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Osseous tools and personal ornaments from the Epigravettian sequence at Badanj

Koštane alatke i lični ornamenti iz epigravetijenske sekvence Badnja

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The Late Upper Palaeolithic (Epigravettian) sequence at Badanj has yielded an important dataset about the occupation of the hinterland of the Eastern Adriatic catchment zone in the late Pleniglacial. The site also harbors one of the rare occurrences of Upper Palaeolithic parietal "art" in southeastern Europe in the form of a large rock engraving. Another notable aspect of the site is the presence of engravings on portable objects made from bone. The first excavations at Badanj, conducted in 1976–1979 in the zone around the engraved rock, yielded a surprisingly large number of personal ornaments (over 1000 specimens) from a variety of primarily marine gastropods, scaphopods, and bivalves, and red deer canines. Here we review what is currently known about the site and report our preliminary findings from the study of the collection of personal ornaments as well as osseous tools, some of which were marked by regular incisions forming decorative motifs. We also report two new direct accelerator mass spectrometry (AMS) dates on antler barbed points.

Keywords: Upper Palaeolithic, personal ornaments, osseous tools, barbed points, beads, parietal engraving, Badanj

Kasna gornjepaleolitska (epigravetijenska) sekvenc na Badnju pružila je važne podatke o naseljavanju zaleđa istočno-jadranske zone tokom kasnog pleniglacijala. Ovo nalazište takođe poseduje jedan od retkih primera pojave gornjopaleolitske pećinske "umetnosti" u jugoistočnoj Evropi u obliku velike stene sa gravurom. Drugi uočljiv aspekt ovog nalazišta je prisustvo graviranja na pokretnim objektima napravljenim od kosti. Prva iskopavanja Badnja, obavljena 1976–1979 u zoni koja je okruživala izgraviranu stenu, proizvela su začuđujuće veliki broj ličnih ornamenata (preko 1000 primeraka) od različitih prvenstveno marinskih gastropoda, skafofoda i školjkaša, i jelenskih očnjaka. Ovde smo napravili pregled svega što je trenutno poznato o ovom lokalitetu i saopštavamo rezultate naše preliminarne analize zbirke ličnih ornamenata kao i koštanih alatki, od kojih su neke bile urezane slednim zarezima koji su činili dekorativne motive. Takođe pružamo podatke o dva nova direktna datuma dobijena metodom akceleratorne masene spektrometrije (AMS) na šiljcima sa zupcima napravljenim od jelenskog roga.

Ključne reči: gornji paleolit, lični ornamenti, koštane alatke, šiljci sa zupcima, perle, pećinsko graviranje, Badanj

INTRODUCTION

Studying the Late Upper Palaeolithic period along the rim of the Adriatic Basin offers one of the best opportunities to examine resilience and change among prehistoric foragers over time in their responses to some of the rapid shifts in climatic conditions towards the end of the Pleistocene. These climatic shifts and ensuing habitat losses significantly altered landscapes and directly affected mobility patterns of human groups and their geographical distribution. After several short interstadial events, between 28 and 21 thousand years ago (henceforth kya), the ice advance accelerated after 25 kya cal BP, leading to the Last Glacial Maximum (henceforth LGM) (22 ± 2000 kya BP).¹ These changes also caused the shrinking of the Adriatic Sea (up to 130 m below the current levels),² opening a large land bridge, known as the Great Adriatic Plain, between Italy and the Balkans in the northern parts of the Adriatic Basin (Fig. 1). While some authors have envisaged the Great Adriatic Plain of the LGM as a zone of high resource productivity³ others have maintained that this was an inhospitable, saline, and desolate land, characterized by swamps and strong winds.⁴ Be that as it may, many authors have considered the Balkans, along with other areas of southern Europe, as one of the European refugia for plant, animal, and human populations, with favorable environments during the LGM. Around 15.3 ky cal BP, there was a rapid amelioration of climatic conditions with the onset of the Bølling/Allerød interstadial oscillations, which led to the melting of glaciers in the Alpine region, prompting a re-colonization of higher altitude locations by human groups here and elsewhere. It also triggered a process of inundation of the Great Adriatic Plain with the rise of sea levels and isostatic rebound. Such changes, in all likelihood, considerably affected the territorial organization of Late Epigravettian groups.⁵

The sequence at the rock-shelter of Badanj in Hercegovina, located some 35-40 km from the LGM coast of the Adriatic Sea, documents the period of the Oldest Dryas from around 16 kya cal BP as well as the period of the site's occupation in the course of the Bølling/Allerød interstadial conditions, likely up to the very end of this phase and before the onset of the rapid cooling known as the Younger Dryas around 12.7 kya cal BP. Hence this site offers a focused glimpse of the conditions of life and cultural expression of foragers in this part of the Balkans during some of the key moments of the late Pleniglacial. While the state of research into this period along the Eastern Adriatic catchment zone is far from perfect, since the discovery of Badanj in 1976, there has been a growing number of field research projects and analytical work at other sites across the region.⁶ These

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Proučavanje perioda kasnog gornjeg paleolita duž obale Jadranskog bazena pruža jednu od najboljih prilika da se ispituju izdržljivost i promene među praistorijskim lovcima i sakupljačima kroz vreme u njihovim odgovorima na neke iznenadne smene klimatskih uslova krajem pleistocena. Ove klimatske smene i gubitak prethodnog habitata koji ih je pratio značajno su promenili prirodno okruženje i direktno uticali na obrasce mobilnosti ljudskih grupa i njihovu geografsku rasprostranjenost. Posle nekoliko kratkih interstadijalnih događaja, između pre 28.000 i 21.000 godina, širenje leda se ubrzalo posle 25.000 kalibrisanih godina pre sadašnjosti (nadalje cal BP), vodeći ka početku poslednjeg glacialnog maksimuma (nadalje PGM) (22.000 ± 2.000 BP).¹ Ove promene takođe su uzrokovale smanjenje Jadranskog mora (do 130 m ispod sadašnjeg nivoa),² otvarajući veliki kopneni most, poznat kao velika Jadranska nizija, između Italije i Balkana u severnim delovima Jadranskog bazena (sl. 1). Dok neki autori vide veliku Jadransku niziju PGM-a kao zonu visoke produktivnosti resursa³ drugi ostaju na stanovištu da je ovo bila negostoljubiva, slana i opustošena zemlja, koju su odlikovale močvare i jaki vetrovi.⁴ Kako bilo, mnogi autori smatraju da je Balkan, zajedno sa drugim oblastima južne Evrope, imao ulogu jedne od evropskih refugija za biljne, životinjske i ljudske populacije, sa pogodnim prirodnim uslovima tokom PGM. Oko 15.300 cal BP, dolazi do naglog poboljšanja klimatskih uslova početkom beling/alered interstadijalnih oscilacija, koje vode ka otopljanju glečera u regiji Alpa, podstičući rekolonizaciju planinskih predela od strane ljudskih grupa u ovoj oblasti i šire. Ovo je takođe uslovalo proces potapanja velike Jadranske nizije sa porastom nivoa mora i izostatičnim odskokom. Takve promene su po svemu sudeći imale značajan uticaj na teritorijalnu organizaciju ljudskih grupa tokom kasnog epigravetijena.⁵

Sekvenca potkapine Badanj u Hercegovini, koja se nalazi nekih 35-40 km od obale Jadranskog mora tokom PGM, dokumentuje period starijeg drijasa od oko 16.000 cal BP kao i period naseljavanja ove lokacije tokom beling/alered interstadijalnih uslova, verovatno sve do samog kraja ove faze i pre početka naglog zahlađenja poznatog kao mlađi drijas oko 12.700 cal BP. Otuda ovo nalazište nudi fokusirani uvid u uslove života i kulturni izraz lovaca i sakupljača u ovom delu Balkana tokom nekih od ključnih momenata kasnog pleniglaciala. Iako je stanje istraženosti ovog perioda duž istočno jadranske zone daleko od savršenog, od otkrića Badnja 1976. godine na ovamo dolazi do porasta terenskih istraživačkih projekata i analitičkog rada na drugim nalazištima širom regiona.⁶ Ove studije počele su da razjašnjavaju

1 Alley *et al.* 2005.

2 Lambeck *et al.* 2002, 2004.

3 van Andel 1989; Bailey, Gamble 1990; Bietti 1990; Miracle 2007.

4 Mussi 2002, 312.

5 Whallon 2007a.

6 E.g., Miracle 1995, 1996, 2001, 2007; Mihailović 1996, 1998, 2009; Bailey 1997; Komšo, Pellegatti 2007; Farbstein *et al.* 2012; Karavanić *et al.* 2013; Cristiani

1 Alley *et al.* 2005.

2 Lambeck *et al.* 2002, 2004.

3 van Andel 1989; Bailey, Gamble 1990; Bietti 1990; Miracle 2007.

4 Mussi 2002, 312.

5 Whallon 2007a.

6 E.g., Miracle 1995, 1996, 2001, 2007; Mihailović 1996, 1998, 2009; Bailey 1997;

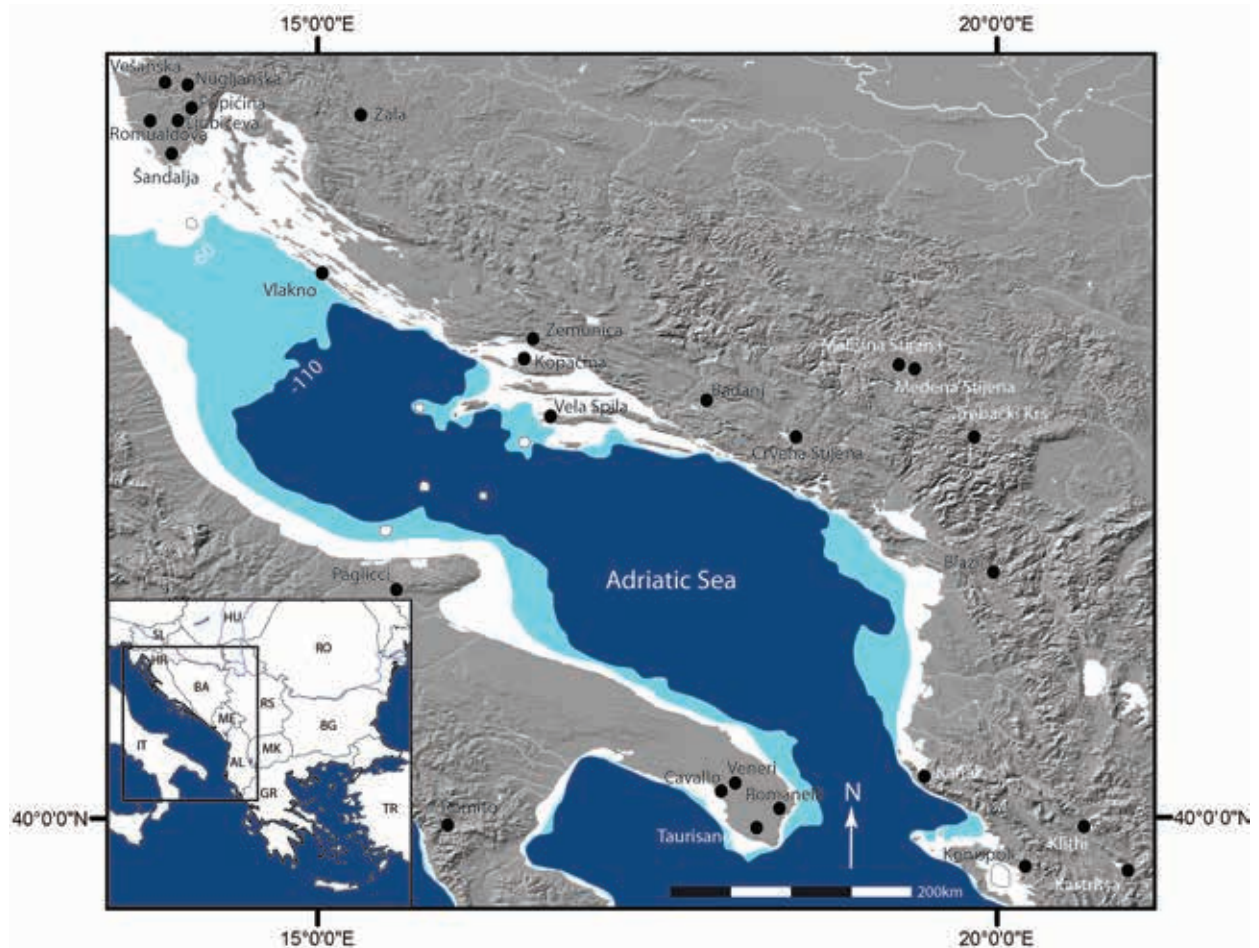


Fig. 1. Map showing the distribution of Late Upper Palaeolithic sites in the Eastern Adriatic catchment zone, Epirus, and Italy. Bathymetric contours show the drop of sea levels -110 m during the LGM climax and -60 m by the end of the Pleistocene.

