarmatian groups living on the Russian Steppe have been relatively well described, while the Sarmatians living on the Great Hungarian Plain are understudied, and their genetic origin and relations to their neighbours are still to be investigated. To fill this gap, we generated whole genome shotgun sequences from 118 individuals dated to the Sarmatian Period of the Carpathian Basin. We also sequenced 15 Sarmatian individuals excavated outside of the Carpathian Basin in Romania to assess the genetic changes the Sarmatians may have encountered during their alleged westward migration. Additionally, we analyzed 21 new genomes from the 4-5th century of the Carpathian Basin to investigate the likely population changes caused by the arrival of the Huns. Our data shows that the Sarmatians of the Carpathian Basin display clear genetic connections towards the Sarmatians of the Volga-Ural region with both classical population genetic and IBD analyses. However, their steppe-related genetic affinity is strongly depleted compared to the Sarmatians excavated in Romania. Furthermore, the Sarmatian population - available in our dataset - shows a densely connected genealogical network across the whole steppe region indicating a lively nomad society that remained fairly connected after substantial geographical expansions.

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Evidence of Rickets in a Cremated Child from Roman Astigi (Écija, Spain): A Combined Analytical Approach

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Keywords: Vitamin D deficiency; histology; interglobular dentine; metabolic bone disease
Presentation Format: In-person podium

Augusta Firma Astigi (Écija, Spain), was one of the most important cities of Hispania Baetica during High Empire. Its occidental funerary area has been studied under the scope of Funus Astigitanorum project, encompassing more than 100 burials dated from the first century BCE to the second century CE. The present case study aims to present and discuss bone lesions found on a secondary cremation burial in an urn. The bone deposit was subjected to macroscopic and metric analysis. Additionally, lesions were examined under high magnification and with X-ray as well as compared with those from rachitic cases from the pathological Skeletal Collection of Georg-August-Universität Göttingen. Histological and Micro-CT evaluation of femur and interglobular dentin is also going to be performed. The estimated age at death of the child was 3-4 years old. Although the skeleton was partially represented and bone pieces show heat-induced changes, several lesions could be detected. Femur bending deformity and thickening were observed, along with *coxa vara*. Moreover, posterior metaphyseal subperiosteal new bone formation was found. Pathological bone formation was also detected on medullar cavity. Moreover, abnormal porosity and new bone formation were observed in upper maxilla, as well as signs of alveolar recession. Porous lesions were also found on a skull fragment and on a visceral rib surface. Although other pathological conditions can cause similar lesions (e.g. infection), the location and characteristics of the observed lesions are most consistent with vitamin D deficiency. Cases of rickets have been observed in burials from Roman provinces, but to our knowledge, this is the first time that a case of rickets was identified in a cremation deposit using a multiproxy approach. Funding information: Short research stay grant “José Castillejo” (ref. CAS23/00059); Project *Funus Astigitanorum* (ref. ProyExcel_00713).

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Post-Butchery Use of Faunal Remains: Evidence from Late Antique Site 97 in Novi Kneževac, Serbia

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Keywords: Faunal remains; post-butchery use; Late Antiquity; Sarmatians
Presentation Format: Virtual poster

This study explores the use of animal bones as tools at Site 97 in Novi Kneževac (northern Banat, Serbia), based on faunal remains recovered during rescue excavations conducted in 2023. The assemblage, dated to the 3rd–5th centuries CE and most likely associated with Sarmatian occupation, comprises a wide range of species, including mammals, birds, fish, mollusks, reptiles, and amphibians. Special attention is given to animal bones that show clear traces of anthropogenic intervention. These primarily include the long bones of large mammals, especially cattle and horses, which were repurposed after initial butchery for secondary use. Tool marks, smoothed surfaces, and evidence of shaping or polishing indicate utilitarian use, most likely as implements involved in everyday tasks. These findings will be discussed in light of comparable data from the region to explore possible patterns of animal bone modification and use in late antique contexts. This analysis contributes to our understanding of the full biographical cycle of animal remains in late antique settlements, emphasizing the intersection of subsistence practices and technological behavior.

