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VIMINACIUM – EXPERIENCES WITH HUMAN OSTEOLOGICAL MATERIAL*

ABSTRACT

When the Viminacium research is regarded from the aspect of biophysical anthropology, we consider that four different phases can be identified. The first one possesses an introductory character and includes the period from 1882 until the 1970's. The second phase is featured not only with huge archaeological, but also anthropological investigations, revealing over several thousand skeletons in the period from 1978 until the end of the 20th century. The third phase is of a preparatory-transitional character. It can be said that it lasted a bit longer than the first decade of the 21st century. Apart from great innovations, another one thousand skeletons were also revealed. The fourth phase includes huge and complex investigations which started in 2013 and are still in progress.

KEYWORDS: Viminacium, necropolis, osteological material.

INTRODUCTION

It is a well-known fact that during the last half century, the biggest and longest excavations in the Balkans have been taking place in *Viminacium*. This is not only related to the Roman period. The time of research and the amount of osteological material certainly brought with it certain experiences with the educating of staff, depositing sensitive osteological material, as well as presenting and publishing expert and scientific results.

Since this paper is dealing with biophysical anthropology, we will write about the period from 1882 until 2013. This is a period of more than one century, so it would be necessary to, at least, report

on the anthropological experiences in a separate paper, which didn't only occur during the early phase of research (in the classical sense of this science). During the entire research of *Viminacium*, human skeletons were treated professionally, but there were certain problems which should be described. There will be an attempt to overview and explain all of this in this paper, in order to gain a better documentation of the research and also the importance of *Viminacium*¹.

¹ Anthropological analyse of the material from cemeteries not included in this paper is in process and they will be published in a separate publication.

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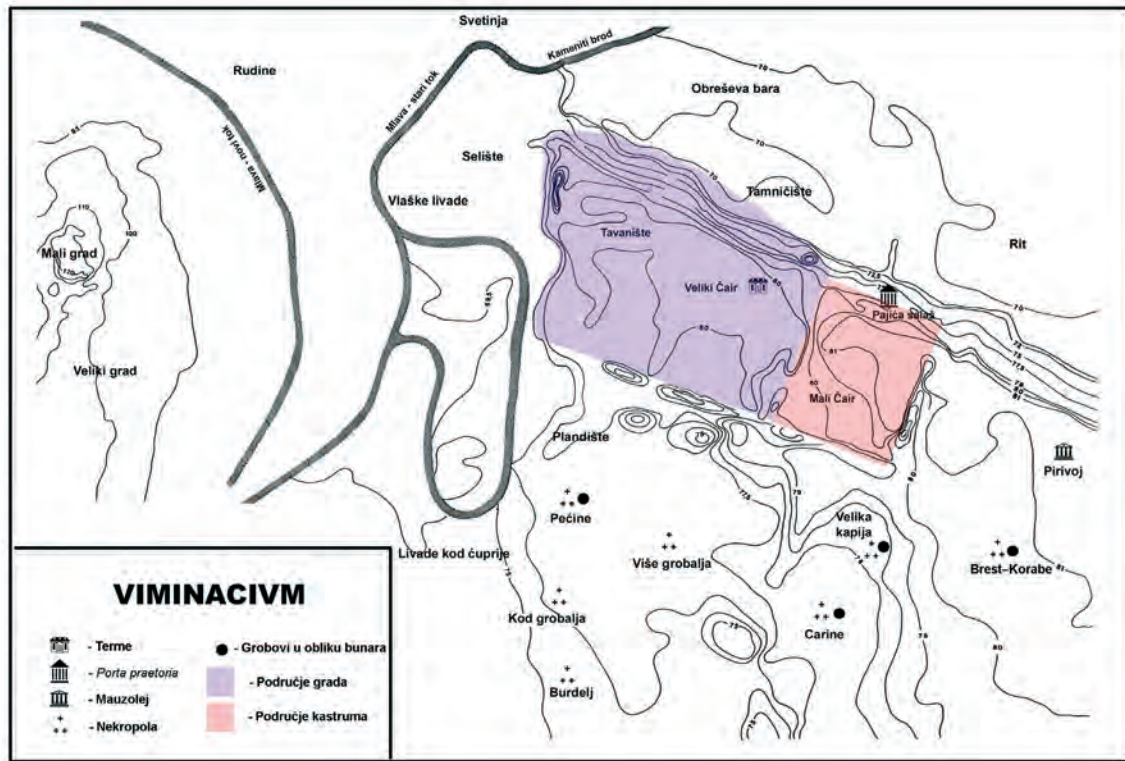


Fig. 1 Excavated necropolis of Viminacium.