Sl. 1. Karta koja pokazuje distribuciju nalazišta kasnog gornjeg paleolita u istočno-jadranskoj zoni, Epiru i Italiji. Batimetričke izohipse pokazuju pad nivoa mora od -110 m tokom klimaksa PGM i od -60 m do kraja pleistocena.

studies have started to elucidate various aspects of what is referred to as the Epigravettian period—a culture-historical taxonomic label that is here used as an extension of the phenomenon previously defined at a number of sites on the other side of the Adriatic Basin, in Italy, due to similarities between the two zones.

In this paper, we will review what has been learned about the Badanj Epigravettian sequence to date, while at the same time offering new data from the first systematic study of osseous tools and personal ornaments from this site. These new data are briefly discussed in the context of other broadly contemporaneous sites along both sides of the Adriatic Basin and further to the south in Albania and Epirus, and broader issues to do with diachronic changes in forager settlement systems and seasonality.

različite vidove onoga što nazivamo epigravetijski period—kulturno-istorijske taksonomske oznake koja se ovde koristi da označi produžetak fenomena koji je prethodno definisan na brojnim nalazištima sa druge strane Jadranskog bazena, u Italiji, zbog sličnosti između ove dve zone.

U ovom radu, pružićemo pregled onoga šta smo do danas saznali o epigravetijskoj sekvenci Badnja, dok u i isto vreme nudimo nove podatke zasnovane na prvoj sistematskoj studiji koštanih alatki i ličnih ornamenata sa ovog nalazišta. Ovi novi podaci su ukratko razmatrani u kontekstu drugih u širem smislu istovremenih nalazišta sa obe strane Jadranskog bazena i dalje ka jugu u Albaniji i Epiru, i širih problema vezanih za dijahronijske promene u sistemu lovačko-sakupljačkih naselja i njihove sezonalnosti.

et al. 2014; Vukosavljević et al. 2014; Janković et al. 2015; Šošić Klindžić et al. 2015a, 2015b; Hauck et al. 2016; Pilaar Birch, Miracle 2017; Vukosavljević, Karavanić 2017; Vukosavljević, Perhoč 2017; Whallon 2017; Vujević, Dilber 2018; Borić, Cristiani 2019; Vujević, Bodružić, 2021.

Komšo, Pellegatti 2007; Farbstein et al. 2012; Karavanić et al. 2013; Cristiani et al. 2014; Vukosavljević et al. 2014; Janković et al. 2015; Šošić Klindžić et al. 2015a, 2015b; Hauck et al. 2016; Pilaar Birch, Miracle 2017; Vukosavljević, Karavanić 2017; Vukosavljević, Perhoč 2017; Whallon 2017; Vujević, Dilber 2018; Borić, Cristiani 2019; Vujević, Bodružić, 2021.

GEOGRAPHICAL SETTING, ENGRAVED ROCK, AND RESEARCH HISTORY

The locality of Badanj (N 43° 4' 52.77", E 17° 53' 7.94", ca. 100 masl) was recognized as an archaeological site in early June 1976, based on the reports about finds of ceramics and lithics. This rock-shelter is located near the village of Borojevići, 7 km to the west of the small town of Stolac, down the Bregava River. The site is located some 45 m above the valley bottom of the Bregava River, which here passes through a 18-km-long and 100-m-deep canyon, eventually ending as one of the tributaries of the larger Neretva River to the west.⁷ The site is around 30 km away from the nearest present-day coast of the Adriatic Sea as the crow flies albeit over a rugged karstic terrain (Fig. 2), with many areas characterized as "angry karst."⁸ Hence it is more likely that the longer route along the Neretva River valley was used as the main corridor of communication with the coast during prehistory.

The shelter is naturally carved into one of the prominent and heavily eroded karstic escarpments, near its top (Fig. 3). The sheltered part of the site protected from the elements encompassed some 40 m². In more recent times, Badanj was used as a shelter for goats, based on the testimonies that around 1 m of goat dung was removed by the local villagers as fertilizer for near-by agricultural fields in the 1960s and early 1970s. A local high school teacher, Miroslav Palameta, was the first to report the existence of flint and ceramic finds found on the surface of the site to the archaeologists of the National Museum of Bosnia and Herzegovina in Sarajevo. The rock engraving found on one of the large boulders at Badanj was spotted already at this time.⁹

The rock engraving was made on a boulder slanting at an angle of 30° from the west to the east (Fig. 4A). The boulder must have originated from the roof of the shelter. The engraved scene appears on the upper surface of the boulder, in its southwestern corner (Fig. 4B-C). It was damaged and contained a possible depiction of the rear right side of a large quadruped interpreted by Basler as a horse with its right hind leg shown straight, the thigh and stifle shown in the foreground and also possibly the left hind leg (none of the hoofs shown) less deeply engraved and left floating as if depicting a movement of the animal. Basler¹⁰ maintains that before the upper levels with recent goat dung and the top archaeological layer were removed, the boulder was covered by archaeological levels from the later Epigravettian use of the shelter. He also suggested that people also might have lit fire over it in antiquity. The leg and back parts of the outline were stressed by deeply carved lines (up to 5 mm) while the area inside the outline was further filled with multiple longitudinally engraved lines some of which also seem deeply carved. There is a possible representation of male sex as well as "arrowheads" that might have pierced the stomach

GEOGRAFSKI POLOŽAJ, GRAVIRANA STENA I ISTORIJA ISTRAŽIVANJA

Lokalitet Badanj (N 43° 4' 52.77", E 17° 53' 7.94", oko 100 m nadmorske visine) prepoznat je kao arheološko nalazište tokom ranog juna 1976. godine, na osnovu prijave o keramičkim i litičkim nalazima. Ova potkapina smeštena je u blizini sela Borojevići, 7 km zapadno od gradića Stolac, uz reku Bregavu. Lokalitet se nalazi nekih 45 m iznad dna doline reke Bregave, koja ovde prolazi kroz 18 km dug i 100 m dubok kanjon, da bi se na kraju kao pritoka na zapadu ulila u veću reku Neretvu.⁷ Nalazište je oko 30 km vazdušnom linijom udaljeno od najbliže sadašnje obale Jadranskog mora iako preko neravnog karstnog terena (sl. 2), kojeg u mnogim zonama odlikuje "ljuti karst."⁸ Te je verovatnije da je tokom praistorije duža ruta uz dolinu reke Neretve bila korišćena kao glavni koridor komunikacije sa morskom obalom.

Potkapina je prirodno uklesana u jednu od vidljivih i značajno erodiranih karstnih strmina, blizu samog vrha (sl. 3). Pokriveni deo nalazišta koji je zaštićen od padavina obuhvata nekih 40 m². U skorija vremena, Badanj je korišćen kao zaklon za koze, na osnovu svedočenja da je sloj od oko 1 m kozjeg izmeta uklonjen od strane lokalnih meštana kao stajsko đubrivo za okolne poljoprivredne parcele tokom 1960-ih i ranih 1970-ih. Lokalni profesor, Miroslav Palameta, prvi je arheolozima Zemaljskog muzeja Bosne i Hercegovine u Sarajevu prijavio postojanje kremenih i keramičkih nalaza pronađenih na površini nalazišta. Već tada je primećeno urezivanje pronađeno na jednoj većoj steni na Badnju.⁹

Urezivanje se nalazi na većoj odlomljenoj steni čija površina stoji ukoso pod uglom od 30° od zapada ka istoku (sl. 4A). Stena verovatno potiče sa stropa potkapine. Urezana scena javlja se na gornjoj površini stene, u njenom jugo-zapadnom uglu (sl. 4B-C). Bila je oštećena i čini je moguća predstava zadnje desne strane velikog četvoronošca koju je Basler protumačio kao konj sa zadnjom desnom nogom predstavljenom ispruženo, bokom i kolonom prikazanim u prvom planu i takođe mogućom levom zadnjom nogom (bez prikaza kopita) sa pličim urezom u lebdećem položaju kao da se prikazuje pokret životinje. Basler¹⁰ tvrdi da je pre uklanjanja gornjih nivoa sa recentnim izmetom od koza i samog vrha arheološkog sloja, stena bila pokrivena arheološkim slojevima datovanim u kasnoepigravetijensko korišćenje potkapine. On takođe predlaže da su u prošlosti ljudi palili vatru preko ove stene. Noga i zadnji delovi obrisa figure naglašeni su duboko urezanim linijama (do 5 mm) dok je zona unutar obrisa dalje ispunjena mnogobrojnim longitudinalnim urezanim linijama od kojih neke takođe izgledaju duboko urezane. Postoji moguća predstava muškog polnog organa kao i "vrhova strele" koje su mogle probiti

7 Basler 1976, 1979a.

8 Miracle, Sturdy 1991.

9 Basler 1976.

10 Basler 1976, 7.

7 Basler 1976, 1979a.

8 Miracle, Sturdy 1991.

9 Basler 1976.

10 Basler 1976, 7.

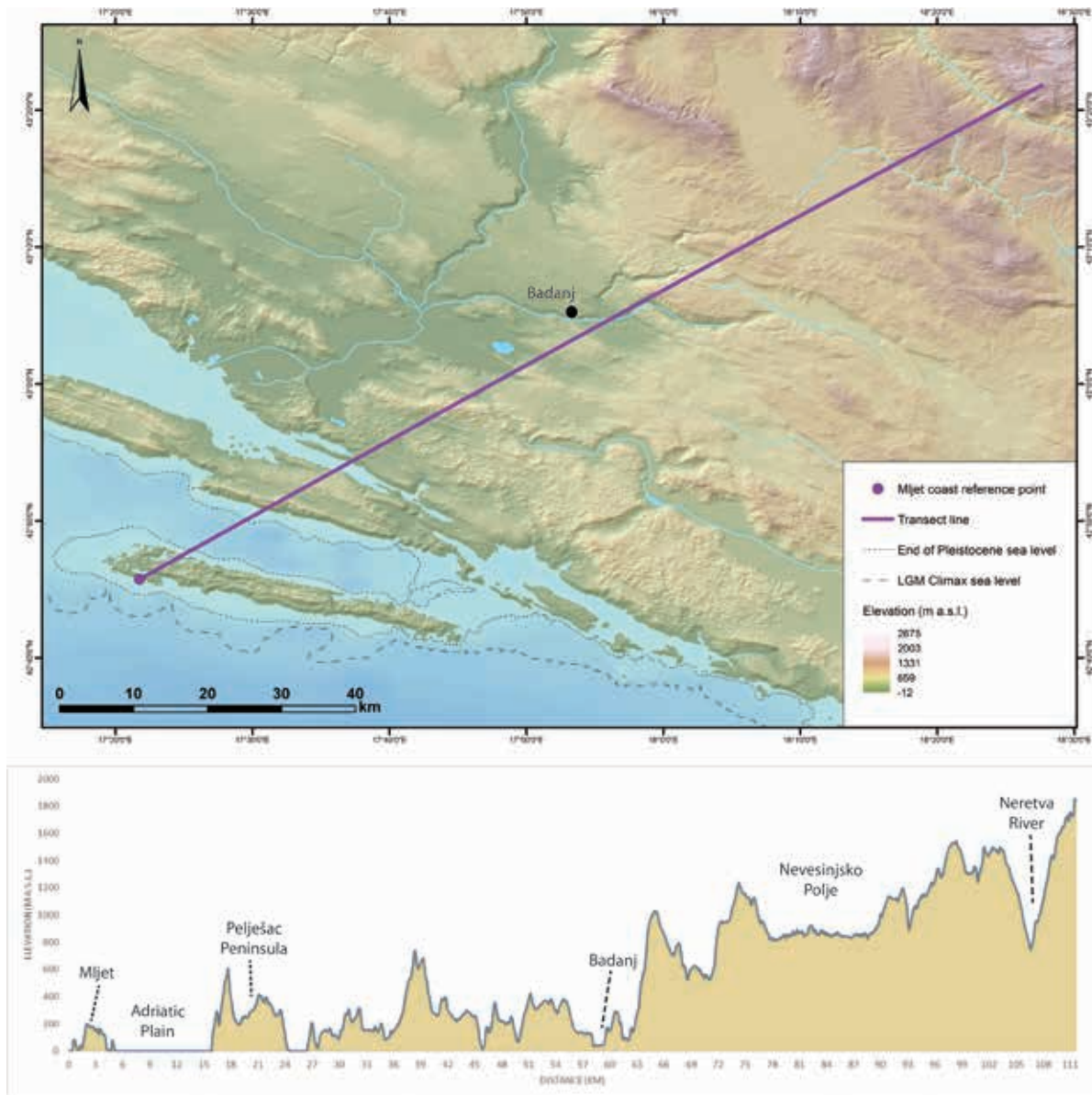


Fig. 2. Close-up map showing the location of Badanj and elevation profile of topography along a SW-NE transect from the edge of the late-glacial Adriatic (off Mljet island), through Badanj, to the Dinarides (Zelena Gora). Elevation profile was created by sampling ASTER GDEM data (1 arc-second or ca. 30 metre cell size) at 15-metre intervals along the profile line in order to be certain that each cell on the profile line is sampled. Following that, coast reference point was set on the transect line and distances to it from other sampling points calculated. Sampling points were then organised by distance from the sea and presented as a graph with distance from the sea in kilometres on the X axis and elevation in metres above sea level on the Y axis. ASTER GDEM is a product of METI and NASA. Bathymetry data provided by The European Marine Observation and Data Network (EMODnet). Figure created by Karol Wehr.