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The Mass Grave of Wien-Simmering: Uncovering the Dead from a Roman-Period Battle Site

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Keywords: Trauma; bioarchaeology; battle; mass burial
Presentation Format: In-person podium

In October 2024, an archaeological excavation at Hasenleitengasse in Vienna, Austria, uncovered a Roman-period mass grave with up to 150 individuals. C14 dates and a few finds date the feature in the late 1st to early 2nd centuries CE. This site lay in uninhabited land between two Roman forts. This presentation presents a first bioarchaeological assessment of the skeletal human remains to provide clues towards the nature of this yet unidentified mass fatality. The disorganized burial situation with intertwined individuals in a variety of orientations suggests that the deceased were interred with a lack of care or under time pressure. Bioarchaeological analysis estimated that all individuals, who were well-preserved, were biologically male, with an estimated age-at-death ranging between 20 and 35 years old. Forty-eight individuals exhibited various forms of trauma, suggesting a violent cause of death. Of the individuals with traumatic lesions, 41 (85%) had instances of perimortem trauma. The types of documented peri-mortem trauma include sharp force, blunt force, and projectile injuries. The majority of the sharp force trauma was observed on the skull, particularly to the frontal and facial bones. However, the highest prevalence of trauma was seen on and around the pelvis (40%). The traumatic lesions on the pelvis were mostly projectile markings, which ranged from diamond-shaped possible lance heads to quadratic bolts. The diversity of traumatic peri-mortem lesions indicates a violent mass fatality. Archaeological finds such as armor, and a dagger were found in association with the burial. The organized distribution of the traumatic lesions and the signs of weapons of war, coupled with the demographic profile of the individuals, suggests a military conflict. Therefore, based on osteological evidence, the mass burial is linked to a violent military conflict and its cause has yet to be determined through further historic and archaeological research.

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Life and Death in the Northern Periphery of the Roman Imperium: From the Archaeological Material of Hermonassa

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Keywords: The Northern Black Sea Region; cultural contacts; diet; raid Alans or Goths
Presentation Format: Virtual poster

The Bosporan Kingdom was a large ancient state that developed in close interaction with neighboring populations, such as the Meotians, Scythians, Sarmatians and Alans. It was attacked by warrior groups (Goths and Alans) from the mid-3rd century CE onwards. Recently archaeologists excavated part of the quarter of Hermonassa, one of the Bosporus's largest cities, where they found two pits containing human remains. The skull of a 35–45-year-old male was found in the first pit. The second pit contained the skulls of a child, two males and one female over 45 years old, as well as the skeleton of a 25–35-year-old male without a skull. Most of the skulls show signs of artificial deformation, which was not typical of the inhabitants of the Bosporan Kingdom. Genetic analysis revealed that the child and one of the men were second-degree relatives. Isotopic analysis of bone collagen revealed a uniform diet consisting primarily of C3 plants and meat from domestic animals. Traces of fire and destruction in the Hermonassa area, as well as traces of violent death on the skulls (scalping and decapitation), suggest that civilians died as a result of a raid, probably carried out by the Alans or the Goths. The quarter was later rebuilt, and the pits were covered with stone paving. The investigations were supported by a grant from the Russian Science Foundation, project No 24-78-00093, "The diet of the population of the urban centers of the Bosporan Kingdom and Chersonesos according to isotopic data."

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Population Structure and Mobility in the Roman and Sarmatian Worlds of the Carpathian Basin

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Keywords: Pannonia; Sarmatians; ancient DNA; population genetics; identity-by-descent
Presentation Format: In-person podium

The Carpathian Basin, intersected by a border between the Roman Empire and the barbarian world, was a dynamic frontier of cultural and human exchange during the 1st to 5th centuries CE. This paper sheds new light on that interaction by analyzing recently generated ancient DNA data from both sides of the Danube River in the Budapest area. To the west and south, the Roman province of Pannonia was home to diverse Romanized populations. Meanwhile, east of the river, the Great Hungarian Plain was occupied by the Sarmatians, an Iranian-speaking group that settled the region in the 1st century CE and ruled it until the occupation of the Huns. As part of the NKFI K142304 project, we examined 50 individuals from the Pest Plain dating to the 3rd–5th centuries. Whole genomic analyses reveal a striking pattern: while the 3rd–4th century Sarmatians were genetically cohesive and aligned with Central European groups, the 5th-century individuals show clear signs of genetic input from East Eurasia and the Near East/Caucasus—likely linked to new populations arriving during the Hunnic migrations. In contrast, genome-wide data from nearly 100 Late Roman-era individuals west of the Danube, analyzed within the MTA-BTK Momentum Bioarchaeology Programme, show a high level of genetic diversity. This contrast highlights different population dynamics on either side of the imperial border. Together, our findings offer new insights into the complex web of genetic, cultural, and demographic interactions at the edge of the Roman world.