RESEARCH PHASES

THE FIRST PHASE

The oldest written data about the *Viminacium* cemeteries dates back to 1882. Back then, M. Valtrović published that to the south of the "settlement" there is a big cemetery which reaches the right Mlava bank. He performed sondage excavations on a smaller scale in the part of the cemetery with skeletal burials (Valtrović 1884: 3-14). He concluded that "plunderers" from the village of Kostol had already excavated a huge number of graves. Many skeletons were destroyed and they found different kinds of jewellery. He concluded that it was mostly the inhabitants of Kostolac who excavated the graves and that they would continue doing so until they are forbidden to do it.

M. Valtrović reports that he "excavated 27 graves". In each of 23 of them, he found one or two skeletons of adults, while in four of them there were infant skeletons. With two exceptions, the rest of them were already excavated by plunderers. It is considered that the graves were already

devastated, since there were visible marks of them above the ground, and it was known that Roman graves were sources of many valuables (Valtrović 1884: 10).

In 1902 and 1903, M. Vasić excavated *Viminacium*. He published his results in 1903 and 1904. In his first report to the Serbian Royal Academy of Sciences, he does not mention graves, nor skeletons (Vasić, 1903: 3-14). However, in his next report about the excavation in 1903 (Vasić, 1904: 249-259), there is information that he investigated around seventy graves. He concluded that none was older than the 2nd century AD, as well as that all the rest of them were "plundered". There is no other data about skeletons from these graves (Vasić, 1904: 248).

It is clear that this early research phase of *Viminacium* can, in its anthropological sense, also be called the introductory phase. The research-archaeologists mention cemeteries and name them according to their position (south of the settlement, east of the settlement etc.). Apart from that, only inhumations are mentioned.

If we would like to add something to this phase of anthropological research of *Viminacium*,

then it would be the fact that, in three research campaigns, around one hundred skeletons were excavated, but were subsequently lost, not only in literature, but also literally (while archaeological finds were transported to Belgrade).

THE SECOND PHASE

The second research phase of *Viminacium* began during the 1970's, with huge excavations of cemeteries when the thermo power-plant Drmno was expanded. According to the Law for Protecting Cultural Monuments, the thermo power-plant also financed the excavation. From the archaeological point of view, the locations which were excavated were named according to the actual cadastre, since they were basically agricultural fields. After that, since it was clear that the chronological span was broader than one millennium, graves were given specific marks (next to the current number). More specifically, Roman inhumation graves were marked G, while cremations were marked G1. Graves from the period of the Great Migration were marked as G2. Chronologically younger graves were marked as G4. It should be underlined that during the anthropological investigation, the same marks were used, clearly understandable from the methodological point of view.

By looking at the archaeological, as well as anthropological documentation, we see that the excavations of *Viminacium* cemeteries began in 1978 at the site called Pećine (according to the cadastre) and continued until 1990. In that period, the first grave was discovered, as well as the skeleton 11. In May 1978, the necessary anthropological analysis was performed.

During the same year, an archaeological excavation was also performed at the Više Grobalja necropolis. During the first campaign, 53 inhumations were excavated (G) and 59 cremations (G1). During the first campaign at the site Pećine, 151 skeletal graves and 35 cremations were investigated.

In the following thirteen years, until 1990, archaeological excavations continued only at the Pećine necropolis. This is how we found data in the field diary that during this period (1978-1990), until November 1990, 5626 inhumation graves (G) and 1154 cremations (G1) were discovered at the Pećine site. The diary ends on page 3835.

Here we should mention that, on the site

Pećine, there were also some "previous" excavations in 1973. However, in the available documentation there was no data about the skeletons that were excavated at that time.

Archaeological and anthropological excavations of *Viminacium* were not only conducted in the cemeteries of Pećine and Više Grobalja, since the area of *Viminacium* was inhabited before and also after the Roman times. In this context, the bi-ritual necropolis should be mentioned, which was ascribed to the Celts. It was excavated in 1981 and 1982 at the site Pećine, simultaneously with the ancient Roman cemetery (in the same area). During this excavation, 26 skeletal graves and 17 cremations were discovered.

As an extremely important skeletal series from the territory of Serbia, it was published from several perspectives, the latest one from the year 2011. (Mikić, 2011: 255-260).

The Više Grobalja necropolis (named after the cadastre of the Kostolac municipality) also belongs to the South *Viminacium* cemeteries. As already mentioned, the archaeological excavations of this cemetery began in 1978 and they have continued, with some interruptions, until recently.

