

SCIENTIFIC CONFERENCE

Roads and rivers 3:

Eating and drinking along ancient roads and rivers:

Study opportunities, archaeological sources and open issues about diet habits”

Programme and the Book of Abstracts

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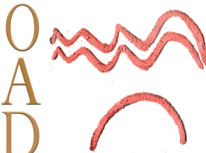
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LIFE ON
THE
ROMAN
ROAD



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11th November 2021

- 9.00 – 9.30** Registration, uploading of presentations
- 9.30 – 9.40** Opening of the conference
Open discussion about food and drink along ancient roads and rivers
- 9.40 – 10.00** [Eleni Schindler Kaudelka](#), Food and drink on the Roman Road.
What do we know about the down to earth subject
- 10.00 – 10.20** [Ivana Ožanić Roguljić](#), Food and drink at Roman roadside station,
Žuta Lokva
- 10.20 – 10.40** [Kaja Stemberger Flegar](#), [Ana Kovačić](#), Street food: food along the
Roman roads of Roman-period Dolenjska (Slovenia)

discussion

Coffee break

*Distribution and consumption of goods from Roman to early Medieval period:
material evidence*

- 11.00 – 11.20** [Tino Leleković](#), Eating and drinking in the SE Pannonia:
Theory and practice of the dietary habits studies in Mursa
- 11.20 – 11.40** [Angelina Raičković Savić](#), Gastronomic guide through Viminacium
– how to eat like a Roman
- 11.40 – 12.00** [Alka Starac](#), A cake mold from Istria
- 12.00 – 12.20** [Verena Vidrih Perko](#), [Kaja Stemberger Flegar](#),
PANE VINV RADIC PAVPERIS CENA

discussion

Lunch break



- 14.00 – 14.20** [Tina Berden](#), Amphorae from Roman Nauportus
- 14.20 – 14.40** [Jason Lundock](#), Bronze Vessels and changing dining patterns in Late Antique Britain
- 14.40 – 15.00** [Hrvoje Vulić](#), Typology of luxury - dishes from the hoard of silver objects from Vinkovci
- 15.00 – 15.20** [Sebastijan Stingl](#), Fish on the Bishop's Table. Analysis of Data regarding the Procurement and Consumption of Fish by Osvald Thuz, Bishop of Zagreb.
- 15.20 – 15.40** [Mario Novak](#), [Marlon Koci](#), [Dinko Tresić Pavičić](#), [Anita Dugonjić](#), [J. Marla Toyne](#), Reconstructing dietary habits of an early medieval community from Jagodnjak, eastern Croatia: carbon and nitrogen stable isotope analysis of bone collagen

discussion



12th November 2021

8.30.- 9.00 Registration

Archaeobotanical and archaeozoological evidence from Roman to early Medieval period

9.00 – 9.20 Kelly Reed, Consumption and trade in Pannonia from the Roman to early Medieval period

9.20 – 9.40 Renata Šošтариć, Aleksandra Bugar, Cereals and fruits in ancient tombs - a feast or a message?

9.40 – 10.00 Kristina Jelinčić Vučković, Asja Tonc, Antonela Barbir, Marko Dizdar, Archaeobotanical finds in context: late antique pits from Ilok – dvor knezova Iločkih

10.00 – 10.20 Anita Rapan Papeša, Food “To go”

10.20 – 10.40 Sonja Vuković, Meat diet in Viminacium: Zooarchaeological data from military and civilian areas

discussion

coffee

Diet reconstruction based on dentoalveolar pathologies and stable isotopes

11.10 – 11.30 Željka Bedić, An overview of stable isotope analyses of Antique and Early Medieval skeletal remains from Croatia

11.30 – 11.50 Pia Šmalcelj Novaković, Mario Carić, Vlasta Vyroubal, So, what was for dinner?

11.50 – 12.10 Ksenija Đukić, Tamara Pavlović, Petar Milenković, Milutin Micić, Viktorija Uzelac, The dietary habits and health status of a child with an artificially deformed skull during the Great Migration Period (Serbia)

12.10 – 12.30 Jasmina Davidović, Food in Sirmium, what we know today

discussion

Lunch



Food in experiment

- 14.00 – 14.20** [Farrel Monaco](#), Panem Bonum Fert: The Panis Quadratus: Form, Function and Tools of the Trade
- 14.20 – 14.40** [Brigitta Hoffman](#), Identifying Roman cheese making in the archaeological record – an experimental/theoretical approach
- 14.40 – 15.00** [Ivana Ožanić Roguljić](#), Roman food and popularization of science

Final remarks



ABSTRACTS / SAŽECI

Food and drink along ancient roads and rivers

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Food and drink on the Roman Road. What do we know about the down to earth subject?