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Of Horses and Men: New Archaeological Evidence from the Eastern Necropolis of Salona

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Keywords: Salona; eastern necropolis; bioarchaeology; horse burials
Presentation Format: In-person poster

The eastern necropolis of ancient Salona developed in the early 1st century CE along the Roman road leading from Porta Caesarea. As the city expanded during the 2nd century, burial grounds shifted eastward through Porta Andetria, continuing along the route toward Klis and inland Roman Dalmatia. This road partially followed a former branch of the Jadro River, with the necropolis extending toward its source. Early 20th-century discoveries approximately 1.5 km from the river's source revealed cremated remains, tombstones, ceramic urns, amphorae, tegulae fragments, and sarcophagus lid fragments – evidence of intensive burial activity in the 3rd century and continued use into the 4th. Despite its longevity, this necropolis remained the least explored of Salona's urban burial grounds. Recent rescue excavations, driven by construction activity, have renewed scholarly interest. In 2023, the Croatian archaeological firm Temenos excavated the Mezanovci site, uncovering 102 graves, 94 inhumation burials, and nearly 200 artifacts. The skeletal remains primarily represent adults. Several adult (mostly male) graves also contained bones of domesticated mammals. Due to geotaphonomic conditions, the periosteal surfaces were poorly preserved. Nonetheless, skeletal analysis indicates a physically active population, with signs of osteoarthritis and enthesopathies likely reflecting lifestyle and genetic predispositions. Two burials (nos. 39 and 51) stand out for the inclusion of horse remains alongside human skeletons and associated grave goods. While rare in Roman funerary practice, horse burials carried symbolic significance, often reflecting military associations or elite status. These finds at Mezanovci may offer valuable insights into social identity, ritual practice, and the role of horses in late Roman Dalmatia.

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The Reconstruction of Health and Lifestyle of the Population of Georgia from Late Antiquity to the Early Middle Ages

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Keywords: Bioarchaeology; dental pathology; stress markers; paleopopulation
Presentation Format: Virtual podium

This study presents a bioarchaeological analysis of health and lifestyle among the populations of Georgia from the 1st to the 8th centuries CE, focusing on cranial stress markers (porotic hyperostosis and cribra orbitalia) and dental pathologies (caries, AMTL, calculus, and dental wear). The research is based on a unique sample of 230 individuals (1852 teeth) from multiple archaeological sites across Georgia. Statistical analysis reveals that the prevalence of dental caries nearly doubled from the Late Antique to the Early Medieval period, while the frequency of AMTL remained relatively stable. Both caries and AMTL were most frequently observed in molars, with incidence increasing significantly with age, but showing no significant difference by sex. The frequency of porotic hyperostosis and cribra orbitalia also increased in the Early Medieval sample, indicating heightened physiological stress during this era. Dietary and environmental reconstructions are based on indirect evidence, such as dental pathology, historical sources, and palynological data, as stable isotope analysis was not performed. Palynological evidence suggests that the Late Antique period was characterized by a relatively stable and humid climate, supporting diverse agricultural practices and a varied diet. In contrast, the Early Medieval period experienced a colder, more variable climate, leading to a monotonous, cereal-based diet and harsher living conditions, which likely contributed to increased dental disease and physiological stress. These findings highlight the complex interplay between environmental change, subsistence strategies, and population health in Georgia from the 1st to the 8th centuries CE. The study demonstrates that dental and cranial markers are valuable indicators for reconstructing past living conditions and adaptive responses to stress, even in the absence of direct biochemical dietary analysis.

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A Case of Glenoid Dysplasia: Paleopathological Analyses on a Roman Skeleton from Milan

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Keywords: Paleopathology; osteobiography; Roman necropolis; glenoid dysplasia
Presentation Format: In-person podium