Sl. 2. Detalj karte koja pokazuje lokaciju Badnja i topografski profil duž JZ-SI transeka od ruba kasnoglacialnog Jadranskog mora (od zapadne obale ostrva Mljet), preko Badnja do Dinarida (Zelena Gora). Profil sa visinama napravljen je uzorkujući ASTER GDEM podatke (1 ark-sekunda ili veličina ćelija od oko 30 m) na intervalima od 15 m duž profilne linije kako bi bili sigurni da je svaka ćelija na liniji profila uzorkovana. Nakon ovoga, referentna tačka za obalu podešena je na liniji transeka dok su izračunate distance ka njoj od drugih uzorkovanih tačaka. Uzorkovane tačke potom su organizovane po udaljenosti od mora i prikazane kao grafikon sa razdaljinom od mora izraženom u kilometrima po X osi i visinama izraženim u metrima iznad nivoa mora po Y osi. ASTER GDEM je proizvod METI i NASA. Batimetrički podaci dobijeni su od The European Marine Observation and Data Network (EMODnet). Ilustraciju pripremio Karol Ver.

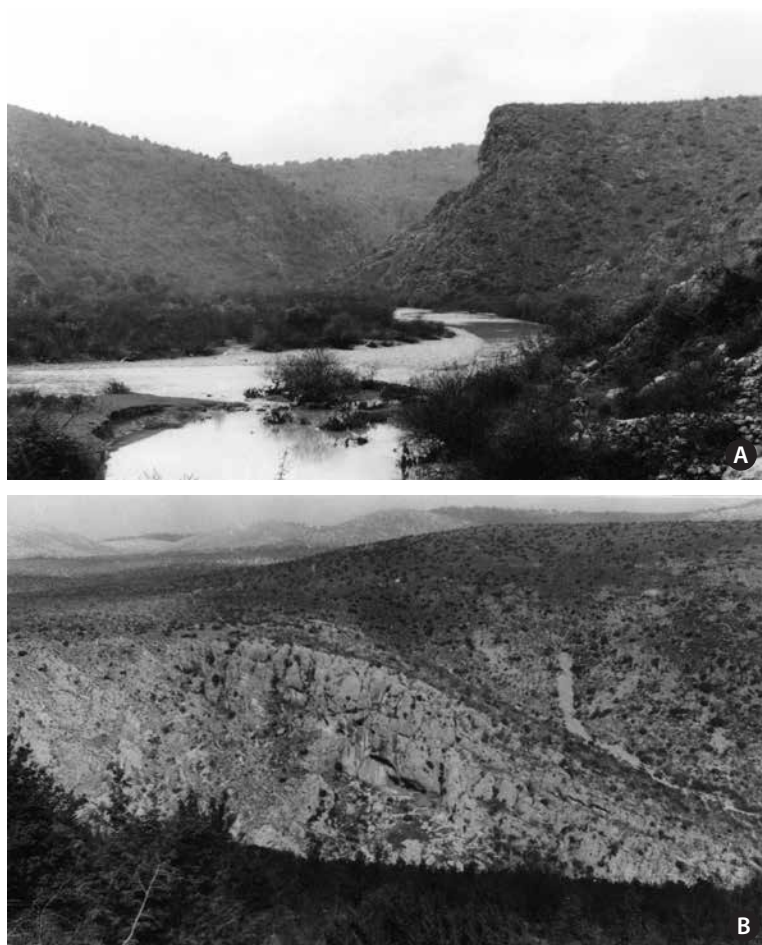


Fig. 3. Location of Badanj rockshelter from (A) the valley floor of the Bregava River, (B) from across Bregava River, and (C) from rocks to the west of the shelter looking northeast (photos courtesy of Duško Šljivar).

Sl. 3. Položaj potkapine Badanj sa (A) nivoa dna doline reke Bregave, (B) upravno, preko puta reke Bregave i (C) sa stena zapadno od potkapine gledajući ka severoistoku (fotografije ljubaznošću Duška Šljivara).

of the depicted animal. Basler¹¹ speculated that the rock might have served as a place of initiation of young hunters.

The first archaeological excavations at the site were conducted by Đuro Basler, a curator at the National Museum of Bosnia and Herzegovina in Sarajevo, from 1976 to 1979, covering around 50 m² of the eastern part of the shelter. Apart from one article written in 1976 about the discovery of Badanj, with descriptions of the engraved boulder and its significance,¹² and a later, relatively short, summary of flint industry, osseous tools, and ornaments provided by Đuro Basler in his coverage of the Palaeolithic of Bosnia and Herzegovina in the synthetic volume *Praistorija jugoslavenskih zemalja I: paleolitsko i mezolitsko doba*,¹³ there is no detailed published information about the first investigations of this site. Furthermore, the National Museum of Bosnia and Herzegovina in Sarajevo does not possess detailed field records of the investigations made by Basler at Badanj, apart from the collection of inventoried material collected at



stomak predstavljene životinje. Basler¹¹ pruža speculaciju da je stena možda mogla služiti kao mesto inicijacije mladih lovaca.

Prva arheološka iskopavanja ovog nalazišta obavio je Đuro Basler, kustos Zemaljskog muzeja Bosne i Hercegovine u Sarajevu, u periodu 1976-1979. godine, obuhvatajući oko 50 m² istočnog dela potkapine. Pored jednog članka napisanog 1976. godine o otkriću Badnja, sa opisima urezane stene i rasprave o značaju ovog nalaza,¹² i kasnijeg, relativno kratkog, pregleda o okresanoj kamenoj industriji, koštanim alatima i ornamentima koju je pružio Đuro Basler u svom pisanju o paleolitu Bosne i Hercegovine u okviru sintetske studije *Praistorija jugoslavenskih zemalja I: paleolitsko i mezolitsko doba*,¹³ ne postoje detaljne publikovane informacije o prvim istraživanjima ovog nalazišta. Štaviše, Zemaljski muzej Bosne i Hercegovine u Sarajevu ne poseduje detaljne terenske beleške o istraživanjima kojima je na Badnju rukovodio Basler, osim zbirke inventarisanog materijala sakupljenog na nalazištu i inventarnih knjiga sa informacijama o poreklu inventarisanih nalaza. Uprkos trenutnoj nesigurnosti o stanju terenske dokumentacije sa Badnja, svedočanstva kolega koji su učestvovali u iskopavanjima 1977-1979, upućuju na to da je iskopani sediment sa nalazišta transportovan kako bi bilo vršeno suvo ili vlažno prosejavanje (sl. 5),¹⁴ što je moglo da doprinese velikom broju otkrivenih okresanih kamenih artefakata kao i perli (vidi dole). Otkopni slojevi bili su 10 cm debeli na osnovu mera za dubinu svakog artefakta koje su date u muzejskoj inventarnoj knjizi.

¹¹ Basler 1976, 12–13.

¹² Basler 1976.

¹³ Basler 1979a, 1979b.

¹¹ Basler 1976, 12–13.

¹² Basler 1976.

¹³ Basler 1979a, 1979b.

¹⁴ D. Šljivar, usmeno saopštenje, 2015.

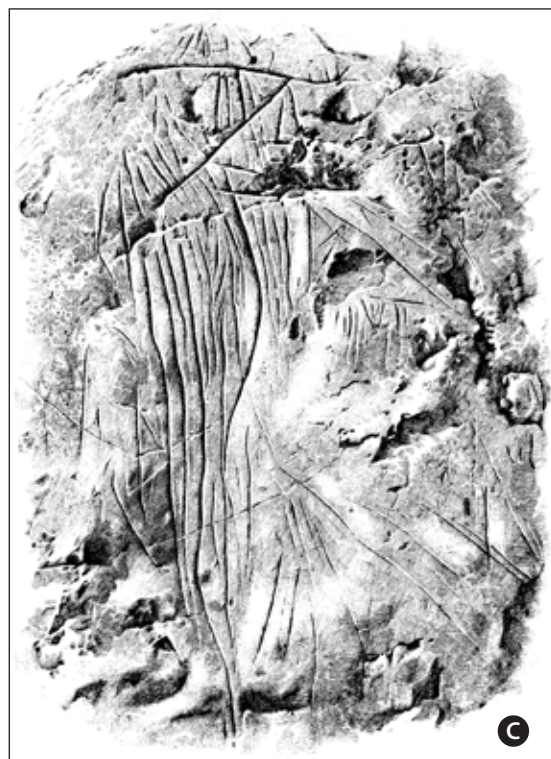


Fig. 4. (A) Location of the rock engraving boulder at Badanj; (B–C) Rock engraving (after Basler 1979b, T. XLVI).

Sl. 4. (A) Položaj stene sa urezima na Badnju; (B–C) Stena sa urezima (po Basler 1979b, T. XLVI).

the site and the inventory books with information about the provenance of inventoried finds. Despite the current uncertain state of field documentation from Badanj, accounts of those who participated at the excavations in 1976–1979 confirmed that the sediment excavated at the site was transported for dry or water sieving (Fig. 5),¹⁴ which might have contributed to the large number of recovered flint artifacts as well as beads (see below). Arbitrary cuttings were 10 cm thick based on depth measurements of each artifact provided in the museum inventory book.

In 1986–1987, the second phase of research at Badanj commenced in the framework of a collaborative international project entitled “Palaeolithic-Mesolithic Occupation of the Adriatic-Mediterranean Zone of Bosnia and Herzegovina,” led by Zilka Kujundžić of the National Museum of Bosnia and Herzegovina and Robert Whallon of the Museum of Anthropology and Department of Anthropology at the University of Michigan, Ann Arbor, USA.¹⁵ The area investigated during the 1986–1987 excavations encompassed the western part of the site, exposing a surface of around 35 m² (Fig. 6). The investigated 10-m-long and 3-4-m-wide transect ran from the back wall of the shelter to the front edge of the site, beyond the dripline (the limit of the area of the site sheltered from elements by the overhanging roof) (Fig. 7). Excavated layers were primarily distinguished by following sediment and texture changes in the sediment matrix and rarely by arbitrary cuttings. The smallest spatial collection unit was one-quarter square meter (0.5 by 0.5 m) within a 1 by 1 m grid. All sediments were



Tokom 1986-1987, započela je druga faza istraživanja Badnja u okviru projekta međunarodne saradnje pod nazivom “Paleolitsko-mezolitsko naseljavanje jadransko-mediteranske zone Bosne i Hercegovine,” pod vođstvom Zilke Kujundžić iz Zemaljskog muzeja Bosne i Hercegovine i Robert Uejlona iz Muzeja antropologije i Odeljenja za antropologiju Univerziteta Mičigen u En Arboru u Sjedinjenim Američkim Državama.¹⁵ Površina istražena tokom iskopavanja 1986–1987. obuhvatila je zapadni deo nalazišta, izlažući površinu od 35 m²

¹⁴ D. Šljivar, pers. communication, 2015.

¹⁵ Whallon 1989, 1999, 2007b.

¹⁵ Whallon 1989, 1999, 2007b.

Fig. 5. Đuro Basler to the right and sieved sediment from Badanj to the left (photo courtesy of Duško Šljivar).

Sl. 5. Đuro Basler s desne strane i prosejavan sediment sa Badnja s leve strane (fotografija ljubaznošću Duška Šljivara).



water-sieved using 3-mm wire mesh-screens with a subsample containing several liters of excavated sediment selected for flotation and fine water-sieving with nylon stockings.¹⁶

STRATIGRAPHY

There is not much information currently available on the stratigraphic sequence unearthed during Basler's excavations at the site in 1976–1979 apart from information that the depth reached in various parts of the trench he excavated around the engraved rock was from 1.5 m to 2.3 m deep, measuring from the surface encountered in 1976.¹⁷ Relative depths of artifacts could be used as very coarse-grained indicators about early versus later parts of the stratigraphic sequence in making very broad comparisons with stratigraphic units and their characteristics more securely established during the second research phase (see below). The reached depth of up to ca. 2 m of archaeological deposits, judging by the provenance of artifacts found at this depth, suggests a deep stratigraphic sequence in this central part of the shelter.