The aim of this lecture points to open a discussion on the topic food and drink on the Roman roads. All starts with an electronic dialogue between two old friends:

ESK: Do you by any chance know anything about what foodstuffs Roman travellers carried with them? Is there a specific text about eating on a journey?

Kathleen W. Slane: Dried or fresh fruit? There are a few canteens out of Pompei and Ostia.

If one travelled by sea, the situation would be different, and there are stoves on shipwrecks. Do you suppose they carried hens? Some wrecks also have single amphoras (wine) in their crews' quarters. For travel over land mansions presumably offered food as well as lodging?

It continues with mails between mentor and former student:

ESK: What can you tell me about the kind of miraculous menu that awaited customers in a caupona?

At the SFECAG congress in France I was given the tip to look at the advertisements in Pompei. Is there something to be found? What do the bars in Italy advertise?

Polly Lohmann: Unfortunately, I do not know of any food advertising from Pompeii - the dipinti mainly contain election advertisements and game announcements. From Ostia and elsewhere we know of virtually no dipinti at all. I don't want to exclude that there are one or two references to gastronomic places, but I don't know anyone who has done research on this. In the graffiti there are one or two funny anecdotes like *the innkeeper pours more water than wine* or *Successus craves for Iris, the landlord's girl*, but no menu ads. Look at Pia Kastenmeier's work on the kitchens of Pompeii, although it only deals with residential buildings, and try the website *Tavola Mediterranea*, where an American archaeologist presents Roman recipes and research on eating habits etc. for a wider audience.



ESK: In the meantime I have done some research and found the PhD thesis of Anna Kieburg on eating places in Pompei, Herculaneum and Ostia and a whole volume of Gallia about roadhouses in Gaul, where archaeologists even found a wooden overhead door inscription.

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Food and drink at Roman roadside station, Žuta Lokva

Žuta Lokva is the only fully excavated roadside station in Dalmatia. In Roman times this site was situated alongside a road mentioned in *Itinerarium Antonini Augusti Ad Aquileia per Liburniam Sisciam*. In prehistoric times this part of land was occupied with the Illyrian tribe Iapodians. The site revealed a building that had two phases. The walls of the building are preserved in their foundation, and the layers of soil above it were very thin. Evidence of food and drink consumption can be seen in various types of pottery like amphorae, drinking vessels and coarse cooking pots. Several questions regarding the building itself are still a question. Where was the kitchen and where the food and beverages were served? Were there sleeping quarters?



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Street food: food along the Roman roads of Roman-period Dolenjska (Slovenia)

Slovenian archaeology has greatly benefitted from the motorway construction projects undertaken in the early 2000s. As is frequently the case, the modern motorways ended up coinciding to a significant degree with ancient Roman roads, whose routes were carefully chosen on the best possible terrain with straight lines in mind. One of the busiest roads in Roman Slovenia was the *via militaris* Emona–Nevioudunum–Siscia, whose route partly underlies the modern motorway Ljubljana–Zagreb.

The results of the Slovenian motorway construction excavations are still in the process of publishing, which means that the main corpus of available data on food along Roman roads comes from cemeteries. The cemeteries of Colonia Iulia Emona (modern Ljubljana) are amongst the most comprehensively published, but the cemeteries of other Roman settlements along the road to Siscia such as Municipium Flavium Latobicorum Nevioudunum (modern Drnovo pri Krškem) and Praetorium Latobicorum (modern Trebnje) as well as those near the stations Romula (modern Ribnica) and Crucium (modern Bela cerkev pri Dolgih njivah) are also well documented, as are several other smaller settlements' or supposed villas' cemeteries from the area of modern Dolenjska.

