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СТАРИНАР

На корицама: Посуде од пурпурног стакла украшене аплицираним нитима из средњовековног града Браничева
(*фото: Народни музеј Пожаревац*)

Sur la couverture : Les récipients de verre pourpre à décor marbré de la ville médiévale de Braničevo
(*photo: Musée national de Požarevac*)

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САДРЖАЈ – SOMMAIRE

РАСПРАВЕ – ETUDES

КРИТИКЕ И ПРИКАЗИ – COMPTES RENDUS

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THINGS WE LOST IN THE FIRE: THE CASE OF THE "BEAUTIFUL" VESSEL

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Abstract – From the earliest excavations on the territory of the central Balkans and up to today, Late Neolithic pottery assemblages have remained one of the most important contributors to our knowledge of the past. To a certain extent, the burned Late Neolithic horizons left a great number of the architectural details preserved in the archaeological record, along with various artefacts, of which pottery makes up the largest part. However, due to the fact that the majority of pottery vessels and sherds were subjected to temperatures that were higher than those they were initially fired in the manufacturing process, decoration makes up a minority of the archaeological record of the central Balkans and, unfortunately, we usually deal with plain assemblages. Therefore, it is not surprising that the discovery of one vessel that has a small preserved portion of applied painted decoration, unearthed from a burned building structure in the latest horizon at the site of Pločnik, introduced a whole new set of questions. Importantly, this instance further emphasises that when deconstructing prehistoric paradigms, our interpretation sometimes must go beyond observation.

Key words – Decoration, ceramic vessels, secondary burning, Late Neolithic, central Balkans.

The Context

The archaeological context of this study is the Late Neolithic site of Pločnik near Prokuplje, which was discovered in 1927, during the construction of the Prokuplje – Kuršumlija railroad. In the same year, the first of a total of four copper hoards, i.e. assemblages of copper weapons and artefacts, were found, after which the site became widely known among archaeologists. The National Museum in Belgrade carried out systematic excavations in the period from 1960 to 1972, with the aim of determining the boundaries of the settlement. In 1996, another long-term campaign of systematic research was launched at Pločnik,[1] this time with the intention of finding evidence regarding the beginnings and development of metallurgy in the Late Neolithic.[2] In the course of those campaigns, a surface of about 800 m² was investigated. During a recent survey,[3] the total area of the site has been estimated at ca 35 ha. While the archaeological material gathered during previous campaigns indicates the presence of Late Neolithic and Early Eneolithic horizons, the settlement of Pločnik is dated to 5300/5200–4600 cal BC.[4] Unfortunately, since the discovery of copper hoards was accidental, their context as well as the chronological correlation with the settlement to-date remain uncertain.

In 2010, in Trench No. 23, a relatively large burned building structure was discovered. The structure shows remarkable similarities regarding its position, architecture and vessel content to the previously investigated

[1] To a certain extent, research is still underway.

[2] For example, Šljivar et al. 2006.

[3] The whole area of the settlement was recently surveyed by The National Museum in Belgrade.

[4] Borić 2009.

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Fig. 1. Pottery vessels found in the restricted room of structure 03 at the site of Pločnik (photo by D. Šljivar)

Сл. 1. Керамичке посуде из доиграђене просторије објекта 03 са Плочника (фото: Д. Шљивар)

units[5] and, presumably, there were several structures in this part of the settlement that were arranged in close proximity to one another and were connected, in some way, with the latest being largest in size. The feature was excavated in 2010 and 2011 over an area of 15 m².[6] The entire ceramic assemblage includes 5,600 sherds along with 33 complete or partly restored vessels. What appears particularly interesting is that most of the complete vessels, more precisely, 28 of them along with one sieve,[7] were found in a restricted room, rectangular in shape, with dimensions of 3.2 x 2.2 m² (Fig. 1). During the preliminary examination of the *in situ* vessels, it was already apparent that this building structure included mainly vessels for the storage and serving of liquids: jars, bowls, and jugs of different sizes – small, medium and large, which are generally characterised by a narrow or wide neck and by handles to enable carrying.

Therefore, since the morphology of the vessels imply a carefully organised storage space, it is plausible that these buildings perhaps served as some kind of common economic centres of accumulation and maybe consumption. While it is usually assumed that each structure was occupied by a single domestic group, my

[5] This refers to the structures that were discovered in the trenches that were excavated in recent years. Also, according to the geophysical prospection data, a similar geomagnetic anomaly was observed in their extension. Duško Šljivar, pers. comm.

[6] The structure is dated to around 4600 cal BC, Vera Bogosavljević-Petrović, Dušan Borić, pers. comm.

[7] This relates to the type of vessel that was previously called a *sulundar* (*silinder* Turkish) and for which it was assumed that it was used in the metallurgical process. However, since most of these objects were found in the context that implies storage, the author of this paper speculates that they represent sieves, indicating potential evidence for cheese-making.

assumption is that the number of storage vessels, as well as their capacity, is beyond the requirements of a household. Recently, scholars have expressed their doubts about the common belief that the majority of all recovered structures at the Late Neolithic settlements on the territory of the central Balkans should be regarded as households.[8] Namely, a few storage facilities were, to various extents, identified at the sites of Vinča–Belo Brdo, Selevac, Banjica and Gomolava, and while it was determined that they were usually situated in open space of the settlement, more importantly it was emphasised that some of them were actually communal.[9] It is interesting here to point out the example of the Neolithic site of Tell Sabi Abyad 1 in Syria, where it has been hypothesised that the large storage rooms were not only used by its permanent residents but also by the members who were more nomadic than sedentary. The members who were mobile still travelled various distances in order to collect goods, while permanent residents were tasked with taking care of them.[10] An additional argument here can be drawn from many examples recorded in the ethnoarchaeological contexts, where ceramic vessels were only stored in the household while in use.[11] At present, bearing in mind the small excavation area at the site of Pločnik, our suggested new interpretation for the similar structures remains in the domain of hypothesis.

The focus here in particular is on one single medium-sized jar with preserved painted decoration (Fig. 2). However, first and foremost, it is important to stress certain characteristics of the latest phase of Late Neolithic settlements and their pottery assemblages.

Fig. 2. Medium-sized jar in situ *(photo by D. Šljivar)*

Сл. 2. Амфора средњих димензија in situ *(фото: Д. Шљивар)*

Orange is the new Black in the Central Balkans

As already mentioned, the last occupation level at Late Neolithic settlements in the Central Balkans is generally illustrated with burned building horizons. Objects usually built with wattle and daub were largely destroyed by fire, which resulted in highly preserved architectural elements and numerous artefacts *in situ*. As Stevanović showed, based on detailed research at the site of Opovo, the whole period of the Late Neolithic is characterised by the horizon of burned building structures. She emphasised that the houses were deliberately burned, which was very different from the previous belief that the fire had occurred as a result of an attack or accident.[12] As a result of this process, the hallmark of the latest phase of Late Neolithic ceramic assemblages is a plain, undecorated surface. Moreover, due to these post-depositional alternations, we face a huge disadvantage for conducting important examinations such as residue and use-wear analysis.

Archaeologists often use colour as the main criterion for the classification of pottery, especially in the process of refitting. However, experimental burning attempts indicate that a truly effective and thorough investigation is necessary in order to determine what particular event in the life-cycle of a ceramic vessel is responsible for the colours we recognise today in the archaeological record.[13] In the Late Neolithic contexts, the majority of vessels surfaces show signs of secondary burning, which means their original colour from primary firing changed, depending on the proximity of fire. If we take into account the pottery from the unburned Late Neolithic horizons, it is reasonable to assume that most of the vessels in the living assemblage were probably dark burnished, since black or dark grey, resulting from an initial firing in a reducing atmosphere, were once dominant colours, a somewhat favoured choice in the ceramic assemblages all over the Balkans.[14] Again, depending on the closeness of the fire source, traces of secondary burning on ceramic vessels vary from a pale orange coloured surface, through ochre,

[8] Трипковић 2007; Tripković 2009.
[9] *Cf.* Tripković 2009, 279.
[10] Verhoeven 2010, 27.
[11] Hally 1983, 178.
[12] Stevanović 1997; Verhoeven 2010, 29.
[13] Vitelli 1990.
[14] Chapman 2004.

Fig. 3. Accumulation of pottery in the burned building horizon, with prevailing orange colour (photo by D. Šljivar)
Fig. 4. The "beautiful" vessel – the only vessel in the assemblage with preserved painted decoration (photo by Central Institute for Conservation in Belgrade)

Сл. 3. Акумулација грнчарије у оквиру спаљеног грађевинског хоризонта, са преовлађујућом наранџастом бојом (фото: Д. Шљивар)
Сл. 4. „Лепа" посуда – једина посуда у асемблажу са очуваном сликаном декорацијом (фото: Централни институт за конзервацију – ЦИК, Београд)

to different shades of grey, sometimes with the entire range represented on a single sherd.[15] Also, in cases of severe burning, the colour can change to intense burgundy, while at the same time vessels become badly warped and vitrified.

However, the majority of pottery that had intense contact with fire generally displays pale orange colouration, and this usually involves all complete vessels in the assemblage (Fig. 3). Therefore, complete ceramic vessels, different in functions, shapes, and sizes, usually found *in situ* in the Late Neolithic contexts in the Central Balkans, all share similar characteristics regarding their colour, surface treatment and, most often, the complete absence of decoration. Unless the ornamentation involved incising or applied plastic decoration, there is little chance that it is going to be preserved in the archaeological record. Furthermore, the original surface treatment of the vessels is often difficult to determine. While some types of decoration are not at all time-consuming and require very little energy in execution, burnishing, as a form of surface treatment for example, requires far more investment of energy than any other decorative technique,[16] which means we are again deprived of important information regarding the production process. In addition, we get an impression of false uniformity. One can even assume that some huge shift in pottery production and use happened, with the tendency of making vessels less ornate but more adequate for other functions. However, regarding this uniform and somewhat monotonous appearance of pottery, bearing in mind that their decorative motifs and colours are forever lost, we can undoubtedly say that ceramic vessels in their second transformation by fire at the end of the Neolithic, suffered a serious decline.

A "beautiful vessel":
a glimpse into the colourful Neolithic

Given the general appearance of the Pločnik vessel (Fig. 4), regarding its sophisticated composite design, it is obvious that each step in the manufacturing pro-

[15] This could also indicate that the vessels were already broken at the time the structure was burned.

[16] *Cf.* Dietler, Herbich 1989, 158.

Fig. 5. The vitrified side of the vessel (photo by Central Institute for Conservation in Belgrade)
Fig. 6. The preserved traces of decoration show that it probably covered the whole surface area of the vessel (photo by Central Institute for Conservation in Belgrade)

Сл. 5. Витрификована страна посуде (фото: Централни институт за конзервацију – ЦИК, Београд)
Сл. 6. Очувани трагови декорације који указују на то да је, највероватније, била украшена читава површина посуде (фото: Централни институт за конзервацију – ЦИК, Београд)

cess was carefully planned. First, the lower part had to dry in order for the successful joining of the upper part. Then, the two horizontal strap handles, as well as the plastic decoration, had to be applied during the process of drying, but before the clay hardened too much. Likewise, the burnishing of the surface had to be done while the pot was still leather-hard. An additional step was adding a slip on the inner surface, which strongly indicates its use for storing liquids. The final step involved the application of the decoration, i.e. the application of an additional layer on the previously slipped and smoothed surface.

The vessel is slightly vitrified as a result of exposure to fire, i.e. as a consequence of both expanding and contracting (Fig. 5). The better preserved side is the only one that shows traces of decoration in the upper part, consisting of parallel and zigzag lines with a combination of small plastic rounded ribs. Determining of the colours that were used also represents a difficult task. At the moment, we can assume that white paint was used on a red or brown background, but other options are also plausible.[17] Based on the small traces of applied paint, it is evident that the lower part of the vessel was also largely decorated (Fig. 6).

Even though the general shape of this vessel is restricted, to a certain extent, it allowed ease of access, i.e. manipulation of the content with hands or utensils, while handles indicate frequent movement or transportation. As already mentioned, the presence of slip implies usage for the storage of liquids. While its morphological characteristics reflect the function of a portable storage container, the decoration implies its suitability for display. In addition to the decorative technique and motifs, its rather unusual shape also raises both contextual and chronological questions.

During the earlier processing of pottery from excavations at Pločnik, we have identified certain elements which are typical for the Early Eneolithic, Bubanj Hum –Sălcuţa–Krivodol complex, although, so far they have been reported in low quantities. However, one peculiarity worth mentioning is the occurrence of pottery with

[17] Even the use of graphite cannot be excluded, especially if we take into account rare published finds of pottery with graphite ornamentation from the simultaneous burned horizons, such as, the one found at the Copper Age site of Pietrele in Romania, Hansen 2015, 280, Fig. 20.

graphite ornamentation. According to the nearest correlations regarding techniques and motifs of pottery decoration that come from the neighbouring area of the Balkans, it appears that both graphite and painted decoration occurred simultaneously. Graphite ornamentation is considered a unique phenomenon, which appeared at the beginning of the 5th millennium cal BC in the Balkans, especially in the Bulgarian Chalcolithic, at the sites that belong to the Kodžaderman–Gumelniţa–Karanovo VI complex,[18] and, at the same time, at the sites related to Dikili-Tash-Slatino horizons in East Macedonia in Greece.[19] Unfortunately, graphite could not withstand temperatures higher than 900°[20] and, therefore, its preservation on Late Neolithic vessels in the Central Balkans is extremely unlikely. Hence, the striking amount of ornamented pottery at the simultaneous archaeological sites in Bulgaria, Greece or Romania is not at all surprising. Namely, the ornamented fragments dominate in comparison with the undecorated ones, for example at the sites of Slatino in Bulgaria[21] and Topolnica– Promahon on the border of Bulgaria and Greece, where graphite ornamentation is very common, along with the black and red painting in the horizons which are considered to be chronologically most relevant to the phase of Late Vinča.[22] Together with the graphite ornamentation which was favoured at a number of sites in Greece, like Sitagroi and Dikili Tash, where it makes up even 75% of the painted vessels, the main characteristic of the Late Neolithic ceramic assemblages in East Macedonia is the great variety of painted decoration.[23] Likewise, a great number of similarities regarding morphology can be drawn between Pločnik vessels and the ones from the site of Dikili Tash, except that similar forms were found with the plain orange surface in one context, while in the other, they were painted.[24] It is even possible, although not our primary goal, to draw parallels within the given territory by pointing out the vessels highly similar to the one in question, largely decorated with graphite ornamentation.[25]

Certainly, the comparison of the neighbouring regions is not something new and many traditional scholars have already emphasised their generally similar characteristics.[26] Also, a need for a better understanding and definition of the given transitional period has already been stressed.[27] It is important here to underline that whether we consider this vessel as an occurrence of Eneolithic elements in a Vinča context, or as an integral component of the Late Neolithic in the central Balkans, it does not mean that we tend to equate pottery and ethnicity in the same manner as the older tradition of culture-historical scholarship. There are undoubtedly many similarities in the archaeological record from the latest phase at the Pločnik settlement and the Struma Valley area. However, the fire created a major obstacle in identifying them. On a superficial level, all these vessels look similar to one another, but on the other hand, we must bear in mind that surely not all techniques have parallels within simultaneous horizons; they rather have limited applicability throughout the Neolithic world. Since both prehistoric societies recorded archaeologically and traditional communities recorded in the ethnoarchaeological contexts, made, used and discarded pottery in their own way, we should not expect that any ceramic vessel, no matter how similar its morphology or style, had the same function and significance when found in different contexts. However, the aim of this paper is not to attempt to reveal the symbolic meaning behind the ornamental pattern represented on this vessel, to match design elements at different sites across the broader territory of the Late Neolithic world, or to define the chronological priority of one complex over another, but rather to draw attention to this hidden dimension of pottery which can be interpreted, understood or perceived in many different ways.

It is important to stress that decoration is far from being the only hidden aspect of Late Neolithic pottery from the Central Balkans, largely due to the absence of information regarding the production process. However, since decoration is often considered to be the main indicator of interactions between pottery and people, it is of huge importance to focus on a few central questions which the occurrence of this vessel has triggered. Firstly, was this vessel somehow special in the context in which it was found? How often was it displayed? Is there a correlation between the decoration and the function of the vessels? And most importantly, what if the decoration was an integral characteristic of the Late Neolithic and this vessel actually reflects the whole assemblage?

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[18] Popova 2014.

[19] Yiouni 2000.

[20] Yiouni 2000, 209; Kisyov 2004, 501.

[21] Чохаджиев 2006, 65; Георгиева 2012.

[22] Vajsov 2007, 97.

[23] *Cf*. Yiouni 2000, 200, 207.

[24] Yiouni 2000, 200, fig. 2/1; Demoule 2004, 82, Pl. E /1.

[25] Demoule 2004, 84, Pl. XI/4, D/2, left; Чохаджиев 2006, Обр. 204/118.5.

[26] *Cf*. Deshayes 1970; Гарашанин 1973.

[27] Borić 2015.

The Value of Decoration

In prehistoric studies, decorative patterns on pottery had a huge importance on account of their chronological implications. Therefore, ornamentation played an essential part in the traditional stylistic-typological method, regarded as a crucial instrument for constituting chronological sequences. On the basis of decoration, scholars tracked stylistic changes through time and the factors that influenced them.[28] In recent studies, many authors have argued how traditional archaeologists' approaches and methods of display and interpretation have, in fact, distanced decorated pottery from its original context. For instance, apart from the usual remarks regarding pottery beauty and elegance, it is additionally implied how some extraordinary potting skills must have led to the making of such a fine work of art.[29] Furthermore, vessels with painted decoration were regarded as prestige goods, used only in some special contexts. After these early efforts to interpret and understand prehistoric designs and symbols represented on pottery vessels on the territory of the central Balkans, which resulted in various degrees of success, pottery decoration has, for archaeologists, become something of a *res nullius*, an area we rarely dare to question.

Although, among numerous aspects of pottery, decoration certainly represents one of the most interesting phenomena, only few scholars have tackled this issue in a comprehensive way. Regardless of whether it is viewed through the prism of traditional or modern archaeology, there is a general assumption that there is a strong correlation between forms of social structure and vessel decoration,[30] which means that pottery, like other prehistoric artefacts (such as figurines, for example), also served as a medium through which people could express themselves. However, since the meaning and values of artefacts are both culturally specific and highly ambiguous,[31] decoration constantly craves interpretation, but cannot be addressed without taking into account several fundamental factors.

A central issue here involves the meaning of the decoration, and it is usually regarded as a most practical and effective means of sending messages.[32] Together with the organised system of vessel classes, pottery decoration is considered to be the "best evidence" of ethnicity preserved in the archaeological record.[33] In some ethnoarchaeological contexts, the vessel also embodies the person.[34] Furthermore, the decoration and the surface treatment can convey information about the person who used the vessel and, therefore, represents an important feature when it comes to vessels that have a social, political or ritual purpose.[35] Regarding Bulgarian Chalcolithic, Chapman considers that the relationship between form and type of decoration is crucial when it comes to understanding the process of human categorisation, which determines the social structure of prehistoric communities.[36]

It seems that, whether it was supposed to reflect the identity of the person or the group, in order to transfer messages, decorated vessels had to be used in the area of social display, which brings us to the one of the oldest and most important questions raised among many authors addressing decoration, or what Braun has defined as a "usually unasked question" – why do people decorate their utilitarian household goods at all?[37] There are many documented cases both in the archaeological and ethnographical contexts where people used to decorate their cooking wares. In fact, cooking wares are sometimes more decorated than vessels used for serving and consumption, i.e. socially visible vessels.[38] It would seem that the real question is why would pottery from the domestic context in any manner serve as a medium of social communication? However, if we look at this question from another perspective, the point is that utilitarian objects are actually the most visible and, therefore, the most suitable as an instrument for communication. Moreover, judging by the ethnographic data, where the distinction between ritual and domestic was neither absolute nor clearly differentiated, vessels used in domestic contexts might also have found occasional use in ritual food consumption when community members gathered for communal feasts.[39] Although the most common interpretation is that decoration was intended for prehistoric people to communicate with people who did not know them – for casual users, there is a growing belief that potters rather used decoration to communicate with people who understood their techniques

[28] *Cf.* Hardin, Mills 2000.
[29] Skeates 1998, 131.
[30] David et al. 1998.
[31] Skeates 1998, 131.
[32] David et al. 1998, 365.
[33] David et al. 1998, 378.
[34] David et al. 1998, 365.
[35] Tite 1999, 211.
[36] Chapman 2004, 56.
[37] Braun 1991.
[38] Dietler, Herbich 1989, 159.
[39] *Cf.* Hardin, Mils 2000, 140; Mils 2007.

and symbols.[40] In many ethnoarchaeological contexts, it has been proven that traditional communities were using decoration in their primary context of use, in order to broadcast messages among themselves.[41]

On the other hand, many ethnoarchaeological studies have proved that the identification of decorative schemes with ethnic groups is not applicable to all traditional communities.[42] There are also many recorded contexts in which decoration does not have any specific meaning, it is more functional than decorative and highly dependant on other technological choices in the manufacturing process.[43] While it can reflect the identity of the potter, it does not have to contain any symbolic message. Furthermore, the shape, rim profiling or size may, in fact, be much more important than their decoration.[44]

When discussing the context, origin and variety of decorative patterns, we must also acknowledge that even in a single household the same vessel may be formed or decorated by more than one person – by passers-by, neighbours, visitors, specialists hired for the task, or purchasing vendors.[45] Also, skills, range of forms, components and diversity of the decorative repertoire of individual artisans, and numbers of vessels produced, may change over time.[46] This means that there are no grounds for the assumption that the same design scheme or decorative motifs could have been characteristic of all vessel classes from one community. We should rather expect that each form has its own pattern.[47] While potters who lived in one community were undoubtedly completely able to explore and adopt new techniques and styles, probably the most significant factor was their movement and interactions with other communities over various distances.[48] We must also bear in mind that in a great number of traditional communities women made pottery. Therefore, their movement as a result of marriage or migration was one of the most common ways of expansion of their decoration patterns.[49] Also, pottery vessels regularly circulated within the community members during various social events. For example, among the Kalinga people, there is a custom when potters visit their relatives or friends to bring them their pots.[50] Also, vessels can be obtained through a loan, just before major ceremonies, such as weddings, funerals, or harvesting, as well as various other events.[51] Likewise, Chapman refers to decorative patterns among Chalcolithic communities as a result of various interactions and membership with a range of different groups – religious sodalities, women's clubs, warrior bands or exchange associations, along with residence groups.[52]

The extreme rarity of decoration on the pottery found in the Late Neolithic burned horizons is well known to modern scholars. Although we are quite aware that this phenomenon is a consequence of secondary burning, there has always been a little hesitation that maybe, in the latest stage of the Vinča culture, decoration was not that important anymore. If that was the case, it could indicate that the deliberate absence of decoration actually means something, respectively that in the context in which the pottery is often decorated, the lack of decoration is more noticeable than any change in decoration style,[53] which would also represent valuable information regarding the manufacturing process and vessel use. However, based on only few finds of vessels whose decoration, to a certain extent, has survived the fire, we cannot solve this troubling dilemma. Since we cannot track the frequency and changes in decoration techniques and motifs through time, the design on the vessel from Pločnik could represent a concept that was either permanently or temporarily in effect. Furthermore, we do not know whether it reflects a collective or personal sentiment. Since the context is our most reliable criterion regarding the given vessel, we have to take into account the whole assemblage, where the prevailing categories are storage vessels. Furthermore, if we accept an assumption of some kind of communal space, what can we assume about the nature of the message that is being communicated here? Was this specific decoration restricted only to specific functional classes and what was so special about them? Was it their content or their affiliation to a certain individual or group?

Although there have been many studies dedicated to pottery decoration, it is probably one of the aspects that is most socially variable and, unfortunately, rarely

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40 Robb, Michelaki 2012, 173.
41 *Cf.* David, et al. 1998, 378; Sterner 1989.
42 Herbich 1987; Dietler, Herbich, 1989, 158.
43 Gosselain 1992, 574, 577.
44 Dietler, Herbich, 1989, 157.
45 Kramer 1985, 84.
46 Kramer 1985, 87.
47 Herbich 1987, 196.
48 Dietler, Herbich 1998.
49 *Cf.* David, Hening 1972, 5.
50 Deal 1998, 79.
51 Deal 1998, 80.
52 Chapman 2004, 61.
53 Faust, 2013, 10.

interpreted to our satisfaction.[54] In this brief overview, it has not been possible to present investigations of pottery decoration from every single point of view. Rather, our aim was to emphasise a few major issues in the given area. As has already been pointed out, even if we study decoration from different perspectives, archaeologists would never understand the full complexity of this phenomenon. Since our main method consists of documenting the observations, during this process it is extremely hard to refrain from our own subjectivity.[55] Certainly, as long as their messages remain mute to us, we will maintain a distance in understanding social life and behavioural patterns of prehistoric people. However, by focusing on each aspect of pottery and comparing more than one characteristic at a time, we could possibly contribute to resolving this immensely complicated task.

Conclusion

For decades, we have been accustomed to observing complete vessels and a large part of ceramic assemblages from the last stage of the Late Neolithic in the central Balkans practically in one colour. Among traditional archaeologists, in a great number of scientific papers, decoration was used to build chronologies, while the focus of modern studies was to develop knowledge and understanding of social issues in prehistoric communities.

As indicated previously, pottery decoration is a highly variable phenomenon that cannot be understood in absolute terms. As it might have been applied in a number of different ways and for various reasons, any straightforward interpretation could be misleading. However, since pottery was present in the everyday life of prehistoric communities, in order to gain some insights into the complex interactions between people and pottery, each aspect of it requires consideration. Whether it represented nothing more but a meaningless filling of the surface or the most powerful evidence of how prehistoric people built and maintained their social identity, each technique and motif deserves attention. Although we will probably never be able to solve the various riddles of ornamental patterns and symbols applied on prehistoric pottery, we can, perhaps, try to explore some other options when analysing decoration, along with other aspects of pottery. The aim of this paper was to address again the issues of decoration when considering Late Neolithic societies. Our failure to identify the meaning of prehistoric symbols is justified by the extreme rarity of vessels with preserved decoration. Due to the small sample, we can only raise, but not elaborate on, numerous specific issues concerning this subject, even though, it may seem that we have contributed to this field of work only by adding new questions. For the time being, following the present state of research of the site of Pločnik, we can assume far more complicated interactions among Late Neolithic/Early Eneolithic communities than previously thought. Whether this implies that two distinct groups of people lived at this settlement and used these vessels and their contents or that the inhabitants of Pločnik were actually involved in trade with neighbouring areas to a certain extent, or a number of other possible scenarios, a further understanding could be gained by focusing attention on the complex network of human activities related to pottery production, use and discard in the given context.

As far as decoration is considered, there will be various interpretations and relationships involved, and the complete meaning of social information will probably remain beyond our understanding. Since all aspects of pottery are somehow interwoven, in order to reveal the social issues concerning both prehistoric groups and individuals, and the reasons why and how they made, used and discarded pottery in the Late Neolithic, we need to bring together all available information.

Translated by the author

[54] Robb, Michelaki 2012, 164.

[55] Robb, Michelaki 2012.

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Marija M. SVILAR
Things we lost in the fire: the case of the “beautiful” vessel (7–18)

Резиме: МАРИЈА М. СВИЛАР, Археолошки институт, Београд

СТВАРИ КОЈЕ СМО ИЗГУБИЛИ У ВАТРИ: СЛУЧАЈ „ЛЕПЕ” ПОСУДЕ

Кључне речи. – декорација, керамичке посуде, секундарно горење, касни неолит, централни Балкан.

Последња етапа касног неолита на територији централног Балкана обележена је хоризонтима спаљених кућа који су детектовани на великом броју налазишта везаних за винчанску културу. Иако су услед горења сачувани многи архитектонски елементи који су на тај начин у великој мери добили на видљивости у археолошком запису, грнчарија је доживела својеврсну деградацију. Наиме, услед секундарног горења на много вишим температурама од оних у којима су посуде иницијално печене, керамичке посуде и фрагменти изгубили су своју оригиналну боју, као и трагове обраде површина и декорације. То је довело до тога да се керамички асемблажи у последњој етапи касног неолита одликују привидном униформношћу и монотоношћу, које се огледају у преовлађујућој наранџастој боји површина и одсуству декорације.

Налаз посуде са локалитета Плочник, која има сачуване трагове сликане декорације иако потиче из спаљеног објекта, омогућио нам је да провиримо у некадашњи живи асемблаж у коме су, највероватније, разне декоративне технике и разни мотиви били интегрални део керамичких посуда. Будући да функционалне класе које су заступљене у поменутом објекту припадају посудама за складиштење течности, он је привремено опредељен у складишни простор, а с обзиром на чињеницу да број посуда и њихова запремина превазилазе оквире једног домаћинства, изнета је хипотеза да се овде највероватније ради о некој врсти комуналног простора. Налаз посуде са остацима сликаних мотива изведених белом бојом на, највероватније, црвеној подлози, као и неуобичајене морфолошке карактеристике у виду четвороугаоно обликованог доњег дела посуде, изнова су покренуле низ спорних питања, која се пре свега тичу интеракција праисторијских заједница на прелазу из касног неолита у рани енеолит на територији централног Балкана. Ипак, примарни циљ овога рада био је тај да изнова скрене пажњу на декорацију као скривени елемент последње етапе касног неолита и као једно од најзначајнијих средстава за идентификовање сложених интеракција између праисторијских људи и грнчарије.

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NEW AMS DATES AS A CONTRIBUTION TO THE ABSOLUTE CHRONOLOGY OF THE EARLY ENEOLITHIC IN THE CENTRAL BALKANS

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Abstract – In this study we present new absolute dates for the Early Eneolithic in Serbia. Four of them confirm the recently obtained dates from that period (Bubanj-Hum I culture) but two samples (from Mokranjske stene and Bubanj) provide somewhat later dates for this period, although their stratigraphic context makes their interpretation difficult. Pottery from those sites, besides the typical examples, also shows particular stylistic and typological characteristics that resemble Galatin or Sălcuţa IV cultures, so one can presume that the Bubanj-Hum I culture in Serbia may have lasted longer than what is generally assumed.

Key words – Eneolithic, AMS-dating, Central Balkans.

Introduction

In South-eastern Europe, the second half of the 5th and early 4th millennium cal. BC (i.e. the Chalcolithic or Eneolithic period) witnessed extensive changes in the archaeological record, including the progressive abandonment of tells in favour of a more dispersed settlement pattern,[1] the growing importance of copper metallurgy,[2] and flat-grave cemeteries exhibiting signs of social stratification.[3] These transformations are reflected in the material culture with the development of various regional archaeological complexes. Although the chronological framework of these processes is relatively well known in Hungary and Bulgaria, the overall absolute chronology of the Eneolithic still requires extensive research in order to gradually shift away from traditional chronologies based on pottery and confusing regional terminologies.[4]

It is well known, indeed, that the chronology of Eneolithic is not uniform in all the regions of the Balkan Peninsula. For example the Early Eneolithic in Serbia corresponds to the Late Eneolithic in Bulgaria,[5] even if in both cases, these are defined on the basis of similar traits. The confusion in terms of nomenclature is generated by the position that occupies each eponymous site in the definition of the cultural complex. Thus, according to Garašanin and Simoska, this complex is defined as Bubanj–Hum I–Krivodol–Sălcuţa,[6] while

[1] Link 2006; Kapuran et al. 2017.
[2] Bartelheim, Krauß 2012.
[3] Higham et al. 2007.
[4] Schier 2014.
[5] Todorova 2003, 288–289.
[6] Гарашанин, Симоска 1976, 9.

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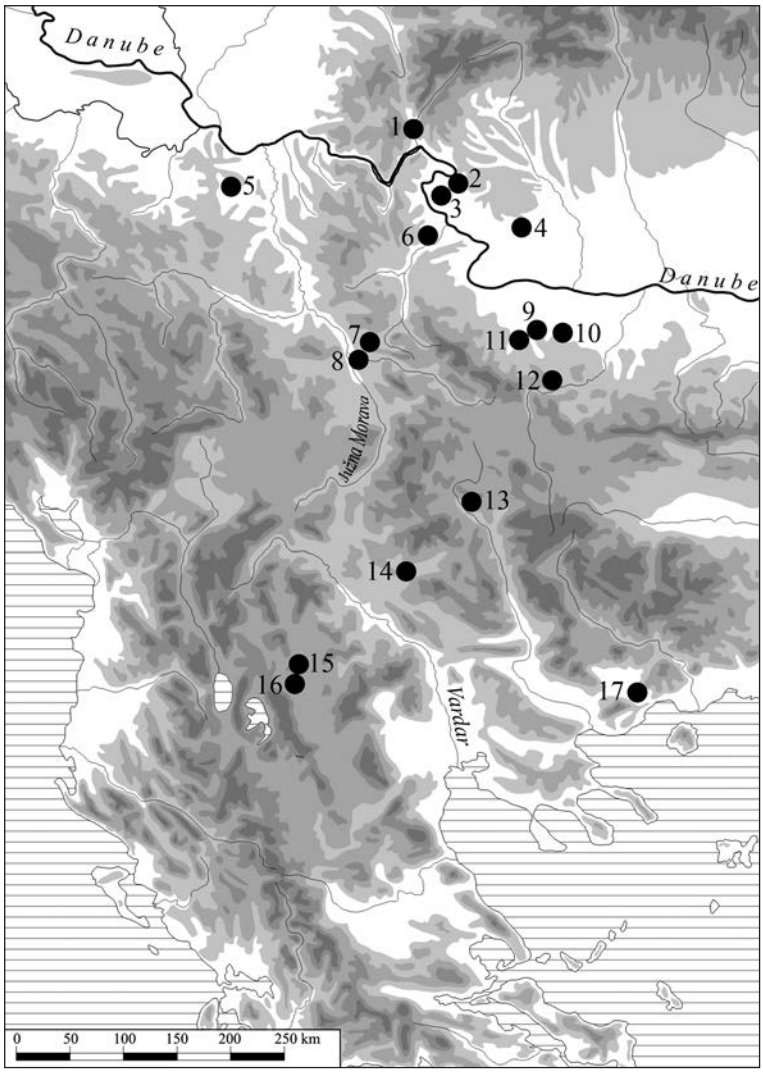

Fig. 1. List of sites mentioned in the study (the background of the map, M. Milinković):
1. Baile Herculane, RO;
2. Ostrovul Corbului, RO; 3. Bistret, RO;
4. Salcuta, RO; 5. Bodnjik, SRB;
6. Mokranjske stene, SRB;
7. Velika Humska Čuka, SRB;
8. Bubanj, SRB; 9. Galatin, BG;
10. Borovan, BG; 11. Krivodol, BG;
12. Rebarkovo, BG; 13. Slatino, BG;
14. Pilavo, MK; 15. Bakarno Gumno, MK;
16. Šuplevec, MK; 17. Dikili Tash, GR.

Сл. 1. Списак локалитета поменутих у чланку (позадину мапе израдио М. Милинковић):
1. Баиле Херкулане, Румунија;
2. Острувул Корбулуи, Румунија;
3. Бистрет, Румунија;
4. Салкуца, Румунија; 5. Бодњик, Србија;
6. Мокрањске стене, Србија;
7. Велика хумска чука, Србија;
8. Бубањ, Србија; 9. Галатин, Бугарска;
10. Бороване, Бугарска;
11. Криводол, Бугарска;
12. Ребарково, Бугарска;
13. Слатино, Бугарска;
14. Пилаво, Република Македонија;
15. Бакарно гумно, Република Македонија; 16. Шуплевец, Република Македонија; 17. Дикили Таш, Грчка

in Garašanin and Đurić it is defined as Sălcuţa–Krivodol–Bubanj.[7] Today the accepted definition of this chrono-cultural horizon (culture) in Serbia is Bubanj–Sălcuţa–Krivodol (hereafter BSK),[8] while in Bulgaria this complex is defined as Krivodol–Sălcuţa–Bubanj,[9] or Krivodol–Sălcuţa–Bubanj Hum Ia.[10]

The area covered by the BSK complex stretches across modern-day NW Bulgaria, SW Romania, Serbia and Macedonia, and is characterised by numerous regional variants (Sălcuţa in Oltenia, Bubanj–Hum I in Serbia, Krivodol in Bulgaria and Šuplevec–Bakarno Gumno in the Republic of Macedonia). As already mentioned, its precise chronological position within the south-eastern European Eneolithic is still subject to debate. In Serbia and the Republic of Macedonia, for instance, there is a regrettable lack of absolute dates: so far only three dates are available for the BSK, one from an insecure context belonging to the site of Bodnjik,[11] and two further dates, recently obtained for the eponymous site of Bubanj.[12]

As regards relative chronology, many authors considered Bubanj–Hum I, which represents this complex in most of the Serbian territory south of the Sava and the Danube, as being parallel to the Sălcuţa II phase.[13] According to the available stratigraphic data, finds and absolute dates from the new excavations in Bubanj and Velika Humska Čuka in south-eastern Serbia, as well as in Mokranjske Stene, in eastern Serbia, the

[7] Гарашанин, Ђурић 1983, 12.
[8] Tasić 1995, 29.
[9] Todorova 2003, 288–289.
[10] Георгиева 2005, 144.
[11] Живановић 2013.
[12] Bulatović, Vander Linden 2017.
[13] Гарашанин, Симоска 1976, 20; Tasić 1995, 27.

Bubanj–Hum I culture lasted longer than previously thought and, in all likelihood, is contemporaneous with several phases of the Sălcuţa culture, including Sălcuţa IV. Radiocarbon dates from Romania and Bulgaria indicate that the BSK complex belongs to the late 5th/ early 4th mill. cal BC. From a typo-chronological point of view, numerous traits of the material culture, such as pottery and figurines, suggest that it is partly contemporary with the Kodzadermen–Gumelniţa–Karanovo VI complex to the east, as well as the Gradešnica–Slatino –Dikili Tash II complex to the south.

The BSK internal phasing and geographical evolution are problematic as well. For instance, the two aforementioned dates for the site of Bubanj point to the time period comprised of between c. 4350 and 4250 cal BC. These predate most available ^{14}C determinations for Romania,[14] and are either earlier than or contemporary to those for Bulgarian sites.[15] These discrepancies also raise questions regarding the geographical structure of the BSK complex, and the directionality of cultural influences.[16] Furthermore, it is also necessary to delineate more precisely the chronological framework of the BSK complex, by investigating its relationship with both preceding (Late Vinča culture in Serbia, and Gradešnica–Slatino–Dikili Tash II complex in western Bulgaria, eastern Republic of Macedonia and northern Greece) and succeeding archaeological cultures (e.g. Coţofeni–Kostolac and Cernavodă III cultures).

New absolute dates from Serbia

In this study we present six AMS radiocarbon dates obtained from three sites: Velika Humska Čuka and Bubanj near Niš in south-eastern Serbia, and Mokranjske Stene near Negotin in eastern Serbia. Samples were submitted for counting to MAMS, the AMS facility at the Curt-Engelhorn-Centre for Archaeometry.[17] Calibration was performed using Oxcal 4.2.[18] All results are reported in Fig. 9.

Velika Humska Čuka is a stratified hilltop site ca. 8 km north of Niš (Fig. 1/7). Research on this site was first carried out in the 1930s and 1950s, and resumed in 2009 until the present day.[19] Excavations undertaken in 2016 and 2017 explored a structure that was partially carved in a solid rock, above which there was a large amount of fired soil, soot and ashes, which was interpreted as the remains of the above-ground part of a dwelling structure (Fig. 2). In the upper parts of the building, a large number of finds, especially potsherds and animal bones, were recovered. Among these finds, a copper chisel is of particular interest (Pl. III/1). Bowls with inverted rims with a wart-like handle, two handled biconical beakers with a marked belly and a small biconical amphora with vertical or horizontal handles (Pl. I/1–8) were recovered in this structure, and show the characteristic features of the Bubanj–Hum I culture. Decoration techniques include graphite painting, incision, channelling and series of crescent imprints.

The radiocarbon date obtained analysing an animal bone sample (*Ovis/Capra*), which was located directly next to the chisel and the characteristic potsherds, gave a value of 5473 ± 31 BP (Fig. 2), which is 4352–4271 cal BC (68.2% probability) or 4365–4259 cal BC (95.4% probability) (Fig. 9/1). This date is important because it defines the time of use of this type of copper chisel, which is known from the Neolithic hoards discovered in the settlement of Pločnik,[20] which lies about 45 km from Hum. This type of chisel was also discovered at Eneolithic sites in north-eastern Bulgaria,[21] and is also known from Eneolithic Bodrogkeresztur contexts in today's Hungary.[22]

Bubanj is a stratified site on the Niš plain, on the left bank of the Nišava River (Fig. 1/8). Archaeological excavations were carried out on two occasions in the last century, following which the site was completely destroyed over time.[23] The remaining small part of the site (about 200 square meters) was explored between 2008 and 2014.[24] Four samples from the Eneolithic horizon were taken from the site's remaining stratigraphy.[25] Of these, two come from structures belonging to the Early Eneolithic, while the other two were taken from structures dated to the Late Eneolithic.

The first sample is a bone of a sheep/goat (*Ovis/ Capra*), which was found in a deep waste pit (structure 37) dug into the virgin soil on the western periphery of

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[14] Lazarovici 2006.

[15] Boyadziev 1995, Tab. 5; Merkyte 2005, Fig. II/12, II/13.

[16] Bulatović 2014.

[17] Kromer et al. 2013.

[18] Bronk Ramsey 2009.

[19] Excavations performs the Archaeological Institute in Belgrade in cooperation with the National Museum in Nis. See: Булатовић, Милановић 2015.

[20] Antonović 2014, Taf. I/1–4.

[21] Todorova 1981, 24, Taf. 1.

[22] Antonović 2014, 35.

[23] Гарашанин, Ђурић 1983; Милановић, Трајковић-Филиповић 2015.

[24] Bulatović, Milanović, forthcoming.

[25] Two samples from a ritual pit (structure 69) from this period were published earlier (Bulatović, Vander Linden 2017).

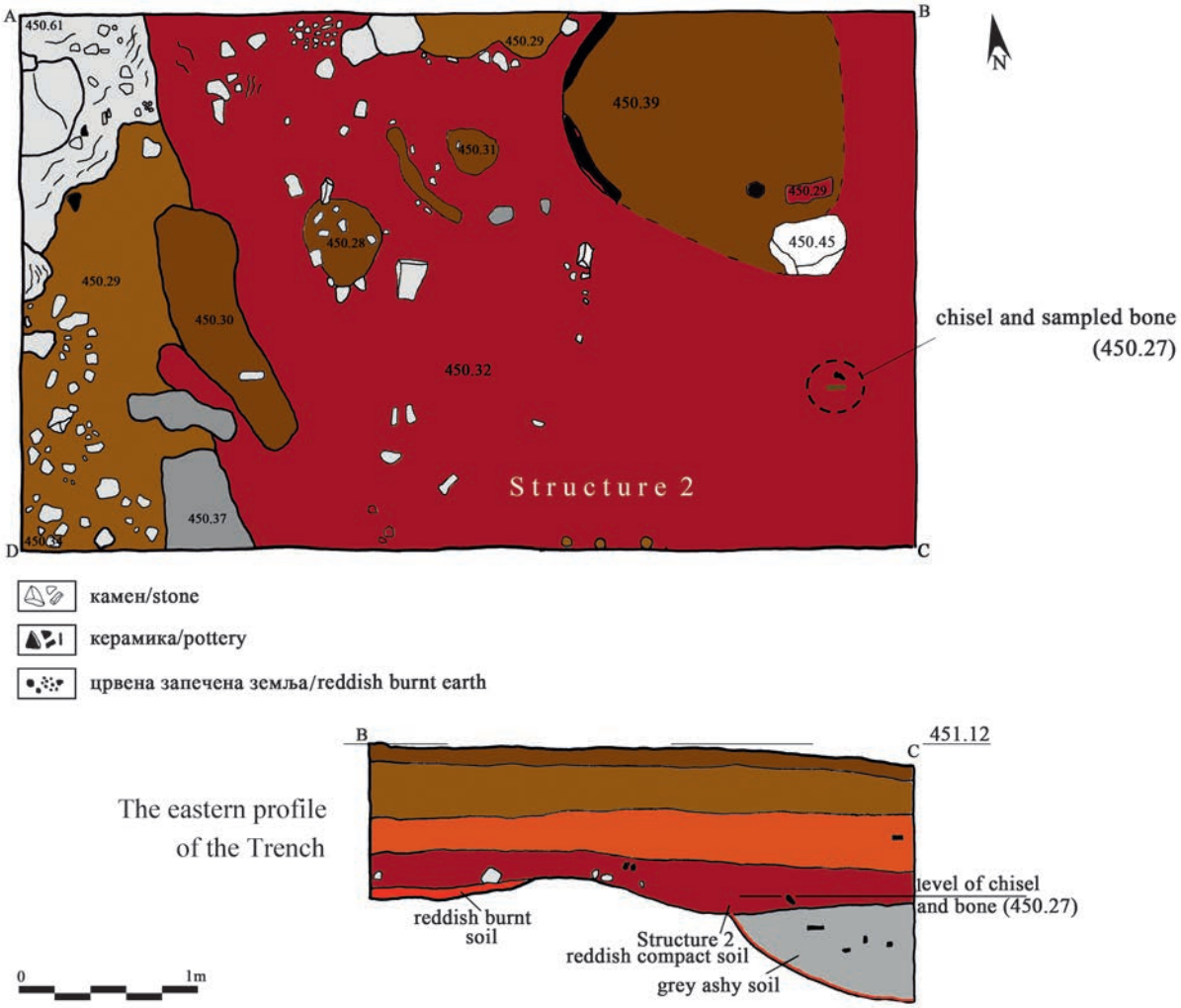

Fig. 2. Velika Humska Čuka site, position of the sampled bone in Trench 3, structure 2/16 (drawing by A. Bulatović)

Сл. 2. Велика хумска чука, контекст узорковане кости у сонди 3, објекат 2/16 (цртеж: А Булатовић)

the explored part of the site. The sample dates to between 5440 ± 30 BP (Fig. 5; Fig. 9/3), that is 4339–4263 cal BC (68.3% probability), 4346–4246 cal BC (95.4% probability). Ceramics recovered in the pit (a bowl with an inverted rim, a conical bowl with a thickened rim, wide open vessels decorated with channels on the neck and the belly, vessels with a high hollow foot and amphorae with two vertical handles, etc.) are characteristic of the Bubanj–Hum I horizon (Pl. I/9–11; Pl. II/2–7).

The second sample is a piece of the long bone of an undefined animal species, found in a ritual shallow pit (structure 25/27) containing several complete vessels, chipped stone tools, a zoomorphic figurine and other finds characteristic of Bubanj–Hum I horizon (Pl. I/12–19; Pl. III/8–10).[26] The AMS analysis determined the age of 5435 ± 30 BP (Fig. 6; Fig. 9/4), that is 4337–4263 cal BC (68.2% probability), 4343–4245 cal BC (95.4% probability). It is interesting to note that the dating of these structures is largely overlapping, even if the first one is placed at an almost 1 m higher level than the previous one, although it is only half a metre distant. Two points must be considered: firstly, the sample could actually come from the layer in which the pit was dug and, thus, belongs to the underlying layer; secondly, it is noticeable that these dates fall into a small plateau in the radiocarbon calibration curve for this period. In these conditions, and from a strictly methodological point of view, further chronological precision remains out of reach and should be not pursued.

[26] Булатовић 2015, 11–12, сл. 1–2.

The third sample from Bubanj (bone of an undefined animal species) originates from the floor structure of a late Eneolithic house (structure 3) and belongs to the Early Eneolithic horizon of the site. It gives almost identical values as the previous samples – 5445 ± 24 BP, that is 4338–4267 cal BC (68.2% probability) or 4344–4260 cal BC (95.4% probability) (Fig. 4; Fig. 9/2).

The last sample from Bubanj discussed here is possibly the most significant one, as it comes from a deep pit, probably used for waste disposal (structure 20), underneath a late Eneolithic or Early Bronze Age layer and dug through the Middle Eneolithic and the upper part of the Early Eneolithic layers.[27] The sample of the Unio shell from the bottom of the structure, whose level corresponds to the youngest horizon of the Early Eneolithic, showed a value of 5087 ± 25 BP, or 3952–3810 cal BC (68.2% probability), or 3960–3800 cal BC (95.4% probability) (Fig. 7; Fig. 9/5). In addition to pottery corresponding to the late Eneolithic, i.e. the Coţofeni–Kostolac horizon, two potsherds decorated with a series of circular imprints were discovered, which, according to stylistic and typological features, can be attributed to the Bubanj–Hum I horizon (Pl. III/11, 12). It is interesting that, while the dates from the three closed contexts from the Early Eneolithic of Bubanj show an almost identical age of approx. 4350–4250 cal BC (bearing in mind the aforementioned effect of the calibration curve), this last sample is considerably later by almost 500 years. It thus seems that some of the – not directly dated – structures assigned to the latest horizon of the Early Eneolithic actually belong to this period, or rather there are no preserved structures from this period in this part of the site, but only a cultural layer, which in this case was cut by the pit marked as structure 20. This most recent date, however, is important, as it suggests that Bubanj was inhabited during this period, that is, that the Bubanj–Hum I horizon lasted considerably longer than previously thought, and that during this time span the basic stylistic and typological features remained rather homogeneous. It is important to underline that no elements characteristic of later cultural horizons, such as the so-called *Scheibenhenkel* (the disc-shaped handles), or the vessels with small handles placed at the junction of the body and the foot, which were discovered at the nearby Velika Humska Čuka site, are present here.[28]

The site of Mokranjske Stene lies about 8 km south of Negotin in eastern Serbia, not far from the Timok River and the Serbian-Bulgarian border (Fig. 1/6). Its extent covers both the hilltop and the foot of the hill along the rocky walls. During the 2011–2013 excavation campaigns, a smaller stratified rock-shelter was explored, in which finds from several prehistoric periods were uncovered.[29] Starting from the 9th artificial excavation spit in the lower parts of a light brown earth cultural layer, characterised by the presence of Coţofeni culture pottery, potsherds with stylistic and typological characteristics of Bubanj–Hum I culture, as well as elements that did not correspond either with Coţofeni and Bubanj–Hum I culture, were recovered. These are thin plastic ribbons forming different shapes, series of triangular, oval, crescent, circular or rectangular imprints, incised net motifs, bowls with an inverted rim decorated with wide, deep oblique or horizontal channels, low vessels with a wide mouth, whose belly is adorned with rectangular vertical channels, stamped ornaments which resemble the so-called caterpillar ornament, and others (Pl. II). This pottery was recovered in the lower part of the layer of light brown soil and the layer of yellow soil below it, to its bottom, which lies directly above the bedrock. In the lower spits (layer of yellow soil), Bubanj–Hum I characteristic features became more abundant.

Finds belonging to Bubanj–Hum I culture in the yellow soil appear much less than the mentioned newer elements unusual for this culture, and it is possible that there was a layer with this pottery that preceded the Coţofeni culture, although it could not be distinguished during the excavation. A bone sample (*Bos taurus*) from the 9th artificial excavation spit gave a result of 4875 ± 23 BP, that is 3692–3642 cal BC (68.2% probability), or 3698–3638 cal BC (95.4% probability) (Fig. 8; Fig. 9/6). The unusual stylistic and typological elements and the possibility of the existence of a layer of the later phase of Bubanj–Hum I culture at this site have already been pointed out, which is confirmed by this date in some way.[30] This date and thee stylistic-typological characteristics of the pottery correspond to the layer of "Final Chalcolithic" from the site of Borovan in north-west Bulgaria, which is dated to the Galatin horizon i.e. to between 40th–37th c. cal BC.[31]

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[27] Immediately above the pit, a grave from the new age was dug, which destroyed the upper part of the pit, so it is uncertain from exactly which layer it was dug.

[28] Such vessels were found during excavation in 2017.

[29] Капуран, Булатовић, Јањић 2013; Капуран, Јањић 2015; Булатовић 2015а.

[30] Булатовић 2015а, 29.

[31] Ganetsovski 2016.

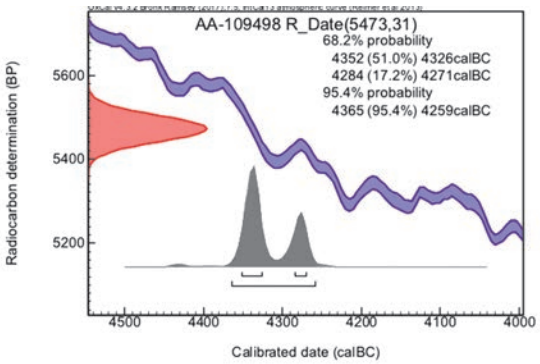

Fig. 3. Velika Humska Čuka, calibrated date chart

Сл. 3. Велика хумска чука, дијаīрам калибрације дашума

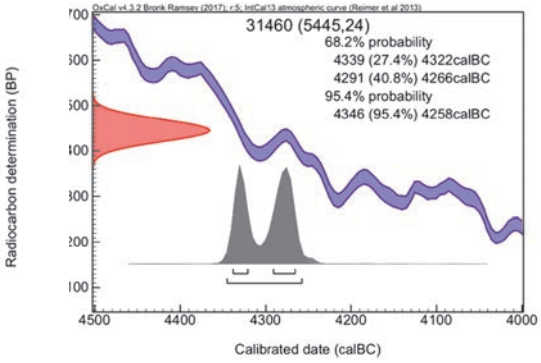

Fig. 4. Bubanj – structure 3, calibrated date chart

Сл. 4. Бубањ, објекаш 3, дијаīрам калибрације дашума

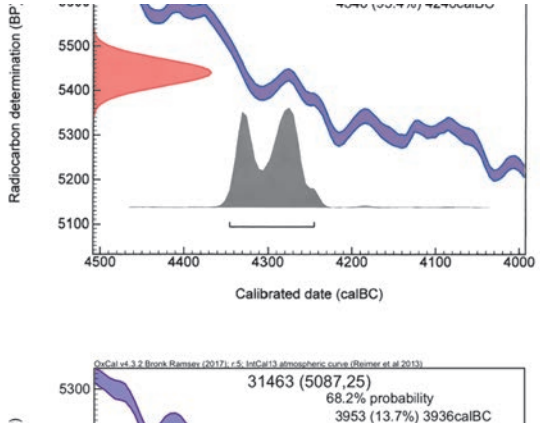

Fig. 5. Bubanj – structure 37, calibrated date chart

Сл. 5. Бубањ, објекаш 37, дијаīрам калибрације дашума

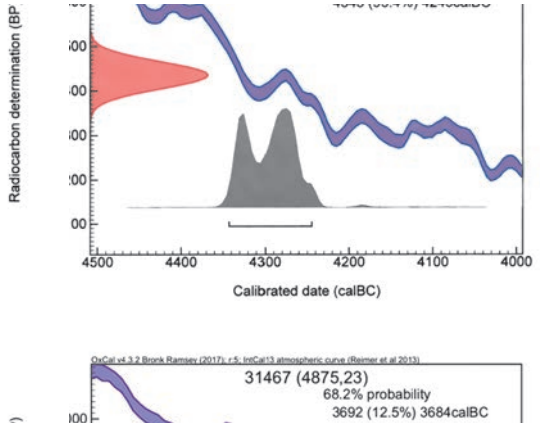

Fig. 6. Bubanj – structure 25/27, calibrated date chart

Сл. 6. Бубањ, објекаш 25/27, дијаīрам калибрације дашума

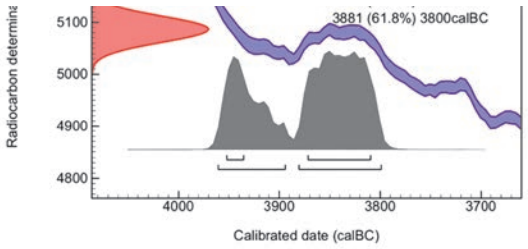

Fig. 7. Bubanj – structure 20, calibrated date chart

Сл. 7. Бубањ, објекаш 20, дијаīрам калибрације дашума

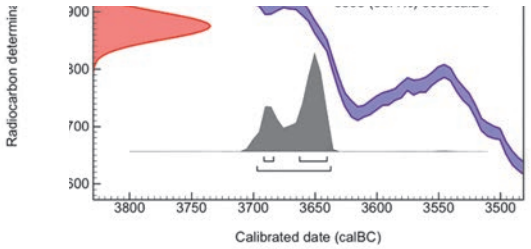

Fig. 8. Mokranjske Stene, calibrated date chart

Сл. 8. Мокрањске сшене, дијаīрам калибрације дашума

Nr	Site (context)	Lab nr	Date (BP)	calBC (68.2% and 95.4%)	Sample
1.	Velika humska čuka (structure 2/16)	AA 109498	**5473 ±31**	4352-4271 4365-4259	Animal bone (*Ovis/Capra*)
2.	Bubanj (structure 3)	MAMS 31460	**5445 ±24**	4338-4267 4344-4260	Animal bone (undefined animal species)
3.	Bubanj (structure 37)	Lyon 13690	**5440 ±30**	4346-4246	Animal bone (*Ovis/Capra*)
4.	Bubanj (structure 25/27)	Lyon 13689	**5435 ±30**	4343-4245	Animal bone (long bone of an undefined animal species)
5.	Bubanj (structure 20)	MAMS 31463	**5087 ±25**	3952-3810 3960-3800	Shell terrestrial
6.	Mokranjske stene (split 9)	MAMS 31467	**4875 ±23**	3692-3642 3698-3638	Animal bone (Bos taurus)

Fig. 9. New absolute dates of Early Eneolithic sites in the Central Balkans.

Сл. 9. Нови апсолутни датуми са налазишта старијег енеолита на централном Балкану

Pottery with similar stylistic and typological features also appears at other sites in Oltenia (Ostrovul Corbului, Băile Herculane and Bistret)[32] and in north-western Bulgaria (Galatin and Rebarkovo).[33] This cultural phenomenon is defined as the Galatin culture in north-west Bulgaria and the Sălcuţa IV–Herculane II–III culture in Oltenia.

Discussion

Most of the mentioned dates (Fig. 9/1–4), together with the recently published ones from Bubanj,[34] are contemporary and correspond to the dates for the BSK complex in Bulgaria and Romania. They range between the mid-44th and the mid-43rd centuries cal BC. Two dates deserve more attention (Fig. 9/5, 6), because they allow for a lower dating of the BSK complex, in the period between 40th and 37th c. cal BC, and thus represent the first dates in Serbia which indicate such a later chronology for the BSK complex. The stylistic and typological characteristics of pottery from the 9th–11th layers of Mokranjske Stene, as well as the sporadic finds from the pit at Bubanj (structure 20) from which these samples were taken, indicate that at that time the characteristics of Bubanj–Hum I pottery were still retained, and that they coexisted with new elements related to the cultures of Galatin and Sălcuţa IV–Baile Herculane II–III, which date approximately to the same period. In the lower parts of the layer of light brown earth (layers 9th–11th) at Mokranjske Stene dated to the 37th century cal BC, numerous elements of these cultures were indeed noticed, while at Bubanj, which showed somewhat higher dates (40th–39th centuries cal BC), the situation appears significantly different, since these elements are almost nonexistent. It remains to be explained whether the geographical location of these sites or their different chronological affiliation is the cause of this discrepancy. Chronological affiliation seems a more likely explanation, as numerous finds with the elements that correspond to the Sălcuţa IV culture were discovered in a yet undated layer at the nearby site of Velika Humska Čuka (e.g. *Scheinbenhenkel* handles, vessels on a foot with small handles placed at the junction of the body and the foot, parallel incisions carried out in different directions, etc.).[35] However, a layer with numerous *Scheibenhenkel* handles at Borovan, a site in north-west Bulgaria, was dated to between 40th and 37th c. cal BC, which could probably have been expected for this layer on the Velika Humska Čuka site.

It must be reminded however, that the accuracy of these two late samples, especially the one from Bubanj, is possibly hampered by poor stratigraphic contexts. Further confirmation of these results will have to be sought with additional dates from more reliable closed units.

So far, the earliest dates for the BSK complex come from Oltenia (Curmatura and Ostrovul Corbului) and north-western Bulgaria (Liga), while the earliest date for Serbia comes from the western part of the country (Bodnjik). The absolute date from the oldest phase from Pilavo, a site in eastern Republic of Macedonia, which was ascribed to the Šuplevac–Bakarno Gumno culture, is 4540–4330 cal BC.[36] This dating is quite high and seems to indicate that this complex developed

[32] Roman 1971, Abb. 6/14, 29/15; Taf. XIV, XVIII, XXVIII; Sălceanu 2008, Foto 4, 15/5.

[33] Georgieva 1987; Georgieva 1993, Fig. 2/5..

[34] Bulatović, Vander Linden 2017, Tab. 1/1, 2.

[35] The finds from the 2009 excavation have been published (Булатовић, Милановић 2015, Т. II/26–31), while the largest number of the finds with those elements still remain unpublished.

[36] Здравковски 2009, 20.

equally throughout its whole territory, as also suggested by a number of elements present in the pottery inventory of the Šuplevac–Bakarno Gumno sites (BSK complex) that are rooted in the Gradešnica–Slatino–Dikli Tash II culture. The Gradešnica–Slatino–Dikli Tash II dates to a slightly earlier period[37] and can be recognised in present-day south-western Bulgaria and northern Greece.

Also of interest is another dating from Pilavo (3750 cal BC), which comes from the latest phase of the site. This dating, on the other hand, could chronologically define the later horizon of the Šuplevac–Bakarno Gumno culture, which is parallel to the Sălcuţa IV culture or Galatin culture. Regrettably, although, in the first publication of the research in Pilavo, two stages are mentioned,[38] nowhere in more recent publications are those phases clearly defined, and it is impossible to understand which of the published finds belongs to which of these two phases. For this reason, the stylistic and typological characteristics of the pottery of each phase cannot be clearly identified.[39] However, published pottery from Pilavo, according to the stylistic and typological characteristics – in particular bowl types and graphite and red painting decorations – recall the finds from Velika Humska Čuka, including those from structure 2/16, whose dating is known.

Conclusions

The AMS radiocarbon dates presented in this paper substantially contribute to the chronological determination of the Bubanj–Hum I culture within the BSK complex. Four dates confirm the previously published results (three dates from Bodnjik and Bubanj), while the other two provide significant information, opening a discussion regarding the length of the Bubanj–Hum I culture. As we pointed out, there are some indications that this culture extended to the first centuries of the 4th millennium cal BC, in combination with new cultural elements which are characteristic of north-western Bulgaria and south-western Romania in the same period. If both dates from the Pilavo site in the eastern part of the Republic of Macedonia can be actually assigned to the layers showing Šuplevac–Bakarno Gumno features, this would mean that this cultural complex originated almost simultaneously in Oltenia, north-western Bulgaria and eastern Republic of Macedonia.

While these dates from Serbia are not confirmed by samples from closed units, and until the stratigraphic situation at the Pilavo site is resolved, the issue of the length of the BSK cultural complex remains open.

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Translated by the authors

[37] Boyadziev 1995, 182, Tab. 5.

[38] Настева 1989, 49.

[39] Колиштркоска-Настева 1999, 25–32; Колиштркоска-Настева, Курпузова 2005, 57–66. A large number of finds from this site that corresponds to the Šuplevac–Bakarno Gumno culture (local variant of the BSK complex), such as two handled beakers and bowls decorated with graphite, anthropomorphic figurines with oversized glutei decorated with deep incisions etc., are on show in a new permanent exhibition of the Museum of Macedonia in Skopje. All finds were attributed to the 4th millennium BC (the Museum was visited in September 2017).

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Aleksandar BULATOVIĆ, Marc VANDER LINDEN, Maja GORI
New AMS dates as a contribution to the absolute chronology of the Early Eneolithic in the Central Balkans (19–32)

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НОВИ АПСОЛУТНИ ДАТУМИ КАО ПРИЛОГ АПСОЛУТНОЈ ХРОНОЛОГИЈИ СТАРИЈЕГ ЕНЕОЛИТА НА ЦЕНТРАЛНОМ БАЛКАНУ

Кључне речи. – енеолит, AMC – датовање, централни Балкан

У раду је презентовано шест апсолутних датума из старијег енеолита са три локалитета у Србији. Четири датума потичу са локалитета Бубањ код Ниша, један је са локалитета Велика хумска чука, такође код Ниша, а последњи датум потиче са локалитета Мокрањске стене код Неготина.

Датовани узорак са Велике хумске чуке откривен је у остацима једног стамбеног објекта, непосредно до бакарног длета (клина) (Т. III/1) и многобројне керамике која припада Бубањ–Хум I култури (Т. I/1–8). Анализом AMC овај узорак је опредељен у 5473 ± 31 BP (сл. 2), односно 4352–4271 calBC (вероватноћа 68,2%) или 4365–4259 calBC (вероватноћа 95,4%) (сл. 8/1).

Од четири датована узорка са локалитета Бубањ два су откривена у затвореним целинама из старијег енеолита (објекти 25/27 и 37), један узорак потиче из јаме која је пробила и слој старијег енеолита (објекат 20), док је последњи нађен у целини из позног енеолита (објекат 3), где је доспео, вероватно, приликом земљаних радова обављаних у том периоду. Узорак из објекта 25/27 датован је у 5435 ± 30 BP (сл. 5, 8/4), односно 4337–4263 calBC (вероватноћа 68,2%), 4343–4245 calBC (вероватноћа 95,4%); узорак из објекта 37 у 5440 ± 30 BP (сл. 4, 8/3), што износи 4339–4263 calBC (вероватноћа 68,3%), или 4346–4246 calBC (вероватноћа 95,4%), док је узорак из објекта 3 дао датум 5445 ± 24 BP, што износи 4338–4267 calBC (вероватноћа 68,2%) или 4344–4260 calBC (вероватноћа 95,4%) (сл. 3, 8/2). Последњи узорак са Бубња потиче са дна јаме (објекат 20) која је пробила слој старијег енеолита.

Уз већу количину пужева и малобројну керамику (Т. III/11, 12) на дну јаме је нађена и шкољка која је датована у време 5087 ± 25 BP, односно 3952–3810 calBC (вероватноћа 68,2%), или 3960–3800 calBC (вероватноћа 95,4%) (сл. 6). Овај датум је значајан стога што индицира могућност да је Бубањ–Хум I култура, као део Бубањ–Салкуца–Криводол комплекса, егзистирала на овим просторима и у првим вековима 4. миленијума пре н. е.

На дуже трајање културе Бубањ–Хум I него што се то до сада мислило упућује и узорак са Мокрањских стена који је дао још нижи датум – 4875 ± 23 BP, односно 3692–3642 calBC (вероватноћа 68,2%), или 3698–3638 calBC (вероватноћа 95,4%) (сл. 7, 8/6). Овај узорак потиче са дна слоја светломрке земље у којем је преовладавала керамика Коцофени културе, али у којем је откривена и керамика Бубањ–Хум I културе, као и керамика слична керамици констатованој у културама Галатин и Салкуца IV (Т. II) у северозападној Бугарској и Олтенији. Непосредно испод тог слоја на Мокрањским стенама налазио се танак слој жуте земље у којем је доминирала керамика Бубањ–Хум I културе, али са спорадичним налазима који подсећају на горепоменуте културе из југозападне Румуније и северозападне Бугарске. Слој са сличном керамиком на налазишту Борован у северозападној Бугарској датован је у приближно исти период као и узорци са Бубња и Мокрањских стена – између 40. и 37. века пре н. е.

Иако не потичу из потпуно поузданих целина, датуми са Бубња и Мокрањских стена допуштају могућност да је Бубањ–Хум I култура, као део БСК комплекса, егзистирала на овим просторима, бар у источној и југоисточној Србији и у првом кварталу 4. миленијума пре н. е. На ово упућују и датуми са локалитета Пилаво у Македонији (Шуплевац – Бакарно гумно култура – регионална варијанта Бубањ–Салкуца–Криводол комплекса), који се крећу између 4540/4330 и 3750 calBC. Међутим, све док се сви ови датуми не потврде додатном серијом датума са више локалитета из различитих региja овог комплекса, питање трајања комплекса БСК на Балкану остаје отворено.

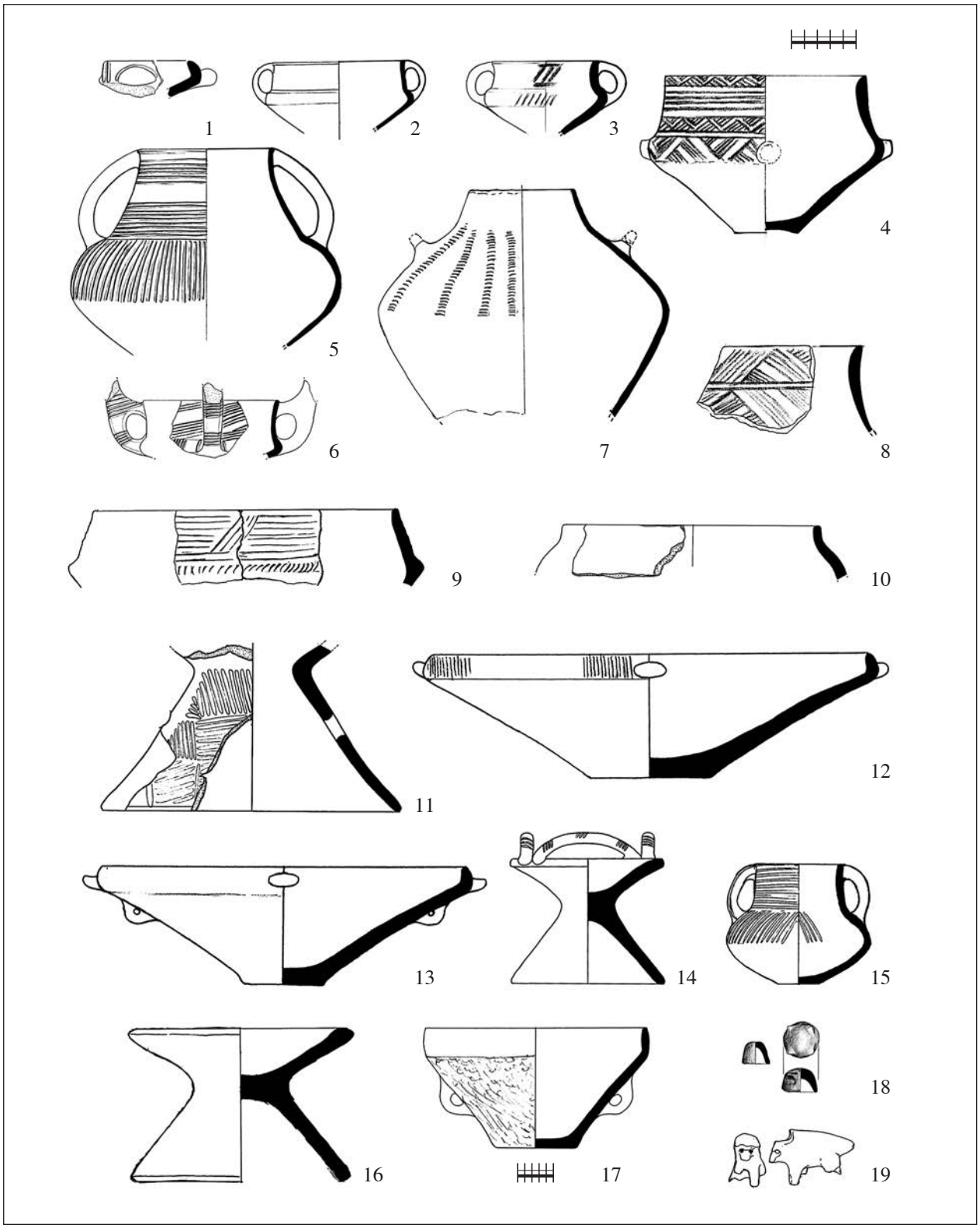

Plate I – 1–8) Velika Humska Čuka, structure 2/16; 9–11) Bubanj, structure 37; 12–19) Bubanj, structure 25/27 (drawings by J. Antić)

Табла I – 1–8) Велика хумска чука, објекат 2/16; 9–11) Бубањ, објекат 37; 12–19) Бубањ, објекат 25/27 (цртежи: Ј. Антић)

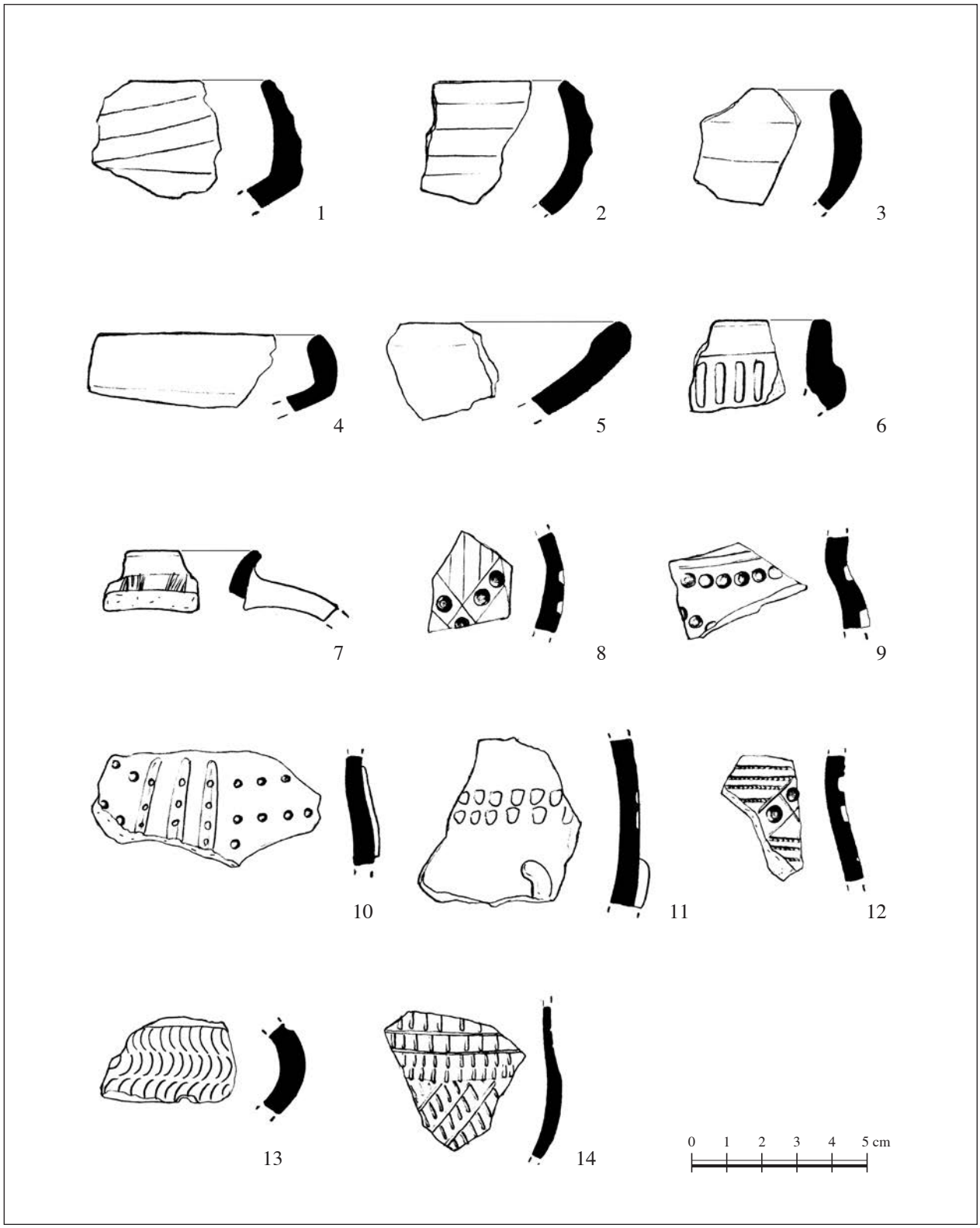

Plate II – 1–14) Mokranjske Stene, trench 2, 9th–11th arteficial spits (drawings by A. Kapuran)

Табла II – 1–14) Мокрањске стене, сонда 2, откопни слојеви 9–11 (цртежи: А. Капуран)

Plate III – 1) Velika Humska Čuka, structure 2/16; 2–7) Bubanj, structure 37; 8–10) Bubanj, structure 25/27; 11–12) Bubanj, structure 20

Табла III – 1) Велика хумска чука, објекат 2/16; 2–7) Бубањ, објекат 37; 8–10) Бубањ, објекат 25/27; 11–12) Бубањ, објекат 20

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Original research article

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JEWELLERY MADE OF BRONZE SHEETS FROM THE PREHISTORIC NECROPOLIS AT THE VILLAGE OF VELEBIT, NEAR KANJIŽA

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Abstract – In 1970, a Bronze Age necropolis in the village of Velebit to the north of Vojvodina was fully explored, but has remained unpublished until today. Apart from possessing all of the features of a Hügelgräber culture complex, some finds indicate connections to the Belegiš – Cruceni culture, developed at the very south of the Carpathian basin. In this paper, we shall present only some of the most attractive finds from the necropolis, including jewellery made of bronze sheets. They include spiral greaves, a belt and finger-rings. The remaining finds shall be presented in a monograph that is being planned.

Key words – Necropolis, Late Bronze Age, Hügelgräber culture, Belegiš culture, greaves, belt, finger-rings.

Apart from the huge contribution to the knowledge of the topic of the Early Iron Age in the territory of the Balkans and Serbia, R. Vasić also made huge contributions to studying the Bronze Age in the Balkans. In the volume *Die Nadeln im Zentralbalkan (Vojvodina, Serbien, Kosovo und Makedonien)* from the series *Prähistorische Bronzefunde,* he published decorative pins from the Velebit necropolis, on the periphery of the village of Velebit, in the vicinity of Kanjiža (northern Bačka).[1] On this occasion, we present jewellery made of bronze sheets. Besides the highest production techniques being applied, it also represents rare, but not unique, bronze products of the Kozsider horizon of the Middle Bronze Age in the territory of Serbia.

Hügelgräber culture, or The Tumulus Culture, extended over a wide area from the Rhine in the west to the Carpathian basin in the east, Czechia in the north and Bačka and western Serbia in the South of Europe.[2] If we presume that the north-western parts of Pannonia represented the core of this cultural manifestation, other regions show local features in such numbers that they resemble different cultures. This depended on the power of newly arriving communities that mixed with local populations.[3] Numerous metal finds that possess characteristics of the Kozsider horizon during the Bronze Age in the Carpathian basin show superiority made through the trade and exchange of high quality bronze weapons

[1] Vasić 2003, 22, 31, 33, 38; Taf. 8/101; 10/152; 11/165; 14/202, 203; 15/204, 205.

[2] Tasić 1972, 94.

[3] Tasić 1972, 95.

The paper represents the results of the projects *Archaeology of Serbia: cultural identity, integration factors, technological processes and the role of central Balkans in development of European prehistory* (OI 177020) and *Cultural changes and population migrations in early prehistory of the central Balkans* (OI 177023) financed by the Ministry of Education, Science and Technological Development of the Republic of Serbia.

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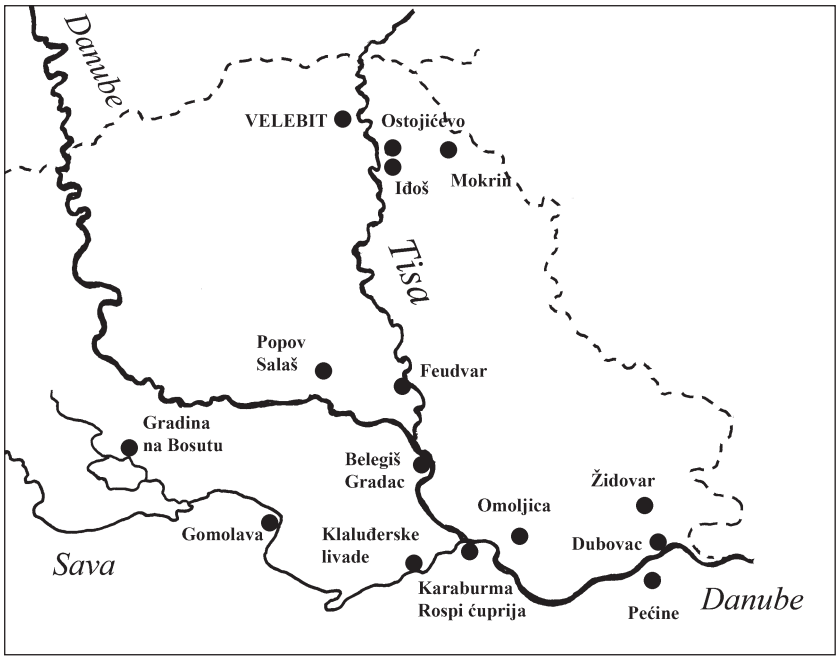

Map 1. Most important Bronze Age sites and necropoles in the north of Serbia

Карта 1. Најважнији локалитети и некрополе бронзаног доба на северу Србије

and jewellery.[4] In Vojvodina and in northern Banat there is a higher density of cemeteries of this cultural group.[5] The term "Tumulus Culture" should be accepted only conditionally, since the deceased were buried both in flat graves and under grave mounds or tumuli.

The Tumulus Culture necropolis is situated on the southern outskirts of the village of Velebit, in Bačka (Map 1). It was excavated on several occasions, in 1953, 1954 and 1956, but the rescue excavation was finally ended in 1970. During the village road construction, Bronze Age graves were discovered, but also some Iazyges graves from Antiquity. The initial excavation took place without expert archaeological supervision (for about a week or two) and it resulted in the discovery of three graves. The main focus was on collecting grave-goods that came into the possession of the local people. Owing to financial support from the Smithsonian Institute in the USA, after fifteen years, the large scale excavation took place.[6] On that occasion, 108 graves were discovered. Of that number, 77 graves belonged to the Bronze Age, while the remaining graves belonged to Antiquity. During the Bronze Age, at the necropolis Velbert there were two kinds of burials; 43 burials were cremations and 34 represented skeletal burials. After having gained an insight into all of the finds, one can notice differences both in burial rites and in quantity and quality of grave-goods. They included pottery, jewellery and weapons made of bronze. Detailed analyses of the burial rite will be presented in a monograph about this necropolis, which is currently being prepared. In this paper, we will present some of the most attractive pieces of jewellery made of bronze sheets, unearthed in skeletal graves and most likely belonging to women.

Information about the spiral greaves from grave number 80 of the Velebit necropolis can be found in "Građa za imonografiju Sente"[7] by L. Szekereš and in the study "Der Hortfund von Bühl und seine Beziehungen" by K-F. Rittershofer[8], but also in J. Koledin, in the paper entitled "Остава бронзаних предмета из Хетина".[9] The bronze belt is mentioned once in the monograph "Gürtelhaken, Gürtelbleche und Blechgürtel der Bronzenzeit in Mitteleuropa" by I. Kilian-Dirlmeier, but only as information gained indirectly.[10]

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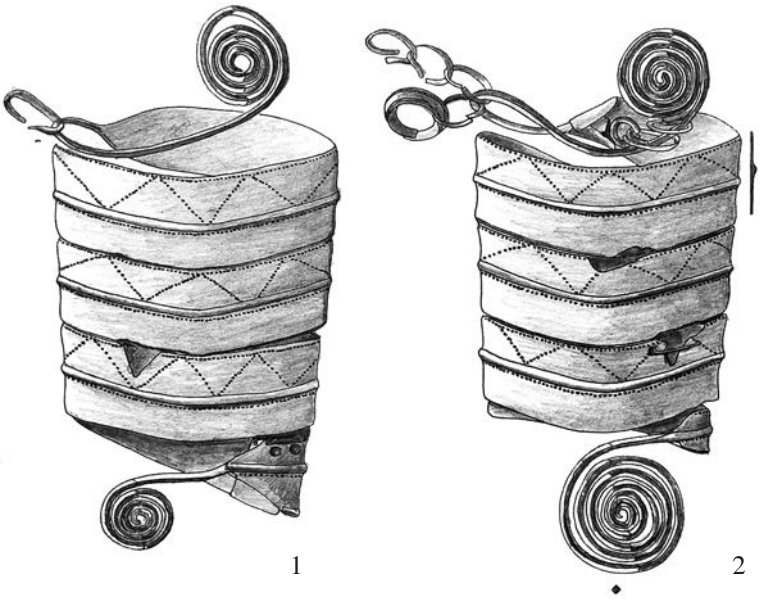
[4] Coles and Harding 1979, 102.
[5] Trogmayer, Sekeres 1965, 21; Karta II.
[6] Sekeresz 1971, 46–50.
[7] Sekeresz 1971, 46–50.
[8] Rittershofer 1983, 252.
[9] Koledin 2001–2003, 32.
[10] Kilian-Dirlmeier 1975, 101, 102.



1 2

Fig. 1. Greaves from Grave 80 (drawing by A. Kapuran)

Сл. 1. Наноīвище из īроба 80 (црīеж: А. Капуран)

According to the field diary from the 3rd of August 1970, it was noticed that the spiral greaves (Fig. 1–2) were discovered in situ, on the lower legs of a skeleton from the devastated grave 80. In the same grave, a two-handled beaker typical for the Belegiš culture (the so-called "Pannonian" beaker) was unearthed, along with two crescent-shaped bronze pin fasteners (Plate I/1–2), appliqués made of circular calotte-shaped pieces of bronze sheets (Plate I/3–4) and rings made of wound bronze wire (Plate I/5–7). According to their position within the grave, the rings were most likely worn on the toes. On the front side of the greaves there was a thickening in the shape of a plastic rib positioned along its axis. The back side is flat and the endings possess extra decoration in the shape of bronze wire wound into a spiral. The cross-section of the wire is rhombic. The decoration on the parts made of bronze sheet consists of punctuated zigzag lines on one part of the greaves and an ongoing, punctuated line along the edge of another greave part. The greaves show traces of repair, actually the connecting of separated parts with a bronze ring (Fig. 3). According to the drawings from the field diary, made immediately after these discoveries, on spirally wound endings made of wire there

Fig. 2 and 3. Greaves from Grave 80, fig. 3 – traces of reparation (photo by R. Ramadanski)

Сл. 2 и 3. Наноīвище из īроба 80, сл. 3 – деīаљ (фоīо: Р. Рамадански)

Fig. 4. Grave 94 (photo: documentation of Senta City Museum)

Сл. 4. Гроб 94 (фото: документација Градског музеја у Сенти)

were rings belonging to a chain (Fig. 1). On one of the greaves, besides the chains, there was also a ring made of bronze sheet, most likely separated during the conservation processes.

Understanding the function or symbolic meanings of greaves connected with chains is difficult, since it is not easy to identify what they could have represented. Since they belong to female costume, we can presume that the chains symbolically represented connections of a wife to her husband or to her home. If we would apply marriage symbols from a modern perspective to the ring on the greaves from Velebit, attached to a chain, it might just underline the connection between a wife and her husband. S. Bergerband considers that during the Bronze Age, a male warrior would, ideally, have a wife waiting for him at home while he was away fighting wars, and this is somehow reflected in this costume, designed in such a way to prevent women from moving around.[11] We presume that the opinion is also plausible that spiral greaves could have possessed the character of a charm, actually of an object with spiritual powers that limit the free movement of a woman.[12]

The spirally bent greaves made of bronze sheets discovered in grave number 80 would belong to the type *Regelsbrunn*,[13] spread across a wide area from northern Germany to Poland and further on along the Danube valley, all the way to Banat and Bačka.[14] They are equally represented in grave contexts and in hoards. The earliest examples are encountered in the Kozsider horizon of the Middle Bronze Age in Middle Europe and they remained in usage until Ha A,[15] actually until the horizon of bronze hoards. Parallels closest to the Velebit examples can be seen on greaves from Nagykajdács[16] and Rácegre.[17] Some authors consider that the centre of their production ought to be sought in the western Carpathian basin.[18] On the territory of Vojvodina, parallels for spiral greaves can be found in the hoard from Hajdukovo. The only difference is that the example from this hoard bears a somewhat narrower ornament. Regarding its profilations (the flat back side), it would chronologically belong to a younger period.[19] From the nearby areas, greaves made of bronze sheets without spirally wound endings (the older variant) are found in the Lovas[20] hoard from eastern Slavonia. Z.

[11] Bergerbrant 2007, 101, 102.
[12] Путица, Коледин, Алексић 2017, 114.
[13] Rittershofer 1983, 252.
[14] Rittershofer 1983, Abb 21.
[15] Kovácz 1997, 261.
[16] Schumacher-Matthäus 1985, 117; Taf. 60/1.
[17] Hänsel 1968, 94; Taf. 26/28, 29.
[18] Koávcz 1997, 262.
[19] Koledin 2001–2003, T. IV/4.
[20] Vinski 1958, II/1.

Vinski dates this hoard to Br C, actually in its older phase, with stronger influences of the Middle Bronze Age.[21] Similar greaves were discovered at the site of Ribnjak–Kolut, near Sombor, in Bačka, belonging to the phase MD II of the Bronze Age, according to Hänsel.[22]

Besides greaves, in the skeletal grave number 80 there were certain elements that indicate the existence of a cultural overlapping of newcomers and the autochthonous populations. The influences are best illustrated with a "Belegiš"-type, double-handled beaker on a tall cylindrical foot, decorated with volutes along the rim and white incrustation on its black-polished surface (Plate I/8). While the greatest percentage of pottery production represented at the Velebit necropolis shows characteristics of the Tumulus Culture in Pannonia and Middle Europe,[23] this beaker shows closest parallels with a find from grave number 87 of the necropolis of Stojića Gumno, near Belegiš.[24] It is dated into the later phase of this culture by N. Tasić.[25] While in southern Pannonia it is typical for the Tumulus and the Belegiš cultures to overlap in such a large way that one can hardly distinguish products of one from the other,[26] the spread of influences of the Belegiš culture into the south can easily be recognised in the cemeteries of the Drina and western Morava valleys. If we are guided according to stylistic and typological characteristics of pottery and bronze production (primarily of jewellery) discovered within the graves of deceased buried under grave mounds, this would refer to cemeteries with features of the Belotić – Bela Crkva and Dobrača – Mojsinje horizons.[27]

Two pin fasteners from grave number 80 (Plate I/1–2) are regarded as representatives of the evolution of chronologically somewhat older crescent-shaped pendants. As far as the crescent-shaped pendants are concerned, according to finds from the Zsadány necropolis, A. Mozsolics determines them into phase B III of the Bronze Age.[28] Necklaces with crescent-shaped pendants can also be seen on numerous anthropomorphic figures, like the one from Glamija.[29] This jewellery would also belong to items of bronze production performed according to the model taken from Kozsider bronze production in the Carpathian basin.[30] In the case of grave number 80, two variants of pin fasteners can be found, which prevent the needle from dropping off, thus avoiding injury to the owner. This is further analysed in the smallest detail in the monograph by D. Jovanović.[31] The first variant from grave 80 includes a crescent-shaped pin fastener of a rhombic cross-section and with a perforation in the middle, decorated on both sides with thickenings (Plate I/1). The second sample is a variant of a crescent-shaped pin fastener with a small tube on top, fragmented in this case, but also perforated (Plate I/2). Casting moulds kept in the Subotica Museum, Velebit and one find in Velesnica, allow us to conclude that crescent-shaped pin fastener could have also been produced in the territory of Serbia.[32]

Many decades ago, O. Trogmayer and L. Szekeres, just like I. Bona and A. Mozolisc, considered that the penetration of the Tumulus Culture into Pannonia could be reconstructed by analysing the distribution of bronze sheet belts with a hook.[33] They presumed that belts made of bronze sheets represented parts of a female costume, and one such belt was discovered at the Velebit necropolis. It was discovered in grave number 94 (Fig. 4), on August 11th 1970, with the remains of a skeletal burial and only the bones of upper limbs being preserved. In the field diary there are notifications that inform us about another possible belt fragment made of bronze sheet from grave 61. However, this piece cannot be identified among the finds' inventory.

The belt from grave 94 is 1.08 m long and is almond-shaped, since it runs thinner towards its endings. One of the endings has a hook, while the other one bears perforations (Fig. 5). The belt was discovered in situ, unmoved and in the place that could anatomically be the deceased's waist. As previously mentioned, only the skeleton's lower arms and fingers remained intact. Among other grave-goods, in the chest area, there were two pins of the Petschaftkopfnadel type, their heads facing downwards. Further finds included three finger-rings made of bronze sheets, two bracelets with opened endings, fifteen saltaleons, eight snail shells (most likely parts of an bracelet) and a plate made of gold sheet

[21] Vinski 1958, 26.
[22] Путица, Коледин, Алексић 2017, 106.
[23] Trogmayer, Szekeres 1965, 23.
[24] Вранић 2002, 141.
[25] Тасић 1983, 100; Fig. 57а–б.; Tasić 1974.
[26] Тасић 1983, 88.
[27] Тасић 1983, 96.
[28] Mozolosc 1967, 153, 187; Taf 70/4–6.
[29] Letica 1972, T. IV/3.
[30] Kovacz 1984, Taf. XCVIII/2.
[31] Jovanović 2010, 55.
[32] Tasić 1974, v. 146; Szekeres 1971: 48; Васић, Ерцеговић-Павловић, Минић 1984, 125, сл. 110/4.
[33] Trogmayer, Szekeres 1968, 17.