In the course of the second research phase in 1986–1987, some 29 archaeological layers were recognized in a meter-deep trench, with the depth often varying from 80–90 cm only.¹⁸ The thickness of layers varied from only few centimeters to several thicker layers of 10–15 cm. A representative published stratigraphic sections is provided here

(sl. 6). Istraženi transekt dug 10 m i širok 3–4 m pružao se od pozadinskog zida potkapine do prednje granice nalazišta, premašujući liniju okapanja (koja predstavlja granicu zone koja je zaštićena od padavina natkrivenim svodom) (sl. 7). Iskopani slojevi prevashodno su bili razdvojeni prateći promene zemlje i tekture sedimentnog matriksa i ređe kroz arbitrarne otkope. Najmanju prostornu jedinicu činila je jedna četvrtina metra (0,5 x 0,5 m) u okviru kvadratne mreže od 1 x 1 m. Sav sediment vlažno je prosejavan koristeći žičana sita promera 3 mm sa pod-uzorkom kojeg je činilo nekoliko litara iskopanog sedimenta koji je odvojen za flotaciju i fino vlažno-prosejavanje koristeći najlonke.¹⁶

STRATIGRAFIJA

Nema trenutno mnogo dostupnih informacija o stratigrafskoj sekvenci iskapanoj tokom Baslerovih iskopavanja nalazišta 1976–1979. osim informacija da je u raznim delovima sonde koju je on iskopao oko urezane stene dosegnuta dubina bila od 1,5 m do 2,3 m mereći od površine koja je zatečena 1976.¹⁷ Relativne dubine na kojima su pronađeni artefakti mogu biti korišćene kao veoma grubo pokazatelj o razlikama između ranih i kasnijih slojeva stratigrafske sekvence pri pravljenju širokih usporedbi sa sigurnije definisanim stratigrafskim jedinicama i njihovim odlikama ustanovljenim tokom druge istraživačke faze (vidi dole). Dosegnuta

¹⁶ Miracle 1995, 60.

¹⁷ Miracle 1995, 59.

¹⁸ Whallon 1989, 1999, 2007b.

¹⁶ Miracle 1995, 60.

¹⁷ Miracle 1995, 59.

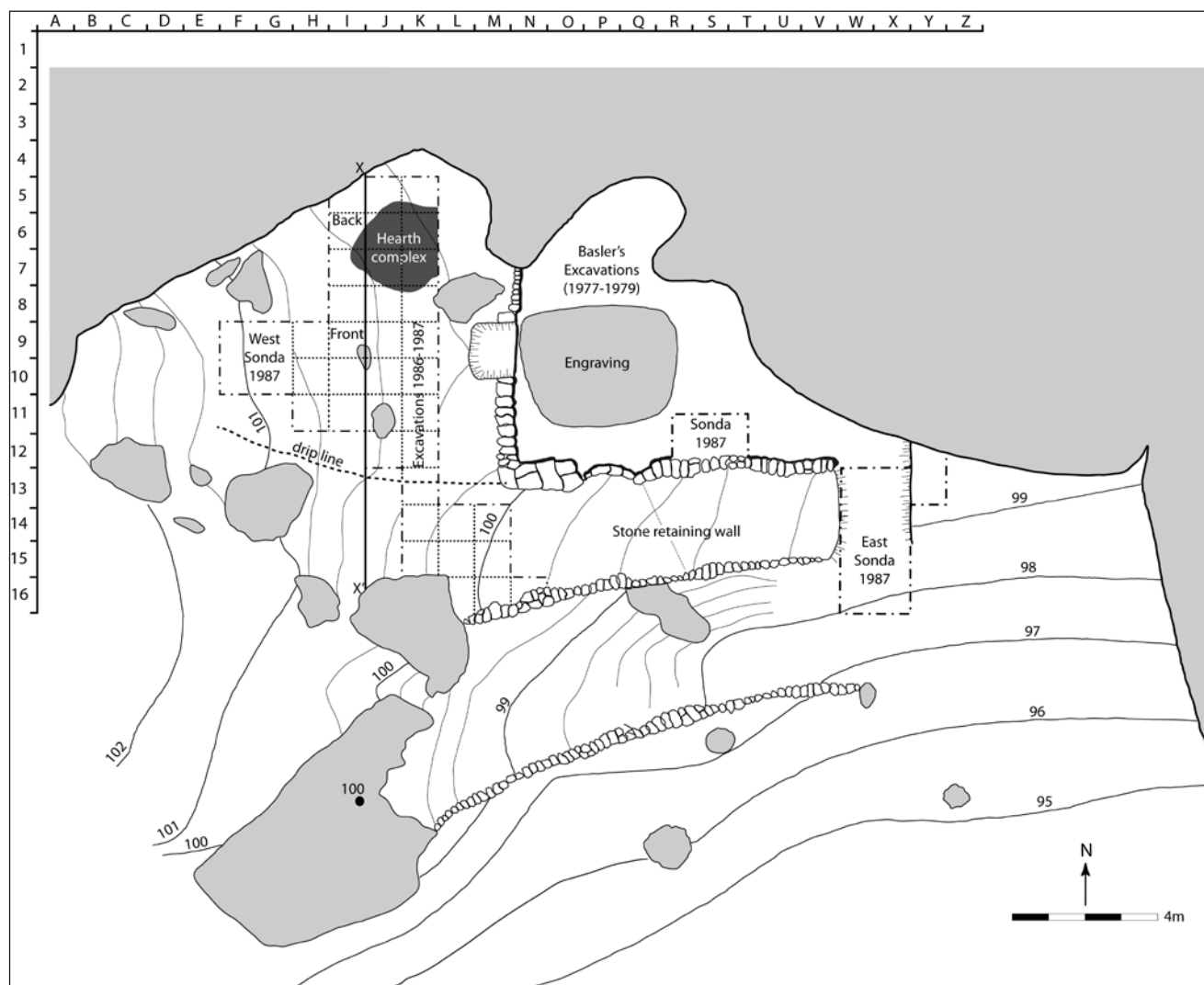


Fig. 6. Plan of the Badanj rockshelter with excavated areas within a grid and the position of the hearth complex (adapted after Whallon 1989, Fig. 1).

Sl. 6. Plan potkapine Badanj sa istraženim površinama u okviru kvadratne mreže i položaj kompleksa ognjišta (prilagođeno po Whallon 1989, Fig. 1).

(Fig. 8) as well as the available description of the physical properties of each of the discovered units along with the available information about features and material culture recognized within each of the units (Tab. 1). There is a gentle dip of all layers towards the back wall of the shelter, from just outside the present-day dripline, probably following the slope of a natural depositional cone formed by eroded rubble, i.e., sterile *éboulis* from the shelter roof. There was a large hearth complex, found towards the back of the shelter, which both cuts through and interfingers with various levels. There are at least four major divisions within this continuous hearth sequence. It has been suggested that there is a considerable degree of vertical mixing in the area of the hearth, and it has been excluded from the published analysis of lithics¹⁹ and faunal remains²⁰ from the site. The continuous reuse of the hearth basin suggests it was likely

dubina do oko 2 m sa arheološkim slojevima, sudeći po dubinama na kojima su pronalazeni artefakti, ukazuje na duboku stratigrafsku sekvencu u središnjem delu potkapine.

U toku druge istraživačke faze 1986-1987, nekih 29 arheoloških slojeva je prepoznato u sondi dubine od oko 1 m, sa dubinama koje su uglavnom varirale do samo 80–90 cm od površine.¹⁸ Debljina slojeva varirala je od samo nekoliko santimetara do nekoliko debljih slojeva od 10–15 cm. Publikovana reprezentativna stratigrafska sekvencu reprodukovana je ovde (sl. 8) kao i dostupni opis fizičkih svojstava svake otkrivene stratigrafske jedinice uz dostupne informacije o celinama i materijalnoj kulturi koji su prepoznati u okviru svake jedinice (tab. 1). Postoji blag pad svih slojeva ka pozadinskom zidu potkapine, tek nešto van sadašnje linije okapanja, verovatno prateći pad prirodne depozicije kupe koja je formirana od erodiranog sipara,

¹⁹ Whallon 1999, 2007b.

²⁰ Miracle 1995.

¹⁸ Whallon 1989, 1999, 2007b.

regularly re-cut, raked out, and re-deposited with mixed sediments, making the links between the hearth and occupation levels hard to establish with certainty. Apart from the hearth complex, the excavators have divided the recognized levels into two groups. Levels of relatively limited spatial extent ($<4 \text{ m}^2$) were confined to the back of the shelter. The rear layers close to the shelter wall were generally looser and often with more abundant artifacts than the layers closer to the front of the shelter. This is particularly true of the lower portion of the sequence in the back of the shelter (Levels 7, 7a, 11, 12, 16, and 17). Some of the layers were likely, at least in part, water-deposited (Levels 5 and 5a). The rear layers are seen more as refuse areas while the front layers, basins, and pits can probably be best interpreted as individual episodes of occupation.

Fig. 7. Excavations at Badanj at the start of the 1986 field seasons.

Fig. 8. Representative stratigraphic north-south profile from 1986–1987 excavations along J/I line (adapted after Whallon 1999, Fig. 31.2).

Sl. 7. Iskapanja na Badnju početkom terenske sezone 1986. godine.

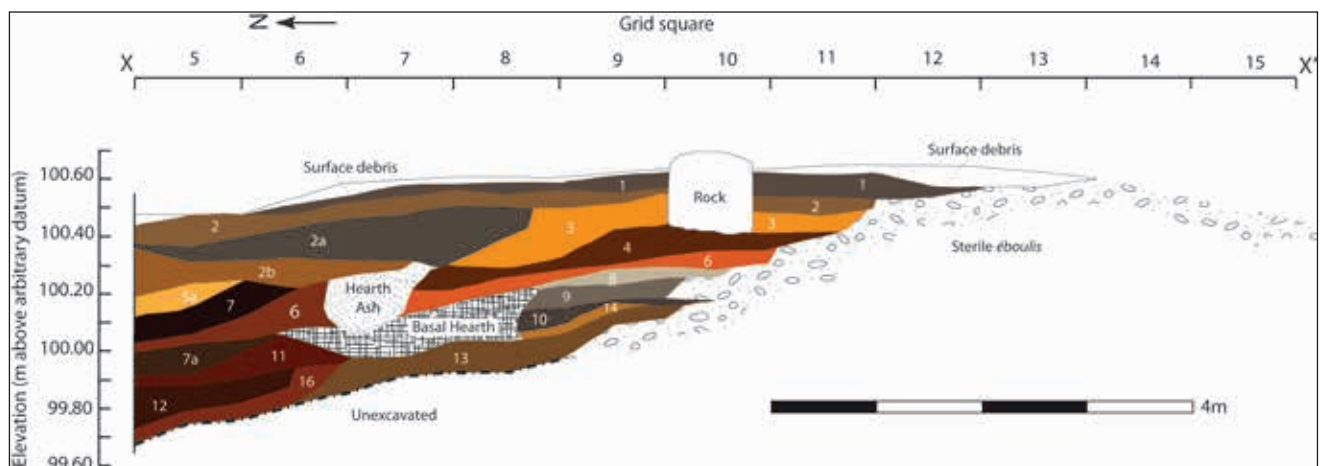
Sl. 8. Reprezentativni stratigrafski severno-južni profil sa iskapanja 1986-1987. duž J/I linije (prilagođeno po Whallon 1999, Fig. 31.2).



tj., sterilnog *éboulis* sa stropa potkapine. Pronađen je veći kompleks ognjišta ka zadnjem delu potkapine, koji kako seče tako se i prepliće sa različitim nivoima sekvence. Postoji najmanje četiri glavne podele u okviru ove kontinuirane ognjišne sekvence. Ustanovljeno je da postoji značajan stepen vertikalnog mešanja u zoni ognjišta, i ova zona je bila isključena iz publikovane analize okresanih kamenih nalaza¹⁹ i faunističkog materijala²⁰ sa ovog nalazišta. Kontinuirana ponovna upotreba ovog ognjišnog bazena upućuje na zaključak da je verovatno redovno bio ponovno usecan, ispražnjen i nanovo zapunjen sa mešanim sedimentom, otežavajući da se sa sigurnošću uspostavi veza između ognjišta i nivoa nastanjivanja. Pored kompleksa ognjišta, istraživači su podelili prepoznate nivoe u dve grupe. Nivoi sa relativno ograničenim prostornim pružanjem ($<4 \text{ m}^2$) bili su ograničeni na pozadinski deo potkapine. Pozadinski slojevi koji su nađeni bliže potkapinskom zidu uopšteno su bili manje kompaktni i često ih je odlikovala značajnija zastupljenost artefakata nego slojeve bliže prednjem delu potkapine. Ovo je naročito izraženo u donjim delovima sekvence u pozadini potkapine (nivoi 7, 7a, 11, 12, 16 i 17). Neke od slojeva je verovatno, makar delimično, nanela voda (nivoi 5 i 5a). Pozadinske slojeve možemo pre videti kao zone odbacivanja dok je prednje slojeve, bazene i jame verovatno najbolje tumačiti kao individualne epizode naseljavanja. Prednji nivoi bili su horizontalno rasprostranjeniji (oko $10\text{--}15 \text{ m}^2$) i istanjivali su se prema jugu, verovatno predstavljajući stambene horizonte. Poreklo otkrivenih nalaza najpre je definisano oznakom kvadrata od $1 \times 1 \text{ m}$ u kombinaciji slova i broja koji se odnose na mrežu