The aim of this paper is to examine the pottery from Roman grave assemblages and explore the possibilities for interpretation in terms of food used in the funerary context. We focus on pottery due to the lack of animal and plant remains, or more precisely, the lack of analyses carried out on animal and plant remains from Slovenian Roman-period cemeteries. On the other hand, the pottery forms from many of the included cemeteries are unique in terms of design since they were heavily influenced by local prehistoric traditions. We discuss why the ceramic footprint of Romanitas is less pronounced in the area of Dolenjska; the potential reasons include a continuity of local culinary traditions, specific local materials, trade, or a specific cultural affiliation.



Distribution and consummation of goods from Roman to early Medieval period: material evidence

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Eating and drinking in the SE Pannonia: Theory and practice of the dietary habits studies in Mursa

The lectures will focus on the material collected during excavations of the Roman colony of Mursa to understand the eating habits of the inhabitants of that part of Pannonia. The great advantage of these excavations is that the archaeobotanical samples were also collected along the pottery and metal vessels. Although the archaeo-zoological sample from the same excavations stems over ten cubic meters of animal bones, this sample is not yet processed due to the lack of experts, so that the data could be obtained by processing this material is still missing. However, during the processing of the archeo-botanical material, the eggshells and the bones of birds and fish were singled out, giving insight into the dietary habits of the inhabitants of Aelia Mursa.

This lecture intends to explore the possibilities of how to use the archaeological material as a material remnant of the eating habits of a particular population. Furthermore, the lecture will try to give a cost-benefit analysis of the pottery studies in light of the research of everyday eating and drinking habits in the Empire's provinces.



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Gastronomic guide through Viminacium – how to eat like a Roman

Confirmation that good food and drink can be found at Viminacium is already in its prehistoric layers. With the development of the city, import increased and with it came real delicacies in the form of exotic animals, as well as in the form of various beverages. The remains of such vessels were found in large numbers throughout Viminacium's settlement layers.

Ceramic vessels along animal remains and traces on human remains, show us the turbulent centuries of its existence until the collapse under the onslaught of the Huns. This paper is a short guide through the hedonistic image of Viminacium from the 1st to the 5th century shown through the prism of ceramic vessels.

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A cake mold from Istria

A ceramic shell-shaped one-part mold is preserved in the Archaeological Museum of Istria. It is glazed inside and seems best suited for making shell-shaped cakes. The possibility that the mold was used to make metal supports for bronze vessels, or bronze lamp lids, can be ruled out because of the glazed interior. The two-part and simple one-part cake molds with figural depictions were used in Roman period. Complex and festive scenes were associated with the holidays and special public and private occasions. Figural molds were used to make cakes that are not baked like fig cakes, and those with honey or cheese, that do not lose their shape when baked. Only a few figural cake molds were documented in Croatia, in Vinkovci and Štrbinci near Đakovo, all of one-part type. The probable place of manufacturing and the datation of the glazed mold from Istria are discussed, as well as the symbolical value of the shell.



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In Roman archaeology we frequently discuss the more visible aspects of material finds. Similarly, to gold and silver table ware, terra sigillata sets and beautifully made glass cups, and mosaics depicting food scraps, we are also fascinated by descriptions of lavish dinner parties such as Trimalchio's banquet from Petronius' Satyricon. However, excessive food and luxurious dishes were most likely not the culinary experience of the majority of people in everyday life. Similarly, to Roman literature, which was predominantly written from a wealthy upper-class male perspective, the archaeological record reveals little of the eating habits of the lower strata of Roman society. While botanical, chemical, and osteological analyses are becoming increasingly common in Slovenia as elsewhere, their results are unfortunately not always made available to the general or even expert public. For the time being, what may be learned of the Roman-period diet in Slovenia is largely still limited to what can be gleaned from material culture, that is to say, the focus is on the containers rather than on the food and drink itself.

This paper aims to address two topics. The first is the discrepancy between what is considered culinary tradition and what the majority of the population actually ate, where we rely heavily on modern parallels. The second intention is to suggest interpretational possibilities for studying the dietary habits of the 'invisible' lower-class majority of Roman-period Slovenia with the data currently available. We draw extensively on local pottery forms and adaptations of prehistoric dietary traditions in the Roman period.



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Amphorae from Roman Nauportus

Nauportus (modern-day Vrhnika) was located in central Slovenia, on the important trade route connecting Italy and the Middle Danube area.

The first Roman settlement was established here in the late 2nd or early 1st century BC, probably in the vicinity of a settlement of the Celtic Taurisci. In the mid-1st century BC, Nauportus had the status of a vicus in the territory of Aquileia.