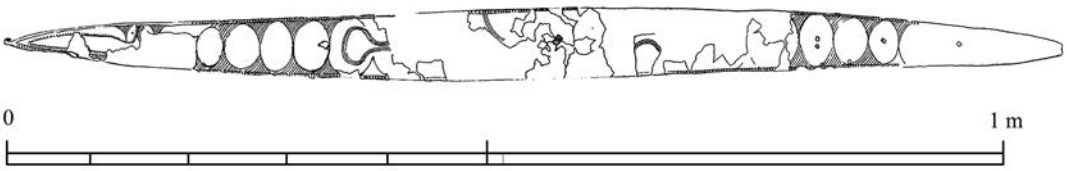


Fig. 5. Belt from Grave 94 (drawing by A. Kapuran)

Сл. 5. Појас из гроба 94 (цртеж: А. Капуран)

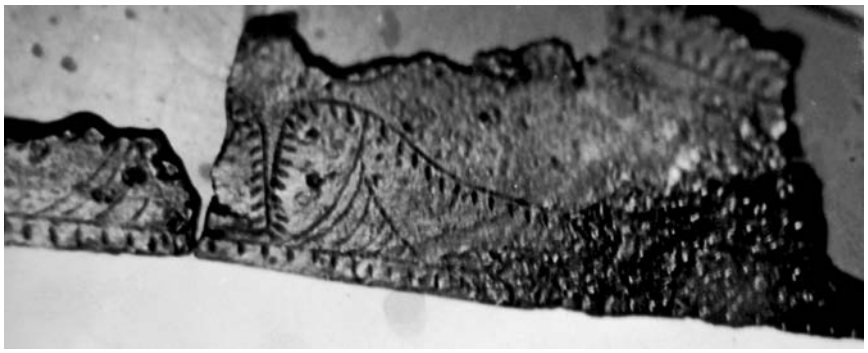


Fig. 6. Belt from Grave 94, traces of reparation (photo: documentation of Senta City Museum)

Сл. 6. Појас из гроба 94, детаљ (фото: документација Градског музеја у Сенти)

(now missing from the Senta City Museum collection). The entire grave-good set from grave 94 determines it as one of the richest ones at the Velebit necropolis.

The bronze sheet belt is decorated in a double technique of punctuation and carving. The punctuated ornaments are comma-shaped and they are positioned along the belt's edges (Fig. 6), while the endings are decorated with a row of carved ovals (Fig. 5). The spaces between the ovals are filled with lattice. An almost identical position of rows of circles and parallel lines can be seen on the belt fragment from the Dorozsma-Átokháza necropolis.[34] The central motif of the belt from grave number 94, also the most damaged one, has the shape of a meander consisting of triple lines. The meander-shaped ornament shows parallels with belts discovered at the cemeteries of Chotin,[35] Szentes,[36] Molzbach,[37] Zala and Tápé.[38] Apart from the example from grave number 94, the only other find of such a belt to the south of the Sava and the Danube was discovered in Kriva Reka, in western Serbia.[39]

The last type of thin, bronze, sheet jewellery from Velebit presented in this paper are finger-rings. Finger-rings are divided into two basic variants: those made of wound bronze wire (Plate I/5–6) and those made of ribbon-shaped, thin bronze sheets (Plate II/21–23). Among the jewellery finds from the Velebit necropolis, finger-rings made of bronze sheets represent an important and well-represented grave-good. Apart from undecorated pieces, there were those ornamented with a single punctuated rib, but also with two or three ribs. On some of the examples, the punctuated ribs were additionally decorated with small oval bulges (Fig. 7). Similar ways of decoration can be seen on finger-rings from graves 102 and 106 of the necropolis at Tiszafüred.[40] In grave 7 from the Velebit necropolis, finger-rings made of thin bronze sheets were discovered in situ, on the fingers of a skeletally buried deceased (Fig. 7). In grave number 80, finger-rings made of wound wire decorated the toes of the deceased, also buried skeletally.

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[34] Kilian-Dirlmeier 1975, 101, Taf. 36/407; Sánta 2013, Fig. 1/7.

[35] Mozsolisc 1973, Taf. 2/1d; Kilian-Dirlmeier 1975, Taf. 37/398; Furmánek 1979, Kat. 23–27.

[36] Kilian-Dirlmeier 1975, Taf. 38/399.

[37] Holste 1953, Abb. 9/20, Taf. 17/12.

[38] Trogmayer 1975, 25,26.

[39] Гарашанин 1967, 47, сл. 14.

[40] Kovácz 1975, Fig. 9/b; Fig. 12/b.

Fig. 7. Rings from the Velebit necropolis (photo by A. Kapuran)

Сл. 7. Прстење са некрополе Велебит (фото: А. Капуран)

If we compare the relative chronology established five decades ago and the newly gained absolute dating, there are only small deviations connected both to the relative and absolute chronology of the Tumulus Culture in the territory of Serbia. The crucial point for the appearance of Tumulus Culture in Vojvodina was the interruption of life in the Vatin settlements at the end of the Middle and the beginning of the Late Bronze Age. At that point, two separate groups, but of similar character, appear: one in the Tisza valley and the other in the area of Srem, southern Banat and western Serbia (Belegiš).[41] B. Hansel and N. Kalicz considered that the beginning of the Tumulus Culture should be dated into the phase Br B1 and that it lasted all the way until Br D (actually during all of the phases MD II, MD III and SD I).[42] Regarding the stylistic and typological features of pottery production, N. Tasić considered that the Velebit necropolis represents a manifestation of the southern or Carpathian variant of the Tumulus Culture complex from the end of the 14th and the beginning of the 13th century BC.[43] R. Vasić established a similar chronology, considering that the Tumulus Culture in the territory of Serbia can be determined into the period of the Middle Bronze Age or Br B and C,[44] further corresponding to the years 1600/1500–1200 BC, actually its second phase, as suggested by N. Tasić.[45] F. Gogatlan considers that the Middle Bronze Age begins immediately after the year 1500 BC,[46] exactly at the point when the Tumulus Culture reached southern Pannonia. Indirect proof of this is the distribution of greaves made of spirally wound sheets, which can be traced from the Middle Bronze Age until the end of the Bronze Age and the beginning of the Iron Age.[47]

Owing to the new absolute dating from the cemeteries at Paulje and Velebit, we are able to determine with greater precision the chronological development span of the Tumulus Culture in Serbia. The first AMS date is related to carbonised remains of a wooden base on which the skeleton of a younger deceased was placed,

41 Tasić 1974, 234, 240.
42 Hänsel and Kovacz 1986, 69.
43 Tasić 1974, 237, 239.
44 Vasić 2003, 3; Vasić 2010, 3.
45 Tasić 2004, 31.
46 Gogatlan 2004, 131.
47 Kovácz 1997, 261.

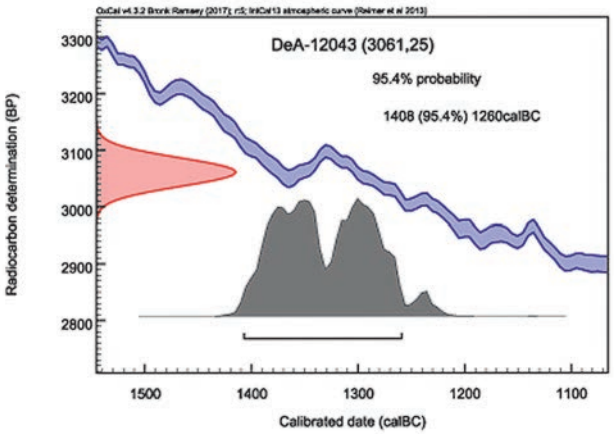

Fig. 8. Absolute date from Grave 107

Сл. 8. Апсолутни датум добијен из гроба 107

buried in mound XVIII of the cemetery of Paulje, near Loznica. In this case, the dating is determined as the 14th century BC.[48] The second absolute date is connected to grave number 107 from the Velebit cemetery, obtained from the cremated remains of a deceased analysed in the Isotoptech ZTR laboratory in Debrecen.[49] The date obtained has the value 3601±25, actually the time span from 1407–1236 cal BC, with a 94% possibility (Fig. 8).[50] This indicates that the cemeteries of Velebit and Paulje were chronologically rather parallel and that their dating is closest to the 14th century BC. This dating corresponds most closely with the presumptions of N. Tasić (Br B2–C).[51]

The Bronze Age necropolis of Velebit near Kanjiža represents the only necropolis of the Tumulus Culture in Serbia where most of its area has been investigated, but remained unpublished until relatively recently. The full excavation results obtained almost half a century ago will soon be published in a common publication.

We dedicate this paper to its researchers L. Sekereš, S. Foltny (Princeton University), N. Tasić, M. Girić, P. Medović, A. Bankoff (USA), O. Sedovecky (USA), F. Smith (USA), R. Pittony (Austria), Z. Pivovarova-Benkovsky (Austria), O. Trogmayer (Hungary), T. Kovács (Hungary), Gy. Farkas (Hungary) and others.

Translated by Milica Tapavički-Ilić

[48] Gligorić et al. 2016, Fig. 3.

[49] We owe our great gratitude to the director of the Institute of Archaeology, Miomir Korać Ph.D., who made it possible to obtain this dating.

[50] The team who performed the AMS dating consisted of: Molnár M, Riny L, Veres M, Seiler M, Synal H–A, Environ MICADAS: a mini ^{14}C AMS with enhanced Gas Ion Source Interface in the Hertelendi Laboratory for Environmental Studies (HEKAL) Hungary. Radiocarbon Vol 55, Nr 2–3 2013, p. 338–344. Molnar M, Janovic R, Major I, Orsovszki J, Gönczi R, Veres M, Leonard AG, Castle SM, Lange TE, Wacker L, Hajdas I, Jull AJT. Status report of the new AMS C14 sample preparation lab of the Hertelendi Laboratory for Environmental Studies (Debrecen, Hungary) Radiocarbon, Vol 55, Nr 2–3 2013, p. 665–676.

[51] Tasić 1974, 237, 239; Тасић 1983, 88.

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Aleksandar KAPURAN
Jewellery made of bronze sheets from the prehistoric necropolis at the village of Velebit, near Kanjiža (33–45)

Резиме: АЛЕКСАНДАР КАПУРАН, Археолошки институт, Београд

НАКИТ ОД БРОНЗАНОГ ЛИМА НА ПРАИСТОРИЈСКОЈ НЕКРОПОЛИ У СЕЛУ ВЕЛЕБИТ КОД КАЊИЖЕ

Кључне речи. – некропола, позно бронзано доба, Hügelgäber култура, Белегиш култура, наногвице, појас, прстење.

Некропола Hügelgäber културе која се налазила нешто јужније од села Велебит у Бачкој (карта 1) истраживана је у више наврата и то 1953, 1954. и 1956. године, а заштитна истраживања коначно су завршена 1970. године. Приликом изградње сеоског пута откривени су гробови из бронзаног доба, као и Јазига из античког периода. Захваљујући финансијској помоћи Института Смитсонијан из САД-а, откривено је 108 гробова, од којих је 77 припадало бронзаном добу (а остали античком периоду). Током бронзаног доба практиковано је на овој некрополи биритуално сахрањивање, односно 43 сахране припадају кремацијама, док су 34 покојника сахрањена скелетно. Увидом у целокупан материјал може се приметити разноликост како у погребном ритуалу, тако и у количини и богатству прилога које су чиниле керамичке посуде, накит од бронзе и бронзани ножеви. Подробније анализе погребног ритуала биће тема будуће монографије која је у припреми.

Према гробном записнику, спиралне наногвице (сл. 1) налазиле су се на потколеницама скелета у девастираном гробу 80, заједно са двоухим пехаром типичним за белегишку културу, са два лунуласта бронзана штитника за иглу (табла I/1–2), апликацијама од кружног калотастог бронзаног лима (табла I/3–4) и прстењем од спирално савијене бронзане жице (табла I/5–7). Судећи према цртежима инвентара направљеним непосредно након њиховог открића, на крајевима од спирално савијене жице налазиле су се алке ланца (сл. 1), а на једној од наногвица, осим ланца, налазио се и прикачен прстен од бронзаног лима, који је највероватније нестао приликом конзервације. Тумачења која се тичу наногвица повезаних ланцима могу бити разноврсна. Будући да спадају у женску ношњу, можемо претпоставити да ланац симболички представља везивања жене за супруга или дом у коме живи. У контексту скелетног гроба 80 могу се, поред наногвица, видети и извесни елементи који указују на културна прожимања новопридошлих заједница и доморадачких популација. Ово се у првом реду односи на белегишки двоухи пехар на високој цилиндричној нози, украшен волутама на ободу и белом инкрустацијом на црноглачаној површини (табла I/8).

Пре више деценија су O. Trogmayer и L. Szekeres, као уосталом и I. Bona и A. Mozsolisc, претпоставили да се продор Hügelgräber културе у Панонију може реконструисати уколико се прати дистрибуција појасева од бронзаног лима са куком за качење. За тај саставни део ношње постоје претпоставке да он искључиво представља саставни део женске ношње, а на некрополи Велебит је такав појас откривен само у једном случају. Ради се о скелетно сахрањеној индивидуи у гробу 94 (сл. 4). Појас из гроба 94 дугачак је 1,08 m и има бадемасти облик, односно стањује се према крајевима, од којих се један завршава куком за качење а на другом се налазе перфорације (сл. 5). Појас је откривен *in situ*, непоремећен, и то на месту где је анатомски могао да се налази струк покојнице. Од самог скелета остали су непоремећени једино подлактице и прсти. Од осталих прилога у гробу су нађене две игле типа Petschaftkopfnadeln, које су се налазиле у висини груди и биле су главама окренуте надоле, затим три прстена од бронзаног лима, две наруквице отвореног типа, 15 салтелеона, 8 каури пужева (вероватно делова наруквице), једна плочица од златног лима (које нема у инвентару Градског музеја у Сенти) и неколико стаклених перли (којих такође нема у инвентару тог музеја). Асамблаж гроба 94 сврстава тај гроб у један од најбогатијих на некрополи Велебит.

Следећи тип накита од бронзаног лима на некрополи Велебит представља прстење. Прстење је заступљено у две основне варијанте – оно од намотане бронзане жице (табла I/5–6) и оно од тракастог танког бронзаног лима (табла II/21–23). Прстење од бронзаног лима на некрополи Велебит веома је присутно у гробовима и у највећем броју случајева декорисано је искуцавањем једног, два или три ребра.

Захваљујући новим апсолутним датумима са некропола Пауље и Велебит, у могућности смо да са већом сигурношћу одредимо хронолошки оквир у коме се развијала Hügelgräber култура у Србији. Први AMS датум односи се на карбонизоване остатке дрвене подлоге на којој је лежао скелет млађе особе сахрањене у хумки XVIII на некрополи Пауље код Лознице. У овом случају се ради о 14. веку пре н. е. Други апсолутни датум односи се на гроб 107 на некрополи Велебит, а добијен је из кремираних остатака покојника у лабораторији Isotoptech ZTR у Дебрицину. Добијени датум има вредности 3601±25, односно временски опсег 1407–1236 cal BC, са 94% вероватноће (сл. 8). То значи да су некрополе Велебит и Пауље временски синхроне и да припадају XIV веку пре н. е. Овакви резултати највише одговарају раније изнетим претпоставкама Н. Тасића – да се Hügelgräber култура у Србији развијала током периода Br B2-C.

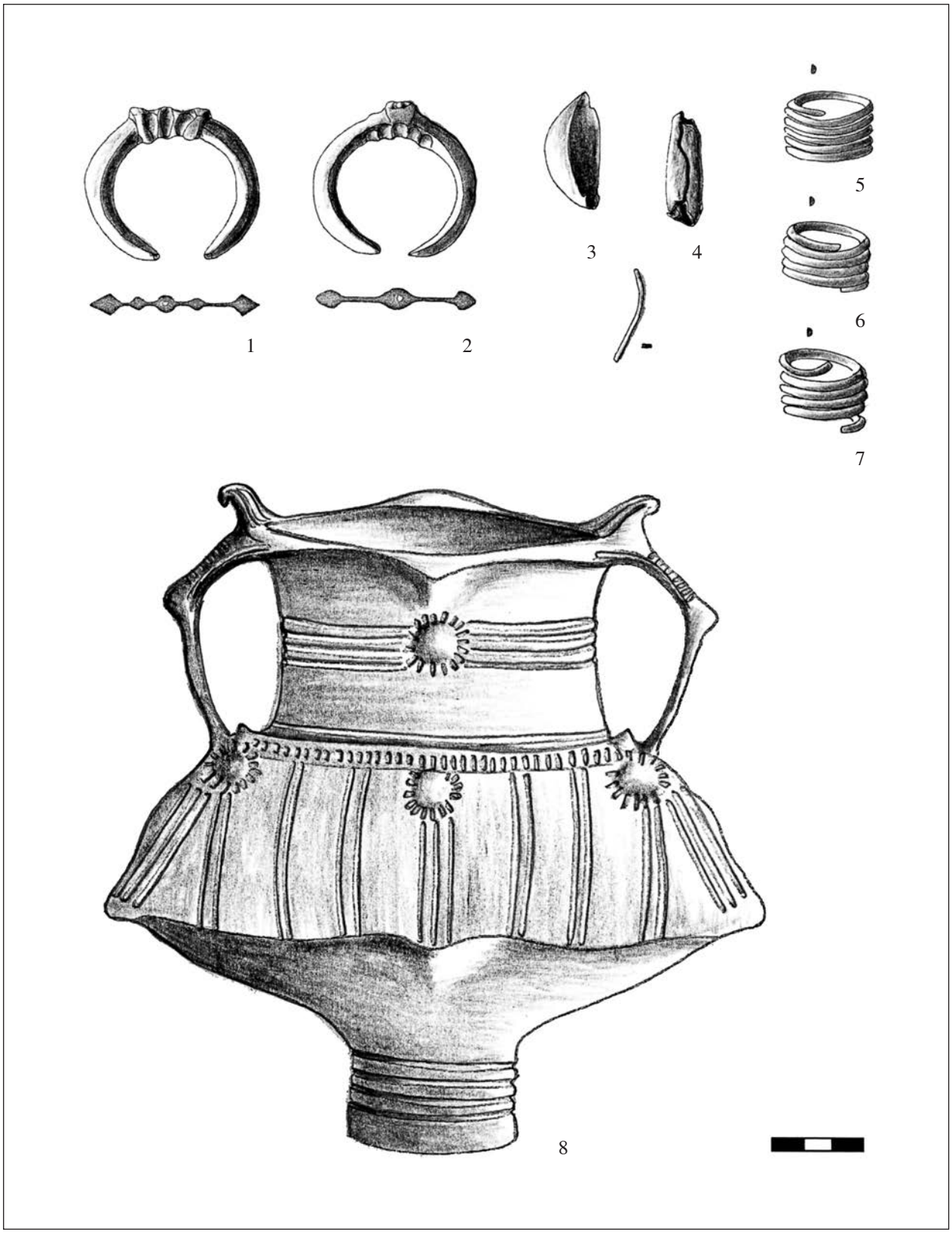

Plate I – Grave 80 (drawings by A. Kapuran)

Табла I – Гроб 80 (цртежи: А . Капуран)

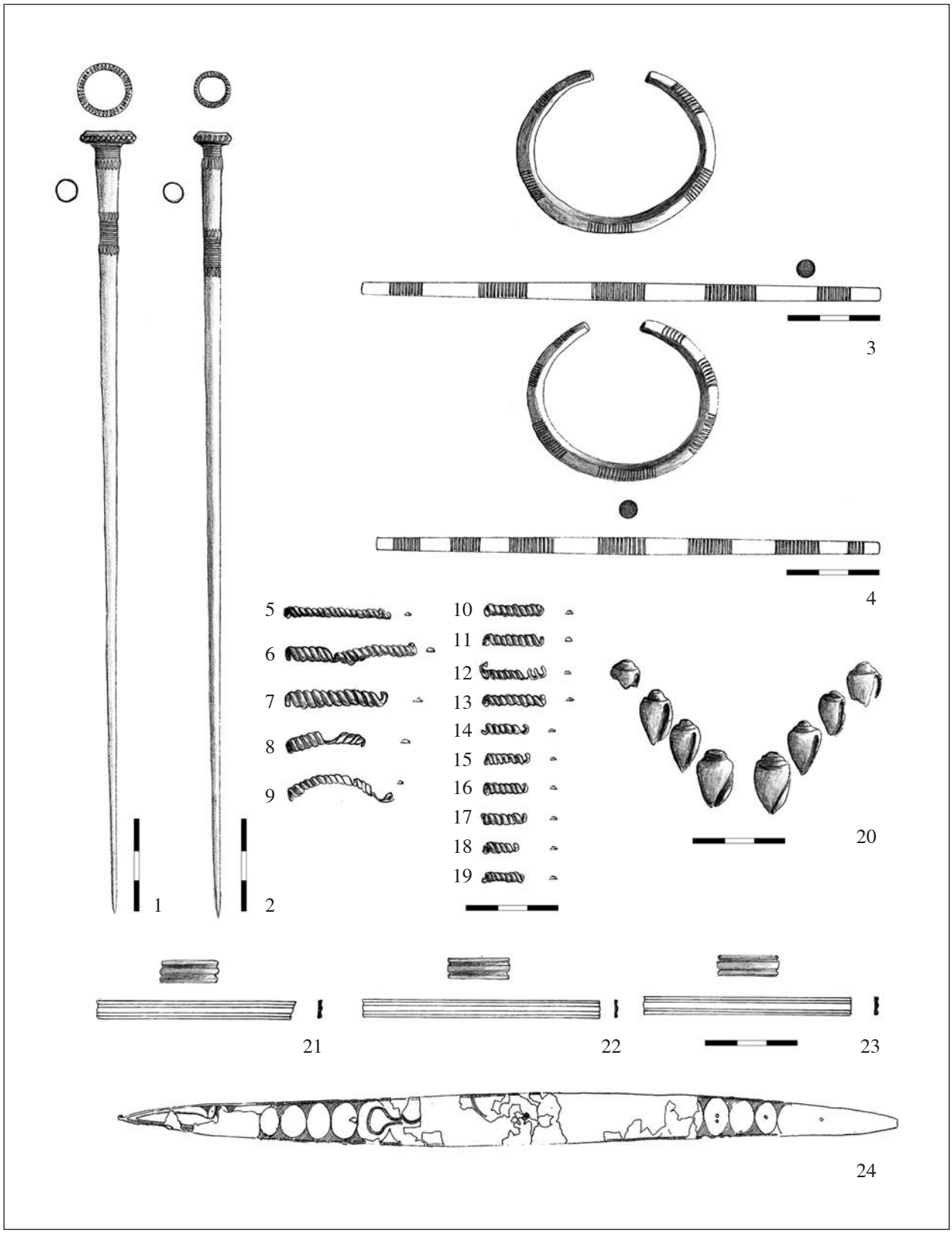

Plate II – Grave 94 (drawings by A. Kapuran)

Табла II – Гроб 94 (цртежи: А . Капуран)

UDC: 903.24"6383"(234.58)
903:739"638"(234.58)
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Original research article

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NOT JUST A BELT: ASTRAGAL BELTS AS PART OF LATE IRON AGE FEMALE COSTUME IN THE SOUTH-EASTERN CARPATHIAN BASIN[1]

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Abstract – The focus of the paper is on bronze astragal belts in the south-eastern part of the Carpathian Basin, interpreted as part of the female costume. In particular, their production seems to have two peaks, one at the end of the Early Iron Age (6th–4th cent. BC) and another during the Late La Tène period. However, there is a continuity of the form throughout the Late Iron Age. Requiring a significant amount of material and craftsmanship, these belts imply the presence of skilled artisans, as well as a supply network that enabled the production. A new typological and chronological assessment of the known examples allows not only a better understanding of the possible production areas of astragal belts, but also the social implications behind the organisation of production, offering also the possibility to better evaluate the role of this particular item as a part of the autochthonous female costume and identity.

Key words – Astragal belts, female costume, Late Iron Age, Carpathian Basin, identity.

The first analysis of bronze astragal belts dates to the 1960's, when J. Todorović outlined characteristics and the datation of examples from the territory of former Yugoslavia.[2] He concluded that the Scordiscans took this type of belt from the autochthonous, Late Hallstatt population. However, the first publication dates back to the very beginning of the 20th century, when J. Brunšmid described belts discovered in the Syrmia region, interpreting them as a part of male military dress.[3] Until the present day, numerous examples have been published, establishing astragal belts as a part of the female costume in the south-eastern Carpathian Basin during the second half of the last millennium BC.[4] Two peaks of production can be observed: a Late Hallstatt one, in the period between 6th–4th cent. BC, well known on the basis of characteristic grave finds, and another during the Late La Tène, when fragments of belts also appear very often in settlement contexts. The belts characteristic for the latter, known as the Belgrade type, have been discussed in detail by D. Božič.[5] However, examples from the intermediate, late phase of the Early and Middle La Tène period, are somewhat less known or recognised,

[1] This paper is a modified version of the one presented at the *Craft and Production in the European Iron Age* conference held in Cambridge in 2015.

[2] Todorović 1964.

[3] Brunšmid 1902, 71–73.

[4] For a more recent overview, see Jovanović 1993; 1998; Arsenijević 1998; 2013, 53–63, Pl. I–III; Filipović, Mladenović 2017.

[5] Božič 1981a.

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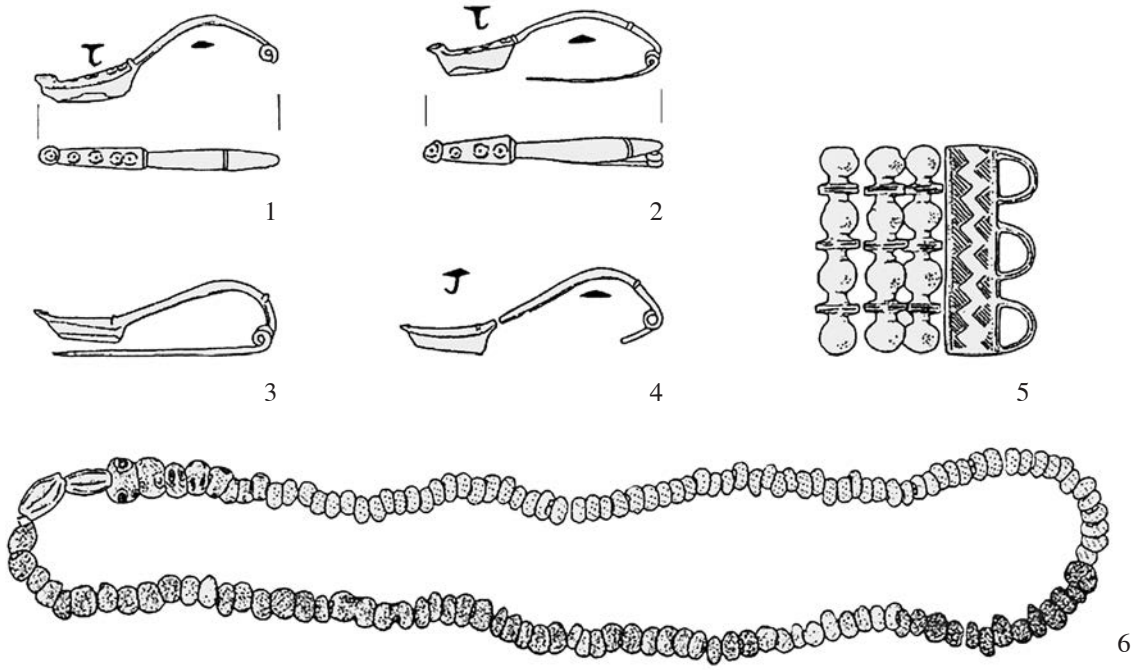

Fig. 1. Grave finds from Vučedol (after Teržan 1977)

Sl. 1. Grobni nalazi iz Vučedola (prema Teržan 1977)

although the continuity of the form is quite certain. A recent study of astragal belts, proposing a somewhat altered typology[6], also stresses the continuity of its constructive and decorative characteristics, especially that of the Osijek and Belgrade types.[7]

LATE HALLSTATT ASTRAGAL BELTS

Syrmian, Eastern Slavonian and south-eastern Transdanubian Late Hallstatt examples, mostly known from inhumation burial contexts, are characterised by astragal elements of four round thickenings separated by rectangular ribs decorated with horizontal grooves, and belt buckles composed of rectangular plates with three semicircular or semioval loops. A decoration composed of incisions or rings-and-dots is frequently found on the belt plate. The intermediate rectangular ribs are clearly separated from the round thickenings and rather elongated, even wider than them.

The first interpretations of astragal belts as a part of male dress originate from Brunšmid's publication of finds from inhumation graves found at the famous prehistoric site of Vučedol on the Danube bank, near Vukovar. He describes the finds as including four Certosa fibulae of type V, glass beads (Fig. 1), several spearheads and a curved battle knife, found during agricultural activities.[8] Although the author concluded that all items belong to the same grave assemblage, thus making the connection of astragal belts with warrior equipment, it is important to emphasise that he was not present at the time of discovery. In fact, the circumstances of the find are mentioned and point to the fact that the bronze items (the belt, Certosa fibulae and a ring) and glass beads were found together, while the iron weaponry was found in the immediate vicinity, but separated from them, pointing to the existence of two separate grave assemblages lying relatively close to one another.[9] J. Brunšmid also mentioned an astragal belt found in Novi Jankovci, which is almost identical to the Vučedol piece, concluding that "a military grave was found… from which I received eleven astragal elements, one Certosa and one Middle La Tène fibula (N.B. actually, a LT D1 form), and four yellow glass beads".[10] Thus, there is no clear indication that all finds belong to a

[6] The authors classified Božič's Osijek type as a variant of the Syrmian type, which also comprises the Belgrade (corresponding to Božič's homonymous type) and Mačva variants.

[7] Filipović, Mladenović 2017, 159–160.

[8] Brunšmid 1902, 68–70.

[9] Brunšmid 1902, 68; Božič 1981a, 52–54.

[10] Brunšmid 1902, 72. For LT D1 cast bronze fibula, see: Drnić 2012, 227, Pl. 1: 5, Fig. 5: 5a–b.

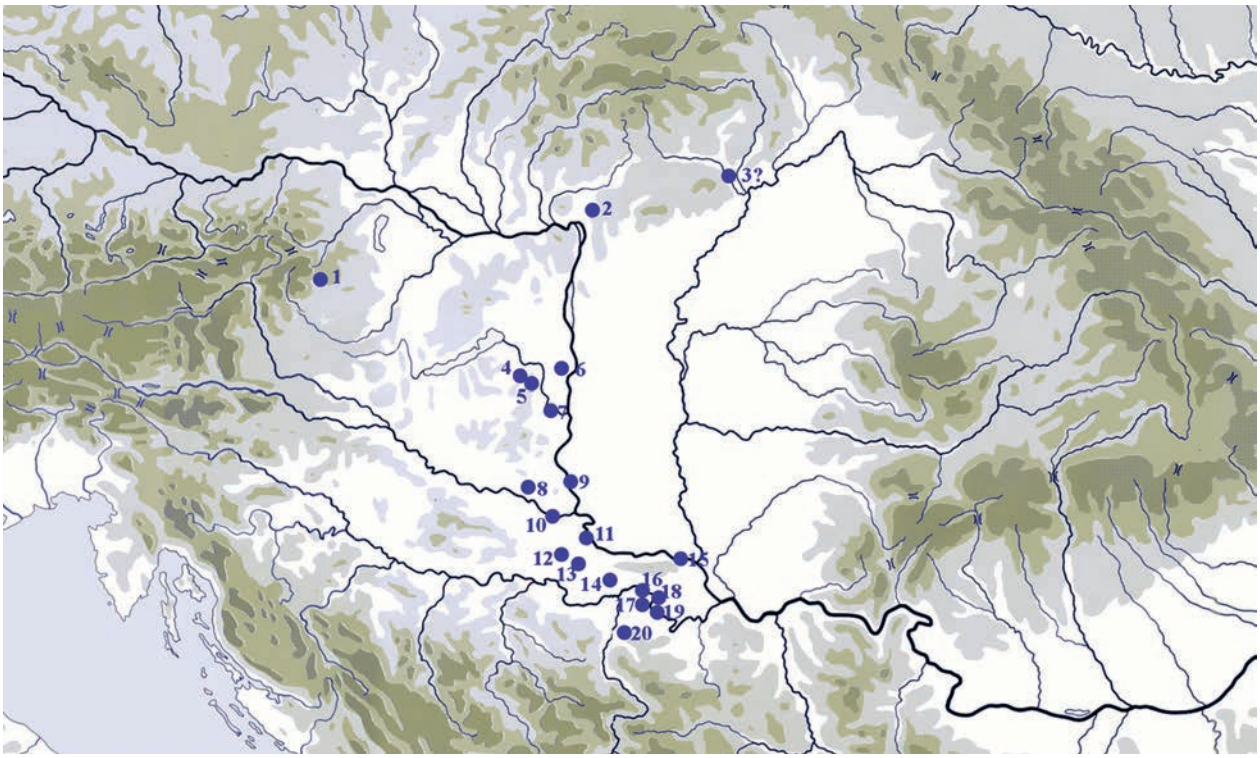

Fig. 2. Distribution map of Late Hallstatt astragal belts (Nikinci type)

Sl. 2. Karta rasprostranjenosti kasnohalštatskih astragalnih pojaseva (tip Nikinci)

1. Velem – Szentvid, 2. Kosd, 3. Arnót, 4. Regöly, 5. Szárazd – Gerenyáspuszta, 6. Paks-Gyapa, 7. Mözs pokraj Tolne, 8. Beremend, 9. Batina, 10. Osijek, 11. Vučedol, 12. Vinkovci – Silos, 13. Novi Jankovci, 14. Adaševci, 15. Novi Sad, 16. Srijemska Mitrovica, 17. Mačva – Uzveće, 18. Nikinci, 19. Šabac, 20. Paulje – Brezjak

closed grave assemblage, especially considering the presence of a LT D1 fibula, although the belt, Certosa fibulae of type V and beads most probably, indeed, originate from a single, Late Hallstatt female inhumation burial.

Roughly at the same time, Ć. Truhelka conducted large scale excavations at the famous Early Iron Age cemetery at Donja Dolina in the central Sava valley. In grave 43 at the M. Petrović Jr. ridge, alongside a fragment of an astragal element, two fibulae were found, together with glass and amber beads.[11] This type of fibula, a variant of Early La Tène forms with a stylised bird's head shaped ending of the foot, can be dated to the 2nd and 3rd quarter of the 4th cent. BC.[12] Another fibula from the grave belongs to the contemporaneous Zagrađe type, which originated in the Glasinac area.[13] An amphora-shaped glass bead from the grave points to the same timeframe.[14] Elements of astragal belts were also discovered in the contemporaneous grave 7 at the N. Šokić I ridge.[15]

At the end of the 19th and during the 20th century more astragal belts were found in Syrmia and Mačva (i.e. Adaševci, Srijemska Mitrovica grave I, Nikinci etc.[16]), often appearing in combination with different types of Certosa fibulae. This was confirmed with the revealing of a female inhumation grave at the site of Vinkovci – Silos in Eastern Slavonia, which yielded an

[11] Truhelka 1902a, 273, Pl. XVII.

[12] Rustoiu 2012, 359–60, Fig. 2.

[13] Popović 1996, 112–114.

[14] Popović 1997; Rustoiu 2011b; 2015.

[15] Truhelka 1902b, 521, Pl. XXII: 11–12. Considering that the Donja Dolina graves included only a smaller amount of astragal elements, these could belong to the fill layers of the mentioned grave units, therefore to older burials that have been destroyed by the digging in of younger graves; see Božič 1981a, 54.

[16] Brunšmid 1902, 77, Fig. 37; Jovanović 1998, Pl. V: 1, 3–5, 12; Arsenijević 1998, 31–32, Figs. 16–19, 20; Todorović 1964, Pl. I: 3–4, 7.

astragal belt without preserved buckles, bronze Certosa fibula of type V and glass beads.[17] This grave confirms the frequent appearance of Certosa fibulae of type V after classification done by B. Teržan,[18] together with astragal belts on Syrmian and Eastern Slavonian sites, which enables dating of the mentioned belts to the late 6th and 5th cent. BC. Cremation grave 1 from mound XV in Paulje in Brezjak, situated near Loznica in the Mačva region, is another example of a rather rich female burial dating to, probably, around the middle of the 6th cent. BC. The entire belt, consisting of 68 astragal elements with a buckle, was found alongside two bronze bracelets with crossed ends, a small ceramic cup, two ceramic spindle whorls, amber beads and a necklace of glass beads. These elements differ from those on other belts of type Nikinci due to the number of thickenings, here five instead of four as on other belts.[19]

At the same time, Late Hallstatt astragal belts are also documented in cemeteries in south-eastern Transdanubia, such as Beremend, Szárazd – Gerenyáspuszta, Mözs near Tolna, and as far as Kosd, near Budapest.[20] Astragal belts have been found in similar grave assemblages as at the Syrmian and Eastern Slavonian sites and very often associated are different variants of the Certosa type fibulae.[21] A good example is the inhumation grave found at Szárazd – Gerenyáspuszta, yielding a belt together with a Certosa fibula of type V, two crossbow fibulae and various glass beads.[22] A similar grave assemblage comes from Paks – Gyapa, where inhumation grave 838 yielded, besides an astragal belt, six fibulae (crossbow fibulae of type Certosa XIII and East Alpine zoomorphic-headed fibulae), glass beads and an iron knife.[23]

The distribution area of Late Hallstatt astragal belts, defined by D. Garašanin as the Nikinci type[24], covers Syrmia, Eastern Slavonia, Mačva and south-eastern Transdanubia (Fig. 2). It is clear that what we are seeing is a distribution limited to the Hungarian part of the Danube basin, from the Balaton Lake and Kapos river southwards; as a rule, belts do not appear east of the Danube river axis. The usage of belts of the Nikinci type can be placed in the period from the second half of the 6th to the 4th cent. BC, while their origin is traced to the central Balkan area.[25] The only possible exception would be a fragment from Arnót, published as an Osijek type,[26] but due to the elongated shape of the intermediate rib it could also belong to the Late Hallstatt group. The fragmentary state of the pieces, as well as the lack of a reliable context, makes this attribution quite open to debate. Still, there is no evidence in the south-eastern Carpathian Basin that belts of this type occurred in male graves. As a matter of fact, belts are always associated with glass beads and different types of bronze fibulae (mostly Certosa type V), which clearly confirms they were part of the female costume.

LA TÈNE BELTS

In 1981, D. Božič published an article in which he analysed Late La Tène belts and differentiated three types: an older variant or the Osijek type, and two contemporary, LT D forms, named the Belgrade and Dunaszekcső types. The Belgrade type, characteristic of Scordiscan territory, has four rounded thickenings divided by three intermediate ribs decorated with oblique incisions. The rectangular part of the belt buckle has two round plates before the bell-shaped protrusion, with one of the buckles ending with a raised knob. Dunaszekcső

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[17] Majnarić-Pandžić 1973.

[18] Teržan 1976, 376.

[19] Filipović, Mladenović 2017, 147, 162, Pl. 1: 1; Bulatović et al. 2017, 71–74, 132–135 (with belt shown on Fig. 52 and Pl. XX: 51). According to the bracelets with crossed ends, considered to be the earliest finds, the grave probably belongs to the middle, at the latest in the second half of the 6th cent. BC.

[20] Jerem 1974, Fig. 2: 1–4, 6–7, Fig. 3: 1, 3, Fig. 4: 1 (distribution map); Jovanović 198, Pl. X: 40, 43–44, Pl. XI: 3; also from Batina in Baranja, Maráz 1983, 107, 114, Pl. III: 1. According to E. Jerem (1974, 234, 241, footnote 28) the elements from Szentvid near Velem also belong to the Late Hallstatt examples, but considering the shape of elements in the picture provided by von Miske (1908, Pl. XLV: 34–37) such dating is probably only applicable for the fragment nr. 35, whereas the other elements should be dated to the Late La Tène.

[21] Kemenczei 2012, 343–344; Jovanović 1998, Tab. 1, 55, 64–65.

[22] Kemenczei 2012, 339, Fig. 9: 1–6. The crossbow fibulae are shown without a side view, making somewhat difficult a more precise attribution, but they could belong to the East Alpine zoomorphic-headed fibulae.

[23] Szabó 2012, 359–360, 363–364, Fig. 9a–b.

[24] Garašanin 1954, 78, Pl. L: 2; 1967, 36. This designation has been accepted here, while the distribution is made by the authors.

[25] Vasić 1989. Astragal belts appeared in the south-eastern part of the Carpathian Basin during the first half of the 6th cent. BC, maybe even at the very beginning of the mentioned century. As the Banoštor assemblage of finds demonstrates (Vasić 1989), for this initial phase, elements of the eponymous Banoštor type are characteristic, which, together with fibulae of the type known from the Banoštor find, have direct analogies in the Western Balkans (Filipović, Mladenović 2017, 158; Dizdar, in print). Also, at sites in Eastern Slavonia and Western Syrmia, elements of belts were discovered which also originated in the Western and Central Balkans and belong to the first half of the 6th cen. BC (Dizdar, in print).

[26] Almássy 2015, 241–242, Fig. 3: 1.

type belts, on the other hand, have five or six thickenings, the intermediate ribs can be decorated with oblique incisions or undecorated, while the belt buckle lacks the round plates on its rectangular part, extending into a triangular or bell-shaped protrusion which can have curled endings. The Osijek type is older than these, has three or four thickenings and horizontal incisions on the intermediate ribs, similarly to the older, Late Hallstatt belts, while the bell-shaped protrusion of the belt buckle brings it close to the Late La Tène forms.[27] Considering the presently known examples, this typology could be somewhat revised.

A study and comparison of morphological features allows a typological classification of the La Tène period belts. Primarily, the shape of the astragals elements is observed. This includes the number of thickenings; the shape and decoration of the intermediate ribs between the thickenings; the space between thickenings and intermediate ribs; and the shape of the belt buckle. In general, going from the Late Hallstatt to the Late La Tène period, the intermediate ribs get narrower; the number of thickenings increases to five or six, while the space between thickenings and ribs shortens; the thickenings also get narrower; and, finally, the shape of the belt buckle shifts from rectangular with three loops to a rectangular plate with an elongated bell-shaped protrusion. These changes of the shape of elements can be observed on the belts of group 1 and variant 2c, while four thickenings can still be found on variants 2a and 2b.[28] While Middle La Tène belts show horizontal grooves on the intermediate ribs, there seem to be two variants of decoration/shape of the intermediate ribs during the Late La Tène period: a biconical rib and a rib with oblique incisions.

Although a large total number of belts, or, rather, belt elements, are known, the rarity of closed contexts remains an issue, especially with regard to the Middle La Tène period. There are, however, some finds that can be placed between the better known Late Hallstatt examples and their Late La Tène counterparts.

Bridging the gap: Early/Middle La Tène belts

The finds from graves found at Zeleno polje in Osijek can be placed in this transitional period between the Late Hallstatt and Late La Tène period. The shift from the three-looped buckle to the bell-shaped one can be observed on the examples from the cemetery in Osijek. Unfortunately, not all grave contexts are always certain and reliable, although among the latter there are also finds of astragal belts. The earlier examples – from graves 9[29] and 22 – are more similar to the Late Hallstatt forms, considering the belt buckle with a rectangular plate with three loops and elements with four thickenings in a row, with respectively three and two horizontal grooves on the intermediate ribs. The later pieces, such as those from graves 4 and 26, have three round thickenings separated by intermediate ribs with horizontal incisions, and a bell-shaped elongated protrusion on the belt plate in place of the three loops. The bell-shaped extension on the only preserved buckle from grave 26 ends with a raised knob.

Besides elements from astragal belts, the inhumation grave 22 contained three fibulae of the Duchcov type and four bracelets.[30] It can be dated to the phase LT B2. The fibulae, decorated with chains ending with trapezoid pendants, belong to a regional variant of the Duchcov type (known as type Karaburma 63, according to D. Božič[31]). The association of the belt with this type of fibula would speak in favour of the opinion that astragal belts are a marker of autochthonous, south Pannonian female costume.

The next horizon is marked by graves 4 and 26 (Fig. 3), with the appearance of new, bell-shaped buckles and a decrease in the number of thickenings, now only three.[32] The buckle from grave 26, however, has four loops and a difference in size compared to the elements, so it seems to have been subsequently added to the rest of the belt.[33] The fragmented fibula allegedly also from grave 26 with figure-of-eight loops on the foot end and a spring with an internal chord can be dated to Middle La Tène (LT C1). Also, the blue glass beads with spiral decoration from the same grave,

[27] Božič 1981a, 47–52.

[28] This applies to the typology here presented. On this occasion the authors would like to express their gratitude to D. Božič for bringing our attention to this and many other details that greatly improved our paper.

[29] The grave 9 in the Osijek–Zeleno Polje cemetery (Spajić 1954, 12–14, Pl. IV, Pl. V: 29), according finds dating from LT B1 to LT C1 (i.e. Early La Tène zoomorphic fibula and Middle La Tène iron fibula with two knobs or bronze fibula with figure-of-eight loops on the foot), doesn't represent a closed funerary assemblage, as well as most of the published graves of this important cemetery. This means that the astragal belt could belong to a grave from LT B1 or LT B2

[30] Spajić 1956, 50, Pl. X: 1, 6–7, Pl. XI: 1–2.

[31] Božič 1981a, 48, fn. 18, Fig. 2: 2; 1981b, 317, 333, fn. 52, Fig. 3: 2, Pl. 1: 15, Pl. 6: 3, Pl. 11: 4.

[32] Spajić 1954, 10, Pl. II: 11; 1962, 37–38, Pl. XIII.

[33] The buckle is 1 cm longer than the elements, Spajić 1962, 38.

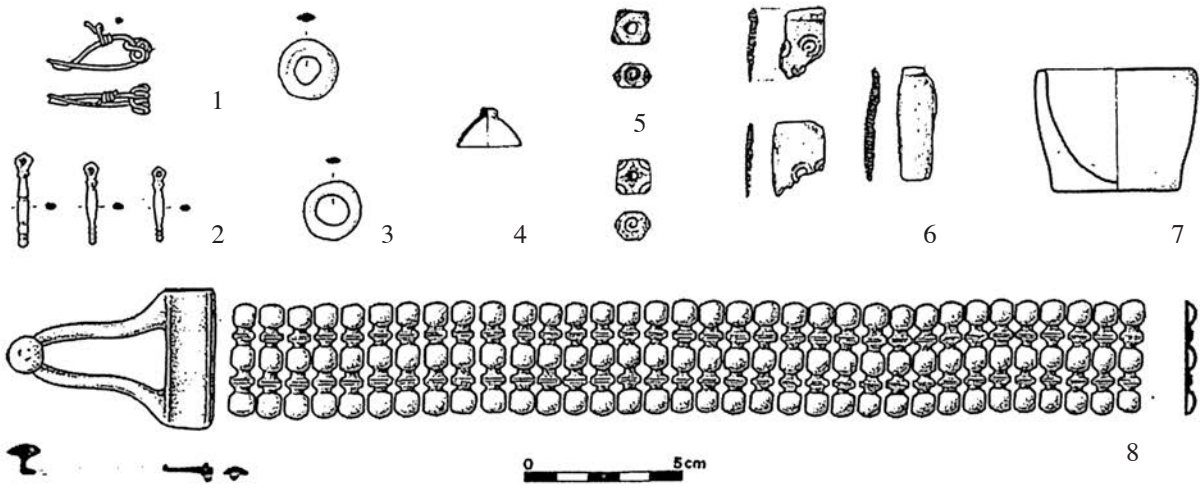

Fig. 3. Finds from grave 26 at Osijek – Zeleno polje cemetery (after Božič 1981)

Sl. 3. Nalazi iz groba 26 s groblja Osijek – Zeleno polje (prema Božič 1981)

speak in favour of a Middle La Tène dating. This bead type is most frequent during LT C2, but with an appearance already in LT C1.[34] Consequently, the grave is most probably dated in LT C1. On balance, it can be concluded that the Osijek finds show a Middle La Tène phase in the development of astragal belts with three or four thickenings and, most notably, changes to the belt buckle. Similarly, the belt from Kablarovac has four thickenings with horizontal grooves on the intermediate ribs, but the belt buckle has a peculiar triangular shape[35] and could be another non-standardised model produced in the period before the Late La Tène large-scale series production. Furthermore, the presence of four round thickenings on elements belonging to the type Belgrade according to D. Božič (i.e. variant 2a of the here proposed division) also points to the perseverance of the previous, Late Hallstatt form. Still, the problem of the lack of a larger number of finds from Middle La Tène, especially its younger phase (LT C2), persists. More closed contexts are needed to resolve the question of continuity. In this context a very interesting fragment attributed to the belt of the Osijek type can be mentioned. The fragment, found in an inhumation grave in Remetea Mare in Banat, was reused as a pendant. The female grave itself is the only inhumation burial in the small LT B2-C1 cemetery and is interpreted as a possible sign of individual female mobility, i.e. marriage alliances.[36]

In the study of astragal elements, a variant was also recognised which has very thin intermediate ribs decorated with horizontal grooves between rounded thickenings. Examples come from Stari Kostolac – Čair, Dubravica – Orašje and Zemun.[37] Intermediate ribs of a similar shape, described as bearing horizontal grooves and paired with somewhat angular thickenings, come from Kablarovac, a cemetery connected to the multilayer settlement site of Gradina on the Bosut river, where bell-shaped buckles with incised decoration also appear.[38] This decoration could point to the perseverance of the Late Hallstatt traditions in decoration.[39]

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[34] Dizdar 2013, 263.

[35] The only known analogy comes from Donja Dolina; see: Mladenović et al. 2016, 11, Fig. 1; Jovanović 1998, 66, Pl. II: 12; Arsenijević 2013, 56–57, 59, Pl. 1: 15, Tab. 1: type VII.

[36] Rustoiu 2011a, 166–167, Fig. 4; 2012, 366, Pl. 15.

[37] Spasić 1992, 8–10, Pl. II: 1–13, 15–23, Pl. III: 1, 3, 5–7, 10; Jacanović, ćorćević 1989–90, 30, Pl. LXXXVII: 4–6; Jovanović 1998, Pl. IX. 1–13, 15–21, 23–26, 30, 31, Pl. X: 2–6, 17, 22, 34. The drawings in the latter publication are sometimes not detailed, hence the absence of the decoration on several pieces.

[38] Popović 2003, 313, Pl. 4: 12–15.

[39] A find from Hungary would also suggest the appearance of a bell-shaped buckle in association with elements with horizontal grooves, which would indicate an intermediate shape between Late Hallstatt and Late La Tène (as already stated by some authors, cfr. Jovanović 1998, 67; Popović 2003, 313). The belt is published in Jovanović 1998, Pl. X: 39, and again in Arsenijević 2013, Pl. III: 13 (cited as from Regöly) The buckle presents, however, five loops while the elements have four thickenings, so the association of these belt parts is questionable. Also, the original publication shows (without mentioning the site of provenience) in fact the two as separate: *Archeológiai Értesítő* 1890, figure on page 355: 1a–b (elements), 3 (buckle). The elements thus belong to a Late Hallstatt, and the buckle to a Late La Tène belt.

Another similar example of "mixed" elements is the decoration of horizontal grooves alongside a bell-shaped belt buckle with round plates, both appearing on the belt from Titel Hill, alas as another stray find.[40]

All this, although fragmentary evidence, suggests the continuity of usage of astragal belts. The continuity of the form is reflected in the difficulty in distinguishing fragments of Late Hallstatt belt elements from the Osijek type in cases without a reliable context and a fragmentary state of preservation, for example in the already mentioned find from Arnót or the finds from the Gradina – Ilinci – Vašica area, near Šid.[41] The form clearly evolves through time, quite possibly maintaining its status as a marker of local female costume. In the following, Late La Tène phase, the production seems to have had another peak.

Late La Tène belts

As already mentioned, according to the decoration of the intermediate ribs, Late La Tène forms can be divided in two groups: 1) biconical ribs and 2) ribs with oblique incisions. Further divisions are possible when observing the number and shape of the thickenings and their relation in size to the ribs.

The first group comprises belts with biconical ribs between thickenings. Belts with five elongated thickenings and biconical intermediate ribs from Zemun[42], Szárazd (Fig. 4: 1a)[43], Čurug[44] and Novi Banovci[45] belong to the first, 1a variant. Very similar finds come from the eastern, Transylvanian region, in Pecica, Sibiu – Guşteriţa or Crişeni, the latter with a triangular elongated buckle. The thickenings have a somewhat irregular shape, with concave sides.[46] The same shape of thickenings can be seen on the belt from an unknown site in Hungary, paired with a triangular buckle with trapezoidal plates.[47] Elongated thickenings on the belt from Regöly come from a belt with also trapezoidal plates on the belt buckle with triangular protrusion.[48] Two fragments from Liptovská Mara could also belong to this variant.[49] Finds from Malaja Kopanja in the upper Tisza valley should be probably added to this group of finds.[50] The next, 1b, variant shows five or six small round thickenings and biconical intermediate ribs, with an undecorated triangular belt buckle. Examples are known from the Hungarian sites of Dunaszekcső and Szárazd[51] (Fig. 4: 1b). One more, i.e. variant 1c, can be mentioned, characterised by elongated elements with small biconical intermediate ribs and five or six elongated thickenings. The entire element is almost rectangular, i.e. the same width over the entire length, with no extra space between the rib and thickening. Examples come from outside of the main distribution area, in Bratislava – Devín[52] (Fig. 4: 1c), Boldog, Cífer and Nitra[53] or Gracarca.[54] Perhaps the shape of these particular astragal elements shows a possible local transformation of the original form, indicating the existence of an intense cultural transfer between the southern and northern parts of the Carpathian Basin during the Late La Tène. The transfer of ideas and knowledge in the opposite direction would be corroborated by finds of different variants of LT D1 cast fibulae, appearing in an ever increasing number on eastern Slavonian and Syrmian sites.[55]

Belts of the second group are characterised by oblique incisions on the intermediate ribs. Both the

[40] Lazić 2015.

[41] Mladenović et al. 2016, 15, Pl. 1: 1–11.

[42] Arsenijević 1998, Fig. 30b.

[43] Kemenczei 2012, Fig. 6: 5.

[44] Trifunović, Pašić 2003, 270, Fig. 6: 3.

[45] Božič 1981a, Fig. 3: 20.

[46] Rustoiu 1999, Fig. 4: 3–4, 6.

[47] Archeológiai Értesítő 1890, fig. on page 355: 2a–c; Jovanović 1998, Pl. XI: 8.

[48] Jerem 1974, Fig. 2: 8.

[49] Pieta 2001, 324, Fig. 5: 3–4. The thickenings seem to have concave sides, like examples from Transylvania.

[50] Kotigoroško 1991, 128, Fig. 7: 53, 54. The first is a fragment of an element showing three thickenings with biconical intermediate ribs, the second is a complete element of five thickenings with biconical intermediate ribs. On both pieces the thickenings seem to have a slightly irregular elongated shape, i.e. the sides appear to be slightly concave on some of the thickenings.

[51] Kemenczei 2012, Fig. 7: 8, 10, 12, 14, 19, 21, Fig. 8: 7–9. No detailed description is given by T. Kemenczei, just a mention of incised decoration on the ribs (Kemenczei 2012, 344), while the drawings show the ribs to be biconical. Clearly, the cited drawings lack details. However, D. Božič mentioned in his description of Dunaszekcső type belts that some elements have undecorated intermediate ribs (Božič 1981a, 52). M. Jovanović also describes elements from the site of Dunaszekcső as both decorated with oblique incisions and undecorated, stating also that elements from Lengyel are "often undecorated" (Jovanović 1998, 59). The above suggests that both types of intermediate ribs, i.e. our groups 1 and 2, appear in Dunaszekcső, quite probably also in Lengyel, so the appearance of decoration could apply only on some, not necessarily all, examples. We decided to keep here the variant 1b as described, although further finds or new drawings could change this, i.e. the cited finds could have elongated thickenings like variant 1a.

[52] Pieta, Zachar 1993, Fig. 115: 11.

[53] Bazovský 2016, Fig. 2: 2–5. The state of preservation of the element from Nitra is, however, poor, so it could belong to variant 1a.

[54] Gleirscher 1996, Fig. 5: 1.

[55] Karwowski, Militký 2011, 133, 135, Fig. 3–4; Drnić 2012; Karwowski 2015, 217, Fig. 8; Dizdar 2016, 37, Fig. 9: 1–2.

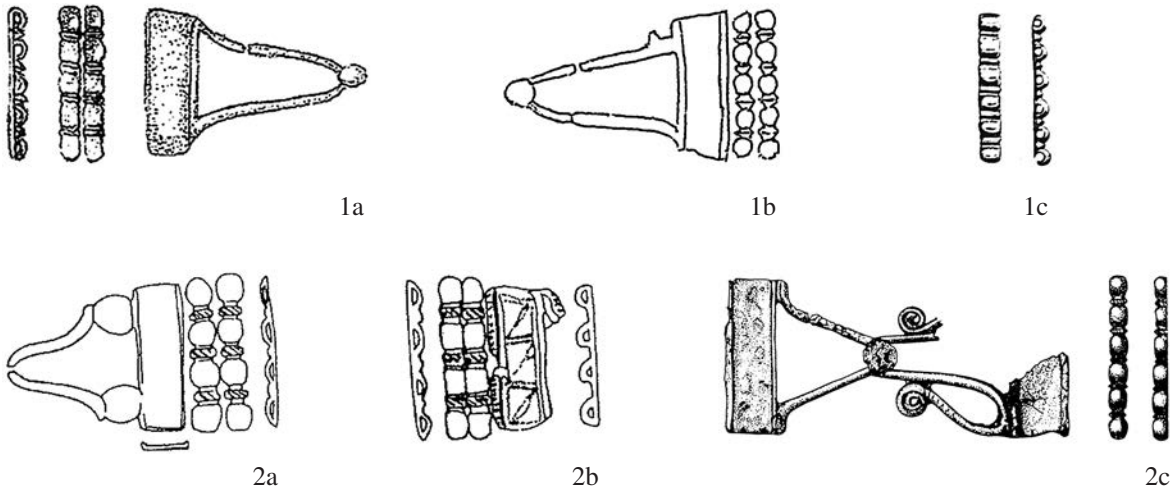

Fig. 4. Variants of Late La Tène astragal belts: 1a) Szárazd (after Kemenczei 2012); 1b) Regöly (after Kemenczei 2012); 1c) Bratislava-Devin (after Pieta, Zachar 1993); 2a) Beograd (after Jovanović 1998); 2b) Krušedol (after Jovanović 1998); 2c) Dunaszekcső (after Jerem 1974).

Sl. 4. Varijante kasnolatenskih astragalnih pojaseva: 1a) Szárazd (prema Kemenczei 2012); 1b) Regöly (prema Kemenczei 2012); 1c) Bratislava-Devin (prema Pieta, Zachar 1993); 2a) Beograd (prema Jovanović 1998); 2b) Krušedol (prema Jovanović 1998); 2c) Dunaszekcső (prema Jerem 1974)

Belgrade and Dunaszekcső types, as defined by D. Božič, can be ascribed to this group. The variant 2a, or Belgrade type belts, have four round thickenings with space between them and the relatively thin ribs with oblique incisions. The buckle has round plates between the bell-shaped protrusion and rectangular plate (Fig. 4: 2a). Numerous examples of this variant are known from northern Serbia and Syrmia: Beograd – Rospi Ćuprija, Beograd – Karaburma, Zemun, Surčin, Prhovo, Salakovac, Novi Banovci, Stari Kostolac – Čair, etc.[56] The shape of the thickenings on the already mentioned richly decorated belt from the Titel Hill site, as well as the round plates on the bell-shaped buckle, suggest an attribution to the same type, although the intermediate ribs are decorated with horizontal grooves in the fashion of Osijek type belts.[57] Elements of the variant 2c or Dunaszekcső type have five or six elongated thickenings with rounded edges; the intermediate ribs are thin and decorated with oblique incisions, while the bell-shaped buckle, sometimes with curled endings, lacks round plates. Examples come from the eponymous site of Dunaszekcső[58] (Fig. 4: 2c) but also from Regöly, Lengyel and Dalj, possibly also from Batina[59] and to the north on Staré Hradisko[60], Oberleiserberg[61] and Ringelsdorf[62]. Very close to the latter is variant 2b with four or five elongated rectangular thickenings and thicker intermediate ribs with oblique incisions, with basically no space between the rib and thickening. There can be decoration on the rectangular plate of the belt buckle. Alongside finds from Krušedol (Fig. 4: 2b), Novi Banovci, Salakovac or Zemun[63],

[56] Božič 1981a, Fig. 3: 1–16, Fig. 4: 1; Fig. 6: 1; Jovanović 1998, Pl. VI: 3–6, 8; Pl.VII: 8–12, Pl. VIII: 4–5, 12, 21–22, 25–26, 29, Pl. IX: 14, 27–29, 33–34, Pl. X: 7–11, 13–14, 23–29, 31–34 (only drawings clearly showing the decoration are cited); Spasić 1992, Pl. II: 14, Pl. III: 2, 4, 8–9.

[57] Lazić 2015, Fig. 1–3.

[58] Márton 1933, Pl. XV: 3–4, 9; Jerem 1974, Fig. 3: 4–5; Božič 1981a, Fig. 3: 17; Jovanović 1998, Pl. XI: 4–5.

[59] Márton 1933, Pl. XV: 5–6; Jerem 1974, Fig. 2: 5; Božič 1981a, Fig. 3: 18; Jovanović 1998, Pl. IV: 10. Cfr. note 49 for possibility of presence of both group 1 and 2 belts on Dunaszekcső or Lengyel. The example from Batina (Maráz 1983, Pl. III: 2) could also belong to variant 2b, considering that it is shown as having no clear distinction, i.e. space between rib and thickenings.

[60] Čižmář 2005, 131, Fig. 1: 2, 3.

[61] Karwowski 2016, 74, Fig. 4.

[62] Allerbauer, Jedlicka 2001, 618, fig. 580. The element has five elongated thickenings, three of which have concave sides, a feature seen on elements of variant 1a. The intermediate ribs are, according to the description, decorated with oblique lines.

[63] Božič 1981a, Fig. 3: 19; Jovanović 1993, Pl. II: 1; 1998, Pl. VI: 7, Pl. VII: 21, Pl. VIII: 27, Pl. X: 35. The example from Novi Banovci seems to have not one, but two ribs decorated with oblique incisions, that cover the entire space between two thickenings.

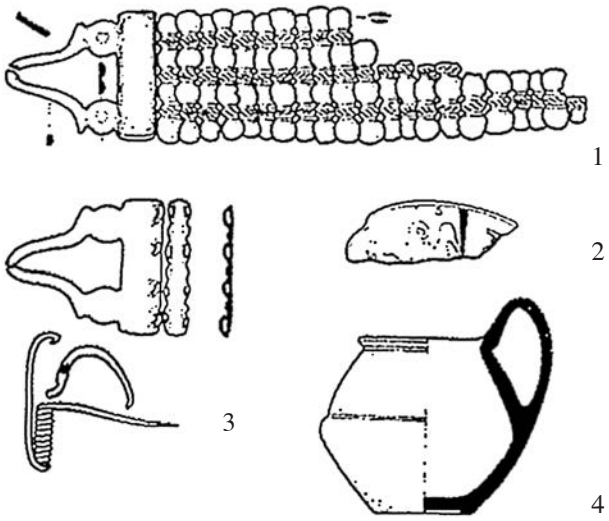

Fig. 5. Karaburma, grave 15 (after Božič 1981)

Sl. 5. Karaburma, grob 15 (prema Božič 1981)

similar finds come from Căpâlna[64]or Piatra Craivii[65], but also grave 3 in Pécs – Hőerőmű[66]. An intermediate form comes from Mudroňova street in Bratislava, with four rectangular thickenings and oblique incisions on the intermediate ribs.[67] The number of thickenings brings it close to the latter, 2b variant. However, the intermediate ribs are very thin and the overall oblong, rectangular form of the element brings it closer to variant 1c, which is found on other sites from the same area. Elements with features very similar to the example from Mudroňova street can be seen on the belt from Zemplín[68] which has a bell-shaped buckle with zig-zag decoration on the rectangular plate. One more good comparison for the previous two examples comes from Dunaszekcső, again showing thin intermediate ribs with oblique incisions and the same width along the entire length of the element.[69]

Obviously, there are numerous Late La Tène examples with morphological differences. Unfortunately, the number of finds from a reliable context is much smaller. Nevertheless, there is enough data in favour of the usage of astragal belts throughout the entire LT D period. The graves of Karaburma 15 (Fig. 5) and Rospi Ćuprija 2, used by D. Božič to date the Belgrade type, were placed within the Belgrade 3 phase, corresponding to LT D.[70] Later, the same author corrected the dating, limiting the Belgrade 3 phase (or 3a) to LT D1[71], while the younger phase of Late La Tène remains obscure. Thus, the belts of the first variant of the second group, the Belgrade type, can be dated to the early phase of Late La Tène; this does not, however, exclude the prolonged usage of the type, or its earlier appearance. In grave 3 at Pécs – Hőerőmű, the belt fragments appear together with two knives with ring shaped endings. The cemetery with La Tène and Early Roman burials is dated to the late LT D (in the second half of the 1st cent. BC) and the beginning of 1st cent. AD, according to the publisher.[72] The grave, possibly a double burial, is probably actually datable to LT D1, along with some other finds; whatever the case, a Late La Tène dating is not questionable. A similar continuity and persistence of autochthonous forms can be seen in settlement finds from the Syrmian region: Livade in Srijemska Mitrovica, Vaganj – Bare and Pećinci.[73] All three sites yielded remains of pit-dwellings and pits with finds datable to the 1st cent. BC; Pećinci also revealed Early Roman pottery and a coin find (Augustus coin). Together with pottery shaped in local tradition and still used in the Early Roman times, finds of fibulae and other costume elements, such as belts, indicate the continuity of the autochthonous population in the years following the Roman conquest of the south Pannonian region.

Distribution areas of Late La Tène belts

When looking at the distribution of particular variants (Fig. 6), it seems that the finds characterised by biconical ribs appear in Hungary (variant 1b limited to Szárazd and Dunaszekcső), with finds attributable to variant 1a also appearing in Transylvania. The shape of the belt buckle is a common trait to these two regions. It is of a more triangular shape, with straight edges, lacking the curly shape of examples belonging to Belgrade or Dunaszekcső types. Variant 1a is also present in Syrmia and Vojvodina as well as in Slovakia, where belts attributed to variant 1c (present as an isolated

[64] Rustoiu 1999, Fig. 4: 1.

[65] Plantos 2009, 48, Pl. VI: 5.

[66] Maráz 2008, Fig. 10: 3.

[67] Bazovský 2016, Fig. 2: 6.

[68] Bazovský 2016, 120, Fig. 3. Elements from Szentvid near Velem could also be mentioned here, given the width of thickenings and intermediate ribs, but the publication lacks detail (von Miske 1908, Pl. XLV: 34, 36–37).

[69] Márton 1933, Pl. XV: 7.

[70] Božič 1981a, 48–49.

[71] Božič 2008, 146.

[72] Maráz 2008, 80–86.

[73] Brukner 1995, 91–93, 98–100, Pl. II: 15, Pl. VI: 54, Pl. XVII: 174.

find also on Gracarca in Carinthia) seem to prevale. Examples with oblique incisions – variant 2a or the Belgrade type – are dominant in Scordiscan territory, more precisely northern Serbia along the Danube and the Syrmia region. Variant 2c with incisions, known as the Dunaszekcső type, appears in the eponymous site and other sites located in Transdanubia, sporadically also to the south, but still along the Danube – in Batina and Dalj. The third, 2b variant is also more common in the Serbian part of the Danube region, but once again

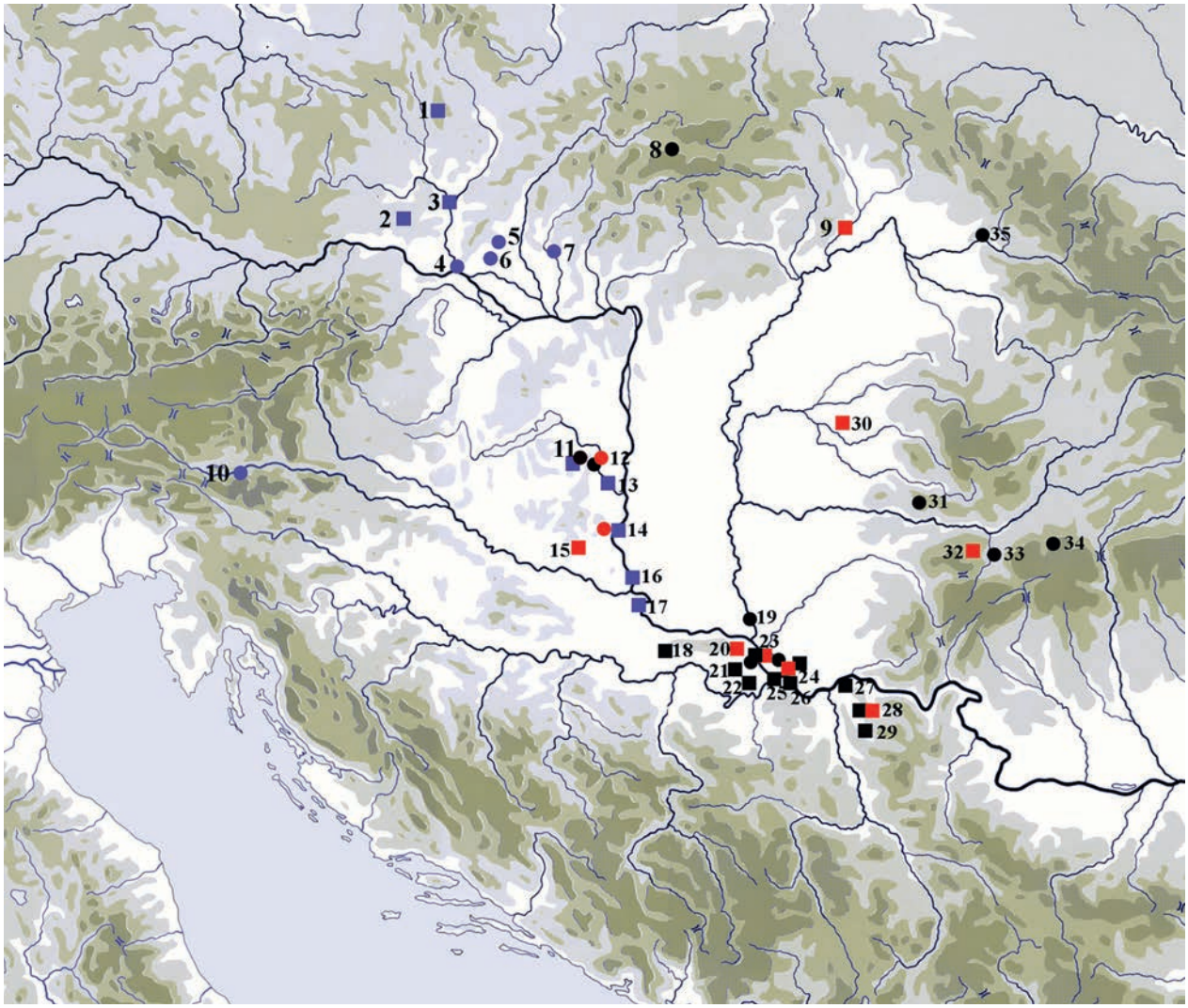

Fig. 6. Distribution of Late La Tène belts. Circle (group 1 – biconical rib): black – 1a, red – 1b, blue – 1c. Square (group 2 – rib with incisions): black – 2a (Belgrade type), red – 2b, blue – 2c (Dunaszekcső type) (note: map not exhaustive)

Sl. 6. Rasprostranjenost kasnolatenskih astragalnih pojaseva. Krug (grupa 1 – bikonična rebra): crno – 1a, crveno – 1b, plavo – 1c. Kvadrat (grupa 2 – rebra s urezima): crno – 2a (tip Beograd), crveno – 2b, plavo – 2c (tip Dunaszekcső) (opaska: karta nije iscrpna)

1. Staré Hradisko, 2. Oberleiserberg, 3. Ringelsdorf, 4. Bratislava – Devín, 5. Cífer, 6. Boldog, 7. Nitra, 8. Liptovská Mara, 9. Zemplín, 10. Gracarca, 11. Regöly, 12. Szárazd – Gerenyáspuszta, 13. Lengyel, 14. Dunaszekcső, 15. Pécs-Hőerőmű, 16. Batina, 17. Dalj, 18. Adaševci, 19. Čurug, 20. Krušedol, 21. Prhovo, 22. Surčin, 23. Novi Banovci, 24. Zemun, 25. Beograd – Karaburma, 26. Beograd – Rospi Ćuprija, 27. Stari Kostolac – Čair, 28. Salakovac, 29. Viteževo, 30. Piatra Craivii, 31. Pecica, 32. Căpâlna, 33. Crişeni, 34. Sibiu-Guşteriţa, 35. Malaja Kopanja

there are similar finds that point to the spread of the form to the east – in Romania, and to the north via the Danube, like the Pécs find that resembles this variant.

Outside the areas of eastern Slavonia, Syrmia and northern Serbia, astragal belts appear in larger numbers in two neighbouring regions – in present-day western Hungary and Romania. Hungarian belts of the Late La Tène period appear in the variant with oblique incisions and without decoration, of a biconical shape; narrower and less plastic thickenings are larger in number, with five or six in a row. The finds are mostly concentrated along the Danube and its tributaries, i.e. in south-east Transdanubia. Late La Tène belts from Dacia, mostly coming from south-west Transylvania, have been attributed to the Dunaszekcső type and interpreted as imports from the Pannonian Danube valley, and dated to the 1st cent. BC.[74] In fact, the morphology of three examples (from Pecica, Crişeni and Sibiu-Guşteriţa) brings them closer to the first group of belts of the here proposed typological division, i.e. to variant 1a, while two are attributed to variant 2b (Piatra Cravii and Căpâlna). Also to be mentioned are, of course, sporadic appearances further to the north-west of the main distribution area: in Austria – Gracarca, Oberleiserberg, Ringelsdorf; also in Slovakia, in Bratislava – Devín, Liptovská Mara, Nitra and other sites; and in Moravia, at Staré Hradisko.[75] It seems that elements of an elongated shape, with the same width along the entire length of the element and thickenings and ribs placed closely together, are found mainly outside the core area of Transdanubia, eastern Slavonia and Syrmia. Although with limited morphological variations, the distribution of astragal belts basically covers the entire Carpathian Basin, with major river valleys serving as communication routes which enabled not only direct imports, but also the existence of cultural transfers, i.e. the spread of ideas and concepts of wearing such specific belts, also quite likely leading to local production.[76]

To the south-west, the finds from Donja Dolina can be mentioned, with the appearance of bell-shaped buckles and astragal elements.[77] This fact can be explained by individual mobility as well as by the existence of cultural transfer, since the site clearly stands on an important strategic point, open to the eastern influences arriving along the Sava basin. Also, the existence of belt elements of a Late Hallstatt as well as a La Tène dating suggests that these belts may have been accepted by the local population – a sign of the position of its community on the periphery, but still within the southern Carpathian Basin.

To conclude, the classification according to morphology seems to have support in the differences in distribution, of course with some overlapping between, especially in the eastern Slavonian and Syrmian region. However, the decoration of oblique incisions seems to be a trait in common and, thus, not necessarily possible to associate to any specific group/community. On the other hand, the clear predominance of this type of decoration in the Scordiscan area suggests a selection of this particular variant; perhaps to be attributed to the possibility of provision, i.e. the existence of a specific workshop(s) that operated in and supplied the area.

SOCIAL IMPLICATIONS OF PRODUCTION AND USE

Finds of astragal belts come from both graves and settlements. For burial contexts, the Late Hallstatt examples of the Nikinci type have already been mentioned; Osijek finds, even though not always from a reliable context, come from graves, as do the elements from Kablarovac; the same is true for the Late La Tène examples from Pecs – Hőerőmű, or the finds from Karaburma and Rospi Ćuprija that served as a basis for establishing the typology and chronology of the Belgrade type belts. Numerous belt fragments (for now unpublished) were found in Blato, in Vinkovci, a site that seems to be an especially important lowland settlement that yielded finds such as horse gear, bronze vessels, numerous brooches, coins etc., mostly datable to LT D1. However, even more important are several finds of unfinished fragments, which clearly suggest local production at the site. During the Late La Tène period, belt fragments appear in a very significant context, i.e. in Syrmian Late La Tène – Early Roman settlements, suggesting the importance of this dress element in stating one's autochthonous identity.

Better preserved examples tell us that astragal belts were very long, composed of numerous elements of elaborate production. They were worn around the waist[78], although an example was found lying across the shoulder of the deceased woman.[79] The number of elements suggests a rather significant weight of the entire belt,

[74] Rustoiu 1999, 190.

[75] Karwowski 2016, 74–76, Fig. 5; Bazovský 2016, Fig. 1.

[76] Karwowski 2016, 76.

[77] Marić 1964, Pl. XIV: 23, 28–29; Jovanović 1998, 42, Pl. II: 4–6, 10, 13.

[78] Cfr. Gaál 2001, Pl. 10.

Fig. 7. Belt from the Late Hallstatt grave found at the Vinkovci-Silos site. The belt buckles are not preserved (photo archive of the Vinkovci Municipal Museum)

Sl. 7. Pojas iz kasnohalštatskog groba s lokaliteta Vinkovci-Silos. Pojasne kopče nisu sačuvane (arhiv Gradskog muzeja Vinkovci)

making rather unlikely its everyday use, therefore suggesting that astragal belts were worn only on certain occasions. Considering that, so far, they have been found in adult female graves, astragal belts could be a marker of the marital status of women within a particular community, i.e. they could be associated with married women.

Numerous glass or amber, even silver beads, and pairs of fibulae suggest an elaborate, even rich, female costume. However, since they appear both in graves and settlements there is no certain proof that this type of belt was exclusively worn by more prominent society members, i.e. the elite. In fact, it seems that astragal belts were worn by adult females of the autochthonous Pannonian origin, as suggested by the appearance of the type during the 6th–4th cent. BC. Subsequently, the belts were integrated with new, Celtic elements of costume – bracelets, fibulae, etc., to become part of the Scordiscan or another identity, as shown by the acceptance of this belt type in other regions of the Carpathian Basin. The belt fragment from Remetea Mare, in Banat points to the same conclusion – it was an element of costume used as a marker of the south Pannonian origin of the deceased.

Once more, when looking at the distribution maps of astragal belts for both the Late Hallstatt and Late La Tène forms, there is a marked concentration of finds along the Danube. Late La Tène examples show a wider distribution, pointing to routes of communication and trade that passed through the Carpathian Basin in all directions and to distant networks. The diversity of Late La Tène variants would point to the existence of several production centres/workshops that supplied a specific area. The Belgrade type – perhaps due to the amount of known examples – is a good example of the possibility of narrowing down the distribution areas of a potential workshop. The use of this type of belt, clearly, was not a random choice – it is a sign of a long-standing local south Pannonian tradition, deeply rooted in the areas of Eastern Slavonia, Syrmia, Mačva and Transdanubia since the Late Hallstatt period. When observing the area to the east of the Danube in the Late Hallstatt period, there are obvious differences in female costume: earrings, beads, bracelets, even gold or silver objects are specific to the wider Tisza river basin and the Great Hungarian plain[80], while the well documented costume comprising of Certosa fibulae (mostly of type V), belts and various beads remains to the west and southwest of the Danube river. Overlapping the astragal belts distribution maps for the two periods of their usage, it becomes evident that the female costume tradition was preserved throughout the entire Late Iron Age.

[79] Jerem 1972, Fig. 3. The position of the astragal belt in the grave assemblage in question has been reconstructed according to the finder's description.

[80] Cfr. Kemenczei 2009.

Observing the tradition of wearing such a particular costume item would not be possible without skilled artisans capable of making such products. Reconstruction of the casting process, together with errors that may occur in making such items (especially considering the thinness of the astragal elements) demonstrates the complexity of its production.[81] The production itself was probably not so difficult for such skilled craftsmen who were able to produce a variety of other bronze or iron objects, but the necessity to maintain a standard quality may have been more important.[82] Since the type, as shown, was an important means of expressing one's identity, its production was likely to be the subject of attention of the maker, as well as of the buyer/user. Development of the form through the centuries does not, in fact, change the main scheme of the belt in a significant way, so a need to keep up with the traditional form has to be supposed. This could also point to some kind of transfer of knowledge among craftsmen (between generations perhaps?), which, in turn, yet again suggests that this particular element of female costume was considered important. The raw materials needed for production should also be considered as a sign that this type was considered worthy of production: the Vučedol belt is 1.03 m long, with 102 elements, the Nikinci example has 81 elements, and other better preserved examples also count their elements in several dozens, so, usually, their length was significant (Fig. 7). Given the length and, therefore, also significant weight of the whole belt, it is questionable whether these belts were, in fact, worn on a day-to-day basis. Quite possibly, their usage was limited to grave contexts or possibly special occasions in which the need to emphasise one's identity was important (occasions such as weddings, or rites of passage from childhood to adulthood?). Nevertheless, the role of astragal belts in female costume as markers of personal and community identity remains important.

The standard of production and the usage of astragal bronze belts covers a large time-span, the entire second half of the last millennium BC, making it a unique example within the present state of study of elements of female costume and jewellery. Morphological features allow their division into more types and variants, and also show how the item changed through time while maintaining the principal idea and scheme which originally came from the Central and Western Balkans area during the late 7th/early 6th century BC, probably through the migration that marked the beginning of the Late Hallstatt period in the southern Carpathian Basin.[83] Astragal belts were, therefore, a very significant part of female costume during the Late Iron Age of various south Pannonian populations settled along the Danube in the south-eastern Carpathian Basin.

Translated by the authors

[81] Lazić 2015.

[82] Unfortunately, the large number of astragal belts is not followed by a comparable number of archaeometallurgical studies that could show specific features of the alloy composition or casting process and allow potential comparisons between particular variants. The analysis carried out on the example from Titel Hill showed high percentages of tin and lead in the copper alloy, a composition that facilitates the casting process of such delicate elements (Lazić 2015, 190–194; on the reconstruction of the casting process and potential problems of production, see p. 196–203). A similar choice of alloy with a high lead content has been noted for cast fibulae of the same, i.e. Late La Tène, period (Mödlinger et al. 2012; Drnić 2012).

[83] Dizdar, in print.

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Not just a belt: astragal belts as part of Late Iron Age female costume in the south-eastern Carpathian Basin (47–63)

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VIŠE OD POJASA: ASTRAGALNI POJASI KAO DIO ŽENSKE NOŠNJE MLAĐEG ŽELJEZNOG DOBA U JUGOISTOČNOM DIJELU KARPATSKE KOTLINE

Ključne riječi. – astragalni pojasi, ženska nošnja, mlađe željezno doba, Karpatska kotlina, identitet.

Brončani astragalni pojasi dio su ženske nošnje na području jugoistočnog dijela Karpatske kotline. Proizvodnja ovakvih pojasa svoj je vrhunac imala krajem starijeg željeznog doba (6. – 4. st. pr. Kr.) te opet u kasnom latenu, no osnovni oblik pokazuje kontinuitet tijekom čitavog mlađeg željeznog doba. Nakon temeljnih objava J. Todorovića (1964) te D. Božiča (1981a) u kojima je uspostavljena kronologija i tipologija, uslijedile su brojne objave s novim primjercima, iako često i dalje bez pouzdanog konteksta. No, postojeći nalazi omogućavaju uspostavu finije tipološke podjele te osvrt na pitanje datacije i ulogu astragalnih pojasa u ženskoj nošnji autohtonih zajednica.

Kasnohalštatski primjerci s područja istočne Slavonije i Srijema imaju 4 okrugla zadebljanja između kojih se nalazi pravokutno rebro ukrašeno horizontalnim urezima te pravokutne pojasne kopče s tri ušice, često ukrašene motivom koncentričnih kružnica. Iako su u prvim objavama tretirani kao dio muške nošnje, grobne cjeline (npr. Vinkovci–Silos, Szárazd–Gerenyápuszta) u kojima su pronađeni zajedno s fibulama tipa Certosa V i XIII te nizom staklenih perli pokazuju kako pripadaju autohtonoj ženskoj nošnji (Sl. 1). Nalazi ovakih pojasa, odnosno tipa Nikinci po D. Garašanin, uglavnom su koncentrirani na području istočne Slavonije, Srijema, Mačve i jugoistočne Transdanubije (Sl. 2) od druge polovice 6. do druge polovice 4. st. pr. Kr.

D. Božič podijelio je pojase latenskog perioda na stariju varijantu ili tip Osijek te istovremene kasnolatenske varijante, tipove Beograd i Dunaszekcső. Razmatrajući do sada poznate primjerke, ova se tipološka podjela može donekle revidirati na temelju morfoloških karakteristika, odnosno oblika i ukrasa astragalnih elemenata te oblika pojasne kopče.

Općenito se od kasnog halštata prema kasnom latenu pojavljuje tendencija smanjivanja i sužavanja rebara između zadebljanja; skraćuje se razmak između rebara i zadebljanja, koja se sužavaju, a broj raste na 5–6; oblik pojasne kopče mijenja se iz pravokutnog s tri ušice u pravokutnu pločicu s izduženim zvonolikim produžetkom. Prijelazni oblici koji datiraju u rano- i srednjelatenske faze rijetko potječu iz pouzdanih konteksta, no mogu se izdvojiti neke grobne cjeline s lokaliteta Osijek – Zeleno polje. U grobovima 9 i 22 javljaju se oblici bliži kasnohalštatskoj tradiciji (horizontalni žlijebovi na rebrima, 4 zadebljanja, tri ušice), dok se u grobovima 4 i 26 (Sl. 3) pojavljaju elementi s tri okrugla zadebljanja i uskim rebrima, no sada uz kopču sa zvonolikim produžetkom. Asocirani predmeti iz ovih cjelina omogućuju dataciju groba 22 u stupanj LT B2, dok se grob 26 može datirati u srednji laten, najvjerojatnije u stupanj LT C1. Ovim se cjelinama donekle popunjava praznina između brojnih kasnohalštatskih i kasnolatenskih primjeraka. Pojedini primjerci svojim morfološkim karakteristikama također idu u prilog kontinuiteta oblika.

Kasnolatenski primjerci mogu se podijeliti u dvije skupine na osnovi ukrasa na intermedijarnim rebrima: prvu čine primjerci s bikoničnim rebrima, a drugu oni s ukrasom kosih ureza. Daljnja podjela na temelju oblika i broja zadebljanja te njihova razmjera prema veličini rebara omogućila je izdvajanje tri varijante unutar svake skupine (Sl. 4), iako naravno postoje i primjerci koji ne pripadaju posve niti jednoj izdvojenoj varijanti. Varijante s kosim urezima pretežno se javljaju na teritoriju Skordiska (varijanta 2a), iako se pojedine varijante pojavljaju i u Transdanubiji (varijanta 2c) te dalje niz Dunav na istok ili sjever (varijanta 2b). Pojasi s bikoničnim rebrima češće se javljaju na području današnje Mađarske i Transilvanije (Sl. 6).

Općenito govoreći, astragalni pojasi pojavljaju se pretežno u Podunavlju kao dio južnopanonske tradicijske ženske nošnje, a u kasnolatenskom razdoblju njihova se distribucija širi diljem Karpatske kotline putem komunikacijskih i trgovačkih pravaca. Brojnost varijanti ukazuje na postojanje više radioničkih središta u kojima je postojala ne samo tradicija izrade, već i transfer znanja i vještina potrebnih za njihovu izradu, na što upućuje zadržavanje osnovne forme i sheme kroz čitavo mlađe željezno doba. Dužina i složenost pojasa te njihova pojava u ženskim grobovima, ali često i na naseljima, ukazuje na važnost ovog tipa pojasa u svjetlu iskazivanja identiteta. Astragalni se pojasi mogu dakle istaknuti kao važan i dugotrajan element autohtone južnopanonske ženske nošnje tijekom čitave druge polovice posljednjeg tisućljeća prije Krista.

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PERFORATED COINS FROM GRAVES AT THE VIMINACIUM NECROPOLIS OF PEĆINE

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Abstract – A common problem that occurs when interpreting finds of perforated Roman coins is their function and whether they were perforated in Roman times or later. Hence, the specimens which originate from an undisturbed archaeological context, as is the case with finds from the Viminacium necropolis of Pećine, are indispensable. A total of 45 perforated coins were discovered at Pećine: 23 from graves and 22 from sacrificial areas.

Key words – Roman Empire, Viminacium, necropolis, Roman coins, perforated coins.

During almost five centuries of dwelling at Viminacium, several cemeteries were established. According to their position compared to the legionary fort and the civilian settlement, they were divided as follows: northern, southern, eastern and western cemeteries. Due to the building activities of the power plant Kostolac 2, from 1977 to 1990, in the area of the southern cemeteries, extensive rescue archaeological investigations took place.[1] Within this territory, nine cemeteries were distinguished and five of them belong to the period of Roman domination (from the middle of the 1st to the early decades of the 5th century)[2]. The two earliest ones, Pećine and Više Grobalja, were established in the middle of the 1st century and they include both cremations and skeletal burials.[3] The change in burial rites that took place in the middle of the 3rd century, resulted in the abandonment of these two burial areas.[4] At another separate cemetery, also belonging to the area of the Pećine site, only cremations were discovered, with the exception of skeletal graves that always represented infant burials. This necropolis was formed at the end of the 1st and the

[1] Зотовић 1986, 41; Golubović 2008, 15.

[2] The oldest cemetery belongs to the Celtic population that inhabited the area at the end of the 4th and the beginning of the 3rd century BC. The two youngest cemeteries belong to the period of the Great Migration: the eastern Gothic one was used during the second half of the 5th century and the Gepidic one was used in the middle of the 6th century. The absolutely youngest one is a smaller mediaeval cemetery, roughly dated to the period from the 12th to the 14th century (*cf.* Зотовић 1986, 41, ref. 4; 54–55; Зотовић, Јордовић 1990, 2).

[3] Within the examined area of the site of Pećine, three cemeteries were distinguished: the oldest one, contemporary to the site Više Grobalja; the second one from the same period, but with cremations and infant skeletal burials only and the youngest one, from the middle of the 3rd to the middle of the 5th century.

[4] Зотовић 1986, 42–45; Зотовић, Јордовић 1990, 1–34; Korać, Golubović 2009, 12–13, ref. 15–17.