19 Whallon 1999, 2007b.

20 Miracle 1995.



The front levels were more extensive horizontally (around 10–15 m²) and thin out towards the south, likely representing occupational floors. The provenance of discovered finds is marked first by the designation of the 1 by 1 m quadrant as a combination of a letter and a number referring to the grid shown in Fig. 6, followed by a letter of the subquadrant (A, B, C, or D), and finally a number or combination of a number and a letter designating the level.²¹

prikazanu na (sl. 6), zatim slovom koje označava kvadrant (A, B, C ili D) i konačno brojem ili kombinacijom broja i slova koji označavaju određeni nivo.²¹

21 Miracle 1995, 128, footnote 51.

21 Miracle 1995, 128, fusnota 51.

Tbl. 1. Description of excavated levels at Badanj, 1986–1987 excavations. Modified after Whallon 1988 cited by Miracle 1995, Appendix I. Numbers in square brackets in the fourth column indicate the number of identified flint tools, cores and core by-products found in each of the unmixed levels (after Whallon 1999, Table 31.1).

Level	Extent, color, and consistency	Features	Archaeological material
1	Generally gray in color, varying to gray-brown or brown in a few places, and showing only occasional spots of a more reddish cast. In most areas, the gray or gray-brown earth of this level was mixed with a moderate amount of small, angular rocks (<i>éboulis</i>).		A moderate amount of archaeological material, representing a mixture of several periods, resulting from disturbance of this deposit, partly by what appeared to be modern ash and fireplaces. [431]
2	Clearly distinguishable as a relatively soft, loose, red, reddish, or reddish-gray deposit, containing less angular <i>éboulis</i> than Level 1. Near the rear, this level was more fine-grained, humic, and more moist, changing in color to a brown or yellow-brown (sq. I-K, 5-6), although this occurred as a gradual gradation from the characteristic red color of the level further to the front, rather than as an abrupt change. At the very front of the site, the typical red of this level became a reddish gray and finally gray.	In a number of areas where ash was found to be mixed into the earth of Level 2, there were found occasional patches of ash and ash mixed with snail shells. However, these appear to originate largely in earlier levels and to have been incorporated into Level 2 by disturbance of these earlier deposits during the occupation of Level 2. The top of one of the major features of several earlier occupations (perhaps all in this area of the site), a large, deep, hearth complex, appears already at the base of Level 2 (sq. J-K, 6-7).	Moderate amount of archaeological material, but different from Level 1, it appears to be in situ for the most part. [621]
5	Limited to the northeast corner of the excavation area, near the back wall of the shelter (sq. J-K, 5-6). Fine, yellow-brown silts, with no, or extremely small number of <i>éboulis</i> inclusions. It looks very much like a water-deposited sediment.	Level 5 clearly overlay not only the large hearth complex but also Level 2a.	[155]
2a	Consists almost entirely of a large concentration of soft, gray ash. In a few cases, the deposit seems to consist primarily of soft, gray ash, with few or no snail shells, but the inclusion of moderate quantities to abundant masses of snail shells, many of which are unbroken, is typical of this layer. In one or two spots, particularly in sq. I5, against the back wall of the shelter, there is more earth in the deposit, and it is a brown to dark brown color, although it remains soft and full of snail shells.	The bulk of this concentration occurs in a large, relatively deep pit, or complex of pits, to the rear of the shelter (from row 8 to the rear) and particularly in the northwest, rear corner of the excavation area (sq. I5-7, J5-6). The very last phase of intense use of the large hearth complex in sq. J-K, 6-7 appears probably to have been associated with Level 2a.	Snail shells (the largest concentration of all levels), flint, and bone. Some separate pockets of pure, gray ash occurring at the same physical level as Level 2a, in sq. J-K9 and J-K,10-11, were sterile and were not considered to be part of Level 2a. [492]

2b	Level 2 deposits were so deep in sq. I5-6 that a lower division was created. This division was at first entirely arbitrary, but in looking at the remaining rear wall profile along the 4/5 m line, these lower ash and snail shell deposits look reddish in contrast to the real gray, which is characteristic of Level 2a. This difference may not be greatly significant in depositional/occupational terms, and it otherwise looks as though 2a and 2b together represent a single occupation phase.		Snail shells, flint, and bone. [104]
Hearth	Stratigraphic divisions within the hearth complex were distinguished primarily on the physical character of its deposits.	In the course of the building up of this complex, there appear to have been stages during which particularly long or intense fires were made that created heavily burned and fused deposits. Some four such phases were observed, which serve to divide the complex into four major divisions: The Top Hearth, Upper Hearth, Lower Hearth, and Basal Hearth.	The nature of the materials within the hearth does not appear to vary significantly throughout the sequence of its use and re-use.
3	A very red layer – sometimes being a bright red, but more usually occurring as simply a red or reddish, light, soft, fine, even powdery deposit, with relatively much <i>éboulis</i> . Level 3 grades at its outer edge from red to gray, brownish gray, or gray-black, usually slightly darker (or a bit more compact) than Level 2.	To the rear, Level 3 has been cut into by the pits of Level 2a.	[587]
5a	Reddish brown to brown, silt deposit in the rear of the shelter. It was generally distinguishable from the overlying Level 5 by its darker color, although in a number of places this distinction was very difficult to make in excavation, leading to some possible confusion of the two in these spots. The nature of the sediments in this layer varies vertically. At the top, Level 5a is uniformly pure silt, with little or no <i>éboulis</i> or snail shell inclusions. However, irregularly, here and there, it was found to become mixed with some <i>éboulis</i> , snail shells, etc., being more compact, also, in these parts. Elsewhere, both above and below such areas, it remains pure silt. At the very bottom of the level, over most of its area in sq. I-K5, it was filled with large masses of very light, porous but compact, yellow (and occasionally gray) material.	Level 5a clearly interfingered with deposit of the hearth. An interdigitation of Level 2a deposits with the upper part of Level 5a can be seen in the 4/5 m profile at the rear of the site. Level 5a becomes extremely thick in places, in conformity with the interpretation that it represents a long sequence of accumulation continuing during the deposition of more than one other stratigraphic unit beside (west) and in front of it. This is tentatively identifiable as redeposited loess, washed in from the surface on the hill above the shelter, and evidently represents some rather specific depositional/climatic conditions near the beginning of the accumulation of this layer. Generally speaking, though, the predominantly silt composition of Level 5a seems to argue, as in the case of Level 5, for water as the agent of deposition here and an interpretation of this layer as a natural (geological) accumulation of material washed into the rear of the site, rather than an occupation level (or midden deposit).	[170]
4	Mostly reddish-brown in color, with frequent variations toward reddish gray on the one hand, or, less often, darker red. The front edge of Level 4 became darker, being brownish gray to dark gray, for some 0.5–1 m prior to its termination against sterile, yellow <i>éboulis</i> . The sediments of Level 4 were typically unconsolidated and contained relatively large amount of <i>éboulis</i> , and occasionally snail shells, especially in sq. I6-7.	Where Level 4 meets the hearth complex, it does not interfinger with hearth deposits, which seem, rather, to cut into the level forming a basin (as also is the case with Level 3).	Lots of flint and bone. [486]

7	Confined to the northwest rear corner of the excavation area. It was a very loose, dark, gray to almost black deposit, with perhaps fewer <i>éboulis</i> inclusions than Level 4 or 5, but of a less silty, coarser texture than Level 5a. It was clear in excavation that Level 7 terminated tapering out on top of underlying Level 6, seemingly ending originally thus, rather than having been cut into and truncated or removed by later occupations.	In character it looked very like an occupation layer, similar to the more extensive ones that extended fully forward to the sterile <i>éboulis</i> at the front of the site.	Relatively abundant archaeological materials, among which it was notable that the bones seem to be of noticeably larger size than usual in other levels. [491]
6	Covered most of the excavation area except in those places where it had been cut into by the hearth complex. It was gray in the front of the site (from sq. I-K/8 forward), becoming more red-brown (sq. I6-8), and finally a dark reddish to clear, bright red color (sq. I5, J5-8, K5) through the middle and towards the rear of the site. In most places it consisted of a soft and loose sediment, with moderate to abundant amounts of <i>éboulis</i> inclusions. The level terminated in the front of the site on sterile, yellow <i>éboulis</i> .		Significant amounts of archaeological material. [642]
7a	Restricted to the northwestern corner of the excavation area, underneath Level 6. It was a very loose, unconsolidated deposit, very dark in color, being very dark gray, gray-black, to black, and being described at points as "greasy."	Given its size and location, it is impossible to think of this level as a true occupation layer in the same sense as the horizontally more extensive levels.	Very abundant archaeological material and bones in this layer appeared noticeably larger than in most other levels, similar in this respect to Level 7. [141]
8	Consisted of soft, loose deposits that were characteristically light gray-brown in color. It was notably thin in most parts, and contained a moderate amount of <i>éboulis</i> . Toward the rear of the site, this level seemed either to taper out and end or to have been cut into by Level 7a.	Level 8 extended over the area in front of the hearth complex and along the west side of the excavation area, beside the hearth. The Basal Hearth seemed to cut cleanly into Level 8 over a large area. It appears to be an occupation layer, and terminates in front on sterile, yellow <i>éboulis</i> as do other such layers.	Moderate amount of archaeological material. [184]
9	Almost identical to Level 8 and was distinguished from the overlying level by its slightly darker gray to gray-brown color. It is also a generally thicker layer.	Where Level 9 and the Basal Hearth touch, their deposits intermingle, and this layer is not cut into cleanly by the hearth complex as is Level 8.	[435]
10	Definitely darker and more gray in color. It was similarly loose in texture, containing a light to moderate amount of <i>éboulis</i> . It was of variable thickness, and was extremely thin in places. Level 10 covered about the same area as overlying Levels 8 and 9, but it was unusual in reversing the trend of the steady retreat of the front edge of lower stratigraphic levels. It was noted in excavating this layer that in some places a noticeable amount of light brown sediment like that of Level 14 was mixed in patchily with Level 10.	This level exhibited a variable relation to the Basal Hearth, interfingering with it in some places, but apparently cut through by the hearth elsewhere.	Occasionally, relatively large amounts of flint and bone. [435]
14	Predominantly yellow-brown to light brown in color, clearly distinguishable in this respect from the overlying Level 10. Moderately compact, rather than loose and unconsolidated like the overlying level, although it did contain moderate to abundant amounts of small <i>éboulis</i> . In extent, this level was restricted to the front of the excavation area.	Along much of its rear edge, it was cut into and truncated by the Basal Hearth. However, along the western side of the excavation it could be seen that Level 14 thinned out and ended naturally about half-way back into the shelter. In the front, this level began once again the progressive retreat of the outer edge of the site.	[248]