The 2005 excavations in the Breg area (today Jelovškova ulica 10-11) unearthed part of this Roman settlement, with several construction phases spanning from the late 1st century BC to the Late Roman period. The excavations also brought to light a large amount of archaeological artefacts, as well as well-preserved organic remains. The artefacts include more than 30 different types of Italic, Hispanic, Eastern and African amphorae. They give an insight into the involvement of the vicus in the trading network of the eastern fringes of Regio X over a long period of four centuries.

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Bronze Vessels and changing dining patterns in Late Antique Britain

The following paper will use copper alloy/bronze vessels as a test case in studying the changing patterns of dining practice in Britain from the Roman Imperial into the Late Antique and Early Anglo-Saxon period. It will be shown that changes in form size and pragmatic utility of these table vessels that dining habits shifted to more communal practice during the Late Antiquity, reflecting a change in how consumption and social identity were perceived. By analyzing the development of vessel types and their depositional patterns, it is hoped that this paper will provide a useful case study in the development of dining practice and community identity during this transitional period.



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Typology of luxury - dishes from the hoard of silver objects from Vinkovci

In 2012, a Roman-era hoard of silver objects was found in Vinkovci. It consists of 45 items with a total weight of just over 36 kg and is part of a luxurious silver dining set. Although documented throughout the Empire, such large and almost complete hoards are a rarity, and the Vinkovci hoard stands out because it was found in a relatively clear archaeological context, which will allow for analyzes to find the remains of food consumed from the dishes. Conservation, restoration and analysis are still ongoing so it is not yet possible to present the results in full, however it is possible to preliminarily present new insights as well as the broader context of using such sets at luxury feasts of the late antique elite across the Empire.

In the presentation, the pantry will be typologically arranged with the emphasis on some specific dishes and serving items whose shape suggests the type of food that could be consumed from them.



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Fish on the Bishop's Table. Analysis of Data regarding the Procurement and Consumption of Fish by Oswald Thuz, Bishop of Zagreb

All expenses of the Bishop of Zagreb Oswald Thuz were written down in the official list of expenses by his governor. According to the available lists from the years 1481 and 1482, more than ten percent of all bishop's expenses were spent on food and preparation of food. Almost one third of that amount was spent on the procurement of fish, which was purchased 95 times. Alongside grains, fish was one of the main groceries used in the Late Middle Ages. Its importance in everyday diet is doubtlessly the result of the very strict Church regulations about numerous fasting days. Almost half of the year, people were supposed to fast. On every Wednesday, Friday, Saturday, during the Lent and in the eve of major holidays, the consumption of meat, eggs, milk, butter and cheese was forbidden. Although the regular folk during those days had mostly plant-based diet, primarily because fish was still too expensive for many, the upper classes, including clergy, frequently had meals made of fish on their plates. Since the purchased fish is described only two times, it is unknown which fish species Bishop Oswald usually purchased. By comparison of its quantities and the amount paid for them, it is noticeable that prices vary. Cheaper fish was commonly intended for servants. On the other hand, pricy fish was consumed by the Bishop and his high guests. Such example is the purchase of sturgeon, which was served during the visit of Jan Filipec, Bishop of today's Oradea (*lat. Varadinum*). This paper is trying to determine whether the bishop, along with others at his table, more often ate salt-water or freshwater fish, was it eaten fresh, cured or marinated, and finally, where it was procured and caught.



Archaeobotanical and archaeological evidence from Roman to early Medieval period

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Consumption and trade in Pannonia from the Roman to early Medieval period

The Roman period is a prime example of how expanding networks, growing economies and migration changed production and consumption patterns in many areas of the empire. This period sees an influx of new vegetables, herbs and spices that would have had a profound effect on the way people ate, imagined and interacted with food at all social levels. In Croatia, the limited archaeobotanical data suggests complex trade and local agricultural systems that allowed large towns such as Mursa, Cibalae and Siscia to gain access to a wide range of food items from the 2nd century AD. This presentation explores these themes in the region of southern Pannonia (Croatia) and presents the current archaeobotanical evidence from the Roman to early Medieval period.



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Cereals and fruits in ancient tombs - a feast or a message?

Roman funeral customs are strictly defined because of the belief that only in this way will the soul of the deceased find its peace and not persecute the living. As the Romans also believed that the soul was immortal and continued to live in the "other world", the deceased was accompanied by various objects and food of plant and animal origin, regardless of whether it was a cremation or skeletal burial.