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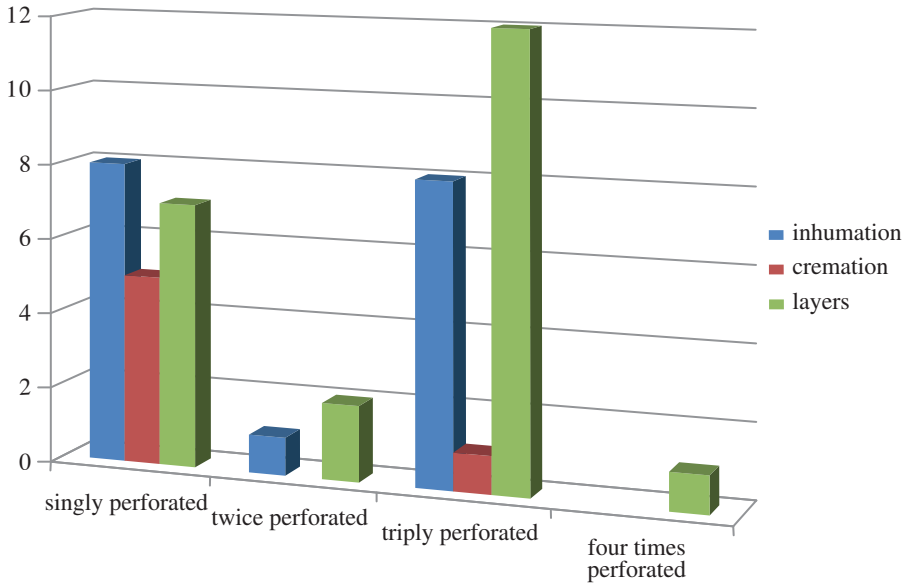

Graph 1 – Perforated coins at Pećine necropolis (from graves and from layers)

Графикон 1 - Перфорирани новчићи са некрōполе Пећине (из гробова и слојева)

beginning of the 2nd century and was used until the middle of the 3rd century. At the southern Viminacium cemeteries, cremation was abandoned in the middle of the 3rd century and from that point onwards, only skeletal burials were practiced. During that period and in the southern area, two further cemeteries were established: Burdelj and Pećine. The first one remained in use until the middle of the 4th century and the second one until the middle of the 5th century.[5]

During the excavations of the cemeteries at the Pećine site, a total of 3,865 coins were discovered.[6] Of this number, 3,497 pieces were available to be examined. They belong to the period starting from 32/31 BC. (Marcus Antonius) to 423 AD. (Theodosius II).[7] A certain number of the coins discovered at Pećine, actually 45, were perforated either one, two, three or four times. Of that number, 17 were discovered in skeletal burials (G), six were discovered in cremations (G1), while 22 come from the layer of the necropolis (Graph 1). As already noticed on the necropolis of Više Grobalja, the number of perforated coins from Pećine is much larger from the skeletal burials than from the cremated ones. At the same time, the latter also represent the only numismatic finds from graves, contrary to skeletal burials, which in some cases include several perforated coins and even more often imperforated ones. This coincides with analyses of the necropolis of Više Grobalja. Here, regardless of a smaller total sample of examined coinage, more perforated coins were discovered than at the necropolis of Pećine (47 pieces or 1.72% compared to 45 pieces or 1.28%).[8] In addition, a larger percentage of perforated coins as grave goods was noticed at the necropolis of Više Grobalja (23 in G and nine in G1 or 48.92% and 19.14%) than at Pećine (17 in G and six in G1 or 37.77% and 13.33%) and compared to the number of coin finds from layers (15 pieces or 31.92% from Više Grobalja and 22 pieces or 48.90% from Pećine).[9]

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[5] This necropolis at the site "Pećine" cuts through the areas of older, already abandoned cemeteries with both cremations and skeletal graves (*cf.* Зоговић 1986, 52).

[6] The coins came from both graves and layers (sacrificial areas formed on top of one or several graves).

[7] All of the numismatic finds from the mentioned sites were listed during 2005 and 2006 at the National Museum in Požarevac (M. Vojvoda, D. Spasić-Đurić). It was concluded that a certain number of pieces was either lost or permanently damaged during conservation processes (367 pieces). A similar situation was observed with pieces from the cemetery of Više Grobalja – according to the field documentation, a total of 3,161 coins were excavated, but only 2,736 remained preserved (*cf.* Vojvoda, Mrđić 2015, 10, ref. 6).

[8] The percentage relates to the total number of coins available for examining: 2,736 pieces from Više Grobalja and 3,497 pieces from Pećine.

[9] Vojvoda, Mrđić 2015, 30, 32, 33, Tabele 7–8; Vojvoda 2015a, 55.

[10] *Cf. supra* ref. 8.

INHUMATION GRAVES (Tables 1–2)

Within the group of skeletal burials with perforated coins as grave goods, one can distinguish between infant graves and those of adults (Tables 1–2). Three graves of adult individuals were noted with a single perforated coin in each of them (G–1749, G–4923 and G–5119), and three graves with triply perforated coins in each of them (G–1827, G–4197 and G 4975). In addition, in one of the graves, both singly and triply perforated coins were discovered together (G–877). Among the infant graves, four contained singly perforated coins (G–1807, G–2947, G–3562 and G–4160). In four further graves there were finds of triply perforated coins (G–227, G–342, G–2669 and G–3541). It can be noticed that the number of graves containing perforated coins as grave goods is almost identical both at the cemetery of Više Grobalja and Pećine (6–7 graves). The only difference is the relation of singly and triply perforated coins. However, the necropolis of Više Grobalja contains a somewhat larger number of perforated coins in infant graves when compared to the necropolis of Pećine (13 to 9). Moreover, the necropolis at Pećine revealed no infant graves with two perforated coins as grave goods, while the necropolis Više Grobalja revealed two of them.[10]

singly perforated coins in graves of adults			
Grave number (G)	**Total number of coins in the grave**	**Number of perforated coins in the grave**	**Position in the grave according to Clarke**
1749	2	1	A - D
4923	1	1	A
5119	1	1	A
triple perforated coins in graves of adults			
1827	1	1	A
4197	2	1	? - ?
4975	2	1	D – F
singly and triple perforated coins in graves of adults			
877	2	2	D – D

Table 1 . Perforated coins in graves of adults (inhumations)

Табела 1. Перфорирани новчићи у гробовима одраслих индивидуа (инхумације)

singly perforated coins in infant graves			
Grave number (G)	**Total number of coins in the grave**	**Number of perforated coins in the grave**	**Position in the grave according to Clarke**
1807	1	1	H
2947	3	1	A – B – D
3562	1	1	?
4160	1	1	D
twice perforated coins in infant graves			
4288	2	1	D – G
triply perforated coins in infant graves			
227	1	1	F
342	1	1	?
2669	1	1	D
3541	1	1	?

Table 2. Perforated coins in graves of children (inhumations)

Табела 2. Перфорирани новчићи у дечјим гробовима (инхумације)

Singly perforated coins in graves of adults

G 1749[11] – An adult buried in a wooden coffin. Grave goods: beneath the right clavicle (position D) there was an imperforated as of Trajan; next to the pelvis, on the left side, shards of a grey burned pot; between the feet a red burned, single handled pot; on the stomach there was a larger red stone; on the right side of the skull (position A) there was a ring-shaped bronze earring with a pendant representing a perforated coin.

The Trajan's as is dated to the year 99–100 (cat. 246), with the image of Victoria facing left, holding a palm branch and a shield with the inscription SPQR. The perforated coin represents part of the so-called "monetary jewellery" as an earring pendant (Pl. I/1).[12] Since it is quite badly preserved, the only thing one could think of is that is an anonymous quadrans (Mercury's group?).

G 4923 – An adult buried without a coffin. Grave goods: next to the skull (position A) there was a perforated silver tetradrachm of Nero; some 60 cm away from the skull towards the south there was a bronze key-ring;[13] near the feet there was a red painted oil-lamp with the stamp FLVI and a bronze ring.

The Nero's silver tetradrachm (Pl. I/2) dated to the year 65–66 belongs to the series of the provincial mint of Alexandria and represents the only piece from this mint discovered so far in Viminacium.[14] On the obverse there is an emperor's bust with an Aegis and a radial crown, while on the reverse there is the bust of the personification of Alexandria with an elephant's skin on her head. The perforation is circular, made from the obverse side, from an aesthetical point of view indicating that the obverse was meant to be seen. However, the obverse axis compared to the reverse axis measures 0 degrees, also indicating that the reverse side was meant to be seen. The perforation edges were polished on both sides and show only very small traces of perforating.

G 5119 – An adult buried in a grave constructed of upward placed bricks and with a floor paved with tegulae. Grave goods: next to the head a glass bead and a perforated coin of Constantius II (position A).

The perforated coin belongs to the fractional folles (AE 3) of the mint Siscia with the inscription on the reverse HOC SIGNO VICTOR ERIS (the emperor and Victoria), dated to the year 350 (Pl. I/3).[15] The perforation is of an irregular circular shape, made from the obverse side at 3 o'clock. Since the coin was discovered together with a glass bead, there is a possibility that both finds once represented necklace pendants. However, the position of the perforation does not indicate that the images represented upon the coin were important in a decorative sense, meaning that none of the images were meant to be seen as such.

Triply perforated coins in graves of adults

G 1827 – An adult buried without a coffin. Grave goods: on the left eye socket (position A) there was a triply perforated bronze coin; beneath the lower legs, a ceramic pot.

The perforated coin is illegible, but it is a dupondius or as from the Julio–Claudian dynasty (Pl. I/4).[16] The perforations are circular and made from the obverse side at 5, 7 and 10 o'clock. The finding place on the deceased's left eye provides information about the variety of coin usage in funerary rituals in Viminacium cemeteries.

G 4197 – An adult buried in a grave with brick construction and covered with bricks. Grave goods: on the upper grave construction level (position?) there was a perforated coin; in the middle (over the stomach of the deceased?) there was a bronze coin from the provincial mint of Nicaea, a glass bead and part of an object made of lead.[17]

The fact that the coin discovered "on the upper grave construction level" was damaged after the coffin lid was hit with mechanisation is in some doubt. One suspects that the coin was placed upon the grave construction lid during the funeral. It is a triply perforated as from the series DIVVS AVGVSTVS PATER, with the image of an altar on the reverse side (Pl. I/5). It was minted during the reign of Tiberius and dated to the years 22/23–30 (?). The perforations are circular, made from the obverse side at 2, 7 and 10 o'clock. Within the grave, a bronze coin of Gordian III was discovered, belonging to the series of the Bithynian mint of Nicaea.[18]

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[11] The mark G refers to skeletal graves, while G1 refers to cremations.

[12] Vojvoda, Mrđić 2017, cat. no. 246 (as Trajan); C–5027 (earring with a perforated coin).

[13] Миловановић, Мрђић 2016, 250, Tabela 1, no. 22; 253, ref. 12; T. I.22.

[14] Vojvoda, Mrđić 2017, cat. no. 3110.

[15] Vojvoda, Mrđić 2017, cat. no. 1530.

[16] Vojvoda, Mrđić 2017, cat. no. 2266.

[17] While levelling the terrain, the top of the grave construction was damaged with mechanisation. The fragment of the lead object was classified as study material (*cf.* fieldwork diary, 2974).

[18] Vojvoda, Mrđić 2017, cat. no. 36 (perforated coin); cat. no. 3023 (Nicaea mint).

Since there are no other finds that would enable a more precise dating of this grave, the coins represent its *terminus post quem*.

It is obvious that there is a huge time span between the coin discovered within the grave (238–244) and the perforated one from the upper grave construction level (22/23–30). It covers between 208 and 222 years. This is not a single example, since at the Viminacium cemeteries, there were several such cases with even greater time spans.[19] The presence of coins from the Julio–Claudian dynasty in the graves from the 3rd century is rare, but it is not an exception.[20] A similar occurrence was noticed with some hoard-finds of coins from the Danube and the Balkan provinces. Coins of triumvir Marcus Antonius and the members of the Julio–Claudian dynasty are represented in some hoards as late as the fourth decade of the 3rd century.[21] The choice to keep a bronze coin over a long period of time is certainly no coincidence and it is not connected with its material value. The cult of divine Augustus was one of the most important phenomena within ideological propaganda. It was initiated during the reign of the Julio–Claudian dynasty and later, during the Principate. The political consequences of Augustus' deification were quite remarkable. Starting with his direct heirs, but also later, emperors were keen to highlight their origin or the continuity of reign that went back to their divine ancestor, the founder of the Principate. Basically, by using the authority of the divine Augustus, his heirs attempted to strengthen their position, further leading towards the development of the emperor's personal cult.[22] Such tendencies are clearly expressed in the coin minting series of *divus augustus pater* during the reign of Tiberius.

We do not know when the coin from grave G 4197 was perforated, but it is possible that, for a while, it was used as part of some composite jewellery (necklace?). The fact is however, that it was kept over two hundred years only to be deposited into a grave. It is interesting to mention that when compared to the total number of discovered coins dated into the 1st century, pieces from these series represent common finds at the Viminacium cemeteries of Više Grobalja and Pećine. At the necropolis of Više Grobalja, a total of 37 pieces were discovered that belong to the series divus augustus pater: of that number, 26 were unearthed from graves (both G and G1) while eleven came from the necropolis layer. Of the total number unearthed, six coins were perforated.[23] At the necropolis of Pećine, a total of 19 pieces were unearthed, fourteen came from graves and five from the necropolis layer. Three of them were perforated.

G 4975 – An adult buried in a wooden coffin. Grave goods: on the chest (position D) there was an as of Septimius Severus; on the left pelvis side (position F) there was a perforated as of Antoninus Pius; on the right pelvis side there was an oil-lamp.

Due to the poor state of preservation and according to relevant catalogues, it was not possible to determine the triply perforated as of Antoninus Pius (Pl. I/6). The perforations are square, made from the obverse side at 12, 4 and 8 o'clock. Because of the same reasons, the as of Septimius Severus was not precisely determined.[24] It is interesting that the imperforated coin was discovered on the chest, while the perforated one was placed next to the deceased's pelvis. This example again illustrates the variety of perforated coin usages in funerary rituals in Viminacium. On the other hand, it narrows our attempt to draw certain conclusions regarding the existence of regularities within them.

Singly and triply perforated coins in graves of adults

G 877 – An adult, buried without a coffin. Grave goods: next to the left shoulder a singly perforated bronze coin; next to the right shoulder a triply perforated bronze coin.

The only grave goods include two perforated coins discovered next to the deceased's shoulders, thus indicating that they might have been pendants on a string-like necklace or sewed to pieces of clothing. The singly perforated coin of Marcus Aurelius (caesar?) represents a series from an unknown provincial mint (Pl. I/7). The perforation is circular and made from the obverse side at 7 o'clock. The triply perforated dupondius is also rather badly preserved, but it most likely belongs to the

[19] Vojvoda, Mrđić 2015, 28–29.

[20] Gorecki 1979, 55–56, Fig. 1; Fitz 1980, 37, Tab. a, b; Istenič 1999, 203, ref. 2; Găzdac-Alföldy, Găzdac 2009, 164, ref. 13.

[21] Kos 1986, 74–78; Borić-Brešković, Crnobrnja 2005, 13–14; Borić-Brešković, Crnobrnja 2008, 14–15; Borić-Brešković, Arsenijević 2008, 101–103, Table 2–4; Borić-Brešković, Vojvoda 2010, 22–23, ref. 10, 12–13, 31–35; Table 3–6b; Borić-Brešković, Vojvoda 2011, 15–18, Table 1–3, Graph 1–2, 19, ref. 29; Borić-Brešković, Vojvoda 2012, 23–26; ref. 10, Table 1–2, Graph 1.

[22] Vojvoda 2015b, 53–55.

[23] Vojvoda 2015a, 53–78.

[24] Vojvoda, Mrđić 2017, cat. no. 768 (perforated coin); cat. no. 1126 (as of Septimius Severus).

mints of Augustus Octavianus and certainly dates to the first half of the 1st century (Pl. I/8).[25] The perforations are square, made from the reverse side at 3, 6 and 9 o'clock.

Singly perforated coins in infant graves

G 1807 – Grave of an infant buried in a wooden coffin. Grave goods: on the right pelvis side there was a fragmented balsamarium; on the left pelvis side there was another balsamarium and an oil-lamp; between the lower leg parts there was a bronze brooch with a bow; next to the right foot there was a fragmented balsamarium; next to the left foot there were several items piled on one spot (position H):[26] a singly perforated coin of Augustus, a shell, a bronze bulla, an iron finger-ring with a circular head, a bronze bell, large perforated boar tooth, a processed antler, an earring made of silver wire with a spherical bead, a bronze sewing needle bent to look like a pendant, a pendant made out of a cow's tooth, three bone pendants in the shape of a phallus, four glass beads, two pendants made of bronze wire and a single carneol pendant in the shape of a phallus. The majority of items from the casket are perforated, possibly representing parts of a single or several strings. Their content indicates that they did not possess a decorative, but a protective purpose.[27]

The perforated coin of Augustus belongs to special editions of the Roman mint from the year 7 BC made by the monetarius P. Lurius Agrippa (Pl. I/9). They include pieces minted in copper and of various weights. There are numerous studies regarding this phenomenon, but the most common theory is that they possess a triumphal character connected to the victories of Tiberius in the year 7 BC and under Augustus' auspicia.[28] The coins were obviously parts of a string, along with the other listed items, all of them possessing protective features. The perforation is circular, made from the obverse side at 12 o'clock, indicating that Augustus' portrait was meant to be seen.

G 2947 – Grave of an infant buried in a wooden coffin, in an oval grave pit. Grave goods: in the mouth (position B) there was a bronze coin of Trajan; beneath the skull (position A) there was a perforated bronze coin; on the chest (position D) a bronze coin of Hadrian (?);[29] on the left skull side a jug; in the western part of the oval pit: two pottery jugs, a pot and an oil-lamp.

The bronze coin of Trajan (cat. 386) discovered within the deceased's mouth was poorly preserved and it was not possible to specify it more precisely according to the relevant catalogues. It was roughly dated between the years 98 and 117. The perforated bronze coin (Pl. I/10) belongs to the series of one of the provincial mints. Due to the poor state of preservation, it was not possible to classify it to either a specific ruler or a specific mint. Because of the same reason, it was broadly dated from the 1st to the 3rd century, although it most likely belongs to the 2nd century. The perforation is circular and made from the obverse side at 12 o'clock. The third bronze coin (cat. 2405) was also poorly preserved, but it was possible to determine it into the period of Hadrian's reign (although with some uncertainty).[30]

G 3562 – Grave of an infant buried without a coffin. Grave goods: at the same spot, in the northern pit part[31] there was a fragmented sea-shell, a perforated bronze coin of Trajan, a stone chip, a bronze ring with a round cross-section, a fragmented and deformed sewing needle, and two circular plates made of bronze sheet with tin with rivets and a deformed bronze sheet.

The perforated bronze as of Trajan (Pl. II/1) is fragmented and poorly preserved and it was not possible to determine it according to the relevant literature. It is dated into the entire chronological span of Trajan's rule, from 98 to 117.[32] The perforation is circular and made from the obverse side at 8 o'clock. There is a possibility that on the damaged spot there was another perforation, but this cannot be claimed with any certainty.

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[25] Vojvoda, Mrđić 2017, cat. no. 3303 (singly perforated coin); cat. no. 2193 (triply perforated coin).

[26] In a soil lump a wooden imprint was discovered and this is why it is considered that all of the items were once deposited in a wooden casket; *cf*. fieldwork diary, 1625.

[27] Спасић-Ђурић 2008, 124–128, Sl. 1,2.

[28] RIC I, 75, ref. *.

[29] The grave is orientated east/west. Since only the skull remained preserved, the position of finds was determined according to the distance from the skull and to the cardinal directions. The coffin measures 1.50 x 0.55 m. At a distance of 20 cm to the west of the skull there was the third coin, possibly corresponding to the position of the chest or stomach. Since anthropological analysis is missing and according to the length of the coffin, we presume that this was a deceased in his/her early years of life.

[30] Vojvoda, Mrđić 2017, cat. no. 3388 (perforated coin); cat. no. 386 (Trajan); cat. no. 2405 (Hadrian).

[31] The pit measures 1 X 0.50 m and it was orientated north-south. The bones were not preserved and this causes all of the doubts regarding position of grave goods towards the deceased. However, there is a great chance that the head of the deceased was placed in the north, since this was observed in many Viminacium graves.

[32] Vojvoda, Mrđić 2017, cat. no. 352.

G 4160 – Grave of an infant buried without a coffin. Grave goods: on the right clavicle (position D) there was a perforated antoninianus of Aurelianus with traces of textile.

The perforated antoninianus (Pl. II/2) of Aurelian bears an illegible mint mark on its reverse side and it was, therefore not, determined according to the relevant literature.[33] The perforation was made from the obverse side at 12 o'clock, indicating that the portrait of the emperor was meant to be seen. It most likely played the role of a pendant. Textile remains do not necessarily indicate that it was sewn onto clothes, but possibly only simply placed upon the deceased's clothes.

Twice perforated coins in graves of infants

G 4288 – Grave of an infant buried in a wooden coffin. Grave goods: next to the right leg (position G) there was a bronze coin and a fragmented needle made of amber; around the neck (position D) there was a necklace consisting of: a twice perforated bronze coin, a bronze bulla, a pendant made of amber and a pendant made of clay, one perforated snail-shell, a bead made of bone and another one made of stone and several glass beads.

The bronze coin discovered next to the right leg belongs to the autonomous Macedonian minting (ΚΩΙΝΩΝ ΜΑΚΕΔΟΝΩΝ). Due to the poor state of preservation it was not possible to determine it precisely, although it is most likely one of the series of Claudius I.[34] The twice perforated coin that makes one part of the necklace (Pl. II/3) is very poorly preserved, but it is most likely an as from the beginning of the 2nd century (Hadrian?).

Triply perforated coins in graves of infants

G 227 – Grave of an infant with the grave construction made of bricks and covered with tegulae. Grave goods: next to the pelvis on the right side (position F) there was a triply perforated bronze coin.

The triply perforated bronze as belongs to the series of the Roman mint for Tiberius from the year 15–16 (Pl. II/4).[35] The perforations are square and made from the obverse side at 3, 7 and 11 o'clock.

G 342 – Grave of an infant buried in a wooden coffin. Grave goods: outside the coffin on the western side there were three jugs; outside the coffin on the eastern side there was a pot and fragments of a censer; in the eastern part[36] there was a glass bead and a triply perforated bronze coin; in the middle there was a pendant modelled from a vessel's stomach with three holes and a gold earring in the shape of a ring.

The perforated bronze coin (T. II/5) is poorly preserved and it was dated into the 1st century, in the time of the Julio–Claudian dynasty (Tiberius–Drusus?).[37] The perforations were made from the obverse side, two of them being circular (at 12 and 8 o'clock), while the remaining one is square (at 5 o'clock). The coin and the bead could have represented parts of a string.

G 2669 – Grave of an infant buried in a wooden coffin. Grave goods: above the head there was a glass balsamarium, an iron knife blade and a small glass bottle with two handles; on the left side of the deceased there was a glass guta, a bone sewing needle and a bronze one; next to the right arm there was a bone spatula and a glass balsamarium; on the body (position D) there was a triply perforated bronze coin.

The coin belongs to the mints of Claudius I (Pl. II/6), but since it is badly preserved, it was not possible to determine it precisely.[38] The perforations are circular and made from the obverse side at 3, 6 and 9 o'clock. The perforation at 9 o'clock actually consists of two overlapping perforations, thus forming the shape of an "8".

G 3541 – Disturbed grave of an infant, the area with bones measures 20 cm; among the bones there was a triply perforated bronze coin.

Due to the poor state of preservation, the perforated coin (Pl. II/7) was not precisely determined, except that it belongs to the period of Julio–Claudian dynasty.[39] The perforations are circular, made from the obverse side at 3, 8 and 10 o'clock. They all have different diameters.

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[33] The inscription on the reverse ORIENS AVG, with the image of Sol holding a globe and lifting his right arm, next to his feet there are two captives. This image was depicted on coin series from Rome and Serdica and it is dated in the year 273–274. Vojvoda, Mrđić 2017, cat. no. 1324.

[34] Vojvoda, Mrđić 2017, cat. no. 3133.

[35] Vojvoda, Mrđić 2017, cat. no. 26.

[36] The grave is orientated east-west. While the grave pit and the coffin are clearly distinguished, the bones were only preserved in traces and it is, therefore, not possible to determine the orientation of the skeleton.

[37] Vojvoda, Mrđić 2017, cat. no.2195.

[38] Vojvoda, Mrđić 2017, cat. no. 77.

[39] Vojvoda, Mrđić 2017, cat. no. 2242.

CREMATION GRAVES

Compared to skeletal burials, at the cemetery of Pećine, just as already noticed at the cemetery of Više Grobalja, perforated coins are much less represented in cremations. Six graves were unearthed in which there were singly or triply perforated coins. The latter was represented in only one grave.

Singly perforated coins

G1 110 – Cremation in a grave with two levels.[40] Grave goods on the first level, all of them in the same spot: parts of a casket (bronze plates, a circular lock with a key, a handle), a bronze mirror, a bronze box decorated with enamel, a round bronze brooch, a perforated silver coin of Augustus Octavianus; at the bottom of the first level (30 cm away from the remaining finds) there was a larger fragment of a circular bronze mirror.

The perforated Augustus' quinarius (Pl. II/8) with the inscription on the reverse ASIA RECEPTA (Victory standing left on cista mystica between two snakes) is dated to the years 29 to 26 BC.[41] It was minted in Italy, but the question of the mint (Brundisium or Rome) is still indefinable in relevant literature. The perforation is circular and made from the obverse side (at 9 o'clock compared to the obverse axis), indicating that the reverse side was meant to be seen. However, the reverse axis is positioned to the south-west when compared to the obverse, thus making the perforation position at 8 o'clock when compared to the obverse axis. The perforation's position does not indicate that either of the images was intentionally to be seen, if one considers that the coin was used as a pendant on a necklace. This does not exclude the possibility that it was a pendant on, for example, an arm ring.

G1 111 – Cremation with two levels. Grave goods on the first level: in the northern part there was a bronze as of Hadrian; in the southern part there was a fragmented oil-lamp; on the second level: in the northern part a glass balsamarium and a perforated coin; in the south-eastern part there was a pot.

The bronze as of Hadrian has the image of Iustitia on the reverse side and it is dated to the years 132–134. The perforated as (Pl. II/9) bears the image of an eagle on a globe on the reverse side and represents yet another piece from the series *divus Augustus pater*, minted during the reign of Tiberius, between 34 and 37.[42] The perforation is circular and made from the reverse side, at 10 o'clock compared to the obverse axis.

G1 542 – Cremation with two levels. Grave goods on the first level: next to the eastern wall a small bronze ring, fragments of a bronze mirror, plating parts made of bronze sheets, a fragment of a bronze bulla, and eight decorative nails with spherical bronze heads and iron thorns; on the second level there was a perforated bronze coin.

Due to the poor state of preservation, the perforated bronze coin (Pl. III/1) was only roughly determined into the period of Hadrian's reign, but without any precise dating within this period.[43] The perforation is circular and made from the obverse side at 12 o'clock, possibly indicating that it might have represented a necklace pendant.

G1 663 – Cremation with two levels. Grave goods on the first level: in the eastern part there was a bronze coin; on the second level: next to the eastern wall: a pottery oil-lamp with the stamp APRIO and a pot; as the grave wall had collapsed, a perforated bronze coin and a bronze ring (a finger-ring?) were unearthed.

The bronze coin discovered on the first level belongs to the time of Hadrian, but since it is poorly preserved, it was not possible to determine it precisely. For the same reasons, the perforated bronze coin (Pl. III/2) was only roughly dated into the period of the Julio–Claudian dynasty.[44] The perforation is circular and made from the obverse side at 12 o'clock, indicating that it might have been used as necklace pendant.

G1 720 – Cremation without levels. Grave goods: next to the northern wall there was a pot and three jugs; to the west of them there was a pot made of kaolin clay, a bronze coin of Nero, an earring made of silver wire with a perforated denarius of Hadrian as a pendant, a bronze, phallus-shaped pendant and an iron finger-ring with a glass gem; in the south-eastern part there was a bronze coin of Hadrian.

The bronze as of Nero (cat. 102) with the image of a flying Victoria holding a shield on the reverse, was dated to the years 66–68. The bronze coin of Hadrian (cat. 449) belongs to the series with the image of the

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[40] The grave was damaged with two later burials (G 344 and G 336) and with one sarcophagus. Only a smaller part of the first and the second level remained preserved.

[41] Vojvoda, Mrđić 2017, cat. no. 2.

[42] Vojvoda, Mrđić 2017, cat. no. 41 (perforated coin); cat. no. 426 (Hardian).

[43] Vojvoda, Mrđić 2017, cat. no. 582.

[44] Vojvoda, Mrđić 2017, cat. no. 2211 (perforated coin); cat. no. 589 (Hardian).

province of Dacia and it is dated between 134 and 138. The perforated denarius of Hadrian belongs to the set of the so-called "monetary jewellery" and was used as a pendant on an earring. It belongs to the early series of Hadrian, from the years 119–122. The reverse image depicts Pax holding a branch and a sceptre (Pl. III/3).[45]

Triply perforated coins

G1 844 – A cremation.[46] Grave goods: a pottery bowl, a cup, a small pot, a jug, a glass guta, an amber statuette in the shape of a larva (a bug?) and a perforated bronze coin of Trajan (excavated beneath the amber statuette).

The perforated as of Trajan was poorly preserved and because of that, it was not possible to determine it precisely. According to the visible inscription part on the obverse, it belongs to his early series from the year 98 to 102 (Pl. III/4).[47] The perforations are of irregular circular shape, made from the obverse side at 12, 5 and 7 o'clock.

PERFORATED COINS FROM THE NECROPOLIS LAYERS

Approximately one half of perforated coins discovered at the necropolis Pećine come from layers, including spaces between graves or sacrificial areas on a group of graves. Of the 22 unearthed perforated coins, seven of them were singly perforated, two were perforated twice, twelve of them bore three perforations and a single piece was perforated four times.

Singly perforated coins

The singly perforated coins can chronologically be distinguished as follows: **1.** dupondius or as from the time of the Julio–Claudian dynasty (Pl. III/5); the perforation is circular and made from the reverse side at 4 o'clock compared to the obverse axis; **2.** dupondius or as from the time of Julio–Claudian dynasty (Pl. III/6); the perforation is circular and made from the obverse side at 12 o'clock.[48] **3.** quadrans dated to the 1st or 2nd century; the perforation is circular and made from the obverse side, near the middle (Pl. III/7).[49] **4.** bronze piece of Julia Domna from the mint of Stobi (Pl. III/8); the perforation is large, circular, roughly made and pierced near the middle; **5.** denarius of Julia Mamaea (Pl. III/9); the perforation is circular and made from the obverse side at 3 o'clock; **6.** antoninianus of Probus from the mint of Siscia and dated to the year 280 (Pl. III/10); the perforation is circular and made from the obverse side at 5 o'clock. **7**. folles fraction dated to the 4th century (Pl. IV/1); the perforation is circular and made from the obverse side at 9 o'clock.[50]

Twice perforated coins

At the necropolis of Pećine and within layers, twice perforated coins were noticed only in two cases: **1.** an as of Trajan (Pl. IV/2); the three perforations are circular and made from the obverse side at 5 and 6 o'clock; **2.** a folles fraction dated to the 4th century (Pl. IV/3); the perforations are circular and made from the obverse side at 2 and 10 o'clock.[51]

Triply perforated coins

The total of twelve triply perforated coins were discovered within the necropolis' layers: **1.** Tiberius' as of the type *divus Augustus pater* (Pl. IV/4); the perforations are square and made from the obverse side at 4, 7 and 11 o'clock; **2–3.** two dupondii or ases of Claudius; the first one bears rectangular perforations, made from the obverse side at 1, 5 and 8 o'clock (Pl. IV/5); the second one bears circular perforations at 12, 5 and 9 o'clock (Pl. IV/6); **4.** an as of Nero (Pl. IV/7), with circular perforations made from the obverse side at 12, 4 and 8 o'clock; **5–7.** three dupondii or ases from the time of the Julio–Claudian dynasty. All of the coins bear circular perforations, made from the obverse side at 2, 4 and 9 o'clock (Pl. IV/8); at 3, 6 and 11 o'clock (Pl. IV/9); and at 2, 6 and 10 o'clock (Pl. IV/10); **8.** an as of Domitianus (Pl. V/1) bears circular perforations

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[45] Спасић-Ђурић 2008, 147; C–7443 (perforated coin); Vojvoda, Mrđić 2017, cat. no. 102 (Nero); cat. no. 449 (Hadrian).

[46] It is a completely destroyed grave, reconstructed according to the traces of burned soil and grouped grave goods; *cf.* fieldwork diary, 2376.

[47] Vojvoda, Mrđić 2017, cat. no. 338.

[48] The coin was discovered at 0.40 m to the west from G 5291 (without any grave goods). At 0.70 m from the same grave and also towards the west, there was another coin. It is a provincial mint of Nicaea for Gordian III (cat. 3055).

[49] The perforated quadrans was discovered at the same depth and coordinates with: a folles of Constantine I (cat. 1426), a folles fraction from the time of Constantine's sons (cat. 2699) and a piece of provincial mint of the unknown origin and period (dated between the 1st and the 3rd century, cat. 3430).

[50] Vojvoda, Mrđić 2017, cat. no. 2263 (1); cat. no. 2258 (2); cat. no. 2349 (3); cat. no. 3154 (4); cat. no. 1190 (5); cat. no. 1340 (6); cat. no. 2730 (7).

[51] Vojvoda, Mrđić 2017, cat. no. 316 (1); cat. no. 2744 (2).

made from the obverse side at 2, 6 and 10 o'clock; **9–10**. two dupondii or ases unearthed together:[52] one of them is most likely from the time of Domitianus, while the second one is dated to the 1st century; the perforations are circular and made from the obverse side at: 12, 3 and 9 o'clock (Pl. V/2) and 12, 6 and 9 o'clock (Pl. V/3); **11.** a dupondius or as dated to the second half of the 1st century (Pl. V/4); the perforations are circular and made from the obverse side at 2, 5 and 9 o'clock; **12.** dupondius of Antoninus Pius (Pl. V/5); the perforations are circular and made at 12, 3 and 8 o'clock.[53]

Coins with four perforations

Only a single piece with four perforations has been discovered so far in Viminacium. It is a dupondius or an as minted for Faustina II (Pl. V/6), with circular perforations made from the reverse side at 4, 6, 8 and 10 o'clock.[54]

CONCLUSION

Studying the role of coins as grave goods contributes, at least partially, to resolving doubts connected to funerary rituals during the Roman Empire. The study of coins from the southern Viminacium cemeteries has already resulted in the conclusion that their role in funerary rituals was complex and still very little known.[55] Regardless of this, we consider that with systematic coin analyses from as many cemeteries from this period as possible, but also with an interdisciplinary approach and an understanding of the graves from the Viminacium cemeteries, one can come closer to resolving the issue. The same can be said for perforated coins. Here again, one comes across a great variety of coin deposits regarding the position of the deceased (in inhumations), the number of perforated coins within graves and their relationship to imperforated coins and other grave goods, their function in graves of adults or infants etc.

Even though there were no rules, the position of perforated coins in graves of adults was most commonly close to the head or torso (positions A and D). When it comes to graves of infants, position D can be encountered again, while all of the others are isolated and different. After analysing other grave goods in graves with perforated coins, we tried to understand whether there are elements that would indicate their function (whether they represented parts of necklaces/arm-rings, isolated pendants, whether they were sewn onto the clothes or they had an unclear function). Additionally, our attention was also focused on the numismatic analysis of perforated coins, as well as the imperforated ones that were parts of inventories of the same graves.

Graves of adults (inhumations) – With six out of seven graves with perforated coins as grave goods, it was possible to determine their position regarding the body of the deceased. In three graves, imperforated coins were also unearthed. In both cases in which it was possible to determine the position, they were laid on the chest of the deceased. In most of the graves (four of them), the position of perforated coins was close to the head (around the head in three cases and in one case, it was positioned on the eye socket). None of them were discovered within the mouth. In one of the graves, a perforated coin was discovered next to the pelvis, while in another grave, two perforated coins were placed next to the left and the right shoulder of the deceased. The find of perforated a coin from G–1749 represented part of the so-called "monetary jewellery" (a pendant on a bronze earring). From the same grave there was a find of an imperforated coin, discovered beneath the right clavicle of the deceased. The finds of singly perforated coins from G 4923 and G 5119, in both cases discovered next to the skull, still remain undefined regarding their purpose. In the case of the first grave, the perforated coin was discovered independently, while in the second case, next to the perforated coin there was a glass bead. In both cases, the position of the coins could indicate their role on a string around the neck. Only in one grave so far (G 1827), was a triply perforated coin unearthed on the eye socket of the deceased. Owing to the position of the find, it does not leave much room for presumptions regarding its function since, at the same time, it was also the only numismatic find in this grave.[56] The discovery of a

[52] Both coins most likely belonged to the devastated cremation grave. At the same spot, traces of soot and ash were discovered, together with a bronze bulla and fragments of a bronze belt plate; *cf*. fieldwork diary, 1979.

[53] Vojvoda, Mrđić 2017, cat. no. 42 (1); cat. nos. 74, 85 (2–3); cat. no. 105 (4); cat. nos. 2204, 2220, 2229 (5,6,7); cat. no. 176 (8); cat. nos. 2284, 2313 (9–10); cat. no. 2340 (11); cat. no. 814 (12).

[54] Vojvoda, Mrđić 2017, cat. no. 1050.

[55] Vojvoda, Mrđić 2015, 36; Vojvoda 2015a, 65; Vojvoda, Mrđić 2017.

[56] Besides the triply perforated coin, in this grave only a ceramic pot was unearthed, deposited near the lower legs.

triply perforated coin in G 4975, unearthed next to the pelvis of the deceased, also does not indicate that it was used as a piece of jewellery. Since the grave construction of G 4197 was devastated, it was not known where the coin was deposited in relation to the position of the deceased's body.[57] In the only grave of an adult in which a singly and a triply perforated coin were discovered (G–877), we can presume that they were used as pendants, since they were discovered next to the left and the right shoulder of the deceased.

Graves of infants (inhumations) – It was already noticed that in infant graves of the necropolis of Više Grobalja, perforated coins represented parts of composed necklaces or arm-rings, along with other different pendants, more commonly than in graves of adults.[58] Pendants played the role of repulsing evil forces by jingling and there were those of protective importance, but there were also pendants that incorporated both functions.[59] Such an example was also noticed at the necropolis of Pećine, in G 1807. In this grave, close to the legs, there were different finds, parts of a single or several laces, presumably deposited in a wooden casket, since they were all piled together.[60] The inventory of this casket included: a perforated coin, a shell, a bronze bulla, an iron finger-ring with a circular head, a bronze bell, a large perforated boar tooth, a processed antler, an earring made of silver wire with a ball-shaped pearl, a bronze sewing needle bent into the shape of a pendant, a pendant made of a cow's tooth, three phallus-shaped bone pendants, four glass beads, two pendants made of bronze wire and a phallus-shaped carneole pendant.[61] All of the listed grave goods possessed a strong protective power, confirming statements from ancient sources about the belief that children were especially exposed to evil forces and that they needed protection, both during their lifetime and in the afterlife. With some uncertainty, the perforated coin from G 2947 might have represented a pendant, since it was discovered beneath the deceased's skull. In the same grave and within the mouth of the deceased, an imperforated coin was also discovered, along with another one next to the skull.

The find of a perforated coin from G 3562 most likely represented part of a string, since it was discovered in the same place with a bronze ring, a deformed bronze sewing needle, a sea-shell, a stone chip, two circular bronze plates with nails and a deformed bronze sheet. The first two finds could have made parts of a string, along with the perforated coin.[62] The only grave good from grave G 4160 was a perforated coin discovered on the chest of the deceased, which could have played the role of a single pendant of a necklace. The fact that it was unearthed together with textile remains does not necessarily mean that it was sewn onto the clothes, especially since it is a single antoninianus with one perforation made from the obverse side at 12 o'clock compared to the obverse axis.[63] Twice perforated coins represent rare finds in the cemeteries of Viminacium.[64] Three of them have been registered so far. One of them was unearthed in G 4288 and it represented part of a necklace around the deceased's neck. Besides the twice perforated coin, the remaining parts of the necklace included a bronze bulla, pendants made of amber, clay, bone and a snail shell and several glass beads. Within the grave G 227, the only grave good was a triply perforated coin deposited near the pelvis, therefore not incorporating any piece of jewellery. Due to the poor state of preservation of the bones, in G 342 in was not possible to determine the position of grave goods compared to the skeleton of the deceased. A triply perforated coin and a glass bead were unearthed together, possibly making parts of a necklace with two pendants. In the other location within the grave pit there was a pendant modelled out of a pottery vessel's stomach, triply perforated, and next to it a gold earring in the shape of a ring. According to the situation in G 2669, we can presume that the perforated coin played the role of a pendant, since it was discovered on the chest of the deceased. The same cannot be said for G 3541, in which the bones were disturbed and the only grave good among them was a perforated coin.

Cremated graves –Of five singly perforated coins and one triply perforated piece discovered within cremations, only one represents part of a jewellery set (a pendant on an earring), while for all of the others there

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[57] *Cf.* supra ref. 13.

[58] Vojvoda 2015a, 68–69.

[59] Besides beads made of different materials, pierced chips and rings, there were also bullas, bells, shells, boar's teeth and teeth of other animals, phallus-shaped pendants etc.

[60] *Cf.* supra ref. 19.

[61] Спасић-Ђурић 2008, 124–128, Fig. 1, 2.

[62] The bones are practically completely unpreserved and it is, therefore, not possible to determine the position of coins in relation to the body of the deceased.

[63] The Aurelianus antoninianus was pierced from the obverse side at 12 o'clock. All of this indicates that the obverse was meant to be seen and that it was most likely used as a pendant. Textile remains simply represent parts of the deceased's clothes.

[64] Not discovered at the necropolis of Više Grobalja.

are no elements to support such a presumption. It was the grave G1 720 in which, among pottery finds and in the same spot, there were an as of Nero (cat. 102), an earring made of silver wire and a perforated denarius of Hadrian,[65] a phallus-shaped bronze pendant and an iron finger-ring.[66] In all of the other cremations with perforated coins, after having analysed the position of grave goods within the grave pits, we cannot draw any conclusions as to whether they played roles as pendants included in jewellery sets. In G1 110, the perforated coin was most likely deposited in a casket. Pieces of bronze plating, a handle and a lock belonging to this casket were also unearthed. Besides the coin, and within the casket, there were also a bronze mirror, a bronze box for an amulet, decorated with enamel, and a circular bronze brooch.[67] In G1 542, in its first level, there were parts of bronze casket plating. Within the casket, there were a bronze mirror and a bulla, all of them piled together. However, the perforated coin was discovered in the second level and it was the only grave good there. In both cases, regardless of whether the coin was within or outside the box, the presumption remains open that it could have represented an independent pendant or played any other possible role.

Already, with the Više Grobalja cemetery, we indicated that certain experts' opinions regarding the function of triply perforated coins need to be changed since, according to them, they were sewn onto clothes.[68] This is shown once more with the discoveries from the necropolis of Pećine. At least with the Viminacium cemeteries, one is, therefore, allowed to say that such finds were first of all used as jewellery, more precisely, parts of necklaces, as shown in most of the cases. Speaking about the role of perforated coins in funerary rituals, it is interesting to note that such finds from the two Viminacium cemeteries make parts of necklace sets in infant or female graves, along with other pendants that possessed a protective function. Contrary to men, women and children were considered to be especially vulnerable and exposed to evil influences and needed extra protection during their lifetimes, but also in the afterlife. Such necklace sets include crescent-shaped pendants, bronze bells, wild boars' teeth, snail shells, bronze bullas, pendants shaped as miniature tools, phallus-shaped pendants, eye-shaped beads, red beads, etc. Besides these pendants with a protective character, there were also other pendants (coins, common beads, rings), playing an additional role of jingling or making a noise.[69] However, not in all of the cases did coins play the role of jingling items, as shown in the cemetery of Više Grobalja. Within the grave of an adult, most likely a female individual (G 596), two silver, crescent-shaped pendants and a singly perforated denarius of Hadrian, bearing the image of a crescent and stars on its reverse side, were discovered on the chest of the deceased. The perforation was made from the obverse side at 6 o'clock and from the reverse side at 12 o'clock. This indicated that the reverse side and its image of a crescent were meant to be seen. The crescent-shaped pendants belong to the oldest and ever present examples in Antiquity. Two crescent-shaped pendants and the coin with the related image are surely not a coincidence. The coin was carefully chosen and pierced in such a way as to expose the reverse image. Described like this, it can also be understood as a protective item, just as well as the crescent-shaped pendants.[70] This example shows the necessity to check every grave find of a perforated coin in detail, especially when they represent pats of string sets (positions of perforations, the images on the reverse sides etc.).

Layers at the necropolis – Besides graves, perforated coins (22 pieces) were also discovered in layers between or on graves. They were used during funerary rituals and during annual funerary festivals. Among them, there were seven singly perforated pieces, two of them were perforated twice, twelve were perforated triply and one was perforated four times. Most of them represent single finds and there are no elements to confirm that they might have represented parts of a string set. Only with two coins, both of them triply perforated and discovered together with a bronze bulla and a fragment of a belt plate made of bronze sheet, is there a remark in the field diary that this might have been a devastated cremation grave.[71] Of great interest is also the four times perforated coin, so far representing an isolated discovery at both cemeteries. It was unearthed

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[65] *Cf. supra* ref. 63.

[66] Спасић-Ђурић 2008, 147. Besides the two coins, there was also another as of Hadrian, but it was deposited in the other part of the grave pit.

[67] All of the finds were unearthed at the same spot within the first level.

[68] Vojvoda, Mrđić 2015, 35, ref. 51, 52.

[69] Vojvoda 2015a, 56, ref. 18.

[70] Vojvoda 2015a, 54–56.

[71] The two coins were excavated together, just next to two further finds (C–7199, 7200, 7201). At the same spot there were traces of soot and ash – most likely the bottom of a devastated cremation grave (*cf*. fieldwork diary, 1979).

Century	Total of perforated coins (G, G1, layers) pcs.	%	singly perf. pcs.	%	twice perf. pcs.	%	triply perf. pcs.	%	perf. four times pcs.	%
1st c.	26	57.77	7	15.56	1	2.22	18	40.00	/	
2nd c.	11	24.44	6	13.34	1	2.22	2	4.44	1	2.22
3rd c.	4	8.90	4	8.89	/		1	2.22	/	
4th c.	3	6.67	2	4.45	1	2.22	/		/	
1st - 2nd c.	1	2.22	1	2.22	/		/		/	
Total	**45**	**100**	**20**	**44.46**	**3**	**6.66**	**21**	**46.66**	**1**	**2.22**

Table 3. Chronological incidence of perforated coins

Табела 3. Перфорирани новчићи хронолошка заступљеност

directly after the sacrificial area in trench 124 was removed. The perforations are circular and positioned at 3, 5, 7 and 9 o'clock compared to the obverse axis and at 9, 11, 1 and 3 o'clock compared to the reverse axis. The facts that the perforations were made from the reverse side, that they are positioned in the upper reverse part, not damaging the reverse image (a sitting female figure facing left and holding a horn of plenty) all indicate that the reverse side was meant to be seen, no matter how the coin was hung.

The role of coins in the funerary rituals of Viminacium in general, and especially perforated pieces as one part of them, is very complex and far from being clarified. We come across a great variety in their usage. With a small sample, one can set certain rules and draw conclusions accordingly. Since only a small number of graves contained coins as grave goods,[72] the position of coins within graves compared to the position of the deceased (only with skeletal burials), and their relationship with other grave goods, the usage of coins within rituals after funerals and during annual festivals still need explanations. Recent analyses show that there were no strict rules regarding all of the listed issues, but certain conclusions can yet be drawn.

If we consider the number of perforated coins through their dating (Table 3) and as we consider pieces from the 1st and 2nd century, we reach almost identical results to those from the cemetery of Više Grobalja: 57.77% (Pećine) to 55.33% (Više Grobalja) and 24.44% to 25.54% for the 2nd century.[73] Perforated coins from the 1st century make up more than half of the total number, while the 2nd century accounts for only one quarter. Less than one fifth belongs to the 3rd century and only 6.67% of perforated pieces belong to the 4th century. Within an almost identical frequency of perforated coins of the 1st century, there is a huge difference compared to the cemetery of Više Grobalja. This reflects in the frequency of singly and triply perforated pieces. At the cemetery of Više Grobalja, this relationship was quite well balanced (29.79% of singly perforated to 25.54% of the triply perforated ones). On the other hand, at the cemetery Pećine, there is a much larger number of triply perforated coins (40.00%) compared to those perforated only once (13.34%).

The relationship between the two cemeteries regarding perforated coins from the 3rd century remains more or less the same: there are single finds of singly perforated pieces (10.61% at Više Grobalja to 8.89% at Pećine), while at both cemeteries there were no finds of triply perforated numismatic finds from this century. What is specific for the cemetery Pećine are coins perforated twice and four times. No such finds are known from Više Grobalja. There are also regional differences, but also similarities in the frequency of perforated coins at the cemeteries of Viminacium and those in the western provinces and in Barbaricum.[74]

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[72] At the cemetery of Više Grobalja, coins as grave goods were found in 33.74% of cases, while at Pećine this percentage is even smaller, at 19.22%; *cf.* Vojvoda, Mrđić 2015, 48; Vojvoda, Mrđić 2017, Table 3.

[73] *Cf.* Vojvoda 2015a, 66, Table 3.

[74] From Britain and Ireland there are 25 registered perforated pieces. Of that number, only a single piece each is dated to the 1st and 2nd century, while all of the remaining ones chronologically belong to the period from 270 to 518.; *cf.* Bland, Loriot 2012, 99. In Gaul, there is only an insignificant number of perforated aurei – only seven out of 1,922 registered pieces (or 0.36%). In the territory of Barbaricum (former Eastern Germany), there is a huge number of perforated aurei: 29 out of 142 registered pieces (or 20.42%); *cf.* Callu 1991, 103.

Singly perforated coins were discovered in eight skeletal graves (Table 4). In one of them there was also an imperforated coin, contemporary to the perforated one. With G 877, both singly and triply perforated coins were unearthed, but their chronological span is about 150 years (from Augustus to Marcus Aurelius Caesar). Of these eight singly perforated coins, two belong to the 1st century; four to the 2nd century and one piece each belong to the 3rd and the 4th century. In most of the cremated graves (five of them) with perforated coins as grave goods, all of them were singly pierced. Three of them were dated to the 1st century and two to the 2nd century. In two of these graves (G1 111 and 663), further imperforated numismatic finds were unearthed, one in each grave, but in G1 720 there were even two imperforated pieces. The chronological span with the first two graves is about one hundred years, from the Tiberius/Julio–Claudian dynasty – Hadrian. In G1 720, this span covers about seventy years: from Nero to Hadrian. In the necropolis layers there were seven pierced coins: two of them belong to the 1st century, three to the 3rd century, one to the 4th century and one more is dated into the period between the 1st and the 2nd century.

Twice perforated coins represent rare finds and only three of them were discovered. One of them comes from a skeletal grave and was dated to the 1st century (?). The remaining two finds come from the necropolis layers and they were dated to the 2nd and the 4th century.

Triply perforated coins are the most numerous ones, although their number is only slightly bigger than that of the singly perforated pieces. What is clearly noticeable is that the majority of them are dated to the 1st century. This was already noticed after the analysis of the triply perforated coins from the cemetery of Više Grobalja.[75] Regarding the total number of samples from both Viminacium cemeteries, we are so far inclined to say that this phenomenon represented a rule. In skeletal graves there was only one piece each from the 2nd and the 3rd century. In two graves (G 4197 and G 4975), imperforated coins were also unearthed, in both cases dated to the 3rd century (Table 4). The time span of the first case varies between 208 and 222 years (Tiberius – Gordian III), while the second case covers 73 years at the most (Hadrian – Septimius Severus). In cremations, a find of a triply perforated coin was noticed only once and it was dated to the 2nd century. Finds of such coins from the necropolis layers include twelve pieces. Of that number, only one belongs to the 2nd century, while all of the others were dated to the 1st century. Although we noticed that the majority of triply perforated coins were dated to the 1st century, we must point to the fact that in two cases at the necropolis of Pećine and once at the cemetery of Više Grobalja, they were unearthed together with imperforated coins from the 3rd century (reign of Gordian III the latest).

Four times perforated coins were unearthed in a single case, representing a find from a layer at the necropolis of Pećine. Since this is just an isolated find, we cannot draw any conclusions about their role in funerary rituals.

While interpreting finds of perforated coins, there are common dilemmas about their function and about the time they were pierced, either in Roman times or later. Thus, such numismatic finds unearthed in the cemeteries of Viminacium and from closed archaeological contexts are of huge importance. Gorecki, in his study of grave finds from the area between the Rhine, Moselle and Somme, but also Gazdac and Alföldy and Gazdac in their papers about coins in funerary contexts and the example of the cemetery of Brigetio, together with Perassi and her paper about perforated Roman coins, all drew attention to this phenomenon.[76]

Analyses of the role of coins in funerary rituals at the southern Viminacium cemeteries, including the perforated ones, still leave many unanswered questions. It is very difficult to surmise what people believed in and to what extent, but also how their beliefs changed through time. Part of the perforated coins discovered at the cemetery of Pećine certainly represented parts of the so-called "monetary jewellery", pendants on earrings or strings, most of them possessing protective functions.

According to their place of find, some coins could have represented independent pendants, although this cannot be claimed with any certainty. However, Perassi tends to think that singly perforated coins (their perforation being on the edge and in the middle) from grave contexts always represent pendants. Those pierced in the middle and not coming from grave contexts could have also had practical purposes.[77] Regarding the function of triply perforated coins, there were

[75] Vojvoda 2015a, 66–67, Table 4.

[76] Gorecki 1975, 249–250; Găzdac-Alföldy, Găzdac 2009, 166; Perassi 2011, 270.

[77] Perassi 2011, 276, 288–289.

G	singly perforated	twice perforated	triply perforated	four times perforated	coins without perforations
1749	2nd c. (?)				2. v./ 2nd c.
4923	1st c.				
5119	4th c.				
1827			3rd c.		
4197			1st c.		3. v./3rd c.
4975			2nd c.		3. v./ 3rd c.
877	2nd c.		1st c.		
1807	1st c.				
2947	2nd c.				
3562	2nd c.				
4160	3rd c.				
4288		1st c.			
227			1st c.		
342			1st c.		
2669			1st c.		
3541			1st c.		
G 1	**singly perforated**	**twice perforated**	**triply perforated**	**four times perforated**	**coins without perforations**
110	1st c.				
111	1st c.				2nd c.
543	2nd c.				
663	1st c.				2nd c.
720	2nd c.				1st and 2nd c. (2 pcs.)
844			2nd c.		
Layers	**singly perforated**	**twice perforated**	**triply perforated**	**four times perforated**	**coins without perforations**
1. v.	2 pcs.		11 pcs.		
1.-2. v.	1 pc.				
2. v.	/	1 pc.	1 pc.	1 pc.	
3. v.	3 pcs.				
4. v.	1 pc.	1 pc.			
Total	**20**	**3**	**21**	**1**	**7**

Table 4. Dating of the perforated and unperforated coins from graves and layers

Табела 4. Датовање перфорираних и неперфорираних новчића из гробних целина и из слојева

already theories that they might have been sewed onto clothes.[78] Based on the way the perforations were made and according to their positions, for some of them, one can presume that they really were sewn onto clothes, especially when there were pieces of textile attached. An example of this includes the find of a triply perforated coin from G 216 at the cemetery of Više Grobalja.[79] As already highlighted, this cannot, however, be confirmed for the singly perforated antoninianus from G 4160 at the cemetery Pećine.[80]

[78] Gorecki 1975, 249, ref. 275; Găzdac-Alföldi, Găzdac 2009, 166, ref. 22–23.

[79] Vojvoda 2015a, 61.

[80] *Cf. supra* ref. 40.

Nonetheless, the analysis of perforated coins from the Viminacium cemetery of Pećine offers new data about the role of this kind of find in funerary rituals. Any future analysis of monetary finds from the eastern and southern Viminacium cemeteries and the large sample it would include will certainly represent further huge steps towards answering some of the already opened questions.

Translated by the author

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ПЕРФОРИРАНИ НОВЦИ СА ВИМИНАЦИЈУМСКЕ НЕКРОПОЛЕ ПЕЋИНЕ

Кључне речи. – Римско царство, Виминацијум, некрополе, римски новац, перфорирани новци.

Током заштитних археолошких истраживања на некрополама локалитета Пећине откривено је укупно 3865 примерака новца. Од овог броја је за обраду било доступно 3497 комада, који се крећу у распону од 32/31. г. ст. е. (Марко Антоније) до 423. г. н. е. (Теодосије II). Одређени број новчића пронађених на некрополи Пећине био је перфориран – једном, два, три или четири пута. Укупно их је регистровано 45, а од тога је 17 пронађено у гробовима инхумираних покојника (Г), 6 у гробовима кремираних покојника (Г1) и 22 у слоју на некрополи (Графикон 1, Табела 1).

Као што је већ опажено на некрополи Више гробаља, и на Пећинама је знатно већа присутност перфорираних новчића у гробовима инхумираних у односу на кремиране покојнике. Код последњих су то истовремено и једини нумизматички налази у гробовима, за разлику од инхумација код којих се у појединим случајевима појављује више перфорираних новчића или чешће и неперфорираних. Ово се поклапа са анализама добијеним на некрополи Више гробаља, на којој је, без обзира на мањи укупни узорак испитаног новца, пронађено више перфорираних новчића него на некрополи Пећине (47 ком. или 1,72% према 45 ком. или 1,28%). Осим тога, на некрополи Више гробаља забележено је веће процентуално присуство ове врсте новца у гробовима (23 у Г и 9 у Г1 или 48,92% и 19,14%) него на Пећинама (17 у Г и 6 у Г1 или 37,77% и 13,33%) у односу на налазе из слоја (Више гробаља 15 ком. или 31,92% и Пећине 22 ком. или 48,90%).

Досадашња анализа улоге новца у погребним ритуалима на виминацијумским јужним некрополама, а у оквиру њих и перфорираног, и даље оставља бројна питања отворена. Веома је тешко проценити у којој мери и у шта су људи веровали, те како су се та веровања мењала кроз време. Део перфорираних новчића пронађених на некрополи Пећине свакако је представљао делове тзв. монетарног накита – привеске на наушницама или нискама, које су углавном имале апотропејски карактер. Извесни перфорирани новчићи су према месту налаза могли представљати самосталне привеске, у шта наравно не можемо бити сасвим сигурни, мада је Пераси склона мишљењу да су једном пробушени новчићи (са перфорацијом на ивици и у средини) из гробних целина у сваком случају представљали привеске, а да су они пробушени у средини и не представљају налазе из гробних целина могли имати и утилитарну намену. У погледу функције три пута перфорираних новчића већ су изнета мишљења да су могли бити пришивани на одећу.

Према начину на који су перфорације направљене и по томе на којим се местима налазе, за неке од новчића можемо претпоставити да су заиста били пришивени на одећу, нарочито у примерима пронађеним са остацима тканине. Пример представља налаз три пута перфорираног новца из Г 216 са некрополе Више гробаља. Као што је већ наглашено, ово не можемо тврдити за једном перфорирани антонинијан из Г 4160 са некрополе Пећине. У сваком случају, анализа перфорираних новчића са виминацијумске некрополе Пећине пружа нове податке о улози ове врсте монетарних налаза у погребним ритуалима. Будућа анализа нових налаза са источних и јужних виминацијумских некропола свакако ће својим великим узорком допринети разрешењу неких отворених питања.

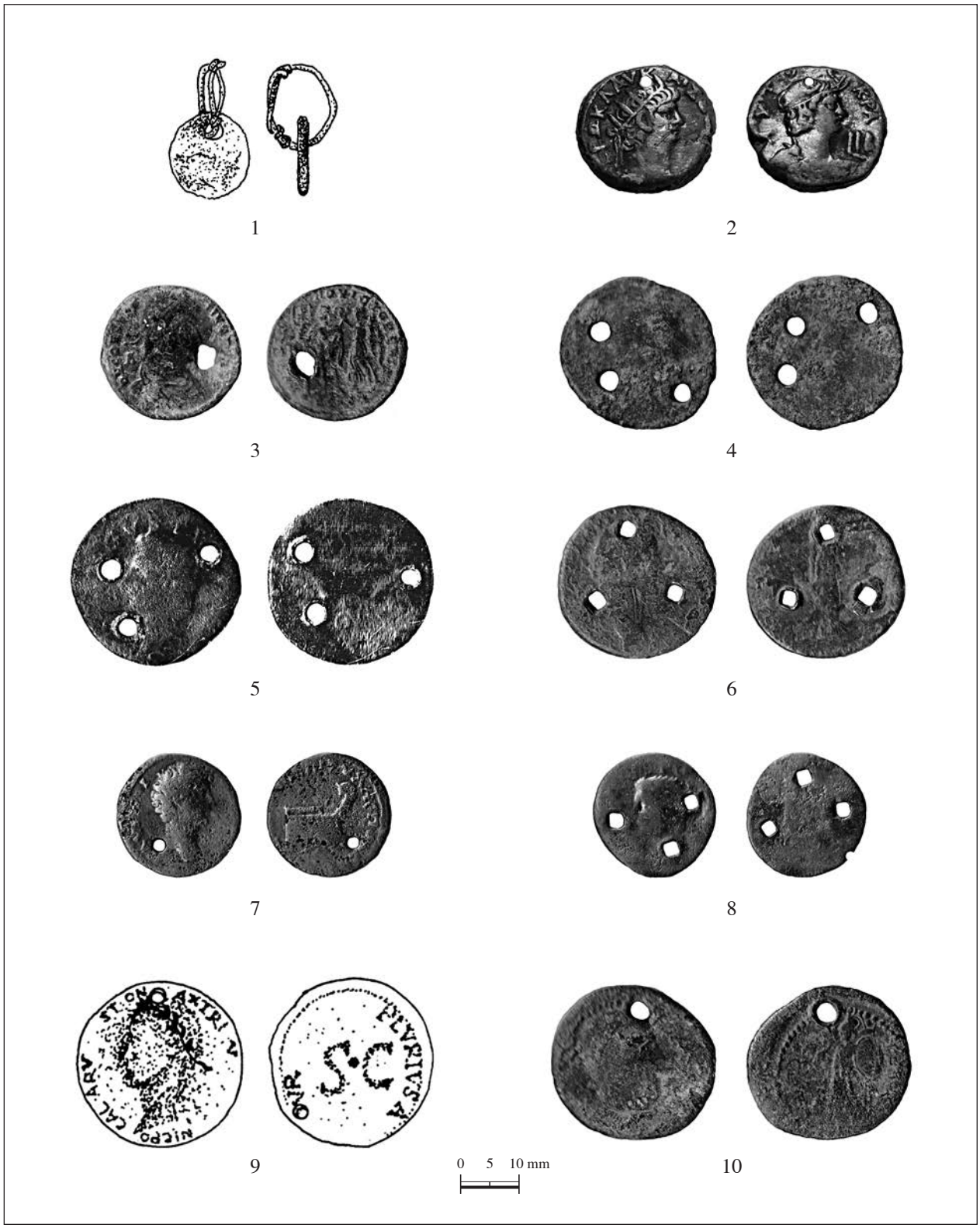

Plate I – 1. Coin from G 1749; 2. Coin from G 4923; 3. Coin from G 5119; 4. Coin from G 1827; 5. Coin from G 4197; 6. Coin from G 4975; 7. Coin from G 877; 8. Coin from G 706; 9. Coin from G 1807; 10. Coin from G 2947

Табла I – 1. Новац из Г 1749; 2. Новац из Г 4923; 3. Новац из Г 5119; 4. Новац из Г 1827; 5. Новац из Г 4197; 6. Новац из Г 4975; 7. Новац из Г 877; 8. Новац из Г 706; 9. Новац из Г 1807; 10. Новац из Г 2947

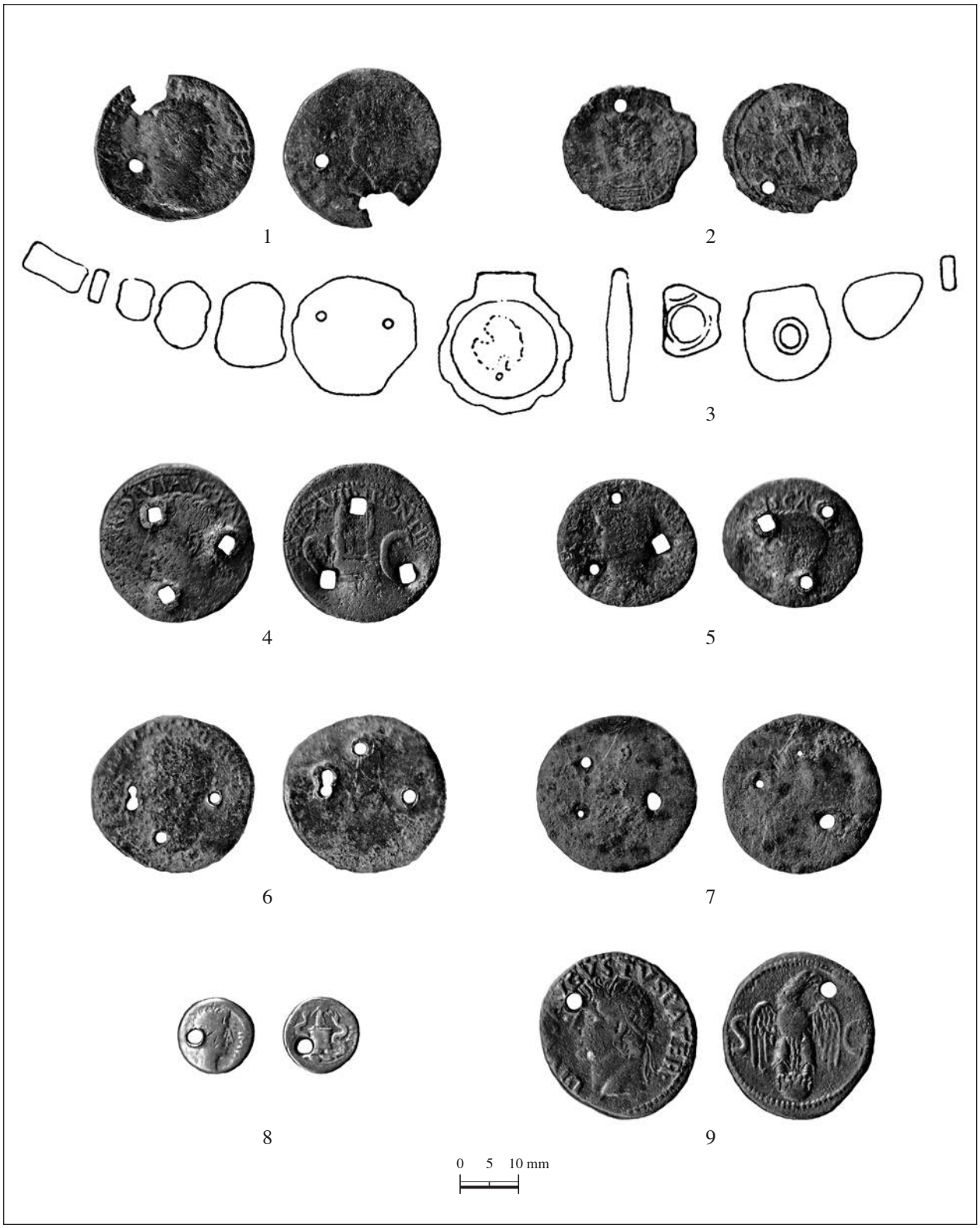

Plate II – 1. Coin from G 3562; 2. Coin from G 4160; 3. Coin from G 4288; 4. Coin from G 227; 5. Coin from G 342; 6. Coin from G 2669; 7. Coin from G 3541; 8. Coin from G1 110; 9. Coin from G1 111

Табла II – 1. Новац из Г 3562; 2. Новац из Г 4160; 3. Новац из Г 4288; 4. Новац из Г 227; 5. Новац из Г 342; 6. Новац из Г 2669; 7. Новац из Г 3541; 8. Новац из Г1 110; 9. Новац из Г1 111

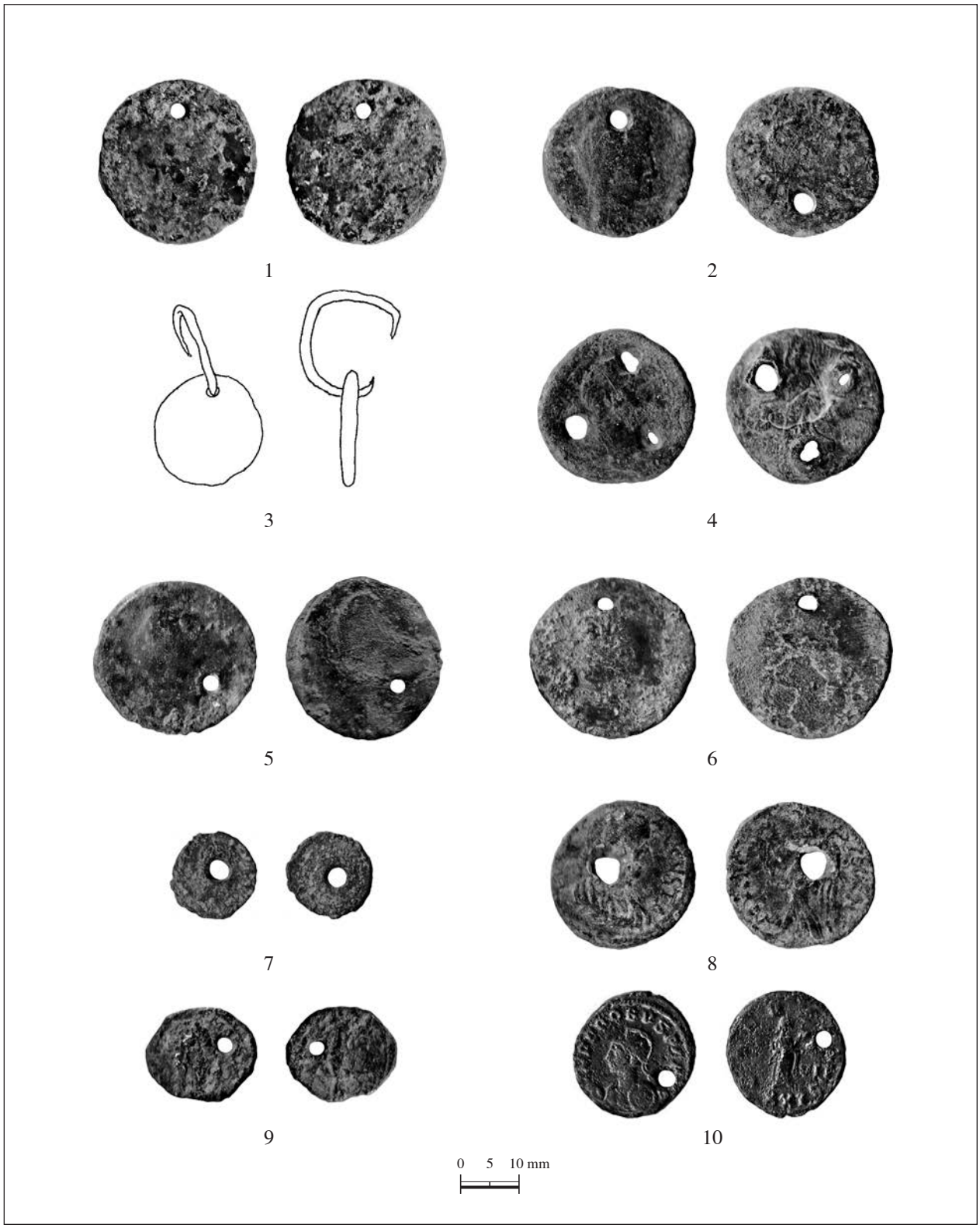

Plate III – 1. Coin from G1 542; 2. Coin from G1 663; 3. Coin from G1 720; 4. Coin from G1 844; 5–10. The perforated coins from the layers

Табла III – 1. Новац из Г1 542; 2. Новац из Г1 663; 3. Новац из Г1 720; 4. Новац из Г1 844; 5–10. Перфорирани новци из слојева

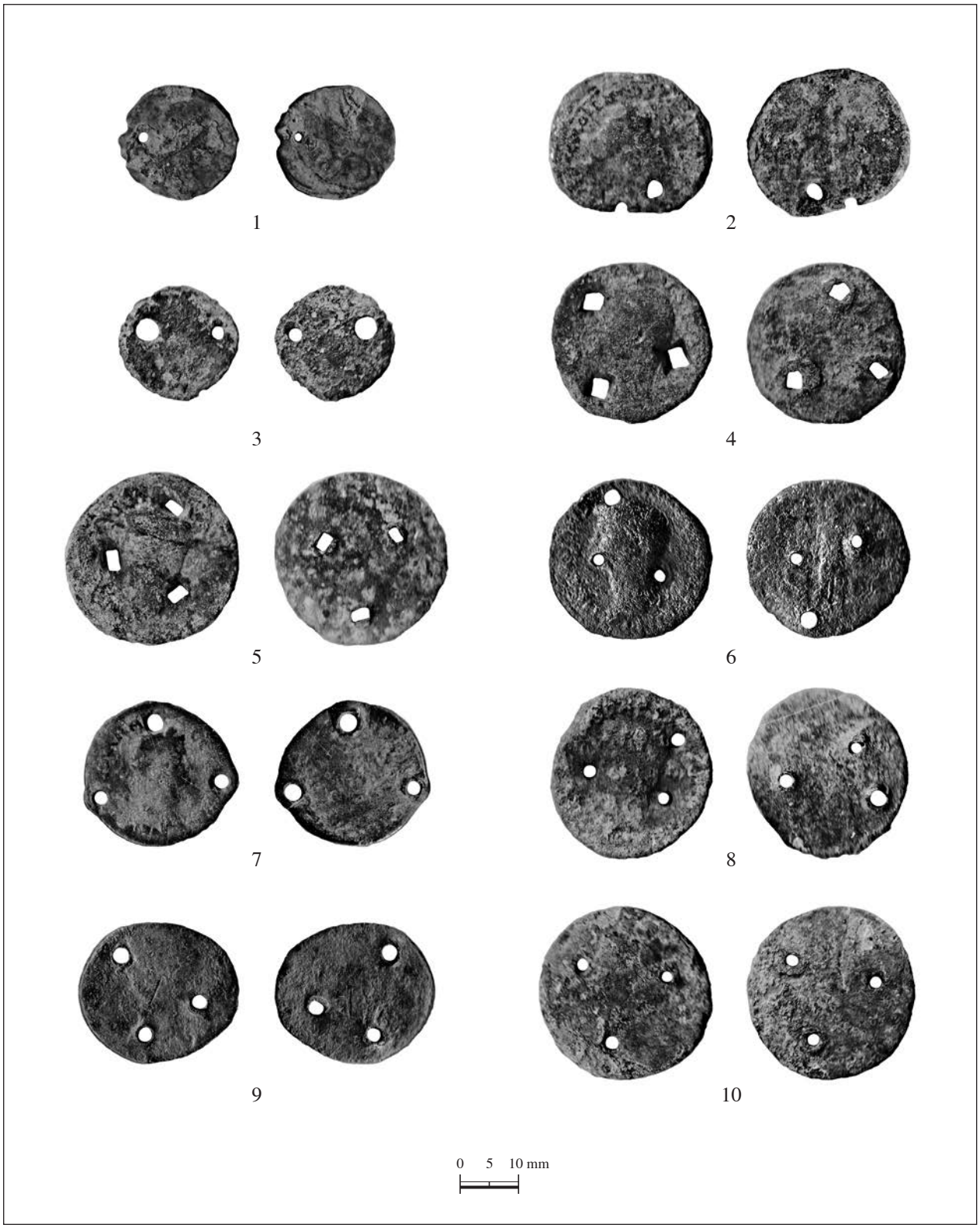

Plate IV – 1–10. The perforated coins from the layers

Табла IV – 1–10. Перфорирани новци из слојева

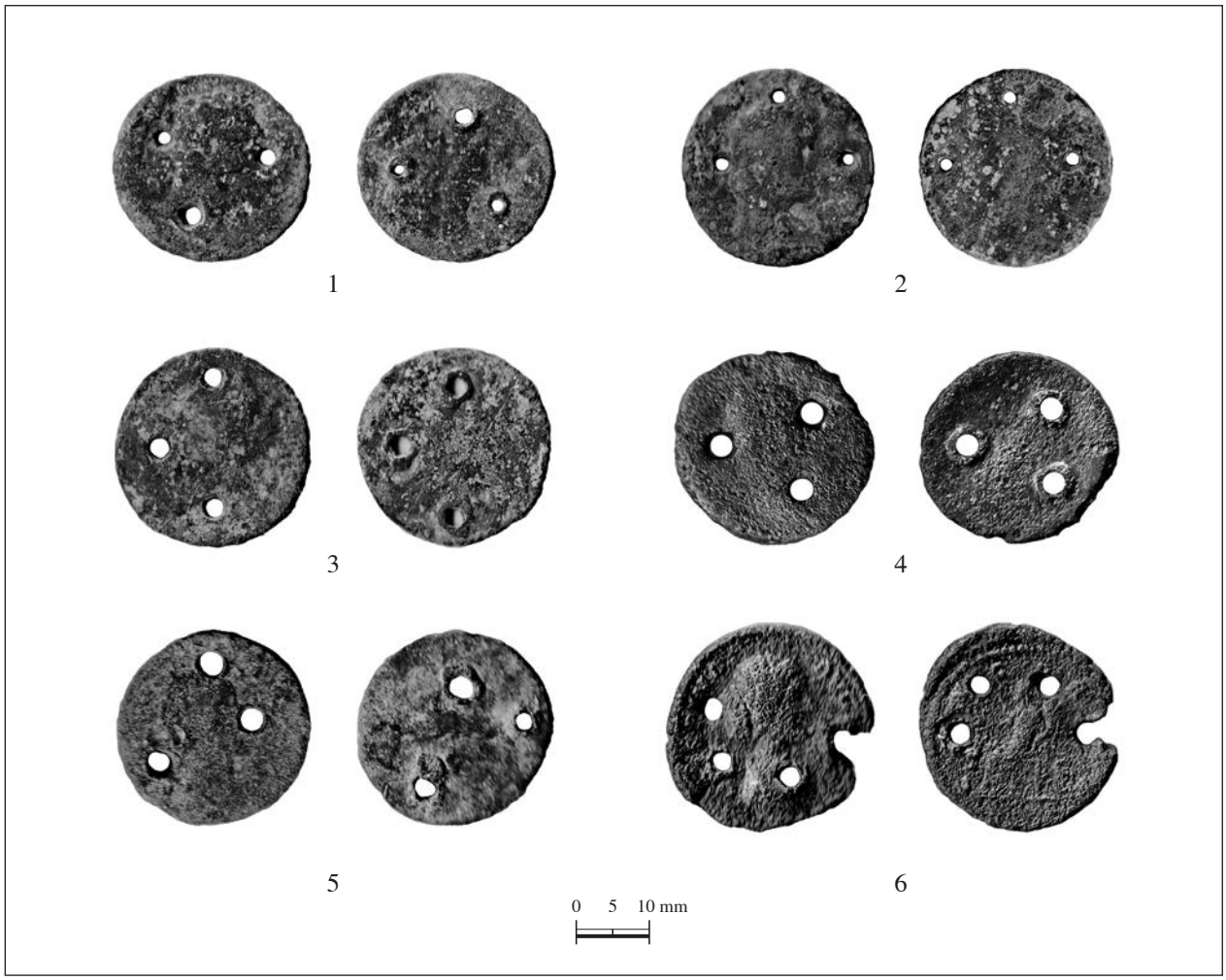

Plate V – 1–6. The perforated coins from the layers

Табла V – 1–6. Перфорирани новци из слојева

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904:730.032.041.8(37)
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SCULPTURES AND "THE SANCTUARY OF AESCULAPIUS" IN MEDIANA

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Abstract – During the excavation in 2002, in trench 24A in Mediana, a head fragment of a sculpture was discovered, belonging to a life-sized, or possibly slightly larger, sculpture. Analysis of this head indicates that it is of Aesculapius. According to its stylistic features, it can be dated into the very end of the 2nd and the early 3rd century. This find raised the question as to whether there could have been a sanctuary dedicated to Aesculapius or Hygieia in Mediana. In this paper, statuettes of these two deities have been reconsidered, all of them unearthed within the "villa with peristyle". New dating has been suggested and it was concluded that the audience hall (*triclinium*), being the largest room within the villa, was turned into a sanctuary. Its apsis was turned into the most sacred place, separated from the rest of the hall with a bronze railing. The rest of the villa could have been used for the reception of the sick, just as in any other Asclepaion. At the same time, questions regarding other sculptures discovered within the villa were posed. The appearance of mythological sculptures in other villas throughout the Roman Empire was analysed in detail and it was concluded that the sculptures in Mediana were exclusively regarded as villa decoration and not as part of any cult. All of them were brought here from different places and they are dated differently. One should not discard the possibility that, for a short period of time, some of them, especially those representing deities with possible healing features, were in a sanctuary of Aesculapius. The sanctuary could have been opened during the reign of Julian the Apostate and it operated until his death.

Key words – Mediana, sanctuary of Aesculapius, sculptures, 4th century, Julian the Apostate.

Finding conditions of sculptures from room w-4 (western set of villa rooms)

The main topic of this paper is the possible existence of a sanctuary of Aesculapius within the villa with peristyle in Mediana, but also the relationship of sculptures dedicated to Aesculapius or Hygieia to those dedicated to other deities also discovered within the same villa. However, prior to discussion, we need to go back to 1972, to the discovery of the sculptures in room w-4.[1] In papers published so far, apart from some very short and brief mentions, there were no comments about this find.[2] I consider that this problem needs to be clarified before any further analysis.

During the excavation in 1972, rooms of the western part of the villa, just next to the peristyle, were unearthed (Fig. 1). At that time, they were only partly examined (slightly less than one half) and, in room w-4, fragmented sculptures were discovered along the northern room wall (the wall that separated rooms 3 and 4).[3] This is why the excavation was extended to the western wall of room w-4 (the wall that separated rooms 4 and 16) and this is when the discovery of fragmented sculptures was made.[4] Closer to the entrance of room

[1] From 1972 to 1980 (the period mostly under reconsideration here), the excavation of the villa with peristyle was conducted by Ljubica Zotović, research associate at the Institute of Archaeology in Belgrade.

[2] Briefly mentioned by: Јовановић 1975, 57; Петровић 1994, 36.

[3] Field diary from 1972: 11. 5.

[4] Field diary from 1972: 12. 5; 13. 5.

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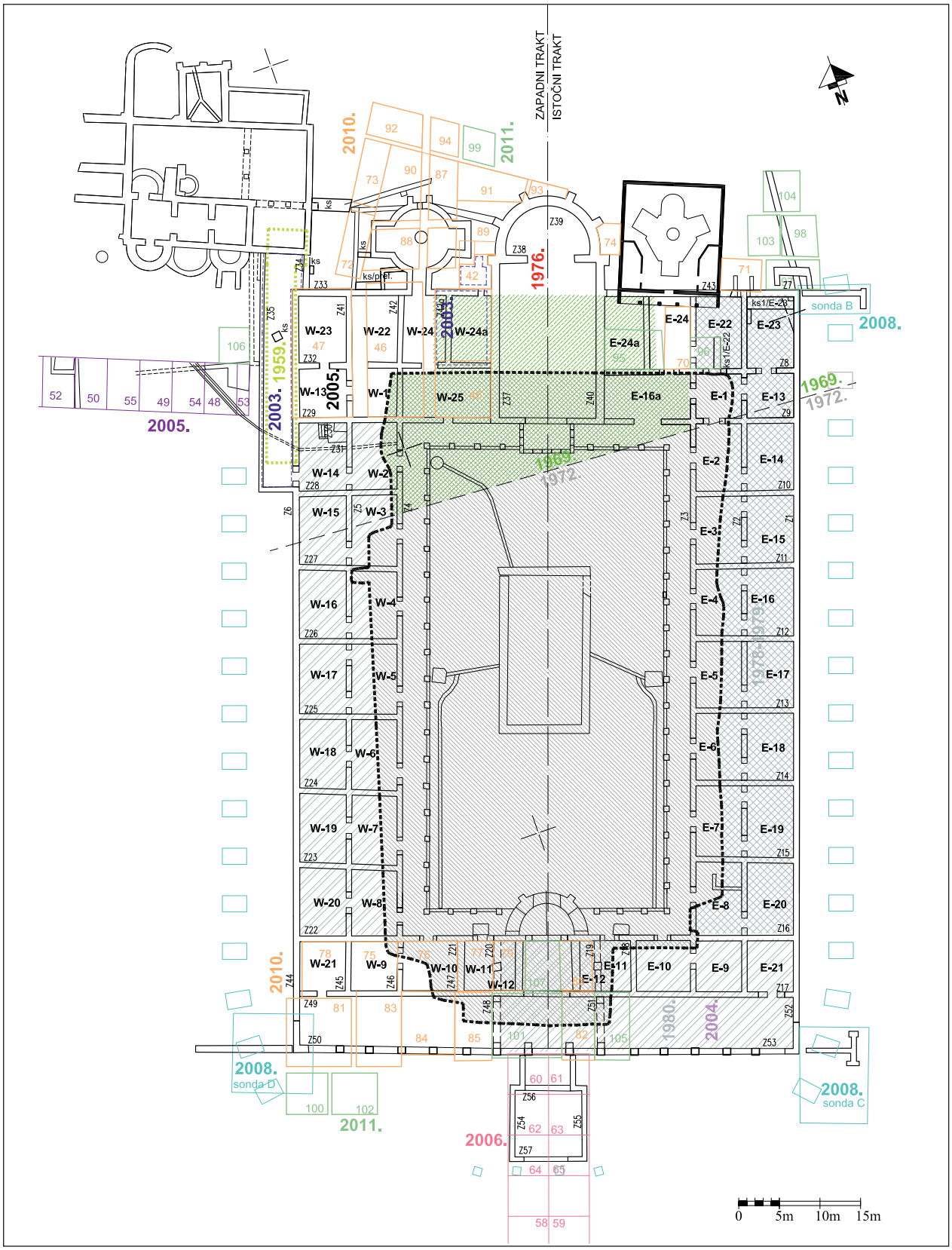

Fig. 1. Plan of the villa with peristyle (authors: G. Milošević, G. Jerinkić)

Сл. 1. План виле с перистилом (аутори: Г. Милошевић, Г. Јеринкић)

w-4, a fragmented pillar base was unearthed, its diameter measuring 50 cm.[5] In the south-eastern corner, parts of a mortar plastered floor were excavated.[6] The floor substructure consisted of pebbles plastered with mortar but, at that point, there were no traces of fire. In 1980, excavation of room w-4 continued. During that period, the entire room was cleaned, as well as the neighbouring room w-16, accessible from room w-4. It was then noticed that next to the wall that separated rooms 4 and 16 there were traces of an intense fire, damaged as the walls collapsed.[7] Fire traces were partly discovered in the western part of room w-4.[8] The field diary does not mention layers of soot or burned soil on the floor like that discovered in the rooms of the northern villa part. Above the floor level, in the south-western corner, within the layer of debris, part of a smaller marble pillar was discovered, possibly the support of a statue.[9] In room w-16 there were no traces of fire, only remains of a mortar plastered floor beneath the debris.[10] Separating rooms 3 and 4 was the wall along which the statuettes were placed. It is only partly preserved since, during a much later phase of villa devastation, it was demolished all the way down to its foundations. Photos show the secondary layer of collapsed walls, as well as the debris from a later phase of wall devastation between rooms 3 and 4. [11]

The excavation results of rooms w-4 and w-16 could be interpreted as the result of the roof construction above them being only partly caught in the fire. Later on, the collapsed roof fell into room w-4, just next to the wall that separated it from room w-16. However, as this happened, they remained almost intact. If that was the scenario, it must have been easy to store fragmented statues from the villa area in room 4. It is most likely that, in the meantime, the peristyle colonnade was torn down, so this might have been the reason why there was a pillar fragment also deposited within this room. Later on, during the wall devastation and after the already fragmented sculptures were covered with debris, the aforementioned pillar fragment (of a statuette?) also ended up within the room. The field documentation does not mention traces of a later digging into the debris layer, possibly indicating that the sculptures were deposited inside only after the room was so devastated that it went out of use. According to the mentioned photographs, one gets the impression that the sculptures were already fragmented, either deliberately or after the roof and walls had collapsed, when they were brought into room 4, not fragmented later.[12] It is certain that before they were deposited into room 4 they were already missing their heads, except for the statue of Aesculapius, although this was also separated from the body. This could have been a possible scenario of depositing statuettes into room w-4.

All of this opens the important question whether, in 378, as suspected, the villa was only partly ruined and it was still possible to use it, or it was burned to the ground and only certain rooms were cleaned and used for dwelling by new inhabitants of Mediana? During the excavation of the villa with peristyle, different cases of covering statuette remains were noticed:

– In the southern room w-10, on the floor level, part of a marble sculpture has been unearthed.[13] In the 2010 campaign, excavation of a part of this room showed that there were no burning traces, only huge layers of collapsed roof construction and layers of collapsed wall parts above them.[14] This would indicate that this room might have been preserved and a statue fragment discarded in it.

– In room w-2, between two bricks covering the channel that runs though the northern room half, a fragment of a hand from a marble statue has been unearthed.[15] The stratigraphy around here is rather interesting: on the upper debris level, corresponding to the preserved upper part of the northern wall, there is a 5 cm thick soot layer. Beneath this level, the debris layer continues[16] and beneath this, the channel was discovered. This would indicate that the sculpture fragment ended up on top of the channel before the first villa devastation.

– A head of Venus, discovered in the north-western room w-1, was lying on layer *C,* which represents the

[5] Field diary from 1972: 7. 5.

[6] Field diary from 1972: 2. 5; 7. 5.

[7] Field diary from 1972: 17. 8.

[8] Field diary from 1972: 15. 8.

[9] Field diary from 1972: 15. 8.

[10] Field diary from 1972: 6. 8.

[11] During the excavation of the north-western villa rooms, three basic layers were established: 1. the burned layer of the attic and roof construction that fell on the floors; 2. collapse of walls after the roof construction collapsed – initial devastation 3. further collapse of walls during later periods – secondary devastation. In south-western rooms and in the south-western peristyle half there are no traces of fire, but only the two layers of architectural devastation. Васић et al. 2014.

[12] M. Tomović had a similar conclusion: Tomović 1992, 67 f.

[13] Field diary from 1972: 15. 8.

[14] Васић et al. 2014, 244 etc.

[15] Field diary from 1980: 8. 8.

[16] Field diary from 1980: 24. 7.

layer of initial devastation within this room. This means that the head ended up here only after the initial villa devastation.[17] Over this layer (and the head), the secondary devastation layer of collapsed walls was formed.

– Sculpture parts were scattered throughout the large area of the villa with peristyle. This is best illustrated with a basis with carved feet and a fragmented dolphin as part of the Venus statue (part of it also being the head from w-1, mentioned earlier), discovered in trench 24A, close to the foundations of the "gate", to the south of the villa. In other words, two fragments of the same statue were discovered in two different villa parts.[18] Besides this fragment, in this trench, as well as in the western annex of trench 25A, at the bordering line between layers A and B, several sculpture fragments have been unearthed.[19] The sculpture fragments were most likely thrown into a medieval pit, since next to them, medieval pottery shards were excavated.

– In different parts of the villa garden, sculpture fragments have been discovered.

We must take into account the circumstances under which the bronze railing was buried, its mobile parts being extremely carefully deposited into a separately dug pit.[20] The railing was not fully preserved, only some of its parts. It was presumed that the railing was posted at the apsis entrance of the dining hall/triclinium and that it was intended to close the improvised sanctuary in the very apsis. If this presumption is correct, the railing must have been removed and buried before the triclinium roof construction collapsed. It is difficult to say whether it was considered more valuable because of the images depicted on it or because of bronze being such a valued material. Obviously, at that moment, the marble sculptures were not regarded as too valuable, or the event took place so quickly that the conquerors tore down and burned the villa before the inhabitants were able to save the sculptures. On the other hand, it seems that the conquerors came across the sculptures before they burned the villa down, beheaded them and mostly destroyed them by smashing. In connection to this, a find from trench 72 is of importance. It was discovered in 2011, on the oldest mortar floor, between the absolute heights of 198.87 m and 198.74 m, as sculpture fragments were unearthed, some of them represented parts of statues from the room w-4, excavated in 1972. This would indicate that some of the sculptures were destroyed just outside the villa. These fragments were covered with the debris layer of the collapsed roof constructions of stybadium B and the north-western villa rooms (layer *C*),[21] proving the hypothesis that the sculptures were destroyed prior to the villa's devastation and burning. The question remains open whether they were immediately transferred to room w-4 or they remained piled up and only later brought into this room. In any case, the find from room w-4 cannot be treated as a compact hoard of statues that all belonged to a single sanctuary, but only as scattered pieces collected from different villa parts by chance. Analysis of specific fragments shows that, apart from the group from room w-4, most of the pieces were scattered in different villa rooms (while it was still fully devastated). Some pieces were discovered in the first devastation layer, while some of them were collected in the Middle Ages and discarded into rubbish pits. Regarding this, information related to the western part of the Empire is also important.[22] It has been concluded that between the 5th and the 7th century, great changes within luxury villas took place. Along the north-western border of the Empire, the recently settled "barbarians" inhabited only several rooms within each villa, while some other parts were turned into workshops. During these changes, the villas were cleaned of both rubble and sculptures but, for some reason, they were not fully destroyed, only deposited into pits. In other words, a process similar to that in Mediana took place, only in a somewhat earlier period.