At the Više Grobalja site, the archaeological excavation began on the 20th of May 1978 and continued until the 10th of October 1985. The first inhumation was discovered on the 25th of May and the first cremation on the 30th of May, 1978. This is highlighted because by 1985, at this *Viminacium* site, 2208 inhumation graves (marked G) and 1773 cremations (marked G1) were excavated. With voluminous and precise field documentation, the field diary ends on page 2287.

In 1987, further excavations on a smaller scale were conducted. The number of skeletal graves reached 2213 and the number of cremations reached 1776. The field diary ends on page 2291.

In December 2008 further excavations were conducted, but on a small scale. No graves were discovered.

In 2009, at the Više Grobalja site, there was an excavation from April to August. The number of skeletal graves reaches 2233. The number of cremated graves reached 1793.

During this last campaign of archaeological research at the site Više Grobalja, graves G2-2217 and G2-2227 (marked as early Middle Ages), which are certainly connected with the earlier research of the Gepid and the period of

the Great Migration should be mentioned.

Apart from the mentioned cemeteries, the Celtic one at the site Pećine and the two Roman cemeteries, Pećine and Više Grobalja, during the second research phase in *Viminacium*, there were only chronologically younger cemeteries (or parts of cemeteries) that were examined and partially published. Chronologically, they include two cemeteries from the period of the Great Migration at the Više Grobalja site and the medieval series Kod groblja (earlier Pećine, churches A and B) (Mikić, 2008: 45-55). An even younger necropolis, Nad Lugom, and the two Roman ones (Pećine and Više Grobalja) were partially published in 1984 (Mikić, I., Korać N., 2012: 185-199).

On the other hand, there is still anthropologically examined, but unpublished, material left in *Viminacium*. It chronologically belongs to the period from the Roman times to the Middle Ages. These are as following, mostly smaller and very specific skeletal series: Rudine, Svetinja, Velika Kapija and Burdelj.

Five skeletons, coming from four graves at the site Rudine, were anthropologically examined. They were excavated in 1978 in one single sondage, which could be regarded as a test sondage. The anthropological documentation reveals that there were of both genders and included infants. The preservation of these skeletons is very poor. Only one skull (from grave number 4) could be reconstructed in order to undergo further anthropological analysis. On adult skeletons there were certain paleo-pathological changes on bones, as well as on teeth.

During the same year, 1988, five graves with seven skeletons were excavated on the site Svetinja. Two graves contained two skeletons each, while the rest were individual graves. There were skeletons of both genders, as well as several infants, who died at an early age. There were paleo-pathological changes in jaws and teeth, as well as on postcranial skeletons. The preservation is poor and, according to the documentation, only paleo-demographic and paleo-pathological diagnoses were made.

Velika kapija can already be considered to be a smaller anthropological series. It includes 19 skeletons from seventeen graves. The preservation degree varies very much, so there are skeletal remains which could not even be lifted from the ground, but also those which offered cranial and

post-cranial anthropological measurements. Some of the skulls could be photographed in standardised anthropological projections.

Apart from the mentioned anthropological measurements, there are also both genders in this series, as well as infant skeletons. Apart from that, their health is reflected in numerous paleo-pathological diagnoses.

In an anthropological sense, site "Njive kod Mlave" drew the attention of the investigators after a skull was discovered with a very specific deformity on the back of the head (due to carrying heavy weights on the head). According to the archaeological documentation, along with this skeleton, "a typical German fibula" was discovered, dating it into the period of the 5th and 6th centuries. It was not investigated whether this was a single grave or part of a necropolis.

This isolated, and certainly hugely anthropologically important find from the "Njive kod Mlave", is very well preserved. All of the primary anthropological measures were obtained. Since it is unpublished, it will be referred to in other publications about *Viminacium*.

The site at Burdelj was also excavated in 1978. In archaeological literature, it is known as the cemetery of the Eastern Goths (Zotović 1981: 95-115) but the anthropological material from this cemetery is not fully investigated yet. Skeletons from number 44 to number 66 remained preserved, but only nine were suitable for detailed study (due to the poor state of preservation).

Anthropologically investigated skeletons showed that there were both genders, as well as infants. There was also certain paleo-pathology. There can be almost nothing said about paleo-demography, since the skeletons from this necropolis were not fully investigated. It is certainly because they possess a very poor state of preservation, especially the infant skeletons.

More data was obtained about these cemeteries from their documentation, since they were not published.