The focus of this presentation is to examine aspects regarding a case of congenital glenoid dysplasia, already present in antiquity, and possible association with several syndromes. This study also aims to investigate the impact of the condition on the experience of the individual and their daily life in Roman times. The bioarchaeological analysis of skeletal remains (3rd to 4th century CE) from the Roman necropolis of the Cattolica in Milan revealed an emblematic case of a young individual, estimated male between 18 and 22 years, with several pathological changes. The skeleton exhibited bilateral glenoid retroversion, agenesis of the lower central incisors, and a peculiar shape of the roots of the lower premolar and molar teeth, as well as enamel hypoplasia on the lower teeth. Remodeled periosteal new bone was also found on the diaphysis of the left tibia, which could be pertinent to a post- traumatic inflammation. Additionally, the individual shows nonmetric features, such as the presence of a 13th thoracic vertebra and bilateral 13th ribs. Glenoid retroversion is usually caused by a congenital malformation and may occur as an isolated primary condition. The differential diagnosis of glenoid dysplasia includes syndromes with multiple anomalies, such as Ehlers-Danlos and Apert, but vitamin deficiencies and obstetric trauma cannot be ruled out. Absence of the cranium does not allow for a more specific diagnosis. Bilateral glenoid dysplasia may have caused shoulder pain, limited range of motion, and joint instability, but in the absence of soft tissues it is not possible to assess these aspects. Each syndrome is associated with posterior shoulder instability, leading to functional disability. Glenoid retroversion has been observed in a few skeletons from European archaeological sites: one from 4th–3rd century BCE, five from the medieval period and three from the modern period. This presentation will illustrate a case from Roman Italy not yet reported in the literature.

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Rural vs Urban Mandibular Morphology: A 3D Geometric Morphometric Study of Two Roman Populations in Northern Greece

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Keywords: 3D geometric morphometrics; Thessaloniki; Mavropigi; mandibular morphology
Presentation Format: In-person poster

The mandibular morphology, beyond its expression of sexual dimorphism, has been also linked to masticatory muscle force and subsistence habits (i.e., food type and processing). The present research investigates whether this link is reflected on mandibular morphology across an urban and a rural Roman site in northern Greece (2nd–4th century CE). For this study, we performed a dense-landmarking 3D geometric morphometric analysis in 96 individuals. The urban sample derives from Roman Thessaloniki, the capital of Provincia Macedonia, while the rural sample comes from the semi-mountainous site of Mavropigi, in western Macedonia, Greece. The landmark digitization and Procrustes were done semi-automatically in Viewbox4. The results showed that the mandibular size differed significantly within and across groups. While males showcased larger mandibles, a trait consistent with the typical sexual dimorphic expression, mandibular size was overall greater in Thessaloniki. Shape differences were only significant at an inter-population level. Thessaloniki's individuals displayed wider, shorter mandibles with larger condyles, and a more vertically ascending ramus. This morphology, in combination with the larger mandibular size, is typically associated with an adaptation to higher masticatory forces. In contrast, Mavropigi exhibited higher sex-classification accuracy, which indicates a higher level of sexual dimorphism in the mandibular shape. Our findings support the relationship between settlement type and mandibular morphology, pointing towards divergent food consumption habits between urban and rural sites in Roman northern Greece. Counterintuitively, the urban sample appears to have experienced greater masticatory demands, potentially due to lower reliance on processed or softer foods than the rural one. This brings forward aspects such as life quality and socioeconomic status, which may have exerted a greater influence than the conventional urban–rural dichotomy. Ongoing research integrating bioarchaeological, isotopic and morphological evidence holds promise for assessing whether the "Roman globalization" reached local food systems across diverse settlement types.

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Proportions and Functional-adaptation analysis of the Fiqris Gora Cemetery

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Keywords: Osteology; adaptation; analysis; stature; bioarchaeology
Presentation Format: Virtual podium

Functional-adaptation osteological analysis examines stature, body proportions, physical activity during childhood, as well as gender and social roles in society. The 4th-6th century CE cemetery at Fiqris Gora contains 175 burials: 75 single-interment burials, 88 multiple-interment burials. Of note, 16 skeletons of young children were included in multi-interment burials. Functional-adaptation analysis is mostly concerned with limb proportions as well as their overall shape and size. After analyzing the stature of 31 male and 28 female individuals, it is obvious that proportionally, individuals in this cemetery have longer fibulas when compared to their femurs, although we see that the upper limbs of these individuals are longer than the lower limbs. These individuals also developed a longer and more robust fibula, as well as a strongly-developed linea aspera on the back of the femur. Some researchers have connected these features with horse riding, but this is not an explanation for the anatomical changes in this particular case because the characteristic o-shape deformation of the lower limbs in horse riders is absent. This paper argues that the development of linea aspera could be connected to agricultural work in the field, where farmers have to stand in semi-recumbent positions for hours. Evidence for this hypothesis also includes longer radius and ulna in comparison with humerus, which should also be considered in the context of muscle attachment sites on the interior surface of the humerus. The stature and robusticity of individuals from Fiqris Gora's leads us to conclude that their lifestyle was agricultural, likely due to the rugged environment they inhabited from childhood.