Statuettes of Aesculapius and Hygieia and the possible establishment of a sanctuary

While excavating the complex of Constantine's villa in Mediana, every campaign brought a surprise. In 2002, a fragment of a marble head was discovered in trench 24A, at an absolute height of 198.40 m.[23] Analysis of this fragment showed that it most likely repre-

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[17] Васић et al. 2014, 241; 256.

[18] Vasić, Gavrilović 2012; Васић et al. 2014, 256.

[19] In trench 24/25A: (just next to the northern edge of the foundation wall of the "gate-triumphal arch"), two fragments of a postament with depicted feet and dolphin's head have been discovered. Field inv. nr. C-144a, see Vasić, Gavrilović 2012, (at depths 198.51 and 198.48); fragmented fingers, C-144, at depth 198.30; fragment of a marble hand, C-117, at depth 198.61; fragment of a marble head, C-211, at depth 198.40.

[20] Vasić 2004.

[21] Васић et al. 2014, 233; 238; 254.

[22] Hannestad 2005, 19=293 and not. 103 with quoted literature about this issue.

[23] Field inv. nr. C-211. Diameter of the upper fragment part measures 0.15 m; at the lower part 0.18 m; fragment height 0.09 m. See footnote 18 in the paper quoted above.

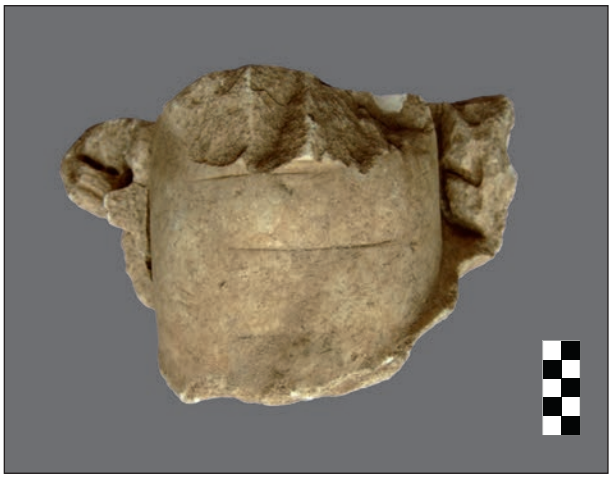

Fig. 2. Fragment of Aesculapius' head (front) (photo: Institute of Archaeology)
Fig. 3. Fragment of Aesculapius' head (rear) (photo: Institute of Archaeology)

Сл. 2. Фрагмент Ескулапове главе (спреда) (фото: Археолошки институт)
Сл. 3. Фрагмент Ескулапове главе (задња страна) (фото: Археолошки институт)

sents part of a sculpture dedicated to Aesculapius.[24] (Figs. 2 and 3). Dating of parallels, both close and those more distant, vary within a chronological span from the late 1st to the beginning of the 3rd century. Apart from some formal comparisons, the fragment of Asclepius' head from Mediana is too small to be chronologically determined within the series of well-known statues and statuettes of Asclepius. However, due to baroque-like" appearance, especially the curl on the right neck side, I tend to date it into the second half of the 2nd century until the first two decades of the 3rd century A.D., basically the time of the reign of the Antonines and the Severi. It is quite possible that it was made in a Greek workshop (Athens or Corinth?).

This fragment of Aesculapius' statue re-opens the question about a sanctuary in Mediana, dedicated to this deity and his daughter Hygieia. Owing to the number of statues and statuettes, we can even take a real Asclepaion into consideration, intended not only for a sanctuary, but also for healing care. The vicinity of Niška Banja, but possibly also a spring of thermal and mineral water closer to Mediana, would make spa treatments and curative processes possible. It could be presumed that the sanctuary was positioned in the "villa with peristyle", with a layout of rooms ideal for the sick spending a night in Asclepaion. Furthermore, the fountains in stybadii A and B, being necessary for Asclepius' cult, made it easier to transform the northern villa part into a sacred area; the thermae close to the villa also played an important role in the cult and the healing processes. [25]

In connection with this, one should return to all of the finds of Aesculapius and Hygieia in Mediana. There are reasons to believe that the former dating of these sculptures is not fully correct. Doubtlessly, the greatest attention of scholars was drawn to the group of sculptures discovered in room w-4, but this still causes controversial theories. In the initial publication considering these sculptures, Aleksandar Jovanović did not suggest any precise dating.[26] The main confusion was caused by an unfounded dating of the entire group into the period around 320. Dragoslav Srejović and Aleksandrina Cermanović-Kuzmanović started with

[24] Vasić 2017.

[25] Water played an important role in Aesculapius' sanctuaries, since the sick were supposed to take a bath prior to being treated. About the importance of water in the temples of Aesculapius and Salus see Vitruvius, De arch. 1. 2. 7. About Aesculapius' sanctuaries throughout Greece see the work of Pausanias, giving detailed descriptions in his books. I also wish to draw attention to his description of sacrifices offered to deities within Aesculapius' sanctuary in the village of Titiane in Sykonia: Paus. 2. 1. 5–8. Details about incubation, Asclepaions, the need for water etc. about Asclepaions in the Greek, Hellenistic and Roman period see Renberg 2017, Part 2, Chapter 3–5, pp. 113–327. A detailed overview of Asclepius' sanctuaries, statues, reliefs, inscriptions, coins, but also descriptions of Aesculapius' and Hygeia's cult in the region of the Black Sea, Lower Moesia and Thrace, with extensive bibliography: Moschakis 2013.

[26] Јовановић 1975.

Fig. 4 and 5. Aesculapius’ and Hygieia’s statuette made of porphyry (photo: National Museum in Niš)

Сл. 4 и 5. Порфирне статуете Ескулапа и Хигије (фото: Народни музеј, Ниш)

Fig. 6. Aesculapius’ statuette made of marble (photo: National Museum in Niš)
Fig. 7 and 8. Aesculapius’ and Hygieia’s statuette made of marble (photo: Institute of Archaeology)

Сл. 6. Мермерна статуета Ескулапа (фото: Народни музеј, Ниш)
Сл. 7 и 8. Мермерне статуете Ескулапа и Хигије (фото: Археолошки институт)

the presumption that the villa with peristyle was built between 316 and 325[27], without further considering this dating. Later on, in various catalogues, sculptures from this group are dated "around the year 320", again without further consideration. The second presumption they expressed is that it was a "chronologically and stylistically unique group of statues and statuettes" and that they all "show special features", again without any explanation.[28] Further on in this paper, I shall try to suggest somewhat different dates.

A. Sculpture group of Aesculapius and Hygieia from room w-4, discovered in 1972:[29]

1. Aesculapius' statue[30] made of porphyry with a Greek inscription on the plinth; (dated to the beginning of the 4th century, according to Tomović);[31] (National Museum in Niš, inv. nr. 985/P). (Fig. 4)

2. Hygieia's statue made of porphyry with a Greek inscription on the plinth; (dated to the beginning of the 4th century, according to Tomović);[32] (Fig. 5)

3. Aesculapius' statue made of marble with a Greek inscription on the plinth; (dated to the beginning of the 4th century, according to Tomović).[33] The fragmented head belongs to this statue[34], not yet published by Tomović; (Fig. 6)

4. Statue of Aesculapius with Telesphorus made of marble; (dated to the beginning of the 4th century, according to Tomović);[35] (Fig. 7)

5. Marble statuette, most likely of Hygieia; (3rd century, according to Tomović);[36] (Fig. 8)

B: sculpture parts of Aesculapius and Hygieia discovered in trench 72, to the west of stybadium B, during the excavation in 2011:[37]

6. Sculpture fragment made of red porphyry, with a preserved left hand holding a globe and drapery over the hand; length 8.1 cm; inv. nr. C-294/011. The fragment belongs to the porphyry statue of Aesculapius (inv. 985/P).[38]

7. Sculpture fragment made of red porphyry, with a partly preserved drapery; length 5.6 cm; inv. nr. C-296/011. The fragment belongs to the porphyry statue of Aesculapius (inv. 985/P).

8. Cylindrical sculpture fragment made of red porphyry; length 7.2 cm; inv. nr. C-304/011. The fragment belongs to the porphyry statue of Aesculapius (inv. 985/P).

9. Sculpture fragment made of red porphyry, with a preserved image of a snake (part of another statue of Hygieia made of porphyry); length 7.8 cm; inv. nr. C-295/011. The image of the snake is identical to the one on the sculpture of Hygieia nr. 2, indicating that there was also another sculpture of Hygieia made of porphyry. (Fig. 9)

10. Sculpture fragment made of white marble, with a partly preserved image of a snake around a stick (Asclepius' statuette); length 7 cm; inv. nr. C-298/011. (Fig. 10)

11. Sculpture fragment made of white marble, with a partly preserved image of a left hand holding a round object (an apple or an egg?) (another part of Aesculapius' statuette); length 4 cm; inv. nr. C-300/011.[39] (Fig. 11).

At first glance, there really is an impression of a unique style of all of the Mediana sculptures. However, what strikes the eye is a completely different style of the marble statue of Aesculapius with the inscription on its plinth (nr. 3). It looks like a poor provincial piece of art, not only regarding the drapery, but also in the poorly depicted musculature. Aesculapius' head was treated in a similar way.[40] Damage on the head prevents

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[27] Срејовић, Цермановић 1987, 7.

[28] *Ibid.*, 10.

[29] Tomović 1993, *passim*. All of the sculptures from room 4 are mentioned by Stirling 2005, 195, not. 131.

[30] Although the inscriptions bear the Greek name Ασκληπιός, I chose to use the Roman name Aesculapius, in order to keep the paper uniform and to avoid any confusion.

[31] Tomović 1993, 98, no. 112, fig. 36. 1–2; Дрча 2004, 155, cat. 73; Vasić et al. 2016, 84, no. 1.

[32] Tomović 1993, 98, no. 111, fig. 27. 1–2; Дрча 2004, 156, cat. 74; Vasić et al. 2016, 85, no. 2.

[33] Tomović 1993, 98/9, no. 113, fig. 35.4; Дрча 2004, 157, cat. 75; Vasić et al. 2016, 86, no. 3.

[34] Дрча 2004, 157, cat. 76.

[35] Tomović 1993, 99, no. 114, Fig. 35. 3; Дрча 2004, 158, cat. 77; Vasić et al. 2016, 87, no. 4.

[36] Tomović 1993, 97/8, no. 110, fig. 28. 5–6; Дрча 2004, 159, cat. 78; Vasić et al. 2016, 87, no. 5.

[37] Васић et al. 2014, 254–255.

[38] Fragments numbered 6, 7 and 8 were earlier fitted into the porphyry statuette of Aesculapius, inv. nr. 985/P and depicted by Vasić et al. 2016, 84, no. 1.

[39] The question remains as to whether the fragments nr. 10 and 11 are parts of a single statuette or that they represent parts of two different statuettes of Aesculapius.

[40] Such a treatment of Aesculapius' head has a possible further parallel on the Aesculapius' sculpture from the Tomis hoard: Canarache et al. 1963, 42 sq., fig. 19, 20 dated to the end of the 2nd and the beginning of the 3rd century. The authors point out that it was made according to the classical Greek type. It is quite possible that Aesculapius from Mediana was made in the same or somewhat similar manner, at the same time as the Tomis statuette. The height of the statuette from Tomis is 0.53 m and the one from Mediana 0.64 m. Cf. Alexandrescu-Vianu 2009, 31, Fig. 13. One should still bear in mind that the statuette from Mediana shows both Aesculapius and Telesphorus.

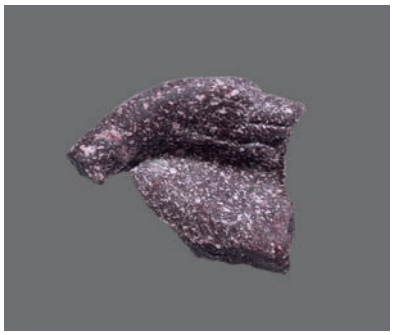

Fig. 9. Fragment of a snake made of porphyry (photo: National Museum in Niš)
Fig. 10. Marble fragment – snake around a stick (photo: Institute of Archaeology)
Fig. 11. Marble fragment – hand holding an egg (photo: Institute of Archaeology)

Сл. 9. Порфирни фрагмент змије (фото: Народни музеј, Ниш)
Сл. 10. Мермерни фрагмент – змија обавијена око штапа (фото: Археолошки институт)
Сл. 11. Мермерни фрагмент – рука која држи јаје (фото: Археолошки институт)

any further identification. However, as much as can be seen, the treatment of the head, eyes, cheek bones and mouth, and the treatment of hair and beard very much resemble the treatment of Aesculapius' head on a statue discovered in a northern Byzantine house in Aphrodisias.[41] It is possible that this statue belongs to the middle of the 4th century.

The drapery on the statue of Aesculapius and Telesphorus (nr. 4) shows certain similarities with the drapery of a very fragmented statuette from Romuliana (a Muse or Athena?), dated around 310.[42] The same method of drapery treatment of Aesculapius and Telesphorus is shown on the statuette from the villa Panayia in Corinth,[43] especially the "V"-shaped folds on Aesculapius' waist and Telesphorus' cloak, although this statuette was made in a much rougher and more stylised way. Lea Stirling indicates that the "V"-shaped folds under the chin of a genius from Autun were dated to the 2nd or the 3rd century, very much resembling the folds on Telesphorus' cloak.[44] Stirling dated the statue of Aesculapius from Corinth to the 3rd or the 4th century.[45] Due to the better production of Aesculapius from Mediana, I would tend to date this statuette to the second half of the 3rd century.[46]

A typical feature is that the folds on Hygieia's statuette (?) (nr. 5) and partly on the marble statuette of Aesculapius with Telesphorus (nr. 4) are shallower and softer, but also carved in wide fields. I point out that this is a feature of the 2nd and the early 3rd century. A very similar treatment of drapery can be found on the statue of Julian the Apostate from The Louvre,[47] but also on the statue of Valentinianus II, made in Aphrodisias, now kept at the museum in Istanbul.[48] Ever closer similarities can be observed on statues of two magisters from Aphrodisias,[49] at the museum in Istanbul and dated to the beginning of the 5th century. An unusual similarity can be traced on a part of a famous ivory diptych belonging to the family of Symachus and Nicomachus from Rome, with the image of a priestess of the cult of Dionysus, performing a sacrifice above the altar.[50] It is dated to the late 4th and the early 5th century. According to their style, all of the mentioned sculptures belong to the second period of classicism, especially developed during the reign of Theodosius I, actually the time during which pagan themes could still be encountered, like the diptych of Symachus and

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41 Stirling 2005, 121, 123, Fig. 56 dates this sculpture to the end of the 4th or even to the beginning of the 5th century, highlighting the sculpture of Cybele, found together with the sculpture of Aesculapius.

42 Срејовић, Цермановић 1987, 130, nr. 56; Tomović 1993, 83, no. 55, Fig. 26. 3.

43 Stirling 2008, 122 ff., figure 23 on p. 123.

44 Stirling 2008, 126.

45 Stirling 2008, 125.

46 A model similar to this statuette of Aesculapius can also be seen on a statue of Aesculapius from Naples: Reinach 1906, Pl. 550, no. 1161, as if they possessed an initial common model.

47 Frova 1961, 359, fig. 341.

48 Frova 1961, 360, fig. 342.

49 Frova 1961, 361/2, fig. 343.

50 Elsner 1998, 190, fig. 127.

Sculptures	End of the 2nd and the beginning of the 3rd century	Second half of the 3rd century	Second half of the 3rd and the beginning of the 4th century	Middle of the 4th century
Aesculapius (nr. 1)	-	-	1	-
Aesculapius with Telesphorus (nr. 3)	-	-	-	1
Aesculapius with Telesphorus (nr. 4)	-	1	-	-
Fragment of Aesculapius' head (find from 2002)	1	-	-	-
Hygieia (nr. 2)	-	-	1	-
Hygieia? (nr. 5)	-	1	-	-
Hygieia (nr. 9), porphyry fragment of a snake in her lap.	-	-	1	-
Total	1	2	3	1

Table 1

Nicomachus. This classicism has recently been much discussed, resulting in the fact that many sculptures, initially dated to the 2nd or the 3rd century, are now being dated to the late 4th or the early 5th century.[51] However, the late 4th or the early 5th century is a dating too late for the sculptures from Mediana, since the entire complex is dated differently. The initial building phase of the villa with peristyle can roughly be dated at the very end of the 3rd or the beginning of the 4th century.[52] Around the year 330, a full reconstruction of the villa was undertaken.[53] Its first destruction is dated to the year 378.

According to the dating suggested for the sculptures of Aesculapius and Hygieia from Mediana, some of them were made long before the year ± 330. A slightly more secure dating, but still long before the villa was built, is suggested for the porphyry statuettes of Aesculapius (nr. 1) and Hygieia (nr. 2), They were most likely made in Egypt (Alexandria?) during the reign of the tetrarchs, i.e. during the last two decades of the 3rd or the first decade of the 4th century. This is confirmed with the paleography of inscriptions on their plinths,[54] although they were carved later.[55] Suggested dates for the sculptures from Mediana can be sublimed as follows (see table 1).

On the statues of Aesculapius (nr. 1) and Hygieia (nr. 2) there is a votive inscription of a certain Roimetalcus and his wife Philippa, while on the statue of Aesculapius alone (nr. 3) there is the carved name of a priest.[56] Votive inscriptions indicate that these statuettes possessed cultic importance, thus, not being just decorative. There is a great probability that these sculptures were brought from an Aesculapius' temple from a nearby Hellenophonic province (Thrace being the most likely). Petar Petrović pointed out that dedications to Aesculapius/Asclepius and Hygieia are very rarely encountered in Latinophonic Balkan provinces.[57] It should be highlighted that statuettes of Aesculapius

[51] Stirling 2005, *passim.*

[52] Vasić et al. 2016a, 11.

[53] *Ibid*., 12.

[54] Petrović 1979, 97/8, no. 61.

[55] The lower left corner of the Aesculapius' plinth was cut off and this is why the inscription ends with an "AN".

[56] I point out the fact that the name and title of Roimetalcus were erased from the statuette of Hygeia, which represents another argument indicating that the villa in Mediana could not have belonged to him, as argued initially, but that the new owner tended to perform some kind of *damnatio memoriae* as he purchased these statuettes for the sanctuary in Mediana. These statuettes were certainly initially intended for an Aesculapius' sanctuary, but not for the villa with peristyle in Mediana. Against the thesis that Valerius Rometalca, dux Aegypti etc. was the same person as Roimetalcus from the Mediana inscription see Vasić 2005. About purchasing statuettes in the free market see Stirling 2014.

[57] Petrović 1979, 95/6, no. 59 quoting: Растислав Марић, *Антички култови у нашој земљи, (Les cultes antiques sur le territoire de la Yougoslavie*, Београд 1933, 41. Besides, sculptures depicting Aesculapius and Hygeia are also rare. The most complete study about Roman sculpture on the territory of Upper Moesia so far, Миодраг Томовић (Tomović 1993), three published statuettes of Hygeia: 95, no. 101 – Brza Palanka (Egeta); 96, no. 107 – Viminacium; 97, no. 109 – Klisura by Niš, and a single, uncertain statuette of Aesculapius (117, no. 185) – Singidunum. See also inscriptions collection within *Inscriptions de la Mésie Superieure I, II, III, IV, VI*, Centar za epigrafiku i numizmatiku, Filozofski fakultet, Beograd.

and Hygieia were popular in the Greek east during Late Antiquity, but they are rather rare in the western provinces.[58] The sculptures mentioned above were brought to Mediana for a very specific reason and it can be presumed, as already mentioned,[59] that at a certain point, in the audience hall/triclinium, a sanctuary was established, dedicated to Aesculapius and Hygieia. It can also be presumed that at the same time, the bronze railing was brought into the villa during the year 361, as this was when the emperor Julian spent some time in Naissus and Mediana.[60] One should, of course, not exclude the possibility that sculptures of some other deities were also brought into the sanctuary (Hercules, Dionysus), either from the villa itself or from the dwelling residence (villa with octagon[61]). Those mythological sculptures, representing mere decoration within the villa and without any cultic content, could have been worshipped in the sanctuary as iatric deities.

Unfortunately, we do not know exactly how the cult of Aesculapius and Hygieia was performed in the 4th century. Was it necessary to bring such a large number of statuettes depicting these two deities to Mediana? In addition, it is quite possible that rooms in the eastern and western part of the "villa with peristyle" could have been used for dwelling and the curing of those who needed medical care, as this usually was the case in Asclepaions. This sanctuary could not have lasted for long, since in 363, after Julian's death, the period of returning to paganism was closed and Christianity became the only official religion. The question is also whether there were ever any sick people seeking medical help in Mediana. In Asclepaions it was common to leave votive gifts in the shape of sick body parts (parts of arms, legs, eyes etc.), but so far, there have been no such finds in Mediana.

Home sanctuaries were usually placed in prominent positions. For example, Lea Stirling writes that in Ostia, the sanctuaries were organised in yards, porticos or "highlighted rooms". In somewhat later houses of this city (after the year 250), sanctuaries in highlighted rooms were positioned on the axis, in the middle of the wall.[62] For the supposed home sanctuary in Panayia, Stirling presumes that before it was established, high quality statuettes were placed in other rooms of the villa and only later transferred into the sanctuary.[63] Since the apsis of the audience hall in the "villa with peristyle" in Mediana was positioned on the main axis, it is not surprising that it might have been chosen for the most sacred place, while the entire hall represented a sanctuary dedicated to Aesculapius and Hygieia.

Sculptures not representing Aesculapius and Hygieia

As already mentioned, a remarkable number of statuettes or their parts (not including the ones of Aesculapius and Hygieia) were discovered in the "villa with peristyle" and around it. I will not go into detail with them, since they have been described and topographically positioned in a new book about Mediana,[64] but I will mention them in order to achieve a better understanding of this paper. They include the following statuettes: Aphrodite Sosandra/Europa/Helotia (sculpture catalogue nr. 6; 2nd century); Hermes[65] (sculpture catalogue nr. 7 and 8; end of the 2nd and the beginning of the 3rd century); Hercules with Erymanthian boar (sculpture catalogue nr. 9; middle of the 4th century); Hercules with apples of the Hesperides (sculpture catalogue nr. 10; middle of the 4th century); lanternarius – slave carrying a lantern (sculpture catalogue nr. 11; second half of the 3rd and beginning of the 4th century);[66] Satyr with a panther[67] (sculpture catalogue nr. 12 and 13; end of the 2nd and the beginning of the 3rd century); marble stand with a pair of human feet and a pillar-shaped holder (sculpture catalogue nr. 14); fragmented scene from the cult of Dionysus (sculpture catalogue nr. 15; middle of the 4th century); Dea Dardania (sculpture catalogue nr. 16; second half of the 3rd and beginning of the 4th century); Venus Pudica[68] (sculpture catalogue nr. 17 and 18; middle of the 4th century);

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58 Stirling 2008, 135 and not. 128.

59 Vasić 2004.

60 Vasić 2008, 15 sq. I wrote about Julian's big concern about health in Vasić 2004, so I do not find it necessary to repeat what has already been said.

61 Vasić et. al. 2016, 35–37.

62 Stirling 2008, 130.

63 *Ibid.*

64 Vasić et al. 2016a, 53; Sculpture catalogue: 84–100. In further text, I will refer to the numbers from this catalogue.

65 Васић et al. 2016 b, 73–74.

66 A fragmented image of a sitting boy was identified as a dadophorus and it was suggested that it was placed within a Mithraeum (Срејовић и Цермановић-Кузмановић 1987, 150, nr. 66). According to a parallel from Gortyna, Lea Stirling described this sculpture as a "lanternarius", a slave carrying a lantern (Stirling 2005, 196 and not. 132). Stirling does not date the sculpture from Mediana, while Tomović dated it into the 3rd or the beginning of the 4th century (Tomović 1993, 112, no. 162). I do not have any better suggestions and, regarding the representation of the textiles, it could well belong to this period.

67 Васић et al. 2016b, 75–77.

68 Vasić and Gavrilović 2012; Црноглавац et al. 2014

Hercules with Telesphorus (sculpture catalogue nr. 19; second half of the 3rd and beginning of the 4th century); Satyr (sculpture catalogue nr. 20; second half of the 3rd and beginning of the 4th century); drunken Dionysus with Satyr[69] (sculpture catalogue nr. 21; middle of the 4th century?); Maenad's head (sculpture catalogue nr. 22; end of the 2nd century); head of Venus or Diana (sculpture catalogue nr. 23; second half of the 3rd century). It was highlighted several times that the sculptures not depicting Aesculapius and Hygieia serve the role of mere decoration of the imperial villa and that they do not possess any cultic or religious meaning, but there were no plausible arguments about this statement.[70] This might be a convenient opportunity to say something more about this.

With all of the imprecise dating, it turns out that there are two sculptures from the 2nd century and another two from the end of the 2nd and the beginning of the 3rd century, while the greatest number belongs to a later period, the second half of the 3rd century (one sculpture), to the end of the 3rd and the beginning of the 4th century (four sculptures) and the middle of the 4th century (five sculptures). Such a scheme is not unusual and it is encountered throughout the Empire, and is discussed here later. However, with this, it was shown that in Mediana it is not about a unique chronological or stylistic group, as suggested earlier. On the other hand, such a chronological scheme indicates that the statuettes could have been brought to Mediana from some other villas, since, within this complex, there are no structures older than the end of the 3rd century. However, it is typical that these sculptures represent replicas of important works of art from the classical Greek or the Hellenistic period, indicating the taste and education of the person who ordered the decoration of the villa in Mediana. This leads to another hypothesis which indicates that the dates suggested for some of the Mediana statues are correct regarding replicas that were made in a large series, because important classical works of art were duplicated, like the images of Mercury, Hercules and Europa/Sosandra, and such pieces were fashionable.[71]

The sculptures could have been placed within the villa between the years 330 and 378. However, even within this period, we have more precise datings, although nothing absolute. The second building phase of the villa is dated from 330 to 334, when Constantine visited Niš for the last time. This phase comprised spaces being added to stybadii A and B, an impluvium to the peristyle, a peristyle corridor and the southern porticus widenings, as well as the thermae floors. Only after floor mosaics had been placed within these added rooms, were some of the sculptures brought in to decorate the villa. The sculptures discovered in the thermae were brought there only during the second sub-phase. So far, there is no data about when the villa was decorated. Hypothetically, the villa could have been decorated with frescoes and mosaics even while Constantine the Great was still alive, but it certainly continued to be decorated in the time of Emperor Constans, as he spent an extended period of time in Niš and most likely also Mediana in the year 339/40.[72] Even then, it was not fully finished. In some rooms, mortar bases were placed along the walls, intended to be covered with mosaics, but this was never done. One should not completely exclude the possibility that some sculptures from Mediana were carved around 339/40. I especially point out the head of Venus Pudica[73] and a part of a Dionysian group with only a fragmented branch with grapes as a statue stand remaining preserved.[74] The best example of a similar stand in the shape of a tree is encountered with a statue of Diana, discovered in the villa of Saint-George-de-Montagne, near Bordeaux, dated to the year 400 by Lea Stirling. This certainly would be a dating too late for Mediana.[75]

I draw attention to the fact that some sculptures, for example the one of Venus Pudica (sculpture catalogue

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[69] Gavrilović 2017.

[70] Vasić et al. 2016, 53; Васић et al. 2016b.

[71] Sources about the sculpture hoard from Mediana indicate that these sculptures were often replicated in Roman times: Stirling 2005, 197.

[72] Vasić 2008, 14. Constans was surely in Naissus on September 18th 339. He arrived there from Mursela. It is not known where Constans lived between the years 337 and 339. Barnes 2001, 224–225, [Zonaras (13. 5)], with certain reservations, writes that, between 337 and 340, Constans lived in Niš and from there he moved to Thessalonica, to the war against the Sarmathinas, then to Viminacium, Sirmium and Savaria. In March 340, near Aquileia, Constans' brother Constantine II was murdered and Constans took over his part of the Empire. Barnes writes that between 340 and 350, Constans' residences were in Trier, Milan and Sirmium, where his presence was attested on May 27th 349. During these ten years, Constans was very much on the move, constantly travelling through his part of the Empire. In January 350, he was murdered near Hellena, in Gaul. In Mediana, there is a very high Constans monetary frequency exactly in the period between 340 and 350, as Constans ruled in these regions.

[73] Vasić and Gavrilović 2012; Vasić et al. 2016, 95, no. 17.

[74] Vasić et al. 2016, 92, no. 15.

[75] Stirling 2005, 30 sqq. figs. 4–6; about dating see p. 110 sqq.

nr. 17 and 18[76]) or the sculptures to which the head of Venus (sculpture catalogue nr. 23[77]) or Maenad (sculpture catalogue nr. 22) belonged, could have not been placed within Aesculapius' sanctuary as they were too profane. Their finding places could also indicate that they were not placed within the sanctuary. After the first devastation, they were scattered around the villa and parts of the peristyle garden. However, neither could the statuette of *lanternarius* (sculpture catalogue nr. 11), the Satyr with panther (sculpture catalogue nr. 12 and 13[78]), discovered in room w-4, nor that of the drunken Dionysus held by Satyr (sculpture catalogue nr. 21) possessed cultic character. It needs to be especially highlighted that it is not possible to find statuettes in the villas of Christian emperors, and especially the religious sons of Constantine, Constans and Constantius II, that could have possessed any other meaning except one indicating high education and a good knowledge of art of the villa owners, but with no other religious ideas.

As a result of these features, I will also mention villas and houses from the 4th and the 5th century in which sculpture hoards have been discovered.[79] They clearly illustrate the fashion of decorating imperial villas or those belonging to rich aristocrats. I will start my study in Sirmium, in the palace complex in which five fragmented sculptures have been found.[80] In the villa outside the eastern city wall (villa suburbana), in the thermae, six fragmented sculptures were discovered, while in other rooms, a further four fragmented sculptures were found.[81] Apart from the man's head from the villa suburbana, all of the sculptures are older than the 4th century, actually older than the palace and villa horizon, which belongs to the 4th century. The next one would be the so-called "Palace of Theodosius" in Stobi, with the number and variety of statuettes representing a very close parallel to the villa with peristyle from Mediana. The statuettes were unearthed over a period of time, from 1927 to 1931, in the peristyle pool.[82] It should be mentioned that above the pool there were seven niches, while eight marble pedestals were placed within the pool. Together these represent a classical nymphaeum in which some of the statuettes were displayed. Lea Stirling also wrote about the discovery of these sculptures.[83] It is striking and also highlighted by L. Stirling, that there is a special group of smaller bronze figures, among them a statuette of Lares Thus, this group might possibly have represented a find from a lararium. She considers this collection to belong to the middle of the 4th century, when the structure was built, but she also draws attention to the different production quality of statuettes from the Stobi collection. Compared to the Mediana sculptures, it is important to say that those from Stobi originated from different periods, some of them even from the 2nd and the 1st century B.C. They also belong to different production centres (from Alexandria,[84] southern Italy and from a local centre). It is less important whether they were brought here or collected from older houses in Stobi. It is important, however, to notice that sculpture collections from the 4th century were formed as monument groups from different periods, which is exactly what I claim about the sculpture collection from the villa with peristyle in Mediana. The example of the so-called "Palace of Theodosius" in Stobi confirms our conclusions in the best possible way.

In my further discussion, I will begin with villas in Britain. In a villa in Woodchester, two sculptures and nine fragments have been unearthed.[85] In Gaul, in a villa in Chiragan, in a pit dated to the 5th century, over 120 sculptures have been discovered, an eclectic mix from the late Republican period to the 4th century.[86] In Spain, to the east of Madrid, in an exquisite octagonal structure in Valdetorres de Jarama, thirteen broken sculptures have been found,[87] whilst in the villa of El Ruedo, close to Cordoba, some thirteen sculptures were found.[88] Most of them were discovered within the pool,

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[76] Vasić and Gavrilović 2012; Црноглавац et al. 2014.

[77] Plemić 2013.

[78] Васић et al. 2016b, 75–77.

[79] About sculpture collections in Late Roman villas see also Stirling 2014. On page 139, she also mentions Mediana. Here, I do not consider Late Roman public thermae, in which numerous sculptures were discovered. About this see Stirling 2012.

[80] Popović 2012, 18.

[81] Popović 2012, 37; 39.

[82] Nestorović 1936; Вајзман 1973, 45–47; Петковић 1937.

[83] Stirling 2005, 197–199.

[84] Соколовска 1987, 88 (English text on page 262).

[85] Scott 2004, 48; Stirling 2005, 190 sq. dates Diana with Cupid and Psyche to the late 4th century.

[86] Stirling 2005, 49–62, 167; Elsner 1998, 109; Elsner 2006, 265.

[87] Hannestad 2007, 296. J. Arce considers that the complex of Valdetorres de Jarama is actually a rural market place, supporting this conclusion according to the architectural shape, absence of residential rooms and the nature of finds: J. Arce, L. Caballero, M. A. Elvira, El edificio octogonal de Valdetorres de Jarama (Madrid), *La Hispania de Teodosio,* vol. 2, Segovia 1997, 321–337 (non vidi, quoted according to Chavarria, Lewit 2004, 15).

[88] Vaquerizo, Noguera 1997; Stirling 2005, 182 and not. 76.

while some were found in rooms around the peristyle. It is certain that they were moved during the villa's destruction, since parts of same sculptures were found in several different places.[89] In "Casa del Mitra" near Cordoba, within a pool with two apses, three sculptures were discovered.[90] In Casilla de la Lámpara near Cordoba, just the same as in the pool with two apses, three sculptures and a fragment were unearthed.[91] In the villa Els Antigons, close to Taraco, in its nymphaeum, two older statues have been discovered, also used in the phase from the 4th century.[92] In Northern Africa, in Cartago, in the "Maison de la cachette", ten statues were walled up in a subterranean room.[93] In Italy, in the villa in Desenzano, a larger group of sculptures was discovered in a tank beneath the peristyle. A second group was discovered in a room behind the northern stybadium apse, while some larger fragments were found in an octagonal hall in the western peristyle end.[94] From the eastern part of the Empire, one should mention the villa in the suburbs of Constantinople, at the site of Silahtarağa. An important part of this villa was a nymphaeum with a row of sculptures. Apart from several older pieces, the sculptures are homogenous and it seems that they were made in Aphrodisias in the late 4th century.[95] In Greece, to the south of the Corinth forum, at the site called Panayia, during the excavation of a house in 1999, a hoard of marble statuettes was discovered. According to the numismatic finds, the house was most likely built during the reign of Gallienus. Archaeologists suggest that it was either burned in a fire, or damaged as a consequence of the earthquake in 365. The sculptures, nine of them in total, were found in a room decorated with frescoes, with an earthen floor, and described as a private sanctuary by Lea Stirling.[96] In 365, the devastating earthquake on Cyprus tore down "The House of the Gladiators" in Kourion. After that, the house was renewed, but the sculptures discovered within it originate from an earlier phase, dated by archaeologists to the late 3rd century.[97] Ten sculptures were found here. The so-called "House of Theseus" from Nea Paphos on Cyprus is completely different. After the earthquake in 365, it was fully reconstructed and the plan of this complex is from the late 4th century. A total of 21 sculptures were found.[98] In a small house in the suburbs of Antiochia, in the last room, a hoard of sculptures was discovered.[99] In 1973, somewhat to the east of Alexandria, at the site of Sidi Bishr, a hoard of sculptures was also discovered, comprising thirteen statuettes within a pit.[100] The list of villas decorated with sculptures certainly does not end here, but it shows clearly enough that similar aesthetic ideas were spread throughout the Empire, both with emperors and with high dignitaries.

In the previous text I listed a number of villas belonging to aristocrats or those that might have been used by emperors, in which collections of ancient statues and statuettes have been discovered, both in the western and the eastern provinces. In this table, I want to show the summarised statistical data, including that which pertains to Mediana (see table 2).

I do not consider these results full and complete, but they still reflect the spread of deities, mythological creatures or genre scenes.[101] It is typical that the most widespread statuettes were those of Dionysus-Bacchus (16 pieces) and his circle, especially Satyr, Pan and Silenus (ten pieces). Dionysus was depicted both in pagan and Christian contexts, either as the Dionysian cult and the mysteries, reminding the observers of the enjoyment of feasts and being care-free, or as a deity that played the role of a Savior.[102] Satyrs admonished the repeated topic of picking forbidden fruits in the divine vineyard.

What follows is Aesculapius (twelve pieces), also with a possible dual role, as a healer or the one who raised people from the dead, thus coming close to the miracles of Christ. However, in some places, exactly because of these features, he was exposed to devastation. Hygieia appears only in five cases. However, six statuettes of Aesculapius and three statuettes of Hygieia from Mediana should be excluded, since they were part of the inventory of his sanctuary in the villa

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89 Stirling 2005, 182.

90 *Ibid.*, 184.

91 *Ibid.*, 184.

92 *Ibid.*

93 *Ibid.,* 186.

94 For villa and especially the statuettes see Stirling 2005, 175 sq. The villa plan and finding places of fragments were also given.

95 Hannestad 2007, 294; Stirling 2005, 214 expressed certain skepticism regarding the workshop.

96 Stirling 2008, 130.

97 Hannestad 2007, 288, not. 83.

98 *Ibid.*, 289. Hannestad does not fully agree with this dating and considers them to be from a later period.

99 *Ibid.*, 294.

100 *Ibid.*, 295.

101 I did not consider reliefs, such as the tondi with the labours of Hercules, from the villa in Chiragan, nor imperial portraits or busts.

102 Painter 1971, 162.

Deities	Number of statuettes	Deities and half-deities	Number of statuettes	Genre-scenes	Number of statuettes
Dionysus/Bacchus	16	Mithras	1	Lanternarius	1
Satyr (Silenus, Pan, Faunus)	10	Roma	1	Giant	1
Aesculapius	12	Demeter	1	Nubian man	1
Hygieia	5	Silvanus	1	Man with chlamys	1
Aphrodite/Venus	10	Fortuna	1	Female statuette	2
Hercules	8	Kairos	1	Female head	1
Artemis/Diana	4	Atthis	1	Male statuette	1
Cybele	3	Menade	1	Double herma	1
Apollo	3	Dioscures	1	Shepherd	1
Jupiter	2	Ganymede	1	Torso of an old fisherman	1
Hermes	2	Larus	1	Woman on a sphinx	1
Europa/Helotia	2	Harpocrates	1		
Ceres	2	Dea Dardania	1		
Amor/Eros	2	Cupid and Psyche	1		
Mars	1				
Isis	1				
Serapis	1				

Table 2

with peristyle.[103] Besides, and as far as one can conclude from other quoted parallels, only one sculpture of Aesculapius originates from the western provinces, while five originate from the those to the east.[104]

Aphrodite – Venus (ten pieces) represents the image of a love goddess, while her followers, the Erotes, could symbolise re-birth or, as depicted on various sarcophagi, the afterlife. Neo-Platonists highlighted Venus as a planet that inspires people and stimulates their thinking, separating them from the physical activities.

Next are the images of Hercules (eight pieces). In the images from the 4th century, Hercules and his labours depicted the victory of good over evil, an earthly struggle to reach heavenly heights and a belief that, with God's help, all obstacles can be overcome. The theme of Hercules taking the apples of the Hesperides, also encountered in the Mediana sculpture, refers especially to collecting souls in the context of the Neo-Platonist philosophy, but also as a re-interpretation of classical symbols. Certainly, the cult of Hercules was especially spread through gymnasia, as he was the ideal of an active life.

Artemis – Diana was represented in only four cases. She also appears both in pagan and Christian interpretations and, in the 4th century, she could have expressed a wish for an aristocratic hunt. Her cult was long-lasting, but although, from the Christian point of view, she was regarded as dangerous, she was still respected due to her virginity.

The remaining divine images come in small numbers and they are possibly connected to purely pagan owners. The number of genre scenes is also not too large, although they are also typical. By the pure fact that their subjects can be moralised and interpreted in a spiritual way, certainly making them more popular, the most numerous divine images during Late Antiquity were acceptable to both pagans and Christians.

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[103] According to the fragments nr. 10 and 11, discovered in 2011 in the villa in Mediana, there could have been another two statues of Aesculapius.

[104] Aesculapius' statuettes were found in the following villas: Valdetorres de Jarama – two statues most likely carved in Aphrodisias and transported to Spain; Corinth – site of Panayia; Cyprus (Kourion) – "The house of the Gladiators"; Cyprus (Nea Paphos) – "House of Theseus"; Egypt – Sidi Bishr. Hygeia's statuette: Stobi – "Palace of Theodosius".

Resuming the sculpture analysis within Late Roman houses and villas, Niels Hannestad writes that, between the years 320 and 380, the building of luxurious structures suddenly became widespread, thus representing an excellent frame for sculptures.[105] The aristocracy who owned these villas was already extremely wealthy. By adding mosaics, frescoes, silverware and rich jewellery to the sculptural decoration, a cultural homogeneity was created, indicating the cultural origin of their owners. The method of decorating became very similar throughout the Empire and, especially regarding sculptures, during this period they were all purchased from the same workshops. One should still bear in mind that the owners of Late Roman villas collected much older sculptures, from the time of the Republic and all the way to the 4th century, even though they might have depicted pagan mythological themes.[106] During the last decade of the 4th century, this was followed by a re-birth of state art in the period of "Theodosius' renaissance",[107] while in certain cases, it also continued at the beginning of the 5th century. Still, the villa in Mediana, Villa Panayia in Corinth, "The house of the Gladiators" in Kourion (Cyprus) and the "House of Theseus" in Nea Paphos (Cyprus) illustrate that this process was well developed much before 380 and before Theodosius' renaissance, also confirmed by Hannestad. Certainly during this process, aristocrats also showed a tendency to copy imperial residences, the same as they did in architectural villa plans.

Let us return to sculptures as home decoration. Cicero, in his *Letters to Atticus,*[108] asks him to purchase statues for decorating the gymnasium and the palestra of the villa in Tusculum. However, the largest and most important ancient sculpture collection, consisting of 85 pieces, was discovered in the so-called Villa dei Papiri, in Herculaneum. It dates to the period from the 1st century BC and the 1st century AD.[109] Therefore, it is not unexpected that the wish to collect sculptures as decoration for imperial and aristocratic villas appears again in the 4th century AD. Constantine the Great placed such collections in the new capital, Constantinople. Wishing to decorate the city, he ordered a large number of old monuments from the capital cities of Greece and Asia Minor to be transported there.[110] Over the course of time, this number was rather reduced.

Besides the hippodrome, important gathering points for people were the thermae. During the spring of 330 in Constantinople, the baths of Zeuxippus were opened, decorated with at least 81 sculptures representing deities and half-deities, mythological heroes, statesmen, philosophers and writers from the Greco-Roman world. All of them were collected to acknowledge the legitimacy of Constantinople to possess the highest status within the Empire.[111] There is a large chronological span between specific sculptures. Statues showing the Greek concept from the 4th and the 3rd century BC are placed alongside Roman portraits of Julius Caesar and Vergil or Flavius Pompeius from the 6th century AD. However, it is not possible to estimate whether the mentioned statues of Hermes or Aphrodite represent original works or just copies from the Hellenistic or Roman era. Regardless, the head fragment from the 5th century BC indicates that old original pieces of art were also represented.

I will mention another collection from Constantinople, gathered at the beginning of the 5th century by Lausos, an aristocrat and *cubicularius* in the court of Theodosius II.[112] The collection contained some of the most important works of Greek art, for example, Zeus from Olympia by Phidias. At this point, this collection captures our attention only as the taste and wishes of aristocrats to possess important works of art. In 475, the collection was destroyed in a fire.

It is a widely accepted opinion that as late as the year 600, paganism had not fully vanished. Cyril Mango even thinks that the mentioned statues in the Constantinople hippodrome did not represent mere decoration, but that they held some cultic features, to be ascribed neither to state politics nor to Constantine himself, but to the fact that many officials (*curatores*), in charge of putting up these monuments, were pagan.[113] All of this

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105 Hannestad 2007, 292

106 Elsner 2006, 265 ff.

107 *Ibid.*, 299.

108 Cicero, *Attici*, 1.5, 1.6; 1.7; 1.8)

109 About this villa see Mattusch, Lie 2005 and Zarmakoupi 2010 with earlier literature.

110 Mango 1963, 55. In this paper, Mango analysed Greek and Roman sculptures made before the 4th century AD. He admits that one cannot determine whether they are Greek, Hellenistic or Roman. I was not able to go through the book by Sarah Bassett, *The Urban Image of Late Antique Constantinople*, Cambridge University Press, 2007, but I consulted her earlier papers about these issues.

111 Guberti Basset 1996. The thermae were built upon the foundations of the Severian thermae. They were torn down in 532, during the uprising of Nicos. Soon after, Justinian renewed them. In the 12th century, there was an extensive deposition. They were described in the poem by Christodoros (from Thebes), 'Εκφρασις των εις το δημόσιον γυμνάσιον του επικαλουμένου Ζευξίππου, *The Greek Anthology* I, transl. W. R. Paton, London 1916, 59–91.

112 Guberti Basset 2000.

113 Mango 1963, 56.

certainly upset the Christian population. In *Vita Constantini*, Eusebius made an attempt to explain the setting up of pagan statues as a very sophisticated political idea that would make these deity statues objects of ridicule:

"From others again the venerable statues of brass, of which the superstition of antiquity had boasted for a long series of years, were exposed to view in all the public places of the imperial city: so that here a Pythian, there a Sminthian Apollo, excited the contempt of the beholder: while the Delphic tripods were deposited in the hippodrome and the Muses of Helicon in the palace itself. In short, the city which bore his [sc. Constantine's] name was everywhere filled with brazen statues of the most exquisite workmanship, which had been dedicated in every province, and which the deluded victims of superstition had long vainly honored as gods with numberless victims and burnt sacrifices, though now at length they learnt to renounce their error, when the emperor held up the very objects of their worship to be the ridicule and sport of all beholders.".[114]

Apart from being objects of ridicule for Christian writers, there was a belief spread among the people that the statues were possessed by demons, which could again lead to their destruction. Some of them were literally destroyed, but most of them remained intact and were even turned into city talismans. As highlighted by Mango, they were given a new "folklore" meaning, kept for a long time during the Byzantine era, practically until 1204, and the great Crusaders' plundering of Constantinople's monuments.[115] Regarding this, one should mention the great care taken by Christian emperors to preserve valuable antique monuments.[116] In the 5th century, the poet Prudentius also describes this:

"I would have thee now lay aside thy childish festivals,
thy absurd ceremonies, thy offerings
which are unworthy of a realm so great.
Wash ye the marbles that are bespattered and stained
with putrid blood, ye nobles.
Let your statues, the works of great artists,
be allowed to rest clean;
be these our country's fairest ornaments,
and let no debased usage pollute the monuments
of art and turn it into sin.".[117]

This fully corresponds with laws from the late 4th and the 5th century, prohibiting rituals connected to traditional pagan religion, especially sacrifice, although images of pagan myths found their place into the private and public life of the Roman world. This is also reflected in the literature of the time.[118] On the other hand, Christian art of that time still remained close to its pagan models.[119]

In that sense, the decorative scheme of the imperial villa in Welschbilig (Germany), with herms and depicted images of deities, mythological creatures, heroes, emperors, historical personalities, thinkers, writes, sculptors, barbarians and many portraits that cannot be identified, might possibly represent the clearest physical evidence of the influence the educational system had on the artistic taste of pagan and Christian aristocrats. The most impressive one is the pool (*piscina*), 58 m long and 21 m wide, designed in such a way that simulated naval battles (*naumachia*) could be performed in it.[120] Around the pool there were 112 sculptures – herms.[121] Henning Wrede, an explorer of this complex, concluded that the villa originates from the time of Valentinianus, while the balustrade herms belong to the period of Gratian's reign (367–383).[122] Wrede also showed, very convincingly, that all of the herms represent Gratian's cultural heritage of the "antique world" and, thus, reflect his educational ideal. It should be highlighted that Gratian's tutor was none other than the pagan rhetorician Ausonius from Bordeaux, who influenced the shape of Gratian's thinking and education. In such a way, classical education made it possible for this villa owner to observe the herms and compare them with literary culture, at the same time creating a

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114 Euseb., *V. Constant*. III, 54.

115 Mango 1963, 59–60; 68.

116 We will not spend too much time with these questions. Besides the already mentioned paper from 1963 by Mango, we will also mention papers by Saradi-Mendelovici 1990; Lepelley 1994; Alchermes 1994, all quoting laws regarding monument protection.

117 Prudentius, *Contra Symmachum*, 1, 499–505: deponas tam festa velim puerillia ritus | ridiculos tantoque indigna sacraria regno. | Marmora tabenti respergine tincta lavate, | o procures: liceat statuas consistere puras, | artificium magnorum opera: haec pulcherrima nostrae | ornamenta fiat patriae, nec decolor usus | in vitium versae monumenta coinquinet artis.

118 James 1996, 13 sqq; Liebeschuetz 1995, 193 sqq; Perring 2003, 97 sqq.

119 Stern 1958, 212 sq; Weitzmann 1960, 57; Васић 2003.

120 McKay 1975, 179–180.

121 About the sculptures see Hölscher, Snodgrass 2004; Stirling 2005, 153.

122 Henning Wrede, *Die spätantike Hermengalerie von Welschbilig: Untersuchung zur Kunstradition in 4. Jahrhundert n. Chr. und zur allgemeinen Bedeutung des antiken Hermenmals*, Römisch-Germanische Forschungen 32, Berlin 1972. 96/7, (non vidi, quoting according to Stirling 2005, 153 and not. 102; 103).

balanced relationship with the still living Roman tradition and many virtues that took part in its creation. Sculptures from Mediana representing Aesculapius and Hygieia can be understood in the same way.

Conclusion

The villa in Welschbilig and the discovery of numerous herms with different features seem to have copied the baths of Zeuxippus in Constantinople. By looking at it, we can sense the influence sculptures from the Constantinople baths could have had on their visitors. Basically, the same ideas were built into both the Welschbilig villa and the baths of Zeuxippus. The example of Welschbilig, but also of Mediana, which I believe was decorated with sculptures at the time of Constans, depict the common life of pagan and Christian ideas in the best possible way, especially when it comes to works of art. The conceptual connection of sculptures from the baths of Zeuxippus and from Welschbilig clearly brings together the tendencies of the Constantine and the Valentinian dynasties, both in governmental and spiritual ways.

Contrary to this, within the imperial complex in Mediana, in the "villa with peristyle", during the reign of Julian the Apostate, a sanctuary was established, dedicated to Aesculapius and Hygieia and placed in the central audience hall, while the entire space of the "villa with peristyle" was turned into an *Asclepaion*. Doubtlessly, the newly established Asclepaion in the villa in Mediana lasted just as long as Julian's reign, until 363. The re-establishment of Christianity must have influenced the closing of this sanctuary, even within the imperial villa. The sculptures of Aesculapius and Hygieia could also have remained within the "villa with peristyle" during the short visits by the new emperors Valentinian I and his brother Valens in Niš and Mediana in 364. On these occasions, they certainly only played the role of mere decorative sculptures, the same as other pagan deities whose sculptures decorated the villa in Mediana. I suppose that only in 378, the intrusion of Gothic hordes led to the "desacralisation" of these sculptures by tearing off their heads and limbs, since they considered them demons rather than works of art. After that, one part of them was collected and deposited in room w-4 within the villa, while another part remained at the place of devastation (trench 72). A part was also scattered in the yards and the park of the "villa with peristyle", while parts of the bronze railing were carefully buried. This represented the final functional end of the Mediana sculptures.

Translated by Milica Tapavički-Ilić

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Miloje R. VASIĆ
Sculptures and “the sanctuary of Aesculapius” in Mediana (89–109)

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СКУЛПТУРЕ И „ЕСКУЛАПОВО СВЕТИЛИШТЕ” У МЕДИЈАНИ

Кључне речи. – Медијана, Ескулапово светилиште, скулптуре, IV век, Јулијан Апостата.

Из анализе места налаза фрагментованих скулптура у медијанској вили с перистилом произилази да су оне, бар једним делом, намерно оштећене и поломљене изван саме виле, али да су њихови остаци прикупљани и депоновани у просторије које нису биле сасвим уништене у првом разарању зграде. Такав је случај у просторији w-4 (западни тракт просторија виле) (сл. 1). Неки фрагменти су нађени и на првом слоју рушења, а неки су били разбацани у башти перистила или чак ван периметра виле. Једна група је нађена у средњовековној јами у сонди 24/25 из 2002. године. Ова анализа је показала и то да помешани фрагменти култних и заветних статуета Ескулапа и Хигије с другим, митолошким статуетама и статуетама жанр-сцене, нису морали да стоје заједно у неком светилишту. Сви они су били у једном тренутку сакупљени с разних страна у вили.

С друге стране, знатан број Ескулапових и Хигијиних статуета, неуобичајен за колекције у империјалним и аристократским вилама широм царства, указује на то да је у вили у Медијани могло да буде успостављено светилиште та два божанства. Оно се највероватније налазило у великој централној сали за аудијенције, и то у њеној апсиди, која је могла бити одвојена од осталог дела сале бронзаном оградом чији су делови нађени 2000. године. Распоред просторија у вили и повезаност са балнеумом били су идеални за успостављање *Асклепејона*. Ескулапове и Хигијине статуете су, према заветним натписима на плинтама, припадале неком светилишту, највероватније у Тракији, из кога су донете у Медијану. Исто тако, треба имати у виду и то да су клесане у различитим периодима. Претпостављам да је ово светилиште посветио император Јулијан када је 361. године боравио у Нишу, а у време његовог враћања паганству.

Остале статуете откривене у медијанској вили с перистилом имају само декоративну улогу, иако представљају божанства или митолошке сцене. То показује само ученост и укус власника виле, у овом случају императора. И ове скулптуре потичу из различитих периода и клесане су у различитим радионицама, па су у једном тренутку донете у вилу. Можемо претпоставити да је вила украшена скулптурама у време боравка императора Констанса 339/40. године у Нишу и Медијани.

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NEW BYZANTINE SEALS FROM MORAVA (*MARGUM*) AND BRANIČEVO

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Abstract – The authors present new finds of Byzantine lead seals at Morava (*Margum*), Braničevo and the broader area around them. The seals from Morava and Braničevo were unearthed in the course of archaeological excavations, which make these finds particularly important. Significant among them is the seal from Morava, which belonged to Symeon (?), magister and logothete of the *dromos*, from the end of the tenth century, which indicates the presence of Byzantine officials in Morava and the establishment of Byzantine authority along the north-western Danubian border following the fall of the Bulgarian empire in 971. Three new seals from Braničevo complement the list of Byzantine officials in connection with the events on the Danubian border in the eleventh and twelfth centuries. The seals found in the broader area of Braničevo should also be added to this list. Of particular significance among them is the seal of Georgios Palaiologos Doukas Komnenos, *megas hetaireiarches*, a well known historical figure involved in events in Hungary, Serbia and on the Danubian border in the 1160s.

Key words – Seals, Byzantium, Morava, *Margum*, Braničevo, Administration, Border.

Besides Belgrade, medieval Morava and Braničevo were the most important Byzantine strongholds along the Danubian border. Investigations of these forts, albeit small-scale, have yielded new finds of lead seals that complement the list of Byzantine officials involved in the events in these remote parts of the Byzantine Empire. This paper presents four seals discovered in the course of archaeological excavations in Morava (*Margum*) and Braničevo[1] as well as five other seals from a broader area around them.[2]

Important among them are a seal from Morava that belonged to Symeon, magister and logothete of the *dromos*, from the end of the tenth century, and a seal from the broader area of Braničevo, which belonged to Georgios Palaiologos Doukas Komnenos, *megas hetaireiarches*, from the second half of the twelfth century. The rest of the finds come from Braničevo and its vicinity and have been dated to the period from the mid-eleventh to the twelfth century, a time when Braničevo represented one of the bulwarks of defence of the Byzantine border against the neighbouring Hungary.[3]

It needs to be noted that already known from this area are finds of a large number of seals, published by

[1] Spasić-Đurić 2016, 109–115.
[2] Private collection, Požarevac.
[3] Popović, Ivanišević 1989, 125–179.

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Maksimović and Popović, from the collections of Svetozar Dušanić and the National Museum in Belgrade. The published seals were unearthed in Sirmium and the Danubian border, mostly in Morava and Braničevo.[4]

MORAVA (*Margum*)

Medieval Morava, erected on the remains of Roman *Margum*, is situated at a strategically important position at the confluence of the Morava and Danube Rivers. This fort guarded access to the Morava corridor and the route to the south, in the direction of Niš. Archaeological investigations – excavations, LiDAR and ground prospection – have revealed that the remains of these fortifications were largely destroyed due to the constant shifts of the bed of the Morava River, a fact that makes it rather difficult to precisely establish the character and size of this important stronghold.[5] On the other hand, archaeological excavations have indicated that the fort had been rebuilt in the Middle Ages over a smaller area than that of the earlier Roman one, probably in the first half of the ninth century, judging by the find of a follis of Constantine VII.[6] From the end of the tenth century, the area thrived and continued to develop over the course of the next two centuries, as recent archaeological excavations demonstrated when an important habitation stratum from this period was discovered.[7]

Historical sources contain sparse records about Morava. Among the first records is that mentioning the metropolitan "Agathon of Morava" (Ἀγάθων Μωράβων), who attended the Constantinople council of 879–880.[8] A possible reference to the broader area around Morava may be contained in the news about a ruler of Morava (ἄρχων τῆς Μωραβίας), found in the *De ceremoniis* of Constantine VII Porphyrogennetos.[9]

In the early eleventh century, Morava diminished in importance, if we are to judge from a charter of Basil II issued in 1019, wherein, among the archbishops subordinate to the Archbishopric of Ohrid, mention is also made of "the bishop of Braničevo", whose jurisdiction also embraced, among others, the town of "Morovski" (Μορόβισκον).[10] In the eleventh century, the town of Μοράβος, or *Morawa*, was an important stronghold. In his account of the uprising of Peter Deljan of 1040, John Skylitzes describes Morava and Belgrade as "fortresses of Pannonia, lying across the Danube, neighbours of the *kral* of Turkey (Hungary)".[11] In Western sources, Morava, along with Belgrade, is regarded as an important border town in Bulgaria.[12]

Maksimović and Popović published the finds of eleventh century seals from Morava that belonged to Orestes, *protospatharios epi tou koitonos* and *katepano* of Thessalonica and Bulgaria,[13] and Nikephoros Batatzes, *proedros* and *doux* of Bulgaria,[14] which can be dated to the 1030s and 1070s respectively. It should be noted that Orestes, "a servant of emperor Basil," was also active during the reign of Romanos III Argyros and was close enough to the emperor to be allowed to accuse the latter's relative Constantine Diogenes of conspiracy.[15]

This small group of finds should be expanded with that of the seal of an official linked with the central, imperial administration, unearthed in the course of archaeological excavations at Morava (*Margum*):

1. Symeon, *magistros* and *logothetes tou dromou* (late tenth century); possibly Symeon Metaphrastes

Obverse

The field is divided by lines into eight equal parts decorated with dots. The central representation is symbolised by cross-shaped lines, each decorated with a

[4] Maksimović, Popović 1990, 221–231; Maksimović, Popović 1993, 127–133.

[5] Ivanišević, Bugarski 2012, 239–255.

[6] Crnobrnja 2007, n° 45.

[7] Ivanišević, Bugarski 2012, 240.

[8] Mansi, *Sacrorum conciliorum,* Vol. XVIIA–XVIIIA, 373B–D, 376A–E, 377A–E; Komatina 2010, 359–368.

[9] *De Cerimoniis,* 691.8–13; Pirivatrić 1997, 173–201.

[10] Gelzer 1893, 22–72; *Notitiae episcopatuum,* 13.845.

[11] Skylitzes, *Synopsis,* 409; Albert of Aachen, 265–713, 144; Komatina 2016, 105.

[12] *Annalista Saxo*, 692.

[13] Maksimović, Popović 1990, 128–129, n° 15; Степанова 2009, 228–229, fig. 6: published a new seal, on which, unlike the specimen from Morava, the name of the owner Orestes can be clearly read. Recently, a third seal of Orestes appeared at the auction "Gert Boersem", which is struck with the same boulloterion as the seal from Morava: https://www.vcoins.com/en/stores/gert_boersema/25/product/orestes_protospatharios_epi_tou_koitonos_and_katepano_of_thessalonica_and_bulgaria_byzantine_lead_seal_early_11th_century_ad/65942/Default.aspx (Consulted 05.12.2017).

[14] Maksimović, Popović 1990, 127–128, n° 14.

[15] Skylitzes, *Synopsis,* 376.89–90.

small cross and dots. On the circumference, two letters are inscribed in each part.
[..]-Β̣[.-..-..-..-.]Ω̣-Δ[.-..]
[Κ(ύρι)ε] β[οήθει τῷ σ]ῷ δ[ούλ(ῳ)]

Reverse
Inscription of five lines.
....|Ω̣ΝΜΑΓ̣ΙϹΤ̣|Ρ,ΚΑΙΛΟΓ.|Θ̣ЄΤ̣...|.....
[+Συμε]ὼν μαγίστρ(ῳ) καὶ λογ[ο]θέτ[ῃ τοῦ δρόμου]

Collection: National Museum Požarevac
Find-site: Morava (*Margum*), Great Thermae, sounding 1, 17/06/2011; C-102.
D. 24–22 mm. W. 5.09 g. Poorly struck on the sides.

Parallels: Dumbarton Oaks Seal Collection 58.106.1592: Oikonomides 1973, 323–326, B, Figs. 2.a–d; Laurent, Corpus II, n° 431.A; Variants: Dumbarton Oaks Seal Collection 58.106.3455: Oikonomides 1973, 323–326, A, Figs. 1.a–d; Laurent, Corpus II, n° 431. B; Йordanov 1981, 16–19; Jordanov, Corpus 3, n° 851–852. The seals from the Dumbarton Oaks Collection 58.106.1592 and Morava were struck with the same boulloterion.

The seal of Symeon, *magistros* and *logothetes tou dromou*, represents an important find, given the assumed attribution, high title and function of the seal's issuer and its date. This find makes topical the issue of the Byzantines' reaching the north-western Danubian border and capturing towns, including Morava, in the wake of the conquest of Bulgaria by John Tzimiskes in 971.

A seal identical to ours was published by Oikonomides, who identified it as a seal of Symeon Metaphrastes, also known as Symeon the Logothete, a well-known figure from the second half of the tenth century.[16] His view was adopted by Jordanov and Laurent,[17] but dismissed by Dujčev and Kazhdan in their respective reviews of the works of the said two scholars. Kazhdan's primary argument makes use of the fact that the seals contain only the name of the issuer, Symeon, which is not sufficient for its attribution, nor can we be certain that there was only one Symeon *magistros* and *logothetes*.[18] In a later mention of the seal, Oikonomides also conditionally linked its issuer to Symeon Metaphrastes.[19] Regardless of the said dilemmas, some researchers have adopted the initial attribution, identifying Symeon Metaphrastes with Symeon the owner of the seal. It is believed that Symeon Metaphrastes may have been promoted to the rank of *logothetes tou dromou* during the reign of John Tzimiskes and that he certainly occupied this high position after the year 976, when Basil II acceded to the imperial throne.[20]

Notwithstanding the issue of the identification of the seal's owner with Symeon Metaphrastes, it should be stressed that this was a person holding an important office in the central administration. The logothete of the *dromos* was in charge of postal services, which made it possible for the emperor and his officials to rule the Empire.[21] The office also implied the logothete's responsibility for roads, whence also came his policing prerogatives, which ensured public security in the state. The prerogatives related to the preservation of internal security also included tasks related to foreigners, not only those living in the Empire, but also beyond its borders. The logothete received foreign emissaries, which allowed him to be in charge of imperial diplomacy, although he himself never assumed the role of envoy. Byzantine lists of ranks of the ninth and tenth centuries present the logothete of the *dromos* as having a single function. The person performing the function was entitled to have a number of subordinate officials (*protonotarioi tou dromou*, *chartoularioi tou dromou*, *episkeptites*, interpreters etc.).[22]

The fact that two seals of Symeon, *magistros* and *logothetes tou dromou*, were found at Preslav[23] and one at Morava indicates that the two places were in the focus of state administration. As the former capital of the Bulgarian Empire, Preslav was of great importance to Tzimiskes, which is also attested by the fact that immediately after its fall in 971 it was renamed Ioannopolis. According to the *Escorial Taktikon,* Preslav/Ioannopolis was added to the Theme of Thrace and placed under the authority of the respective *strategoi* of Thrace and Ioannopolis.[24] The find of the seal of a *logothetes tou*

[16] Oikonomides 1973, 323–326.
[17] Йорданов 1981, 16–19; Jordanov, Corpus 3, n° 851–852; Laurent, Corpus II, n° 431.
[18] Dujčev 1982, 298; Kazhdan 1983, 384.
[19] Oikonomides 1985, 22, 28, n° 70.
[20] Schminck 2005, 285, n. 100: the promotion of Symeon Metaphrastes as the logothetes *tou dromou* is dated to January or February 970, that is, at the very beginning of the reign of John I Tzimiskies; Cf. Treadgold 2013, 208; PMBZ Online # 27504.
[21] Miller 1966, 438–470; Guilland 1971, 31–56.
[22] Oikonomidès, *Listes* 117.10–18.
[23] Йорданов 1981, 16–19; Jordanov, Corpus 3, n° 851–852.
[24] Oikonomidès, *Listes* 265.9.

dromou at Morava raises the issue of the reach of Byzantine authority in the area of the Danubian border during Tzimiskes' reign.

The seal of a *logothetes tou dromou* discovered at Morava indicates that Tzimiskes' campaign of 971 led to the inclusion of the important strategic stronghold of Morava (*Margum*) inside the borders of the Empire. It is uncertain to what extent the seal of Symeon, *logothetes tou dromou*, raises the question of the attribution and dating of the seal of Adralestos Diogenes, the imperial *protospatharios* and *strategos* of Morava.[25] The first publishers of the find, Nesbitt and Oikonomides, linked this seal with Adralestos Diogenes, a prominent military commander, who deserted Bardas Phokas in 970 and joined John Tzimiskes.[26] According to the two scholars, he may have been appointed *strategos* of Morava a few years after 971 and after the office of *katepano* of Ras was introduced.[27]

The proposed dating, and thence the attribution, was dismissed by Seibt, who stated that the seal must be dated to the first half of the eleventh century.[28] Cheynet agreed with this opinion, as he deemed it improbable that, following John Tzimiskes' successful military campaign in eastern Bulgaria, a seat of the *strategos* of Morava would have been established, as this official is not mentioned in the *Escorial Taktikon*,[29] composed during the said emperor's reign. Cheynet attributed the seal to another Adralestos Diogenes, who held the office in the 1020s, after the Byzantine border on the Danube had been firmly established, following the fall of Samuel and his epigones, adding that after the year 1018, Adralestos Diogenes was the first and probably the last *strategos* of Morava.[30] Attributed to this Adralestos Diogenes is the seal bearing the inscription that reads *partikios* and *strategos*, now kept in the Hermitage.[31]

On the other hand, the seal of Adralestos Diogenes, *strategos* of Morava, was the subject of analyses of several studies, one of the first of them being that by Pirivatrić. He adopted the view of the first publishers and, having analysed the sources, interpreted the seal as an important testimony to the establishment of the *strategis* of Morava after 971.[32] This interpretation has been adopted by many scholars, including Živković,[33] Krsmanović,[34] Komatina[35] and Vedriš.[36]

The seal of Symeon, *magistros* and *logothetes tou dromou*, unearthed at Morava and dated to the late tenth century, indicates that the supposition regarding the establishment of Byzantine authority on the north-western Danubian border following the fall of the Bulgarian Empire should not be lightly dismissed. The find supports the thesis of the presence of Byzantine officials in Morava – whether of the *logothetes tou dromou*, who may have been part of John Tzimiskes' entourage during the campaign of 971, or of other officials that may have been receiving instructions from the logothete of the *dromos*. The question of the Byzantine organisation of authority in Morava may remain unanswered: was a garrison headed by a *strategos* left in the fort like in other important strategic centres, or was Morava attached to another centre? What is probable, however, is that Morava, like other Danubian forts and towns, was temporarily included inside the borders of the Empire during the reign of John Tzimiskes.

BRANIČEVO – MALI GRAD
(Inner fort)

Medieval Braničevo developed around a fort erected on a mountain ridge overlooking the plain of Stig and the confluence of the Mlava and Danube Rivers. Remains of two fortifications are known: Mali and Veliki Grad, as well as the suburb, which lay in the area at the foot of the fortifications in the direction of the Mlava river. In the twelfth century, this settlement spread eastwards, to the other bank of the river.[37]

Archaeological investigations of the fort have indicated the existence of a stratum that could be dated to a period from the end of the tenth or the beginning of the eleventh century to the thirteenth century, which fits with contemporary narrative sources.[38] The emperors John II Komnenos[39] and Manuel I Komnenos[40] stayed

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[25] Nesbitt, Oikonomides, DO Seals 1, n° 36a.1.

[26] Skylitzes, *Synopsis,* 292.

[27] Nesbitt, Oikonomides, DO Seals 1, n° 33.1; For a new analysis, see: Wassiliou-Seibt 2017, 188–189.

[28] Seibt 1991, 548–550.

[29] Oikonomidès, *Listes* 258–261; For a new interpretation see: Wassiliou-Seibt 2017, 188–189.

[30] Cheynet 2008, 565–566.

[31] Seibt, Zarnitz 1997, 95; Šandrovskaja, Seibt, Ermitage, n° 69: dated to 1020–1050.

[32] Pirivatrić 1997, 173–201.

[33] Živković 2002, 427.

[34] Krsmanović 2008, 135–136.

[35] Komatina 2016, 104.

[36] Vedriš 2011, 54–56.

[37] Popović, Ivanišević 1988, 125–179.

[38] The structures are dated by coin finds.

[39] Kinnamos, *History,* 9–13; Choniates, *History,* 17–18.

[40] Kinnamos, *History,* 113–121, 124–127, 130–134; Choniates, *History,* 100–102.

in the fort and also had the fortifications rebuilt. The town was also a base for military operations in Hungary. The importance of its location is attested by the fact that in 1153 Andronikos Komnenos was appointed "*doux* of Niš and Braničevo"[41] and "*doux* of Braničevo and Belgrade".[42] In 1189, the *doux* of Braničevo (*dux de Brandiez*) welcomed the participants in the Third Crusade, led by emperor Frederick I Barbarossa.[43] Alexios III Angelos' charter to the Venetians of 1198 makes mention of "the province of Niš and Braničevo".[44]

As might be expected, given the importance of Braničevo, a large number of seals attesting to the position of this centre in the intricate Byzantine system of administration have been found in the fort itself and the broader area of the town. They include seals of secular and clerical figures active in the eleventh and twelfth centuries. A smaller number of them are dated to the eleventh century and belonged to the following persons: Basileios Nikerites, *vestarches*,[45] Artaser Laskaris, *anthypathos* and *strategos*,[46] Leon Apokaphkos, *protospatharios* and *strategos*,[47] Pankratios Bekenes[48] and Euthymios, *spatharokandidatos*.[49] There is also a seal of the metropolitan of Laodicea Kosmas Soteriotes.[50] The larger group of seals comes from the twelfth century, indicating the importance the town had in this period, when, along with Belgrade, it was the main Byzantine stronghold on the Danubian border. The following seals have been published: Michael, *kouropalates*,[51] Stephanos Eleodorites, *sebastos*,[52] Ioannes Symponopoulos, imperial *notarios*,[53] Manuel Manouelites,[54] Nikolaos Petrouses,[55] Demetrios,[56] and a seal of an unknown issuer.[57]

Important among these seals is that of John, archbishop of Bulgaria, attributed to John Kamateros (after 1183–1204).[58] Nesbitt and Oikonomides surmise that the seal, due to its epigraphic features and historical circumstances, should be dated to an earlier time and have therefore attributed it to Hadrian–John (before 1143 – to 1157/1164).[59]

It needs to be noted that a seal of Nikephoros, *skeuophylax*, has been discovered at the site of the town of Dupljaja, north of the Danube.[60]

In addition to these known finds, the latest archaeological excavations at Braničevo yielded the seals of the following dignitaries:

2. John, *sebastos*, originating from Rome (twelfth century)

Obverse

Bust of the Virgin orans with the medallion of Christ on breast. Border of dots. On either side the inscription:
..-.. |....|ΧЄΡ-ΝΙ|ΤΙ|CA
[Μή(τη)ρ Θ(εο)ῦ ἡ Βλα]χερνίτισα

Reverse

Inscription of six lines. Border of dots.

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[41] Kinnamos, *History,* 124, 126.

[42] Choniates, *History,* 101.

[43] Ansbert, *History of Frederick's Expedition*, 27–28.

[44] Tafel, Thomas, *Urkunde*, 261, 268.

[45] Maksimović, Popović 1990, 228–230, n° 5; Wassiliou, Seibt, Österreich 2, n° 21; PBW (Consulted 05.12.2017) Basileios 20260: http://db.pbw.kcl.ac.uk/pbw2011/entity/boulloterion/3622.

[46] Maksimović, Popović 1990, 226–228, n° 2; Cheynet 2010, 50: states that Artaser was of Iranian origin, judging by his name Laskaris.

[47] Maksimović, Popović 1990, 222–224; Parallel: Schlumberger, Sigillographie, 363.

[48] Maksimović, Popović 1993, 132, n° 19; Parallels: Two seals struck with the same boulloterion were found in Preslav: Йорданов 1993, n° 399–400; Jordanov, Corpus 3, n° 1842–1843; One seal is preserved in the Archaeological Museum in Istanbul: Cheynet, Gökyildirm, Bulgurlu, Istanbul, n° 7.13.

[49] Maksimović, Popović 1990, 228, n° 3.

[50] Maksimović, Popović 1993, 131–132, n° 18.

[51] Maksimović, Popović 1990, 228, n° 4.

[52] Maksimović, Popović 1990, 225–226, n° 1; Parallel: Šandrovskaja, Seibt, Ermitage, n° 81.

[53] Maksimović, Popović 1993, 133, n° 21.

[54] Maksimović, Popović 1990, 230, n° 6.

[55] Maksimović, Popović 1993, 132–133, n° 20.

[56] Maksimović, Popović 1993, 130–131, n° 17.

[57] Maksimović, Popović 1993, 130, n° 16.

[58] Dušanić 1975, 318–325; Maksimović, Popović 1990, 224–225; Parallel: BZS.1951.31.5.2400: Laurent, Corpus V/2, n° 1497; Nesbitt, Oikonomides, DO Seals 1, n° 29.7.

[59] Nesbitt, Oikonomides, DO Seals 1, n° 29.7.

[60] Radičević, Dželebdžić 2014, 275–287, fig. 1–2.

+̣|CΦP.....|RAϤȢΠAΓKΛ|ЄȢCIω̅PIΣAΝΓЄ|NȢCЄXONTOC
|ЄΞOXȢPΩ|MHC·
+Σφρ[αγὶς σε]βαστοὺ παγκλεοῦς Ἰω(άννου) ῥίζαν γένους ἔχοντος ἐξόχου Ῥώμης

Two twelve-syllable verses.

Collection: National Museum Požarevac

Find-site: Braničevo, Mali grad, sounding AE24; 27/07/2017; C-670.

D. 34 mm; field 24 mm. W. 35.11 g. Chipped.

Parallel: Dumbarton Oaks Seal Collection 55.1.5038: Jordanov, Corpus 2, 263–264; McGeer, Nesbitt, Oikonomides, DO Seals 5, n° 109.1: John Manganes. The seal from Dumbarton Oaks is slightly different: On the obverse MP – ΘV : Μή(τη)ρ Θ(εο)ῦ.

The first publishers of this seal classified it as a seal of John Manganes, quoting a view of an unknown reviewer that the inscription might actually read *Mankaphas* rather than *Manganes*.[61] This suggestion was adopted by Seibt.[62] Contrary to the Dumbarton Oaks seal, our seal bears an inscription that reads ΠAΓKΛЄȢC.[63]

3. Leon Hagiochristophorites, *protospatharios* (second-third quarter of the eleventh century)

Obverse

Border of dots. Epithet along the upper circumference:

........|ITHCA

[Μή(τη)ρ Θ(εο)ῦ Ἡ Ἀιοσορ]ίτησα

Reverse

Inscription of six lines. Border of dots.

Θ.... |ΛЄ.... |ÂCΠ̣.... |TOAΓ̣... |CTOΦ... | ⲭTḤ.

Θ[εοτόκε β(οή)θ(ει)] Λέ[οντι] (πρωτο)σπ[αθαρ(ίῳ)] τῷ Ἁγ[(ιο)χρι]στοφ[ορί]τῃ

Collection: National Museum Požarevac

Find-site: Braničevo, Mali grad, sounding AE23, 18/08/2016; C-626.

D. 31–16 mm. W. 7.52 g. Half missing.

Parallels: Berlin and Fogg 687: Speck, Berlin, n° 120 (non vidi): Stavrakos, Athens, 51–52; PBW (consulted 28.11.2017) Leon 20135: http://db.pbw.kcl.ac.uk/pbw2011/entity/boulloterion/842.

Besides this seal, there is another one known to have belonged to Leon Hagiochristophorites, *protospatharios* and *kommerkiarios*, which Stavrakos believes refers to a different person, as there is a depiction of Saint Christopher on the obverse.[64]

4. John (bishop) of Atramyttion (twelfth century)

Obverse

St. Athanasios standing, blessing with his right hand and holding a book in his left. On either side the inscription:

Ⓐ|A|Θ|A-.|.|CI|OC

Ὁ ἅ(γιος) Ἀθα[νά]σιος

Reverse

Inscription of four lines. Border of dots.

.|.......|.......C|.Ω̣̄ATPA|..Ṭ IȢ|

[Σφραγὶς εὐτελοῦ]ς [Ἰ]ω(άννου) Ἀτρα[μη]τίου

The inscription is metrical.

Collection: National Museum Požarevac

Find-site: Braničevo, Mali grad, sounding AC24–AD24, 04/09/2010; C-245.

D. 24–23 mm; field 20 mm. W. 10.15 g. Corroded.

Parallel: Dumbarton Oaks Seal Collection BZS. 1951.31.5.991: Laurent, Corpus V.1, n° 276; Nesbitt, Oikonomides, DO Seals 3, n° 3.4; Wassiliou-Seibt, Siegel mit metrischen Legenden II, no. 2440.

The seals from Morava and the Dumbarton Oaks Seal Collection were struck with the same boulloterion.

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[61] Jordanov, Corpus 2, 263–264; McGeer, Nesbitt, Oikonomides, DO Seals 5, n° 109.1.

[62] Seibt 2007, 235.

[63] According to the reading of A.-K. Wassiliou-Seibt.

[64] Stavrakos, Athens, 51–52.

The seals of John (bishop) of Atramyttion and Kosmas Soteriotes, metropolitan of Laodicea,[65] attest to a correspondence between Braničevo clerics and bishops in distant parts of the Empire, such as places situated in the west of Asia Minor. The links between Laodicea clerics and Danubian towns are attested by the seal of Leon, Metropolitan of Laodicea, from the mid-eleventh century, unearthed at Neviodunum.[66] Another seal of Leon was discovered in the faraway Staraya Ladoga.[67]

REGION OF BRANIČEVO

Some of the seals presented here come from the broader area of Braničevo, since there is no precise information about the find-spots. They are the seals of Andronikos Doukas, *sebastos* (2), Constantine Kappadokes, Georgios Palaiologos Doukas Komnenos, *megas hetaireiarches* and Michael *logothetes tou dromou*. These finds complement the list of Byzantine officials linked with places on the Danubian border in the time of the Komnenoi.

5. Andronikos Doukas, *sebastos* (twelfth century)

Obverse

The archangel Michael standing, holding the labarum in his right hand and the globus cruciger in his left.

...|Χ|ΑΓ|...-...

[ὁ ἀρ]χάγ[γελος Μιχαήλ]

Reverse

Inscription of five lines.

...ΑΝ|.....ΟΝ|...ϱΟΝΙ|..ΝΜЄСΚЄ|..ΙС

[Δούκ]αν [σεβαστ]ὸν [Ἀνδ]ρόνι[κό]ν με σκέ[πο]ις

Collection: Private, Požarevac

D. 25 mm. Half missing.

Parallels: Fogg Seal Collection BZS.1951.31.5.249 and BZS.1958.106.833: Cf. Wassiliou-Seibt, Siegel mit metrischen Legenden I, no. 655b,

6. Andronikos Doukas, *sebastos* (twelfth century)

Obverse

St. Theodore standing, holding a spear in his right hand and his shield against the ground.

.|...|..-ϴϵ|Ο|Δ|Ψ|Ρ|ΟС

[Ὁ ἅγιος] Θεόδωρος.

Reverse

Inscription of four lines.

Δϙ.....|ϱΑСΤΟΝ..|Δϙ ΡΟΝΙ....|ЄСΚЄ..|– . –

Δο[ύκαν σε]βαστὸν [Ἀν]δρόνι[κόν μ]ε σκέ[πε]

Collection: Private, Požarevac

D. 32 mm. Half missing.

Parallels: Dumbarton Oaks Seal Collection BZS.1958.106.907 and BZS.1947.2.1135: Cf. Wassiliou-Seibt, Siegel mit metrischen Legenden I, no. 655a.

7. Constantine Kappadokes (mid-twelfth century)

Obverse

Inscription of four lines.

+Κ..|ϮΑΝϮ...|СΦϱ....|-Μ.-

Κ[ων]σταντ[ίνου] σφρ[άγισ]μ[α]

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[65] Maksimović, Popović 1993, 131–132, n° 18.

[66] Chirac 2002, 271–272.

[67] Bulgakova, Osteuropa: Altrusslands, n° 1.3.4: PBW (Consulted 05.12.2017) Leon 20282: http://db.pbw.kcl.ac.uk/pbw2011/entity/boulloterion/3445.

Reverse

Inscription of three lines.

.OV|..ΠΠΑ|.OKḤ

[τ]οῦ [Κα]ππα[δ]όκη

Collection: Private, Požarevac

D. 27 mm. Half missing.

Parallels: Dumbarton Oaks Seal Collection BZS.1958.106.5731; Schlumberger, Sigillographie, p. 630; Laurent, Bulles métriques, no. 223; Билик 1998, n° 9; Jordanov, Corpus 3, n° 1914; Wassiliou-Seibt, Siegel mit metrischen Legenden I, no. 1255.

8. Georgios Palaiologos Doukas Komnenos, *megas hetaireiarches* (second half of twelfth century)

Obverse

St. Theodore standing, holding a spear in his right hand and his shield against the ground.

O|A|ΓΙ|OC–ΓЄ|...

ὁ ἅγιος Γε[ώργιος]

Reverse

Inscription of six lines.

+|..ΩṚΓΙ..|....ΓΙCMA.|.......OΓOV·Ḳ..|..NOΔOV..|RΛAϤAVXȣṆ|TOΓЄNOC

[Γε]ωργί[ου σφρά]γισμα [Παλαιολ]όγου Κ[ομνη]νοδου [κό]βλαστ(ον) αὐχοῦντο(ς) γένος

Collection: Private, Požarevac.

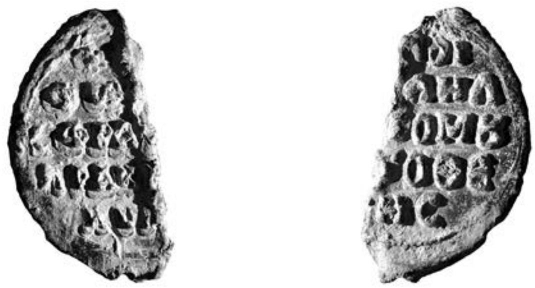
D. 39 mm. Chipped and cut.

Parallels: Speck, Berlin n° 5 (Non vidi); Seibt, Zarnitz n° 1.2.10 (Non vidi): PBW (consulted 28.11. 2017) Georgios 17002: http://pbw2016.kdl.kcl.ac.uk/boulloterion/751/; Auction Münz Zentrum, Sale 90 (14–16 May 1997); Same seal Auction Dr. Busso Peus Nachfolger, Sale 376 (29 October 2003), n° 1411; Wassiliou-Seibt, Siegel mit metrischen Legenden I, no. 264, fig. 11.

Significant among these finds is the seal of Georgios Palaiologos Doukas Komnenos, *megas hetaireiarches*, a well known historical figure involved in events in Hungary, Serbia and along the Danubian border. Georgios Palaiologos headed a delegation to Hungary that negotiated the terms of the marriage between Maria Komnena, daughter of Manuel I Komnenos, and Béla, one of the sons of King Géza. In 1163, an agreement was made according to which Béla was recognised as heir to the Byzantine throne and sent to Constantinople, where he was renamed Alexios and granted the title of *despotes*.[68]

In 1167, Georgios Palaiologos went to Hungary once again, this time because of the Byzantine occupation of Sirmium. When he returned, he fell ill at Adrianople and died there.[69]

9. Michael, *logothetes tou dromou* (second half of twelfth century)



Obverse

Inscription of five lines.

+... |ΩN... |CΦPA..... |ΠPAKT... |KVP..

[γραφ]ῶν [ἐπι]σφρά[γισμα] πρακτ[έων] κῦρ[ος]

Reverse

Inscription of five lines.

..ΠOI|...AHΛ|...ṚOMȣ|..ΓOΘЄ|.HC|

[τυ]ποῖ [Μιχ]αὴλ [τοῦ δ]ρόμου [λο]γοθέ[τ]ης

Collection: Private, Požarevac

D. 32 mm. Half missing.

Parallels: Dumbarton Oaks Seal Collection BZS. 1958.106.932 and 1958.106. 5597: Cf. Wassiliou-

[68] Kinnamos, *History,* 125.2–9.

[69] Cheynet, Vannier 1986, 157.

Seibt, Siegel mit metrischen Legenden I, no. 539a; Zacos, Nesbitt, Seals, n° 1012; Variant struck on a smaller flan: Dumbarton Oaks Seal Collection BZS. 58.106. 932 and DO 58.106. 5597; Laurent, Corpus II, n° 436.

The presented finds from the areas of Morava and Braničevo are indicative of an ever stronger Byzantine military, administrative and diplomatic presence in the area of the Danubian border in the period from the end of the tenth to the twelfth century.

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New Byzantine Seals from Morava (*Margum*) and Braničevo (111–124)

Резиме: ВУЈАДИН ИВАНИШЕВИЋ, Археолошки институт, Београд
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НОВИ ВИЗАНТИЈСКИ ПЕЧАТИ ИЗ МОРАВЕ (*MARGUM*) И БРАНИЧЕВА

Кључне речи. – печати, Византија, Морава, Маргум, Браничево, управа, граница.

У раду су приказани налази нових византијских оловних печата из Мораве и Браничева који потичу са археолошких ископавања, као и налази са шире територије Браничева. Реч је о девет печата који се датују у раздобље од краја 10. до краја 12. века, у време када је та област била под византијском управом. Посебно је значајан налаз печата Симеона Метафраста (?), магистра и логотета дрома с краја 10. века из Мораве. Овај налаз поново актуализује питање византијског изласка на северозападну дунавску границу и освајања градова, међу којима и Мораве, након покоравања Бугарске 971. године од стране Јована Цимискија.

Приликом археолошких ископавања Браничева, односно локалитета Мали град, откривена су три печата. Реч је о печатима следећих достојанственика: Јована севаста, пореклом из Рима (12. век), Лава Хагиохристофорита, протоспатара (друга–трећа трећина 11. века) и Јована, епископа Атрамитиона (12. век).

Пет печата потиче са шире територије Браничева: два примерка Андроника Дуке (12. век) и по један Константина Кападока (средина 12. века), Георгија Палеолога Дуке Комнина (друга половина 12. века) и Михајла логотета дрома (друга половина 12. века). Међу овим налазима издваја се печат Георгија Палеолога, виђене личности на двору цара Манојла I Комнина, ангажованој у Угарској, Србији и на дунавској граници. Георгије Палеолог се налазио на челу делегације која је преговарала у Угарској о удаји Марије Комнине, ћерке цара Манојла I Комнина за једног од синова краља Гејзе. Године 1164. склопљен је уговор према коме је Бела признат за угарског престолонаследника и послат у Константинопоље, где је примио име Алексије и добио титулу деспота. Георгије Палеолог је поново боравио у Угарској 1167. године у поводу византијског заузимања Сирмијума.

Налази печата представљају важно сведочанство о византијском државном апарату и посебно достојанственицима везаним за области на северозападној дунавској граници Царства у раздобљу од краја 10. до краја 12. века, као и о дипломатским активностима Византије.

UDC: 904:666.11/.28"11"(497.11)
543.2:666.11/.28-033.5"11"(497.11)
https://doi.org/10.2298/STA1868125R
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COMPOSITION AND TEXTURE OF A SET OF MARVERED GLASS VESSELS FROM 12th CENTURY AD BRANIČEVO, SERBIA

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Abstract – Strongly coloured glass vessels decorated with marvered threads of white glass are a wide-spread and popular, but rarely studied group of high-quality glassware of medieval Islamic origin. Relatively little is known about the composition and production places of these vessels, and their chronological range is not very well defined, as many of the published finds lack contextual evidence. Here, we present detailed chemical and microstructural data on a set of well-dated purple glass vessels decorated with white threads, excavated at the Mali Grad site in Braničevo, Serbia, in an archaeological context dated to the middle/second half of the 12th century AD. The set comprises at least sixteen different vessels, manufactured from two different batches of probably Levantine plant-ash glass coloured by manganese oxide. Significantly, the results demonstrate that these batches are correlated to particular vessel shapes. The base glass of the white threads is comparable to that of the purple vessel glass, but instead of being coloured by added manganese oxide, it contains considerable amounts of tin and lead oxides which provide the effect of opacity and white colour. No difference in composition can be seen between the white glass threads used to decorate the vessels from the two different manganese-coloured batches, thus indicating a likely common production origin of the whole set.

Key words – Islamic glass, Marvering, Braničevo, Serbia, 12th century, LA-ICPMS analysis, SEM imaging, pXRF.

INTRODUCTION

Islamic glass vessels of the High Middle Ages are renowned for their artistic and aesthetic quality. Among the easily recognisable decorated glass objects are vessels consisting of an intensely coloured body trailed with threads of opaque glass, most often of white colour, typically dragged in a festooned fashion (i.e. the so-called combed decoration) when the glass was still soft and often marvered flat into the surface of the vessel walls[1]. The first comprehensive survey of these marvered Islamic glasses was published by James Allan[2], who surveyed and summarised the earlier literature on the subject as well as detailing his own considerable knowledge of the material based mostly on the Ashmolean Collection, followed by Stefano Carboni's review of the material in the al-Sabah Collection[3]. Since then, further studies reported more finds, for instance

[1] Pinder-Wilson 1999, 129–130.
[2] Allan 1995.
[3] Carboni 2001, 291–321.

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Fig. 1. Examples of the analysed purple glass vessels with marvered decoration from Braničevo (Cat. Nos 1, 2, 6 from Spasić-Đurić, Jovanović in this volume; photo: Institute of Archaeology, Belgrade)

Сл. 1. Примерци анализираног пурпурног стакла из Браничева украшени апликираним нитима (Cat. Nos 1, 2, 6 из Spasić-Đurić, Jovanović у овом броју Старинара*; фото: Археолошки институт, Београд)*

from Bet Shean in Israel[4], the Wadi al-Tūr in Sinai[5], and Jerusalem[6]. Beyond this, numerous articles and catalogue entries also depict fragments of such vessels from various sites or museum collections, attesting the wide popularity of this group. Despite this popularity, however, few papers discuss the chemical composition of these vessels, the main one being Julian Henderson's companion piece to the survey by James Allan[7].

Recent excavations at House No 4 from Braničevo in eastern Serbia have yielded a highly remarkable assemblage of glass vessel fragments (Fig. 1). They were found in a closed context formed with the destruction of the building and dated, on the basis of the numismatic evidence, to the middle/second half of the 12th c. AD[8]. The main finds form a set of at least 16 individual vessels, including bowls, bottles and flasks made from translucent purple glass with opaque white festooned decoration. They have few published parallels from the Balkans[9], and form the topic of this chemical study. A full presentation of the vessel set, its context and archaeological interpretation is provided in the preceding paper by Dragana Spasić-Đurić and Sonja Jovanović[10]. Here, we report the results of compositional and microstructural analyses done on this assemblage.

MATERIALS AND METHODS

The fragments were recovered during regular excavations in 2011 and visually sorted and assigned to at least 16 different vessels, tentatively identified as six

[4] Hadad 2002.

[5] Shindo 1993.

[6] Brosh 2014; Brosh 2017, 300–301, 303–304.