Archaeobotanical remains in Roman cremation graves in Ilok, Šćitarjevo and Šepkovića were found in a carbonized and mineralized state, which indicates that part of the contribution was added to the deceased at the pyre, and part, during later ceremonies - directly to the grave. Remains of cereals, legumes and various juicy edible fruits were found in the graves, which were added with a specific intention, as well as the remains of plants such as weeds and ruderal species, which reached the grave by chance. Most often, grave goods of plant origin are interpreted as food, a feast in "this or other world". However, the symbolic significance that individual plants had in the life and beliefs of the Romans cannot be ignored. Therefore, this paper analyzes the possibility that plants, the remains of which were found in ancient tombs, were placed on a pyre and/or in graves because of the message they carried.



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Archaeobotanical finds in context: late antique pits from Ilok – Dvor knezova iločkih

During excavations of Dvor knezova iločkih – Palace of the Dukes of Ilok in 2006 several Late Antique objects – pits have been unearthed. These are relatively deeply buried objects, sometimes with several fill layers that contained ceramic, metal and glass finds, coins, as well as animal (bones) and carbonised plant remains. On this occasion we will present the results of archaeobotanical analysis of samples from selected units (pits SU 838 and 1039). Furthermore, the associated ceramic and metal finds will be presented in brief, since they allowed not only dating the units, but also placing the finds in the wider geographic and cultural context. On the other hand, iron agricultural tools, together with the archaeobotanical finds, illustrate the local crop cultivation and dietary habits during Late Antiquity.



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Food “To go”

Unlike Roman period that still amazes us with preserved books of recipes, Early Medieval population buried at cemetery in Nuštar and dated to Avar period left us no written evidence of their nutrition habits. At the first glance, specific archaeological finds from graves indicate food offerings in form of pots and bones. This “food to go on the other world”, probably picked by community members according to their beliefs, is visible through finds of pots and animal bones. But this still does not answer what they ate! Therefore, the help of interdisciplinary researches was needed. The first one conducted was the analysis of animal bones in order to determine species and taxonomy. That gave us first insight. Further on microarcheobotanical analysis of earth from vessels was done that gave us some information about the content. Eventually analysis of stable isotopes was also done on some skeletons. All those results combined give us a glance into the diet and nutrition habits of people buried at Nuštar cemetery. Obtained results will be compared to some other from the same period.



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Meat diet in Viminacium: Zooarchaeological data from military and civilian areas

Viminacium, located in present – day Serbia, is one of the most important Roman sites in the region, where the fortress of the legion VII Claudia was stationed, while next to the fortress a city, that became the capital of the province of *Moesia Superior* and *Moesia Prima* developed. This paper will assemble and compare the zooarchaeological data (species ratios, mortality profiles, biometry and butchery patterns) from different periods and areas of Viminacium (legionary fortress, amphitheater, and settlements in the vicinity), in order to discuss different dietary patterns of citizens and legionaries in Viminacium.



Diet reconstruction based on dentoalveolar pathologies and stable isotopes

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An overview of stable isotope analyses of Antique and Early Medieval skeletal remains from Croatia

Diet has a significant role in the organisation and evolution of human cultures. Information about the type of diet and dietary habits of ancient populations may be obtained from historical sources, by studying the animal and plant remains excavated on archaeological sites, by analysis of teeth and stable isotopes of human osteological material.

Historical sources are often not preserved and therefore they are not suitable as the source of information for diet. The insufficient number of archaeozoological and archaeobotanical analyses of Antique and Early Medieval period in Croatia does not completely allow the reconstruction of diet.

Bioarchaeological studies focusing only on oral health and nutrition can generally be divided into those dealing with dentoalveolar pathologies and stable isotope analyses. In Croatia, the first analyses are more represented because they are simple macroscopic analyses that do not require special apparatus and the large amounts of money, nevertheless they provide an insight in dietary and hygienic habits of an archaeological population. In contrast, stable isotope analyses are less prevalent because they are mostly conducted in laboratories outside Croatia and are expensive. An overview of conducted stable nitrogen and carbon isotope analyses of Antique and Early Medieval skeletal remains from Croatia will be given in order to evaluate how obtained results contribute our knowledge of diet and dietary habits from these periods. Ongoing stable isotope analyses will also be mentioned.