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Tracing the Demographic Shifts in a Roman city on the Danubian Frontier During the Migration Period through Paleogenetics

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Keywords: aDNA; Viminacium; Late Antiquity; Migration Period
Presentation Format: In-person podium

During Late Antiquity, the Roman city of Viminacium – located in present-day Serbia on the Danubian frontier at the crossroads of the Balkan Peninsula, the Black Sea and the western part of the Roman Empire - acted both as a commercial hub and a strategic military base. It eventually developed into one of the largest cities in the northern provinces and became the capital of the province of Upper Moesia. With the transition from Late Antiquity to the Migration Period, this region of the Roman Empire underwent profound political and social transformations. In Southeastern Europe, these changes were accompanied by increased migration into the empire. For Viminacium, these developments had devastating consequences, with a reduction of the city size after relocation of the military garrison, and culminating with the city's destruction at the hands of the Huns in 441 CE. The city was then rebuilt by Emperor Justinian, only to be sacked again by the Avars in 582. To study the history of the city beyond the available historical records, and to investigate whether the aforementioned changes had an effect on its demography, we generated more than a hundred new genomes from the Viminacium necropoleis, focusing on the 4th, 5th and 6th centuries. We document a significant shift in the ancestry of Viminacium in the 5th century, marked by a decline in genetic diversity with respect to the previous period, potentially reflecting the mutated policies of the Late Roman Empire or the effect of the Huns' destruction of the city.

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Life and Death on a Roman Sicilian Estate: Insights from the Cuticchi Necropolis

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Keywords: Roman Sicily; Early Imperial Era; human remains; funerary rituals; bioarchaeology
Presentation Format: Virtual podium

The Early Imperial rural settlement of Cuticchi (Assoro, Enna, Sicily), excavated since 2020, offers an exceptional case study of social stratification within a small Sicilian community from the 1st to 3rd centuries CE. The complete excavation of residential, productive, sacred, and funerary contexts has enabled a nuanced reconstruction of the community's social structure, daily life, and mortuary practices. The necropolis, with 168 tombs, is dominated by primary inhumations reflecting the plebs rustica of servile or freed status. Cremation is rare but socially meaningful: four cremation burials, including one bustum and an inscribed marble urn of outstanding interest, signal elite aspirations. The urn, dedicated to *Chios*/*Chius magnus magister pecoris* by Hesychus dispensator, reveals the high status achieved by certain individuals despite their servile origins. These roles—estate manager and financial administrator—mark their alignment with Roman models of prestige and cultural distinction, in contrast to the local Hellenic funerary traditions. Grave goods, particularly in female burials, further illuminate social roles. Textile tools and symbolic items associated with wool-working suggest that women contributed critically to the estate's pastoral economy, embodying the Roman ideal of the *mulier lanifica*. Their burials, though materially modest, express social identity and status within the laboring population. Bioarchaeological analysis of 127 individuals shows a relatively healthy community with low infant mortality and significant representation of mature and elderly adults. Patterns of skeletal stress and trauma indicate stratified labor roles, distinguishing a more privileged managerial class from physically burdened laborers. The Cuticchi case highlights how funerary choices, material culture, and biological data together expose nuanced social dynamics and cultural negotiations in a rural Roman context. It demonstrates the interpretive potential of integrated archaeological and bioarchaeological research for understanding non-privileged populations in the Empire.

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Unburied in the Fort: A Violent Late Antique Death at Crkvišće Bukovlje Site (Croatia)

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Keywords: Bioarchaeological analysis; osteological trauma; pathological changes; Late Antiquity, Late Antique hillfort; Crkvišće Bukovlje
Presentation Format: In-person podium