[7] Henderson 1995.

[8] Spasić-Đurić 2016, 113–114, Fig. 56b; Spasić-Đurić, Jovanović in this volume.

[9] E.g. vessels from Kotor, Montenegro in Križanac 2001, and from Corinth, Greece in Davidson 1952, 115–116, Nos 755–758.

[10] Spasić-Đurić, Jovanović in this volume.

small and two large bowls, two flasks, and three large bottles; other fragments indicate the presence of a further three unidentified, highly fragmented vessels, potentially also flasks. From the much larger total number of sherds excavated, 15 fragments representing at least nine of the different vessels were analysed by Bernard Gratuze[11] using Laser Ablation – Inductively Coupled Plasma Mass Spectrometry (LA-ICPMS). On each fragment three spots in the purple glass base and, where possible, a further three spots in the white glass were analysed using well-published conditions and protocols[12]. The Appendix reports the average values of the three measurements per sample, separate for the purple and the white glass, together with the results for the reference glass Corning A, whose composition is assumed known[13] and which was analysed as part of the same analytical sequence as the compositionally unknown glass fragments[14]. From the analysis by LA-ICPMS we identified the presence of two different chemical compositions among the purple glasses (see below); this separation was further supported by portable X-Ray Fluorescence (pXRF) analyses done at the National Museum in Požarevac using a hand-held Olympus Delta InnovX instrument with modified calibrations based on the instrument's Soil and Mining Plus modes (see below).

To better understand the manufacturing technology of the opaque white decoration, and to explore the reason for the observed internal heterogeneity of the triplicate LA-ICPMS analyses (see below), six of the 15 fragments analysed by LA-ICPMS were selected for further study by optical and scanning electron microscopy. In preparation for this, the samples were embedded in cold-setting transparent resin in such a way that the cross section of the glass would be exposed after grinding and polishing the flat surface of the resin disc, revealing both the purple glass matrix and the white decoration. They were then investigated using a Leica DM2700 Optical Microscope (OM) and a JEOL Scanning Electron Microscope with Energy-Dispersive Spectrometer (SEM-EDS) at the Archaeological Materials Science Laboratories of UCL Qatar.

RESULTS

There are two main characteristics to report regarding the results of the scientific analysis of these glass fragments. Firstly, there is the chemical composition of the glass, separately for the purple bodies and the white threads, as determined by LA-ICPMS. Secondly, there are the textures of the two glass parts on a microscopic level, as visualised and determined by SEM Back-Scatter Electron (BSE) images and EDS analyses for six fragments[15] out of the 15 analysed by LA-ICPMS. Knowing the composition enables us to discuss the production technology and the likely origin of this glass, and whether the different vessels were made all at the same workshop during the same production event, or whether they are from different sources. The texture, in addition, provides us some information regarding the working and colouring processes used to make and decorate the glass vessels.

Composition

The purple glass fragments are a typical soda-lime-silica glass, with around 67 wt% silica, 12 to 13 wt% soda, and c 9 wt% lime (Table 1). The presence of 2.5 to 3 wt% magnesia and 1.9 to 2.3 wt% potash indicates the use of plant ash as the flux. The purple colour is due to a manganese oxide content of, on average, 2 to 2.2 wt%, clearly added as a deliberate ingredient of the colouring recipe. Around 2 wt% alumina and around 1 wt% iron oxide are the only other compounds present at the percentage level. This composition matches typical Islamic plant-ash glass compositions known from extensive literature, and is in accordance with the stylistic affiliation of the vessel types and decoration to an Islamic origin.

Within this compositional range we identify two subgroups. Purple 1, with eight analysed samples, has slightly higher concentrations of potash, magnesia (Fig. 2), and lime, while Purple 2, with seven analysed samples, has slightly higher concentrations of iron and

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[11] At the laboratory of the Institute de Recherche sur les Archéomatériaux (IRAMAT) – Centre Ernest Babelon, UMR 5060 CNRS/ Université d'Orléans, France.

[12] Cf. Gratuze 2016. Three separate spots were placed in the cross sections of the fragments, analysing a volume of glass c 0.06 mm wide and c 0.2 mm deep. An exception is sample BRN 1-09 on which, due to the strong glass heterogeneity of the decoration, nine individual spots were measured, spread over three different areas, and then averaged as three separate results; see Fig. 6a, b and the Appendix – samples BRN 1-09.w(i), BRN 1-09.w(ii), and BRN 1-09.w(iii).

[13] Brill 1972; Adlington 2017.

[14] The comparison of the measured oxide concentration to values published by Brill (1972), Vicenzi et al. (2002), Wagner et al. (2012), and Adlington (2017, Table 3) shows an overall good consistency; the main discrepancy was seen in the determined lime concentration, which was analysed c 13% higher than in the published values.

[15] Fragments BRN 1-04, 1-05, 1-07, 1-09, 1-13 and 1-14b.

wt%	SiO_2	Al_2O_3	Na_2O	K_2O	CaO	MgO	P_2O_5	Cl	TiO_2	Fe_2O_3	
Purple 1	67.4	1.75	12.2	2.25	9.1	2.87	0.30	0.71	0.09	0.73	
Purple 2	66.7	1.90	12.9	1.91	8.7	2.60	0.26	0.77	0.10	1.06	
White (all)	57.8	1.08	9.0	1.81	6.9	2.35	0.24	0.66	0.06	0.44	
ppm	Li_2O	B_2O_3	Rb_2O	SrO	BaO	V_2O_5	Cr_2O_3	ZrO_2			
Purple 1	20	315	16	682	1473	27	21	59			
Purple 2	25	414	14	677	1547	31	23	67			
White (all)	4	225	11	456	195	18	11	39			
	MnO	**CoO**	**NiO**	**CuO**	**ZnO**	As_2O_3	**Ag**	SnO_2	Sb_2O_3	**PbO**	**Bi**
	wt%	ppm	ppm	ppm	ppm	ppm	ppm	wt%	ppm	wt%	ppm
Purple 1	2.02	7	17	518	67	19	3	0.04	74	0.13	2
Purple 2	2.21	13	17	478	86	24	2	0.10	292	0.33	5
White (all)	0.60	8	33	352	39	44	25	6.6	21	12.3	288
Base glass White (all)	SiO_2*	Al_2O_3*	Na_2O*	K_2O*	CaO*	MgO*	P_2O_5*	Cl*	TiO_2*	Fe_2O_3*	MnO*
(wt%)	71.4	1.33	11.1	2.24	8.5	2.91	0.30	0.81	0.07	0.54	0.74

Table 1. Average values for the main oxides and selected trace compounds of the compositional glass groups Purple 1, Purple 2 and White from Braničevo, as determined by LA-ICPMS. The lower section reports the base glass composition of the white glass as recalculated after removing the added oxides (SnO_2 and PbO), and recalculating the listed eleven compounds (marked with an asterix) to 100%, see footnote 32. Full data is in the Appendix

Табела 1. Просечне вредности главних оксида и издвојених једињења у траговима који улазе у састав стакла Пурпур 1, Пурпур 2 и белог стакла из Браничева, установљених методом LA-ICPMS. При дну табеле приказан је основни састав белог стакла добијен након искључивања додатих оксида (SnO_2 и PbO) и поновног прерачунавања вредности за преосталих једанаест једињења (означених звездицом) до 100%, види нап. 32. Комплетни подаци дати су у прилогу

manganese oxide (Fig. 3), and higher levels of some trace elements such as lead, tin, antimony, boron and lithium (Fig. 4).

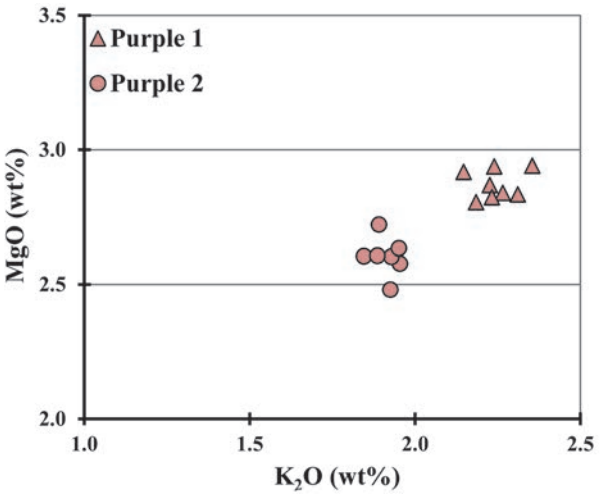
The differences in trace element levels between the two subgroups, identified by the LA-ICPMS analyses, were sufficiently clear to be recognised even in the much less accurate and precise pXRF analyses, particularly for antimony, but also tin, lead, and even manganese at the level of major oxide. This enabled us to assign, within the space of a few minutes, specific fragments to either of the two subgroups, as a fast in-situ method without the need for full analysis in a specialist laboratory[16]. In order to confirm the feasibility of such an approach, a few fragments already analysed by LA-ICPMS were measured by pXRF, providing an idea of the extent of credibility of the data[17]. Screening an additional set of c 30 fragments from the assemblage in this manner indicated that all were compatible with either of the two purple glass subgroups, within the limitations of the method (Fig. 5a, b)[18]. This not only confirmed the consistency of the overall assemblage but also helped in assigning some individual fragments to specific vessels.

The opaque white glass has a similar base composition as the purple glass, in that it is also a plant-ash based soda-lime-silica glass. The main difference is that the white glass contains an additional c 5 to 9 wt% tin

[16] The full pXRF data is on file at the National Museum in Požarevac; the details of this work will be published elsewhere in a more technical paper.

[17] The purple areas of fragments BRN 1-03, 1-05 (Purple 1) and BRN 1-04, 1-10 (Purple 2) were re-analysed using pXRF (see Fig. 5). Based on this internal comparison, we considered the numerical values reported by the pXRF instrument as indicative (labelled as wt% ind. and ppm ind. in the graph) rather than fully quantitative.

[18] For methodology and limitations of the pXRF technique in glass analyses see Adlington, Freestone 2017.



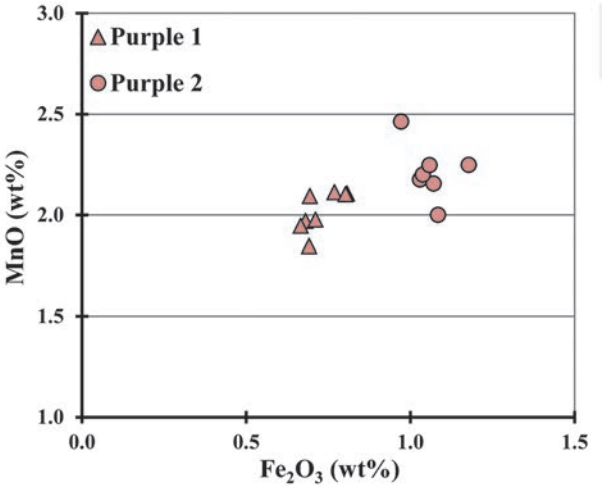


Fig. 2. The magnesia (MgO) and potash (K_2O) contents of Purple 1 and Purple 2 both fall in the range associated with plant ash glass, and differ from each other to show that they form two separate compositional subgroups. LA-ICPMS data from B. Gratuze, IRAMAT
Fig. 3. The manganese oxide (MnO) and iron oxide (Fe_2O_3) contents of Purple 1 and Purple 2 differ from each other, confirming that they form two separate compositional subgroups. LA-ICPMS data from B. Gratuze, IRAMAT

Сл. 2. Вредности оксида магнезијума (MgO) и оксида калијума (K_2O) у обе подгрупе стакла, издвојене као Пурпур 1 и Пурпур 2, улазе у опсег који се везује за стакло на бази биљног пепела, док разлике између ових вредности указују на постојање две подгрупе са различитим саставом. LA-ICPMS подаци добијени од Б. Гратуза, IRAMAT
Сл. 3. Вредности манган-оксида (MnO) и оксида гвожђа (Fe_2O_3) у стаклу издвојеном као Пурпур 1 и Пурпур 2 се разликују, што потврђују две подгрупе стакла различитог састава. LA-ICPMS подаци добијени од Б. Гратуза, IRAMAT

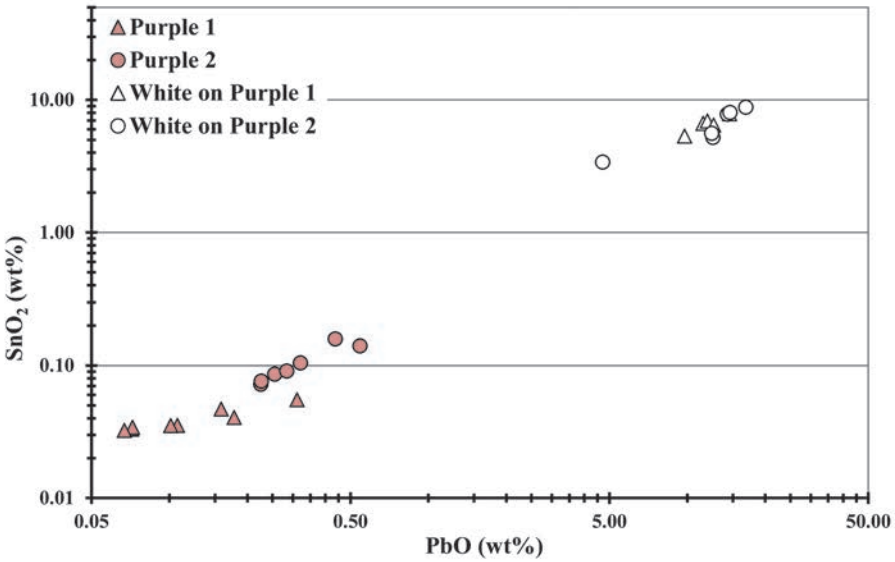


Fig. 4. The tin oxide (SnO_2) and lead oxide (PbO) contents of Purple 1 and Purple 2 fall on the same correlation line as in the white trails, but at different concentrations. Note the logarithmic scale of the two axes. LA-ICPMS data from B. Gratuze, IRAMAT

Сл. 4. Вредности оксида калаја (SnO_2) и олова (PbO) у стаклу издвојеном као Пурпур 1 и Пурпур 2 прате исту линију корелације као код белог стакла, али са другачијом концентрацијом. Види логаритамску скалу две осе. LA-ICPMS подаци добијени од Б. Гратуза, IRAMAT

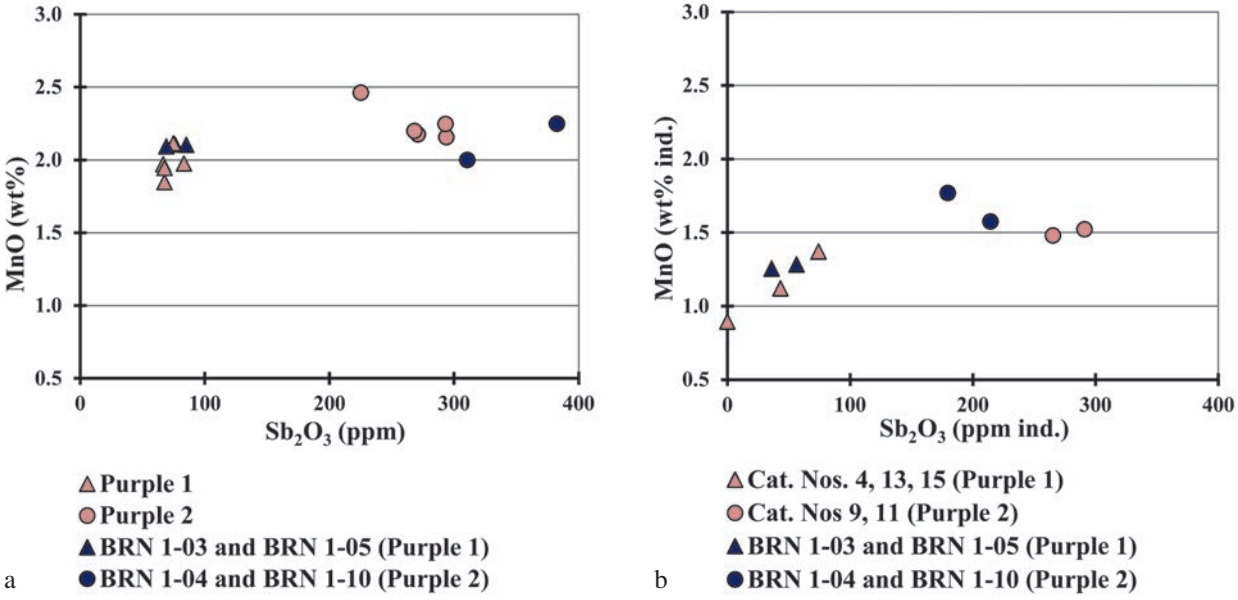


Fig. 5. Purple 1 and Purple 2 can be clearly distinguished by their manganese oxide (MnO) and antimony oxide (Sb_2O_3) contents in the LA-ICPMS data (a). These oxides can successfully separate the two compositional subgroups even in the less accurate and precise pXRF data (b; numerical values on the axes only indicative; uncorrected Soil mode measurements). The pXRF data allow recognition of bottle Cat. No 11 as Purple 2 and three more vessels as Purple 1 – bowl Cat. No 4, flasks Cat. Nos 13, 15 (see Spasić-Đurić, Jovanović in this volume). A loose handle fragment of bottle Cat. No 9, not analysed by LA-ICPMS, is confirmed to belong to Purple 2. LA-ICPMS data from B. Gratuze, IRAMAT

Сл. 5. Пурпур 1 и Пурпур 2 јасно се разликују по вредностима манган-оксида (MnO) и оксида антимона (Sb_2O_3) према LA-ICPMS подацима (а). Ови оксиди могу јасно да раздвоје две хемијски различите подгрупе стакла, што се чак може добити и у мање прецизним мерењима pXRF-от (b; нумеричке вредности на осама су само индикативне; некоригована „Soil mode" мерења). Подаци добијени методом pXRF опредељују боцу Cat. No 11 као Пурпур 2 и три друге посуде као Пурпур 1 – здела Cat. No 4, мале боце („flasks") Cat. Nos 13, 15 (види: Спасић-Ђурић, Јовановић у овом броју Старинара*). Фрагмент дршке боце Cat. No 9 који није анализиран методом LA-ICPMS, потврђено је да припада подгрупи Пурпур 2. LA-ICPMS подаци добијени од Б. Гратуза, IRAMAT*

oxide and around 10 to 17 wt% lead oxide; accordingly, the other components of the initial glass melt are reduced by about 18 to 22 % of their original concentration due to the dilution from the added metal oxides. An exception is sample BRN 1-13.w which has significantly lower levels of tin and lead oxides (adding up to only c 8 wt%) compared to the rest of the opaque white glasses. This compositional peculiarity is possibly a result of insufficient homogenization of the glass melt during the introduction of the tin- and lead-rich additive, when this particular portion of the batch absorbed lower amounts of opacifying substance[19].

When considering the compositional results of the white glass samples, one has to bear in mind that these are data from LA-ICPMS, which means that they represent only a microscopically small volume of material[20]. Since the white glass is compositionally heterogeneous (see below), this can result in highly variable measured concentrations, especially of lead and tin oxides, depending on which parts of the heterogeneous glass was ablated by the laser. This is particularly evident in the white decoration of fragment BRN 1-09 analysed in three separate areas (cf. Fig. 6).

[19] Cf. Fig. 8a, b.

[20] See footnote 12.

Remarkably, the levels of antimony and copper are significantly lower in the white glass than in the purple glass (Fig. 7); the same is true for other trace elements such as lithium, boron, zinc, strontium and barium. In contrast, some elements, such as arsenic, silver and bismuth, commonly associated in terms of their geological occurrence with lead, are significantly increased in the white glass.

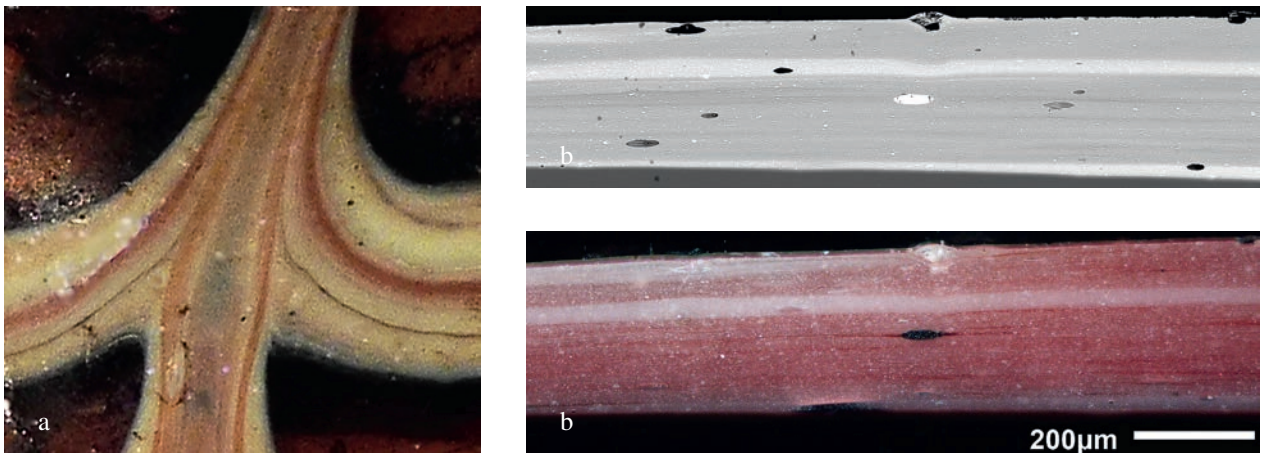


Fig. 6. Close-up photograph of the decorative trails on a fragment of bottle Cat. No 10 showing streaks of purple glass in the white thread (a; width of image c 1.7 mm). Mixing of white and purple glass in the cross section of sample BRN 1-09 (sampled from the same vessel) as seen in the SEM-BSE image as different grey shades and in the OM micrograph in colour (b; scale bar is 0.2 mm). The mixing is potentially due to contamination of the tool during the dragging of the trails, and also explains the differences between the three analyses of the white glass in this sample (BRN 1-09.w(i), (ii), (iii))

Сл. 6. Детаљ декорације на фрагменту боце Cat. No 10 приказује трагове пурпурног стакла прожете кроз беле нити (a; ширина слике с. 1,7 mm). Мешање белог и пурпурног стакла у пресеку узорка BRN 1-09 (узорак исте посуде), што се на SEM-BSE слици препознаје у виду различитих сивих сенки, а на OM микрографу у боји (b; размера је 0,2 mm). Мешање је можда резултат контаминације изазване алатком којом су се наносиле стаклене нити, што такође објашњава и разлике у три мерења белог стакла у овом узорку (BRN 1-09.w(i), (ii), (iii))

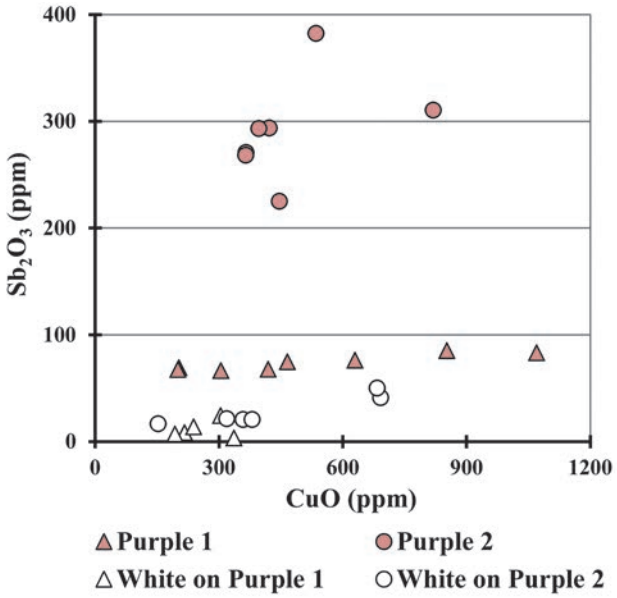


Fig. 7. The antimony oxide (Sb_2O_3) content in the purple glasses is significantly higher than in the white glass, particularly in Purple 2, while copper oxide (CuO) is only elevated in some of the analysed samples compared to the white glass. LA-ICPMS data from B. Gratuze, IRAMAT

Сл. 7. Садржај оксида антимона (Sb_2O_3) у пурпурном стаклу је у значајној мери виши него у белом стаклу, нарочито код узорака подгрупе Пурпур 2, док је бакар-оксид (CuO), у поређењу с белим стаклом, повишен само у неким испитаним узорцима. LA-ICPMS подаци добијени од Б. Гратуза, IRAMAT

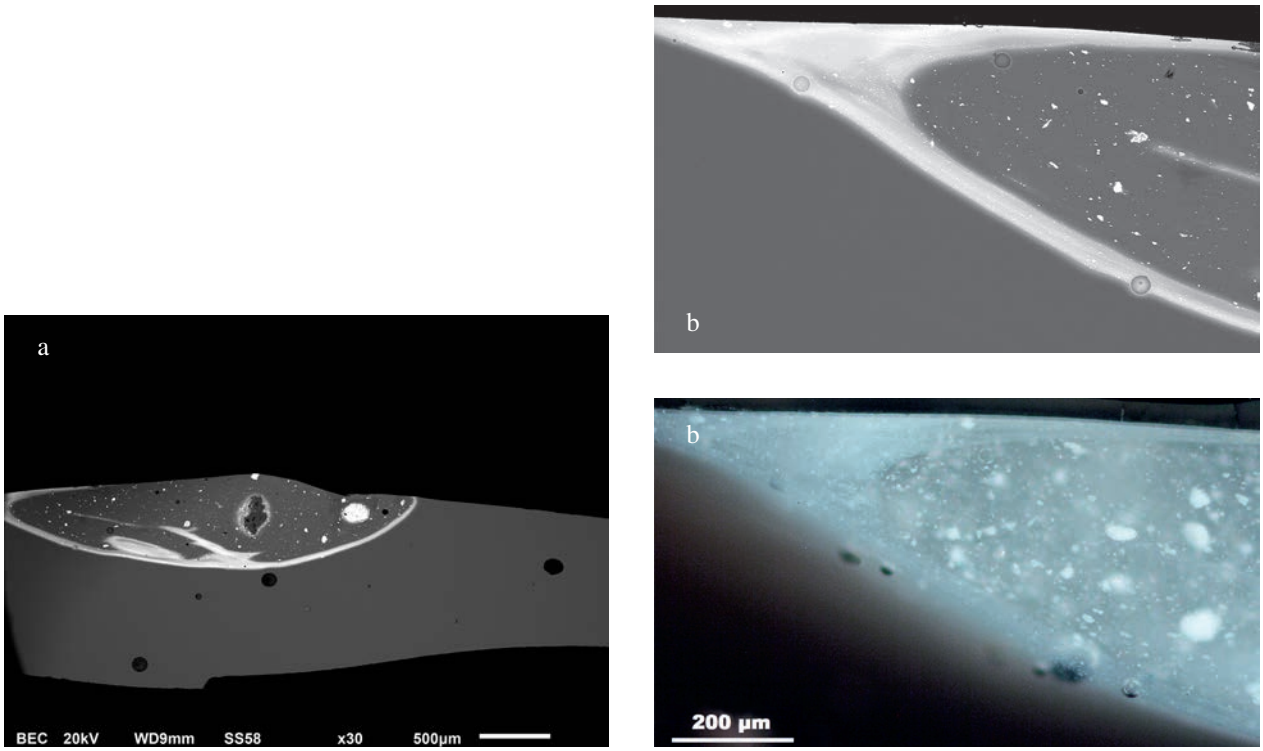


Fig. 8. Cross section through fragment BRN 1-13. Note the homogenous body (mid grey) and the white trail marvered into the body (white, upper part, with discrete bright white particles and clusters of tin oxide). SEM-BSE image (a; scale bar is 0.5 mm). Close-up of the left corner of the trail as OM micrograph and as SEM-BSE image showing that the glass is not fully opacified and only the external layer of the trail is rich in tin and lead oxides (b; scale bar is 0.2 mm)

Сл. 8. Пресек кроз фрагмент BRN 1-13. Уочавају се хомогено тело (средње сива) и бела нит стопљена са телом посуде (бела, горњи део, са дискретним светлим белим честицама и кластерима оксида калаја). SEM-BSE слика (a; размера је 0,5 mm). Детаљ левог угла беле нити као OM микрограф слика и као SEM-BSE слика показује да стакло није потпуно непрозирно и да је само спољашњи слој нити богат оксидима олова и калаја (b; размера је 0,2 mm)

Texture of the purple glass

Vessel glass is often considered very homogenous, due to the nature of glass as a melt which solidified without crystallisation. The purple area of fragment BRN 1-13 is an example of such a very homogenous glass (Fig. 8a, b). However, all other sampled purple glasses are not entirely homogenous in their texture, but in cross section appear striated with slightly lighter stripes or layers within the predominantly mid-grey[21] matrix (Fig. 9a, b). These stripes are due to different concentrations of metal oxides in the different layers, with increased lead and tin content in the lighter parts. At higher magnification, discrete particles rich in lead and tin oxide become visible within some of the light striations (Fig. 9b). Among the six fragments studied microscopically, this is particularly pronounced in the purple areas of BRN 1-04, 1-09, and 1-14b. BRN 1-05 and 1-07 are less clearly layered, while only BRN 1-13 appears entirely homogenous in the purple glass. There is no correlation between the presence and intensity of layering and the compositional subgrouping; two of the striped fragments belong to Purple 1 subgroup (i.e. samples BRN 1-14b.p, 1-05.p), and three to Purple 2 subgroup (i.e. samples BRN 1-04.p, 1-09.p, and 1-07.p).

[21] The grey shade refers to the appearance in the SEM-BSE images, which highlight compositional differences. Lighter shades represent higher concentrations of elements with a higher atomic number, such as heavy metals.

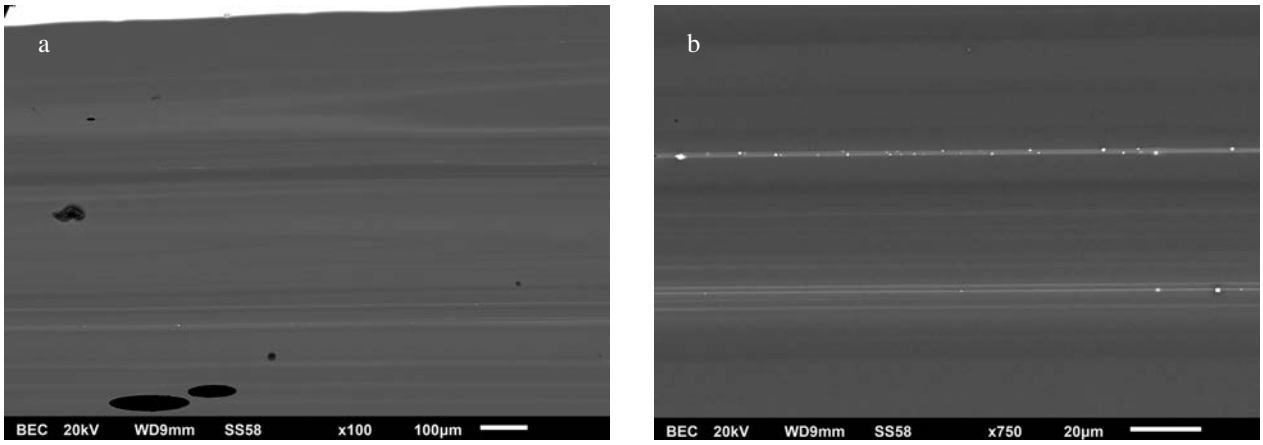


Fig. 9. Partial cross section through fragment BRN 1-04, showing the striation in the purple body. Different shades of grey represent different compositions, with higher levels of lead and tin oxide showing as lighter tones. Air bubbles appear black (lower left corner), while the upper edge of the image shows the beginning of the bright white layer on top of the purple body. SEM-BSE image (a; scale bar is 0.1 mm). Close-up of the same fragment, showing details of the striation in the purple body. The bright white particles are very rich in lead. SEM-BSE image (b; scale bar is 0.02 mm)

Сл. 9. Делимичан пресек кроз фрагмент BRN 1-04 показује пругасте трагове на пурпурној позадини. Различите сенке сиве боје представљају различит хемијски састав, са вишим вредностима оксида олова и калаја који су приказани у светлијим тоновима. Ваздушни мехурићи се појављују у црној боји (доњи леви угао), док горња ивица слике приказује почетак светлог белог слоја на површини пурпурне основе. SEM-BSE слика (a; размера је 0,1 mm). Крупан план истог фрагмента показује детаље пругастих елемената у пурпурној основи. Светле беле честице су веома богате оловом. SEM-BSE слика (b; размера је 0,02)

The triplicate LA-ICPMS analyses of almost all analysed fragments also show this strong and relatively unusual pattern of compositional heterogeneity, indicating that the molten glass was not very well mixed, and contaminated with some white glass, as demonstrated by the elevated tin and lead content (see below).

The white decoration

The trails of opaque white glass were clearly applied on the outer surface of the purple vessels, as is common for this type of decoration which goes back to the first core-formed glass vessels dating to the Late Bronze Age, and continued to be used through the Hellenistic and Roman to Late Antique periods, into the Islamic period and even into early modern Western Europe[22]. Typically, the trailed decoration was then combed and marvered into the body glass, making a flush and smooth overall surface and feathered design[23].

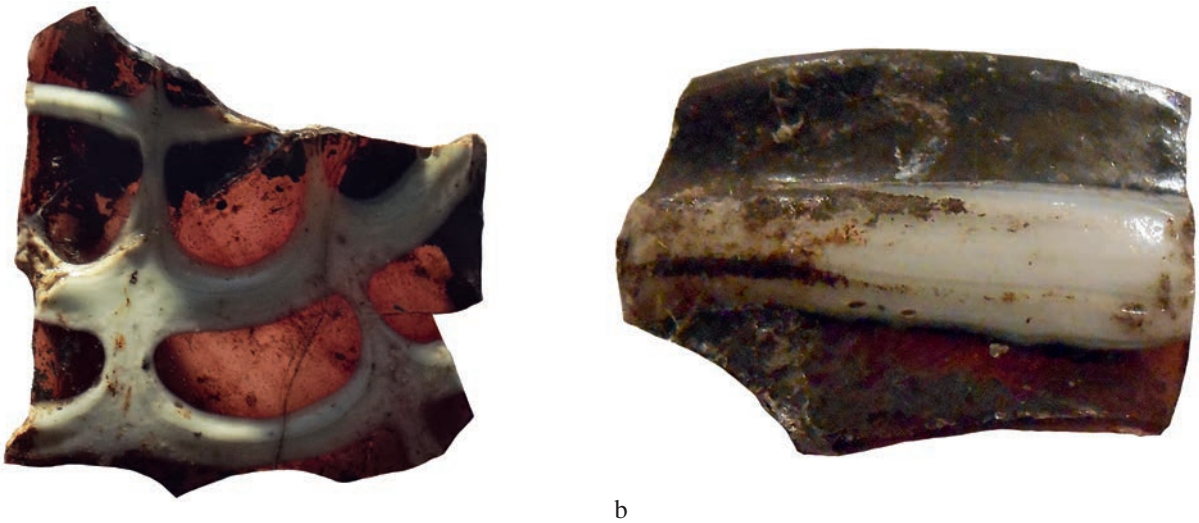
While the vessels studied here fall into the group of vessels commonly referred to as 'marvered', it is noteworthy that in several of the Braničevo fragments this marvering appears not to have been done fully in each case, with some of the white trails left standing proud of the purple glass surface (Fig. 10a, b; Fig. 11).

In other areas, however, the white glass appears fully pressed into the purple glass, as one would expect from properly marvered glass. The marvered working is recognisable in some cross sections, from the sloping boundary between the two glass types, and the dislocation of the striations in the purple glass (Fig. 12; see also Fig. 8).

As already mentioned, the LA-ICPMS data suggests that the white glass is compositionally quite heterogeneous (see Appendix), and this is also evident from the SEM imaging, in particular if the contrast is adjusted to reveal these differences (Fig. 13a, b, c). In SEM-BSE images, the white glass also appears white due to its high lead and tin content, in a similar contrast to the optical appearance (cf. Fig. 6b). Closer inspection

[22] An extraordinary example of marvered combed decoration from Western Europe, late 16th – beginning of the 17th c. in Patin et al. 2017.

[23] For instance, see kohl bottles from the al-Sabah Collection, dated to the 12th–13th c. in Carboni 2001, 304–305, Cat. No 80.



a b

Fig. 10. Examples of white decoration trailed onto the wall surface but not marvered into the body – wall fragment of a bottle (a) and rim fragment of a flask (?) Cat. No 14 (b); width of each image c 3–4 cm

Сл. 10. Примерци беле декорације на површини посуде који нису стопљени са телом посуде – фрагмент тела боце (а) и фрагмент обода мале боце? Cat. No 14 (b); ширина сваке слике износи око 3–4 cm

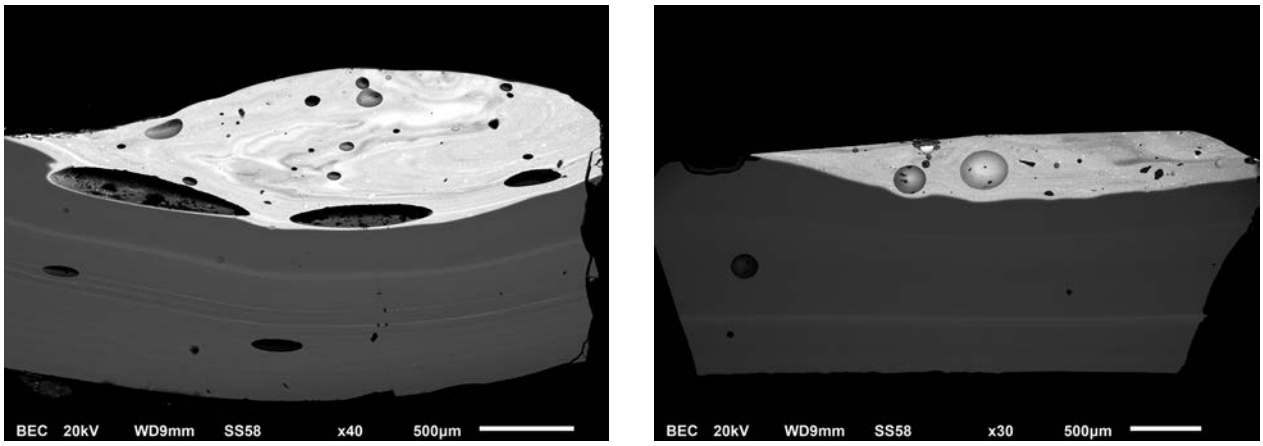


Fig. 11. Cross section through fragment BRN 1-07, with an incompletely marvered white thread overlaying the purple glass body (mid-grey). Air bubbles appear black. Note the internal heterogeneity of the white glass, and the elongated air bubbles trapped between the white and purple glass showing the incomplete bonding of the two glasses. SEM-BSE image; scale bar is 0.5 mm
Fig. 12. Cross section through fragment BRN 1-05. The tapering of the white colour shows how the white glass has been marvered into the purple body. SEM-BSE image; scale bar is 0.5 mm

Сл. 11. Пресек кроз фрагмент BRN 1-07, са непотпуно стопљеном и утиснутом белом нити која покрива пурпурно тело посуде (средње сива). Ваздушни мехурићи су црни. Обратити пажњу на унутрашњу хетерогеност белог стакла и издужене мехуриће „заробљене" између белог и пурпурног стакла који указују на непотпуно стапање ове две врсте стакла; SEM-BSE слика; размера је 0,5 mm
Сл. 12. Пресек кроз фрагмент BRN 1-05. Истањивање беле боје показује како је бело стакло утапано у пурпуну основу; SEM-BSE слика; размера је 0,5 mm

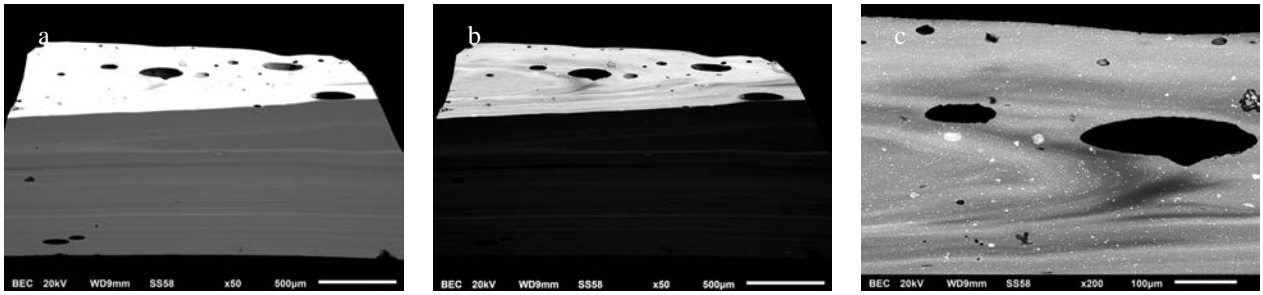


Fig. 13. Cross section through fragment BRN 1-04, at normal contrast setting showing the lead-rich white layer on top of purple (mid-grey, striated). Note the equally elongated air bubbles (black) in the white and purple glass, indicating that the vessel was possibly further inflated after the white decoration had been applied. SEM-BSE image (a; scale bar is 0.5 mm). The same area with the contrast setting to show the heterogeneity of the lead-rich opaque white layer on top of the purple glass (almost black, striation faintly visible). SEM-BSE image (b; scale bar is 0.5 mm). Close-up of the same area showing the internal structure within the white layer with parts of the glass having a much lower lead content (dark grey), and discrete particles and clusters of tin oxide (white) acting as an opacifier. SEM-BSE image (c; scale bar is 0.1 mm)

Сл. 13. Пресек кроз фрагмент BRN 1-04. При нормалном подешавању контраста уочава се слој белог стакла богат оловом на пурпурној основи (средње сива, пругасти трагови). Уочавају се једнако издужени ваздушни мехурићи (црна боја) и у белом и у пурпурном стаклу, који наводе на помисао да је посуда поново дувана након што је бела декорација апликирана; SEM-BSE слика (a; размера је 0,5 mm). Исти део са контрастним подешавањем показује хетерогеност непрозирног белог слоја богатог оловом на пурпурној основи (скоро црна, пругасти елемент једва видљив); SEM-BSE слика (b; размера је 0,5 mm). Увећање овог дела показује структуру белог слоја са деловима стакла који имају знатно нижи ниво олова (тамносива), и дискретне честице и кластере оксида калаја (бело), који се користи да би се постигла непрозирност; SEM-BSE слика (c; размера је 0,1 mm)

and respective SEM-EDS measurements demonstrate that the white glass has variable quantities of tin and lead oxides resulting in a swirled or *schlieren* appearance typical of incomplete mixing of two viscous liquids. Higher magnification shows the individual discrete particles and bigger clusters of particles of tin oxide which give opacity to the glass, and their uneven distribution in a matrix which is also very variably saturated with lead oxide.

The white thread in fragment BRN 1-13 is unusual in that it seems to consist mostly of a thin lead-rich outer layer surrounding a core of weakly coloured glass which is only partly opacified with relatively big particles of tin oxide and, according to the EDS data, contains hardly any lead oxide (see Fig. 8b). Thus, the texture of the white area of fragment BRN 1-13 provides further evidence of the heterogeneity of the opaque white glass.

DISCUSSION

Several aspects of the results presented here can be discussed that are informative for the understanding and archaeological interpretation of this unique assemblage. Firstly, there is the question of how the different glass compositions relate to each other, and what this tells us about the working practices of the producers of these vessels. Secondly, there is the question of the origin of the base glass and the nature of the colorants used to produce these colourful objects. Finally, we will briefly discuss how this assemblage compares compositionally to other analysed marvered vessels with white trails.

The working practices of the vessel producers

The assemblage consists of three chemically distinct glasses, namely the two subgroups of the translucent purple – Purple 1 and 2 – and the opaque white glass. The compositional difference between Purple 1 and 2 is only small, but for several oxides and trace elements it is clearly bigger than the variability within each subgroup, indicating that they are indeed two separate subdivisions of the purple glass. On balance, the base chemical makeup of Purple 1 and Purple 2, their colourations, as well as the technique of vessel decoration bind the two subgroups together. Importantly, the opaque white glass on the two purple glasses does not separate

into two clearly distinct subgroups, but appears to be chemically consistent, regardless of whether it is applied on Purple 1 or Purple 2. Thus, the white glass was taken from one and the same stock, even if the purple glass is slightly different. One can, therefore, argue that all vessels were probably made in the same workshop, with Purple 1 and Purple 2 representing two different stocks, batches or pots of molten glass, while the opaque white trails, used much more sparingly and in smaller amounts than the purple, were from the same batch for both production series of purple vessels.

Important differences between the two purple subgroups are observed in their trace element patterns, particularly in the levels of tin and lead oxide contamination (see Fig. 4), where Purple 2 has noticeably higher levels. We argue that the presence of these elements indicates some contamination of the batch by the white glass, possibly by incidental inclusion of white glass pieces (wasters?), or/and perhaps during the working process when the same tools were used to retrieve hot glass and combine it with the purple paraison when forming the vessels. Such a hypothetical explanation is further corroborated by the contamination of the opaque white glass of fragment BRN 1-09. Its adulteration with stripes of purple glass (see Fig. 6) represents the opposite effect of the same working practice, i.e. a certain amount of purple glass was accidentally admixed into the white batch. As mentioned above, Purple 2 subgroup features higher SnO_2 and PbO values than Purple 1, and this peculiarity once again confirms the differentiation of the two subgroups, possibly caused by variations of the secondary glass working operations. Nevertheless, the seemingly different trends for the Sn/Pb ratios in the two subgroups (see Fig. 4) should be taken with caution since the calculated higher average lead oxide levels in Purple 1 samples may well result from the internal heterogeneity of some of them[24].

At the same time, Purple 2 has an intriguing pattern of relatively high contamination with antimony oxide (around 290 ppm on average compared to only c 75 ppm in Purple 1); the white glass, in contrast, has even less antimony, with only about 15 ppm Sb_2O_3 (see Fig. 7), close to the natural background concentration of this oxide in glassmaking raw materials[25]. The copper content is variable but also higher (at trace oxide level) in the analysed purple fragments than in the white glass, and this pattern is overall indicative of a further source of contamination of the purple batches. Increased levels of elements which can affect the colour of the glass (e.g. copper, cobalt, antimony, etc.), which are, however, significantly lower than those of purposely used additives, have long been recognised to denote contamination of raw glass with cullet containing small amounts of coloured fragments[26]. Accordingly, we interpret the current data as evidence of the addition of certain amounts of cullet glass, particularly in the purple melts. Such mixing could have taken place either at the stage of primary glass making, or in the secondary glass workshop where the actual vessel manufacture took place, or possibly even at both stages of production[27].

An even more detailed insight into this practice of cullet re-melting can be inferred from the differences at trace element level between Purple 1 and Purple 2. Samples of the Purple 2 subgroup feature the highest boron concentrations in this assemblage which set them apart from the other purple glass and the white glass (Fig. 14). Traces of boron are usually present in the raw materials used in glass making but such an abrupt increase of B_2O_3 concentrations as seen in Purple 2 (even if still being at trace oxide level) could indicate an additional source of this element in the glass melt. High-boron glasses of the Middle Byzantine period, approximately contemporaneous with the vessel assemblage from Braničevo, form a well distinguishable category of various chemical compositions, which is likely related to specific raw materials from Western Anatolia[28]. Recently, a particular link between these compositions and manufacture of 10th–12th c. Byzantine glass bracelets has been proposed[29]. As suggested above, the cullet inclusion in the purple batches seems quite probable, and the increased B_2O_3 levels in Purple 2 allow further hypothesizing that at least a certain part of that reused glass was of high-boron composition. This, in turn, could be interpreted as evidence for an

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[24] The heterogeneity of Purple 1 subgroup is particularly pronounced for the PbO content of samples BRN 1-05 and BRN 1-11. The coefficient of variation between the triple individual PbO measurements for the Purple 1 samples typically ranges between c 6% and 27%, while for samples BRN 1-05 and BRN 1-11 it is 57% and 103%, respectively. The highest PbO level is nearly 8000 ppm, measured on BRN 1-05, and the lowest individual measurement on the same sample is c 1000 ppm.

[25] Brems, Degryse 2014, 79; Jackson 2005, 764; Rehren, Brüggler 2015, and literature therein.

[26] Jackson 1996; Freestone 2015, 34–36.

[27] Recycling of cullet and discarded glass is considered an intrinsic feature of Islamic glass production – cf. Jenkins 1986, 3; Freestone 2002, 76.

[28] Brill 2005, 215–219; Rehren et al. 2015, 276–277.

[29] Swan et al. 2018, 228 and literature therein.

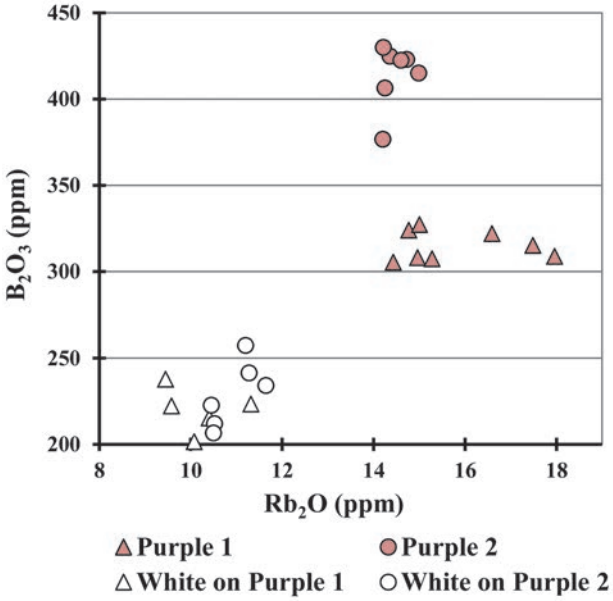

Fig. 14. The rubidium oxide (Rb_2O) and boron oxide (B_2O_3) contents of the purple glasses are higher than those of the opaque white glass, with a further increase of B_2O_3 in the Purple 2 subgroup which is tentatively explained as resulting from the addition of cullet of high-boron composition in the Purple 2 batch. LA-ICPMS data from B. Gratuze, IRAMAT

Сл. 14. Вредности оксида рубидијума (Rb_2O) и борона (B_2O_3) више су у пурпурном стаклу него у непрозирном белом стаклу, са даљим увећањем B_2O_3 у подгрупи Пурпур 2, што је условно објашњено као резултат додавања стакленог отпада са високом концентрацијом борона у претапању подгрупе Пурпур 2. LA-ICPMS подаци од Б. Гратуза, IRAMAT

unselective and possibly ad hoc recycling practice which could have taken place in the workshop of the vessel manufacturers, causing minor compositional variations between the different batches of purple glass.

Overall, we interpret the chemical composition of the Braničevo assemblage to indicate that the analysed vessels were made in two separate production events, but most likely in the same workshop which used slightly different batches of purple glass. This could have been either on two different days, or even at the same time, using two separate pots of molten glass from which glass blowers worked side-by-side. It is noteworthy that it seems that a single stock of white glass was used during both production episodes. From the trace element concentrations we recognise the incorporation of some cullet containing certain amounts of copper in the purple batches, and antimony and boron in the Purple 2 batch in particular. Such an indiscriminate recycling could indicate relatively unsophisticated production practices, as is further corroborated by the reciprocal contamination of the purple and white batches, possibly resulting from not too attentive or skilful tool manipulation by the craftsmen when applying the vessel decoration.

Finally, when comparing the purple compositional subgroups and vessel shapes, it is evident that the bottles and the analysed bigger bowl are made of Purple 2 glass, while the smaller bowls and flasks are Purple 1 (see Appendix). The correlation between glass compositions and vessel shapes within a single set, likely manufactured in a single workshop, provides an intriguing glimpse at the organisation of the craftsmen. It seems possible that relatively standard series of uniform vessels were made from a single batch – e.g. bottles with handles made of Purple 2 glass only – either by a single (specialised?) glassblower, or by several craftsmen simultaneously implementing identical production tasks.

The origin of the glass, and its colouration

The composition and provenance of Islamic glass from the late 1st and early 2nd millennium AD has been the subject of numerous studies[30], which provide a sound body of comparative data against which to juxtapose the composition of the vessels from Braničevo. In this way, it is possible to broadly specify the production region from which the glass used for the manufacture of the set originated. Such an attribution, however, would only locate the production of the raw glass itself, and does not imply that the vessels as objects were necessarily manufactured in the same region. This is due to the organisation of the medieval Near Eastern glass industry which was likely divided into technologically, and possibly also spatially, separate stages of glass making and glass working[31].

As mentioned earlier, the analysed purple and white samples generally match the common Islamic soda

[30] Most recently Phelps 2017; Henderson et al. 2016; and Swan et al. 2017, 110–114, and references therein.

[31] Whitehouse 2009, 506–507.

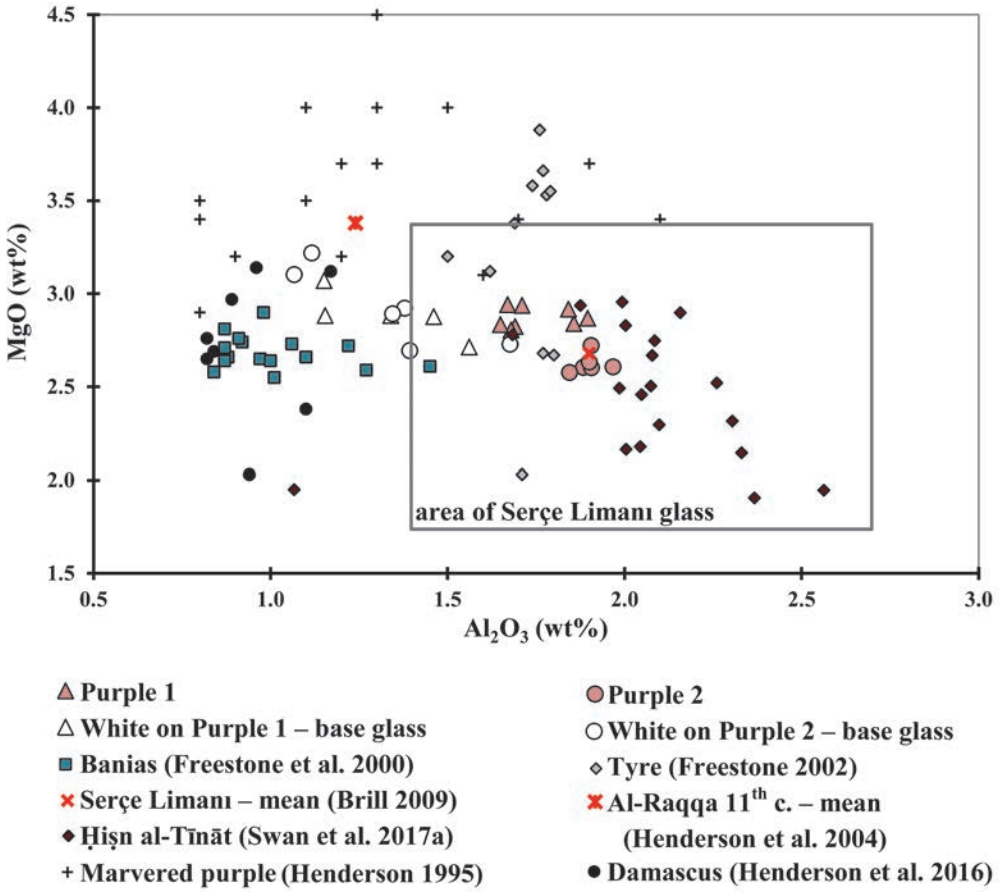

Fig. 15. The alumina (Al_2O_3) and magnesia (MgO) contents of the Braničevo glasses (the opaque white glass recalculated to represent the base composition – see footnote 32) compared to published analytical data for selected glass groups from the Levant. The samples of purple glass decorated with marvered threads in the Ashmolean Museum (data from Henderson 1995) have generally higher magnesia and do not seem to form a defined cluster

Сл. 15. Вредности оксида алуминијума (Al_2O_3) и магнезијума (MgO) у стаклу из Браничева (вредности за непрозирно бело стакло су модификоване – види нап. 32) у поређењу са публикованим аналитичким подацима за издвојене групе стакла са Левантa. Узорци пурпурног стакла украшени апликираним нитима у музеју Ешмолијен (подаци из: Henderson 1995) имају генерално виши ниво магнезијум-оксида и не представљају дефинисану групу

plant-ash glass composition, as could also be expected on the basis of the stylistic features of the vessels. Among the several major regions known to have produced glass in the early 2nd millennium AD Byzantine and Near Eastern Islamic worlds[32], the Levantine coast and the adjacent territories seem to provide the closest compositional parallels of the Braničevo assemblage. It is beyond the scope of this paper to present a thorough comparison of the Braničevo samples with the known glass makeup from this region, not least because of the variable extent of compatibility between the available literature data. Nevertheless, some general compositional affiliations are outlined below, based on two diagnostic major oxides.

A scatter graph of the alumina and magnesia levels in the present samples shows how they relate to some of the published analytical sets from the Levantine

[32] These regions include Egypt, the Levantine coast, Mesopotamia and Iran, and Western Anatolia, with the latter two being ruled out based on their specific trace element pattern. The differentiation between glass of Egyptian and Levantine origin is less clear-cut, and for now better understood for earlier mineral natron glasses than for medieval plant-ash glasses.

region, broadly dated to c 10th–12th/14th c. AD (Fig. 15). Since the added tin and lead oxides in the opaque Braničevo samples significantly distort the original composition of the raw glass, the values for all the white glass in this plot are recalculated in order to make them consistent with the rest of the data (see Table 1)[33].

As expected, the Purple 1 and Purple 2 subgroups form a tight single cluster featuring relatively high alumina concentrations. As mentioned above, we tentatively interpret the internal differentiation of this cluster as a result of minor variations between the two batches and glass mixing which have no significance in regard to glass provenancing. Remarkably, the recalculated base composition of the opaque white samples has lower alumina and, on average, slightly higher magnesia than the purple glass. Such Al_2O_3 values (mean c 1.3 wt%) associate the base glass of the Braničevo decoration with the composition found in chunk glass samples from a secondary production site in Banias (Northern Israel) dated to the 10th/11th–13th c. AD[34]. Samples of 12th–14th c. vessel glass from Damascus (Syria), broadly from the same inland Levantine region, also display comparable alumina and magnesia levels[35].

In contrast, the purple samples from Braničevo fall into the area of the Serçe Limanı glass – a vast shipwreck assemblage of vessels, cullet and raw chunks of Levantine/Syrian provenance, found off the South-Western Anatolian coast of Turkey, near Rhodes, and dated to the third decade of the 11th c. AD[36]. These glasses have generally higher alumina and also more variable magnesia levels. A similar trend of negative correlation of Al_2O_3 and MgO is seen in a late 10th – early 12th c. assemblage of glass bracelets from Hisn al-Tīnāt (Turkey), at the North-Western edge of the Levantine coast[37]. The samples from the large primary glass production furnaces excavated in Tyre (Lebanon) on the Levantine coast and tentatively dated to the 10th–11th c. should also be mentioned here, despite their broader range of MgO, since a common regional origin of the Tyre composition and the Serçe Limanı glass can possibly be recognised[38].

Such a summarised overview of the compositional analogies of the Braničevo samples confirms the differentiation of the opaque white and the purple glasses in terms of their base chemical makeup, and may suggest that they possibly come from different production zones within the broader Levantine region. This would imply that the workshop where the vessel set was manufactured procured its raw materials from more than one source. Nevertheless, provenancing plant-ash glass on the basis of major oxides only may not be entirely straightforward or conclusive because of the variability of the plant ash component[39] as well as due to the dynamic connections and exchange of raw materials which likely existed between the different production centres within the Levant and beyond[40]. Some isotope studies, for example, suggested that the Banias glass was probably produced, like the Tyre glass, on the Mediterranean coast instead of in the inland Levant, but these two littoral production centres used plant ashes procured from different areas[41]. Furthermore, on the basis of isotope data, a common origin of the plant ash used in Tyre and the North Syrian production centre at al-Raqqa has been proposed[42].

Apparently, complex phenomena of technological and economic interactions developed between the glass production regions in the medieval Levant and on a wider geographical scale. In this context, a secondary workshop, such as the one that manufactured the Braničevo vessels, could probably have been supplied with raw glass, cullet and possibly even prefabricated opacified glass (see below) from various sources. Therefore, associating its production with a particular primary production centre within the Levant may not be plausible at the present stage of research.

Regarding the colouration of the analysed samples, it was previously mentioned that the purple colour is

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[33] This recalculation excluded SnO_2 and PbO, and the remaining composition was re-cast to 100% to represent the base glass used to produce the opaque white composition, similar to the approach of 'reduced composition' in Brill 2009, 482 and the references therein.

[34] Freestone et al. 2000, 69, Table 2; Freestone 2006, 203. Note that Samples 49 and 54 from Freestone et al. 2000 are not included in Fig. 15 as they do not match the main cluster of Banias glass.

[35] Henderson et al. 2016, 144.

[36] Brill 2009, 479–492. The outlined area in Fig. 15 includes the samples of the main group of Serçe Limanı glass, without the samples with extreme Al_2O_3 and MgO values.

[37] Swan et al. 2018, plant-ash glass of Group 1, 222–223.

[38] Freestone 2002, 73–77 and the references therein; Brill 2009, 480. Note that Sample 5 from Tyre in Freestone 2002 is not included in Fig. 15 as it is supposed to be an outlier.

[39] Freestone 2006, 205, 212; Degryse et al. 2010, 83.

[40] Henderson et al. 2009, 426.

[41] Degryse et al. 2010, 89.

[42] Freestone et al. 2009, 44–45; for al-Raqqa glass see Henderson et al. 2004. The plant-ash glass of subtype 1 found at the Tell Fukhkhar site in 11th c. AD al-Raqqa has, on average, slightly higher MgO than the Braničevo samples (Fig. 15).

caused by higher levels of manganese oxide[43]. Besides the intentionally added MnO, there are higher strontium, barium and iron contents in the purple compositions, with Fe_2O_3 particularly higher in Purple 2. Rather than weakening our argument for a close chemical similarity to the Levantine glasses which typically have lower levels of these elements, we argue that these differences are a direct consequence of the added manganese mineral. This is most clearly argued for barium, the concentration of which in the purple glass is closely correlated with the manganese concentrations, reflecting the known geological correlation of the two elements in barium-containing manganese minerals. However, the added Mn-bearing material was possibly a mixture of different minerals, some rich in manganese, others rich in iron (and possibly also titanium and aluminium), which accordingly increased the iron oxide content of the purple glasses even though no direct Mn–Fe correlation can be identified[44].

The opaque white glass of the Braničevo vessels is produced by adding tin and lead oxide to common transparent and, most probably, decolourised or slightly tinted base glass. The opacity and the white colour result from the minute tin oxide particles dispersed in the glass, while lead is typically dissolved in the glass matrix, helping to lower the range of temperatures at which glass is sufficiently soft to be shaped[45]. Such particular working properties of the opaque white glass, even if probably not deliberately sought, were certainly necessary when the soft threads were applied onto the vessel walls and dragged up to form the festoon pattern, while at the same time the purple vessel itself had to be kept stable and not deformed by the contact with the viscous white glass.

The analytical study of Islamic marvered vessels by J. Henderson found the same additives in the opaque white thread decorations[46]. Furthermore, an identical production technology of mixing base plant-ash soda-lime-silica glass with tin and lead oxides is recognised in pre-fritted tin white enamels of the later Islamic glasses of the 13th–14th c[47]. A comparison of these data and the Braničevo samples demonstrates that all opaque white decorations have similar levels of SnO_2 and PbO, with the Braničevo samples featuring generally lower tin oxide concentrations (Fig. 16). Interestingly, the trend of a pronounced heterogeneity of the glass and incomplete mixing of the additives mentioned above is also noticed in some tin white enamel samples[48].

Previous research suggested that opaque glass production possibly formed a more specialised section of the Islamic glass industry because of the particular knowledge and skills required regarding the opacifying technology [49]. Hypothetically, this includes the distribution of prefabricated coloured glass as raw material to secondary workshops. The differences between the base composition of the purple and the opaque white samples from Braničevo could be interpreted as an indirect corroboration of such a hypothesis. At the least, these differences rule out the possibility that both colours were produced in the glass blowers' atelier using one and the same starting batch of common base glass. It seems plausible that the white glass was brought as readymade raw material to the glass blowers' workshop and was used there without further compositional modifications (apart from the contamination with purple glass) in the two separate production events of Purple 1 and Purple 2 vessel manufacture.

Comparison with other Islamic marvered vessels

The extent of published analytical data on Islamic marvered glasses available from the literature is relatively limited. The most comprehensive research is the already mentioned study by J. Henderson[50], who presents compositional analyses of 26 different objects

[43] It is suggested that manganese was added in Islamic plant-ash glasses already at the primary stage of production in order to improve their colour and texture, and this addition may not have been according to a strictly controlled recipe (Freestone 2002, 76). However, it is not clear whether higher manganese concentrations used to obtain purple glass colour were added during the primary glass making, or at the stage of secondary glass working. Significantly, the dark purple colour of marvered vessels is presumed to be characteristic of Syrian workshops (Carboni 2001, 305), further supporting the proposed Levantine origin of the glass of the Braničevo vessels.

[44] Cf. Henderson 1995, 37.

[45] Previous studies on Islamic white enamels have demonstrated that the significant levels of lead oxide facilitate lower softening temperatures of the enamel, while also providing an increased opacity effect due to the complex processes of tin particles recrystallisation – see Freestone, Stapleton 1998, 126; Salvant et al. 2016, 10.

[46] Henderson 1995, Table 2.

[47] Freestone, Stapleton 1998, 125, 126–127, Table 3; Wypyski 2010, 113. However, certain compositional differences between opaque white marvered decoration and white enamels are also noted – Henderson 1995, 40–41.

[48] Freestone, Stapleton 1998, 125.

[49] Henderson 1995, 40.

[50] Henderson 1995.

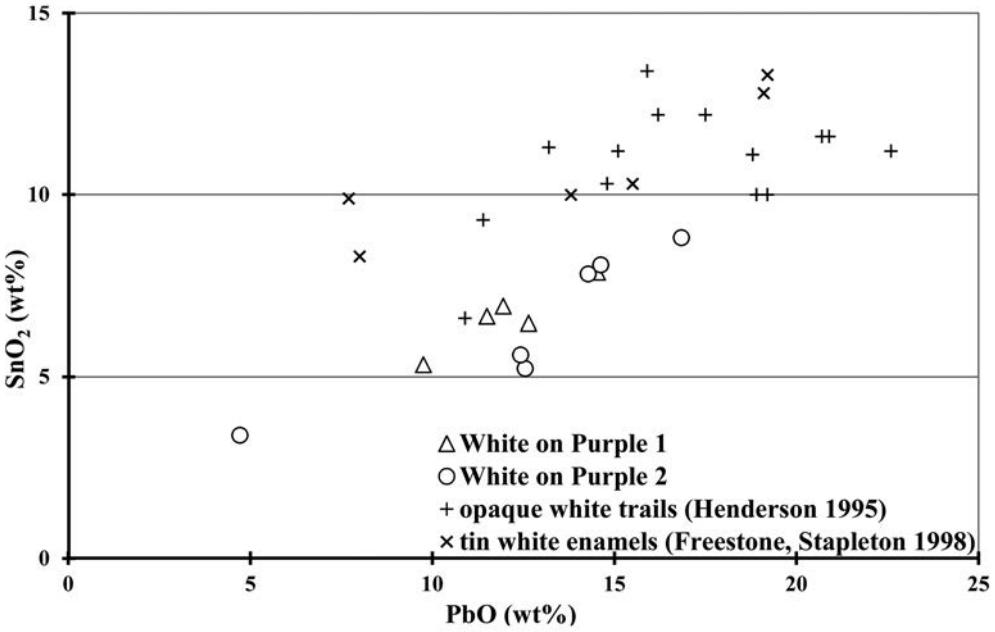

Fig. 16. The lead oxide (PbO) and tin oxide (SnO_2) levels in the opaque white glass are similar to the values found in the marvered white threads of the Islamic glass in the Ashmolean Museum (data from Henderson 1995) and in the tin white enamel decoration of the Islamic vessels in the British Museum (data from Freestone, Stapleton 1998). Note the lower SnO_2 content of the present samples; the tight positive correlation of the two additives in the Braničevo glasses strongly suggests that they come from a single batch, as opposed to the more dispersed pattern of the Ashmolean and British Museum datasets obtained from vessels of diverse origins

Сл. 16. Вредности оксида олова (PbO) и калаја (SnO_2) у непрозирном белом стаклу сличне су вредностима нађеним у апликираним белим нитима у исламском стаклу у музеју Ешмолијен (подаци из: Henderson 1995) и у калајнобелој емајлираној декорацији исламских посуда у Британском музеју (подаци из: Freestone, Stapleton 1998). Обратити пажњу на нижи ниво SnO_2 у присутним узорцима; чврста позитивна корелација два додата оксида у стаклу из Браничева доказ је да потичу из јединствене смесе, насупрот другачијем обрасцу у сетовима података добијених код посуда које имају различито порекло

from the Ashmolean Museum's collection, including 13 opaque white trails and 16 transparent purple bodies. The majority of these finds come from Fustat (Egypt) but unfortunately lack clear archaeological context and dating[51]. Five samples of white-marvered and threaded glass fragments of brown colour are published among the analysed finds from the Monastery of Wadi al-Tūr in Sinai (Egypt), typically of a post 10th c. AD date[52]. Finally, a fragmented white-marvered vessel of reddish brown colour excavated at Pergamon (Turkey) is dated to the 12th–13th c. AD[53].

Significantly, there is no compositional match between these published samples and the glass of the vessel bodies from Braničevo, even though the decoration and stylistic features of the objects define all of them as belonging to the group of marvered Islamic glass. The vessels in the Ashmolean collection have generally higher magnesia levels which are comparable, for instance, to the 11th c. AD plant-ash glass found in Northern Syria (Fig. 15)[54]. Furthermore, the Ashmolean samples of purple vessel glass demonstrate a wide compositional range, not forming a clearly defined

[51] Allan 1995, 7–9.

[52] Kato et al. 2010, minor type III, 1393, Figs 2q, 2r.

[53] Rehren et al. 2015, sample PER062, Fig. 2f (the label in the figure wrongly attributes this sample to the plant ash glass group of Pergamon; it in fact belongs to the HBAl / High Boron Alumina group, see Table 2, p. 270).

[54] Cf. Henderson et al. 2004, Table 3, Fig. 3 – the 11th c. AD Tell Fukhkhar plant-ash glass of subtype 1.

cluster, as opposed to the tight grouping of the Braničevo purple glasses. On the other hand, the samples from Sinai have a particular chemical pattern which resembles glasses of Egyptian provenance (e.g. elevated titania associated with a combination of higher alumina values and relatively low concentrations of lime), which distinctly sets them apart from the common Levantine glass makeup. In this respect, the Pergamon example is similar to the samples from Sinai but also features considerably elevated alumina (Al_2O_3 >8wt%) and high boron levels, indicating yet another production origin of the raw glass used in Islamic marvered vessel production.

This diversity of chemical glass compositions found across a fairly small and unsystematic database of available analytical results is not surprising, given that the manufacture of vessels with marvered trails is associated with different wider regions (e.g. Egypt and Syria[55]) and particular cities (e.g. Jerusalem[56]). It seems possible that, in fact, the Islamic marvered glass represents an inter-regional phenomenon of shared and replicated aesthetic trends and fashion, rather than production of a specific artisanal centre which could be characterised by a distinct chemical glass composition.

Such a complex and non-centralised model, probably with its own dynamics over time, tentatively reconstructed on the basis of glass chemistry, is also confirmed by the diversity of techniques of applying the trails. As previously mentioned, the decoration of the Braničevo vessels does not seem to be fully marvered in all areas, as usually seen with such objects[57]. The smear-like strokes of some of the festoons are not compatible with the typical technique of marvered trails[58]. This suggests that the glass blowers probably tried to imitate, with their supplies of raw materials and at their level of proficiency, the appearance of the fashionable ornamentation without being closely familiar with the genuine ways of creating combed patterns.

CONCLUSION

The studied set from Braničevo is unique in terms of the extent of the assemblage and the securely-dated archaeological context, and for the first time offering the opportunity for a detailed chemical characterisation. Even if stylistically homogenous, the assemblage forms two distinct though compositionally closely related groups of purple glass, linked further by the opaque white glass, indicating their origin from the same workshop but from different batches and production events. Both batches of purple glass have evidence of recycling in the base glass, and differ in the amount of added manganese, the purple colorant. They also have clear evidence of contamination with traces of the opaque white glass. The base compositions of the purple and the opaque white glasses are likely of Levantine origin. Nevertheless, such a provenancing does not necessarily indicate that the vessels themselves were manufactured in the Levant because of the division of the glass industry into primary glass making and secondary glass working stages.

For now, there are still not sufficiently large numbers of samples analysed for firm conclusions to be drawn, but apparently the marvered glasses do not form a consistent production group. The diversity of the glass compositions attested so far should not be unexpected if the popularity of the fashion had triggered the spread of this ornamental style and its further imitations in numerous workshops across the Islamic Near East – workshops which could have procured glass from various regions, hence with different chemical compositions. Nevertheless, the possibility of a more standardised production of the opaque white glass and its distribution as prefabricated raw material for the secondary glass workshops should not be ignored.

Further data from analytical research and thorough artefact studies would help to identify possible correlations between the chronologies, regions of distribution, vessel shapes, decoration techniques and glass chemistry within the apparently broader and diverse group of Islamic marvered vessels.

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55 Carboni 2001, 305, 309, Cat. No 82.
56 Brosh 2017, 305.
57 See footnote 23.
58 Cf. Carboni 2001, 291.

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Thilo REHREN, Anastasia CHOLAKOVA, Sonja JOVANOVIĆ
Composition and texture of a set of marvered glass vessels from 12th century AD Braničevo, Serbia (125–149)

Резиме: ТИЛО РЕРЕН, Наука и технологија у археологији и култури, Кипарски институт, Никозија;
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ХЕМИЈСКИ САСТАВ И ТЕКСТУРА СЕТА СТАКЛЕНИХ ПОСУДА УКРАШЕНИХ АПЛИЦИРАНИМ НИТИМА (12. ВЕК) ИЗ БРАНИЧЕВА (СРБИЈА)

Кључне речи. – исламско стакло, декорација аплицираним стакленим нитима, Браничево, Србија, 12. век, LA-ICPMS, SEM-EDS, pXRF.

Стаклене посуде интензивних боја, украшене аплицираним нитима, представљају широко распрострањену и популарну, али слабо изучавану групу висококвалитетног стакленог посуђа средњовековног исламског порекла. У раду су дати детаљни хемијски и микроструктурни подаци за пурпурне стаклене посуде украшене непрозирним белим нитима, које су откривене у сету током ископавања на локалитету Браничево – Мали град. Фрагментоване посуде потичу из затвореног контекста, из слоја рушења Куће 4, који је, захваљујући осталим археолошким налазима, пре свега примерцима новца, датован у средину / другу половину 12. века.

Међу фрагментима је издвојено најмање 16 различитих посуда, и то шест малих здела, две велике зделе, три веће и две мале боце, и три посуде које су са резервом опредељене као мале боце. Петнаест фрагмената од најмање 9 различитих посуда анализирано је методом масене спектрометрије са индукованом куплованом плазмом путем ласерске аблације (LA-ICPMS). Неколико уломака из ове групе издвојено је за анализу оптичким микроскопом и скенирајућим електронским микроскопом са енергетски дисперзивном спектрометријом (SEM-EDS), коришћењем детектора повратно расутих електрона (SEM-BSE) за снимање. Осим мерења у оквиру поменутог сета посуда, вршена су и мерења на око 30 других уломака пурпурног стакла, и то преносним рендгенским флуоресцентним спектрометром (pXRF), како би се потврдило издвајање хемијских подгрупа у читавом сету.

Резултати показују да је пурпурна основа посуда израђена од стакла на бази Na_2O – CaO – SiO_2 са биљним пепелом. Пурпурна боја добијена је захваљујући високим садржајима манган-оксида, који је намерно додат за потребе бојења стакла. Овакав став одговара типично исламском стаклу са биљним пепелом, а стилски типовима и декорацији посуда исламског порекла. У сету из Браничева идентификоване су две хемијске подгрупе – Пурпур 1 и Пурпур 2, са благим разликама у садржају главних оксида и елемената у траговима. Непрозирно бело стакло, од којег су израђене аплициране нити, има сличну основну композицију као и пурпурно стакло. Међутим, додавање оксида калаја и олова основном саставу овог стакла обезбедило је његову непрозирност и белу боју. У ове две подгрупе пурпурног, манганом бојеног стакла није уочена разлика у саставу белог стакла које је коришћено за израду декоративних нити на свим посудама у сету, што значи да оно вероватно има јединствено порекло.

У оба случаја (пурпурна основа, бела декорација) стакло је хетерогено и у микроструктури већине узорака видљиве су линије или слојеви који представљају различиту концентрацију оксида метала, као и дискретне честице богате оксидима олова и калаја. Оваква хетерогеност означава непотпуно мешање растопљеног стакла, вероватно рециклирање отпада, и по свој прилици контаминацију стакла алаткама коришћеним приликом израде посуда.

Хемијски састав посуда из браничевског сета показује да су оне израђене током две производна процеса, највероватније у истој радионици, у којој су коришћене незнатно различите смесе пурпурног стакла (Пурпур 1 и Пурпур 2). Када је реч о белом стаклу, очигледно је да је једна залиха коришћена током оба процеса. Поређењем подгрупа пурпурног стакла са формама посуда, утврђено је да су велике боце и већа здела израђене од стакла подгрупе Пурпур 2, док мање зделе и мале боце припадају подгрупи Пурпур 1.

Основна композиција пурпурног и непрозирног белог стакла вероватно је левантског порекла. То нужно не значи да су и саме посуде израђене на Леванту, будући да је познато да је производња стакла обухватала две гране – примарну израду сировог стакла и секундарну израду финалних производа. Поређењем састава наших примерака са објављеним подацима о хемијском саставу исламског левантског стакла потврђена је разлика у основној композицији пурпурног и белог непрозирног стакла, што указује на то да сировина потиче из две различите продукцијске зоне унутар левантске области. Наши резултати показују да је радионица у којој су посуде прављене набављала сировину из више од једног изворишта и да је могла бити снабдевена готовим непрозирним стаклом и, вероватно, разноврсним стакленим отпадом.

Appendix. Average values for the main oxides and trace compounds of the individual Braničevo glass samples, as determined by LA-ICPMS, and the average of eight separate analyses of Corning A compared to the published values for this reference glass, for references see footnote 14.
Vessel shapes and catalogue numbers from Spasić-Đurić, Jovanović in this volume

Прилоī. Просечне вредности īлавних оксида и једињења у траīовима у узорцима из Браничева, уīановљене меīодом LA-ICPMS, и īросечне вредности осам различиīих анализа Corning A, које су уīоређене са īубликованим вредноīима за ово референīно сīакло; за референце види наī. 14. Форме īосуда и каīалошки бројеви īреузеīи су из: Сīасић-Ђурић, Јовановић у овом броју Старинара

sample	vessel / Cat. No	SiO_2	Al_2O_3	Na_2O	K_2O	CaO	MgO	P_2O_5	Cl
		wt%	wt%	wt%	wt%	wt%	wt%	wt%	wt%
Purple 1									
BRN 1-03	bowl Cat. No 1 - rim fragment	67.1	1.68	12.6	2.35	9.1	2.94	0.31	0.69
BRN 1-01.p	bowl Cat. No 2 - wall fragment	67.3	1.71	12.5	2.24	9.2	2.94	0.31	0.70
BRN 1-15.p	bowl Cat. No 3 - rim fragment	67.8	1.65	12.2	2.31	9.2	2.83	0.31	0.64
BRN 1-05.p	cup Cat. No 6 - wall fragment	67.0	1.86	12.1	2.15	9.2	2.92	0.29	0.73
BRN 1-11.p	flask Cat. No 12 - wall fragment	67.3	1.90	12.0	2.23	9.2	2.87	0.30	0.70
BRN 1-12	flask Cat. No 12 - wall fragment	67.5	1.84	12.0	2.27	9.1	2.84	0.31	0.68
BRN 1-14b.p	? flask Cat. No 14 - wall fragment	67.7	1.69	12.3	2.23	9.1	2.82	0.30	0.79
BRN 1-14a	? flask Cat. No 14 - wall fragment	67.6	1.67	12.3	2.18	9.1	2.80	0.29	0.77
Purple 2									
BRN 1-13.p	bowl Cat. No 8 - wall fragment	67.0	1.88	12.8	1.95	8.8	2.58	0.27	0.77
BRN 1-06	bottle Cat. No 9 - loose handle fragment	66.8	1.91	13.0	1.95	8.7	2.63	0.27	0.76
BRN 1-08	bottle Cat. No 9 - wall fragment	66.7	1.91	13.0	1.89	8.7	2.61	0.26	0.76
BRN 1-07.p	bottle Cat. No 9 - wall fragment	66.5	1.84	12.9	1.89	8.8	2.72	0.27	0.76
BRN 1-09.p	bottle Cat. No 10 - wall fragment	66.8	1.90	13.0	1.93	8.7	2.60	0.26	0.77
BRN 1-10	bottle - neck fragment	66.6	1.97	12.8	1.93	8.6	2.48	0.26	0.79
BRN 1-04.p	? bowl - wall fragment	66.5	1.90	13.1	1.85	8.8	2.60	0.26	0.78
White on Purple 1									
BRN 1-01.w	Cat. No 2	55.1	1.04	8.6	1.80	6.7	2.23	0.21	0.56
BRN 1-15.w	Cat. No 3	57.8	1.26	9.5	1.66	6.1	2.19	0.25	0.71
BRN 1-05.w	Cat. No 6	59.0	1.19	8.8	1.77	6.3	2.35	0.22	0.66
BRN 1-11.w	Cat. No 12	59.4	0.98	9.9	1.87	7.9	2.60	0.26	0.71
BRN 1-14b.w	Cat. No 14	58.2	0.93	8.9	1.74	7.0	2.33	0.23	0.65
White on Purple 2									
BRN 1-13.w	Cat. No 8	64.8	1.54	10.5	2.03	7.9	2.50	0.31	0.82
BRN 1-07.w	Cat. No 9	55.0	1.04	8.6	1.69	6.7	2.23	0.21	0.58
BRN 1-09.w(i)	Cat. No 10 - white area	53.9	1.03	7.9	1.63	6.0	2.00	0.24	0.55
BRN 1-09.w(ii)	Cat. No 10 - pink area	58.3	0.92	8.9	2.01	7.2	2.64	0.25	0.77
BRN 1-09.w(iii)	Cat. No 10 - pink-purple area	58.5	0.87	8.8	2.01	7.1	2.54	0.26	0.70
BRN 1-04.w	? bowl	55.5	1.07	8.5	1.75	6.8	2.27	0.21	0.55
Braničevo set - means									
Purple 1		**67.4**	**1.75**	**12.2**	**2.25**	**9.1**	**2.87**	**0.30**	**0.71**
Purple 2		**66.7**	**1.90**	**12.9**	**1.91**	**8.7**	**2.60**	**0.26**	**0.77**
White		**57.8**	**1.08**	**9.0**	**1.81**	**6.9**	**2.35**	**0.24**	**0.66**
Corning A measured									
mean (n=8)		**66.9**	**0.91**	**13.9**	**2.84**	**5.67**	**2.46**	**0.11**	**0.13**
standard deviation (st dev)		0.21	0.03	0.10	0.02	0.05	0.06	42.52	0.01
Corning A published		**66.56**	**1.00**	**14.3**	**2.87**	**5.03**	**2.66**	**0.13**	**0.09**
difference absolute		0.4	-0.09	-0.4	-0.03	0.64	-0.20	-161	0.04
difference relative		0.6%	-8.9%	-2.5%	-1.1%	13%	-7.4%	-12%	43%

sample	TiO_2	Fe_2O_3	Li_2O	B_2O_3	Rb_2O	SrO	BaO	V_2O_5	Cr_2O_3	ZrO_2	MnO	CoO
	wt%	wt%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	wt%	ppm
Purple 1												
BRN 1-03	0.085	0.69	18	327	15	671	1506	26	22	55	2.09	6
BRN 1-01.p	0.086	0.68	21	324	15	681	1362	26	22	56	1.97	6
BRN 1-15.p	0.087	0.67	16	307	15	697	1460	26	17	58	1.95	6
BRN 1-05.p	0.095	0.80	21	322	17	669	1512	28	24	60	2.10	7
BRN 1-11.p	0.100	0.81	25	309	18	682	1556	29	23	64	2.11	7
BRN 1-12	0.097	0.77	23	315	17	682	1615	28	22	62	2.11	7
BRN 1-14b.p	0.088	0.69	17	308	15	692	1314	26	19	58	1.85	6
BRN 1-14a	0.089	0.71	18	305	14	680	1462	27	20	58	1.98	7
Purple 2												
BRN 1-13.p	0.099	1.03	25	406	14	691	1593	31	22	67	2.18	15
BRN 1-06	0.099	1.04	23	423	15	673	1564	31	22	65	2.20	14
BRN 1-08	0.098	1.06	22	430	14	675	1605	31	22	67	2.25	14
BRN 1-07.p	0.095	0.97	25	377	14	679	1764	30	22	63	2.46	10
BRN 1-09.p	0.098	1.07	23	425	14	670	1480	31	21	66	2.16	14
BRN 1-10	0.103	1.18	27	423	15	684	1550	33	26	71	2.25	14
BRN 1-04.p	0.099	1.08	26	415	15	666	1272	31	24	67	2.00	12
White on Purple 1												
BRN 1-01.w	0.060	0.47	9	215	10	462	183	18	17	37	0.56	13
BRN 1-15.w	0.069	0.46	2	201	10	375	207	19	9	39	0.78	6
BRN 1-05.w	0.059	0.41	2	223	11	396	227	18	13	36	0.80	6
BRN 1-11.w	0.060	0.42	11	238	9	551	196	19	14	43	0.66	6
BRN 1-14b.w	0.057	0.39	4	222	10	481	189	18	8	39	0.52	6
White on Purple 2												
BRN 1-13.w	0.082	0.52	5	234	12	505	286	20	11	47	0.70	6
BRN 1-07.w	0.058	0.51	0	223	10	450	188	18	11	39	0.54	10
BRN 1-09.w(i)	0.050	0.40	0	207	10	389	136	17	9	33	0.41	7
BRN 1-09.w(ii)	0.054	0.37	0	257	11	474	178	17	9	37	0.55	5
BRN 1-09.w(iii)	0.055	0.38	0	241	11	468	177	17	10	36	0.54	5
BRN 1-04.w	0.061	0.47	6	212	11	465	181	18	13	38	0.56	12
Braničevo set - means												
Purple 1	**0.091**	**0.73**	**20**	**315**	**16**	**682**	**1473**	**27**	**21**	**59**	**2.02**	**7**
Purple 2	**0.099**	**1.06**	**25**	**414**	**14**	**677**	**1547**	**31**	**23**	**67**	**2.21**	**13**
White	**0.060**	**0.44**	**4**	**225**	**11**	**456**	**195**	**18**	**11**	**39**	**0.60**	**8**
Corning A measured												
mean (n=8)	**0.76**	**1.13**	**110**	**2091**	**96**	**1028**	**4518**	**65**	**30**	**51**	**1.02**	**1717**
st dev	0.01	0.02	2	44	0.8	6	61	0.9	0.7	0.8	0.02	23
Corn A publ	**0.79**	**1.09**	**100**	**2000**	**100**	**1000**	**4600**	**60**	**30**	**50**	**1.00**	**1700**
difference abs.	-0.03	0.04	10	91	-4	28	-82	5	0	1	0.02	17
difference rel.	-3.7%	3.2%	9.9%	4.5%	-3.6%	2.8%	-1.8%	8.0%	1.5%	1.2%	1.7%	1.0%

sample	NiO	CuO	ZnO	As_2O_3	Ag	SnO_2	Sb_2O_3	PbO	Bi	Y_2O_3	La_2O_3	CeO_2	Nd_2O_3
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Purple 1													
BRN 1-03	16	203	62	18	1	342	69	719	1	7.3	6.9	12.4	6.2
BRN 1-01.p	16	304	63	17	3	330	67	716	1	7.5	7.0	12.6	6.4
BRN 1-15.p	16	200	62	16	1	324	68	670	1	7.7	7.8	13.9	6.8
BRN 1-05.p	17	852	70	20	8	552	85	3113	2	7.8	7.6	13.7	6.9
BRN 1-11.p	18	630	77	21	2	405	76	1779	2	8.4	8.3	15.0	7.2
BRN 1-12	17	466	66	20	3	353	75	1074	1	8.1	8.0	14.5	7.1
BRN 1-14b.p	16	419	74	17	2	352	68	1011	1	7.8	7.6	13.7	6.8
BRN 1-14a	15	1070	65	19	3	468	83	1584	2	7.6	7.6	13.7	6.5
Purple 2													
BRN 1-13.p	16	366	82	24	2	724	271	2254	3	8.1	7.9	14.1	6.9
BRN 1-06	17	365	82	23	2	765	268	2264	4	7.8	7.5	13.6	6.8
BRN 1-08	16	396	84	24	2	860	293	2549	4	8.0	7.5	13.5	6.7
BRN 1-07.p	16	446	79	25	2	909	225	2838	5	7.9	7.3	13.5	6.7
BRN 1-09.p	16	421	84	23	2	1048	294	3204	5	7.9	7.4	13.4	6.5
BRN 1-10	17	535	92	27	2	1589	383	4372	7	8.2	7.7	14.0	6.9
BRN 1-04.p	17	819	98	21	3	1410	311	5450	7	7.9	7.4	13.3	6.7
White on Purple 1													
BRN 1-01.w	39	304	45	62	25	78620	24	145338	253	4.5	4.6	8.3	4.2
BRN 1-15.w	29	238	31	50	23	64650	14	126428	212	6.0	5.7	10.1	5.2
BRN 1-05.w	31	336	33	48	27	66486	3	114960	494	5.1	5.3	9.2	4.8
BRN 1-11.w	31	217	44	34	16	53328	8	97529	260	5.3	5.7	9.8	4.7
BRN 1-14b.w	35	193	40	60	29	69259	7	119492	276	4.8	5.6	9.6	4.5
White on Purple 2													
BRN 1-13.w	21	152	37	15	7	33942	17	47127	108	6.7	6.8	11.7	6.0
BRN 1-07.w	39	380	42	47	29	80655	21	146235	324	4.9	5.3	8.9	4.4
BRN 1-09.w(i)	40	358	39	36	33	88142	21	168402	400	4.1	5.3	9.2	4.2
BRN 1-09.w(ii)	29	692	37	40	31	52277	41	125452	290	4.4	5.6	9.6	4.5
BRN 1-09.w(iii)	31	683	38	37	29	56055	50	124235	290	4.3	5.6	9.9	4.4
BRN 1-04.w	37	319	44	57	29	78135	21	142784	263	4.8	4.8	8.5	4.3
Braničevo set - means													
Purple 1	**17**	**518**	**67**	**19**	**3**	**391**	**74**	**1333**	**2**	**7.8**	**7.6**	**13.7**	**6.8**
Purple 2	**17**	**478**	**86**	**24**	**2**	**1043**	**292**	**3276**	**5**	**7.9**	**7.5**	**13.6**	**6.8**
White	**33**	**352**	**39**	**44**	**25**	**65595**	**21**	**123453**	**288**	**5.0**	**5.5**	**9.5**	**4.7**
Corning A measured													
mean (n=8)	**229**	**11559**	**542**	**32**	**15**	**1681**	**16350**	**615**	**8.65**	**0.72**	**0.41**	**0.30**	**0.15**
st dev	3	143	8	1.2	0.5	13	184	9	0.1	0.01	0.02	0.00	0.01
Corn A publ	**200**	**11700**	**440**	—	**19**	**1900**	**15770**	**730**	—	—	—	—	—
difference abs.	29	-141	102	—	-4	-219	580	-115	—	—	—	—	—
difference rel.	15%	-1.2%	23%	—	-19%	-12%	3.7%	-16%	—	—	—	—	—

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A 12th CENTURY SET OF MARVERED PURPLE GLASS VESSELS FROM BRANIČEVO (SERBIA)

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Abstract – During the 2011 archaeological excavations at the Mali Grad site in Braničevo, a set of at least 16 vessels made of translucent dark-purple glass and decorated with marvered opaque white trails was discovered. This unique glass assemblage, consisting of at least eight bowls, three bottles, two cylindrical flasks and three further vessels which can be possibly attributed to flasks, was found in the most significant archaeological context in the urban centre of Braničevo, in the layer above the floor in House No 4. According to other archaeological finds from the same context, coins in particular, the glass vessel set is dated to the 12th century. Importantly, the finds from Braničevo are so far the earliest securely-dated vessels of this type in the territory of the Byzantine Empire, post-dating the reestablishment of its control over the Balkan Peninsula in the 11th century.