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So, what was for dinner?

Privlaka-Gole njive is a Late Avar-age cemetery located in the easternmost part of Croatia, in Western Srijem (part of the former Roman province Pannonia Sirmiensis), at the southern end of the Pannonian plain.

Unfortunately, none of the discovered Avar age cemeteries in Croatia have been completely excavated, but 3 of the 4 edges of the cemetery in Privlaka were identified and an estimated 80 percent of the site was excavated. With 230 graves excavated, it remains the largest Avar age burial site registered in Croatia to date.

Within the project Life on the Roman Road: communications, trade and identities on Roman roads in Croatia from 1st – 8th CE (UIP-05-2017-9768), stable isotope analyses were performed, characterised as preliminary, on the bone remains of 22 deceased (approximately 10 percent of the population). With the selected samples, we tried to reflect the character of the community (gender, age, richness of grave finds). We were interested in whether there were any nutritional differences between the deceased concerning the above characteristics, as well as similarly dated Avar communities nearby.



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Serbia

The dietary habits and health status of a child with an artificially deformed skull during the Great Migration Period (Serbia)

This case study will present the dietary habits and health status of a child with an artificially deformed skull, from the Great Migration Period in Serbia. During protective archaeological excavations in Bački Breg (West Bački District, northern Serbia) in 2013, grave No 1 was discovered, containing a child with an artificially deformed skull. The child was buried without grave goods, however, according to unpublished archaeological records, this grave is dated to the 6th century AD, interpreted to belong to the Gepid population. The bioanthropological analyses were carried out in the Laboratory of Bone Biology and Bioanthropology, Faculty of Medicine, Belgrade. The bioanthropological analyses involved assessing the degree of preservation, determining the anthropometric and morphological characteristics of the skeleton, an estimation of age, and paleopathological and dental analyses. In addition, in order to reconstruct the dietary habits of this child, stable isotope analyses were performed. The results of the bioanthropological analyses suggests that, at the moment of death, this child was between 5 and 7 years of age. No skeletal signs of any pathological condition were found. The results of the stable isotope analysis showed positive values of carbon (-17.0), which indicates the yield of C4 plants (probably millet) in the diet, while the value of nitrogen (10.9) is within the expected range for a continental diet (meat and dairy products). The value of carbon indicates a standard diet of carbohydrates (cereals) in the form of porridge, with a continuous intake of protein (meat and dairy products).



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Reconstructing dietary habits of an early medieval community from Jagodnjak, eastern Croatia: carbon and nitrogen stable isotope analysis of bone collagen

Dietary habits of past populations were influenced by various factors ranging from environmental, social, and economic reasons to the physiological needs of an individual. Reconstructing the range of dietary variation within and between communities can thus help elucidate some of these factors. Here we present the results of carbon and nitrogen stable isotope analysis of bone collagen for the early medieval (7th-9th century CE) community of Jagodnjak in eastern Croatia. Based on the archaeological context and direct radiocarbon dates the Jagodnjak cemetery can be placed in the Avar period. The paper will evaluate the dietary variation of bone collagen samples from the stable isotope analysis of $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$. The analysis of individuals of both sexes and all age groups will focus on differences between adult males and females, as well as between juveniles and adults. The samples average $-16.28 \pm 1.72\text{‰}$ for $\delta^{13}\text{C}$, and $+10.89 \pm 1.53 \text{‰}$ for $\delta^{15}\text{N}$. These data suggest that the adults of both sexes had similar food choices for plants and terrestrial animals / freshwater fish. Likewise, the adults and juveniles had similar choices for dietary protein. However, the adults and juveniles' dietary behaviour was different for C3 food resources. Comparisons of the available $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ values suggest that Jagodnjak and other Avar period communities from the region did not have the same dietary habits. The present study significantly expands our knowledge about diet and subsistence strategies of early medieval inhabitants of southern Carpathian Basin, but it also helps us to better understand food choices of these people during this time of residential and lifestyle transition.