11	Found in at the rear of the shelter, particularly in the northwest corner of the excavation. It was characteristically a red to dark red layer, although it darkened to a red-black or even black color in a few small areas. The sedimentation in this layer ranged from loose to moderately compact (always more compact than Level 7a above it) and were somewhat silty.	It appeared clearly to be a cultural deposit, rather than of geological origin, although not a major occupation area, given its restricted size.	Level 11 consistently contained a notably high density of bones and flints. [434]
11M	Has the appearance of a highly mixed deposit (thus the designation "M"), consisting of a loose, silty, gray to gray-brown, ashy deposit. Level 11M was found in back of Level 11, against the shelter wall, and to the east of Level 11, in the northeast corner of the excavation, behind the hearth complex.	The transition between levels 11 and 11M was rapid, but not sharp. There seemed to be always some intermingling of the two levels, which led to their designation by the same level number, strongly differentiated, however, in terms of the nature of their sediments and what they likely represent depositionally.	Filled with both archaeological material and snail shells.
12	Restricted to rear 1 to 1.5 m of the excavation area, where it formed a wedge overlying and apparently partially cutting into the underlying Levels 16 and 17. To the northeast, Level 11M clearly had, in its turn, cut in Level 12. Level 12 plunged deeply in the northwest corner of the excavation, forming an extremely thick layer in the very small area behind the rock in sq. I5. This was a very loose, unconsolidated level, filled with much <i>éboulis</i> . In color it was dark, mostly dark reddish brown to dark brown.		It was filled with flint, bone, and, especially near the rear wall of the shelter, snail shells. [595]
13	Extended broadly over the front of the excavation, reaching at its surface as far, or almost as far, forward as Level 14 above it, but showing at its base a significant retreat of the area covered by archaeological layers over this part of the site. It was a relatively thick layer, of brown earth, which was darker toward the rear of the shelter, stained slightly red near its contact with Levels 16 and 17, becoming lighter and more gray-brown toward the front. There was a great deal of small <i>éboulis</i> included in the sediments of this layer, and on the east side of the excavation, these <i>éboulis</i> were strikingly white in color, rounded, and soft, giving a strong impression that they had been heavily weathered.	Its relationship to the Basal Hearth was variable, being intact underneath the hearth in places, but clearly having been cut onto here and there by the hearth as well. At the rear of the shelter, Level 13 abutted Levels 16 and 17 directly, all three levels appearing to be stratigraphically equivalent, but with rather sharp boundaries among them all, with no evident intermingling or interfingering of their respective deposits. Level 13 seems to be a broad occupation layer, and perhaps Levels 16 and 17 can be seen also to belong to a complex of levels that can be considered together to represent the deposits left from a single, major phase of occupation of the site.	[891]
16	Restricted to the northwest corner of the excavation area. It was dark brown to brown-black, with a reddish cast to it. It was very unconsolidated and filled with a great deal of small and larger <i>éboulis</i> .	It matched Levels 13 and 17 stratigraphically, but abutted them, as described above, rather than intergrading with them.	Abundant flint artifacts and bones, which appeared during excavation to be larger in this layer than usual. [193]
17	A relatively small unit in the northwest, rear part of the excavation, occurring in back of the hearth and between it and Level 16 to the west. The sediment of this layer was distinctively red, fine, and very soft, often powdery. It contained little <i>éboulis</i> .	It contrasted sharply in various characteristics with Levels 16 and 13, although it appeared to lie stratigraphically adjacent to these levels rather than to over- or underlie either of them.	A good deal of smaller archaeological material, and, near the rear wall in sq. K5, many whole snail shells. [125]

Tab. 1. Opis iskopanih nivoa na Badnju tokom iskopavanja 1986-1987. Prilagođeno po Whallon 1988. citirano od strane Miracle 1995, Appendix I. Brojevi u uglastim zagradama u četvrtoj koloni predstavljaju broj identifikovanih kremenih alatki, jezgara i nusproizvoda okresivanja jezgara pronađenih u svakom od nepomešanih nivoa (po Whallon 1999, Table 31.1).

Nivo	Pružanje, boja i sastav	Celine	Arheološki materijal
1	Uglavnom sive boje, varirajući do sivo-mrke ili mrke na nekim mestima, i pokazujući samo pojedine fleke sa crvenkastim prelivom. U većini zona, siva ili sivo-mrka zemlja ovog nivoa bila je pomešana sa umerenom količinom malih, uglastih šljunkova (nadalje éboulis).		Umerena količina arheološkog materijala koji predstavlja mešanje nekoliko perioda, kao posledica upada u ovaj depozit, delimično kroz prisustvo po svemu sudeći modernog pepela i vatrišta. [431]
2	Jasno razdvojen kao relativno mek, rastresit, crven, crvenkast ili crvenkasto-siv depozit, kojeg čine manje uglasti éboulis nego u nivou 1. Ka pozadin-skom delu, ovaj nivo bio je fine granulacije, humu-san i vlažniji, menjajući boju u mrku ili žuto-mrku (kv. I-K, 5-6), iako se ovo dešavao kao postepena gradacija od karakteristične crvene boje ovog nivo dalje prema prednjem delu pre nego kao nagla promena. Na samom prednjem delu nalazišta, tipična crvena boja ovog nivoa postaje crvenkasto siva i konačno siva.	U jednom broju zona gde je pepeo bio pomešan sa zemljom nivoa 2, nalazili su se sporadične mrlje pepela i pepela mešanog sa ljušturama puževa. Međutim, izgleda da one uglavnom potiču iz ranijih nivoa i da su postale deo nivoa 2 remećenjem ovih ranijih depozita tokom aktivnosti vezanih za nivo 2. Vrh jedne od najvažnijih celina nekoliko ranijih faza naseljavanja (možda svih u ovom delu nalazišta), velikog i dubokog kompleksa ognjišta, javlja se već na dnu nivoa 2 (kv. J-K, 6-7).	Umerena količina arheološkog materijala, ali za razliku od nivoa 1, izgleda da je ovde uglavnom in situ. [621]
5	Ograničen na severoistočni ugao u zoni iskopavanja, u blizini pozadine potkapine (kv. J-K, 5-6). Fin, žuto-mrk prah, bez ili sa veoma malim brojem éboulis inkluzija. Izgleda poprilično kao sediment nanet vodom.	Nivo 5 jasno pokriva ne samo veliki kompleks ognjišta već takođe i nivo 2a.	[155]
2a	Gotovo u potpunosti ga čini velika koncentracija mekog, sivog pepela. U nekoliko slučajeva depozit izgleda sačinjen prvenstveno od mekog, sivog pepela sa manjim brojem ili bez ljuštura puževa, ali ono što je tipično za ovaj sloj je da se u njemu nalaze inkluzije umerene do značajne mase ljuštura puževa, od kojih mnogi nisu bili polomljeni. Na jednoj ili više tačaka, naročito u kv. I5, uz pozadinski zid potkapine, nalazi se više zemlje u ovom depozitu; zemlja je mrke do tamno mrke boje, iako je i dalje meka i puna ljuštura puževa.	Najveći deo ove koncentracije javlja se u velikoj, relativno dubokoj jami, ili kompleksu jama, ka pozadini potkapine (od reda 8 do pozadine) i naročito u severozapadnom, pozadinskom uglu zone u kojoj se vršilo iskopavanje (kv. I5-7, J5-6). Poslednja faza intenzivnog korišćenja velikog kompleksa ognjišta u kv. J-K, 6-7 izgleda da je verovatno bila vezana za nivo 2a.	Ljuštura puževa (najveća koncentracija od svih nivoa), kremen i kost. Neki odvojeni džepovi čistog sivog pepela koji se javljaju na istom fizičkom nivou kao nivo 2a, u kv. J-K9 i J-K,10-11, bili su sterlni te se ne uzimaju kao deo nivoa 2a. [492]
2b	Depoziti nivoa 2 bili su tako duboki u kv. I5-6 da je napravljena podela na dva nivoa. Najpre je ova podela bila potpuno arbitrarna, ali gledajući na ostatke profila uz pozadinski zid duž linije 4/5 m, ovi donji depoziti pepela i ljuštura puževa izgledaju crvenkasto u kontrastu sa pravom sivom, koja odlikuje nivo 2a. Ova razlika ne mora biti od velikog značaja u smislu depozicije/naseljavanja, i inače izgleda kao da 2a i 2b zajedno predstavljaju jedinstvenu fazu naseljavanja.		Ljuštura puževa, kremen i kost. [104]
Ognjište	Stratigrafske podele u okviru kompleksa ognjišta razdvojene su prvenstveno na osnovu fizičkih odlika depozita.	U toku nastajanja ovog kompleksa, izgleda da je bilo stupnjeva tokom kojih su ložene značajno duge i intenzivne vatre koje su stvorile značajno goreo i stopljen depozit. Neke četiri takve faze su primećene, koje su poslužile da se kompleks podeli u četiri glavne celine: vrh ognjišta, gornje ognjište, donje ognjište i bazalno ognjište.	Priroda materijala u okviru ognjišta ne varira značajno kroz sekvencu njegovog korišćenja i obnove.

3	Veoma crven sloj – ponekad svetlo crven, ali češće se javljajući kao jednostavno crven ili crvenkast, svetao, mek, fin, čak prašnjast depozit, sa relativno dosta éboulis. Nivo 3 na svom spoljnjem kraju gradira od crvene do sive, braonkasto sive ili sivo-crne, obično neznatno tamniji (ili malo više kompaktan) nego nivo 2.	U pozadini, nivo 3 su zasekle jame nivoa 2a.	[587]
5a	Crvenkasto mrk do mrk depozit prašine u pozadini potkapine. Svojom tamnom bojom uglavnom se razlikuje od nivoa 5 koji ga pokriva iako je na nekoliko mesta bilo veoma teško napraviti ovu razliku tokom iskopavanja, što je dovelo do neke moguće konfuzije između ova dva nivoa na tim mestima. Priroda sedimenata u ovom sloju razlikuje se po vertikali. Pri vrhu, nivo 5a je ujednačeno prašinast, sa malo ili bez primesa u vidu éboulis ili ljuštura puževa. Međutim, nepravilno, ponegde, nalazio se pomešan sa nešto éboulis, ljušturama puževa, itd., bivajući takođe kompaktniji u ovim delovima. Na drugim mestima, kako iznad tako i ispod takvih zona, nalazio se u vidu čiste prašine. Na samom dnu ovog nivoa, preko većeg dela njegove površine u kv. I-K5, bio je popunjen sa velikom masom veoma svetlog, poroznog ali kompaktnog, žutog (i povremeno sivog) materijala.	Nivo 5a se jasno prepliće sa depozitom ognjišta. Ukrštanje depozita nivoa 2a sa gornjim delom nivoa 5a može se videti u 4/5 m profilu u pozadini nalazišta. Nivo 5a postaje izuzetno debeo mestimično, što je u saglasnosti sa tumačenjem da on predstavlja dugu sekvencu akumuliranja koje se nastavlja tokom depozicije više od još jedne stratigrafske jedinice pored (zapad) i ispred njega. Ovo se uslovno može odrediti kao redeponovani les, koji je spran sa površine brda iznad potkapine, i očigledno odslikava neke po svemu sudeći specifične depozicione/klimatske uslove oko početka akumulacije ovog sloja. Ipak, uopšteno govoreći, preovlađujuća prašina u sastavu nivoa 5a izgleda da ukazuje, kao i u slučaju nivoa 5, da je ovde voda bila uzročnik depozicije i na tumačenje ovog sloja kao prirodne (geološke) akumulacije materijala spranog u pozadinu nalazišta, pre nego nivoa stanovanja (ili smetlišta).	[170]
4	Uglavnom crvenkasto-mrke boje, sa čestim varijacijama ka crvenkasto sivoj s jedne strane, ili, manje učestalo, tamnije crvenoj. Prednja ivica nivoa 4 postaje tamnija, mrko siva do tamno sive, na nekih 0,5–1 m pre nego što se završi ka sterilno žutom éboulis. Sedimenti nivoa 4 bili su tipično nestabilizovani i sadržavali su relativno veliku količinu éboulis, i povremeno ljuštura puževa, naročito u kv. I6-7.	U delu gde se nivo 4 susreće sa kompleksom ognjišta, ne prepliće se sa depozitima ognjišta, koji izgledaju pre kao da se usecaju u ovaj nivo, formirajući bazen (kao što je to takođe i u slučaju nivoa 3).	Dosta kremena i kosti. [486]
7	Ograničen na severozapadni pozadinski ugao zone iskopavanja. Bio je veoma rastresit, taman, siv do skoro crn depozit, sa možda manje éboulis inkluzija nego nivoi 4 ili 5, ali od manje prašinate, grublje teksture nego nivo 5a. Tokom iskopavanja bilo je jasno da se nivo 7 završava isklinjavanjem na vrh nivoa 6 ispod njega, naizgled kao da se tako prvobitno završavao pre nego da je bio usečen i zarubljen ili uklonjen kasnijim aktivnostima.	Po svojim odlikama poprilično izgleda kao horizont stanovanja, sličan onima koji su zahvatali veću površinu i potpuno se širili napred ka sterilnom éboulis na prednjoj strani nalazišta.	Relativno obilan arheološki materijal, među kojim je uočljivo da su kosti izgledale приметно krupnije nego što je uobičajeno za druge slojeve. [491]
6	Pokrivao veći deo iskopavane površine osim na onim mestima gde je bio usečen kompleksom ognjišta. Bio je siv na prednjem delu nalazišta (od kv. I-K/8 napred), postajući više crveno-mrk (kv. I6-8), i konačno tamno crvenkast do jasno, jarko crvene boje (kv. I5, J5-8, K5) kroz središnji deo i prema pozadinskom delu nalazišta. Na većini mesta činio ga je mek i rastresit sediment, sa umereno do značajnom količinom éboulis inkluzija. Nivo se završio na prednjem delu nalazišta na sterilnom, žutom éboulis.		Značajne količine arheološkog materijala. [642]