Key words – Braničevo, Serbia, 12th century, vessel set, purple glass, opaque white marvered decoration.

Introduction

The remains of the Medieval city of Braničevo are situated in the eastern part of Serbia, about 130 km east of Belgrade and 24 km from northeast from Požarevac, in the village of Kostolac. Located in an important strategic position, on the right bank of the Danube and above the Dunavac and the Mlava River, Braničevo was one of the most important Medieval fortifications on the Danubian frontier (Fig. 1). Medieval Braničevo developed in the area of the Roman city and legionary fort of Viminacium. Two fortified structures of the Braničevo urban centre, known as Mali Grad and Veliki Grad sites, are situated on the ridge surmounting the lowland of Stig and the Pannonian plain. A vast suburb developed eastward, beneath the two units, at the Rudine and Svetinja sites on the opposite (right) bank of the Mlava River.[1]

In 2011, during the archaeological excavation at the Mali Grad site, a significant assemblage of purple marvered glass was unearthed. Given that marvered glass finds are rare in the Balkans and the fact that the Braničevo group of vessels is reliably dated, the aim of this paper is to present the assemblage in detail in terms of vessel typology and decoration, its context and date; it should also contribute to the current understanding of

[1] Поповић, Иванишевић 1988, 125.

The paper results from several research projects: *Archaeological investigations of Medieval Braničevo* (no. 1201-P13) by the National Museum in Požarevac, funded by the Municipality of Požarevac, *Urbanization Processes and Development of Medieval Society* (no 177021) by the Institute of Archaeology in Belgrade, funded by the Ministry of Education, Science and Technological Development of the Republic of Serbia, and the project of University College London (UCL) – Qatar, *Glass from Byzantium to Bagdad – trade and technology from the Byzantine Empire to the Abbasid Caliphate*, NPRP grant 7-776-6-024 from the Qatar National Research Fund (a member of Qatar Foundation).

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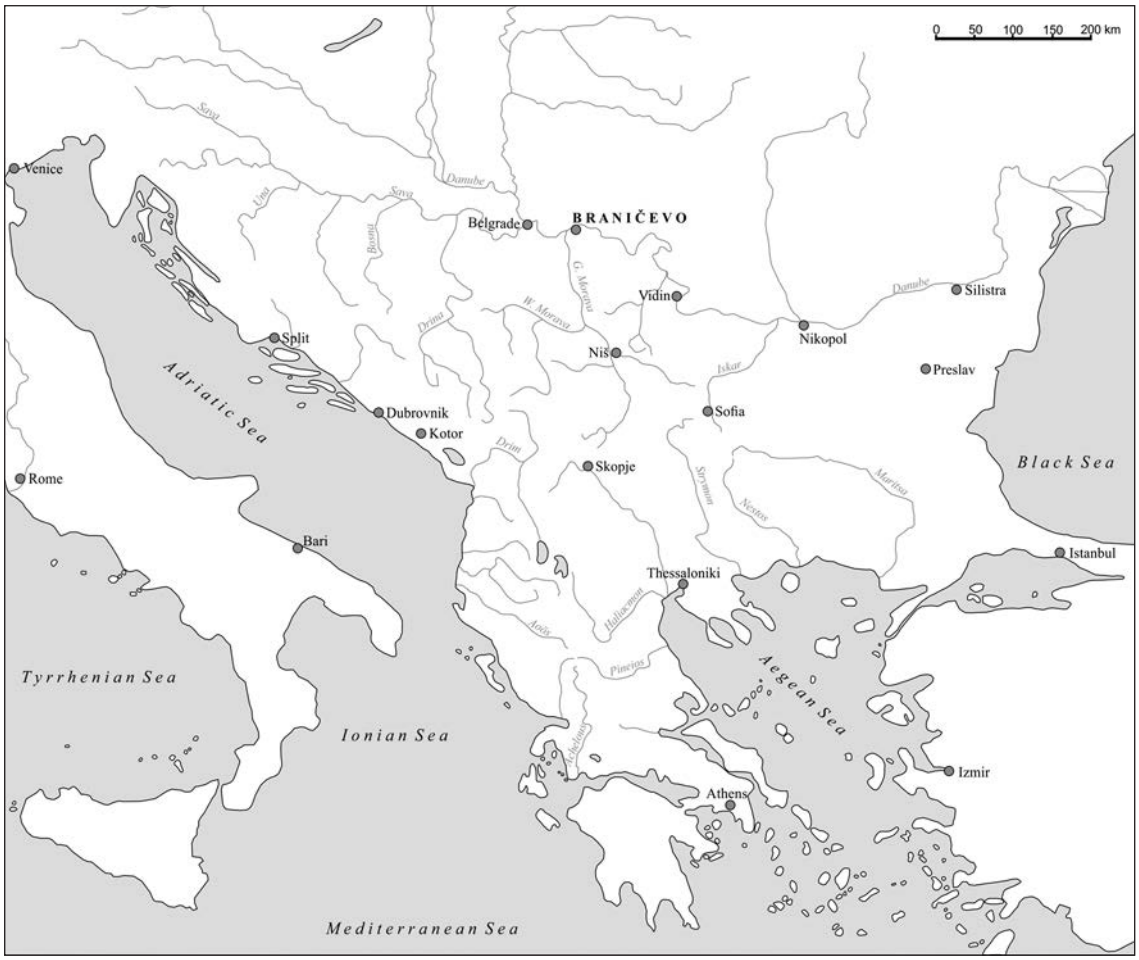

Fig. 1. Location of Braničevo

Сл. 1. Положај Браничева

the distribution pattern of this type of glass, which was apparently popular in Byzantine lands but also quite numerous in the Levant, and occasionally present even much further beyond. The opportunity to carry out the analysis of the Braničevo finds provides an important insight into the issues of technology and provenance of these vessels, discussed in the paper to follow, by Rehren, Cholakova and Jovanović.

Braničevo: historical circumstances and archaeological background

The first mention of Braničevo in historical sources dates from 1019, when 'the bishop of Braničevo' was listed in a charter affirming the rights of the autocephalous Bulgarian Church. Therefore, Braničevo was confirmed as the bishopric. In the 12th century, together with Belgrade, it became the most important Byzantine stronghold on the Danube. The valuable testimonies of that time were left by the Byzantine chroniclers John Kinnamos and Nicketas Choniates, who described the Byzantine-Hungarian conflicts and subsequent events in which Braničevo assumed a significant role. One of the records refers to Hungarian merchants who were assaulted in the city in 1127; this note indicates that at that time Braničevo was a significant economic centre. Emperors John II Komnenos (1118–1143) and Manuel I Komnenos (1143–1180) were mentioned in some important accounts. Due to the clashes, both emperors stayed in the city, John II Komnenos between 1127 and 1129 and Manuel I Komnenos in 1151–1152.

The new Byzantine-Hungarian military conflicts on the Danube border took place between 1162 and 1167 and later on, in the 1180s, the accounts of which also mention Braničevo. In addition to the aforementioned Byzantine historians, some data about Braničevo in the 11th and 12th centuries were recorded by European tra-

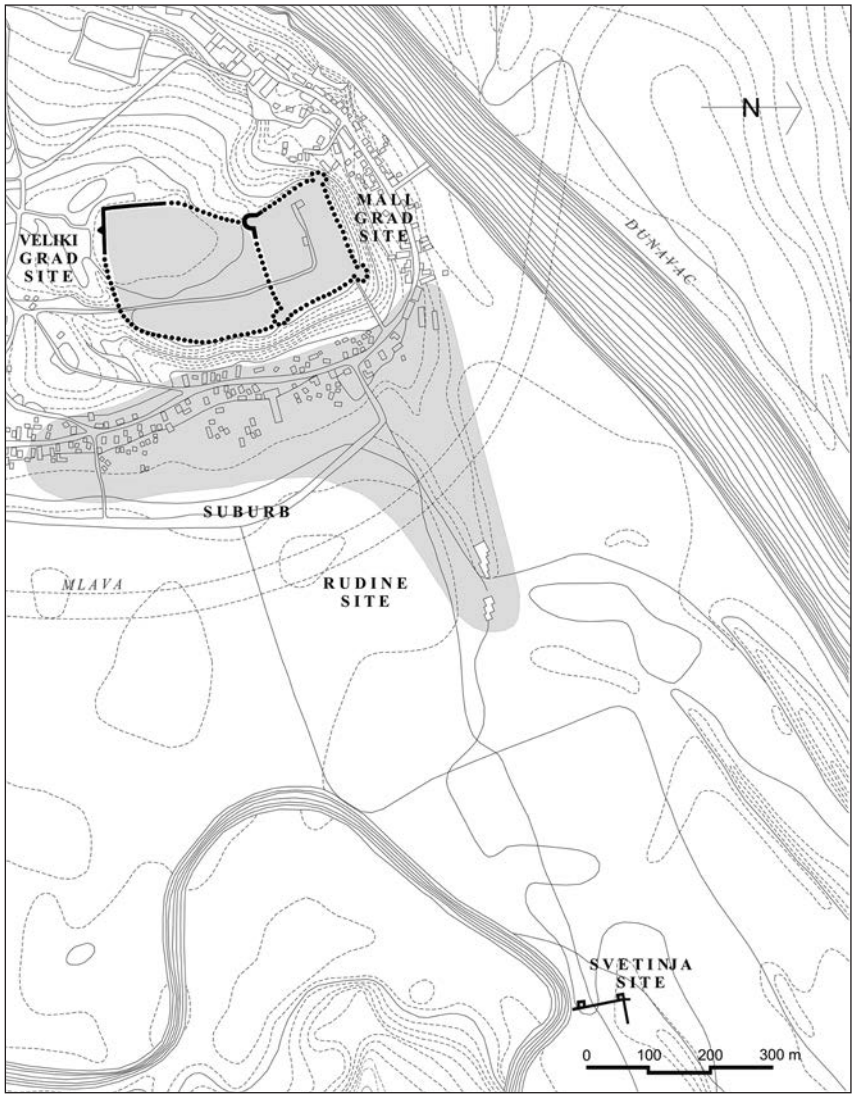

Fig. 2. Situation plan of the Medieval city of Braničevo (according to Popović, Ivanišević 1988, 129, Fig. 2)

Сл. 2. Ситуациони план средњовековног града Браничева (према Поповић, Иванишевић 1988, 129, Сл. 2)

vellers, pilgrims or those who took part in the Crusades. It is well known that the city hosted the Second Crusader army of the kings Louis VII and Conrad III, as well as the Third Crusader army led by Frederick III Barbarossa in 1189. The last information on Byzantine rule over Braničevo is found in a charter from 1198, which lists, among other provinces of the Empire, 'the province of Niš and Braničevo'. After the collapse of Byzantine rule, during the first decades of the 13th century, the Hungarians were struggling with the renewed Bulgarian state over the authority in this region. It is not always easy to establish the exact chronology of the events which were to follow. Only in 1292 would the Serbian kings establish stable political authority over Braničevo, incorporating the area permanently into the Serbian state.[2]

First investigations in Braničevo reach back into the early decades of the 18th and the end of the 19th centuries. The first plan of the city, in addition to the descriptions, was drawn by Luigi Marsigli, in the third decade of the 18th century. The plan shows two fortified

[2] *ВИИНЈ* IV, 7–10, 13, 14, 16–22, 43–45, 50, 117, 118, 120–126, 137, 159; Поповић, Иванишевић 1988, 125–127; Komatina 2016, 104–107.

Fig. 3. The Mali Grad site, 2007 (photo by D. Spasić-Đurić)

Сл. 3. Локалитет Мали град, 2007. (фото: Д. Спасић-Ђурић)

units of Braničevo, Mali Grad and Veliki Grad. The square form of the "main" fortification at Mali Grad is clearly visible today in the terrain. According to Marsigli's plan, four round towers were located at the corners of the fort. Archaeological excavations at this location were conducted in the early 20th century, and in 1975. During the 1970s and 1980s, investigations were also undertaken at the Veliki Grad site, as well as in the suburbs of Braničevo, at the sites of Rudine and Svetinja (Fig. 2).[3]

New investigations at Mali Grad, which are of particular importance, were initiated in 2007 (Fig. 3) and have continued until today.[4] So far, they have completed results from earlier campaigns and verified the data from historical sources, establishing a more reliable chronology and providing an insight into the circumstances which led to the foundation of Braničevo and to its decline.[5] When it comes to the Middle Ages, the coins cover the period from the second half of the 10th century[6] and the beginning of the 11th (anonymous follis of class C, 976?–c.1030/5; Coloman, 1095–1116) to the early 13th century (Bulgarian imitation C, c.1202–c.1215; Latin imitative type A, 1204–?; Eberhard II, 1200–1246).

The archaeological layers dated to the 12th and the early 13th centuries are rather thick. Houses and pits yielded a wealth of material culture, especially pottery. The most important archaeological context from the urban centre of Braničevo is a large wooden house,

[3] Поповић, Иванишевић 1988, 128–130.

[4] The project *Archaeological investigations of Medieval Braničevo* has been carried out by the National Museum in Požarevac. The head of the research team is Dragana Spasić-Đurić.

[5] Spasić-Đurić 2016, 109–115.

[6] Ivanišević 1988, 87–104.

[7] Spasić-Đurić 2016, 110–113.

[8] Billon trachea of John II Komnenos (1118–1143) and a trachy of Manuel I Komnenos emitted in 1143–1152?.

[9] Spasić-Đurić 2016, 114.

[10] Price, Cottam 1998, 39; Carboni 2001, 291; Brosh 2014a, 302.

labelled House No 4. With its length of 19.5–20 m and width of about 7–7.5 m, the house is almost rectangular in plan. It had a dual pitched roof, a clay floor with embedded brick, 20 post-holes and five furnaces. Charred wooden elements and pieces of burnt wattle indicate timber frame construction.[7]

Judging by the coins of John II Komnenos and Manuel I Komnenos found on the floor,[8] House No 4 may have been built during the reign of John II Komnenos, probably at the end of the third decade of the 12th century. The fire which damaged it can probably be linked to the events following the death of Manuel I Komnenos (1180) and the conflicts of 1182–1183. The layers of debris imply that the destruction of the house and the western defence wall occurred at one and the same time. As suggested by the finds studied so far, Friesach coins from between 1170 and 1200 and the later issues by King Béla III (1172–1196) mark the end of the prosperous phase and the demolition of the structure.[9]

Fig. 4. Purple glass vessels in situ *(photo by D. Spasić-Đurić)*

Сл. 4. Налази пурпурних стаклених посуда in situ *(фото: Д. Спасић-Ђурић)*

Glass vessel set

The 2011 excavations of House No 4 revealed a unique glass assemblage consisting of at least 16 vessels made of translucent dark-purple glass, decorated with marvered trails of opaque white glass. The finds belong to a group of bichrome-glass vessels characterised by applied and marvered decoration, in which white opaque trails were pressed into a dark transparent base in various patterns by rolling the hot glass on a flat stone or metal surface (the marver, or marver block).[10]

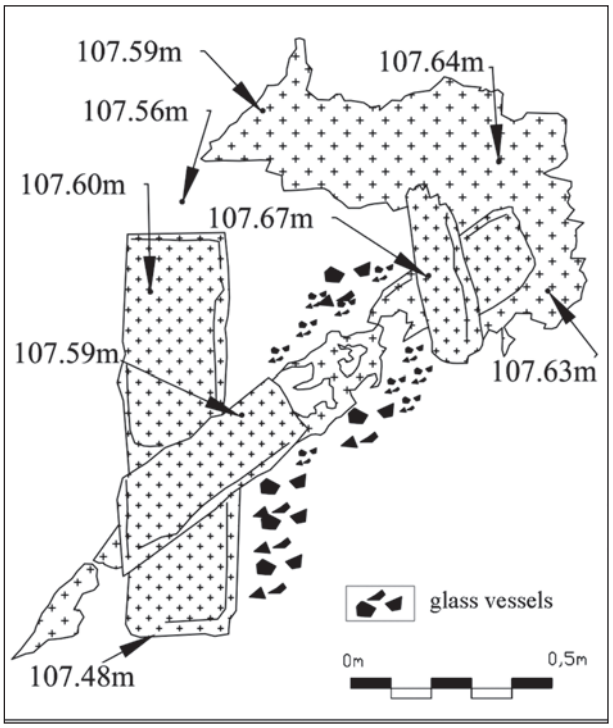

Fig. 5. Remains of charred wooden boards in situ *(photo by D. Spasić-Đurić)*

Сл. 5. Остаци угљенисаних дрвених дасака in situ *(фото: Д. Спасић-Ђурић)*

The purple glass vessel set was unearthed from a conflagration layer, immediately above the house floor (Fig. 4). It was found within an area of approximately 1.10 by 1.10 m, together with some 87 fragments of naturally coloured glass and 25 fragments of dark blue glass bangles, one of which was decorated with applied white threads. There were also the remains of three charred wooden boards (Fig. 5). The best preserved board is 1 m long, 23 cm wide and 2.5 cm thick, above which another, smaller one, was discovered. A third, poorly preserved board, laid over them. The context of the finds indicates that there used to be shelves, on which the vessels were placed, or a wooden box in which these objects were possibly stored.[11]

The assemblage comprises at least eight bowls, three bottles, two flasks and three further vessels which can be possibly attributed to flasks. All the vessels were made using the free-blowing technique; bases and handles were added separately. Circular or irregular scars of pontil are visible on preserved bases.

Out of the total of eight bowls, six are rather small (the preserved rim diameters are *c* 7.6 cm, *c* 9.5 cm, and *c* 12 cm: Figs 6, 7) and two are larger (the rim diameter of one of them, Cat. No 7, is *c* 18 cm: Fig. 8). Two of the six smaller bowls are biconical in form (Cat. Nos 1, 2; Fig. 6), three are convex (Cat. Nos 3–5?; Fig. 7. 1–3), and the smallest one is deep and rounded in its lower part (Cat. No 6; Figs 7. 4, 13. 2). The two larger bowls are rather convex (Cat. Nos 7–8; Fig. 8). Considering the preserved fragments, it is evident that the bowls have either out-turned or in-turned rims with fire-rounded edges, slightly thickened, and applied coil base-rings.

The three bottles seem to be similar in form (Fig. 9. 1–3), having longer cylindrical necks, one or two handles and probably an ovoid body, as evidenced by one of them, Cat. No 9; it is certain that this bottle had two handles (Fig. 9. 1). Judging by the decoration, dimensions of the fragments, and the results of chemical analysis, it may be assumed that fragments of a bottle rim and a concave base also belonged to this vessel. The upper part of the second bottle (Cat. No 10; Figs 9. 2, 13. 1) is preserved with its cylindrical neck expanding downward, and a handle, semicircular in cross-section, is applied on the upper body and attached to the neck. Only a fragment of the third bottle's mouth is preserved (Cat. No 11; Fig. 9. 3). There are an additional four bottle fragments which cannot be definitely regarded as separate vessels, since they could also belong to the three described bottles (Fig. 9. 4–5).

Besides the bowls and the bottles, the set also includes fragments of two flasks with cylindrical bodies and concave bases (Cat. Nos 12, 13; Fig. 10. 1–2), as well as three vessels with funnel mouths with slightly thickened fire-rounded rims (Cat. Nos 14–16; Fig. 10. 3–5). Their lower parts are not preserved; however, these pieces can be possibly attributed to flasks.[12]

The vessels from the set are considered to be tableware (bowls, bottles, small bottles/flasks). Often regarded as toilet vessels, used for medical and other purposes, flasks may also have served as tableware, and for storage as well.[13]

Another piece of marvered glass was found apart from the set, in Pit No 4, east of House No 4 (Fig. 11). Unlike the aforementioned purple vessels, it was made of blue glass and decorated with applied opaque-white trails, marvered and combed into festoon-like pattern. The pit also produced an anonymous Class C follis (1042?–c. 1050) and a coin of John II Komnenos from 1122–1137(?).

Within the project *Glass from Byzantium to Baghdad–Trade and Technology from the Byzantine Empire to the Abbasid Caliphate*, a total of 15 vessel fragments from the purple glass set were analysed with LA-ICPMS (Laser Ablation Inductively Coupled Plasma Mass Spectrometry) at the Institut de Recherche sur les ArchéoMATériaux (IRAMAT) in Orléans, France. Additional pXRF (Portable X-Ray fluorescence) measurements were taken in April 2017 in the National Museum in Požarevac, Serbia.

The sample numbers of the analysed vessels and data obtained by pXRF analyses are listed in the catalogue. The outcomes of the analyses reveal that the vessels were made from plant-ash soda glass, most probably of Levantine origin and matching the typical composition of Near Eastern Islamic glass. The purple glass is coloured with manganese oxide and the opaque white glass is made by adding tin and lead. It could be assumed that the entire set was manufactured in a single workshop, in two slightly different batches. For a more detailed discussion on chemical composition and texture of glass see the following article in this volume.

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[11] Spasić-Đurić 2016, 110–113.

[12] It is noteworthy that these fragments could also belong to the tall narrow cylindrical beakers which flare into a funnel shape below the rim, see Carboni, Whitehouse 2001, 145, cat. no. 60.

[13] Price, Cottam 1998, 14.

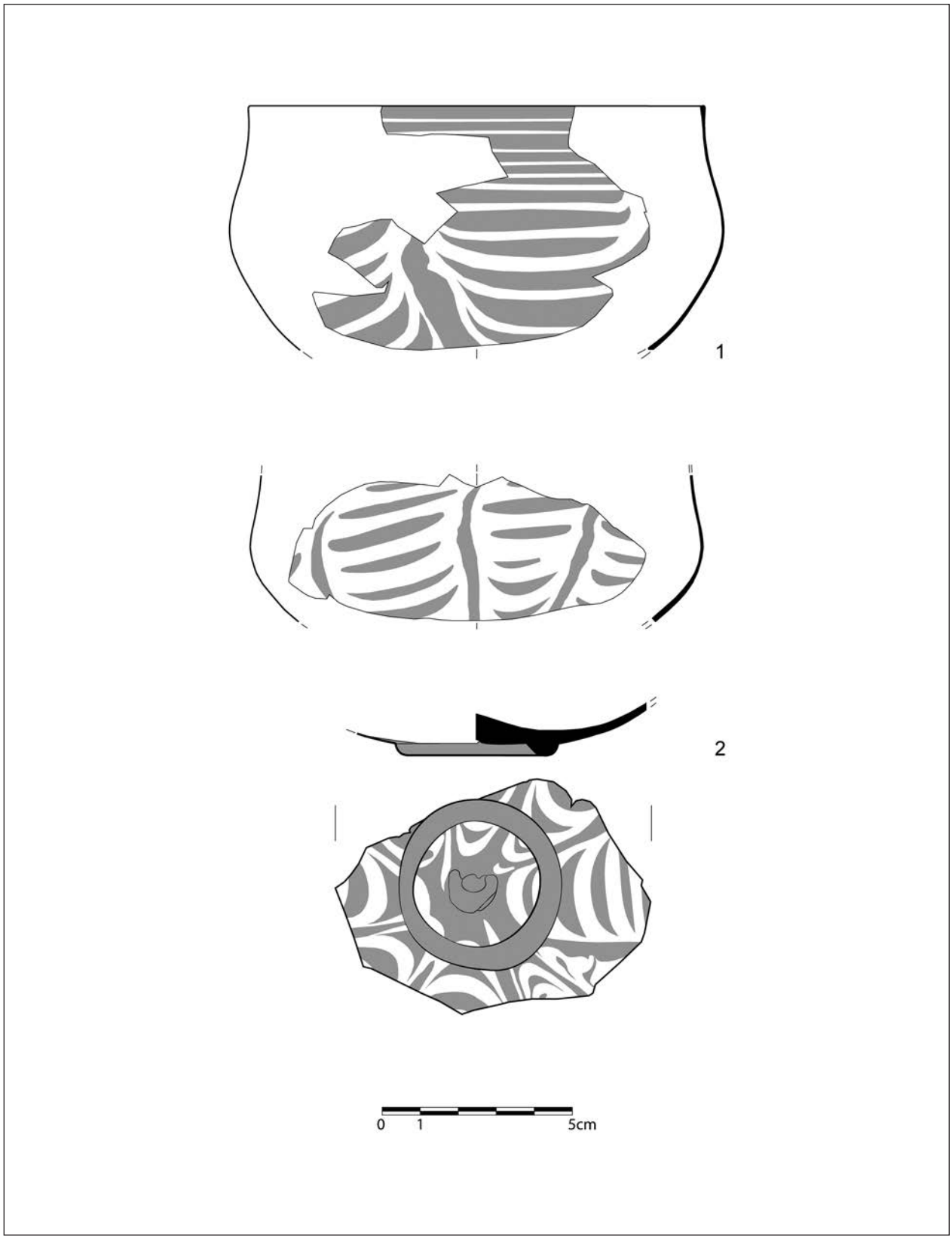

Fig. 6. Bowls (drawings S. Živanović)

Сл. 6. Зделе (цр̄тежи С. Живановић)

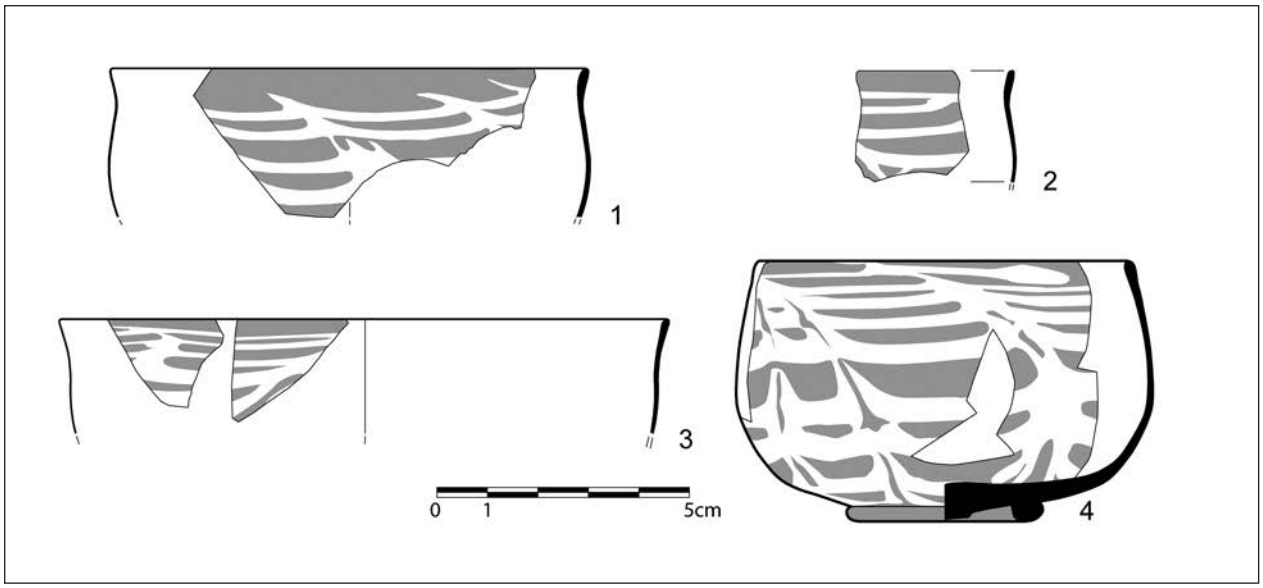

Fig. 7. Bowls (drawings S. Živanović)

Сл. 7. Зделе (цр̄тежи С. Живановић)

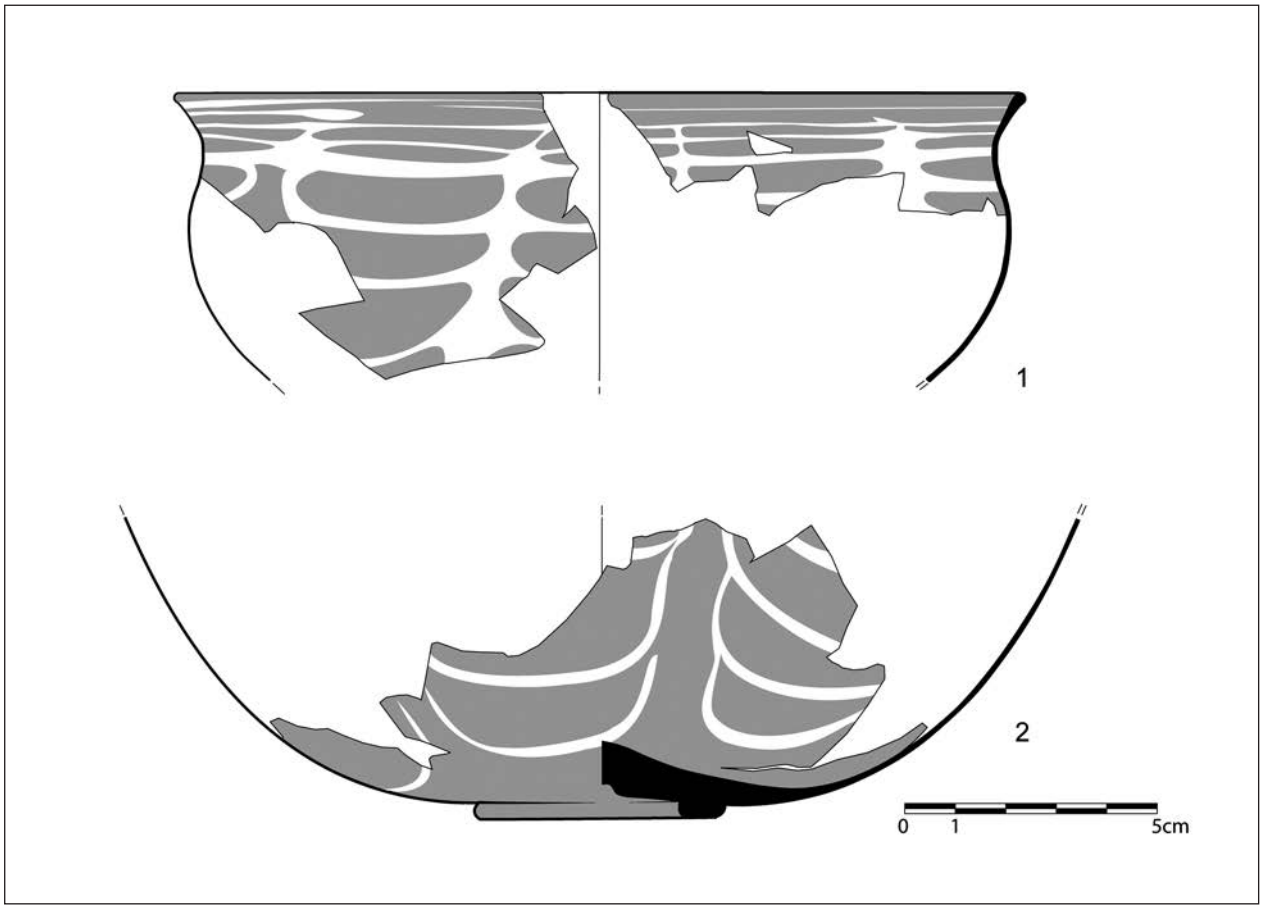

Fig. 8. Bowls (drawings S. Živanović)

Сл. 8. Зделе (цр̄тежи С. Живановић)

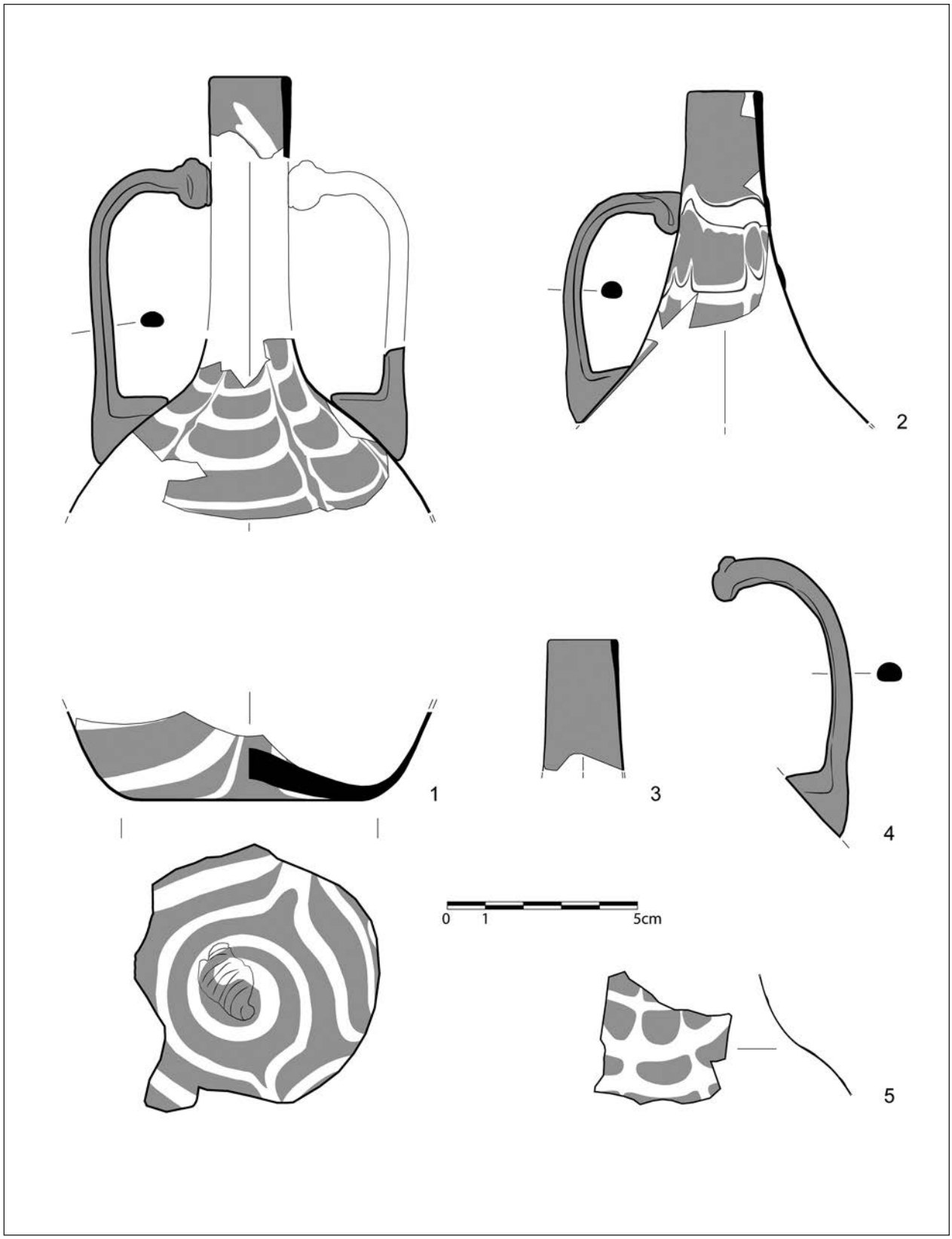

Fig. 9. Bottles (drawings S. Živanović)

Сл. 9. Боце (цртежи С. Живановић)

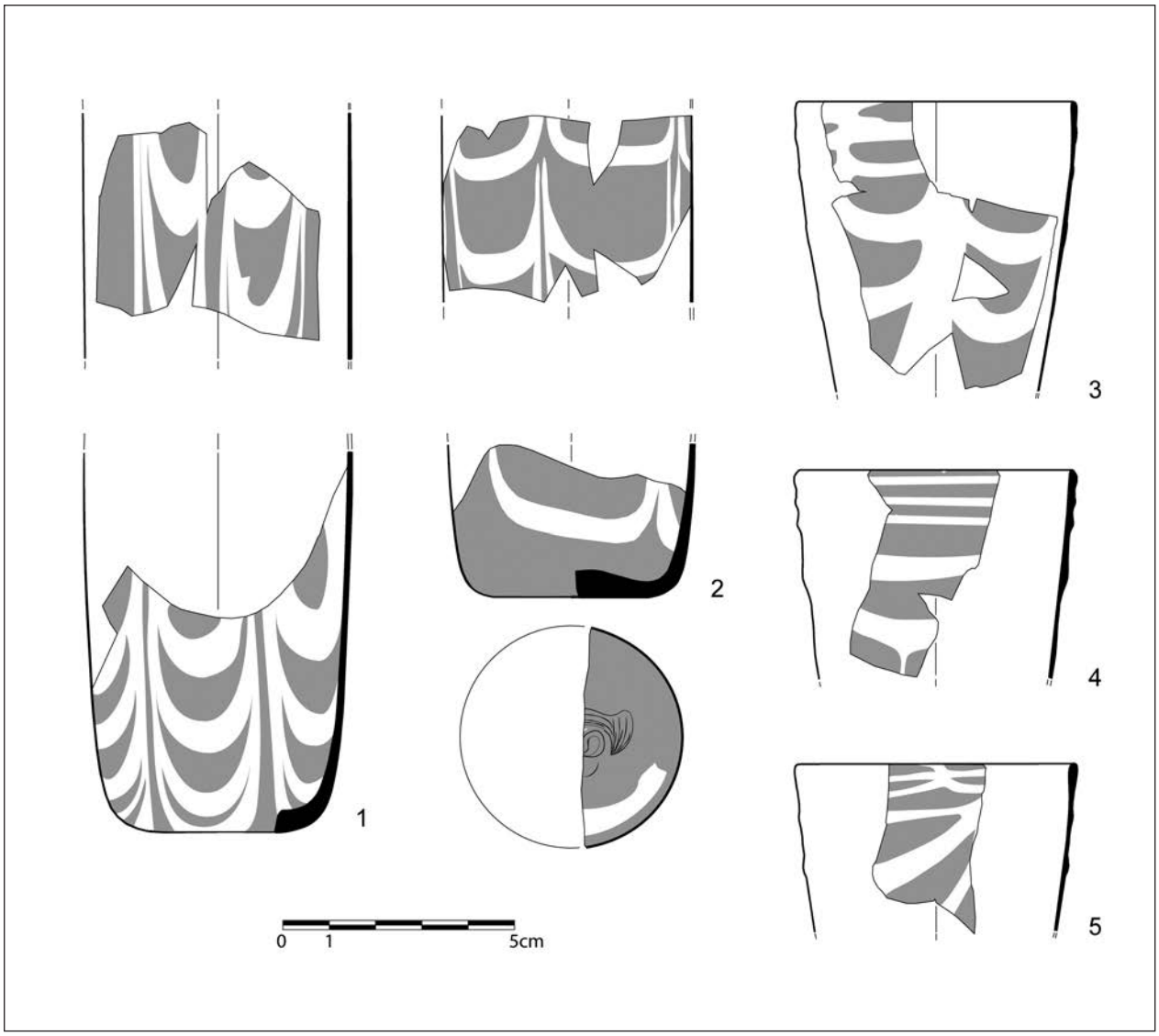

*Fig. 10. Small bottles (*flasks*) (?) (drawings S. Živanović)*

Сл. 10. Мале боце (?) (цртежи С. Живановић)

Fig. 11. Fragment of marvered blue glass (photo by: D. Spasić-Đurić, S. Jovanović)

Сл. 11. Фрагмент плавог стакла (фото: Д. Спасић-Ђурић, С. Јовановић)

CATALOGUE

Bowls

1. Biconical bowl (Fig. 6. 1) – nearly complete profile is reconstructed, the base is missing; slightly in-turned rim, edge fire-rounded, slightly thickened. Decorated with spirally wound trails which cover almost the entire vessel. In the lower part, the trails were dragged up with a tool to form rows of festoons. The festoon-like pattern was likely divided into seven (?) vertical sections in the lower part, while in the preserved fragments of the upper part the trails are mostly horizontal. The trails in the lower part are wider and marvered until they are flush with the vessel wall surface, and the trails toward the rim are thinner and bolder in relief.

Compositional group: Purple 1 (Sample BRN 1-03 purple glass only)

Dimensions: reconstructed rim diameter – *c* 12 cm

C-345

2. Biconical bowl (Fig. 6. 2) – fragments of the middle and lower parts of the vessel are preserved, the rim is missing; applied coil base-ring of variable width; irregular pontil scar (*c* 1.4 x 1.2 cm) in the middle of the base. Both the pontil mark and the base-ring are laid over trailed decoration. The same decoration scheme as on Cat. No 1, with a festoon-like pattern in nine vertical sections, quite variable in width. The trails in the lower and middle parts of the vessel are wider and marvered until they are flush with the vessel walls.

Compositional group: Purple 1 (Sample BRN 1-01 purple and opaque white glasses)

Dimensions: base diameter – *c* 4 cm; reconstructed width in the middle part of the vessel – *c* 14 cm

C-348

3. Convex bowl (Fig. 7. 1) – fragments of the upper and middle parts of the vessel are preserved, the base is missing; slightly out-turned rim, edge fire-rounded, slightly thickened. The same decoration scheme as on Cat. No 1. Decorated with festoons arranged in a vertically skewed grid; on part of the vessel the decoration goes up to the rim.

Compositional group: Purple 1 (Sample BRN 1-15 purple and opaque white glasses)

Dimensions: rim diameter – *c* 9.5 cm

C-350a

4. Convex bowl (Fig. 7. 2) – only a fragment of the upper part of the vessel is preserved; slightly out-turned rim, edge fire-rounded, slightly thickened. Several trails applied on the surface indicate that the vessel was decorated with a festoon-like pattern.

Compositional group: tentatively Purple 1 (measured by pXRF)

Dimensions: –

C-350b

5. Bowl (Fig. 7. 3) – only two fragments of the upper part of the vessel are preserved; slightly out-turned rim, edge fire-rounded, slightly thickened. Decorated with festoons arranged in nearly vertical sections, skewed in the opposite direction than on Cat. No 3. Pattern seems very similar to that on Cat. No 4.

Compositional group: –

Dimensions: rim diameter – *c* 12 cm

C-350c

6. Bowl or cup (Figs 7. 4, 13. 2) – almost the entire vessel is preserved; slightly in-turned rim, edge fire-rounded, slightly thickened; applied coil base-ring; quite regular pontil scar (l. *c* 0.6 cm) in the middle of the base. The base-ring is applied to the bottom, previously decorated with trails. The decoration of applied trails covers the entire vessel, with a festoon-like pattern in eight vertical sections. The trails are wider and completely marvered in on the lower and middle parts, and thinner and more plastic toward the rim.

Compositional group: Purple 1 (Sample BRN 1-05 purple and opaque white glasses)

Dimensions: rim diameter – *c* 7.6 cm; base diameter – *c* 3.8 cm; height – *c* 5.8 cm

C-353

7. Large convex bowl (Fig. 8. 1) – fragments of the upper and middle parts of the vessel are preserved, the base is missing; out-turned rim, edge fire-rounded, slightly thickened. The same decoration scheme as on Cat. No 1, with a festoon-like pattern in vertical sections, quite variable in width. As with the previous bowl, the trails are wider in the lower and middle parts of the vessel and thinner toward the rim.

Dimensions: rim diameter – *c* 17 cm

C-343a

8. Large convex bowl (Fig. 8. 2) – fragments of the lower and middle parts of the vessel are preserved, the rim is missing; applied coil base-ring of variable width;

irregular pontil scar (*c* 1.1 x 0.7 cm) in the middle of the base. The same decoration scheme as on Cat. No 1, with a festoon-like pattern in eight or nine vertical sections. The trails are quite thin.

Compositional group: Purple 2 (Sample BRN 1-13 purple and opaque white glasses)

Dimensions: base diameter – *c* 5 cm

C-343b

Bottles

9. Ovoid bottle (Fig. 9. 1) – nearly the complete profile is reconstructed, parts of the neck and body are missing; straight rim, edge fire-rounded, slightly thickened, long cylindrical neck, two handles, concave base; irregular pontil scar (*c* 2 x 1.3 cm) in the middle of the base. Two handles, semicircular in cross-section, are applied on the upper body and attached to the neck. A festoon-like pattern on the ovoid body was likely divided into six (?) vertical sections. Due to the thin application of white glass between these sections, the purple background is visible. A wide trail is applied on the neck. The base was decorated with marvered spiral trails. The decoration is in low relief.

Compositional group: Purple 2 (Samples BRN 1-06 purple glass only, BRN 1-07 purple and opaque white glasses, BRN 1-08 purple glass only)

Dimensions: rim diameter – *c* 1.9; base diameter – *c* 6.5 cm

C-344a

10. Ovoid? bottle (Figs 9. 2, 13. 1) – fragments of the upper part of the vessel are preserved, middle part of the body and base are missing; almost straight rim, edge fire-rounded, slightly thickened, cylindrical neck expanding to merge with body, one handle preserved. The handle, semicircular in cross-section, is applied on the upper body and attached to the neck. The neck is decorated with the applied wide trails dragged up with a tool. Thin purple glass threads are visible in the opaque white decoration. The decoration is in bold relief.

Compositional group: Purple 2 (BRN 1-09 purple and opaque white glasses)

Dimensions: rim diameter – *c* 2.3 cm; preserved height – *c* 11 cm

C-344

11. Bottle (Fig. 9. 3) – only a fragment of the upper part of the vessel is preserved; straight rim, edge fire-rounded, slightly thickened, cylindrical neck expanding to merge with body. This fragment is not decorated.

Compositional group: tentatively Purple 2 (measured by pXRF)

Dimensions: rim diameter – *c* 2 cm; preserved height – *c* 3.5 cm

C-347

Flasks

12. Cylindrical flask (Fig. 10. 1) – fragments of the lower and middle parts of the vessel are preserved, upper body is missing; concave base. A festoon-like pattern was likely divided into six (?) vertical sections.

Compositional group: Purple 1 (Samples BRN 1-11 purple and opaque white glasses, BRN 1-12 purple glass only)

Dimensions: base diameter – *c* 4.5 cm, preserved height – *c* 8.4 cm

C-346a

13. Cylindrical flask (Fig. 10. 2) – fragments of the lower and middle parts of the vessel are preserved, upper body is missing; concave base; irregular pontil scar in the middle of the base. The flask was decorated with marvered trails arranged in wide festoons.

Compositional group: tentatively Purple 1 (measured by pXRF)

Dimensions: base diameter – 4.5 cm; preserved height – *c* 3.3 cm

C-346b

14. Flask (?) (Fig. 10. 3) – fragments of the upper part of the vessel are preserved, lower body is missing; funnel mouth, slightly in-turned rim, edge fire-rounded. The vessel was decorated with applied trails forming a festoon-like pattern. The decoration is in bold relief.

Compositional group: Purple 1 (Samples BRN 1-14a purple glass only, BRN 1-14b purple and opaque white glasses)

Dimensions: rim diameter – *c* 6 cm

C-349a

15. Flask (?) (Fig. 10. 4) – fragments of upper part of the vessel are preserved, lower body is missing; funnel mouth, straight rim, edge fire-rounded. The flask was decorated with applied trails forming three horizontal lines below the rim and a thick festoon-like pattern (?) further below. The decoration is in bold relief.

Compositional group: tentatively Purple 1 (measured by pXRF)

Dimensions: rim diameter – *c* 6.5

C-349b

16. Flask (?) (Fig. 10. 5) – fragments of the upper part of the vessel are preserved, lower body is missing; funnel mouth. The same decoration scheme as on Cat. No 15.

Compositional group: –

Dimensions: rim diameter – *c* 6.5 cm

C-349c

Discussion

The purple vessels with marvered decoration from Braničevo belong to a well-known group of Medieval glassware, often regarded as originating from Islamic Egypt or Syria and, more generally, the Near East. During the Ayyubid (1171–1250) and Mamluk (1250–1516) dynasties, the glass industry was at its peak in the eastern Mediterranean.[14] The two most popular decoration techniques were those of applied and marvered trails, and of enamel and gold painting. Both techniques are characterised by polychromatic effects ignoring the distinct characteristics of glass – transparency and delicacy.[15] As the group of vessels with applied and marvered trails from House No 4 in Braničevo is securely dated, it is very important in the study of the distribution and chronology of such finds. The analogous finds, as listed below, come from the period between the 12th and 15th centuries; some sites of uncertain date, but possibly relating to the Ayyubid and Mamluk periods, are also mentioned (Fig. 12).

In the Near East, such decorated vessels are known from Turkey (Pergamon, 12th–13th c.,[16] the Kubadabad palace, 13th c.,[17] Adana, 12th–13th c.?[18] and Samsat, 12th–13th c.[19]); Syria (Mharda, 12th–13th c.,[20] Hama, 12th–14th c.,[21] Qasr al-Hair al-Sharqi[22] and Raqqa,[23] both of uncertain date); Lebanon (Baalbek[24] and Beirut,[25] both of uncertain date); Israel (Giv'at Yasaf, Mamluk period,[26] Acre, 12th–13thc.,[27] Safed, 14th c.,[28] Tell Yoqne'am, Mamluk period,[29] Tiberias, Fatimid period,[30] Bet Yerah, 15th c.,[31] Ḥammat Gader, Mamluk period,[32] Bet Shean, 12th–14th c.,[33] Horbat Zerifin,[34] Ramla,[35] Khirbat el-Ni'ana,[36] Revadim,[37] Emmaus al-Qubeiba,[38] all dated to the Mamluk period, Jerusalem, 13th–15th c.[39] and Auja al-Hafir, 9th–12th c.[40]); Jordan (Ajloun Castle, 13th c.,[41] Heshbon, 12th c. and later,[42] Khirbat Faris, 14th c.[43] and Karak-Raven, 13th or 14th c.[44]); Iraq ('Anna, 11th–14th c.,[45] Samarra, uncertain date,[46] Tulul al-Ukhaidir, Abassid-Fatimid period,[47] Kish, Hira, both of uncertain date[48] and Wasit, 13th c.[49]); Yemen (Sharma, 12th–13th c.[50] and Kawd am-Saila, uncertain date[51]), Egypt (Alexandria – Kom el-Dikka, Mamluk period,[52] Fustat, 12th–14th c.,[53] Al-Tur (Sinai),

[14] The marvering decoration technique appeared during the New Kingdom in Egypt (1450–1100 BCE). It was used in the Hellenistic and Roman periods, and during the early Islamic period as well, throughout the 8th and 9th centuries, see Grossmann 2002, 7–10; Ounahnouna 2016, 243. There are not many securely-dated finds from the latter phase, see Allan 1995, 23–24; Carboni 2001, 291–321; O'Hea 2003, 133–137; Hadad 2002, 151–158.

[15] Brosh 2014a, 302.

[16] Rehren et al. 2015, Fig. 2f.

[17] Uysal 2008, 239, 448, 532, kat. no. 155.

[18] Pinder-Wilson 1991, 129, fig. 162.

[19] Allan 1995, 28.

[20] Carboni 2001, 310, Cat. 83b.

[21] Allan 1995, 11, 21; Brosh 2014a, 302.

[22] Allan 1995, 13, 27.

[23] Hadad 2002, 154.

[24] Allan 1995, 11, 13, 27; Brosh 2014b, 910–912.

[25] Brosh 2014b, 910–912.

[26] Gorin-Rosen 1999, 138–139, Fig. 1.9; Gorin-Rosen 2006, 109.

[27] Gorin-Rosen 2013, 110–111, Fig. 1.5.

[28] Katsnelson 2017, 314, 316, Fig. 5.2–5.

[29] Gorin-Rosin, Katsnelson 2007, 75–76, Figs. 17.1, 17.2.

[30] Allan 1995, 13, 27.

[31] Brosh 1993, 290–291, fig. 4.

[32] Hadad 2002, 155; Brosh 2014a, 303.

[33] Hadad 2002, 153–156; Kucharczyk 2015, 79.

[34] http://www.hadashot-esi.org.il/report_detail_eng.aspx?id=814

[35] Gorin-Rosen 2009, Fig. 13.3 (http://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=1168&mag_id=115)

[36] Gorin-Rosin, Katsnelson 2007, 75–76, Figs. 17.1, 17.2.

[37] Brosh 2014a, 303.

[38] Hadad 2002, 156; Brosh 2014a, 303.

[39] Brosh 2005, 186–188; Brosh 2012, 403–406; Brosh 2014a, 302–305; Brosh 2014b, 909–920; Brosh 2017, 304–305; Gorin-Rosen 2003, 385; Gorin-Rosen 2006, 108, Fig. 2, 6–7; Katsnelson 2009 (http://www.hadashot-esi.org.il/Report_Detail_Eng.aspx?id=1206&mag_id=115, accessed 31.01.2018.); Winter 2012, 335–337; Ouahnoua 2016, 243–247.

[40] Allan 1995, 13, 27.

[41] file:///C:/Users/SARAD/Downloads/object_ISL_jo_Mus01_24_en.doc%20(1).pdf (accessed 15.01.2018.)

[42] Goldstein 1976, 131, pl. XII/C; Brosh 2014b, 911–912.

[43] McQuitty 2007, 169, fig. 6; Hadad 2002, 155.

[44] Milwright 2008, 269, Plate 41.

[45] Hadad 2002, 155.

[46] Allan 1995, 9–11, 27.

[47] Hadad 2002, 155.

[48] Allan 1995, 9, 11, 27.

[49] Hadad 2002, 155.

[50] Foy 2015, 328–329, 352, Fig. 236.

[51] Allan 1995, 14, 27.

[52] Kucharczyk 2015, 73, 78–79, Fig. 2.5, 3.2.

[53] Allan 1995, 7–10, 12; Brosh 2014a, 302.

14th–15th c.,[54] Quseir al-Qadim, 14th c.,[55] and Qasr Ibrim, early Islamic-Ottoman[56]) and Sudan (Meinarti, *c* 1050–1350 and Kasanarti, *c* 1150–1400).[57] Several fragments are known from Eastern Africa (Gedi, Kenya, 1100–1350),[58] Northern Africa (Qal'a of Beni Hammad, Algeria, 1007–1152)[59] and Western Africa (Gao, Mali, 11th–12th c.).[60] The evidence for trade across the Indian Ocean is best illustrated by the glass finds from Singapore (Fort Canning Hill, 14th c.) and Pengkalan Bulang near Penang Island in Malaysia, dated to the 12th–13th century.[61]

Sporadic finds are known from western Europe – from the United Kingdom (St Andrew's Cathedral in Fife, uncertain date, Cheesecake Hill Barrow, 6th–7th or 12th–13th c., Restormel Castle in Cornwall, in association with painted 13th c. glass, Burpham in Sussex, uncertain date, St Martin's Lane in Chichester, uncertain date and Colchester, unlikely later than early 13th c.);[62] Spain (Alhambra, uncertain date);[63] France (Marseille, end 13th – beginning of the 14th c.);[64] Germany (Ludwigsburg, 12th–13th c.);[65] and from eastern Europe as well: from Belarus (Vawkavysk, 13th c.,[66] Novogrudok, uncertain date,[67] and Polotsk, 13th c.[68]); Russia (Novgorod, *c* 1116–1134,[69] Beloozero, uncertain date,[70] Ostolopovo, end 11th – beginning of the 12th c.,[71] Vladimir, uncertain date,[72] Hmelevskoe I settlement, 13th–14th c.,[73] Bolgar, 13th–14th c.,[74] Bilyar, Selitrennoe, both of uncertain date,[75] North Ossetia, 11th–12th c.,[76] and Tsaryovo Gorodishche, uncertain date[77]); and from Georgia (Agar, uncertain date).[78] Such glass finds are also known from Armenia (Dvina, uncertain date).[79]

Rare specimens of marvered glass – purple or dark blue – come from the Balkans. In terms of location, the nearest finds similar to the Braničevo glass assemblage come from Dubrovnik in present-day Croatia (Monastery of St Mary of Kaštel, mid 12th–14th c.)[80] and from St Tryphon's Church in Kotor (Montenegro).[81] In accordance with the analogous finds and course of historical events, the author dates marvered glass from Kotor to the second half of the 12th century, although with some reservations.[82] Marvered glass finds, similarly decorated, were found at the Medieval site of Trapezitsa in Veliko Tarnovo (13th–14th c.)[83] and in Karasura (12th–13th c.),[84] Bulgaria. A fragment of blue glass with marvered white trails comes from the Agora South Centre Glass Factory Site in Corinth (Greece).[85] After reconsideration, this piece was dated to the 13th–14th centuries.[86] A further fragment of a marvered cup is also known from the Cyprus Medieval Museum at Limassol Castle.[87]

Current knowledge of marvered glass distribution reveals that the highest concentration of these pieces can be found in the Eastern Mediterranean region, mostly in Syria and Egypt. Most sites producing such finds come from the territories of present-day Israel (Fig. 12). To some extent, this can be explained by the large-scale archaeological works conducted nowadays across this region. Marvered glass is also frequently found in Lebanon, Jordan, Iraq, as well as in Turkey. Apart from this region, several finds are recorded in the United Kingdom and Russia, which, along with the finds from Spain, Africa, Singapore and Malaya, indicate developed long-distance communication networks

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54 Allan 1995, 14, 27; Brosh 2014a, 302.

55 Whitcomb 1982, 234–235; Meyer 1992, 89–90, Plate 19; Allan 1995, 15.

56 Allan 1995, 15, 28.

57 Allan 1995, 14, 28.

58 Hadad 2002, 155.

59 Allan 1995, 15–16.

60 Insoll 1998, 81, 83, Fig. 2, 4.

61 Whitcomb 1983, 105; Borell 2005, 200–201, Fig. 1.

62 Allan 1995, 15–17.

63 Allan 1995, 15, 28.

64 Foy, Michel 2014, 265, Fig. 216 et Fig. 217.

65 Allan 1995, 5.

66 Лавыш 2015, Рис. X.

67 Валиулина 2015, 249.

68 Лавыш 2015, Рис. XI.

69 Плохов 2007, 174, цв. ил. 5, 19–22.

70 Валиулина 2015, 249.

71 Валиулина 2015, 249; Руденко 2012, 133, Рис. 7.1; Руденко 2016, 1490, Рис. 12.

72 Валиулина 2015, 249.

73 Валиулина 2015, 249; https://cyberleninka.ru/article/n/issledovaniya-hmelevskogo-i-selischa

74 Валиулина 2015, 249, Рис. X/6, 8–9.

75 Валиулина 2015, 249.

76 *Меч и златник* 2012, 155, кат. 390.

77 Валиулина 2015, 249.

78 Allan 1995, 16.

79 Валиулина 2015, 249.

80 Topić et al. 2016, 575, 577–578, Fig. 1.5.

81 Križanac 2001.

82 Križanac 2001, 32, 56–57; Križanac 2012, 411–412, Figs. 5–6.

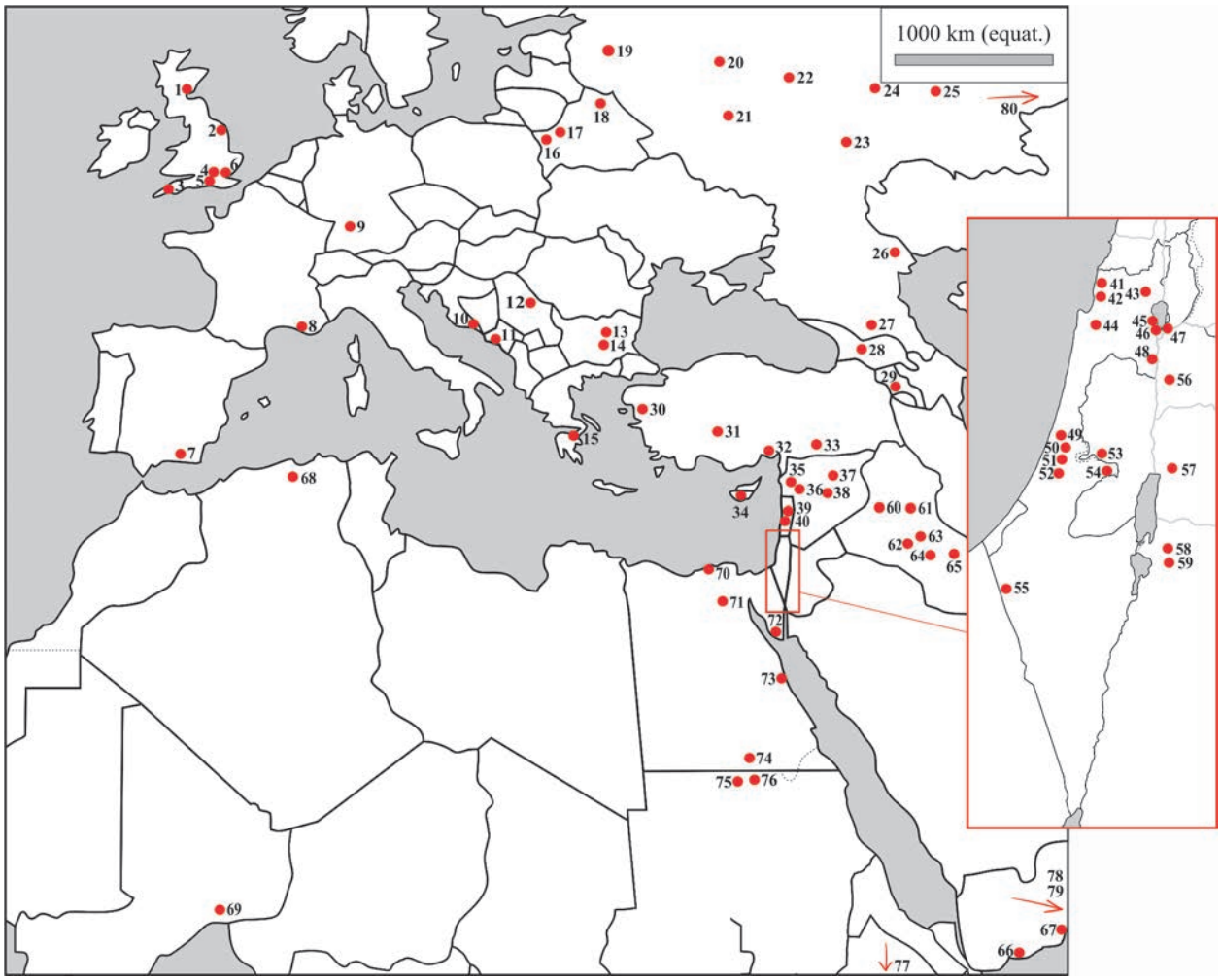
83 Рабовянов 2015, 172, Табло 77, №377, №382.

84 Rauh 2013, forthcoming, 322, 331, Kat. Nr. 1392–1395, Taf. 70.

85 Allan 1995, 21; Davidson 1952, 115–116, nos. 755–758.

86 Whitehouse 1991, 78.

87 Allan 1995, 16.



1. St Andrew's Cathedral in Fife
2. Cheesecake Hill Barrow
3. Restormel Castle in Cornwall
4. Burpham
5. St Martin's Lane in Chichester
6. Colchester
7. Alhambra
8. Marseille
9. Ludwigsburg
10. Dubrovnik
11. Kotor
12. Braničevo
13. Veliko Tarnovo
14. Karasura
15. Corinth
16. Vawkavysk
17. Novogrudok
18. Polotsk
19. Novgorod
20. Beloozero
21. Ostolopovo
22. Vladimir
23. Hmelevskoe I settlement
24. Bolgar
25. Bilyar
26. Selitrennoe
27. North Ossetia
28. Agar
29. Dvina
30. Pergamon
31. Kubadabad palace
32. Adana
33. Samsat
34. Limassol
35. Mharda
36. Hama
37. Qasr al-Hair al-Sharqi
38. Raqqa
39. Baalbek
40. Beirut
41. Giv'at Yasaf
42. Acre
43. Safed
44. Tell Yoqne'am
45. Tiberias
46. Bet Yerah
47. Ḥammat Gader
48. Bet Shean
49. Horbat Zerifin
50. Ramla
51. Khirbat el-Ni'ana
52. Revadim
53. Emmaus al-Qubeiba
54. Jerusalem
55. Auja al-Hafir
56. Ajloun Castle
57. Heshbon
58. Khirbat Faris
59. Karak-Raven
60. 'Anna
61. Samarra
62. Tulul al-Ukhaidir
63. Kish
64. Hira
65. Wasit
66. Sharma
67. Kawd am-Saila
68. Qal'a of Beni Hammad
69. Gao
70. Alexandria – Kom el-Dikka
71. Fustat
72. Al-Tur (Sinai)
73. Quseir al-Qadim
74. Qasr Ibrim
75. Meinarti
76. Kasanarti
77. Gedi
78. Pengkalan Bulang
79. Fort Canning Hill
80. Tsaryovo Gorodishche

Fig. 12. Marvered glass distribution map

Сл. 12. Карта распрострањености стаклених предмета украшених апликираним нитима

of the 12th–14th centuries. Further analysis of the distribution map revealed that almost all marvered glass finds come from the sites/ports located by seas and rivers.

In general, the above-mentioned glass vessels are dated between the 12th to 14th centuries, mostly to the late 13th and 14th centuries, associated with the Mamluk period; yet some finds came from 15th century contexts, as evidenced in Jerusalem[88] and Bet Yerah[89] in Israel and in Al-Tur (Sinai) in Egypt.[90] Some earlier dated finds (12th–13th c.) come from Kotor (Montenegro),[91] Pergamon (Turkey),[92] Acre[93] and Auja Hafir[94] (Israel), Novgorod,[95] Ostolopovo,[96] North Ossetia[97] (Russia), Qal'a of Beni Hammad (Algeria)[98] and Gao (Mali),[99] among them a toilet vessel from North Ossetia (11th–12th c.),[100] vessels from Novgorod (*c* 1116–1134)[101] and a bottle fragment from Acre (Crusades, 1187–1291)[102] stand out for their clearly defined contexts. The marvered vessel from the Crusader-period bathhouse in Acre is made of brown glass, which is not as common as purple, green or blue in later Mamluk-period glass assemblages. Found together with a prunted beaker, this is a rare securely dated 12th–13th centuries example of Near Eastern marvered glass from the period of Crusader domination in the area.[103]

In terms of their morpho-typological features, thus far there have been no finds analogous to the Braničevo vessels. Similar flasks come from Kotor, where different forms of marvered glass vessels are presented. Together with sporadic finds from Dubrovnik, Veliko Tarnovo and Karasura, they throw new light on the appearance, dating and distribution of marvered glass vessels in the Balkans. The vessel set from Braničevo is entirely different from the most common Mamluk finds, in terms of vessel forms and craftsmanship. Only a few forms from outside the Balkans are recognised as similar to some vessels from Braničevo, although all of them are dated later or come from uncertainly dated contexts. Bowls from Khirbat Faris in Jordan (from a 14th century context)[104] and the Jewish Quarter in Jerusalem (dated to 14th c. by comparison with analogous finds),[105] resemble two biconical bowls from Braničevo (Cat. Nos 1 and 2). Furthermore, our bowl listed as Cat. No 8 has similarities with two conical bowls with base-rings from Horbat Zerifin in Israel (Mamluk period, 13th–16th c.)[106] and from the collection of The Corning Museum of Glass (*c* 1100–1399).[107] Cylindrical flasks from Braničevo (Cat. Nos 12 and 13) resemble the vessel from Cheesecake Hill Barrow in England, dated to the 12th–13th centuries,[108] and a small bottle of unknown provenance, kept in the Kofler collection (7th–8th c.).[109] A vessel from the Jewish Quarter in Jerusalem has a similar cylindrical body; by preserved fragments it is identified as beaker.[110] Three vessel rims from Braničevo (Cat. Nos 14–16), possibly parts of small bottles/flasks, resemble the upper part of another vessel from this Jerusalem quarter.[111] In addition to this, two handled bottles, one from the collection of Islamic glass in Jerusalem (11th–13th c.)[112] and the other from a collection in Japan (12th–13th c.),[113] are similar to our Cat. No 9, albeit only in shape. It should be underscored that these vessels are smaller than that from Braničevo; with its height of only 13 cm, the find kept in Jerusalem is attributed to pilgrim flasks.[114]

As for the decoration, the glass vessels from Braničevo are mainly ornamented with festoon-like patterns (Fig. 13. 2; Fig. 14. 1, 4, 6, 8–10). The festoons are either

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[88] Gorin-Rosen 2003, 385; Gorin-Rosen 2006, 108, Fig. 2, 6–7; Brosh 2012, 403–406, 415–416, 422–423, Plate 15.2, G 37, Plate 15.5, G 69a, G 69b, G 70; Brosh 2014a, 303; Ouahnoua 2016, 243–247; Brosh 2017, 304–305.

[89] Brosh 1993, 290–291, fig. 4.

[90] Allan 1995, 14, 27; Brosh 2014, 302.

[91] Križanac 2012, 413.

[92] Rehren et al. 2014, 270, 274, Fig. 2f.

[93] Gorin-Rosen 2013, 110–111, Fig. 1.5.

[94] Allan 1995, 13, 27.

[95] Плохов 2007, 166; Валиулина 2015, 254.

[96] Валиулина 2015, 249; Руденко 2016, 1490, Рис. 12.

[97] *Меч и златник* 2012, 155, кат. 390.

[98] Allan 1995, 15–16.

[99] Insoll 1998, 81, 83, Fig. 2, 4. 1998, 81, 83, Fig. 2, 4.

[100] *Меч и златник* 2012, 155, кат. 390.

[101] Плохов 2007, 174.

[102] Gorin-Rosen 2013, 110–111, Fig. 1.5.

[103] Gorin-Rosen 2013, 110–111.

[104] McQuitty 2007, 161, 169, Fig. 6; Milwright 2008, 269, 270, Plate 41.

[105] Brosh 2014b, 912, 914, fig. 4.1.

[106] http://www.hadashot-esi.org.il/report_detail_eng.aspx?id=814 (accessed 24.01.2018)

[107] https://www.cmog.org/artwork/bowl-482?image=0&search=collection%3A8480fd362951606897866ff4a7474610&page=1517 (accessed 24.01.2018)

[108] Allan 1995, 16–17, Fig. 14.

[109] Carboni 2001, 316, Cat. 3.63a.

[110] Brosh 2014b, 915, fig. 5.24.

[111] Brosh 2014b, 915, Fig. 5.25.

[112] Hasson 1979, 12.

[113] Shindo 2002, 32.

[114] Hasson 1979, 12, cat. No. 12.

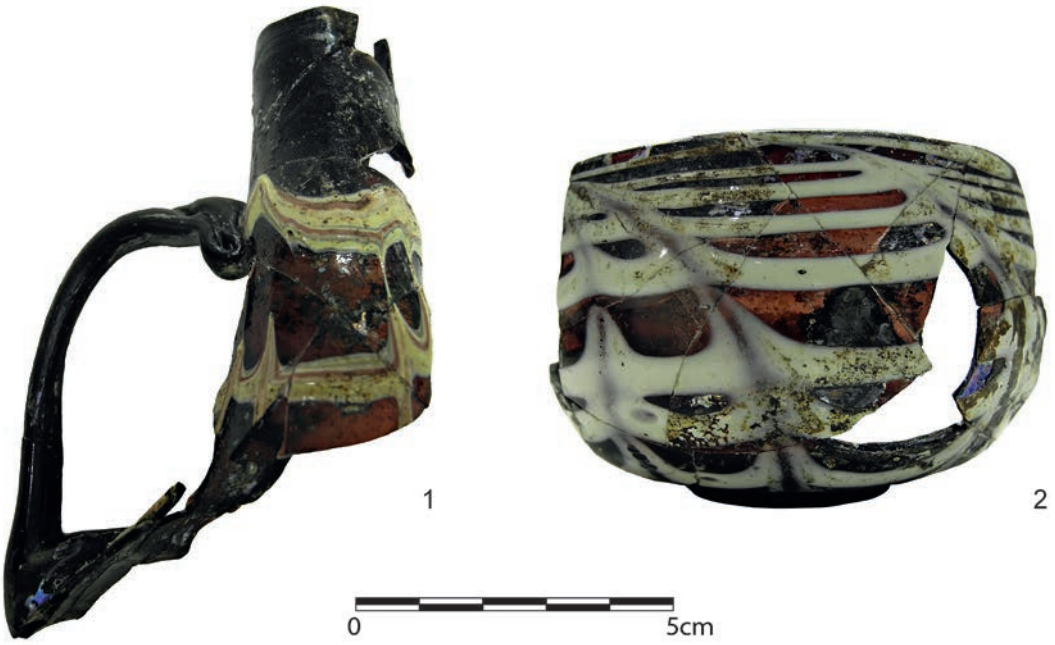

Fig. 13. Preserved parts of a bottle and a bowl after conservation treatment (photo by: D. Spasić-Đurić, S. Jovanović; conservator M. Živković, Central Institute for Conservation, Belgrade)

Сл. 13. Очувани делови боце и зделе након конзервације (фото: Д. Спасић-Ђурић, С. Јовановић; конзерватор М. Живковић, Централни институт за конзервацију – ЦИК, Београд)

thin (Cat. Nos 1 and 7) or thicker (Cat. Nos 2, 6, 12), arranged in narrower (Cat. No 12) or wider (Cat. No 13) vertical sections and skewed on some bowls (Cat. Nos 3, 6). The most similar festoon patterns are seen on the vessels from St Tryphon's Church in Kotor,[115] Monastery of St Mary of Kaštel in Dubrovnik,[116] Fustat in Egypt,[117] and on some fragments from the collection of the Corning Museum of Glass.[118] One bottle seems to have a feather-like pattern on its neck (Cat. No 10; Fig. 13.1); as only the upper part of this vessel is preserved, there is no information about the decoration of the rest of the bottle. The exterior of the second bottle base (Cat. No 9) has spirally wound white trails. This motif is also found on some vessel bases from Jerusalem,[119] as well as on the previously mentioned bottle from Cheesecake Hill Barrow.[120] Some vessels from the Braničevo assemblage, such as a possible flask (Cat. No 15), are decorated with thin horizontal trails below the rim. The decoration of some bowl rims from Braničevo, such as Cat. No 4, resembles that of the vessel excavated in Pergamon (Turkey).[121] It should be noted that the decoration on the Braničevo vessels is not uniform in terms of technical performance. High-quality, smooth marvering resulted from the complete integration of two types of glass (white opaque glass ornament with a purple vessel base). In the Braničevo assemblage, in the lower parts of the vessels, the trails are marvered until they are flush with the vessel wall surface (Fig. 14. 5, 8–10), while in their upper and even middle parts the trails are executed in relief (Figs 13. 1; 14. 2–3, 7). Since the technique of marvering at any rate requires experienced and skilful masters, this partial marvering probably reflects limited skills in applying opaque white trails, with inadequate pressing in of the decoration. The shape of the vessel, and also some other parameters, like glass composition and

[115] Križanac 2001, 28, 33, figs. 6, 12, 15.

[116] Topić et al. 2016, 575, 577–578, Fig. 1.5.

[117] Allan 1995, 9, Fig. 9.

[118] https://www.cmog.org/artwork/fragment-1130?search=collection%3A1b641c0151b9a44a34168cdfdb78cdc3&page=933; https://www.cmog.org/artwork/fragment-bottle-32?search=collection%3A1b641c0151b9a44a34168cdfdb78cdc3&page=866

[119] Brosh 2014b, 914, Figs. 4. 2, 7–8, 11; 915, Fig. 5/34; Ouahnouna 2016, 244, Fig. 11.13, 8–9.

[120] Allan 1995, 16, 17, Fig. 14.

[121] Rehren et al. 2015, 274, Fig. 2f.

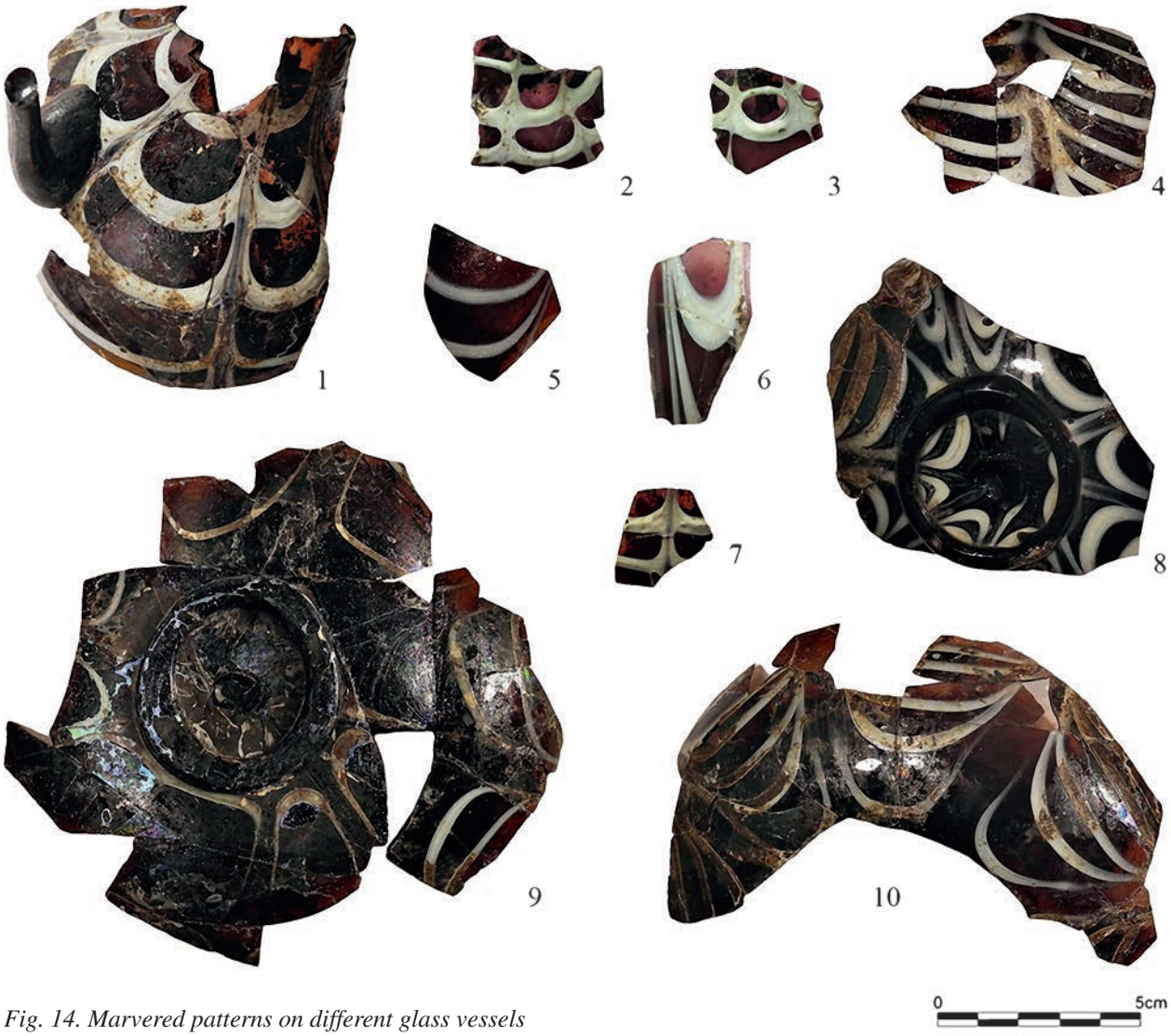

Fig. 14. Marvered patterns on different glass vessels (photo by: D. Spasić-Đurić, S. Jovanović)

Сл. 14. Делови различитих посуда украшени апликираним нитима (фото: Д. Спасић-Ђурић, С. Јовановић)

temperature, final furnace annealing, etc., could also have affected the marvering process to some extent. In the Braničevo assemblage, vessel rims, necks, and concave linking parts of the bottles between the neck and the belly usually bear trailed decoration, not marvered into the body of the vessel.

Conclusions

The group of glass vessels from House No 4 in Braničevo is a rare find of purple marvered glass in the Balkans. As it is well known that the highest concentration of these finds comes from the eastern Mediterranean at the times of the Ayyubid (1171–1250) and Mamluk (1250–1516) dynasties, the fact that the Braničevo assemblage is reliably dated contributes to the general knowledge of marvered glass distribution. Due to the large number of such finds in Egypt and Syria, and the numerous sites producing such finds in present-day Israel, this type of glass is believed to have been produced in these areas. Recently, traces of glass workshops dated to the 14th century were discovered in Israel (Jerusalem).[122]

The latest phase of House No 4, which represents the *terminus ante quem* for the Braničevo inventory, is coin-dated to the last decades of the 12th century (Frie-

[122] Brosh 2014b, 909–920.

sach coins issued between 1170 and 1200 and emissions minted for King Bélla III, from 1172–1196). As the coins of John II Komnenos (1118–1143) and Manuel I Komnenos (1143–1152?) were found on the house floor, in a conflagration layer immediately above it, from which the glass assemblage also came, it can be assumed that the set belonged to the middle/second half of the 12th century. Importantly, only after the assessment of the complete archaeological material from House No 4, could more narrow dates for our finds perhaps be suggested.

In the context of marvered Islamic vessels, considering the later group of this type of glass (12th–15th c.), it seems that the finds from Braničevo are, so far, the earliest securely dated vessels of this group, without analogous finds. In light of the other rare, but also luxurious and important finds from the Balkans, particularly those from St Tryphon's Church in Kotor, this kind of glass certainly should be considered an interregional phenomenon.

The results of the analyses conducted within the project *Glass from Byzantium to Baghdad – Trade and Technology from the Byzantine Empire to the Abbasid Caliphate* imply that the vessels from Braničevo were made from plant-ash soda glass, most probably of Levantine origin, which reveal a typical composition of Near Eastern Islamic glass. Judging by morphological and typological criteria, i.e. the fact that this was a unique set of marvered vessels which included different forms, it could be assumed that these vessels were brought to Braničevo together, as a set. This interpretation is also supported by the fact that the entire set was manufactured in a single workshop, in two slightly different batches, which was also demonstrated by the analyses. It is not known where these vessels were made but, apart from the Islamic lands, it should also be considered that the workshop could be located in the territory of the Byzantine Empire. It is worth noting that, along with this purple glass set, other imported goods have been unearthed from House No 4 as well, such as pieces of luxurious Byzantine glazed pottery.[123]

It cannot be concluded under which circumstances this luxurious set of glass might have been brought to Braničevo. It must be seen in the light of the military-political importance of the city during the 12th century,[124] in a time of the opposition of Hungarian and Byzantine interests in the Balkans, and with the transit role of Braničevo during the Crusades. Historical accounts of the emperors' stay there and the fact that the city had its own elite circle indicate that the delivery of such an assemblage could have been required on many occasions.

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Translated by Sonja Jovanović

[123] Bikić 2016, 129.

[124] *ВИИНЈ* IV, 7–10, 13, 14, 16–22, 43–45, 50, 117, 118, 120–126, 137, 159; Коматина 2016, 105–107.

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Dragana SPASIĆ-ĐURIĆ, Sonja JOVANOVIĆ
A 12th century set of marvered purple glass vessels from Braničevo (Serbia) (151–173)

Резиме: ДРАГАНА СПАСИЋ-ЂУРИЋ, Народни музеј Пожаревац
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СЕТ ПУРПУРНИХ СТАКЛЕНИХ ПОСУДА СА УКРАСОМ ОД АПЛИЦИРАНИХ НИТИ* (12. ВЕК) ИЗ БРАНИЧЕВА (СРБИЈА)

Кључне речи. – Браничево, Србија, 12. век, сет пурпурних стаклених посуда, украс од аплицираних нити, бело непрозирно стакло.

Током археолошких ископавања средњовековног Браничева 2011. године, на локалитету Мали град откривен је сет од најмање 16 стаклених посуда израђених од прозирног тамнопурпурног стакла. Посуде су украшене аплицираним нитима од белог непрозирног стакла које су накнадно, ваљањем/окретањем врелог стакла на равној подлози, потпуно или делимично стопљене са пурпурном основом (енг. *marvering*). Нити су у току тог процеса обликоване посебном алатком формирајући украс од фестона. Сет се састоји од осам здела, три боце, две мале боце и три посуде које су такође, са одређеном резервом, опредељене као мале боце. Посуде су нађене у слоју гарежи/рушења који непосредно лежи на подници Куће 4, заједно са око 87 уломака посуда од природно обојеног плавозеленог стакла и са 25 фрагмената наруквица израђених од тамноплавог стакла. Са њима су откривени и остаци три дрвене угљенисане даске, те је на основу њих претпостављено постојање полица на којима су стаклене посуде стајале или дрвене шкриње у којој су биле складиштене.

Од укупно шест мањих здела, две су биконичне (кат. бр. 1–2; сл. 6), три конвексне (кат. бр. 3–5; сл. 7. 1–3), а једна је готово цилиндрична (кат. бр. 6; сл. 7. 4). Две веће зделе су конвексне форме (кат. бр. 7–8; сл. 8). Зделе су имале извијене или увучене заобљене и благо задебљане ободе, и прстенасте, накнадно аплициране базе. Сачувани елементи упућују на то да су три боце сличне форме, вероватно овалног тела, са дугим цилиндричним вратом и с једном или две дршке (кат. бр. 9–11; сл. 9. 1–3). Поред здела и боца, сет такође садржи фрагменте две мале боце цилиндричног тела и конкавног дна (кат. бр. 12–13; сл. 10. 1–2), као и три посуде левкасто проширеног врата, благо задебљаног и заобљеног обода (кат. бр. 14–16; сл. 10. 3–5). Доњи делови ових посуда нису очувани. Може се претпоставити да је такође реч о малим боцама.

Археолошки контекст, а посебно нумизматички налази, завршну фазу Куће 4 опредељују у последње деценије 12. века (фризашки новац емитован између 1170. и 1200. године и емисије краља Беле III из 1172–1196. године). Захваљујући томе, као и налазима новца Јована II Комнина (1118–1143) и Манојла I Комнина (емисија из 1143–1152?) који су нађени такође у слоју гарежи на поду Куће 4, сет пурпурног стакла из Браничева оквирно се датује у средину/другу половину 12. века.

Највећа концентрација оваквог луксузног посуђа забележена је на простору источног Медитерана (сл. 12) из времена владавине династије Ајубида (1171–1250) и Мамелучког султаната (1250–1516). Посуде овог типа су у мањем броју налажене и у Европи, Африци и Азији. Шире се датују у период од 12. до 14. века, а највећи број примерака опредељује се у крај 13. и у 14. век. Ретки примерци датовани су у 15. век. Сет из Браничева представља значајно откриће на Балкану и један је од најраније поуздано датованих налаза пурпурних стаклених посуда украшених аплицираним нитима од белог непрозирног стакла.

Резултати хемијских анализа, које су рађене у оквиру пројекта *Glass from Byzantium to Baghdad–Trade and Technology from the Byzantine Empire to the Abbasid Caliphate*, показали су да сировина стакла од које су посуде прављене потиче са Леванта, те да је реч о типично исламском стаклу Блиског истока. Након морфолошке и типолошке обраде материјала утврђено је да су форме браничевских посуда јединствене и као такве немају директне аналогије (када је реч о стаклу украшеном овом техником). На основу тога, као и морфолошко-типолошке разноврсности ових налаза, може се претпоставити да су посуде у Браничево донете заједно – у сету. Ова претпоставка је оснажена и аналитичким резултатима који су потврдили да су све посуде израђене у једној стакларској радионици, али у оквиру два процеса, од две сировине са незнатним разликама у хемијском саставу.

Не може се са сигурношћу установити под којим условима је овај луксузни сет доспео у Браничево. Околности које су томе допринеле биле су различите и могу се само претпоставити. Оне се морају посматрати у светлу војно-политичког значаја Браничева током 12. века, у време константних преламања угарских и византијских интереса на Балкану, уз транзитну улогу коју је овај град имао током крсташких похода, и кроз присуство царева Јована II, Манојла I и војно-политичке елите у Браничеву. Због чињенице да се ради о затвореној и поуздано датованој археолошкој целини, сет посуда из Браничева представља значајан допринос у проучавању технологије израде и морфолошко-типолошких карактеристика овог луксузног посуђа, као и хронолошких оквира појаве и шире дистрибуције ових налаза.

* Будући да енглески термин *marvering* није једноставно превести у једној или пар речи, због самог процеса технике декорације који се састоји из више фаза, аутори су одлучили да на српском користе уопштенији назив – декорација аплицираним нитима, чија је употреба оправдана. Један од разлога је и то што на појединим посудама или на њиховим одређеним деловима, процес стапања декоративних нити са пурпурном основом није у потпуности завршен, па су аплициране нити на тим примерцима остале рељефне, односно само аплициране.

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THE BATHING CHAMBER IN THE CASTLE OF NOVO BRDO

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Abstract – A recent archaeological excavation of the Castle of the town of Novo Brdo has discovered residential buildings from the second quarter of the 14th century as well as the remains of a subsequently built bath, dated to the end of the 14th or beginning of the 15th century. Built ona small area, the bath consisted of a single bathing chamber above a hypocaust, a water reservoir and a furnace. Since there were no natural springs or groundwater wells, it was supplied with water from cisterns. The bathing chamber, originally domed, was not furnished with a masonry water basin. It was heated by an under floor hypocaust system and by steam conveyed by pipes from areservoir ofboiling water. The only known analogies for this small structure, presently the only such discovered in medieval Serbia and its neighbourhood, are bathing chambers in residential complexes in the region of Amalfi, southern Italy.

Key words – *bathing* chamber, shallow dome, Castle, Novo Brdo, Amalfi.

Medieval society is commonly believed to have been very different from the civilization of classical antiquity when it comes to personal hygiene habits. This belief, however close to the truth it may be in general, opens up a quite complex and little studied set of issues. It appears from the surviving evidence that early periods of the middle ages knew the need for spaces intended for maintaining personal hygiene, for baths. The presence of such facilities was, at first, restricted to larger monasteries and royal palaces.[1] This aspect of classical tradition was preserved much better in the eastern part of the former Roman Empire. In Byzantium, apart from baths within monastic complexes, there were also public baths in the cities.[2] In the Islamic lands of North Africa and the Near East, where body hygiene was a religious requirement, the institution of public baths, *hammam*s, was underpinned by the system of Roman *thermae*.[3]

Unlike public baths, which outlived the demise of classical civilization in one or another simplified form, the presence in domestic, family settings of amenities comparable to the Roman *balnea* has not been the object of any closer scrutiny for a long time. More recent research by Jill Caskey, focused on examples identified in medieval residential contexts in southern Italy, has drawn attention to the existence of small domestic baths, suggesting that bathing was an important routine of domestic life, at least for the well-to-do strata of medieval society.[4] Caskey's analysis of five bathing chambers in the Amalfi area scrupulously describes this type of facility, thereby facilitating the identification and interpretation of the archaeological remains of such structures in medieval residential contexts. A fresh contribution to this field of studies, which are highly

[1] Horn, Born 1979; Sagui 1990, 98–116.
[2] Osterhout 1997, 193–199; Berger 1982.
[3] Grotzfeld 1970.
[4] Caskey 1999, 170 and passim.