If we wish to consider them, regarding the volume of archaeological research and the subsequent anthropological analyses at *Viminacium*, then the situation is as follows:

The Celtic necropolis (at the site Pećine) with graves marked G3 (inhumations) and G3-1 (cremations) is chronologically the oldest one. Then there are two Roman cemeter-

ies, Pećine and Više Grobalja, globally speaking. During the first research phase at Pećine, 5626 inhumation graves (G) were excavated and 1154 cremations (G1). At the Više grobalja necropolis, there were 2233 inhumations and 1793 cremations. The number of anthropologically investigated skeletons is certainly much bigger, since graves with several individuals are quite usual at *Viminacium* (Mikić 1993: 197-198).

Smaller cemeteries, like Rudine, Svetinja and Velika Kapija, revealed only skeletal graves. Their total number does not exceed several dozens and they were completely and independently numbered.

The older and the younger Gepid cemeteries, whose graves, i.e. skeletons, were marked as G2, are numerically integrated into the ancient Roman cemetery of Više Grobalja. There were 94 totally anthropologically examined skeletons.

Medieval graves around churches A and B were marked as G4, but numerically, they are integrated into the graves of the ancient Roman Pećine. Still, the medieval necropolis Nad lugom includes 112 graves. They are not marked as G4, but just with numbers from 1 to 112, since they were situated further away from the other *Viminacium* cemeteries.

Briefly said, until 1990, the following anthropological material from *Viminacium* was investigated: the Celtic necropolis of Pećine and, later, the Roman cemeteries Pećine and Više Grobalja, whose territories overlap, forming the so-called southern *Viminacium* cemeteries. Then there are also the aforementioned smaller skeletal groups. In total, there are over 14000 graves.

The investigated skeletal remains from the period of the Great Migration come from four sites: the older and the younger cemeteries at Više Grobalja, the Burdelj necropolis and the Lanci necropolis. The total number of anthropologically investigated skeletons from these sites is slightly over 100. Later medieval skeletons come from the graves marked as G4, and their number is slightly bigger from the previous group – around 150. These are the Nad Lugom necropolis and the necropolis near the Roman memoriae at the Pećine cemetery.

Nevertheless, not all of the skeletons could be deposited after they have been studied. Due to the large number of skeletons, which grew bigger

each year, the depositing problem occurred very soon. The anthropological field laboratory was set up in the primary school in Kostolac, but this was soon lost. This is why it was decided to re-bury the skeletons and to only keep voluminous anthropological documentation about them. This measure was accepted with much difficulty, but there were simply no capacities which would enable the depositing of such voluminous anthropological material, including about ten thousand skeletons, especially regarding the degree of development of physical anthropology in our country.

On the other hand, Ž. Mikić and M. Korać, managed to form a huge collection of the best preserved Roman skulls (with the approval of the former conductor of archaeological excavation at *Viminacium* - Lj. Zotović). These skulls are now exhibited in the Anthropological laboratory inside the Domus, representing a very important collection of *Viminacium*. Further, all of the 34 artificially deformed Gepid skulls are in Munich at this time (Anthropological state collection of Bavaria) and will be returned to *Viminacium* after very complex analyses, which are now being performed.

The second phase of anthropological investigation at *Viminacium* ended in the year 2000. The experience of not being capable of keeping such a large quantity of human osteological material was not positive. It is fortunate that it was successively studied and documented, including photographs in standardised projections, with all the necessary anthropological measures and paleo-pathological diagnoses, already partially published. One of the mentioned preserved skull series, the collection from the Pećine necropolis, was recently published (Korać, M., Mikić, Ž., in print), so it is easy to overview a great variety of populations which dwelt in *Viminacium* in Roman times. The same should be done with the Više Grobalja necropolis.

THE THIRD PHASE

The third phase can also, chronologically, be precisely determined. It begins in 2000 and ends in 2013. The director of the *Viminacium* project was M. Korać. It is actually an innovation phase in all the fields of investigation. Methodologically speaking, new technologies are introduced into archaeological research,

which is new in our country. The Domus Scientarium was under construction (at the part of the site on which no finds were expected, near the mausoleum). The ways of collecting documentation was modernised, there is international co-operation, with different foreign experts coming to work in *Viminacium*, etc.

Anthropologically, since the Domus was practically finished, a modern anthropological laboratory was established, with all of the necessary instruments, with the possibility of depositing and keeping human osteological material.