The Crkvišće Bukovlje site, located near Duga Resa in the municipality of Generalski Stol (Croatia), represents a stratified archaeological context with notable Late Antique occupation. Excavations have revealed at least two phases of fortification construction: an earlier phase dated to the 4th century CE and a later 5th-century phase, characterized by the addition of a church and reinforced defensive structure, including towers. Within Tower 1, a rubble layer was identified as the dominant stratigraphic component. Embedded in a stratum of debris, humus, and displaced soil within this layer, an anomalous burial (Grave 1) was discovered. The grave contained the skeletal remains of an adult male, aged 35–45 years at the time of death, who exhibited three peri-mortem sharp-force cranial injuries, suggesting a violent death. Anthropological and bioarchaeological analyses were conducted, including radiocarbon dating and stable isotope analysis at the 14CHRONO Centre, Queen's University Belfast. The radiocarbon results produced a broad calibrated range (AD 345–536), corresponding to the chronological span of both construction phases. Isotope values indicated a terrestrial C3 plant-based diet, with high carbohydrate intake from cereals, fruits, and vegetables, and low levels of animal protein consumption. The interpretation of this burial poses challenges due to its unusual context: a murdered individual deposited in rubble rather than a formal grave. This raises questions about violence, conflict, and the treatment of the dead in Late Antiquity within the region. Further interdisciplinary analysis is necessary to clarify the sociocultural and historical implications of this find.

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Bioarchaeological Analysis of the Funerary Complexes from the 4th – 6th Centuries CE in the "Western Sector" of the Eastern Necropolis of Augusta Traiana – Beroe

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Keywords: Bioarchaeology; Late Antiquity; paleopathology; cultural practices
Presentation Format: Virtual podium

Founded as part of Emperor Trajan's urbanization policy, Augusta Traiana became a flourishing Roman town in the province of Thrace. To date, rescue archaeological excavations have uncovered a substantial number of graves (over 1,000), situated in several extramural necropolises beyond the city's fortification walls. This study presents the results of a bioarchaeological analysis of 44 burial complexes from the western sector of the Eastern Necropolis of Augusta Traiana, dating to the 4th–6th centuries CE, a period spanning Late Roman and Late Antiquity. The primary aim is to reconstruct the biological profiles of the individuals and assess demographic, pathological, and cultural characteristics of the population. Standard osteological methods were applied to estimate age-at-death, biological sex, stature, pathological changes, anatomical variants, and cultural modifications observed on the skeletal remains. A total of 45 individuals were identified, exceeding the number of burial complexes due to commingled and secondary burials. Despite the generally poor preservation of the remains, reconstructions allowed for meaningful anthropological insights. The study revealed a wide range of pathologies—including cribra orbitalia, porotic hyperostosis, rickets-like symptoms, trauma, enthesopathies, and rare congenital conditions. Cultural interventions such as artificial cranial deformation and potential dental wear associated with habitual craft activity were also documented. The data were statistically synthesized to outline demographic structures and health patterns and compared with previously studied necropolises in Augusta Traiana. Notably, burial orientations and body positioning suggest a coexistence of Christian and pagan practices, reflecting complex cultural dynamics during the transitional period. The case studies of selected individuals‒including a female with evidence of chronic physical strain and possible domestic violence, and a child with artificial cranial deformation, offer nuanced perspectives on health, lifestyle, and identity. These findings contribute to a deeper understanding of life, death, and cultural continuity and change in Late Antique Augusta Traiana.

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Revisiting Dravlje: Bioarchaeological Insights into a Late Antique Cemetery near Emona

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The archaeological material from the Dravlje site on the outskirts of Ljubljana (Slovenia) attracted considerable attention after its discovery and publication in the 1970s. This interest was due to at least three factors. First, the proximity of the site to the well-researched Roman colony of Emona, which at the time was thought to have existed in its final phase at the same time as the Dravlje cemetery, where burials took place in the late 5th and early 6th centuries. Second, archaeological finds indicated that the cemetery was used by an Ostrogothic population in addition to the locals. Third, anthropological analysis of the remains revealed a high frequency of deliberately deformed skulls. In recent years, we have re-evaluated the archaeological and skeletal material, including isotopic and aDNA analysis of the latter. While the dating and classification of the archaeological finds remain largely unchanged, two decades of new research on Emona suggest a much weaker chronological connection. The colony appears to have come to an end in the mid-5th century, several decades before the Dravlje cemetery came into use. Additionally, scholars' views on the possibilities of ethnic identification based on archaeological material have changed considerably. In this paper, we compare the skeletal remains from Dravlje with those from late Emona using new bioarchaeological methods. We examine the extent to which the earlier interpretation, based on material culture, that the Dravlje cemetery was used by an Ostrogothic population and local inhabitants, is consistent with our findings. Finally, we propose a more comprehensive and fundamentally different interpretation of the site's population.