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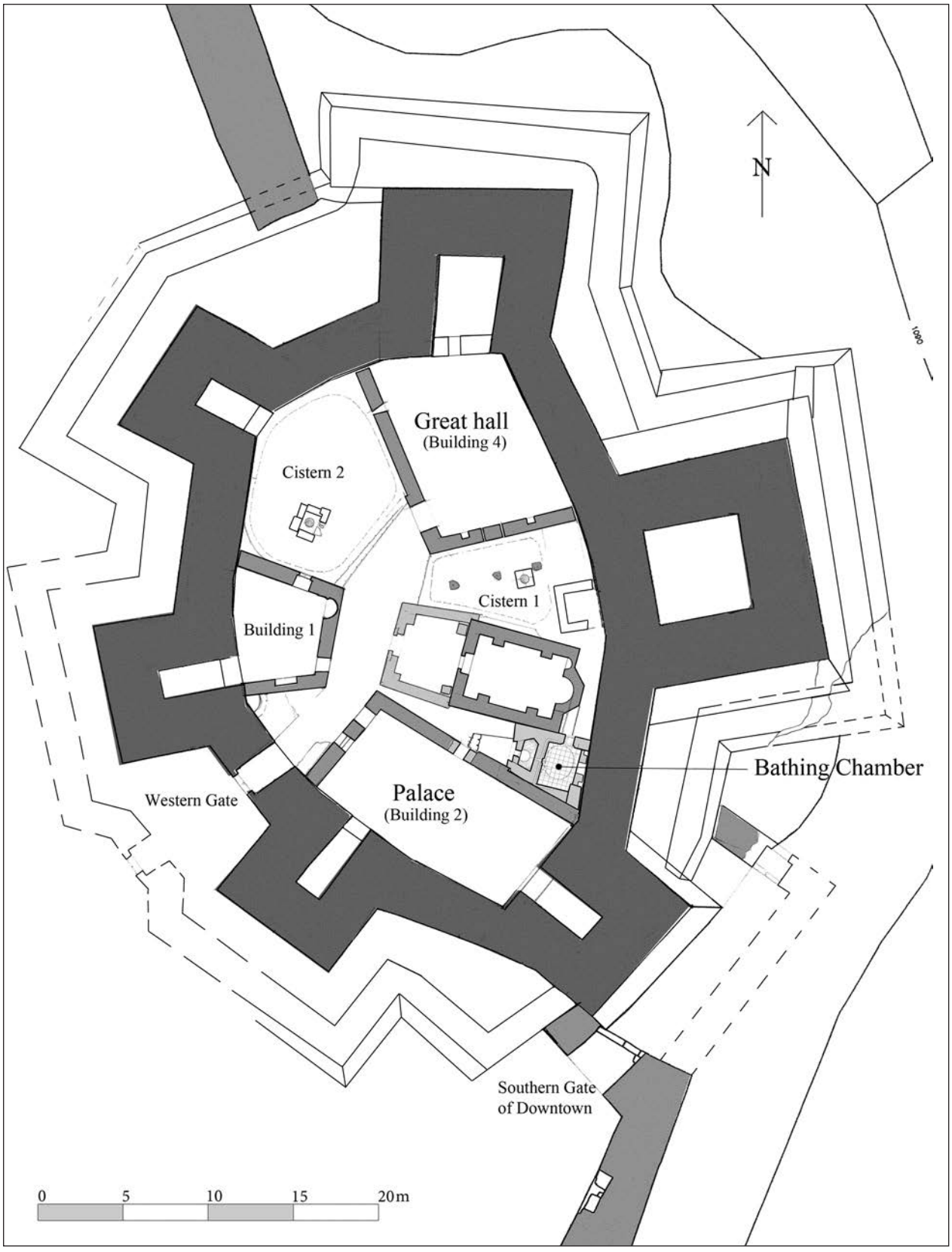

Fig. 1. Castle of Novo Brdo, site plan (after M. Popović 2016)

Сл. 1. Ново Брдо, Замак, ситуациони план (према: М. Поповић 2016)

relevant for our knowledge of everyday life in medieval society, has been made by the latest archaeological excavation of the Castle of Novo Brdo. The site has recently yielded the remains of a bath which is the only such facility discovered in medieval Serbia to date and which, moreover, lacks any known analogies for some aspects of its design. For the sake of a better understanding of the design and operation of the Novo Brdo bath, we shall begin our considerations with an introduction which should provide the overall context of this remarkable discovery.

The remains of the medieval town of Novo Brdo sit in the mountainous area of Southern Serbia, or eastern Kosovo, at an altitude of more than 1,000 m. Despite its unfavourable geographical position, the town saw a remarkably rapid growth in the 14th and first half of the 15th century. Owing to its rich silver mines, Novo Brdo swiftly eclipsed the older mining centres and from the mid-14th century became the largest town of medieval Serbia and its main economic hub with its own mint. In the autumn of 1349, Emperor Stefan Dušan himself (r. 1331–1355) stayed in this thriving town. Subsequent Serbian rulers used to make visits to it as well, but the surviving sources do not provide more information about their stays. It appears that Despot Stefan Lazarević of Serbia (r. 1389–1427) made several visits to the town and that he had a residence there.[5]

The settlement and expansion of Novo Brdo was directly related to the operation of mines and the volume of silver production. The administration of the town was organised as it grew as an urban centre. In the first half of the 15th century, the highest position in the town administration was held by an official with the title of *vojvoda,* appointed by the Serbian ruler. Acting as the ruler's representative, he was in charge of not only the urban settlement with the surrounding mines but also of the broader town area.

In the 14th and first half of the 15th century, Novo Brdo grew as a typical medieval fortified town. In the middle of it was the town castle which served both as a residence and as the last line of defence. On the west slope below the Castle was the well-fortified part of the town, the so-called *Lower Town*. There has been no excavation in that area but, judging by surface vestiges of houses, it was relatively densely populated. On the east slope below the Castle was a sizeable suburb, which seems to have been largely walled as well. A field survey has located the town's main streets and quarters. In the middle of it was a sizeable square where streets converged from different directions.[6] Not far from the central square was the main town church, the Orthodox Christian cathedral of St Nicholas.[7]

The Ottoman conquest of Novo Brdo in 1455 was a watershed in its history. A decrease in mining production caused by the reprisals that followed the conquest led to its decline and the resettlement of its Christian inhabitants. The depopulation process was particularly severe in the 17th century and by its end the town had been practically deserted.

The archaeological investigation at Novo Brdo begun back in the 1950s[8] was only resumed in 2015 with the aim of exposing the structural remains of the Castle and the fortified town in order to enable their conservation and partial restoration.[9] Particular attention within this project has been paid to the structural remains in the Castle, which were buried under a 3–6 m thick layer of destruction debris, stone and rubble. The extensive works involved the clearing of the debris to the surviving height of the buildings' walls followed by the systematic archaeological excavation of the entire inner bailey of the Castle.[10]

The area enclosed by the Castle's curtain wall was about 550 m² in area. The curtain wall was fortified with six concurrently built towers. The main, and largest, tower was closed on all four sides, while the others had their upper parts open to the bailey. The entrance to the Castle was to the west, and the curtain wall was fronted by a lower outer wall with a sloping escarp (fig. 1).

The structural remains discovered in the Castle under the thick layer of rubble belong to three residential buildings, one church, two cisterns, and a small bath, which is the focus of this paper. These structures, abutting the pathway leading from the West Gate towards the Main Tower, filled the entire bailey of the Castle, the central fortification of the town of Novo Brdo. The

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[5] Jireček, Radonić 1978, 352.

[6] Jovanović et al. 2004, 88–94; Popović 2016, 58, fig. 21.

[7] Popović, Bjelić 2017, in press.

[8] Zdravković, Jovanović 1954–1955, 251–264; Korać 1954–1955, 265–274; Zdravković, Jovanović 1954–1955a, 275–282; Pribaković 1958, 253–265.

[9] The project of excavation, conservation and partial restoration of the Novo Brdo fortifications has been taking place under the auspices of UNESCO, with funds provided by the European Union. The works have been carried out by the winner of the international tender, Company for Construction, Renewal and Reconstruction of Buildings Koto Ltd Belgrade, under the archaeological and conservation-restoration supervision of the archaeologist Dr Marko Popović and the architect Gordana Simić.

[10] Popović 2015, 74–80.

aisleless Church in the central part of the bailey had its interior walls covered with frescoes and a narthex subsequently added at its west end. To the north of the Church was a sizeable structure, designated as Building 4, with its two sides set against the curtain wall. A wooden porch on its south side provided access to the Great Hall on the upper floor. Across from it, to the right of the entrance to the Castle, the walls of a large three-storey residential building were discovered, Building 2, whose two sides were also set against the curtain wall. It appears that it was heavily damaged in a fire soon after construction and that its north wall had to be partly rebuilt. To the left of the entrance to the Castle was a smaller two-storey structure, Building 1.

The Castle was equipped with two sizeable cisterns, both of the type commonly occurring in medieval Serbian fortifications.[11] In the middle of a rock-cut pit coated with layers of impermeable clay was a well shaft of 60–70 cm in diameter. The interior of this type of filter cistern was filled with layers of sand in which rainwater accumulated. The larger of the two occupied the entire space between Buildings 1 and 4, while the smaller one was between the Church and Building 4. The remains of a small bath, to which the rest of this paper will be devoted, have been discovered in the only unbuilt and relatively small part of the bailey bounded by the curtain wall, Building 2 and the Church.

The results of the investigation carried out so far have provided a basic chronology of Novo Brdo Castle and its structures. The Castle's curtain wall with towers and the outer curtain wall resulted from the original design and formed a whole. As correctly assumed by earlier excavators, they may be dated to the middle of the first half of the 14th century, or to the 1320s and 1330s at the latest. After that, in the course of the same century, there followed the construction of other fortifications of Novo Brdo which, together with the Castle, formed part of the original strategy of town defence.

The construction of structures in the Castle ran parallel with the construction of its towered curtain wall. Buildings 2 and 4 are contemporary with the curtain wall against which they are set. There is no reliable evidence for the construction date of Building 1, but it may be assumed that this third residential building in the Castle dates from the first construction phase. There followed the construction of both cisterns, the smaller of the two apparently being somewhat earlier. The Church, whose architectural form suggests a date that is not later than the mid-14th century, was built in the central part of the Castle, in all likelihood in the first construction phase. The question of the date of the renovation of Building 2 has remained open. It would have taken place, if not before the end of the 14th century, then certainly in the first years of the 15th century. Also related to this question is the construction date of the small bath which was built either at the time of or immediately after the renovation of the adjacent Building 2, but probably not before the first decade of the 15th century.[12]

The damage sustained by the Castle can be reliably linked to the Ottoman sieges and capture of Novo Brdo. If there had not been much damage in 1441, when the Ottomans took the town for the first time, the buildings in the Castle suffered destruction in 1455 at the latest, during the siege or immediately after the final conquest of Novo Brdo. The Ottomans did not use the Castle enclosure for stationing a garrison but as a source of building material for repairing the fortifications. Soon after the conquest, the south wall of the Church and the adjoining wall of the small bathing chamber were torn down for the same purpose. A few decades later, a simple millet granary was builton their ruins, which might have been in use during the first half of the 16th century.[13]

The remains of the bath were buried under a thick layer of rubble which also covered a thin cultural layer formed at the time this structure was torn down. The bath was built in the area bounded by the east curtain wall, Building 2 and the Church, and in such a way that three of its walls were set against them. Having been overlaid by layers of stone and rubble, the unearthed remains of this small structure were in a relatively good state of preservation. Its north wall, however, could not be fully exposed because a wall of the Ottoman granary had been built on its remains. A closer examination of this wall and its partial restoration will be possible only after the removal of this later construction (fig. 2).

The unearthed remains of the small structure provided information about its construction features, making it possible to establish its original purpose and appearance with much certainty. The analysis of its relationship to the adjacent structures and of the archaeological finds retrieved from the cultural layer has provided basic parameters for establishing the date of its construction and eventual demolition.

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[11] Popović 2012, 141–144.

[12] Popović 2015, 74–80.

[13] Popović 2015, 80.

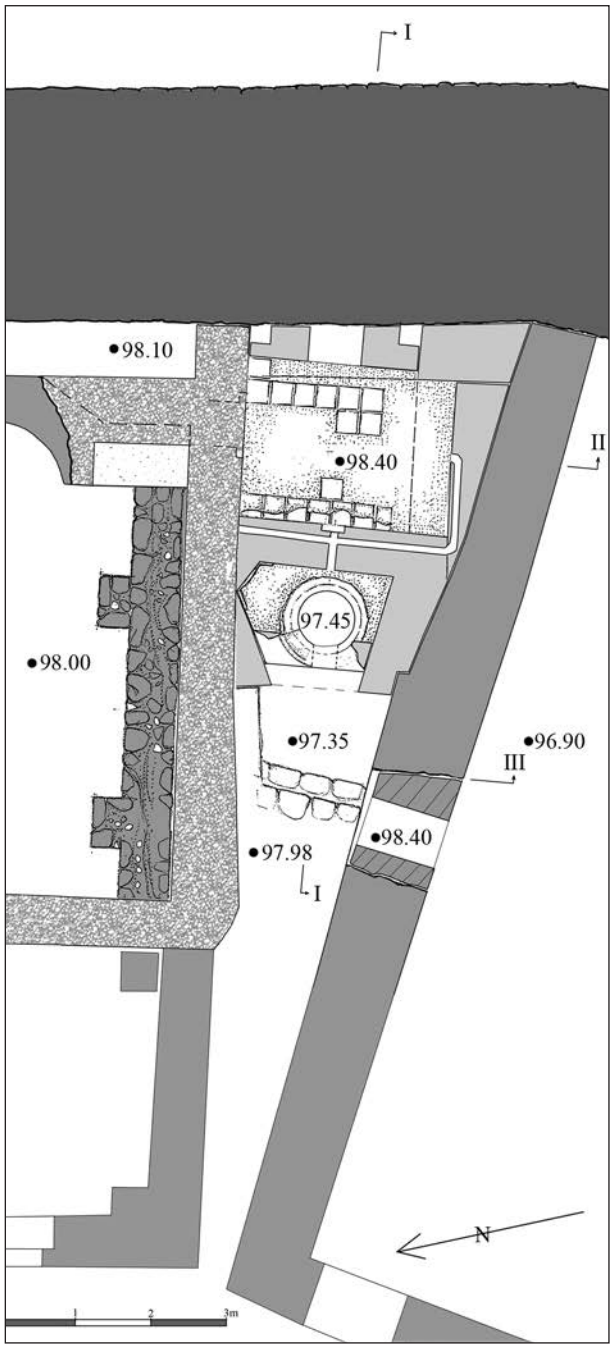


Fig. 2. Bath in the Castle,
plan of unearthed structural remains (scale 1:100)

Сл. 2. Купатило у Замку,
основа откривених остатака (R 1 : 100)

The bathing facility in the Castle of Novo Brdo consists of a single bathing chamber above a hypocaust, a water reservoir, and a furnace with a small stoking area (figs 3–5). The whole structure rests on shallow foundations set on levelled bedrock. Underneath the bathing chamber is a completely preserved hypocaust with two pillars, or *pilae* stacks. The floor of the hypocaust rests on bedrock. The pillars and the hypocaust pit walls support larger stone slabs constituting the subfloor of the chamber above. The hypocaust pit was linked to two square-sectioned chimney flues butted up against the curtain wall in its east corners. On its opposite, west, side it connected by three openings with the stone-built furnace which formed a structural whole with the water reservoir and the pipes conveying steam into the bathing chamber (fig. 6). The unusually cylindrical firebox, about 70 cm in diameter, was built with much care and precision, with dressed stones laid in regular courses of equal height. It communicated with the hypocaust pit by three narrow, equal-sized vertical openings through which hot air passed and heated the floor of the bathing chamber. Its opposite side features a square opening for feeding the furnace from the sunken and revetted stoking area. A layer of soot and ash in the stoking area was overlaid by a relatively thin cultural layer which contained potsherds typical of the first half of the 15th century. The stratigraphic position of the cultural layer in relation to the overlying layers of rubble, as well as the pottery finds, has made it possible to date it to the mid-15th century, i.e. to the time of the destruction of the Castle buildings.

The cylindrical firebox was lidded with a now missing circular metal plate, at least one metre in diameter, which left a scar showing that its edge was lodged into the masonry. It was surmounted by the upper structure of the water reservoir, laid out on an irregular trapezium plan of about 1.80 m² in area. Judging by the surviving traces, this only partly preserved structure was covered with a tufa ashlars vault. The apex of the vault could have been at a height of about 0.80 m from the bottom of the reservoir, or 1–1.10 m from the upper side of the metal plate. All interior surfaces of the reservoir were coated with a 2–3 cm thick layer of hydraulic mortar mixed with pounded brick.

The partly preserved bathing chamber above the hypocaust was rectangular in plan and about 6 m² in area (figs 7–8). At the corners of its east wall, which is set against the curtain wall, are engaged piers, from which springs an arch built of tufa ashlars. A pointed-arch niche of tufa ashlars is cut out in the middle of the wall through to the curtain wall. The abovementioned chimney flues rising from the hypocaust pit are incorporated into this wall of the bathing chamber. The south wall was butted up against the rebuilt north wall of Building 2. A tufa-built arch attached to this wall

Fig. 3. Bath in the Castle, view from the west (photo 2015, photo by M. Popović)

Сл. 3. Купатило у Замку, изглед са запада (фото из 2015, фото: М. Поповић)

Fig. 4. Bath in the Castle, view from the east
Fig. 5 Bath in the Castle, view from the south

Сл. 4. Купатило у Замку, изглед са истока
Сл. 5. Купатило у Замку, изглед са југа

also partially survives. The north wall was torn down almost to the floor level at the time of the destruction of the Castle buildings, and the south wall of the Ottoman granary was built on its remains. Remains of the entrance to the bathing chamber accessed from the passage between the east curtain wall and the Church were discovered in its north wall during the partial dismantlement of the younger Ottoman structure. This door, whose sides survive only to a height of one or two courses of stone, was 0.60 m wide. The west wall of the bathing chamber was also in a ruined state. It survives to a height of up to one metre above the floor level. Both of the two ruined walls had featured the same tufa arches as those attached to the two better-preserved walls. Horizontally embedded in the south and west walls at a height of 0.60–0.70 cm above the floor level were ceramic pipes 7–8 cm in diameter, which ended in vents in the middle of the interior face of the walls. A similar ceramic pipe must also have been embedded in the demolished north wall. This system of pipes communicated with the water reservoir above the furnace and served solely for conveying hot steam to the bathing chamber.

The subfloor of the bathing chamber consisting of stone slabs above the hypocaust pit was coated with 6–8 cm thick layers of mortar, the uppermost of which was mixed with pounded brick. The underlayment was covered over with thin floor tiles (30 cm by 30 cm) laid in a regular grid pattern and grouted with red hydraulic mortar. Although only some of the tiles were found in

Fig. 6. Bath in the Castle, firebox with remains of the water reservoir (photo by M. Popović)

Сл. 6. Купатило у Замку, детаљ ложишта са остацима резервоара за воду (фото: М. Поповић)

Fig. 7 and 8. Bathing chamber and detail with remains of arches (photo by M. Popović)

Сл. 7 и 8. Купатило у Замку, главна просторија и детаљ са остацима лукова (фото: М. Поповић)

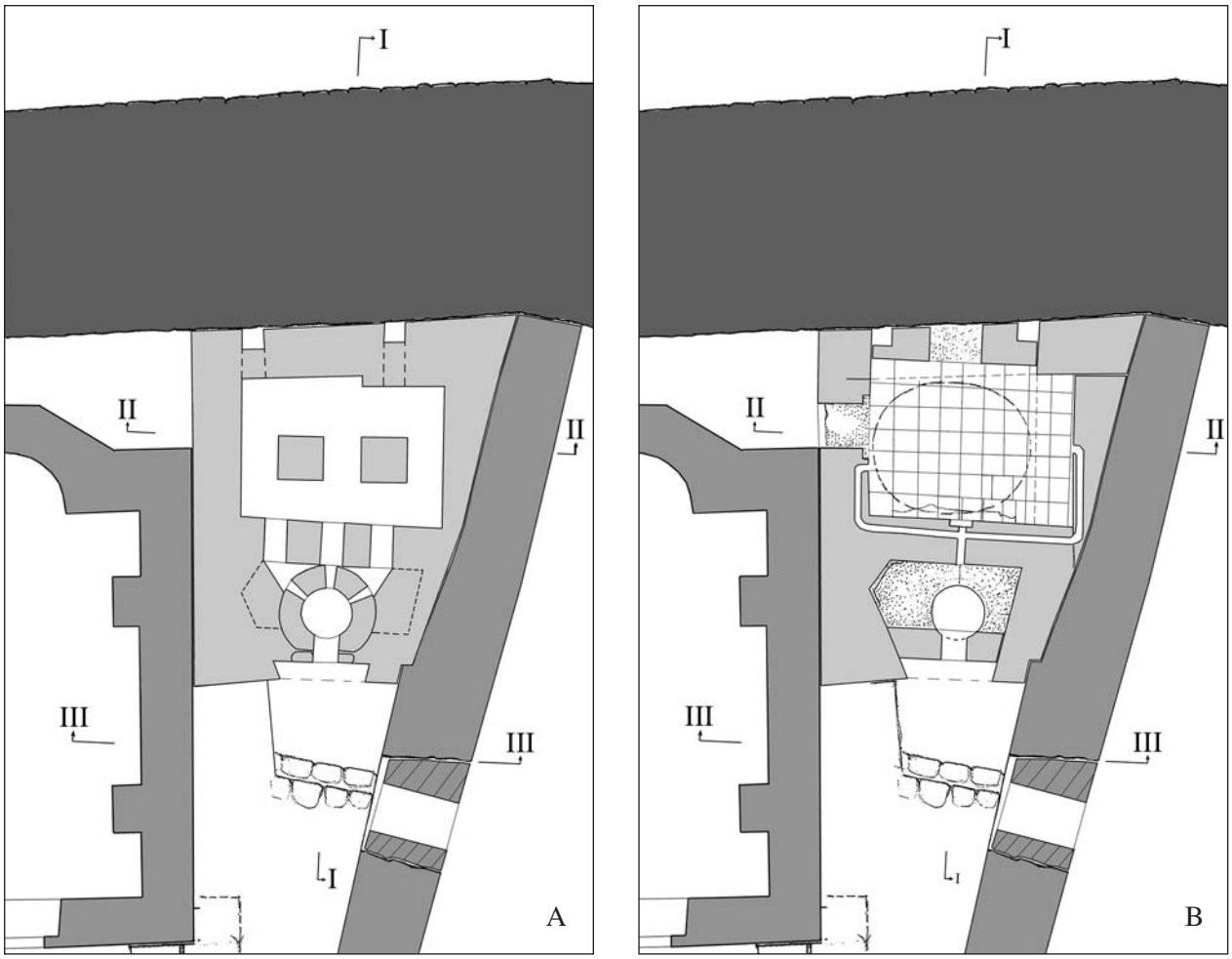
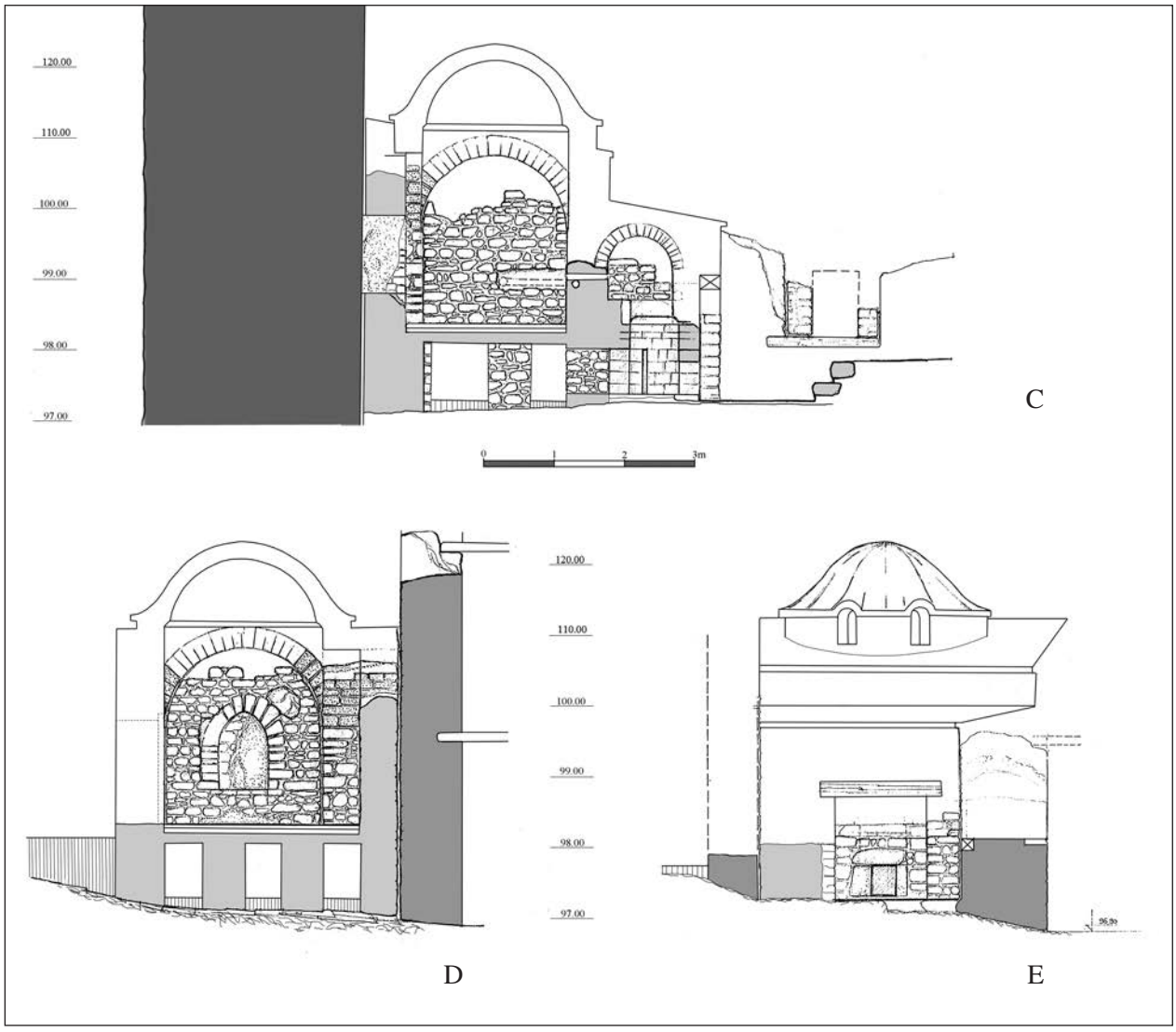


Fig. 9. Bathing chamber, plans and sections with a reconstruction of destroyed portions (1:100): A. Plan of the lower level with hypocaust; B. Plan of the upper level at 0.70 m above floor; C. Longitudinal section I–I; D. Cross-section II–II; E. Cross-section with east elevation III–III

Сл. 9. Купатило у Замку, основе и пресеци са реституцијом порушених делова (Р 1:100): А. Основа доњег нивоа са хипокаустом; В. Основа горњег нивоа на 0,70 m изнад пода С. Подужни пресек I–I; D. Попречни пресек II–II; Е. Попречни пресек са западним изгледом III–III

situ, most had left clear impressions in the underlayment. As it appears from the preserved areas of wall coating, all walls of the bathing chamber were plastered with a highly-polished 1–2 cm thick layer of hydraulic mortar.

The discovered remains of the Novo Brdo bath are sufficient to quite reliably reconstruct its original appearance and manner of use, and to draw on helpful analogies in considering its function within the Castle as a whole (fig. 9). It should be noted that there were no natural springs or groundwater wells either in the Castle, built on rocky terrain, or in its immediate surroundings. The Castle depended mostly on the rainwater collected in its two underground filter cisterns, which undoubtedly was a limiting factor in the operation and use of the bathing facility which could not count on a supply of running water. Furthermore, being squeezed into a small space, the bath had a single heated room above the hypocaust and no antechamber or any other auxiliary rooms. There was no masonry water basin either, an important fixture in this type of facility. In the analysed south-Italian bathing chambers, regardless of how they were supplied with water, there was a recess for such a basin, whose size suggests that it was intended for one person. A preserved example exists in the Toro bathing chamber in Ravello,[14] and the loca-



tion of similar fixtures in some other partially preserved domestic baths in the same region may be presumed with much certainty.[15] The lack of a bathing basin in the bathing chamber of Novo Brdo Castle may be ascribed to the small available space, and perhaps also to the fact that it operated under very limited water supply conditions.

As already noted, the surviving structural remains of the bath in Novo Brdo Castle allow for a quite reliable reconstruction of its former makeup.[16] The completely preserved lower level of the facility contains a hypocaust under the bathing chamber which communicated with the two chimney flues set against the curtain wall on the east side and the solid-built cylindrical firebox on the west side. In front of the west side of the furnace was a relatively small sunken area from which the furnace was stoked and which could only accommodate a small quantity of fuel. The stoking area was probably sheltered by a wooden roof.

On the upper level, the furnace was surmounted by the masonry water reservoir. Judging by the surviving remains, it was topped by a barrel vault. The interior of the reservoir was coated with a relatively thick layer of waterproof mortar. The cylindrical firebox was covered with a metal plate which heated the water in the reservoir. Since the dimensions of the reservoir have been established with much precision, its usable volume did

[14] Caskey 1999, 173–174, fig. 4.

[15] Caskey 1999 176–177, figs 12 and 14.

[16] The architectural analysis of the structural remains of the bathing chamber and the graphic reconstruction of its original appearance were compiled by the architect Gordana Simić (figs 9–10).

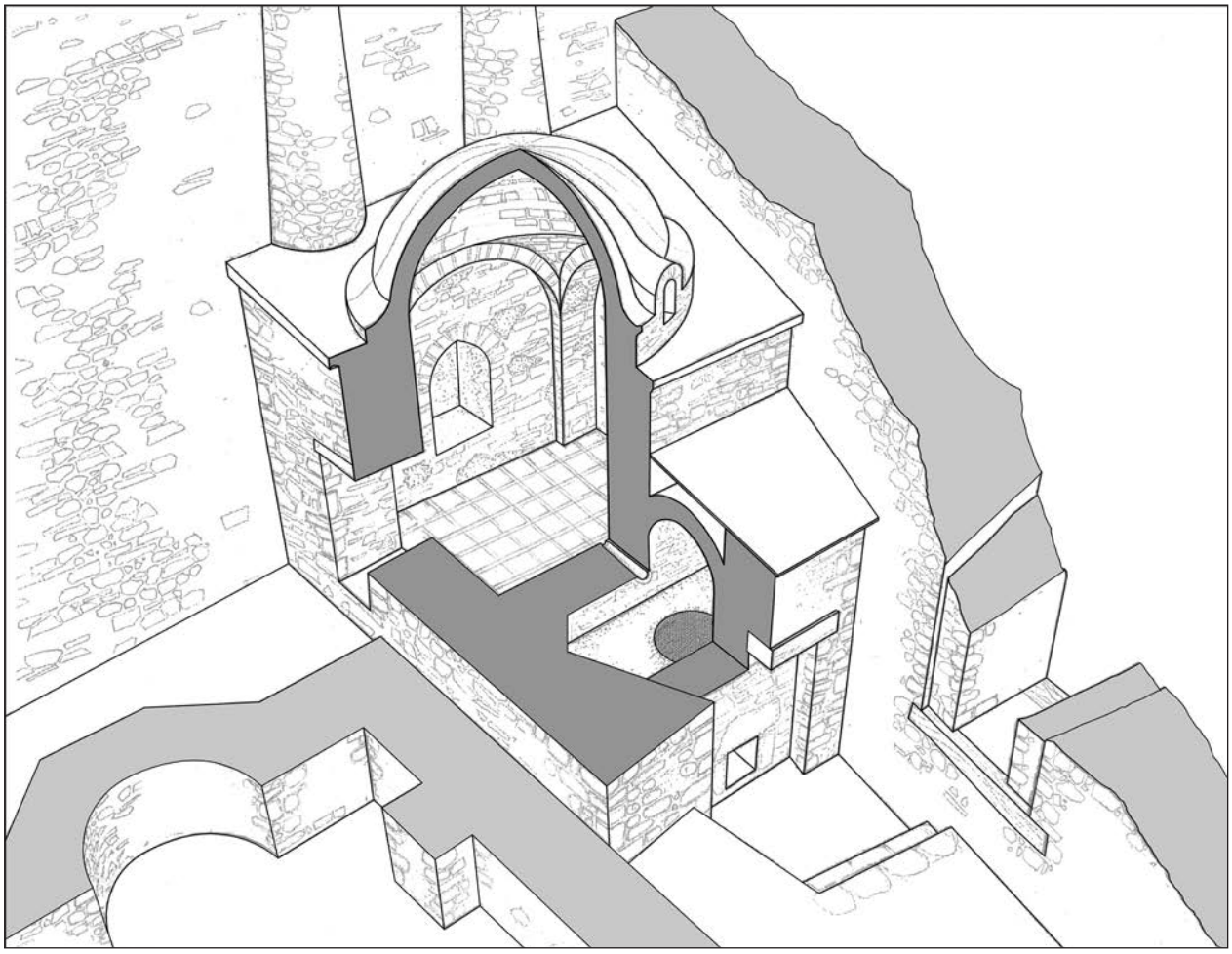


Fig. 10. Bath, conjectural view (reconstruction by G. Simić; technical support by I. Bjelić)

Сл. 10. Купатило у Замку, замишљени изглед са разрезом (према реституцији Г. Симић, техничка обрада И. Бјелић)

not exceed 0.5 m³, i.e. it could hold a little less than 500 litres. To fill it with water, which must have been brought in vessels from the cisterns, there must have been an opening in the apex of the vault, probably accessed from some sort of a wooden scaffold mounted against the south exterior wall of the Church. The steam was conveyed from the reservoir to the bathing chamber through ceramic pipes which were embedded in its west, south and north walls and ended in circular vents in the face of the walls.

The bathing chamber was directly accessed from the outside through the door in its north wall. The surviving remains have made it possible to establish the exact place and width of the door, but not its appearance (fig. 10), and it cannot be known whether the opening was spanned with an arch or a lintel. The original appearance and construction of the bathing chamber is indicated by the surviving structural elements. The engaged piers in its corners supporting tufa-built arches were found on its south and east sides. The more poorly preserved north and west walls must have also featured such arches. The four arches delimited a square of 2 m by 2 m, and the transition from the square to an elliptical, almost circular shape was achieved with pendentives. The vault is not preserved, but it may be reconstructed from the surviving structural elements, finds retrieved from the destruction debris and preserved analogies. The room was probably topped by a shallow dome on a very low drum rising above a lean-to roof set against the inner face of the east curtain wall and, thus, visible only from the west. Since the siting of the bathing chamber made it impossible to make

any other opening in its walls except for a door, it is reasonable to assume that there were two small windows in the drum. A similar solution with windows partly cut into the base of a shallow dome occurs in a middle-Byzantine public bath in Thessaloniki.[17] The Novo Brdo bathing chamber was probably roofed with lead, a material abundantly available on the site owing to the local mines. This assumption is corroborated by the fact that the destruction debris did not yield any fragments of ceramic roof tiles or stone shingles.

All interior walls of the bathing chamber were plastered with highly-polished red waterproof mortar, but there does not seem to have been any stucco decoration. That the walls were plain is suggested both by the surviving portions of the mortar coating on the walls and by the analysis of the fragments of mortar from the debris. The only distinctive detail in the interior was a niche in the east wall, which must have been intended for a lamp. An analogy for this niche occurs in the already mentioned domed Toro bathing chamber in Ravello. As suggested by J. Caskey, apart from a lamp, the niche might also have been used for other accoutrements of bathing such as perfumes, oils, herbs, towels and drinking vessels.[18]

The Novo Brdo bathing chamber was not furnished with a masonry water basin. It was essentially a room heated by the under floor hypocaust system and by the steam conveyed by ceramic pipes from the reservoir of boiling water. A moveable wooden bathtub therefore seems likely to have been used. It may also be assumed that there was a wooden bench for clothes, probably placed against the south wall.

The specific siting of the bathing chamber in relation to the other Castle buildings determined the placement of the door. The chamber could only be accessed by a narrow passage behind the Church, whose width between the apse and the curtain wall was only 0.80 m. Since there was no anteroom, it may be assumed that there was only a simple wooden awning over the door. The furnace was also accessed via a narrow passage, but from the west, between the south wall of the Church and Building 2.

As far as the function and construction of the Novo Brdo bath is concerned, the only close analogies so far are five baths in the Amalfi area in southern Italy. Given the facility's small overall size, it lends itself to comparison only as far as the bathing chamber itself is concerned. In that respect, there are similarities both in plan and in area. With its area of 6 m², the Novo Brdo bathing chamber is smaller than those of the Toro bath in Ravello (12 m²) and the Ruga bath in Amalfi (9 m²), but almost the same as those of the D'Afflitto bath in Pontone (4.20 m²), the Rufolo one in Ravello (6.15 m²) and the one in the Castle of Caserta Vecchia (5.30 m²). The greatest similarity is, however, in some elements of their construction. All of the Amalfi examples cited above had a domed bathing chamber. As indicated by its surviving lower construction, so did the Novo Brdo one, but the Italian examples cannot help us reconstruct its appearance more closely. This goes in particular for the style of their segmented or ribbed domes, which would have been hardly imaginable in the Novo Brdo bathing chamber. The Novo Brdo bathing facility has no known parallels in the central Balkans or in the Byzantine areas of present day Greece. The same goes for the eastern coast of the Adriatic where, to the best of our knowledge, such facilities have not been identified so far. Yet, the possibility should not be ruled out that the excavators of medieval residential complexes were not able to recognise them even if they were there. Briefly, the bath within the residential complex of Novo Brdo Castle is the only structure of the type identified in the lands of medieval Serbia to date.

Reliable information for dating the bath has been provided by the architectural analysis, which identified the phases of its construction and of the renovation of the adjoining buildings, and by the stratigraphic make-up of the site, which evidenced its fall into disuse and eventual destruction. As already observed, the construction of the bath could only have taken place concurrently with, or shortly after, the renovation of the adjoining Building 2. This three-storey residential building, which the Serbian inhabitants of the Castle called the "Palace" (*polata*), was built concurrently with the curtain wall against which it was set, i.e. in the second quarter of the 14th century. As was usual in medieval Serbian architecture, all its interior constructions were timber built. At some point, which cannot be dated more closely but certainly before the end of the 14th century, the Palace was damaged in a fire. The upper portion of its northeast wall facing the Church collapsed. It appears that the building was repaired soon afterwards, which included the rebuilding of its collapsed northeast wall. Neither the fire nor the renovation can be dated with precision, but they likely took place in the years around 1400. The construction of the

[17] Tripsiani-Omirou 1997, 314–317.

[18] Caskey 1999, 173, fig. 3.

adjoining bathing chamber was closely linked with the renovation works, considering that its upper part is set against the rebuilt portion of the Palace's northeast wall. This would mean that its construction could have taken place concurrently with, or soon after, the renovation works. It should also be noted that an opening towards the furnace, whose placement and size suggests a window, was made in the rebuilt portion of Building 2, at a height of 1.30 m above the floor level. The fact, however, that it was at a height of only 0.40 m from the original ground level makes its purpose unclear, but it must have been in some way connected with the newly-built bathing facility.

The dating of the Novo Brdo bath to the very end of the 14th or early years of the 15th century is based on the reliably established chronology of the construction of the Castle. The residential buildings, the Church and the two cisterns were, by all accounts, envisaged in the original design of the fortified residential complex carried out in the first construction phase. If we put the subsequently added narthex aside, these structures filled practically the whole bailey. The only space left for further construction was the small area between the Church and the Palace (Building 2), which obviously dictated the small size of, and unusual access to, the bathing chamber. Even though it adjoined the main residential building, it had no communication with it. The narrow access passage and door on the opposite side was obviously the only, if inconvenient, solution. The analogous Amalfi examples show that the location of bathing chambers was not fixed, but rather that it depended on the available space and easy access to water resources.[19]

The dating of the Novo Brdo Castle bath to the years around 1400 distinguishes it from similar south-Italian facilities. The examples in the Amalfi area and in the Castle of Caserta Vecchia have been dated to the 13th century, but the existence of earlier facilities of the type has not been ruled out. These bathing chambers, the first such to be studied and put through an architectural analysis, undoubtedly drew on some earlier models. A role in that must have been played by the experience and needs of Amalfitan merchants who, when travelling the eastern Mediterranean, had the opportunity to acquaint themselves with Byzantine and Islamic baths, which grew from the traditions of classical antiquity.[20] These were not only public baths, especially numerous in Islamic environments of North Africa and the Near East, but also those in domestic settings in residential complexes.

Domestic baths of the "Amalfitan type", which is the only adequately known at present, must have been built both before and after the 13th century, as future research is likely to show. The presence of such a bath in Novo Brdo Castle should be interpreted in that context. A somewhat more difficult question concerns the origin of its builders. In all likelihood they came neither from the local environment nor from lands in the Byzantine cultural orbit, where there are no known facilities of the type in private domestic settings. In view of the development of the town of Novo Brdo, where many merchants from Ragusa (Dubrovnik) and the coastal lands of medieval Serbia resided or visited, it may be assumed that the builders came from the West. The close similarity of some aspects of the design of the Novo Brdo bathing chamber to those in the Amalfi area points to southern Italy, although the eastern Adriatic should not be ruled out either.

The construction of the bathing facility in the Castle of Novo Brdo should be looked at from the perspective of the function and layout of the whole residential complex. Novo Brdo Castle was a marked example of a well-fortified royal or lordly residence which contained a three-storey "palace" and an additional dwelling – Buildings 1 and 2, the "Great Hall" accessed from a wooden porch, and the Church which served as the court chapel. Apart from these buildings, the Castle was equipped with two sizeable cisterns. Archaeological excavation has shown that there were no service buildings such as kitchens, stables and the like. It may be assumed that they were sited in the fortified part of the town, west of the Castle.

Within the Novo Brdo system of defences, its central fortification – the town's Castle, apart from its remarkably important defensive role, served a residential function as well. It probably served as the residence of the Serbian ruler's official, the *vojvoda*, and the seat of his administrative offices. However, it may also have served as the residence of the Serbian ruler on his occasional stays in Novo Brdo, notably in the reign of Despot Stefan Lazarević (r. 1389–1427), who seems to have stayed there quite frequently. On such occasions the Castle almost certainly served as the seat of his court. Perhaps this fact, however scantily supported by the surviving sources, was the reason for adding a bathing chamber. This assumption may find corrobo-

[19] Caskey 1999, 181.

[20] Fugliuolo 1986, 571–664; Citarella 1967, 299–312.

ration in the Despot's biography by Constantine of Kostenets which explicitly states that the court of Stefan Lazarević maintained the highest standards in every respect, including the details of everyday life.[21] Bathing facilities in residential contexts were a luxury only affordable by the most prominent members of medieval society. In the circumstances where there was no running water, preparing a hot bath and bathing itself was certainly an elaborate and quite costly operation.[22]

The bathing chamber in Novo Brdo Castle was not in use for long. It was destroyed together with the adjacent buildings only a few decades after construction. The destruction could have taken place in 1441, when the Ottomans took the town for the first time after a months-long siege. Even if it had survived this first capture of the town, it was demolished, along with the walls of the adjacent church, immediately after the final Ottoman conquest in the spring of 1455.

[21] Žitije despota Stefana, 76, 99–100.

[22] Caskey 1999, 186.

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Marko POPOVIĆ
The bathing chamber in the castle of Novo Brdo (175–190)

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КУПАТИЛСКО ЗДАЊЕ У ЗАМКУ НОВОГ БРДА

Кључне речи. – купатилско здање, плитка купола, Замак, Ново Брдо, Амалфи.

Уобичајено је схватање да се средњовековно друштво у погледу одржавања телесне хигијене битно разликовало од света античке цивилизације. Ово мишљење, ма колико у основи тачно, задире у једну доста сложену тему, која је до сада остала још недовољно проучена. У том смислу појава малих купатилских инсталација у домаћем, породичном окружењу, која би одговарала типу римских балнеа, дуго није била предмет детаљне стручне анализе. Новија истраживања резиденцијалних комплекса у Јужној Италији, која су указала на постојање малих домаћих купатила, сведоче да је купање било важан део породичног живота за богатије слојеве средњовековног друштва. На основу истражених пет купатилских комора из области Амалфија, овај тип грађевина је веома јасно дефинисан, што отвара могућности да се њихови археолошки остаци у средњовековним резиденцијалним комплексима лакше препознају и растумаче. Нов допринос овим проучавањима, која су од великог значаја за боље познавање приватног живота у домаћем окружењу и средњовековног друштва у целини, пружили су резултати најновијих археолошких истраживања Замка – резиденцијалног комплекса и средишњег утврђења средњовековног града Новог Брда.

Испод високих слојева обрушеног камена и шута, у Замку су откривени остаци три стамбене грађевине, затим цркве, две цистерне, као и малог купатила, коме је посвећен овај рад (сл. 1). Остаци овог здања откривени су између Источног бедема, Грађевине 2 и Цркве, на релативно малом и једином слободном простору који је преостао у унутрашњости Замка. Својим зидовима било је прислоњено уз ове објекте, при чему је уочено да му се горњи део зидне масе прислања уз спољно лице обновљеног северног зида Грађевине 2 (сл. 2). Откривени остаци остали су релативно добро очувани. Преостали део северног зида овог малог здања било је могуће само делимично истражити, будући да је преко његових рушевина утемељен познији зид турског амбара.

Купатило у новобрдском Замку имало је само једну просторију, затим резервоар за воду и претпростор са ложиштем (сл. 3–5). Његови остаци, иако делимично порушени, омогућавају да се, уз реконструкцију некадашњег изгледа, утврди начин употребе и размотри функција у оквиру целине новобрдског Замка (сл. 9–10). За купатило у Замку није било могуће обезбедити прилив текуће воде, будући да на простору урбане зоне Новог Брда нема природних извора, тако да је снабдевање водом било ограничено превасходно на кишницу која се акумулирала у раније поменутим цистернама са филтер-бунарима. То је утицало на функционалне могућности купатила и отежавало његову употребу. С друге стране, услед веома мале површине на којој је подигнуто, новобрдско купатило је просторно било ограничено само на главну грејану просторију изнад хипокауста, без предворја и других мањих помоћних одељења. Такође, није постојала ни зидана када, односно мали базен који је представљао један од важних садржаја тог типа грађевина, што је на првом месту било условљено веома малим простором на коме је ово здање подигнуто. С друге стране, на то су могле утицати и веома ограничене могућности снабдевања довољним количинама воде.

Откривени остаци зидова пружају могућност да се доста поуздано реконструише некадашњи изглед купатила у резиденцијалном комплексу Замка. У доњем нивоу овог здања, испод главне просторије, налазио се хипокауст, који је на западној страни био повезан са веома солидно грађеним цилиндричним ложиштем. Са супротне стране, уз источни бедем, била су изведена два димњачка канала. Испред ложишта се налазио релативно мали, укопан и подзидан откривени простор, где се ложило и где су се могле налазити само мање количине приручног огрева. Над тим простором је највероватније постојала дрвена надстрешница.

У горњем нивоу, изнад ложишта, налазио се резервоар за воду. Судећи према очуваним остацима био је засведен полуобличастим сводом од танких опека. Цела унутрашњост резервоара била је малтерисана дебљим слојем водонепропустивог малтера. Изнад цилиндричног ложишта била је у зидну масу испод пода уграђена метална плоча преко које се загревала вода. Будући да су димензије резервоара доста прецизно утврђене и с обзиром на ниво до кога је он могао бити испуњен водом, закључак је да његова корисна запремина није прелазила 0,5 м³ или нешто мање од 500 литара. Ради снабдевања водом, која је у посудама доношена из цистерни са филтер-бунарима, постојао је, без сумње, отвор у темену свода коме се, највероватније, прилазило преко неке дрвене конструкције прислоњене уз спољно лице јужног зида Цркве. Загрејана пара из тог резервоара просторије изнад хипокауста спровођена је кроз зидове керамичким цевима, које су се завршавале кружним отворима на западном зиду и на бочним зидовима.

Непосредан улаз у купатило, са спољног простора, налазио се у оквиру северног зида. На основу откривених остатака било је могуће одредити само његов тачан положај и ширину улазних врата, али не и њихов некадашњи изглед. На изглед и конструкцију горњег дела просторије над хипокаустом указују конструктивни детаљи у оквиру очуваних зидова. У угловима просторије са источне и јужне стране налазили су се пиластри повезани луковима од тесаника сиге. Слични лукови постојали су и у оквиру слабије очуваних зидова са западне и северне стране. Конструкције тих лукова омеђавале су површину од 2,20 м х 2,00 м, која је преко угаоних пандантифа прелазила у елипсасту, готово кружну форму, над којом је било изведено засвођавање. Над тим простором, највероватније, налазила се плитка купола са веома

ниским тамбуром. Будући да због свог положаја купатило, осим врата, није могло имати других отвора, разложно је претпоставити постојање два мања прозора између тамбура и базе куполе. Кровни покривач над целим здањем купатила чинило је, по свему судећи, олово, а на то би указивала и чињеница да приликом археолошких ископавања није било у рушевинама ове грађевине ни кровних опека – ћерамида, нити камених плоча које су могле служити за покривање крова.

У унутрашњости просторије над хипокаустом сви зидови су били прекривени фино глачаним црвеним хидрауличним малтером без трагова штуко-декорације. Једини посебан детаљ представљала је засведена ниша у оквиру источног зида, која је без сумње служила за постављање светиљке. Купатило у новобрдском Замку, као што је већ наведено, није имало зидани базен – каду. Била је то, заправо, просторија која је добро загревана преко пода над хипокаустом и путем топле паре која је керамичким цевима довођена из резервоара са кључалом водом. У недостатку зидане конструкције, за купање је без сумње коришћена покретна дрвена када.

Специфичан положај у односу на друге грађевине у Замку условио је место улаза у купатило. Овом здању се могло прићи искључиво уским коридором иза цркве, који је на делу између апсиде и бедема био широк свега 0,80 м. Будући да није било зиданог предворја, може се претпоставити да је испред улаза у купатило постојала само дрвена надстрешница. Ложишту са одговарајућим претпростором прилазило се са друге стране, такође уским коридором између јужног зида цркве и Грађевине 2.

Функционално и према свом конструктивном склопу, купатило из Замка у Новом Брду има за сада једине блиске паралеле са познатим примерима пет малих купатила из области Амалфија у Јужној Италији. Будући да је било просторно сведено, упоређења се могу вршити само у односу на централне одаје поменутих купатила. Најзначајнија блискост огледа се у детаљима примењених конструкција. Сви примери купатила из некадашњих резиденцијалних комплекса у региону Амалфија имали су над централном просторијом куполу, као што је то, без сумње, био случај и са купатилом новобрдског Замка. Осим тих паралела с поменутим грађевинама из Јужне Италије, купатило Замка у Новом Брду нема аналогија на подручју централног Балкана као ни у византијским областима данашње Грчке, те за сада представља једину познату грађевину те врсте на подручју средњовековних српских земаља.

Датовање новобрдског купатила у крај 14. или прве године 15. века засновано је на поуздано утврђеној хронологији грађења у Замку. Стамбене грађевине са Црквом и цистернама биле су, по свему судећи, део првобитне замисли утврђеног резиденцијалног комплекса која је остварена већ у првој етапи грађења. Ако изузмемо касније подигнут нартекс цркве, овим здањима је већ у то време био попуњен готово читав простор у оквиру бедема Замка. Једина преостала могућност за познију доградњу била је на ограниченом простору између Цркве и Палате, односно Грађевине 2. То је, без сумње, предодредило скромне димензије нове купатилске коморе, као и необичан прилаз овом објекту. Иако је било ослоњено на главно стамбено здање, ново купатило није с њим имало непосредну комуникацију. Улаз на супротној страни са уским прилазом био је, без сумње, једино могуће, мада нефункционално, решење.

Домаћа купатила „амафитског типа”, који нам је за сада једини ближе познат, датована су у 13. век, а грађена су, без сумње, и у каснијим раздобљима, што ће вероватно показати даља истраживања. У том контексту треба посматрати и појаву купатила овог типа у новобрдском Замку. Нешто сложеније питање представља покушај да се утврди порекло градитељâ овог здања. Они сигурно нису потицали из домаће средине, а вероватно ни из земаља византијског културног круга, где до сада није регистрована појава малих грађевина овог типа у приватном, домаћем окружењу. Имајући у виду развој града Новог Брда, где је боравио велики број трговаца из Дубровника и градова српског Приморја, нећемо погрешити ако претпоставимо да су градитељи могли стићи са Запада. Сличност, пре би се могло рећи подударност са конструктивним решењима овог типа грађевина у области Амалфија указивала би да су то највероватније били неимари из Јужне Италије, мада се ни учешће градитеља са Јадранског приморја не би смело искључити.

Настанак и потреба доградње купатила мора се посматрати у оквиру функције и просторног решења резиденцијалног комплекса коме је оно припадало. Новобрдски Замак представљао је изразит пример добро утврђеног владарског или властеоског двора, где се у оквиру бедема налазила двоетажна „палата” са још једном стамбеном зградом (грађевине 1 и 2), као и „велика дворана” у коју се улазило преко дрвеног трема. У средишту се налазила црква, која је служила као дворска капела. Двору су припадале и простране цистерне између тих здања. Уочљиво је, како су то показала археолошка истраживања, да у оквиру самог Замка није било помоћних дворских здања – кухиње, штале и сл. Може се претпоставити да су се она, заједно с другим пратећим објектима неопходним у свакодневици житеља двора, налазила у утврђеном делу града, западно од Замка.

У оквиру система фортификација Новог Брда, ово централно утврђење, које можемо назвати градским замком, поред своје изузетне важности за одбрану имало је и резиденцијалну функцију, и то, по свему судећи као двор војводе – намесника српског владара и његових пратећих служби. Међутим, овај замак могао је имати и функцију двора српског краља, касније деспота, у време његових повремених долазака у Ново Брдо. То би се посебно могло односити на време владавине деспота Стефана Лазаревића (1389–1427), који је, изгледа, често боравио у Новом Брду. Његов двор је тада, готово сигурно, боравио у новобрдском Замку. Можда је управо та чињеница, за коју, истина, нема довољно података у сачуваној историјској грађи, и била повод за доградњу купатила у Замку. У резиденцијалним комплексима су зидани објекти за одржавање телесне хигијене представљали луксуз доступан само најзначајнијим представницима средњовековног друштва. У условима где није било текуће воде, припреме топлих купатила и организовање купања представљали су веома скупу активност.

Купатило у новобрдском Замку није било дуго у употреби. После свега неколико деценија пострадало је заједно са суседним грађевинама. То се могло догодити већ 1441. године, после вишемесечне турске опсаде и првог привременог запоседања града. Уколико је тада и опстало, оно је порушено заједно са зидовима суседне цркве одмах после коначног турског освајања Новог Брда у пролеће 1455. године.

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FIRUZ AGHA AND HIS HAMMAM IN SMEDEREVO

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Abstract – This paper deals with the hammam in the Smederevo fortress, erected by Firuz Agha, the head of the Sultan's treasury, between 1485 and 1490. Using Ottoman sources, the authors are able to determine the time of construction, the method of work and the role that this public bath played for Smederevo's inhabitants. The hammam was very important for the functioning of the great Firuz's waqf, which included numerous buildings in the Balkans and Anatolia. Based on data on the waqf's revenue, it may be concluded that until the mid-16th century the hammam in the Smederevo fortress was one of the most profitable facilities of its kind in the Ottoman Empire. Over a quarter of a century, Firuz, as the court agha and later as the sanjak-bey, constructed another three hammams in Tokat, Sivas and Sarajevo, which help us discern patterns and changes in the manner of construction. Based on this knowledge and information about the appearance and manner of functioning of the numerous hammams built in the second half of the 15th and the first half of the 16th century, the authors present the presumed disposition of the rooms of the public bath in the Smederevo fortress. In the female section, the rooms can be determined with great certainty, while three possible types, based on the shape and dimensions, are offered for the hot part of the male section of the hammam.

Key words – Smederevo, Firuz Agha, hammam, waterworks, waqf, Bayezid II, Tokat, Sarajevo, sanjak-bey.

From the Ottoman conquest in 1459 until the 1520s, Smederevo was the most important military stronghold in the European part of the Ottoman Empire. Over the following decades it retained its military, economic and urban importance. However, the past of Ottoman Smederevo has been insufficiently explored. The majority of buildings, both at the time of the despots and during a considerable period of the Ottoman rule, were built of wood and other light materials, which is why few traces of the old urban structures have remained in Smederevo. In addition to fortifications, which largely survived until the present day despite heavy damage in World War I and II, and traces of court buildings in the Castle (*Mali grad* – Little Fort), archaeologists have found remains of only a few constructions in the fortress (*Veliki grad* – Big Burg). These comprise three mosques, one of which was erected by altering and expanding the medieval church in the south-eastern corner of the fortress, and Firuz Agha's double (*çifte*) hammam, with male and female rooms.[1]

[1] Ненадовић 1956, Fig. 11; Дероко, Ненадовић 1957, 185, Fig. 15; Цуњак 2011, 83–104; Поповић 2013, 8–9, 13, 16, 20, 35, 49–54, 56–57, 60–62, 70–72.

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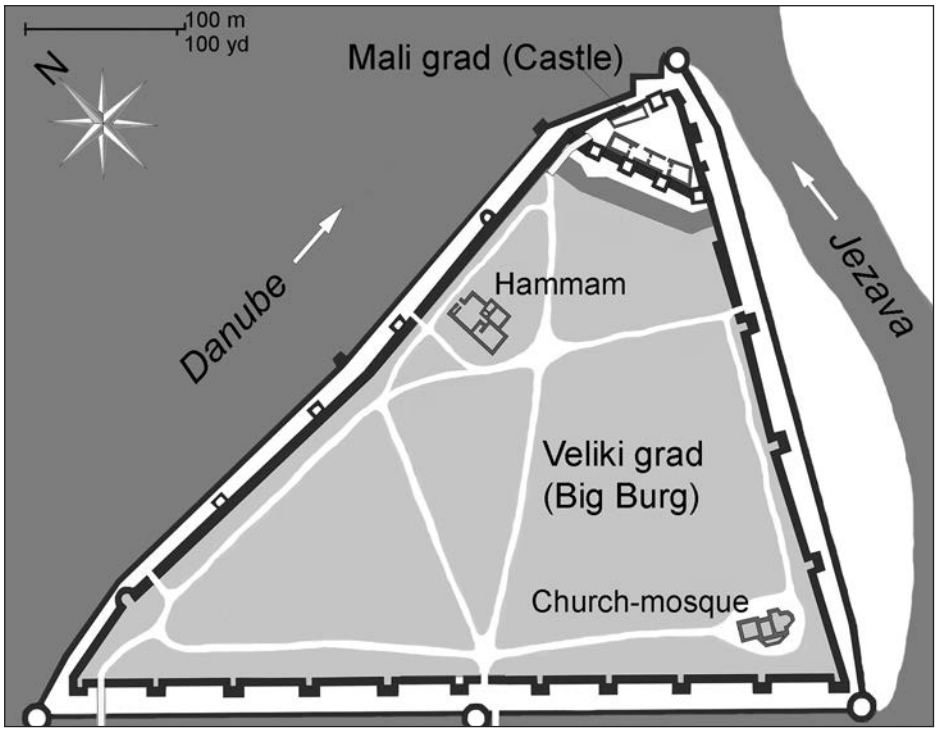

Fig. 1. Plan of the Smederevo fortress with the position of Firuz Agha's hammam (authors: A. Krstić, S. Katić)

Сл. 1. План Смедеревске тврђаве са положајем Фируз-аџиног хамама (аутори: А. Крстић, С. Катић)

Hammams were buildings characteristic of the entire Ottoman civilisation, as Islam pays great importance to the maintenance of body hygiene and ritual washing, i. e. purification of the body. As only running water can be used for ritual washing and bathing, it is understandable that religious regulations were a great incentive for the construction of public baths, *sebils*, fountains and waterworks across the Islamic world. These were among the first public facilities, in addition to religious buildings, that the Ottomans erected in newly conquered towns, and they represented an important feature of their urban development. The construction of baths, fountains and water supply systems was considered a pious act. This is one of the two main reasons why these facilities were a significant part of numerous endowments, waqfs, in the Ottoman Empire. The second reason is the fact that the revenue generated by the hammams was important for the maintenance of the waqfs that they belonged to.[2]

The remains of Firuz Agha's hammam are located in the *Veliki grad* of the Smederevo fortress, five meters from the Danube rampart, between the second and third Danube tower when observed from the *Mali grad* (i. e. between towers 23 and 24). The hammam was constructed at the crossroads of the main town streets, which connected the entrance to the Castle with the gates on the southern rampart of the *Veliki grad*, as well as the Danube with the Jezava gate (Figure 1).[3] Based on this, it is clear that this Turkish bath was one of the most representative buildings in Smederevo during the centuries-long Ottoman rule, which is also confirmed by some old cartographic records. The Austrian plan of Smederevo from the period of the War of the Holy League shows only two facilities in the fortress, the church-mosque in the south-eastern corner of the *Veliki grad* and the double hammam.[4] The same can be seen in an undated plan of Smederevo from the 18th century.[5] Given the significant role played by hammams in the

[2] Kiel 1976, 87; Kreševljaković 1991, 11–18; Eyice 1997, 402–430; Kanetaki 2004, 83; Kanetaki 2012, 204–205; Mikov 2012, 128, 148–150.

[3] Поповић 2013, 19, Fig. 7, 35, Fig. 20, 49.

[4] Zdravković 1965, 223; Катић, Поповић 2013, 82, Fig. 1.

[5] In this plan, the hammam is wrongly designated as a mosque. In addition to several other buildings in the fortress, Sparr's plan of Smederevo from 1738 also shows the hammam: Павловић 1980, 226, Fig. 166, 245, Fig. 177.

everyday life of the urban population in the Ottoman Empire, it is no wonder that such a building was among the most prominent features of the urban structure of Smederevo.

The remains of the Smederevo hammam are also important for the history of the Serbian Christian spirituality, architecture and art of the 15th century, because the hammam incorporated a part of the construction material from one of the monumental churches of Smederevo, most probably the main endowment of despot Đurađ Branković (1427–1456) – the metropolitanate church of the Annunciation.[6] All this prompted us to present here data, until now unknown in Serbian historiography, about the Smederevo hammam and its founder Firuz Agha, later Firuz Bey, offered by Ottoman documentary, narrative and epigraphic sources. They shed light on the time and purpose of creation of this public bath, its work and role in the life of Ottoman Smederevo, and its role in the functioning of the great Firuz's waqf, which covered buildings in several Balkan and Anatolian sanjaks.

* * *

Firuz was born as a Christian and was most probably of South-Slavic origin.[7] Given that he was a eunuch (*hadım*), he probably became a slave as a boy and was castrated by slave traders who sold him to Ottoman courtiers.[8] He was converted to Islam and trained in one of the royal sarays. It is hard to determine whether he was immediately taken to Amasya, to the saray of the prince, later Sultan Bayezid II (1481–1512), or this was done later. It is certain that Firuz obtained the prince's trust and was among the most capable and trustworthy courtiers that Bayezid II, after ascending to the throne, brought to Istanbul, intending for them important services in the Topkapı Palace.[9]

Idris Bitlisi, a contemporary, described Firuz as a handsome man, whose face always emanated goodness. Bitlisi also states that Firuz was driven by a strong wish to progress, that he was very useful in the palace and was adorned with honesty, sharpness of mind and, above all, excellent knowledge of finance, which is why Sultan Bayezid II entrusted him with tasks in the imperial treasury.[10]

The founder's inscription in Persian, set up in 1485 above the entrance to Firuz's hammam in Tokat, reads that the patron was the *hazinedar*, one of the treasurers of the imperial treasury.[11] The other founder's inscription on his mosque at At Meydanı (Hippodrome) in Istanbul[12] and the waqfiyya appertaining to the creation of the waqf from 1491[13] testify that, in the meantime, Firuz was appointed the chief treasurer (*serhazine*), which was, during the 15th and major part of the 16th century, after "the agha of the Gate" (*kapı ağası*), the most important function on the court. Firuz Agha served as the chief of the Sultan's internal treasury until June 1496, when he was appointed the sanjak-bey of the Scutari (Shkodër) sanjak.[14] (Figure 2)[15]

Soon after assuming his duties in Scutari, Firuz Bey incorporated the Crnojevićs' lands in Zeta into the Ottoman state. After the escape of Đurađ Crnojević, the *subaşı* for Montenegro was appointed upon Firuz Bey's order and until March of the following year (1497), the first Ottoman census of this area was carried

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[6] Ненадовић 1956, 78–79, 82–84, Fig. 5, 6, 11; Ненадовић 1979, 404, 409–424; Поповић 2000, 201–202, 208, 211, 216; Цуњак 2011, 99.

[7] Testifying to the non-Muslim, Christian origin are the terms "the son of Abdallah" or "the son of Abdalhayy" instead of his father's name: *İstanbul Vakıfları Defteri 1546*, 23–24; Schwarz, Kurio 1983, 116–117. Kissling 1974, 294, states that a certain *Giorgio di Servia* (also recorded as *di Bosnia*) *dictus da Spalato*, the envoy of the Mantova duke at the Porte, claimed that Firuz Bey was his cousin (*parente*). Based on this and based on Firuz Bey's communication with the Dubrovnik and Venetian authorities in Serbian (*schiavo servo*: Sanuto I, 677–679, II, 506), and with the Mantova duke in Italian, Kissling believes that Firuz originated from Split or its environs. Two Cyrillic Firuz Bey's letters in Serbian have been preserved, sent from Sarajevo to Dubrovnik in the early 16th century: Truhelka 1911, 131, 135–136, 207–208. Cf. Reindl 2014, 150.

[8] About eunuch slaves in the Ottoman court service see: Ezgi Dikici 2013, 105–136.

[9] Schwarz, Kurio 1983, 118–119. About the court of Ottoman princes in Amasya see: Kappert 1976, 19–67.

[10] Dimitriadou 2000, 236.

[11] Uzunçarşılı 1927, 32–33.

[12] Ayvansarâyî 2001, 213; Öz 1962, 59–60; Eyice 1996, 136.

[13] The *waqfiyya* (endowment charter) states that Firuz Agha was Sultan's freedman (*atiq*): Schwarz, Kurio 1983, 116–118.

[14] Reindl 2014, 150–151. According to Mehmet Süreyya, Firuz Agha performed the duty of "the agha of the Gate" as well: Süreyya II, 538. However, Süreyya failed to notice that in the late 15th and early 16th century there was another court agha called Firuz, mentioned in documents also as Hacı Firuz Agha. It seems that he served for a longer time as an agha in the Old Palace. He is mentioned as "the agha of the gate" from 1504 to 1507, as his much better known namesake left the Topkapı Palace long time before and performed the service of a sanjak-bey: Gök 2014, 224, 351, 498, 603; *Ориенπталски сбирки НБС*, F. 1A, a. u. 17657; F. 1A, a. u. 17797, ff. 1–2.

[15] The inscription was made by the famous calligrapher Sheikh Hamdullah, the founder of contemporary Ottoman calligraphy: Ayvansarâyî 2001, 213. About the work of Sheikh Hamdullah see: Serin 2007.

Fig. 2. Firuz Agha's mosque at At Meydanı in Istanbul (photo by A. Altun). The founder's inscription above the entrance to Firuz Agha's mosque in Istanbul (after Eyice 1996)

Сл. 2. Фируз-аīина џамија на Аш мејдану у Истанбулу (фото: А. Алшун). Оснивачки наīīис изнад улаза у Фируз-аīину џамију у Истанбулу (īрема: Eyice 1996)

out.[16] Firuz Bey also took Crmnica, as well as salterns and lands in Grbalj, which were previously held by the Crnojevićs and to which Venice laid its claims, which, along with other territorial disputes, led to the Ottoman–Venetian War of 1499–1503. During the war, waged on the sea and in maritime parts of Greece, Albania and Dalmatia, up to Friuli, Firuz Bey assaulted Kotor and the environs with his men, while during the peace negotiations he played an important role in determining the Ottoman–Venetian border.[17]

After the death of İskender Pasha in late 1504, Firuz Bey was appointed the sanjak-bey of Bosnia.[18] While in this position, in addition to performing military and administrative tasks, he coordinated an extensive espionage network. The Ottoman foreign policy towards Hungary, Venice and Dubrovnik,[19] as well as towards other European countries, which were in the sphere of Ottoman interests, was carried out by him to a significant extent.[20] Due to the complexity of his tasks, Firuz was not subjected to the customary rotation of officials, which most often took place every third year. Though it was expected that in 1511 he would be appointed Rumeli beylerbey, he served as the sanjak-bey of Bosnia until his death in December 1512.[21]

* * *

Firuz's endowment activity was very rich and versatile. Although there were patrons among highly positioned eunuchs in the Ottoman court before, the rise of the architectural patronage of this specific group of courtiers is associated primarily with the rule of Sultan Bayezid II.[22] Like the ruler and his most prominent courtiers, Firuz began to erect his first endowments in the area of Amasya. Besides the wish to be memorialised as patrons and requite the population of the region where they spent a large portion of their lives, they were also driven by practical reasons, such as the knowledge of local needs and appropriate space for construction, as well as earlier acquired real estate.

In the second half of the 1480s, Firuz Agha founded a waqf dedicated to the madrasa in Havza, in whose complex there was also a mescid.[23] He ensured the resources for their maintenance by constructing the double hammam in Tokat, along with which he also erected a *çarşı* with around forty shops, and a smaller hammam in Sivas with several stores. Firuz's waqf collected revenue from around fifteen villages, from the sanjaks of Amasya, Sivas-Tokat and Sonisa-Niksar.[24] When the construction of buildings in the environs of Amasya was already in its advanced stages, Firuz focused on his main waqf complex in Istanbul, which he completed in 1491. He possessed a great estate at At Meydanı (Hippodrome), which covered the surroundings of Philoxenos' (Binbirdirek) cistern and was adja-

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[16] Sanuto II, 372, 504; Đurđev et al. 1957, 153; Томић 1901, 68, 91–95, 113, 117; Đurđev 1954, 172; Šabanović 1958, 340; Zlatar 2013, 71.

[17] Томић 1901, 95–106, 113–132, 137, 140–143; Томић 1909, 21–26, 29, 30–34; Станојевић 1963, 45–46; Kissling 1974, 299–311; *Историја ЦГ* II/2, 337, 347; III/1, 13–14, 23; Reindl 2014, 152–153.

[18] Sanuto VI, 389.

[19] Поповић 1973, 79, 85, 424, note 113; Zlatar 2013, 72–73.

[20] Reindl 2014, 150–151, 153–155, with primarily sources and earlier literature.

[21] Sanuto X, 21, XIII, 187, XIV, 465; Truhelka 1911, 31, 135–136, 207–208; Schwarz, Kurio 1983, 123–124; Reindl 2014, 156. Firuz's cousins Suleyman and Davud and men from his escort held timars in Bosnia in 1516: TD 56, 35, 39, 40, 50, 58, 60, 61, 71, 81, 86; TD 157, 68, 214, 757, 873; Zlatar 2013, 70, 73–74.

[22] Ezgi Dikici 2009, 35–39.

[23] Baltaci 1976, 77–78.

[24] *Karaman ve Rûm defteri* 1530, II, 359, 361, 368–372, 380–381, 385, 433, 497, 542; *İstanbul Vakıfları Defteri 1546*, 23–24; *Defter-i Mufassal-ı Livâ-i Sivas 1574/1575*, 62, 193–194; Gürbüz 1993, 232–233.

cent to the yard of the Hagia Sophia. In the central part, Firuz built a mosque, türbe, sebil and school, where the famous calligrapher Sheikh Hamdullah Efendi held classes of calligraphy (Figure 2).[25]

In the surrounding area, Firuz Agha also constructed a number of accompanying facilities which generated revenue for his waqf from the lease of: 62 chambers for habitation or storage, 17 shops, a slaughter-house and a garden. The waqf was also entitled to revenue from leasing 56 chambers and shops near the coin mint, the colouring facility and Saraçhane in Istanbul, and from 11 shops and chambers in Edirne, together with loan interest, a village from *hâsses* in Istanbul and four villages from Iznikmid nahiye (Nicomedia, present-day Izmit),[26] and from the hammam in Smederevo, which generated by far the greatest profit.[27]

Firuz's waqfs of the madrasa in Havza and the mosque at At Meydanı were then consolidated to ensure better control and more efficient operation.[28] Being a financial expert, Firuz made a good selection of revenue and successfully motivated the administrators of the waqfs, bestowing upon them, instead of daily allowances, a tenth of the waqf revenue. Thus, long after Firuz's death, his waqf's revenue significantly exceeded expenditure, reaching almost 130,000 akçes in 1546.[29] Given their number and structure, this could have been considerably greater but, in some cases, the patron put mercy before profit such as when, for instance, he rented for a pittance tens of residential chambers at At Meydanı to the poor.[30]

Almost fifteen years after the establishment of the above two waqfs, Firuz Bey began to construct new endowments in Sarajevo. Similarly to Havza, the Sarajevo waqf was dedicated to the first Sarajevo madrasa and the mahalle mescid, and the main source of revenue originated from the double hammam in Baščaršija, which was under construction in 1509. He brought water to the hammam from the Sedrenik source, and built five fountains on the waterworks, which were around two kilometres long.[31] The waqf's revenue also originated from leasing land parcels near the madrasa and numerous shops in Sarajevo, and from water mills and land in Travnik in Bosnia, and in Peć in the Scutari sanjak.[32]

It should be noted that Firuz Bey, while serving as the Bosnian sanjak-bey, also founded a town in the region of Polimlje. The summary defter of the Bosnian sanjak of 1516 records "Firuz Bey's town" in the census of the Vlahs of the Banja nahiye as the only settlement of a town type in this nahiye.[33] This town, however, did not carry Firuz's name for a long time, as the censuses of 1530 and 1540/1541 already specified Kratovo (the present-day village south-east of Priboj) as the town in Banja.[34]

Fate was not benevolent towards numerous of Firuz's endowments. Only the mosque at At Meydanı has survived to date, although, due to the expansion of Divanyolu Street after 1865, the patron's türbe, school and sebil were pulled down, and the fence was moved significantly towards the mosque.[35] No trace has been left of the two madrasas in Havza and Sarajevo. Testifying to their existence are the names of parts of these two towns, which are still today called Medrese.[36] The hammam in Sarajevo was operational until 1810, when

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[25] Ayvansarâyî 2001, 213; Eyice 1996, 135–137. Sheikh Hamdullah was the teacher of calligraphy of Prince Bayezid in Amasya, and when Bayezid became the new Sultan, he moved to Istanbul with him. According to Mehmet Süreyya, Firuz also learned from Sheikh Hamdullah and was rather successful, as he himself became known as a calligrapher: Süreyya II, 538; IV, 32.

[26] Firuz probably built or restored a mescid in the Karagollu village (Iznikmid) whose revenue belonged to the waqf, as the breakdown of revenue shows the daily allowances for the imam, muezzin, khatib and kâim in this village: *İstanbul Vakıfları Defteri 1546*, 23–24.

[27] Ibid. In 1501, another smaller waqf was established in Istanbul, devoted to Firuz Agha's mescid near the Valens Aqueduct: *İstanbul Vakıfları Defteri 1546*, 230. However, the founder was another Firuz Agha (see note 14) about whom there is no information in historiography. This is also the reason why the mescid waqf was either wrongly ascribed to the former chief of the imperial treasury or wrongly dated to the period after the rule of Bayezid II: Öz 1962, 61; Eyice 1996, 137–138.

[28] Schwarz, Kurio 1983, 119, 123. Nine shops from Sarajevo were subsequently added to the waqf.

[29] Ibid. For instance, in 1520 the revenue from villages in the Amasya sanjak amounted to 23, 593 akçes, and in 1576 to 55, 371 akçes: Gürbüz 1993, 233.

[30] *İstanbul Vakıfları Defteri 1546*, 23–24.

[31] Krešević 1991, 57–58; Schwarz, Kurio 1983, 123–124.

[32] Information about this is contained in the defters from 1530, 1540/1541, 1567/1568, 1604 and 1624: TD 164, 380; TD 211, 770; TD 462, 41; TD 742, 686; Handžić 2000, 485; Krešević 1991, 57–58; Kasumović 1999, 159–160; Zlatar 2013, 74–76.

[33] TD 157, 396–397.

[34] TD 164, 39; TD 211, 249.

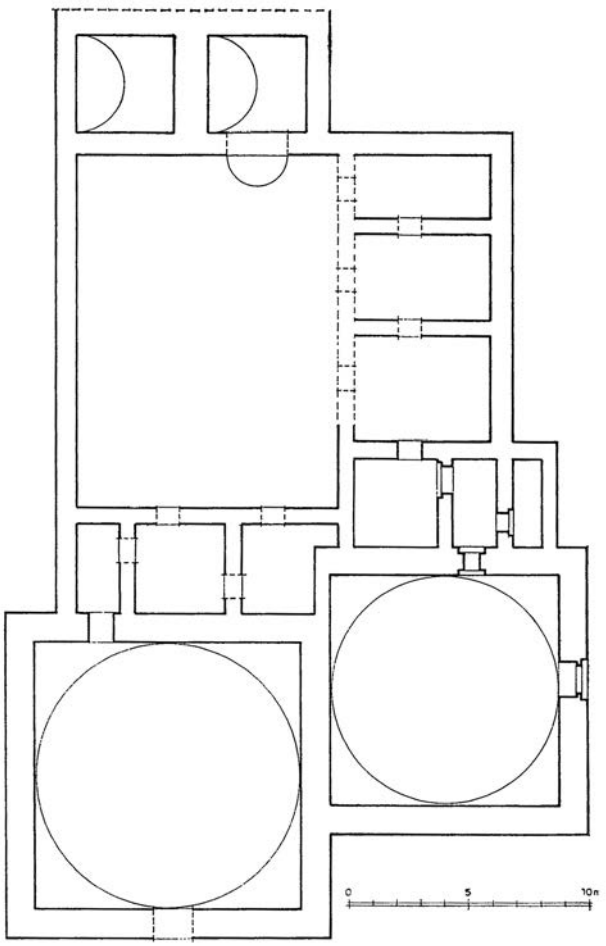
[35] Eyice 1996, 137.

[36] After Havza was proclaimed the seat of the *kadılık*, in 1832/33 the madrasa in that town was turned into a state administration building. As it was unfit for work, it was demolished after some time, so that a new building would be built: Abdizade 1909–1912, 367. The madrasa in Sarajevo was ruined in the 1697 fire and was never restored: Krešević 1991, 58; Kasumović 1999, 160; Zlatar 2013, 76.

it was, due to damage to the dome and its danger of collapse, closed and left to dilapidation.[37] The Smederevo hammam persisted until the Turkish troops were in the fortress, but when they left in 1867, it was abandoned and, soon after, demolished.[38] The hammam in Tokat was the longest surviving. It was active even in the early 20th century, but for military purposes it was first converted into a warehouse, only to be pulled down in the 1930s for the sake of expanding a military facility.[39]

* * *

The exact time of construction of Firuz Agha's hammam in Smederevo is not known. Its first direct mention is associated with the establishment of Firuz's waqf in Istanbul in 1491. Agha also designated the revenue from the Smederevo bath to his endowment in the capital, which means that the hammam already existed in the Smederevo fortress, and was active for at least a year. Firuz Agha, other eminent courtiers or Prince Bayezid himself did not construct waqf facilities during their stay in Amasya. This was very rare, even after Bayezid's rise to the throne on 22 May 1481, as in the first year and a half the new sultan had to settle a score with the pretender to the throne, Prince Cem, the rebellious Karamanids and the conspirators led by Grand vizier Ishak Pasha and the conqueror of Otranto Gedik Ahmed Pasha.[40] Even when Bayezid consolidated his rule, the main endowment activity of the sultan and his most prominent courtiers began first in Amasya and



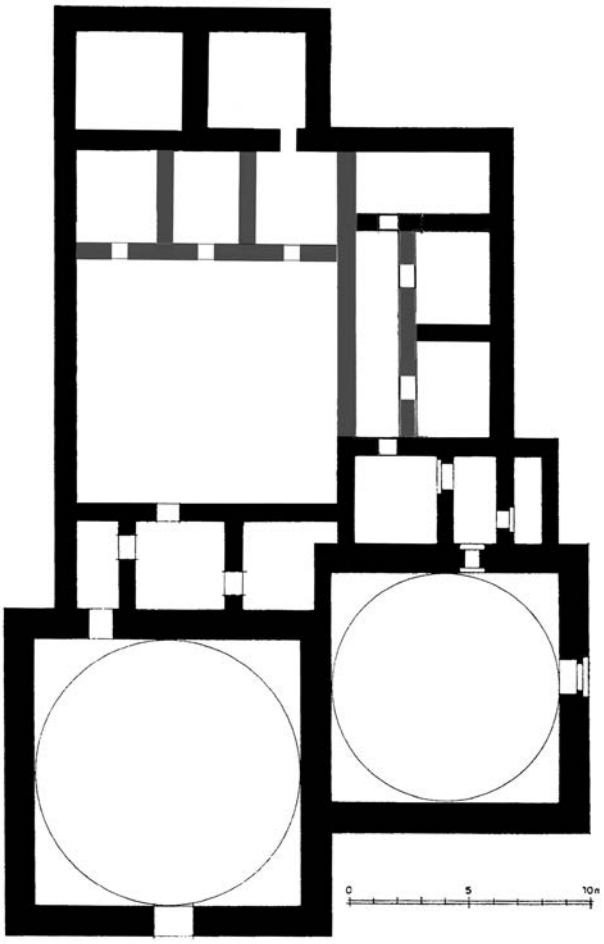


Fig. 3. Plan of the Smederevo hammam (according to S. Nenadović)
Fig. 4. Plan of Firuz Agha's hammam in Smederevo (according to S. Katić and A. Krstić)

Сл. 3. План хамама у Смедереву (према С. Ненадовићу)
Сл. 4. План основе Фируз-аīиноī хамама у Смедереву (према С. Каīићу и А. Крсīићу)

the surrounding towns such as Tokat, Sivat and Havza.[41] Given the political circumstances, Firuz's endowment activity, which first began in the environs of Amasya, the direct connection of the Smederevo hammam with his main waqf complex at At Meydanı in Istanbul (completed in 1491), the time needed for construction and at least one year of work, it is possible to conclude with great certainty that the works on the public bath in Smederevo began in the period from 1485 to 1487, and were completed during the late 1480s.

The above also shows that until the mid-1480s, there was a lot of construction material in the Smederevo fortress, which remained after the destruction of the Annunciation Church. Fragments of stone decoration (parts of arosette and doorpost or window jamb decorated with plaits), and stone blocks with a fragment of the fresco of the Holy Warriors were found in the foundations of the southern room of the hammam.[42] Unfortunately, only the foundations remained of the Smederevo bath and it is, therefore, not possible to determine the quantity and structure of the incorporated spolia. Therefore, the time of construction of the hammam cannot be a precise indicator for dating the Ottoman polygonal cannon tower on the outer rampart near the Jezava confluence, which also contains parts of the demolished church.[43]

Firuz Agha built waterworks for the needs of the Smederevo hammam, along which he erected several fountains.[44] The three-kilometre route of the waterworks went from the spring of the creek of Petrijevski potok, across Jasenak and the present-day Kneza Mihaila Street. It is believed that waterworks were built on this route back in Antiquity and that this route was also used in the Ottoman period, with narrower pipes placed above the existing ones.[45]

Along with Firuz Agha's hammam, two other public baths existed in Smederevo. The older hammam was constructed by the first Smederevo sanjak-bey, Minnetoğlu Mehmed Bey (1459–1463), soon after the conquest. He built it outside the fortress, in the *çarşı* of Smederevo town, somewhere near the road leading to the Jezava bridge. He built waterworks to the hammam, as well as a fountain and 12 shops in the hammam's complex.

The costs of Mehmed Bey's mescid in the Smederevo fortress were covered to a lesser extent from the revenue of the hammam, shops, plots of land and the slaughter house on the Jezava, while the major part was intended for his main endowment, the *imaret* complex in Konush, a small town south-east of Plovdiv.[46]

The third Smederevo hammam, younger than Firuz's, was built by Ferhad Pasha, who stayed in Smederevo as a sanjak-bey in 1523–1524. Due to repeated abuse, Ferhad Pasha was withdrawn from duty in Smederevo and executed in Istanbul in 1524. Thus, there is almost no information about his Smederevo waqf, nor do we know whether the hammam was located in the fortress or the town. Only a short note from the 1532 census has been preserved, stating that the hammam and the revenue belonged to the state.[47]

Chart 1 shows that the revenue of Firuz-aga's hammam was by far the greatest. The exception is the 1522/1523 census, which contains data from the previous

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[37] On the eve of World War I, the hammam was almost demolished. After World War II, the ground-floor artisan and catering facilities were built on its remains. After the archaeological research of 2009–2010, the remains were preserved: Kreševljaković 1991, 58; Kasumović 1999, 160; Sanković Simčić 2012, 9–11; Pravidur 2012, 17–25.

[38] In the First Serbian Uprising (1813), the hammam served as a prison. A photo from March 1912 shows that only the foundations remained from the hammam at the time: Павловић 1980, 202, 318.

[39] According to the waqfiyya, Firuz Agha's hammam in Tokat was located at the foot of the fortress, in the mahalle that was called – owing to its position – Tahtakale. In time, the hammam was no longer identified with its patron, but with the mahalle, which is why it was known as the Tahtakale hammam: Schwarz, Kurio 1983, 120. İ. H. Uzunçarşılı wrongly associates Firuz Agha's hammam with the Sultan's hammam in Tokat: Uzunçarşılı 1927, 32–33. In contrast to these hammams, there is no information about the smallest hammam – the one in Sivas, or about its location.

[40] Tansel 1966, 15–69; Мантран 2002, 123–125.

[41] It is believed that by building the bedesten in Amasya in 1483/1484, *kapı ağası* Hüseyin Agha was the pioneering patron among the court eunuchs, and that the hammam built in 1485 by Firuz Agha in Tokat was an introduction to his extensive construction activity in the years that followed: Uzunçarşılı 1927, 32–33; Ezgi Dikici 2009, 35–39.

[42] Ненадовић 1956, 78–79, 82–84, Fig. 5, 6, 11. One stone block with a fragment of the fresco of the Holy Warriors and one block painted on two adjacent sides were found in the revising archaeological research of the hammam carried out in 1986 and 1987, which suggests that this was a part of a pillar, doorpost or window jamb: Цуњак 2011, 99.

[43] Ненадовић 1956, 79, 83, Fig. 6; Ненадовић 1979, 409–415, 419–424, Fig. 13, 20, 21; Павловић 1980, 118–120, 187; Цуњак 2011, 99–100; Поповић 2000, 216–217; Поповић 2013, 53, 62, 67–73.

[44] *İstanbul Vakıfları Defteri 1546*, 23.

[45] Kanitz 1904, 153–154; Павловић 1967, 44–45; Павловић 1980, 11, 56, Fig. 50; Катић, Поповић 2013, 98.

[46] About Mehmed Bey's waqf in Smederevo see: Катић, Поповић 2013, 96–97, 103; about the imaret in Konush, see: Boykov 2010, 47–67.

[47] TD 978, 149; Катић, Поповић 2013, 96.

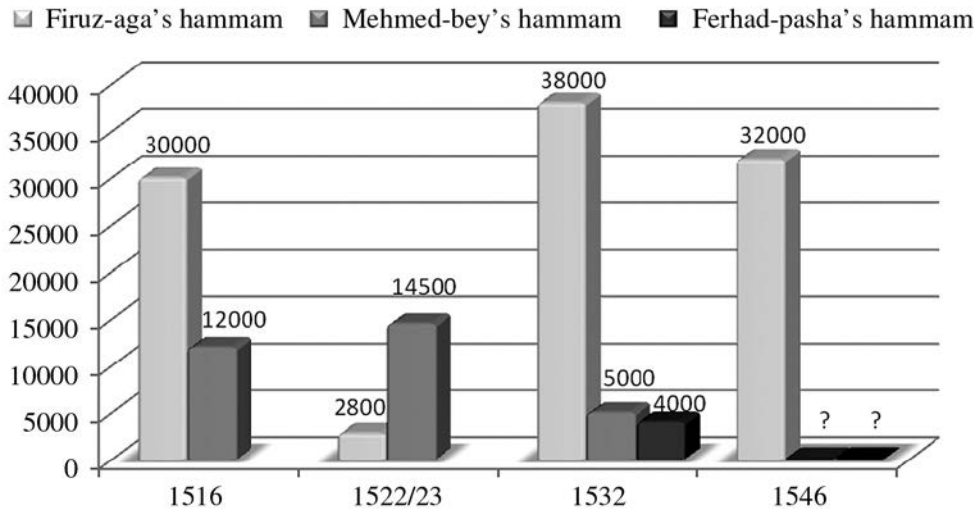

Chart 1: Revenue from Smederevo hammams in the first half of the 16th century[48]

Графикон 1. Приходи од смедеревских хамама у првој половини 16. века

accounting year. In this period, the hammam obviously did not work for a long time, due to the military campaign of 1521, during which thousands of the wounded and plague infected were accommodated in public facilities and later in private houses in Smederevo.[49] It is only the 1532 census that contains information about the revenue of all three hammams. From the total turnover of the Smederevo public baths, Firuz Agha's hammam accounted for as much as 80.9%, Mehmed Bey's for 10.6% and the newly opened Ferhad Pasha's hammam for 8.5%.[50]

FiruzAgha's hammam in Smederevo also generated much greater income in comparison with his other hammams. In the mid-16th century, the annual profit of the Smederevo hammam equalled 32,000 akçes, while the hammams in Tokat and Sarajevo generated 12,000 each, and the hammam in Sivas around 3,000 akçes, which together is a much smaller amount than that produced in Smederevo.[51] In normal circumstances, the revenue from Firuz Agha's hammam in Smederevo ranged between 30,000 and 38,000 akçes, which makes it, in the period shown in the chart, one of the most important hammams in the Ottoman state.[52]

The expenditure of Firuz's hammam in Smederevo rose overtime. When the waqf was established in 1491, two akçes a day were earmarked for maintenance, and one akçe for the kadi's supervision. After more than half a century of work, the amount for maintenance was twice as much (four akçes) – the daily allowance for the person charging for entry to the hammam now equalled two akçes, while the kadi still received one akçe.[53] The masseur's services were paid separately. This was a traditionally Muslim occupation and it is interesting that Dimitrij, a resident of the Dubrovnik colony in Smederevo, performed this task.[54]

At the time when Evliya Çelebi visited Smederevo in 1661, the town no longer enjoyed its erstwhile importance and only Firuz Agha's public bath was active. The Ottoman travel writer only briefly mentions that this was the hammam of *Kızlar ağası*, that it was

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[48] TD 1007, 413, 416; TD 978, 149, 152, 154, 158. Information about hammams from the lost census of 1522/1523 is preserved in two summary defters, created in 1530 and 1531: MAD 506, 13–14; TD 135, 123–124. About dating of census TD 135 in 1531 and TD 978 in 1532, see: Катић, Урошевић, 2015, 38–40.

[49] BOA, *Kamil Kepeci Tasnifi*, d. 61, s. 371. Катић, Поповић 2013, 84.

[50] Later, comprehensive censuses (*mufassal defteri*) of the Smederevo sanjak of 1536, 1560, 1572, 1586 and 1741 do not contain information about waqfs, while the defter of the Istanbul waqfs of 1600 does not give new information, but only repeats information from 1546. This is why the period in the chart is limited only to the first half of the 16th century: BOA, TD 187; TD 316; TD 517; TK, KKA, TD 168 (184); TD 170 (18); *İstanbul Vakıflar Defteri 1600*, 48–49.

[51] *İstanbul Vakıfları Defteri 1546*, 23–24; TD 462, 41.

[52] TD 1007 (1516), 416; TD 978 (1532), 152.

[53] Schwarz, Kurio 1983, 120; *İstanbul Vakıfları Defteri 1546*, 24.

[54] TD 1007 (1516), 32; Зиројевић 1970, 190–191; Катић, Поповић 2013, 94.

the only one in the town, that it was located in the fortress and was very spacious.[55] Evliya misnamed the Smederevo hammam, because its patron, as already mentioned, performed services only in the court treasury, while the duty of the agha of the harem (*kızlar ağası*) was instituted only in the second half of the 16th century and was reserved only for black eunuchs.[56]

* * *

Compared to the architecture of public baths in other Islamic states, Ottoman hammams are unique in terms of their monumental appearance, artistic design of the exterior and interior, and careful planning of architectural structures and shapes. Hammams had several main spatial units. The first room that a visitor would enter was called the *soyunmalık*, and served the function of a waiting and changing room. It was a large, domed room with a square base, usually with a decorated fountain, a *şadırvan,* in its centre.[57] Along the walls of the changing room there were low wooden or stone benches (*taş sekisi*) and wooden dressing cabins (*kafes*) with curtains at the entrance. The wooden pillars carried the gallery, where visitors to the hammam could rest and consume coffee and sweets. From the changing room, one would go to the "cold" or tepid section, called the *soğukluk* and *ılıklık* in Turkish.[58] These were smaller rooms where a visitor could prepare himself for bathing and get accustomed to the rising temperature in the hammam. Within this section, there was usually a toilet and a depilation room.