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Food in Sirmium, what we know today

Sirmium is a Roman town archeologically explored for more than 60 years. Although animal bones and plant seeds and pollen were collected from time to time, only since 1994 we had opportunity to look into what was actually eaten in *Sirmium* more in detail because from that year all remains were collected and analyzed by a bone expert. Also, with PhD work of Nataša Miladinović Radmilović we also had pathology of human remains and could connect that to the actual food intake of inhabitants of *Sirmium*. Today we can make a picture of how that looked like, but it is only beginning in this kind of research. Our data is huge but still not perfect. This work will show present situation in this field considering firstly vessels used for the preparation of the food (vessel for making cheese, mortaria for souces and especially amphoras), then finding in archaeozoology and also anthropology. We have 85 excavated sites in Sremska Mitrovica with huge base of any kind of archaeological material of which some is published, some is waiting to be published. All anthropological material is published with detailed analyses of pathology visible on human bones. Although not all material is from Roman times it is interesting to see signs of different illnesses and malnutrition on the skeletal remains. For me expecially interesting is my own conclusion, based on my participation in excavation of few *Sirmium*'s site that Roman skeletal remains had perfectly preserved teeth while in medieval times situation is completely different. Unfortunately, we cannot make clear difference in diet of rich and poor for all finds, mainly because the necropolis were disturbed so sometimes is difficult to connect skeletal remains with the specific grave but we can try in smaller number to give some statistics.

With animal remains there is also problem with not having stratigrafically clear situations to which period they belong to and also many of the finds are not published. We have one published analyses for the site 85 (northwest part of the Imperial Palace) that showed very interesting finds of fish and even oysters' shells. This work will be first of its kind made for *Sirmium*.



Food in experiment

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Tavola Mediterranea: Home of Culinary Archaeology on the Web

Los Angeles

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Panem Bonum Fert: The Panis Quadratus: Form, Function and Tools of the Trade

This study is focused on the form and function of the commercially produced Roman bread product, the Panis Quadratus, produced at a Pompeian commercial bakery in the 1st century C.E., and the tools that were used to create the loaves. While several studies related to Roman commercial bakery spaces and production have been published in recent decades, no study has performed an in-depth analysis of the tools of the trade used to form the loaves and the broader image that these tools depict about bakery production environments and the working lives of bakery labourers, a class of Roman who are largely invisible from the archaeological and literary records. Taking into account previously published scholarly commentary and the archaeological remains of commercial Roman bread, this study aims to determine if first-hand analysis of the loaves, in addition to experimental recreation, can determine the types of tools that were used in commercial bread preparation in Pompeian settings during the 1st century C.E. This study uses a multi-methodology approach incorporating quantitative, compositional, and morphological analyses of original archaeological specimens, coupled with experimental archaeology to produce several convincing hypotheses. This study argues that specific types of organic, utilitarian resources were used to create the form of the panis quadratus loaf with the interest of keeping costs low and labourers compliant. The results of this study have confirmed that experimental archaeology is an integral methodological approach in the interpretation of food processing technologies and prepared food products in ancient Rome, in addition to the interpretation of broader scenarios related to the processing environments, the processors, and the product supply chain itself.



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Identifying Roman cheese making in the archaeological record – an experimental/theoretical approach

The Roman sources mention Caseum as common food and cooking ingredient, used by civilians and military alike, with the emperor Hadrian enjoying it on military campaign (SHA Hadrian 10.2).

As most people will be aware, “Cheese” covers a wide range of milk products from fresh and creamy cheeses like Bresaola to long ripened cheeses such as Paški Sir on the other, including a wide range of mould cheeses.

While we know thanks to Columella that the Romans knew of the use of rennet in their cheesemaking, their cheese making must have been very different from modern techniques which depend on highly controlled working and storage conditions with regard to temperature, humidity and materials used. Traditional European and Indian cheesemaking recipes stress instead the use of certain tools in a prescribed order.

Based on two years of experimental archaeology using traditional techniques and material and comparing them to the archaeological evidence from Roman agricultural sites. this paper is going to explore what archaeological evidence for cheesemaking we can still hope to find and what a Roman dairy would have looked like and how dairy specific these tools are likely to be and what options we have of proving dairying in the Roman context.



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Roman food and popularization of science

Through popularization of science project partially funded by Croatian Ministry of science and education experimental archaeology with topic of Roman food became an excellent tool for popularization of archaeology. In the last decade workshops were organized on various ways and for different kind of public. Mostly the workshops were made for general public and carried out in schools, various cultural events and manifestations. Workshops were held with professionals (chefs, pastry chefs and waiters) but also with students from different vocational schools who train future employees in tourism and gastronomy.