7a	Ograničen na severozapadni ugao zone iskopavanja, ispod nivoa 6. Ovo je veoma rastresit, nekonsolidovani depozit, veoma tamne boje, bivajući veoma tamno siv, sivo-crն do crն, i na pojedinim mestima je opisan kao "masan."	S obzirom na svoju veličinu i lokaciju, nemoćuće je uzimati ovaj nivo kao pravi stambeni horizont u istom smislu kao horizontalni nivoi koji su bili rasprostranjeniji.	Veoma obilan arheološki materijal i kosti u ovom sloju izgledale su uočljivo veće nego u većini drugih nivoa, u ovom smislu slično nivou 7. [141]
8	Činili su ga meki, rastresiti depoziti koji su bili svojstveno svetle sivo-mrke boje. Bio je uočljivo tanak na mnogim mestima, i posedovao je umerenu količinu éboulis. Ka pozadinskom delu nalazišta, izgleda da se ovaj nivo ili istanjuje i završava ili da je bio usećen nivoom 7a.	Nivo 8 prostirao se preko zone ispred kompleksa ognjišta i duž zapadne strane zone iskopavanja, pored ognjišta. Izgledalo je da je bazalno ognjište potpuno usećeno u nivo 8 preko velike površine. Nivo izgleda kao stambeni horizont, i u prednjem delu završava se na sterilnom, žutom éboulis kao i drugi takvi slični slojevi.	Umerena količina arheološkog materijala. [184]
9	Gotovo identičan nivou 8 i razlikovao se od nivoa koji ga prekriva po svojoj blago tamnije sivoj do sivo-mrkoj boji. Takođe radi se o uopšte debljem sloju.	Gde dolazi do dodira između nivoa 9 bazalnog ognjišta, njihovi depoziti se mešaju, i kompleks ognjišta se nije potpuno usekao u ovaj sloj kao što je slučaj sa nivoom 8.	[435]
10	Boja je definitivno tamnija i više siva. Po teksturi je slično rastresit, posedujući manju do umerenu količinu éboulis. Varirao je po debljini i na pojedinim mestima je bio izuzetno tanak. Nivo 10 pokrivao je otprilike istu zonu nivoa 8 i 9 koji su ga pokrivali, ali je bio neobičan po tome što je obrnuo trend postepenog povlačenja prednje ivice nižih stratigrafskih nivoa. Tokom iskopavanja ovog sloja na nekim mestima uočeno je da je primetna količina svetlo mrkog sedimenta, kao onog iz nivoa 14, bila mestimično pomešana sa nivoom 10.	Ovaj nivo pokazuje promenljiv odnos prema bazalnom ognjištu, sa kojim se prepliće na nekim mestima, ali očigledno je bio presećen ognjištem na drugim mestima.	Povremeno relativno velika količina kremen a i kostiju. [435]
14	Uglavnom žuto-mrke do svetlo mrke boje, jasno se odvajajući u ovom smislu od nivoa 10 koji ga pokriva. Umereno kompaktn, pre nego rastresit i nekonsolidovan kao nivo iznad, iako je sadržavao umerene do velike količine sitnih éboulis. Po protezanju, ovaj nivo je bio ograničen na prednji deo iskopavane površine.	Duž najvećeg dela zadnjeg ruba, u njega je bilo usećeno i presecalo ga je bazalno ognjište. Međutim, duž zapadne strane zone iskopavanja može se uočiti da se nivo 14 istanjuje i prirodno završava na oko pola dužine prema zidu potkapine. U prednjem delu, ovaj nivo počinje ponovo da se progresivno povlači sa spoljnog ruba nalazišta.	[248]
11	Pronađen u pozadini potkapine, naročito u severozapadnom uglu zone iskopavanja. Ovo je bio karakteristično crven do tamno crven sloj, iako je potamneo do crveno-crne ili čak crne boje u nekoliko manjih zona. Sedimentacija u ovom sloju imala je raspon od rastresite do umereno kompaktne (uvek kompaktniji nego nivo 7a iznad) i donekle prašinaste (silty).	Jasno izgleda da je u pitanju kulturni depozit pre nego da je geološkog porekla, iako nije predstavljao glavnu zonu stanovanja uzimajući u obzir njegovu ograničenu veličinu.	Nivo 11 jednobrazno je sadržao primetno veliku gustinu kostiju i kremen a. [434]
11M	Izgleda kao veoma pomešan depozit (otud oznaka "M"), kojeg čini rastresit, prašinast, siv do sivo-mrk, pepeljasti depozit. Nivo 11M pronađen je u pozadini nivoa 11, uz zid potkapine, i istočno od nivoa 11, u severoistočnom uglu zone iskopavanja, iza kompleksa ognjišta.	Nagli ali ne oštar prelaz između nivoa 11 i 11M. Izgleda da je uvek dolazilo do nekog mešanja ova dva nivoa, što je dovelo do toga da im je pripisan isti broj nivoa, ali su ovi slojevi, međutim, jasno razdvojeni po prirodi njihovih sedimenata i po tome šta najverovatnije depoziciono predstavljaju.	Ispunjen kako arheološkim materijalom tako i ljušturama mekušaca.

12	Ograničen na pozadinskih 1 do 1,5 m iskopavane površine, gde formira klin koji pokriva a očigledno se delimično i useca u nivoe 16 i 17 koji se nalaze ispod. S druge strane, prema severoistoku, nivo 11M se jasno usekao u nivo 12. Nivo 12 ponire duboko u severozapadnom uglu zone iskopavanja, stvarajući izuzetno debeo sloj u veoma maloj zoni iza stene u kv. I5. Ovo je bio veoma rastresit, nekonsolidovan nivo, ispunjen sa dosta éboulis. Boja je bila tamna, uglavnom tamno crvenkasto mrka do tamno mrka.		Ispunjen kremenom, kostima i, naročito blizu pozadinskog zida potkapine, ljušturama puževa. [595]
13	Rasprostire se široko preko prednjeg dela zone iskopavanja, dosežući svojom površinom sve do ili gotovo isto daleko ka napred kao nivo 14 iznad njega, ali pri dnu značajno smanjujući površinu koju pokrivaju arheološki slojevi na ovom delu nalazišta. Ovo je bio relativno debeo sloj mrke zemlje, koji je bio tamniji prema pozadinskom delu potkapine, neznatno umrljan crvenom blizu svog kontakta sa nivoima 16 i 17, postajući svetliji i više sivo-mrk prema prednjem delu. Javlja se velika količina sitnih éboulis koja čini sediment ovog sloja, i na istočnoj strani zone iskopavanja, ovi éboulis bili su izrazito bele boje, zaobljeni i meki, odajući snažan utisak da su bili značajno izloženi elementima.	Odnos ovog nivoa prema bazalnom ognjištu bio je promenljiv, bivajući nedimut mes-timično ispod ognjišta, ali bio je takođe tu i tamo jasno usecan od strane ognjišta. U pozadini potkapine, nivo 13 direktno se dodirivao sa nivoima 16 i 17, odajući utisak da su sva tri nivoa stratigrafski ekvivalentna, ali sa dosta oštrim granicama između njih, bez očiglednog mešanja i preplitanja njihovih depozita. Nivo 13 je izgleda širok stambeni horizont, i možda je moguće videti nivoe 16 i 17 kako takođe pripadaju kompleksu nivoa koji je moguće zajedno posmatrati kao depozite ostavljene tokom jedne od glavnih faza naseljavanja ovog nalazišta.	[891]
16	Ograničen na severozapadni ugao površine iskopavanja. Boja je tamno mrka do mrko-crna, sa crvenkastim izlivkom. Bio je veoma nekonsolidovan i ispunjen sa velikom količinom manjih i većih éboulis.	Stratigrafski odgovara nivoima 13 i 17 ali se sa njima dodiruje, kao što je gore opisano, pre nego da se sa njima utapa.	Obilje kremenih artefakata i kostiju, koje su u ovom sloju tokom iskopavanja delovale veće nego uobičajno. [193]
17	Relativno mala stratigrafska jedinica u severozapadnom, pozadinskom delu zone iskopavanja, pojavljujući se u pozadini ognjišta i između njega i nivoa 16 ka zapadu. Sediment ovog sloja bio je izrazito crven, pročišćen i veoma mek, često prašnjav. Sadržao je malo éboulis.	Oštro se razlikovao po različitim odlikama od nivoa 16 i 13, iako je izgledalo da stratigrafski leži graničeći se sa ovim nivoima pre nego da ih prekriva ili da se podvlači ispod njih.	Dosta sitnog arheološkog materijala i, u blizini pozadinskog zida u kv. K5, mnoštvo celih ljuštura puževa. [125]

ABSOLUTE CHRONOLOGY

There are currently only five available radiocarbon dates from Badanj (Tab. 2). Two measurements were obtained immediately after the 1986–1987 excavations and were made on burnt bones. OxA-2196, from bottom-of-the-sequence Level 13, possibly provides a representative date for the start of the sequence in the Oldest Dryas (Fig. 9). OxA-2197 comes from the middle part of the sequence, Level 6, and falls into the duration of the Bølling interstadial.²² In the mid-1990s, another burnt bone sample from Badanj was submitted to Oxford for dating by Geoff Bailey, along with samples from Palaeolithic sites in Epirus.²³ The sample came from Level 4, which is younger than Level 6 in the stratigraphic sequence, but the obtained result (OxA-5895, Tab. 2) was surprisingly early, corresponding with the date earlier obtained for Level 13. The only explanation of this discrepancy is that some

²² Whallon 1999.

²³ Bronk Ramsey *et al.* 2002, 33.

APSOLUTNA HRONOLOGIJA

Trenutno postoji samo pet dostupnih ¹⁴C merenja sa Badnja (tab. 2). Dva datuma dobijena su na spaljenim kostima neposredno nakon iskopavanja 1986-1987. OxA-2196, sa dna sekvence iz nivoa 13, moguće pruža reprezentativan datum za početak sekvence u vreme najstarijeg drijasa (sl. 9). OxA-2197 potiče iz središnjeg dela sekvence, iz nivoa 6, i pada u trajanje beling interstadijale.²² Sredinom 1990-ih, Džef Bejli je, zajedno sa uzorcima sa paleolitskih lokaliteta u Epiru, predao laboratoriji u Oksfordu na datovanje još jedan uzorak spaljene kosti sa Badnja.²³ Uzorak potiče iz nivoa 4, koji je mlađi nego nivo 6 u stratigrafskoj sekvenci, ali je dobijeni rezultat OxA-5895, (tab. 2) iznenađujuće rani, i odgovara datumu prethodno dobijenom za nivo 13. Jedino objašnjenje za ovo neslaganje je da je neki zaostali materijal iz ranijih nivoa završio među kolekcijom kostiju iz nivoa 4. Buduće,

²² Whallon 1999.

²³ Bronk Ramsey *et al.* 2002, 33.