From the tepid section, one would go to the hot part of the hammam, the *sıcaklık*.[59] This was a larger room intended for massage and preparation for bathing, and for bathing itself. The central part of the hot room contained an elevated marble plate (*göbektaşı*), where massage was carried out. Stone benches were placed along the walls of this section, where visitors would sit during bathing and steaming. Between them there were *kurnas,* chiselled stone basins above which there were two bronze taps for warm and cold water. Bathers would collect water from the kurnas with buckets (*tases*) and splash themselves. Smaller, private bathing rooms, *halvets,* were separated from the hot section, which also contained *kurnas* and stone benches. The number and distribution of *halvets* shaped the appearance of the hot part of the hammam, which could have several *eyvans* (spaces recessed from the central part of the room). A dome rose above the central part of the hot room, while the *eyvans* and *halvets* were topped with smaller domes or semi-arched vaults. The domes and vaults were covered with tile or lead, in the cases of larger and more sumptuous hammams. The domes contained round or star-like apertures as a source of daylight. They were closed with characteristic convex glasses called the "elephant's eye" (*fil gözü*).[60]

The water tank (Turkish: *hazine, su hazinesi*) and the furnace room, *külhan,* leaned against the hot section of the hammam. The *hazine* was entered into from one of the *halvets*. While the *hazine* was at the level of the hammam, the *külhan* was dug in the earth. The water tank contained a copper cauldron, which was stoked from the *külhan*. Water was brought to the water tank from the waterworks, and flowed into it just above the cauldron. Hot water was distributed from the *hazine* through pipes placed 100–120 cm above the floor level. The fire stoked to heat water in the copper cauldron also heated the hammam itself, as the hypocaust system (*cehennemlik*) under the marble floor of the building carried smoke and hot air to all premises (apart from the changing room). The smoke and air were carried from the floor towards the chimneys through vertical ceramic pipes (*tüteklik*) placed in the walls, which thus, just like the pipes with hot water, additionally heated the rooms.[61]

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[55] Čelebi 1979, 313; Çelebi 2010, 5/2, 819. Evliya Çelebi writes that the Tahtakale hammam (i.e. Firuz Agha's hammam) in Tokat was much visited and very old: Çelebi 2010, 5/1, 98.

[56] Ezgi Dikici 2009, 20–27; also see: Мантран 2002, 211, 214.

[57] In South-Slavic areas, this room was named the *šadrvan* after this fountain: Krešević 1991, 20–21. In Turkish and other literature, the Turkish words *soyunmalık* or *camekan* (after Persian *camegah*) or Arabian *musluk* (*meslakh*) are usually used to denote the changing room: Kiel 1976, 87; Kanetaki 2004, 85; Eyice 1997, 415–416; Antonov 2012, 110–111.

[58] Unlike the changing room, the *soğukluk* had floor heating (hypocaust), however, as it was far from the furnace room, its temperature was moderate. In the South-Slavic area, this section is called the *kapaluk* (Turkish: *kapalık*). The name originates from the door of this room which was always closed: Krešević 1991, 21; Kiel 1976, 87, 94.

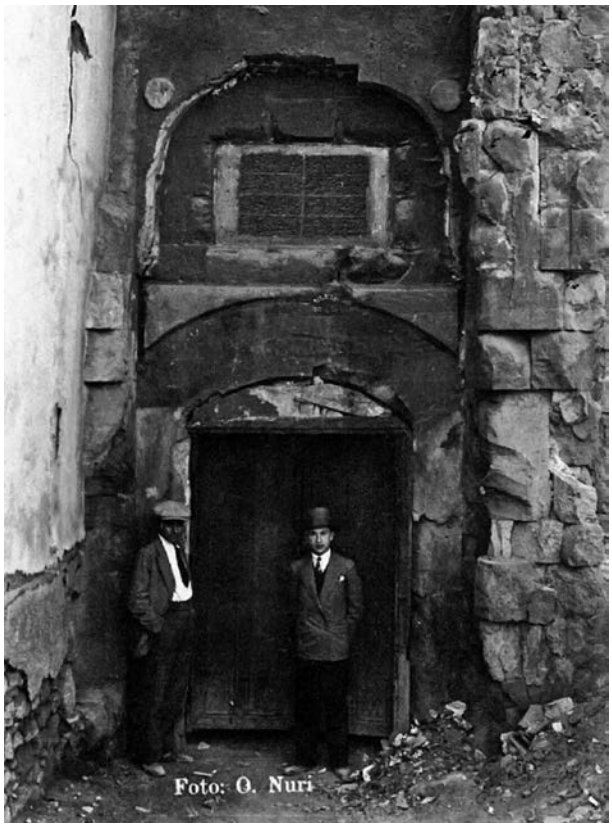
[59] The hot section is called the *beyt al-harare* or *harare* in Arabic. In the region of the former Yugoslavia, the term *mejdan* (Turkish: *meydan*), is used to denote the central part of the hot hammam section, which is not found in the Turkish and foreign literature that we have used: Krešević 1991, 21; Ђорђевић 1975, 141; Pravidur 2012, 24, 31; Škarpa Dubreta 2012, 54, 59.

[60] Krešević 1991, 21–22; Ђорђевић 1975, 141–143; Kiel 1976, 87–88, 94; Kanetaki 2004, 85, 97–99, 102–105; Eyice 1997, 416–417.

[61] The water tank was isolated with a special type of waterproof mortar: Krešević 1991, 23; Ђорђевић 1975, 139, Fig. 2, 142; Kiel 1976, 94; Kanetaki 2004, 85, 99–100.

Fig. 5. The hammam of Firuz Agha in Tokat, a view from the north: the dressing rooms. In the left corner is the entrance to the male part; in the left foreground is a fountain in front of the hammam (after Bilgen 2013)
Fig. 6. The hammam of Firuz Agha in Tokat, a view from the east: the male dressing room; parts of the hot sections can be seen behind it (after Bilgen 2013)

Сл. 5. Хамам Фируз-аге у Токату, поглед са севера: свлачионице, у левом углу улаз у мушки део; у првом плану лево чесма испред хамама (према: Билген 2013)
Сл. 6. Хамам Фируз-аге у Токату, поглед са истока: мушка свлачионица; иза ње виде се делови врућe секције (према: Билген 2013)



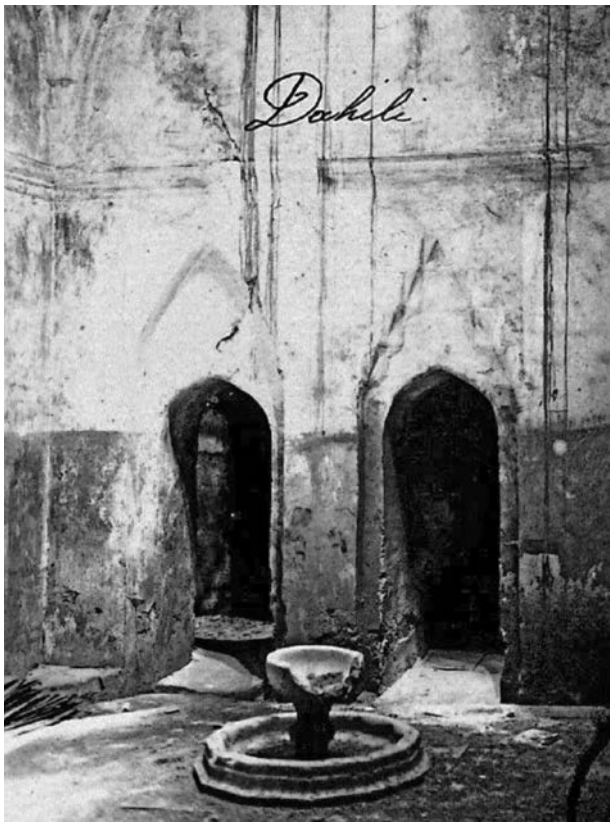


Fig. 7. The hammam of Firuz Agha in Tokat, the entrance to the male part of the bath with the founder's inscription (after Bilgen 2013)
Fig. 8. The hammam of Firuz Agha in Tokat, interior of the dressing room with the şadirvan *(after Bilgen 2013)*

Сл. 7. Хамам Фируз-аге у Токату, улаз у мушки део хамама са оснивачким натписом изнад врата (према: Билген 2013)
Сл. 8. Хамам Фируз-аге у Токату, унутрашњост свлачионице са шадрваном (према: Билген 2013)

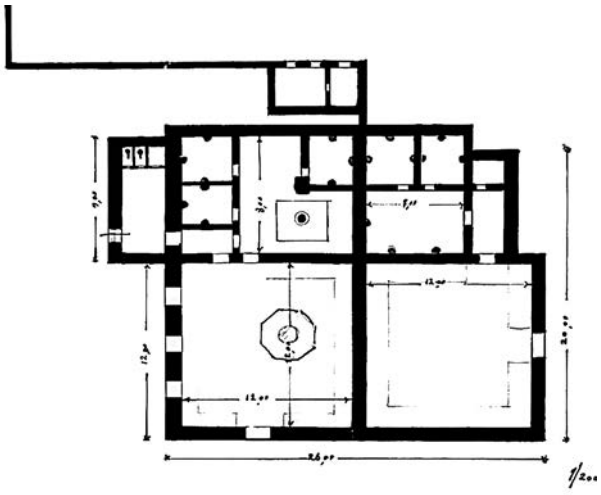


Fig. 9. Plan of Firuz Agha's hammam in Tokat (after Bilgen 2013)

Сл. 9. План хамама Фируз-аге у Токату (према: Билген 2013)

Although the basic organisation of space in the hammam, the changing room, the tepid and hot part, was practically common for all hammams, Ottoman builders achieved a considerable degree of versatility in the plans of these buildings, the decoration and the combination of shapes. Several authors have classified the types of these buildings, starting primarily from the spatial disposition of the hot sections of hammams from Anatolia, Istanbul, Edirne, Greece and Bulgaria. Despite differences among them, it is possible to single out five or six basic types of hammams.[62]

Making conclusions about the appearance of the Smederevo hammam is somewhat limited. The reason is that there are no old photographs or sketches of the hammam made by witnesses, as far as we know. Besides, it is not only that the hammam was demolished after the Turkish army eventually left the Smederevo fortress in 1867, but its remaining foundations were heavily damaged in bombing in World War II. Its remains were archeologically explored in 1942/1943, but the results and documentation from this research have been lost.[63] Revising archaeological research was carried out in 1986 and 1987.[64]

Based on the knowledge obtained so far and the preserved remains of the foundation zone of the Smederevo hammam, it is possible to define the dimensions of this Firuz endowment. Oriented in a south-north direction, the building was made of crushed stone in lime mortar. Finely carved stone blocks were built in the lower zones. The foundations were dug into the unbroken ground and founded at analtitude of 68.60 m above sea level. The total width of the front, southern part of the construction is 24.14 m, and that of the back, the northern part (which, by all accounts, has not been preserved in its entirety) is 19.35 m. The total length (of the preserved parts) of the hammam is 35.52 m.

As this was a double, *çifte* hammam, envisaged for simultaneous bathing of men and women, it was divided by a wall, along the entire length, into two, completely separate parts. Given that it was not possible in double hammams to go directly from the male to the female part and vice versa, it is possible to claim with certainty that there were no apertures or passages in the now destroyed wall in the northern part of the building.[65]

The somewhat larger male part of the hammam was located on the western side and it was entered directly from the main street, while the female part on the eastern side of the building was entered from the flank, i. e. from a side street. Such an orientation of the entrance was customary for *çifte* hammams so that, in accordance with Islamic regulations, men and women would not have direct contact in public.[66] The entrance into the male part of the hammam was more sumptuously shaped than the entrance into the female part, which was, as a rule, modest. A tablet with the patron's inscription was likely located above the entrance into the male part of the Smederevo hammam, similar to the one on Firuz Agha's hammam in Tokat (Figure 7). As Firuz Agha's hammam was located at the crossroads of the main streets in the *Veliki grad* of Smederevo, a square with a fountain was most probably situated in front of the bath, as was the case with other such buildings.

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[62] Glück 1921; Klinghardt 1927; Kiel 1976, 89–90; Eyice 1997, 417–419; Kanetaki 2004, 82, 84, 86, 88–93; Kanetaki 2012, 206–207.

[63] Archaeological works were carried out under the authority of the architect Miša Radovanović. At the time, the facility was still, to a significant degree, covered in shattered construction material: Павловић 1980, 202.

[64] The works were led by Mlađan Cunjak, who presented the main research results: Цуњак 1998, 115–119; Цуњак 2011, 97–100.

[65] The ground-plan of the hammam, prepared by S. Nenadović, assumes that the now demolished wall which separated two parts of the building contained three pairs of doors: Ненадовић 1956, 83; Павловић 1980, 203, Fig. 156; Цуњак 2011, 98. See Fig. 3.

[66] Eyice 1997, 415; Mikov 2012, 138–139. Therefore, the claim presented by M. Cunjak (Цуњак 2011, 97–98) that the entrance to the male part was on the eastern side and the entrance to the female part on the southern side is wrong. It was, in fact, the opposite way round.

Fig. 10. The hammam of Firuz Bey in Sarajevo: a) remains of the male (left) and female dressing room (right); b) remains of the hot sections: the male section is to the right and the female to the left; c) kurnas (after Sanković Simčić 2012)

Сл. 10. Хамам Фируз-бега у Сарајеву: а) остаци мушке (лево) и женске свлачионице (десно); b) остаци вруће секције: мушке са десне стране и женске са леве; c) курне (према: Санковић Симчић 2012)

Both the male and the female changing rooms in the Smederevo hammam were rooms with a square base, outer walls 123–130 cm thick and internal, northern walls (towards other parts of the bath) 99–104 cm thick. The walls of the changing rooms were, at the same time, the thickest walls in the entire building – the thickness of outer walls of other hammam rooms ranged from 99 to 116 cm, and that of internal walls from 72 to 90 cm.[67]

The male changing room was larger than the female one, its base measured 13.44 x 13.20 m, while the dimensions of the female changing room were 10.70 x 11.54 m. The square shape of the base, the thickness of the walls and analogies with other hammams suggest that a massive dome rose above each of the changing rooms of the Smederevo bath. The diameter of the dome above the male part was somewhat longer than 13 m, and the diameter of the dome above the female part was somewhat longer than 10.5 m.[68] Semavi Eyice emphasises the exceptionally large domes above the changing rooms as one of the main features of the construction of hammams in the 15th century. The domes of the largest hammams ranged from 10 m to as much as 16 m. She specifies the diameters of the domes above male changing rooms of around ten largest hammams from that period, and singles out the Kaygan (Koca Mehmed Pasha's) hammam in Bursa, with a diameter of 12 m, Davud Pasha's hammam of 14.5 m, also in Bursa, Sultan Bayezid's hammam in Istanbul of 15 m, and Demirtaş' hammam of 16 m in Bursa.[69] Based on this, it is possible to conclude that, in terms of the size of the most monumental part of the hammam, Firuz Agha's public bath in the Smederevo fortress was among the largest in the Empire.

There were no party walls in the changing room as the changing cabins and the gallery were made of wood. The male changing room would have relatively large windows, and the female room would have smaller ones, placed at a greater height, above the eye-shot of passers-by. The examples of other hammams, including Firuz's public baths in Tokat and Sarajevo

[67] We received the ground-plan of the hammam with dimensions by courtesy of Dejan Radovanović, director of the Regional Institute for Protection of Cultural Monuments in Smederevo, whom we thank for his kindness.

[68] Цуњак 2011, 99. See Fig. 5–6.

[69] Eyice 1997, 423.

clearly suggest that stone fountains, *şadırvans,* were located in the central parts of the changing rooms. Also, these rooms were certainly covered in stone tiles,[70] while the domes and walls must have been decorated in shallow relief with geometric and floral motives ("stalactite decoration"), carved in stone or made using the stucco technique.[71]

The tepid section in both parts of the hammam consisted of three small rooms, of which one was separated, while two were passing rooms. In addition to the use of the toilet and the depilation segment, the tepid part also served as a chamber preventing the circulation of air and steam from the hot part into the changing rooms and vice versa. The passing part was, therefore, probably divided into two rooms with doors that were not placed opposite one another, but at right angles. It is possible to claim with a fair degree of certainty that the separate, far right rooms both in the male and female tepid section of the hammam served as a toilet.[72] The total internal dimensions of this section in the male part of the hammam were 3.09 x 9.73 m, and in the female part 2.80 x 7.90 m. The small tepid sections placed between the monumental changing room and the spacious hot part became a feature of Ottoman hammams from the period of Bayezid II.[73]

While the male and female changing rooms and tepid sections were the same or very similar, the organisation of space in the hot parts of Firuz Agha's hammam in Smederevo was very different. According to the present state of the hammam's remains, the hot section in the male part of the hammam was a rectangular room, with internal dimensions of around 11.60 x 13.28 m. However, it is certain that the present situation does not correspond to the original appearance of the bath, as there are no dividing walls of *halvets*, separate rooms for bathing in greater privacy, which were integral to any larger Ottoman hammam. Given its size and revenue, Firuz Agha's hammam in Smederevo must have had several *halvets*. In the entire room, only the remains of one wall around 3.22 m long and 0.90 m wide have been preserved – the wall was placed aslant, at an angle of 75 degrees against the south-western wall of this large room.[74] However, as it was customary for the dividing walls of smaller rooms to be placed at right angles against the bearing wall of the hammam, it is possible that this wall was raised at some later stage, when the building was remodeled.[75] The present state of the building's remains leads us to assume that either the hammam underwent more significant alterations and remodelling in time, or that during the bombing in World War II the foundations of the *halvets* were destroyed along with the now demolished eastern wall of the hot section, which separated this room from the female part of the hammam. It is highly possible that both things happened.

Based on the different variants of the architectural design of the space of the hot sections of the hammam,[76] we may assume that the male part of Firuz's public bath in Smederevo had *halvets* in the northern wall, behind which there was a heating facility. This was customary practice because the room with the water tank was always entered from one of the *halvets*, and this passage is also visible in the hammam's remains.[77] The *halvets* most probably covered the entire northern wall, while the 11.60 m room width allowed for the existence of three *halvets*. In the female part of the hammam, the *halvet* width ranged between around 2.74 m and around 3.54 m. For instance, in Firuz's hammam in Tokat, the *halvet* dimensions ranged from around 2.70 x 3.60 m to around 3.30 x 3.30 m.[78] We cannot exclude the possibility that two *halvets* were

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[70] Archaeological excavations revealed stone panels in the central part of the female changing room in Firuz's hammam in Sarajevo; these are the remains of the base of the stone *şadırvan* with parts of ceramic pipes found *in situ*. The remains of benches stretch along the northern and southern walls, with bases for the wooden pillars of the gallery and cabins (which have not been preserved). In the male changing room, a large part of an erstwhile floor of rectangular, regularly distributed stone panels has remained: Pravidur 2012, 21, 23. See Fig. 10. Fig. 8 and 9 show the appearance of one stone *şadırvan* from the changing room of Firuz Agha's hammam in Tokat and its position in the room.

[71] Kiel 1976, 92–93; Рецић 1961, 98–99; Кумбараци-Богојевић 1998, 169–182; Eyice 1997, 417; Kanetaki 2004, 96–97, 100; Pavlov, Petkova 2008, 22–25, 36–37, 80–83, 84–87; Mikov 2012, 142–143.

[72] Based on this, we must reject the assumption of the existence of a passage between the far right room in the male tepid section and the hot section, drawn in the hammam plan of S. Nenadović. The non-existence of traces of the wall in this place and between the male and female tepid section is most probably due to the destruction of the hammam's foundations. Cf. Fig. 3 and 4.

[73] Earlier Ottoman hammams had a more spacious and more decorated tepid section, which also served for rest after bathing. The changing room later assumed this role: Kiel 1976, 93.

[74] This wall is not drawn in the hammam's ground plan by S. Nenadović. Cf. Fig. 3.

[75] This could also be the wall of a small *halvet* of an irregular shape.

[76] Cf. literature in note 62.

[77] Kreševljaković 1991, 23; Antonov 2012, 113–114.

[78] In the hammam in Ihtiman, Bulgaria, the *halvet* size was 27.5 x 2.72 m: Antonov 2012, 113–114.

separated by a niche, an *eyvan*.[79] Assuming that the *halvets* were around 3.30 m deep and that the wall separating them from the central part of the hot section (*meydan*) was around 0.70 m thick, the *meydan* may have had a rectangular base of around 11.20 x 9.30 m. It is possible that there were another one or two *halvets* in the south-western and south-eastern corner of the hot room, along the wall towards the tepid section.[80] In view of the analogies with other Ottoman public baths of the period, it is quite certain that a larger dome topped the central part of the hot room, while the *halvets* and other smaller rooms were either topped with smaller domes or with semi-arched vaults. The height of the vaults and domes over the hot part of the hammam was significantly lower than above the changing rooms as it was necessary to heat these premises as well as possible.[81]

The distribution of rooms in the female part of the hammam poses no dilemma. It is possible to say with certainty that there was no central part of the hot section (*meydan*). Instead, one would go from the tepid section into three smaller *halvets*. Such a difference in the spatial conception of the male and female part of the hammam existed in some other Ottoman hammams as well.[82] The female hot part of the hammam had a corridor along the now destroyed wall which separated the female from the male part of the bath. From this corridor, one would enter two *halvets* from the right side, the first of which was around 3.35 m wide and the second 3.54 m. At the end of the corridor, there was the third *halvet*, which, due to such a distribution, was rectangular with dimensions of around 5.00 x 2.75 m.[83] It may be assumed that the corridor was around 1.50 m wide, and that the depth of the first two *halvets* was around 3.50 m. The *halvets* contained two or three *kurnas* each, as was the case with other public baths, including Firuz Agha's hammams in Tokat and Sarajevo.[84] The female part of the hammam was probably much smaller because Firuz's Smederevo bath was erected in a fortress with a considerable military garrison, and it was expected that it would have many more male than female visitors.

The foundations of walls in the northern part of the building, which have most probably not been preserved in their entirety (present-day outer dimensions are 11.56 x 4.07 m) represent the remains of the *hazine* – the water tank, and of the *külhan*– the furnace room. The water tank was made of brick with dimensions of 40 x 40 x 5 cm, filled with heavy lime mortar. The small pillars of the hypocaust (heating system) were made in the same way. These rooms were lower than the hot parts of the hammam, with a slanting, single or double-pitched roof, covered most often in tiles.

The hammam's rooms were mutually connected with ceramic pipes of different diameters. The pipes with an 8 cm diameter, placed at an approximately same height from the floor, served to bring in warm water.[85] Pipes of twice this diameter (16 cm) were placed in two levels, one pipe system, much higher than the floor, served to bring in pure water, while the other, at the floor level, served to drain dirty water.

The above described, assumed, appearance of Firuz Agha's hammam in Smederevo indicates the evolution of Firuz's construction activity in terms of this type of building. Firuz Agha's public bath in Tokat, constructed in 1485, several years before the one in Smederevo, was also a *çifte* hammam. The bath is oriented towards north-south, with dimensions of around 26 x 21.8 m. It has two changing rooms with a square base, of almost the same size (around 12 x 11.5 m), leaning against one another. The female part was entered from the western, and the male part from the northern side. Until the destruction of the hammam in 1931/1932, an elegant fountain was preserved in the male changing room. From the female changing room, one would go through

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[79] See Kanetaki 2004, 82, 84, 87, 92, Fig. 1, 2, 4.

[80] See the ground plan of the Pasha hammam in Thessaloniki: Kanetaki 2004, 92. Also see the ground plan of the Hunkyar hammam and Çifte hammam in Plovdiv: Boykov 2013, 383.

[81] Cf. pictures of Daut Pasha's hammam in Skopje, Isa Bey's hammam in Novi Pazar and Mehmed Pasha's hammam in Prizren: Рецић 1961, 109–110, Fig. 8–10; Ђорђевић 1975, 139–140, Fig. 1–8; Pavlov, Petkova 2008, 80–82.

[82] For instance, the female part of Gazi Orhan's hammam in Bursa, which had two *halvets*, was designed in a similar way: Kiel 1976, 88, Fig. 1.

[83] The ground plan of S. Nenadović (Fig. 3) shows one pair of doors almost at the middle of two dividing walls which separated two rooms in the eastern part of the hammam. The same plan shows traces of these dividing walls left of the doors, in the part towards the destroyed wall between the male and female section of the bath. However, the plan of the Regional Institute for Protection of Cultural Monuments in Smederevo shows only the remains of the dividing walls along the eastern wall of the hammam. This, as well as analogies with other hammams, indicates that the corridor was positioned up to the destroyed wall which separated the male from female part of the hammam. Cf. Fig. 4.

[84] Cf. the plan of the Tokat hammam, Fig. 9. Nicely cut stone *kurnas* have been discovered in the remains of Firuz Bey's Sarajevo hammam: Pravidur 2012, 31–32. Fig. 10c.

[85] Cf. Kiel 1976, 94. Цуњак 2011, 98, believed that these pipes "served for water levelling in basins".

the narrow tepid section into a smaller hot room, from where two *halvets* could be reached. The distribution of rooms in the male hot section was somewhat different. There were three *halvets*, while the toilet was situated in a room constructed on the left side of the building. Both changing rooms were topped with massive domes.[86]

On the other hand, the hammam built by Firuz while he was serving as the Bosnian sanjak-bey in Sarajevo, most probably in 1509, was more sumptuous than the one in Smederevo. Firuz Bey's hammam in Sarajevo was also a *çifte* hammam. It is oriented towards east-west, with total dimensions of 32.50 x 24.00 m. The male part of the hammam was entered from Baščaršija, and the female part was entered from the side street. Of the square-shaped changing rooms, with dimensions of 10.00 x 11.75 m (male) and 10.00 x 9.25 m (female), parts of the massive walls 1 m thick and 6–8 m high have been preserved. Both the male and female part had representative hot, square-shaped sections. The male hot section was, in its inner part, divided by niches radially positioned in the space, which, thus, represented separate architectural units with *kurnas*.[87] There were also three *halvets*, one in front of the polygonal *meydan*, while the other two were behind it, leaning against the *hazine* and *külhan*, which have not been preserved. The female hot section had basically the same distribution, though it was more modestly architecturally shaped, with a rectangular central part. In Firuz Bey's Sarajevo hammam, the entrance and central parts of the building were also topped with domes. The preserved remains of the marble floor and other found archaeological material, including the *kurnas*, indicate a richly appointed interior.[88]

The hammam in the Smederevo fortress, constructed in the second half of the 1480s through the efforts of the eunuch Firuz Agha, the chief treasurer of Sultan Bayezid II, was one of the most representative buildings in this town during the centuries-long Ottoman rule. This is testified by the dimensions of its archaeological remains and the old plans of Smederevo. Ottoman documentary sources provide information about the importance of Firuz Agha's hammam in the life of the predominantly Muslim citizens of Smederevo during the 16th century and its role in the financing of Firuz's extensive waqf. They indicate that the double hammam in the Smederevo fortress in the first half of the 16th century belonged among the most important and most profitable public baths in the Ottoman Empire. By analysing the remains of Firuz Agha's hammam in Smederevo and based on analogies with other buildings of this type, primarily Firuz's public baths in Tokat and Sarajevo, we came to a number of conclusions regarding the architectural structure of this hammam, and the function and appearance of some of its rooms. The presented, thus far insufficiently researched facts indicate the need to devote more attention to this archaeological site than has been the case to date, and to have it systematically archeologically explored and preserved.

[86] Bilgen 2013, 1337. See Fig. 5–9.

[87] For this type of hammam cf. Kiel 1976, 90; Eyice 1997, 417–419; Kanetaki 2004, 82, 84, 86, 88–93: Kanetaki 2012, 206–207. See Fig. 10.

[88] Pravidur 2012, 21–24. See Fig. 10c.

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Srđan KATIĆ, Aleksandar KRSTIĆ
Firuz agha and his hammam in Smederevo (191–210)

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ФИРУЗ-АГА И ЊЕГОВ ХАМАМ У СМЕДЕРЕВУ

Кључне речи. – Смедерево, Фируз-ага, хамам, водовод, вакуф, Бајазит II, Истанбул, Токат, Сарајево, санџакбег.

Рад се бави хамамом у Великом граду Смедеревске тврђаве, који је у периоду између 1485. и 1490. године подигао Фируз-ага, управник султанове благајне. Фируз је рођен као хришћанин, по свему судећи јужнословенског порекла. Био је евнух, међу најспособнијим и најповерљивијим дворјанима на двору принца Бајазита у Амасији. По ступању Бајазита II (1481–1512) на трон, Фируз-ага је постао ризничар царске благајне. На том положају Фируз-ага се налазио 1485, када је у Токату подигао хамам, а до 1491. године постављен је за главног ризничара. Фируз је на месту управника султанове унутрашње благајне остао до јуна 1496, када је именован за управника Скадарског санџака. Убрзо по ступању на дужност у Скадру, Фируз-бег је припојио земље Црнојевића османској држави. Као скадарски санџакбег Фируз је имао значајну улогу током османско-млетачког рата (1499–1503) и потоњих мировних преговора о утврђивању османско-млетачке границе. Крајем 1504. Фируз-бег је постављен за санџакбега Босне. На тој дужности је, поред војних и административних послова, водио и разгранату шпијунску мрежу, а преко њега је у значајној мери спровођена и османска спољна политика према Угарској, Венецији и Дубровнику, као и другим европским државама које су биле у сфери османских интереса. Док је био босански санџакбег, основао је и једну варош у Полимљу – данашње село Кратово, југоисточно од Прибоја. На положају санџакбега Босне Фируз-бег је остао све до смрти, децембра 1512. године.

Фирузова задужбинарска делатност била је веома богата и разноврсна. Он је прве задужбине почео да гради у Анадолији у области Амасије, у градовима Хавза, Токат и Сивас. Потом се посветио свом главном вакуфском комплексу у Истанбулу, који је завршио 1491. године. Он је на Ат мејдану (Хиподрому) у Истанбулу подигао џамију, турбе, себиљ и школу. Фируз-ага је свом вакуфу приложио бројне објекте у Истанбулу, Анадолији и на Балкану, укључујући и хамам који је подигао у Смедереву. Петнаестак година касније Фируз је почео да гради нове задужбине у Сарајеву. Сарајевски вакуф био је посвећен првој сарајевској медреси и махалском месџиду, а главни извор прихода потицао је од двоструког хамама на Башчаршији, који је 1509. године био у изградњи. Судбина није била благонаклона према бројним Фирузовим задужбинама, од којих је до данас опстала једино џамија у Истанбулу. Хамам у Смедереву срушен је пошто је турска војска коначно напустила тврђаву 1867, а преостали темељи те грађевине тешко су оштећени у бомбардовању у Другом светском рату.

Фируз-агин хамам био је међу најрепрезентативнијим грађевинама у Смедереву током вишевековне османске владавине. У њега је био уграђен део грађевинског материјала са једне од монументалних цркава Смедерева, највероватније главне задужбине деспота Ђурђа Бранковића – митрополијске цркве Благовештења. Османски извори омогућавају да се утврди оквирно време градње, начин рада и улога коју је то јавно купатило имало у животу становника Смедерева. Уколико се узму у обзир политичке околности, Фирузова задужбинарска делатност, која је прво почела у околини Амасије, директна повезаност смедеревског хамама с његовим главним вакуфским комплексом на Ат мејдану у Истанбулу (завршен 1491), време потребно за градњу и најмање једну годину пословања, с великом извесношћу се може закључити да су радови на јавном купатилу у Смедереву почели у периоду од 1485. до 1487. године и да су завршени до краја осамдесетих година 15. века. Овај хамам био је веома значајан за функционисање великог Фирузовог вакуфа. На основу података о вакуфским приходима може се закључити да је до средине 16. века хамам у Смедеревској тврђави био међу најпрофитабилнијим објектима те врсте у Османском царству. Хамаме изграђене у 15. веку карактеришу велике куполе над пријемним делом, које су код оних највећих имале пречник 10–16 m. Купола Фирузовог хамама с пречником нешто дужим од 13 m била је четврта по величини. Фируз-ага је за потребе хамама у Смедереву изградио водовод, уз који је подигао и неколико чесама.

Фируз је током четврт века, као дворски ага и касније као санџакбег, изградио још три хамама у Токату, Сивасу и Сарајеву, што омогућава да се уоче одређени обрасци, као и промене у начину градње. На основу археолошких остатака, као и података о изгледу и начину функционисања бројних хамама саграђених у другој половини 15. и првој половини 16. века, укључујући и Фирузове хамаме у Токату и Сарајеву, у раду је дат претпостављени распоред просторија јавног купатила у Смедеревској тврђави. Како се радило о двоструком, *чифте* хамаму, предвиђеном за истовремено купање и мушкараца и жена, грађевина је читавом дужином била зидом подељена на два потпуно одвојена дела. И у мушком и у женском делу хамама постојала је репрезентативна свлачионица – *шадрван*, квадратне основе и надвишена великом куполом. У женском делу се из свлачионице ишло преко малог млаког одељка (*капалука*) до дела за купање. Он се састојао од три *халвета*, у које се улазило из ходника ослоњеног на преградни зид између женског и мушког дела хамама. У мушком делу се из шадрвана улазило кроз капалук у врући одељак купатила. Извесно је да садашње стање локалитета не репрезентује оригинални изглед ове секције, па су за врући одељак мушког дела хамама понуђена

три могућа типа, која одговарају облику и димензијама просторије. Највероватније је да је у мушком делу постојала једна већа централна просторија – *мејдан*, где је обављана масажа и где се такође могло купати, из које су биле издвојене мање просторије за купање у већој приватности – *халвети*. Два или три халвета су се налазила на северној страни мушког дела хамама, према *ћулхану* (ложионици). Врућe секције хамама биле су ниже од свлачионица и највероватније су биле покривене већим и мањим куполама и полуобличастим сводовима.

КРИТИКЕ И ПРИКАЗИ – COMPTES RENDUS

Boris Gasparyan, Makoto Arimura (eds.), STONE AGE OF ARMENIA,
A Guide-Book to the Stone Age Archaeology in the Republic of Armenia
Monograph of the JSPS-Bilateral Joint Research Project
Center for Cultural Resource Studies, Kanazawa University 2014.
269 страница, са мноштвом илустрација које укључују фотографије локалитета, ситуационе планове, графиконе и статистичке табеле, као и фотографије и цртеже налаза

У издању Археолошког и етнолошког института Јерменске академија наука, Јерменског огранка Гфелер Фонда корпорације Америка и Каназава универзитета из Јапана, године 2014. објављена је велика монографија о археологији каменог доба у Републици Јерменији. Она је настала као резултат саопштења излаганих у оквиру радионице под називом „Камено доба у Јерменији", у организацији Археолошког и етнолошког института Јерменске академије наука и Каназава универзитета из Јапана, која је одржана 5. марта 2013. године. На том скупу је 15 излагача саопштило резултате својих истраживања палеолитских, неолитских и халколитских култура на територији Јерменије, док су у припреми прилога за монографију учествовала 32 аутора, међу којима је било и младих сарадника пред којима се тек отвара професионална будућност.

Након увода који су написали Павел Аветисјан, директор Археолошког и етнолошког института Јерменске академија наука, и Сумио Фуђи, директор Центра за студије културолошких извора Каназава универзитета из Јапана, уредници ове публикације, Борис Гаспарјан и Макото Аримура, својим прилогом упознали су читаоце с географским положајем који заузима данашња Република Јерменија, наглашавајући његову важност за разумевање иницијалних етапа у насељавању и формирању цивилизација на Блиском истоку и њиховом ширењу даље ка истоку. Они су посебно скренули пажњу на чињеницу да су резултати каснијих истраживања, иако су први артефакти каменог доба у Јерменији пронађени још у 19. веку, у скромном обиму познати западним стручњацима због тога што су базирани на малом броју добро ископаваних стратификованих налазишта и што су публиковани само на руском или јерменском језику. Имајући у виду језичку баријеру, морамо се подсетити на то да је у другој половини 20. века такав случај био и с многим налазиштима широм тадашњег СССР-а, што је у великој мери онемогућавало паралелисање налаза али и праисторијских култура, нарочито оних палеолитских откривених на простору југоисточне и централне Европе. Аветисјан и Фуђи указали су на значај међународне сарадње, примену нових аналитичких метода и укључивање следеће генерације јерменских стручњака у пројекте. Аутори су скренули пажњу и на значај систематских проучавања налазишта јерменског опсидијана, као и на значај паралелних серија металографских анализа и геохемијску и изотопску карактеризацију бакарних артефаката. Посебну пажњу усмерили су и на резултате проучавања палеоклимата и пећинског сликарства. Кроз те кратке приказе најновијих истраживања на пољу палеолита, мезолита, неолита и халколита, они су сумирали досадашња достигнућа студија каменог доба у Јерменији и јасно показали значај и перспективу будућих пројеката који се пружају како пред јерменским истраживачима, тако и пред њиховим страним колегама.

Наредни прилози обухваћени су у три одељка главног дела публикације – палеолит, рани холоцен/неолит и халколит.

Део о палеолиту обухвата поглавља о најновијим истраживањима доњопалеолитских локалитета у Јерменији, поглавље које сумира резултате старих и нових истраживања

средњопалеолитског насељавања Јерменије и поглавље о горњопалеолитским налазиштима јерменске висоравни. Свако поглавље је резултат рада више аутора у којем су приказани како досадашњи тако и најновији подаци, на основу којих се полако и мукотрпно слаже један велики мозаик који гради слику периода за који не постоје други подаци осим археолошких. Открићем, можемо слободно рећи, спектакуларног локалитета Дманиси у Грузији осамдесетих година прошлог века отворене су потпуно нове перспективе у проучавању палеолита. Једна од теорија о раној хоминизацији Европе правцем преко северних обала Црног мора има своје упориште управо у проналаску локалитета какав је Дманиси, па је у том контексту реално очекивање археолога да се и у Јерменији открију локалитети исте старости. Рекогносцирања и сондирања која су покренута у новије време потврдиће или оповргнути очекивања јерменских археолога. Посебно је интересантан приказ локалитетâ на којима је могуће пратити транзицију од ашелске културе доњег палеолита до мустеријенске културе средњег палеолита, као и рану употребу опсидијана који се користи за израду алатки већ у доњем палеолиту, а нарочито заступљен постаје у средњем палеолиту. Ништа мање интересантан и информативан није приказ млађепалеолитских пећинских налазишта и налазишта на отвореном простору откривених на јерменским висоравнима. Истраживање тих налазишта потврдило је њихов значај у повезивању са истовременим локалитетима у Грузији и на Блиском истоку, о чему су као први својевремено писали совјетски истаживачи.

Део о раном холоцену/неолиту нешто је опширнији и чине га четири прилога. У уводном делу првог прилога указано је на постојање четири етапе истраживања (1900–1960, 1960–2000, 2000–2014, када је публикација објављена), а затим су приказана ранохолоценска налазишта у Јерменији и проблематика културне дистрибуције и хронологије. У том прилогу је посебно интересантан приказ тзв. Кмло оруђа, окресаних микролитских артефаката који су обликовани специфичним стрмим ретушем који карактеришу паралелне микрофацете. Други прилог овог дела књиге посвећен је Акнасену, каснонеолитском налазишту у долини Арарат, на којем се јавља серија микролитских артефаката у виду издужених трапеза. Такви артефакти јављају се у европском мезолиту и познати су као трансверзалне стреле или *bleeding points*, док на неколико неолитских локалитета у Србији више представљају реликт претходних времена него релевантну карактеристику савремене индустрије окресаног оруђа. Због тога је интересантно пратити њихову појаву на том удаљеном јерменском простору, као могући пример тзв. конвергентне еволуције у развоју одређеног типа оруђа. Следи прилог о прелиминарним резултатима истраживања касноneолитског налазишта Масис-Блур која су обављена 2012. године и током којих је откривена сложена структура објеката у насељу. Последњи прилог јесте рад о неолитској керамици и о петрографским анализама те керамике са налазишта Акнасен у долини Арарат.

Трећи део, који је посвећен халколиту, најопширнији је и чини га седам прилога. Први прилог посвећен је типовима декорације на халколитским посудама јужног Кавказа и поређењу са сличним налазима са других локалитета у Јерменији. У другом прилогу приказани су налази из пећине Арени-1. Реч је о јединственом случају да су због повољних микроклиматских услова сачувани остаци и корпи плетених од биљних влакана али и „текстил" начињен такође од биљних влакана. Детаљно је описана технологија плетења корпи и разних прекривки за које су биљне нити мање припариране него за плетење одеће, покривача за спавање или меких врећица за чување разних предмета. Затим следи прилог о каснохалколитским и средњовековним археоботаничким налазима из исте пећине у којем се износе подаци о аналитичким методама примењеним на воћу, житарицама и биљним влакнима, а који су дали богате податке о врстама биљака гајених током касног халколита и средњег века. Прилог о искоришћавању ресурса које су нудиле шумске области током холоцена у долини Агстев, у североисточној Јерменији, указује и на значај будућих истраживања периода када је земљорадња стигла, као и њеног утицаја на планински регион какав је долина Астев. Екстрактивној металургији и социјалној трансформацији у Јерменији током краја каменог доба посвећено је пето поглавље. Најстарији трагови употребе метала на тлу Јерменије сежу у сам почетак 6. миленијума пре нове ере, у долини Арарат, а реч је о налазима азурита и малахита од којих је добијан бакар. Након те прве фазе обраде метала, током 4. миленијума пре нове ере забележени су трагови који указују на прелазак ка екстрактивној металургији. Археометалурзима биће посебно занимљиве табеле са подацима о хемијском саставу металних налаза халколитског доба на тлу Јерменије. Јасно је да се јужни Кавказ појављује као спона између два важна металуршка центра – Анатолије и Блиског истока, с једне стране и југоисточне Европе, с друге стране. У претпоследњем поглављу обрађен је феномен пећинског сликарства, које се у Јерменији јавља у пећинама и поткапинама лоцираним на надморским висинама између 1100 m и 1700 m. Најразличитије теме приказане тим сликарством покривају период од мезолита (12. миленијум пре нове ере), преко неолита и халколита, до бронзаног и гвозденог доба у 1. миленијуму пре нове ере. Последње поглавље читаоце упознаје са открићем првих халколитских гробних хумки – тумулуса у Јерменији. Будући да су такве гробне конструкције из халколитског периода веома ретке у целом региону (неколико из Грузије и Азербејџана и на северном Кавказу датовано је у прву четвртину 4. миленијума пре нове ере), откриће два тумулуса датована у последњу четвртину 5. миленијума пре нове ере представља знатан помак у проучавању еволуције таквих гробних конструкција.

Иза сваког поглавља налази се богат списак релевантних референци које укључују, осим неких старијих издања, и мноштво нових, што заинтересованом читаоцу омогућава да се упусти у дубље анализе проблематика којима се баве јерменске колеге.

На крају, после свих прилога, приложена је листа аутора чији радови су објављени у овој књизи, као и њихови подаци за контакт.

* * *

Ово издање, које је нека врста хибрида између монографије и зборника радова, на врло информативан начин отвара врата јерменске археологије свим истраживачима жељним увида у рад колега у срединама које су још увек недовољно експониране у научној арени. Покривено је широко истра-

живачко поље – од технологије и типологије палеолитских окресаних артефаката, преко анализе археоботаничких остатака, типолошких и петрографских анализа керамичких посуда, коштаних и камених алатки неолита и халколита, до технологије ткања и добијања метала, као и примера пећинског сликарства које обухвата период од мезолита до гвозденог доба. Нису запостављене ни социјалне категорије какве су уметност и сахрањивање. Увид у материјал и резултате истраживања праисторијских култура у Јерменији, који покривају период од доњег палеолита до халколита, открива једну често запостављену чињеницу – да се извесне додирне тачке могу уочити и међу културама које су, на први поглед, толико далеко једна од друге да се те споне не очекују. Ипак, од палеолита, када су културни обрасци били много униформнији, преко мезолита и неолита па до халколита, Блиски исток је чинио управо ту карику која повезује младе праисторијске културе југоисточне Европе и далеке Јерменије, а то се јасно види из неких прилога у овој књизи. Иако већина нас током своје професионалне каријере неће имати прилике да ради са праисторијским материјалом из Јерменије, увид у њега путем публикација каква је ова књига свакако отвара нове погледе не само на културне моделе него и на еволуцију културе, са могућношћу да се уоче како сличности, тако и разлике исказане локалним карактеристикама.

Иако сажет, приказ ове, надасве интересантне и информативне публикације могао би да буде путоказ ка археологији каменог доба у Републици Јерменији. Препоручујемо је свим археолозима који се баве праисторијом од палеолита до халколита.

Јосип ШАРИЋ

Ivan Drnić, KUPINOVO, Groblje latenske kulture / A La Tène Culture Cemetery,
Musei Archaeologici Zagrabiensis Catalogi et Monographiae / Katalozi i monografije Arheološkog muzeja u Zagrebu, Svezak XII, Arheološki muzej u Zagrebu 2015.
172 стране, 34 слике у тексту, 46 табли

Дело *Купиново, гробље латенске културе*, колеге И. Дрнића из Археолошког музеја у Загребу, представља прву и до сада једину целокупну студију латенског материјала из Купинова. Монографију, у потпуности штампану двојезично (хрватски и енглески) сачињавају: Предговор (стр. 7), Увод (9–17), Типолошка и кронолошка анализа гробних прилога (19–102), Интерпретација гробља у Купинову (103–117), На крају (119–121), Захвала (123), Листа налазишта (125–127), Каталог (129–162), Попис литературе (163–172) и Табле (173–219). На самом почетку треба напоменути да је латенски материјал из Купинова доспео у Археолошки музеј у Загребу почетком XX века, а потиче из циглане В. Клема, који га је пажљиво сакупљао како је одмицао ископ земље за потребе циглане. Део материјала В. Клем уступио је Музеју, део је откупљен, али је један мањи број предмета преко препродаваца завршио и у збиркама других европских музеја (Drnić 2015, 17). Од укупно 223 предмета из Купинова из збирке Археолошког музеја у Загребу, половина је до сада публикована у делима која су расправљала о ширим питањима латена и/или Скордиска на простору Посавине и Подунавља, каква су она И. Хуњади (1942), Ј. Тодоровића (1968) или Н. Мајнарић-Панцић (1970). Наравно, мора се указати на то да и поменути публиковани предмети нису приказани у истом маниру, већ је реч о разнородним и неуједначеним графичким прилозима, састављеним како од техничких цртежа, тако и од црно-белих фотографија. Или, како би сам аутор монографије казао (Drnić 2015, 17): *Pojedini predmeti, uglavnom oni značajne estetske vrijednosti, sporadično su objavljivani u različitim člancima i knjigama, no detaljna analiza cjelokupne građe nikada nije načinjena. Na sreću, stiglo je vrijeme i za to!*

У уводном делу, иако то није уобичајено, дата је шира слика латенске културе на територији јужне Панонији, са детаљном најновијом хронолошком поделом латена на овим просторима, али и списком најважнијих локалитета у непосредном окружењу Купинова, а који су од даље важности за доцнију интерпретацију грађе. Потом следи део о самом локалитету, о пореклу и условима налаза, архивским писмима и историјату публиковања грађе, што је, можда, могло бити први део уводника, али то и није толико значајно на овоме месту. Аутор је уз помоћ колега из Србије успео и да одреди положај старе циглане у Купинову.

Потом следи најобимнији део монографије – типолошка и хронолошка анализа материјала, у очекиваном следу. На почетку се приказује и анализира оружје – мачеви (2.1), следе посебно корице (2.2), копља (2.3), штитови, тј. умба (2.4), појасне гарнитуре за ношење мачева (2.5), ножеви (2.6), да би потом уследио накит класификован у фибуле (2.7), тзв. обручасти[1] накит (2.8), женске појасеве (2.9), стаклене перле (2.10), тоалетни прибор (2.11), делове кола/коњске опреме (2.12), те оруђе (2.13) и керамичке посуде (2.14). Сав материјал је детаљно анализиран уз бројне аналогије на ширем подручју југоисточне Европе. Оно што је важно напоменути јесте то да су у овом поглављу графички представљени и предмети који не потичу само из Купинова а важни су за интерпретације и аналогије налаза, од којих је већина из збирке Археолошког музеја у Загребу и са територије данашње Србије и није до сада публикована. За поједине типове приложене су и карте шире дистрибуције, или графички прикази конструктивних елемената, али на овом месту можемо само изразити жаљење што се аутор определио за такав приступ са појединим типовима и при-

мерцима материјала. Додуше, овакав манир већ јасно издваја ово дело од класичног каталога налазишта.

Свакако треба обратити пажњу на детаљне анализе и приказе мачева, канија и копаља, што ће бити од велике помоћи оним колегама који одлуче да се баве латенском материјалном културом. Типологија копаља добро је предложена, иако постоје одређени проблеми који прате типологије копаља уопште узев, о чему је исцрпно писао Р. Васић неколико пута (2015; 2017). Дрнићева класификација би засада била најкориснија уколико разматрамо латенска копља у југоисточној Панонији, а о чему је аутор писао и пре тога (Drnić 2015a).

У поглављу о интерпретацији некрополе аутор прецизно опредељује налазе, па је дошао до закључка да највећи део материјала, а самим тим и гробова, потиче из времена средњег латена, тј. из III и прве половине II века, док се сама некропола може датовати у дуг период од LT B2 до LT D1, а можда и LT D2 (Drnić 2015: 108).

Каталог предмета урађен је по свим параметрима модерне музеологије, па су ту, осим описа, димензија и материјала, и подаци о датовању и литератури, уколико је примерак већ био публикован раније. Напоменимо и то да је библиографија импозантна и да је коришћена сва нова литература са скоро 300 јединица.

Једина замерка, ако би се тако могла назвати, с обзиром на то да представља прежитак времена из Другог светског рата и тадашње технике штампе, јесу табле са материјалом на крају књиге, што неминовно доводи до бесомучног и учесталог листања страница књиге, те уметања разноврсних предмета који дођу под руку.

Монографија *Купиново, гробље латенске културе* изузетно је важна за схватање латенске материјалне културе у нашој земљи, и можемо слободно рећи да већ сада представља референтно и капитално дело које би свакако требало консултовати приликом интерпретација и анализе латенског материјала са територије данашње Србије. Нажалост, овакве комплексне студије материјала у форми монографија од стране домаћих аутора недостају већ неколико деценија, а све је мање активних колега који се уопште и баве овим периодом.

[1] Према аутору, обухвата наруквице, наногвице и прстење.

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У издању Археолошког музеја у Загребу изашла је 2016. г. двојезична монографија *Каменица, Оставa римског сребрног новца из збирке Археолошког музеја у Загребу*, аутора Мирослава Нађа иАње Бертол-Стипетић. Објављена је у серији Каталози и монографије Археолошкога музеја у Загребу, Св. XIV.

Налаз из Нишке Каменице представља, највероватније, најбројнију оставу римског новца до сада, откривену давне 1936. г. Нажалост, овај изузетан налаз био је већ у време открића у највећој мери расут, а с обзиром на познате чињенице, никада нећемо сазнати ни првобитни састав ове оставе нити бројност примерака новца који је она садржавала. Што не значи да не треба учинити покушај да се ова нумизматичка мистерија барем делом разреши или да се понуде могућа решења. Након открића, извесни делови налаза из Каменице доспели су до појединих музеја, али је највећи део

завршио у приватним колекцијама, што за нас као истраживаче остава римског новца представља изузетан губитак.

Званично, данас се поједини делови оставе из Каменице налазе у неколико музејских збирки: у Народном музеју у Нишу, Археолошком музеју у Загребу, Народном музеју у Београду и у Народном музеју Словеније, што је укупно близу 12.000 примерака новца. Осим тога, Нађ и Бертол-Стипетић дошли су до информације из Народног музеја у Прагу по којој се у тамошњој збирци чува око 15.000 денара и антонинијана из Ниша. Ову информацију морамо узети са извесном резервом, али, уколико би се испоставило да је то заиста део истог налаза, број примерака који се налази у музејским збиркама нарастао би на око 27.000.

Нађ и Бертол-Стипетић учинили су први корак у публиковању дела оставе из Нишке Каменице који се чува у Археолошком музеју у Загребу, будући да поменути делови у оквиру других музејских збирки нису још увек публиковани. У поглављу „Околности налаза оставе" аутори монографије изложили су све познате информације везане за околности открића оставе у покушају да сваку од њих објасне. Наравно да им је тај посао, с озбиром на околности налаза, велику временску удаљеност од открића, као и мноштво контрадикторних публикованих информација, у великој мери био отежан. На основу расположивих података они закључују да остаје нејасно да ли је уистину откривена једна или две оставе. Такође, недоумица остаје и у погледу налазача оставе, јер се у литератури појављују различита имена.

У следећем одељку, под називом „Број каменичких примјерака", аутори су покушали да представе све међусобно супротстављене податке о броју пронађених примерака новца и да рационално објасне сваку од могућности, узимајући у обзир и усмена саопштења која су била доступна. Из различитих извора дошли су до потврде информација да је највећи део налаза распршен ван граница тадашње Југославије и да је мањи део доспео у музеје. Поред тога, сазнали су да је део оставе вероватно претопљен и употребљен за израду сребрних предмета. Све прикупљене информације о укупном броју каменичких примерака врло су корисне, али су истовремено и веома конфузне. Очито је да су налазачи, у страху да би им власти могле одузети новац, нишком и, касније, београдском музеју предали само минорни део оставе, а највећи део продали приватним колекционарима.

Како је, уистину, све у вези с овим налазом још увек у великој мери нејасно и магловито, аутори су у сваком наредном поглављу имали сличне проблеме с којима су се суочавали. У следећем одељку, „Досадашњи ставови око проблема датације", Нађ и Бертол-Стипетић детаљно су изложили датовање свих познатих делова налаза, који се међусобно разликују. Део одељка посвећен је и расправи о могућем власнику оставе. Одбацили су могућности да је у питању војна остава или да је представљала власништво трговца. На основу састава оставе, времена тезаурације, степена очуваности новца и великог удела денара у саставу, аутори закључују да се вероватно ради о уштеђевини више генерација једне породице која је поседовала велику латифундију.

У крађем одељку под називом „Повјесне околности", следствено разликама у датовању делова оставе, аутори су указали на проблеме интерпретације историјских околности покопавања оставе. Будући да налаз из Нишке Каменице није сачуван у целости, тешко је говорити о историјским условима покопавања оставе зарад нехотичног злоупотребљавања материјалних историјских извора. Најмлађи примерак загребачког дела оставе из Нишке Каменице, према референтној литератури, датује се од јануара/јесени (?) 236. до почетка или прве четвртине 238. године. што би уједно било извесно полазиште за *terminus post quem* налаза. У то, наравно, не можемо бити сасвим сигурни, што оставља отвореним питање датовања и узрока њеног похрањивања.

Како се најмлађи примерци у загребачком делу оставе датују у шири период, разлози за похрањивање уштеђевине власника латифундије на једној од главних балканских путних комуникација могли су да буду различити. До краја 237. године то би могао бити терор који су спроводили Максиминови агенти у убирању такси, или походи против Сармата и Дачана који су изискивали прикупљање војске и средстава у провинцијама најближим месту војних операција. За каснији датум, прве месеце 238. године, разлози би, поред фискалних захтева који су тешко исцрпљивали становништво, могли бити реакција на вест о побунама у Африци и Риму и припреме за Максиминов марш на Италију. Чињеница да остава није сачувана у целости оставља отвореним питања једног или више узрока њеног похрањивања, као и њеног коначног датовања.

Следи одељак „Анализа дијела оставе из Археолошког музеја у Загребу", у којем је детаљно описан састав тог дела налаза према владарима, члановима породица и ковницама, са пратећим статистичким анализама и графиконима. Загребачки део оставе састоји се од 4096 примерака новца у распону од тријумвира Марка Антонија, односно Веспазијана до Максимина Трачанина. Осим једне Трајанове драхме из ковнице Бостра и једног Каракалиног антонинијана, сви остали примерци јесу денари. У крађем одељку који следи аутори износе аргументе у прилог тврдњи да три примерка која се у документацији Археолошког музеја у Загребу воде као део Каменичке оставе, у суштини, не припадају овом налазу.

Како је након открића оставе Народни музеј у Нишу први дошао у посед дела оставе, а убрзо после њега и Археолошки музеј у Загребу, у следећем одељку Нађ и Бертол-Стипетић баве се компарацијом та два дела налаза. Нишки део налаза садржавао је првобитно 4442 примерка новца у распону од Нерона до Александра Севера. Након извесног расипања преостали део нишког налаза чини 3941 примерак у истом владарском распону. Поређење загребачког и нишког дела било је отежано због тога што нишки део налаза није публикован у целости, већ само прелиминарно. На основу расположивих података аутори су начинили оквирну компарацију два дела налаза, илуструјући резултате бројним графиконима. Несагласје између два дела каменичког налаза које су приликом тих анализа уочили аутори објашњавају нецеловитошћу читавог налаза, као и великом могућношћу да су након открића поједини сегменти оставе насумично издвајани, што је довело до стварања вештачког састава појединих сегмената оставе.

У следећем одељку, који има назив „Београдски дио оставе", аутори анализирају део налаза који се чува у Народном музеју у Београду, поредећи га са друга два дела, уз поновно изношење чињеница о околностима под којима је тај део, знатно касније од нишког и загребачког, доспео у Народни музеј у Београду. Београдски део чини 3132 денара

и антонинијана у распону од тријумвира Марка Антонија, односно Веспазијана до Филипа I. Откупљен је 1954. г. као део велике оставе из Нишке Каменице, пронађене 1936. г. Најмлађе примерке чини 7 антонинијана Филипа I, а сви припадају 3. емисији римске ковнице из 245–247. г. Позивајући се на различитост састава београдског дела од друга два, као и на велику временску удаљеност од проналаска до куповине дела оставе (18 г.), Нађ и Бертол-Стипетић закључују да овај део не припада првобитном налазу, већ једној сасвим другој остави из Шљивовика, удаљеног од Каменице педесетак километара.

Следи поглавље које садржи упоредне анализе аналогних остава. Са територије данашње Србије, а две римске провинције (Горње Мезије и Доње Панонија), регистроване су три оставе новца које се завршавају примерцима Максимина Трачанина: из утврђења Равна на Дунаву, из села Супска код Ћуприје (Супска II) и из Меховина код Шапца. Упадљиво је мали број познатих остава новца из времена Максимина Трачанина и у суседним провинцијама, изузев Тракије где их је забележено четири. Из Доње Мезије потиче само један налаз, док са територије Дакије није забележен ниједан. Из Горње Паноније као и из Норикума познат је само по један налаз. Даље према западу, са територије која је у античко доба припадала Италији позната су још два налаза – први из околине Постојине, а други из залеђа Трста. Нађ и Бертол-Стипетић су у своје компаративне анализе аналогних остава укључили налазе: Равна, Супска II, Меховине и Постојина, јер је ниво њихове обрађености допуштао поређења са загребачким делом. Из тих анализа произлази закључак да загребачки део каменичког налаза, иако непотпун, показује више подударности него одступања од остава овог хоризонта.

У Закључку аутори резимирају контрадикторне информације из времена налаза оставе које од тада уносе конфузију и онемогућавају извођење сигурнијих закључака. То се у првом реду односи на дилему да ли су откривене две оставе у размаку од два месеца и то у непосредној близини, или је постојала само једна остава. Нађ и Бертол-Стипетић склони су закључку да су у питању ипак две оставе различитог хоризонта похрањивања. Прва и већа завршавала би се примерцима Максимина Трачанина, а друга и мања новцем Гордијана III, како сведоче неки од извора и с обзиром на то да се мањи део, који чува Народни музеј Словеније, завршава тим примерцима. Што се тиче броја пронађених примерака, налаз из Каменице је сасвим сигурно био бројнији од оставе из Реке Девније (преко 100.000 примерака), док је горња граница отворена за различите интерпретације, а с обзиром на информације које су се појављивале усмено или у литератури. На основу свега, аутори сматрају да би приближна горња граница била најближа информацији коју преноси Ледерер 1939. г., а она износи око 3000 кг.

Највећи део монографије чини опширан каталог нумизматичке грађе. У њему су наведени сви стандардни подаци и употребљена је релевантна литература. Каталог прате и илустрације свих примерака загребачког дела оставе из Каменице.

У закључку приказа монографије треба изразити похвале ауторима за напор који су уложили у покушају да понуде извесна решења комплексних питања везаних за налаз из Нишке Каменице. Надамо се да ће публиковање осталих познатих делова оставе бар у извесној мери расветлити неке од овде изнетих претпоставки. Монографија аутора Мирослава Нађа и Ање Бертол-Стипетић представља полазно становиште за даље проучавање овог веома значајног налаза римског новца и велики подстицај за публиковање осталих познатих делова оставе.

Мирјана ВОЈВОДА

МИРА РУЖИЋ
(1959–2017)

Мира Ружић је рођена у лето 1959. године у Београду, у породици здравствених радника, од оца Александра Ружића, професора Медицинског факултета у Београду и мајке Раће Ружић, начелнице Фармацеутског одељења Војно-медицинске академије у Београду. Ипак, пошто је као одличан ученик матурирала у Осмој београдској гимназији на природно-математичком смеру, младеначка љубав ка археологији одвела ју је на Филозофски факултет у Београду, на који се уписала 1978. године. Ова љубав и ентузијазам према археолошкој науци обележили су не само Мирине студије већ и њен читав радни век. Таквим, надахнутим односом према археологији често је умела да постиди све нас, њене колеге, сараднике и пријатеље, који смо с годинама изградили професионализам у струци, можда губећи оно што се зове позив.

Мира Ружић је, такође, остала доследна класичној методологији археолошких истраживања коју смо учили од наших професора – академикâ Милутина Гарашанина, Драгослава Срејовића и Владислава Поповића, професорке Александрине Цермановић-Кузмановић, али и од, у оно време асистената, Александра Јовановића и Ђорђа Јанковића. Може се рећи да је она била типичан представник „Београдске археолошке школе", која је током 70-их и 80-их година прошлог века била неприкосновена у бившој Југославији, па и у региону. Методологија коју је промовисала поменута „школа" заснивала се на три принципа: теренским археолошким истраживањима, придавању важности анализи свих археолошких налаза и интердисциплинарном приступу. Пошто смо већ током студија били укључени у теренска археолошка истраживања и процесуирање – евидентирање и анализу археолошких налаза, логичан наставак тог процеса био је избор тема за дипломски рад, те магистарску и докторску тезу, који су се заснивали на материјалним остацима прошлости.

Мира Ружић је дипломирала 1986. године са темом *Епиграфски споменици Синдунума* (ментор: академик Милутин Гарашанин), а 1993. године одбранила је магистарску тезу под насловом *Римско стакло у Србији* (ментор: проф. др Александрина Цермановић-Кузмановић). На основу овог магистарског рада Мира је 1994. године, у издању Центра за археолошка истраживања Филозофског факултета у Београду, објавила књигу под истим насловом, која представља сажетак њене тезе. *Римско стакло у Србији* је и након 25 година једина монографија о овој теми код нас, те је незаобилазна у изучавању римских стаклених посуда и других предмета од стакла не само у Србији него и у иностранству и безброј пута је цитирана. Докторску тезу, под насловом *Културна римска бронзана пластика на територији северног Балкана*, одбранила је 2006. године на Филозофском факултету у Београду (ментор: проф. др Александар Јовановић).

Не треба занемарити рад Мире Ружић на теренским истраживањима, која је и она сама највише волела. Немогуће је побројати сва налазишта на којима је радила, али треба издвојити најважнија, она која су обележила њен развој као археолога и утицала на њена научна интересовања. Пре свега, то су истраживања римског лимеса у оквиру пројекта заштитних ископавања током изградње ХЕ Ђердап II (Борђеј, Ушће Слатинске реке, Михајловац – Muoara Vagei), на којима је у периоду 1980–1983. учествовала као студент

археологије, али још важнија су ископавања на локалитету *Pontes* – Трајанов мост, где је била члан стручног тима Филозофског факултета, Народног музеја и Археолошког института из Београда, под руководством академика Милутина Гарашанина, др Гордане Марјановић-Вујовић и др Милоја Васића, у периоду1985–1989. године. Пресудан утицај на рад Мире Ружић имала су истраживања на Гамзиграду (*Felix Romuliana*), где је у оквиру пројекта САНУ, под руководством академика Драгослава Срејовића, била члан стручног тима током 1990–1995. године, а руководилац теренских истраживања од 1996. до 2001. године.

Мира Ружић је била запослена у Центру за археолошка истраживања Филозофског факултета од 1993. године, где је радила као истраживач-сарадник и потом научни сарадник све до гашења те институције, а затим у Археолошкој збирци Филозофског факултета у Београду, чији је успешан управник била од 2009. до 2015. године. У Археолошкој збирци реализовала је две изложбе: *Резултати археолошких истраживања на аутопуту Е 80, деоница Црвена Река – Чифлик* (2013. године) и *Археолошка збирка Филозофског факултета у Београду: 85 година у служби науке, просвете и културе* (2014. године). У оквиру програма Одељења за археологију Филозофског факултета, у Археолошкој збирци је организовала и реализовала практичну наставу за студенте археологије. На ове часове су студенти долазили редовно, са радошћу и ишчекивањем, са осећањем да су део „праве археологије", а одлазили су са солидним познавањем археолошке грађе, конзерваторско-рестаураторских поступака и музеолошких процедура. Може се рећи да је Мира „крива" за стручност многих колега млађих генерација, које је подучавала како у теренским истраживањима, тако и у музеолошкој пракси.

Што се тиче научног рада Мире Ружић, који је остварила у периоду 2001–2017. године у оквиру античких пројеката Археолошког института у Београду (руководилац: др Ивана Поповић), треба издвојити две капиталне монографије: *Текија*, као коаутор са Александрином Цермановић-Кузмановић и Александром Јовановићем, издата у оквиру посебних издања Ђердапских свезака 2004. године и *Roman and Medieval Necropolis in Ravna near Knjaževac*, са групом аутора, издата 2005. године као посебно издање Археолошког института. Такође, бројни чланци и студије који су објављени у домаћим и страним часописима и зборницима били су резултат рада на поменутим пројектима.

Као сарадник Одељења за археологију Филозофског факултета Мира је коруководила археолошким истраживањима локалитета *Municipium Splonum* код Пљеваља (Црна Гора) у периоду 2007–2011. године. Такође, била је руководилац пројекта истраживања локалитета *Remesiana* – Бела Паланка током 2013–2015. године. Треба поменути и њен рад у заштити, где је као руководилац истраживања била ангажована од стране Републичког завода за заштиту споменика културе на бројним римским налазиштима дуж трасе Коридора 10, на јужном и источном краку. Оно што је посебно важно нагласити јесте чињеница да је резултате свих теренских истраживања публиковала у виду извештаја, чланака и студија.

Без обзира на то што сам добар познавалац Мириног рада, јер смо биле колегинице, пријатељице и сараднице од студентских дана до краја њеног археолошког и животног пута, што је скоро четири деценије, сигурна сам да сам нешто изоставила из њеног великог и разноликог опуса. Међутим, много је важније то како су Миру Ружић запамтиле колеге, пријатељи и студенти. Она је била жена велике снаге и пожртвовања, али и изузетне скромности, склона да делује из другог плана. Њено велико знање и њена посвећеност археологији оставили су печат како на припаднике њене генерације, тако и на нова поколења археолога. Осим тога, Мира је била духовита и луцидна особа, која је умела да створи пријатну радну атмосферу и у најтежим тренуцима. Она је предивно певала и плесала, што је улепшавало многе дуге вечери на теренима. Њена источњачка лепота и изражајне зелене очи били су украс многих археолошких екипа. Ко год ју је познавао, осећао је њену изузетну људску топлину, разумевање и брижност. Многима је пружила подршку и утеху онда када су их сви напустили. Умела је да поднесе жртву за пријатеље и колеге, и то са изузетном лакоћом, као да је то најнормалнија ствар. Зато тврдим, сасвим објективно, да је некима од нас Мира однела са собом један део душе и да ми никада више нећемо бити исти.

Софија ПЕТКОВИЋ

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Journal *Starinar* publishes articles from the fields of archaeology, history, architecture, history of arts, classical philology, physical anthropology, etc.

EDITORIAL RESPONSIBILITIES

The Editorial Board is responsible for deciding which articles submitted to ***Starinar*** will be published. The Editorial Board is guided by the Editorial Policy and constrained by legal requirements in force regarding libel, copyright infringement and plagiarism.

The Editorial Board reserves the right to decide not to publish submitted manuscripts in case it is found that they do not meet relevant standards concerning the content and formal aspects. The Editorial Staff will inform the authors whether the manuscript is accepted for publication within 120 days from the date of the manuscript submission.

Editorial Board must hold no conflict of interest with regard to the articles they consider for publication. If an Editor feels that there is likely to be a perception of a conflict of interest in relation to their handling of a submission, the selection of reviewers and all decisions on the paper shall be made by the editor and editorial board.

Editorial Board shall evaluate manuscripts for their intellectual content free from any racial, gender, sexual, religious, ethnic, or political bias.

The Editor and the Editorial Staff must not use unpublished materials disclosed in submitted manuscripts without the express written consent of the authors. The information and ideas presented in submitted manuscripts shall be kept confidential and must not be used for personal gain.

The journal Starinar applies the system of double-blind peer review. Editors and the Editorial Staff shall take all reasonable measures to ensure that the reviewers remain anonymous to the authors before, during and after the evaluation process and the authors remain anonymous to reviewers until the end of the review procedure.

Papers prepared for publishing should be submitted to the editorial secretary between 20 November to 20 December of the current year for the volume that will be published the following year. The Editorial board meets after the submission of all papers. At the first meeting, reviewers are selected and assigned manuscripts for review.

AUTHORS' RESPONSIBILITIES

Authors warrant that their manuscript is their original work, that it has not been published before and is not under consideration for publication elsewhere. Parallel submission of the same paper to another journal constitutes a misconduct and eliminates the manuscript from consideration by *Starinar*.

The Authors also warrant that the manuscript is not and will not be published elsewhere (after the publication in Starinar) in any other language without the consent of the Publisher.

In case a submitted manuscript is a result of a research project, or its previous version has been presented at a conference in the form of an oral presentation (under the same or similar title), detailed information about the project, the conference, etc. shall be provided in front of the first footnote and it should be marked with a star. A paper that has already been published in another journal cannot be reprinted in Starinar.

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A submitted manuscript should contain sufficient detail and references to permit reviewers and, subsequently, readers to verify the claims presented in it. The deliberate presentation of false claims is a violation of ethical standards. Book reviews, critical reviews, necrologies and other professional articles are reviewed as well and the decision on their acceptance or rejection is made by the Editorial Board based on reviews.

Authors are exclusively responsible for the contents of their submissions and must make sure that they have permission from all involved parties to make the data public.

Authors wishing to include figures, tables or other materials that have already been published elsewhere are required to obtain permission from the copyright holder(s). Any material received without such evidence will be assumed to originate from the authors.

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Authors must make sure that all only contributors who have significantly contributed to the submission are listed as authors and, conversely, that all contributors who have significantly contributed to the submission are listed as authors. If persons other than authors were involved in important aspects of the research project and the preparation of the manuscript, their contribution should be acknowledged in a footnote or the Acknowledgments section.

Acknowledgment of Sources

Authors are required to properly cite sources that have significantly influenced their research and their manuscript. Information received in a private conversation or correspondence with third parties, in reviewing project applications, manuscripts and similar materials, must not be used without the express written consent of the information source.

Plagiarism

Plagiarism, where someone assumes another's ideas, words, or other creative expression as one's own, is a clear violation of scientific ethics. Plagiarism may also involve a violation of copyright law, punishable by legal action.

Plagiarism includes the following:

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– Copying equations, figures or tables from someone else's paper without properly citing the source and/or without permission from the original author or the copyright holder.

Please note that all submissions are thoroughly checked for plagiarism. Any paper which shows obvious signs of plagiarism will be automatically rejected and authors will be temporary permitted to publish in Starinar.

In case plagiarism is discovered in a paper that has already been published by the journal, it will be retracted in accordance with the procedure described below under Retraction policy, and authors will be temporary permitted to publish in Starinar.

Conflict of interest

Authors should disclose in their manuscript any financial or other substantive conflict of interest that might have influenced the presented results or their interpretation.

Fundamental errors in published works

When an author discovers a significant error or inaccuracy in his/her own published work, it is the author's obligation to promptly notify the journal Editor or publisher and cooperate with the Editor to retract or correct the paper.

By submitting a manuscript the authors agree to abide by the *Starinar*'s Editorial Policies.

REVIEWERS' RESPONSIBILITIES

Reviewers are required to provide written, competent and unbiased feedback in a timely manner on the scholarly merits and the scientific value of the manuscript.

The reviewers assess manuscript for the compliance with the profile of the journal, the relevance of the investigated topic and applied methods, the originality and scientific relevance of information presented in the manuscript, the presentation style and scholarly apparatus.

Reviewers should alert the Editor to any well-founded suspicions or the knowledge of possible violations of ethical standards by the authors. Reviewers should recognize relevant published works that have not been cited by the authors and alert the Editor to substantial similarities between a reviewed manuscript and any manuscript published or under consideration for publication elsewhere, in the event they are aware of such. Reviewers should also alert the Editor to a parallel submission of the same paper to another journal, in the event they are aware of such.

Reviewers must not have conflict of interest with respect to the research, the authors and/or the funding sources for the

research. If such conflicts exist, the reviewers must report them to the Editor without delay.

Any selected referee who feels unqualified to review the research reported in a manuscript or knows that its prompt review will be impossible should notify the Editor without delay.

Reviews must be conducted objectively. Personal criticism of the author is inappropriate. Reviewers should express their views clearly with supporting arguments.

Any manuscripts received for review must be treated as confidential documents. Reviewers must not use unpublished materials disclosed in submitted manuscripts without the express written consent of the authors. The information and ideas presented in submitted manuscripts shall be kept confidential and must not be used for personal gain.

PEER REVIEW

The submitted manuscripts are subject to a peer review process. The purpose of peer review is to assists the Editorial Board in making editorial decisions and through the editorial communications with the author it may also assist the author in improving the paper.

To every paper submitted to editorial board of Starinar two reviewers are assigned. Reviewers could be members of the Editorial Board, associates of the Institute of Archaeology or eternal associates, with the same or higher scientific degree as the author(s), competent in the field of the manuscript's topic. The suggestions on who the reviewers should be are made by the Editorial Board, and adopted by the Editor-in-Chief.

All papers are reviewed by using the double-blind peer review system: the identity of the author is not known to the reviewers and vice versa. Reviewers shall send their reviews within the period of 30 days after the receipt of the manuscript. Reviewers are not paid for this work.

If a reviewer requires a revision of a manuscript, authors shall send a revised version with changes made in accordance with the reviewer's suggestions within the period of 30 days. In case they consider the revision request unfounded, the authors should send their arguments explaining why they did not make the required revision. The same timeframe applies to revisions of manuscripts that are not written in accordance with the author guidelines.

The decision of acceptance of the paper is made by the Editorial Board of Starinar by majority vote based on the peer reviews and the evaluation of the authors' revision or their arguments, if they did not make changes to the manuscript.

After the final decision on the content of a volume is made, manuscripts are sent for editing and proofreading, and then to a graphic designer, who is responsible for computer layout, design and prepress. Before printing, the authors will have the opportunity to proofread their paper twice in the PDF format. The final approval for printing is given by the Editor-in-Chief. The whole volume should be send to the printing press by 1 October.

The reviewers selected by the Editorial Board, receive a peer review form with questions that they should answer. The purpose of the questions is to indicate all aspects that they should consider in order to make a decision on the destiny of a paper. In the final part of the form, reviewers are supposed to write their opinion and suggestions how to improve the paper. The identity of reviewers is unknown to authors, before, during and after the review procedure. The identity of authors is unknown to reviewers before, during and after the review procedure (until the paper is published). It is suggested to authors to avoid formulations that could reveal their identity. The Editorial Board shall ensure that before sending a paper to a reviewer, all personal details of the author (name, affiliation, etc.) will be deleted and that all measures will be undertaken in order to keep the author's identity unknown to the reviewer during the review procedure.

The choice of reviewers is at the Editorial Board's discretion. The reviewers must be knowledgeable about the subject area of the manuscript; and they should not have recent joint publications with any of the authors.

All of the reviewers of a paper act independently and they are not aware of each other's identities. If the decisions of the two reviewers are not the same (accept/reject), the Editor may assign additional reviewers.

During the review process Editor may require authors to provide additional information (including raw data) if they are necessary for the evaluation of the scholarly merit of the manuscript. These materials shall be kept confidential and must not be used for personal gain.

The Editorial team shall ensure reasonable quality control for the reviews. With respect to reviewers whose reviews are convincingly questioned by authors, special attention will be paid to ensure that the reviews are objective and high in academic standard. When there is any doubt with regard to the objectivity of the reviews or quality of the review, additional reviewers will be assigned.

PROCEDURES FOR DEALING WITH UNETHICAL BEHAVIOUR

Anyone may inform the editors and/or Editorial Staff at any time of suspected unethical behaviour or any type of misconduct by giving the necessary information/evidence to start an investigation.

Investigation

- Editor-in-Chief will consult with the Editorial Board on decisions regarding the initiation of an investigation.
- During an investigation, any evidence should be treated as strictly confidential and only made available to those strictly involved in investigating.
- The accused will always be given the chance to respond to any charges made against them.
- If it is judged at the end of the investigation that misconduct has occurred, then it will be classified as either minor or serious.

Minor misconduct

Minor misconduct will be dealt directly with those involved without involving any other parties, e.g.:

- Communicating to authors/reviewers whenever a minor issue involving misunderstanding or misapplication of academic standards has occurred.
- A warning letter to an author or reviewer regarding fairly minor misconduct.

Major misconduct

The Editor-in-Chief, in consultation with the Editorial Board, and, when appropriate, further consultation with a small group of experts should make any decision regarding the course of

action to be taken using the evidence available. The possible outcomes are as follows (these can be used separately or jointly):

– Publication of a formal announcement or editorial describing the misconduct.
– Informing the author's (or reviewer's) head of department or employer of any misconduct by means of a formal letter.
– The formal, announced retraction of publications from the journal in accordance with the Retraction Policy (see below).
– A ban on submissions from an individual for a defined period.
– Referring a case to a professional organization or legal authority for further investigation and action.

When dealing with unethical behaviour, the Editorial Staff will rely on the guidelines and recommendations provided by the Committee on Publication Ethics (COPE): http://publicationethics.org/resources/.

RETRACTION POLICY

Legal limitations of the publisher, copyright holder or author(s), infringements of professional ethical codes, such as multiple submissions, bogus claims of authorship, plagiarism, fraudulent use of data or any major misconduct require retraction of an article. Occasionally a retraction can be used to correct errors in submission or publication. The main reason for withdrawal or retraction is to correct the mistake while preserving the integrity of science; it is not to punish the author.

Standards for dealing with retractions have been developed by a number of library and scholarly bodies, and this practice has been adopted for article retraction by Starinar: in the electronic version of the retraction note, a link is made to the original article. In the electronic version of the original article, a link is made to the retraction note where it is clearly stated that the article has been retracted. The original article is retained unchanged, save for a watermark on the PDF indicating on each page that it is "retracted."

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The journal *Starinar* allows authors to deposit the accepted, reviewed version of the manuscript, as well as final, published PDF version of the paper in an institutional repository and non-commercial subject-based repositories, or to publish it on Author's personal website (including social networking sites, such as ResearchGate, Academia.edu, etc.) and/or departmental website, and in accordance with the licence Attribution-NonCommercial-NoDerivs 3.0 Serbia (http://creativecommons.org/licenses/by-nc-nd/3.0/rs/), at any time after publication. Full bibliographic information (authors, article title, journal title, volume, issue, pages) about the original publication must be provided and a link must be made to the article's DOI.

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SUBMISSION INSTRUCTIONS FOR THE *STARINAR* JOURNAL

By applying the new rules (Acta) for publishing activities issued by the Institute of Archaeology, Belgrade and in accordance with the editorial policy of the Starinar journal, the editorial board of the Starinar journal have decided to improve its quality and, thus, contribute to its full integration into the international system of exchanging scientific information.

The Starinar journal is dedicated to topics from the scientific areas of archaeology, history, history of arts, architecture and similar scientific disciplines.

The Starinar journal publishes original papers that have not been previously published: original scientific articles, excavation reports, scientific reviews, book reviews, critiques, bibliographies and necrologies.

Articles can be submitted in English, German or French. If the paper is written in English, the summary can be written in Serbian (for authors from Serbia) or English (for foreign authors), while articles submitted in German or French need to have the summary in English.

Articles submitted to the Starinar editorial board must contain customary data. Each article should therefore include: title; author's forename and surname; affiliation; abstract; key words; main text; summary; graphic images with list of captions; bibliography; contact details.

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1. The title should be short and clear, reflecting as much as possible the content of the article. The title should include words which are easy to index and search for. If there are no such words integrated into the title, it is preferable to have an added subtitle. The title should appear in either the fifth or sixth row under the upper margin, in bold, with a font size of 14 pts.

2. The author or authors should include their full names.

3. The author or authors should write the official name and address of the institution they represent, together with, where applicable, the official name and address of the location where they performed their research. With complex institutions, all names should be included (e.g. University of Belgrade, Philosophical Faculty, Department of Archaeology, Belgrade).

4. The abstract represents a short overview of the article (100–250 words). It is advisable for this to contain words which are easy to index or search for. The abstract should offer data about the research goal, method, results and conclusion. Abstracts should be written in the same language as the article (English, German or French). It is necessary to use correct grammar and spelling and to have the document reviewed by a qualified native proof-reader.

5. The key words should include words or phrases that effectively describe the content of the article, and which are easy to index and search for. They should be selected according to an internationally recognised source (index, vocabulary, and thesaurus), such as the list of key words Web of Science. The number of key words should not exceed ten.

6. Articles should be no longer than 32 DIN A4 pages, including footnotes and illustrations. The body text should be written digitally, using Times New Roman or Arial font (font size 12 pts), MS Office Word 97 or later, with a line spacing of 1.5 and margins set to 2.54 cm. The body text must not contain illustrations. Illustrations must be submitted as separate files.

7. Manuscripts must be submitted in English, German or French, with the author obliged to state the name of the translator and the proof-reader who checked the paper. Words, statements

and titles written in a foreign language should be written using their original spelling and, in accordance with the editor's or reviewer's suggestions, transliterated (translated) into the submission language of the manuscript.

Footnotes can be included in the main paper. They should contain less important data, required explanations and cited literature. (A separate chapter of the Submission Instructions details the required method for quoting that is to be applied when writing a paper).

8. The summary must have the same content as the abstract, only expanded, but not longer than 1/10 of the paper's overall size. It is strongly advised to write the summary in a structural form. Papers submitted in English must have the summary in Serbian (for Serbian authors) or English (for foreign authors). Papers in German or French must have the summary in English. As well as the summary text, the title of the paper, the key words and the author's affiliation should be written in the appropriate language.

9. Illustrations (photographs, tables, drawings, graphs etc.) should all be in the same format. Scanned illustrations should be in a resolution of 600 dpi, while photographs should be in a resolution of at least 300 dpi, and of a TIFF, PSD or JPG format. Illustrations are to be submitted as a separate part of the paper and should not be integrated into the basic text. Titles and captions should be submitted bilingually, where applicable, (the languages in which the paper and summary are written), and as a Word document.

10. The bibliography should include bibliographic sources (articles, monographs etc.). Within the paper it should be quoted with references in the footnotes and as a list of literature/bibliography at the end of the manuscript. The bibliography represents a part of every scientific paper, with precisely quoted bibliographical references. The list of used sources should follow a unique pattern, in a sequence based on the quoting standards determined by these instructions. The bibliography must be presented in the language and alphabet in which each source has been published. In cases when the publication is published bilingually, all data should also be written bilingually. In cases where the summary is written in another language, then the title of the summary should be written in the same language.

In the list of references: **Popović 2009** – I. Popović, Gilt Fibula with Christogram from the Imperial Palace in Sirmium (Резиме: Позлаћена фибула са христограмом из царске палате у Сирмијуму) *Starinar* LVII (2007), 2009, 101–112.

Publications published in Cyrillic, Greek or any other non Latin alphabet should be transliterated into the Latin alphabet in accordance with the standards of The American Library Association and The Library of Congress of the United States (http://www.loc.gov/catdir/cpso/roman.html), for example:

Quotation within a footnote: (Поповић 1994, 65)

In the list of references: **Поповић 1994** – И. Поповић, (прир.), *Античко сребро у Србији*, Београд 1994. (I. Popović, (prir.), *Antičko srebro u Srbiji*, Beograd, 1994.)

11. Parts of references (authors' names, title, source etc.) are to be quoted in accordance with the accepted quoting form. The most commonly quoted references are listed below:

(MONOGRAPHS)

1**. How to quote an author's books:**

a. A single author

In a footnote: (Popović 2006, 21)

In the list of references: **Popović 2006** – I. Popović, *Roma aeterna inter Savum et Danubium*, Belgrade 2006.

b. Two authors

In a footnote: (Vasić, Milošević 2000, 125)

In the list of references: **Vasić, Milošević 2000** – M. Vasić, G. Milošević. 2000. *Mansio Idimvm rimska poštanska i putna stanica kod Medveđe*, Beograd, 2000.

c. Three or more authors

In a footnote: (Petković et al. 2005, 129–131)

In the list of references: **Petković et al. 2005** – S. Petković, M. Ružić, S. Jovanović, M. Vuksan, & Z. K. Zoffmann. 2005. *Roman and Medieval Necropolis in Ravna near Knjaževac*. Belgrade, 2005.

2**. Quotation of papers in serial publication, collection of papers:**

In a footnote: (Popović 2014, 261)

In the list of references: **Popović 2014** – I. Popović, The Motif of Christogram on the Architectural Elements of the Imperial Palace in Sirmium, in: *The Edict of Serdica (AD 311). Concepts and Realizations of the Idea of Religious Toleration*, (ed.) V. Vachkova, D. Dimitrov, Sofia 2014, 261–276.

3. **How to quote prepared editions (editor, translator or preparator instead of author):**

In a footnote: (Поповић 1994, 65)

In the list of references: **Поповић 1994** – И. Поповић, (прир.), *Античко сребро у Србији*, Београд 1994. (I. Popović, (prir.), *Antičko srebro u Srbiji*, Beograd, 1994.)

4. **How to quote books without indicated author:**

In a footnote: (*Гамзиград. Касноантички царски дворац* 1983, 43)

In the list of references: ***Гамзиград. Касноантички царски дворац* 1983** – *Гамзиград. Касноантички царски дворац*, Београд 1983. (*Gamzigrad. Kasnoantički dvorac*, Beograd, 1983.)

5. Quoting several books of the same author:

a. written in different alphabets

In a footnote: (Поповић 2002, 23–26; Popović 2006, 33)

In the list of references:

Поповић 2002 – И. Поповић, *Накит са Јухора, остава или сакрални тезаурус*, Београд 2002. (I. Popović, *Nakit sa Juhora, ostava ili sakralni tezaurus*, Beograd, 2002.)

Popović 2006 – I. Popović, *Roma Aeterna inter Savum et Danubium.* Belgrade, 2006.

b. written in the same year

In a footnote: (Dawkins 1996a; 1996b)

In the list of references:

Dawkins 1996a – R. Dawkins, *Climbing Mount Improbable*, London, 1996.

Dawkins 1996b – R. Dawkins, *River out of Eden*, London, 1996.

6**. Quoting chapters or parts of books:**

In a footnote: (Кондић 1994, 66)

In the list of references: **Кондић 1994** – Ј. Кондић, Рановизантијско сребро, у: *Античко сребро у Србији*, И. Поповић, (ур.), Београд 1994, 65–67. (J. Kondić, Ranovizantijsko srebro, u: *Antičko srebro u Srbiji*, I. Popović, (ur.), Beograd 1994, 65–67.)

7. **Quoting chapters or parts of previously published books (as an original source):**

In a footnote: (Cicero 1986, 35)

In the list of references: **Cicero 1986** – Cicero Quintus Tullius, Handbook on canvassing for the consulship, in: *Rome: Late republic and principate*, W. E. Kaegi, P. White (eds.), vol. 2, Chicago, 1986, 33–46. Originally published in: E. Shuckburgh (trans.) *The letters of Cicero*, vol. 1, London, 1908.

8. **Quoting books which have been published on-line:**

In a footnote: (Kurland, Lerner 1987)

In the list of references: **Kurland, Lerner 1987** – Ph. B. Kurland, R. Lerner, (eds.) *The founders' Constitution*. Chicago 1987. //press-pubs.uchicago.edu/founders/, accessed (date of visit to the page)

ARTICLES FROM PRINTED PERIODICALS OR PERIODICALS PUBLISHED ON-LINE

9**. Quoting an article from a printed periodical:**

In a footnote: (Vasić 2004, 91, fig. 17)

In the list of references: **Vasić 2004** – M. Vasić, Bronze railing from Mediana. *Starinar* LIII–LIV 2004, 79–109.

10**. Quoting an article from a periodical published on-line:**

In a footnote: (Van Eijck 2009, 41)

In the list of references: **Van Eijck 2009** – D. Van Eijck, Learning from simpler times, *Risk Managemen*t, vol. 56, no 1, 2009, 40–44. http://proquest.umi.com/, accessed (date of visit to the page)

DOCTORAL AND MASTER THESES

11. **Quoting doctoral or master theses:**

In a footnote: (Ilić 2005, 25–32)

In the list of references: **Ilić 2005** – O. Ilić, *Ranohrišćanski pokretni nalazi na području dijeceze Dakije od IV do početka VII veka.* Unpublished MA thesis, University of Belgrade, 2005.

LECTURES FROM SCIENTIFIC GATHERINGS

12. **Quoting a published lecture or communication presented at a scientific gathering:**

In a footnote: (Vasić 2008, 69, fig. 3)

In the list of references: **Vasić 2008** – M. Vasić, Stibadium in Romuliana and Mediana. *Felix Romvliana 50 years of archaeological excavations*, M. Vasić (ed.), (Papers from the International Conference, October, 27–29 2003, Zaječar, Serbia), Belgrade–Zaječar 2006, 69–75.

13. **Quoting an unpublished lecture or communication presented at a scientific gathering:**

In a footnote: (Gavrilović 2004)

In the list of references: **Gavrilović 2004** – N. Gavrilović, *Interpretatio Romana* of Oriental Cults in Upper Moesia from I to IV century A.D. Paper presented at the 10th Annual meeting of the European Association of Archaeologists, September 7–12, 2004 in Lyon, France.

POPULAR MAGAZINES (PERIODICALS) AND NEWSPAPER ARTICLES

14. **Quoting an article from a popular magazine:**

In a footnote: (Јањић 2007, 32–33)

In the list of references: **Јањић 2000** – Ј. Јањић, Прво хришћанско знамење, *НИН*, јул 2007. (J. Janjić, Prvo hriščansko znamenje, *NIN*, jul 2007.)

15. **Quoting an article from a newspaper:**

In a footnote: (Марковић-Штрбац 1999)

In the list of references: **Марковић-Штрбац 1999** – С. Марковић-Штрбац, Пустахије са Јухора, *Политика*, 18. септембар 1999, Одељак Култура, уметност, наука. (S. Marković-Štrbac, Pustahije sa Juhora, *Politika*, 18. septembar 1999, Odeljak Kultura, umetnost, nauka.)

ELECTRONIC DATABASES, WEB PAGES, COMMENTS etc.

16. **Quoting an electronic database** (Name of the database. Address):

In a footnote: (Pliny the Elder, Perseus Digital Library)

In the list of references: **Pliny the Elder, Perseus Digital Library** – Perseus Digital Library. http://www.perseus.tufts.edu/, accessed (date of access)

17. **Quoting documents and data taken from institutional web pages** (Name of institution. Name of document. Editor. Web site. (Date of access)):

In a footnote: (Evanston Public Library Board of Trustees)

In the list of references: **Evanston Public Library Board of Trustees** – Evanston Public Library Board of Trustees, Evanston Public Library strategic plan, 2000–2010, A decade of outreach, Evanston Public Library, http://www.epl.org/library/strategic-plan-00.html, accessed (example: June 1, 2005).

12. All of the quoted bibliography/literature is to be listed in Latin alphabetic order, by the author's surname initial or the first letter of the publication's title (in cases where the author or editor is not listed).

13. When submitting a manuscript, the author should supply his/her contact details in a separate file: the address of his/her affiliation and his/her e-mail address and telephone number. In cases where there are several authors, the contact details of the first author should only be supplied. The author is also obliged to state the specific name and code of the project within which the paper was created, along with the name of the institution(s) that financed the project. The dates of birth of all authors should be written at the end.

14. Each of the submitted scientific papers will be forwarded to anonymous reviewers by the STARINAR editorial board. For further information concerning the peer review process and the editorial board's, reviewer's and author's obligations and duties, authors can refer to the EDITORIAL POLICY OF THE STARINAR JOURNAL.

15. Papers prepared for printing should be submitted to the secretary of the editorial board in the period between 20th November and 20th December of the year prior to the year of publication of the volume. Apart from a printed version, papers must also be submitted in digital form, on a CD or via e-mail j.andjelkovic@ai.ac.rs

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For additional explanations, please feel free to contact the secretary of the editorial board, Jelena Anđelković Grašar, available on: +381 11 2637 191, mobile number +381 64 809 85 23 or by e-mail: j.andjelkovic@ai.ac.rs.

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