As far as the archaeological excavation is concerned, as well as the anthropological material, it was excavated at four locations: Pirivoj, Amfiteatar, Nad Klepečkom and is still continuing on the site Više Grobalja. In other words, apart from the already investigated southern *Viminacium* cemeteries, in this excavation phase, research has spread also to the eastern part (Pirivoj). By the end of 2013, anthropological investigation from the sites Amfiteatar, Pirivoj, Nad Klepečkom and those excavated during the last years at the already known site of Više Grobalja had finished. This revealed another 1000 skeletons, increasing the number of human osteological remains from *Viminacium*. It transpires that the study of the anthropological material was performed with success and simultaneously with the excavation. This is how the anthropology of *Viminacium* made a step forward in comparison with other research disciplines. It should also be mentioned that it was all done within the framework of the current project.

THE FOURTH PHASE

The fourth phase of anthropological research will be the least considered one in this paper. It begins in 2014 and it will probably last for several years. It is related to the most recent analyses and their publication. New skeletal finds which are discovered in the meantime will also be added here. After the results of examining the human osteological material gained so far, a complex bio-archaeological reconstruction of *Viminacium* can be expected in this phase, in which anthropology will make its contribution. This will be done with multidisciplinary research.

INSTEAD OF CONCLUSION

The experience so far with human osteological material is not very satisfactory. Insufficient development of bio-physical anthropology in our country was certainly also reflected in the situation at *Viminacium*. In the first place it is the lack of balance between the anthropological material and the employment of adequate staff to explore it, especially in the early investigation phases. As a result of this, there are insufficient publications about the anthropological material and incomplete depositing of anthropological finds. Still, after 2000, the situation changed in a positive direction. Primary anthropological studies of all of the skeletons were recently updated. In accordance with the research phases named above, which partially match with the phases of archaeological excavations, we can overview the anthropological situation. Human osteological material was excavated and anthropologically examined from twelve sites, containing fifteen cemeteries (see appendix). The oldest necropolis on Pećine was ascribed to the Celts. After that there were graves with skeletons from the Roman period: Pećine, Više Grobalja, Velika kapija, Rudine, Svetinja, Pirivoj, Nad Klepečkom and, most likely, the Amphitheatre. Traces of the Great Migration were discovered at the sites Više Grobalja, Burdelj and Lanci. Cemeteries from the later medieval periods were examined at the sites Kod Groblja (according to the earlier archaeological documentation, Pećine and Nad Lugom). According to the anthropological finds, we can conclude that the continuity of life in the area of *Viminacium* goes from the last centuries of the Old Era until late Middle Ages, which is almost two millennia.

In the next, fourth research phase, we will try to conduct detailed and modern isotopic laboratory analyses, which should help with the bio-archaeological reconstruction of *Viminacium*. There is also a problem to be solved regarding the naming of the cemeteries. Can they be named according to the cadastre or according to directions (east, south)? For the Roman period it is necessary to divide the cemeteries of *Viminacium* from those connected to other areas such as farms, settlements and other sites. The demands of further anthropological research in *Viminacium* will certainly take that direction, with further innovations and in interdisciplinary fields.

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Izveštaj o iskopavanjima u Kostolcu u 1903. godini,

REZIME**VIMINACIUM - ISKUSTVA SA
HUMANIM OSTEOLŠKIM
MATERIJALOM**

Ključne reči: Viminacijum, nekropole, osteološki materijal.

Kada su u pitanju istraživanja koja obuhvata bio-fizička antropologija na Viminacijumu, mogu se izdvojiti ukupno 4 faze. Početak istraživanja na Viminacijumu se vezuje za 1882. godinu. Tada počinje i prva faza istraživanja dok poslednja faza istraživanja počinje 2014. godine. To je vremenski raspon koji obuhvata period više od jednog veka. S obzirom da su arheološka iskopavanja na Viminacijumu najveća na Balkanu u poslednjih nekoliko decenija, dobijeni su značajni antropološki rezultati i stečeno je veliko iskustvo. Prema humanom osteološkom materijalu se ophodilo profesionalno, ali su se tokom vremena javili i određeni problemi koji su navedeni u radu.

Situacija sa humanim osteološkim materijalom u prvim fazama istraživanja nije bila zadovoljavajuća, međutim od 2000. godine drastično se poboljšala.

Na Viminacijumu je do sada istraženo 15 nekropola (12 lokacija). Prema arheološkim kriterijumima, obuhvataju vremenski raspon od blizu 2 milenijuma tako da možemo konstatovati kontinuitet života na Viminacijumu.

Za poslednju fazu istraživanja na Viminacijumu se vezuju analize drevne DNK i izotopske analize stroncijuma koje će nam poslužiti da proširimo bioarheološku sliku ovog lokaliteta.