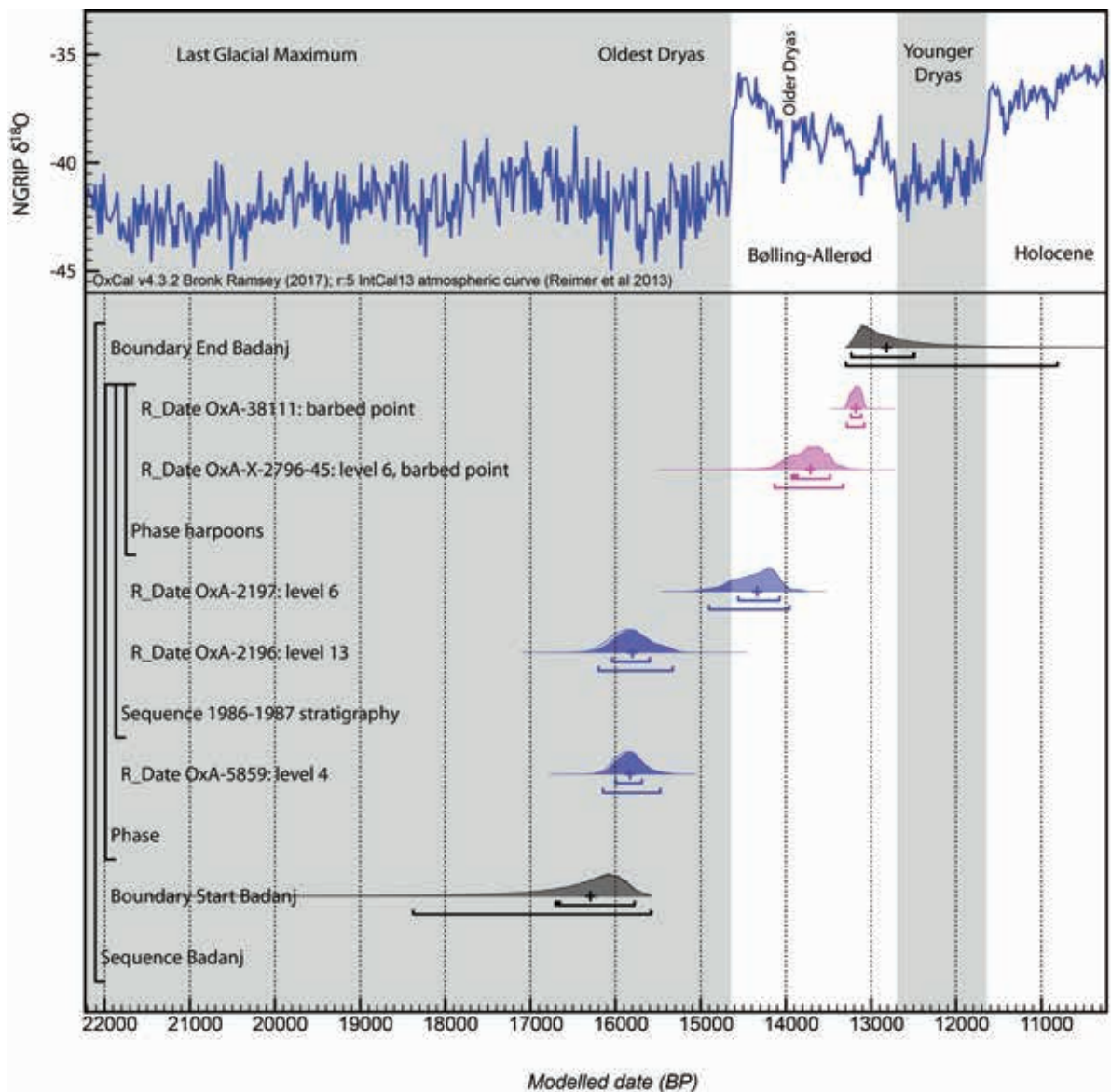


Fig. 9. Bayesian modelling of all available dates from Badanj plotted against the North Greenland (NGRIP) $\delta^{18}\text{O}$ record and event stratigraphy. For the radiocarbon measurements, distributions in outline are the results of simple radiocarbon calibrations, solid distributions are the output from the chronological model. The large square brackets and OxCal v. 4.3.2 CQL2 keywords define the overall model exactly. Blue: burnt bones; magenta: red deer antler.

Sl 9. Bajesovo modelovanje svih dostupnih datuma sa Badnja u odnosu na severnogrenlandske (NGRIP) $\delta^{18}\text{O}$ podatke i događajnu stratigrafiju. Za radiokarbonska merenja, neispunjene raspodele verovatnoća rezultat su jednostavnih radiokarbon kalibracija, dok su ispunjene raspodele verovatnoća proistekle iz hronološkog modela. Velike uglaste zagrade i OxCal v. 4.3.2 CQL2 ključne reči precizno definišu model. Plavo: gorele kosti; magenta: rog jelena.

residual material from earlier levels ended up in the assemblage of bones in Level 4. Future, more robust dating and careful selection of dating material (e.g., articulates or matching unfused epiphysis and diaphysis of young animals, both indicative of freshly deposited carcasses that minimally moved after deposition) from various levels at the site will allow for the building of a more reliable absolute chronological framework.

As part of our analysis of the osseous material from Badanj (see below), we have submitted four

obimnije datovanje i pažljivije odvajanje materijala za datovanje (npr., artikulacije kostiju određene individue ili nesrasle epifize i dijafize mladih životinja, upućujući na sveže deponovane leševe koji su bili minimalno pomerani nakon deponovanja) iz različitih nivoa ovog nalazišta dozvolice nam da izgradimo pouzdaniji apsolutno hronološki okvir.

Kao deo naše analiza na osteološkom materijalu sa Badnja (videti dole), u septembru 2018,

samples for dating to the Oxford Radiocarbon Accelerator Unit in September 2018. Apart from one sampled barbed point (inv. 10016, Tab. 1), which came from the 1986–1987 excavations at Badanj, the rest of the samples come from the collection unearthed by Basler in 1976–1979. Two samples were taken on two incised bones (Fig. 11) and both were withdrawn due to the low collagen yield (%N 0.22 and 0.25 respectively, i.e., below the Oxford Laboratory's minimum threshold). Another two samples were taken from two specimens of barbed points (possible harpoons but see below for more details) (Fig. 12), and both produced comparable dates (Tab. 2). After the calibration using OxCal v.4.3.2,²⁴ OxA-38111 gave the range of 13.280–13.070 cal BP (95% confidence) and OxA-X-2796-45 gave the range of 14.190–13.290 cal BP (95% confidence), with the two measurements not overlapping. The precision of OxA-X-2796-45, which has large error terms, was somewhat affected due to the low pretreatment yield of collagen (%N 0.43, i.e., below the Oxford Laboratory's minimum threshold), even though it is in all likelihood earlier than OxA-38111. While the barbed point dated by OxA-38111 has no stratigraphic information, it is very likely that similar to other barbed points discovered during the first and second excavation phases, it also comes from upper levels in the sequence of the site (see below), and thus represents a date of the final Epigravettian use of Badanj. The barbed point inv. 10016 dated by OxA-X-2796-45 comes from Level 6 in quadrant J5B next to the hearth complex in the back of the shelter, and is in broad agreement with another previously obtained measurement (OxA-2197), which came from the same level.

The existing and newly available dates might be representative of the span of the Late Upper Palaeolithic use of this site. However, there is an increasing need to provide a more robust chronological framework for the occupation of Badanj, and this can be achieved by planned future targeted AMS dating of preserved organic remains from the site.

predali smo četiri uzorka na datovanje Oksfordskoj radio-aktivnoj akceratornoj jedinici. Osim jednog uzorkovanog šiljka sa zupcima inv. 10016, (tab. 1), koji potiče sa iskopavanja Badnja 1986–1987, ostatak uzoraka potiču iz zbirke koju je iskopao Basler između 1976. i 1979. Dva uzorka uzeta na urezanim koštanim artefaktima (sl. 11) povučena su iz dalje analize zbog niskog prinosa kolagena (%N 0,22 i 0,25, tj. ispod minimalno dozvoljenog praga određenog u oksfordskoj laboratoriji). Preostala dva uzorka uzeta su na dva primerka šiljaka sa zupcima (mogući harpuni ali videti dole opširnije o upotrebi ove terminologije) (sl. 12), i za oba su dobijeni slični datumi (tab. 2). Nakon kalibracije ovih rezultata koristeći OxCal v.4.3.2,²⁴ OxA-38111 dao je raspon od 13.280–13.070 cal BP (95% poverenja) i OxA-X-2796-45 je dao raspon 14.190–13.290 cal BP (95% poverenja), s tim da se rasponi ova dva merenja ne poklapaju. Preciznost OxA-X-2796-45, koji ima veći raspon greške, donekle je pod uticajem niskog prinosa kolagena (%N 0,43, tj. ispod minimalno dozvoljenog praga određenog u oksfordskoj laboratoriji), iako je po svoj prilici ovaj datum raniji od OxA-38111. Dok projektil sa zupcima koji je datovan sa OxA-38111 nema bliže stratigrafske informacije, veoma je verovatno da je slično projektilima sa zupcima otkrivenim tokom obe istraživačke faze, takođe poticao iz gornjih nivoa u sekvenci nalazišta (videti dole), i da tako predstavlja datum za finalno epigravetijensko korišćenje Badnja. Šiljak sa zupcima inv. 10016, kojeg datuje OxA-X-2796-45 potiče iz nivoa 6 u kvadrantu J5B uz kompleks ognjišta u pozadinskom delu potkapine, i ugrubo se slaže sa drugim prethodno dobijenim merenjem (OxA-2197), koje potiče iz istog stratigrafskog nivoa.

Moguće je da su postojeći i novodobijeni datumi reprezentativni za kasno gornjopaleolitsko korišćenje ovog nalazišta. Međutim, sve više postoji potreba da se obezbedi jasniji hronološki okvir naseljavanja Badnja, i ovo se može ostvariti planiranim budućim ciljnim AMS datovanjem očuvanih organskih ostataka sa ovog lokaliteta.

²⁴ Bronk Ramsey *et al.* 2017.

²⁴ Bronk Ramsey *et al.* 2017.

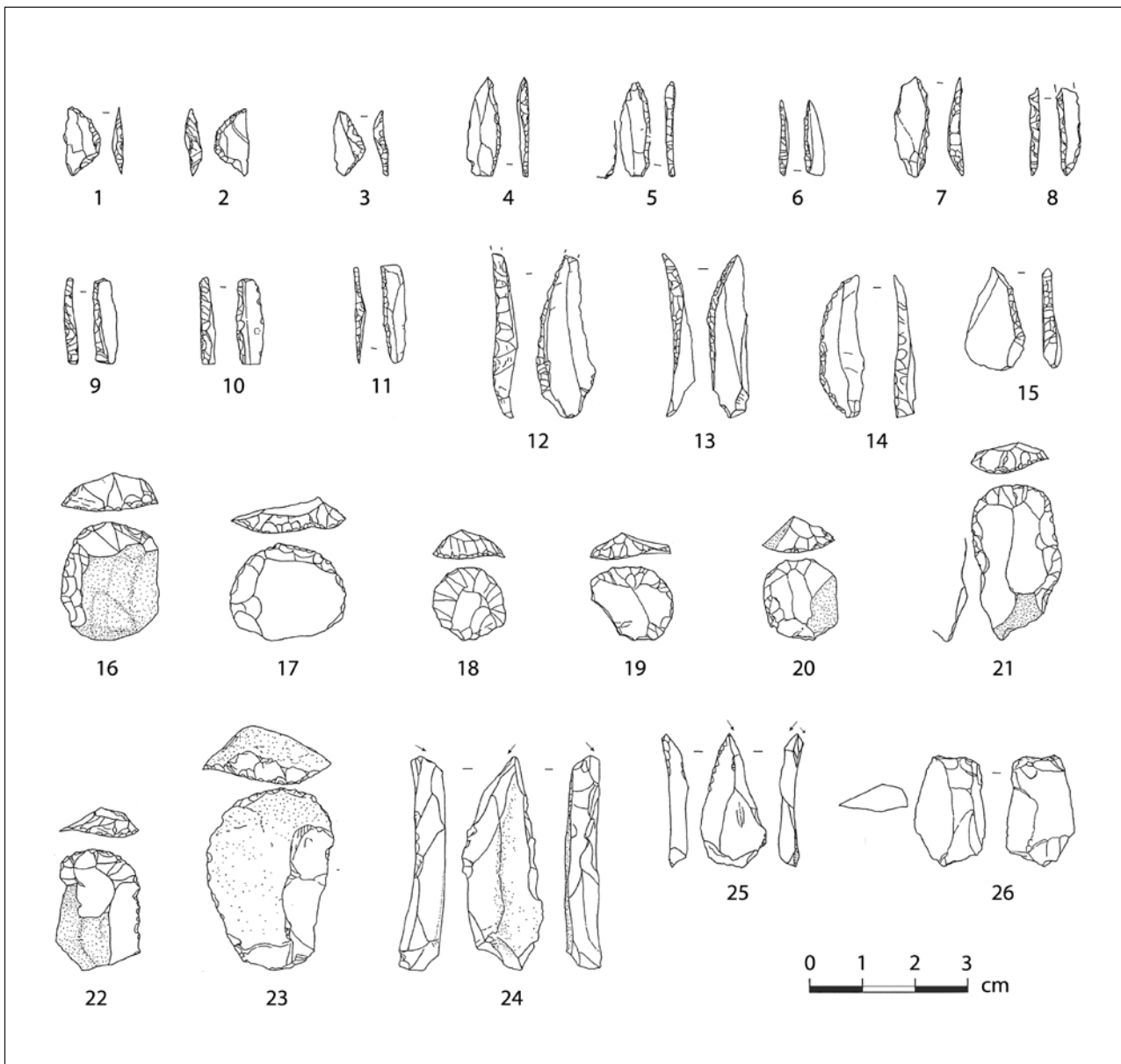


Fig. 10. (A) A selection of flint tools discovered at Badanj (1986–1987 excavations): 1–2. Crescents; 3. Triangle; 4–11. Backed bladelets and microgavette points; 12–14. Large backed flake points; 15. Small backed flake point; 16–20. Thumbnail flake scraper; 21–23. End-of-flake scrapers; 24–25. Burins; 26. Splintered piece (adapted after Whallon 1989, Fig. 2); (B) Massive curved retouched blade (1976–1979 excavations: inv. 7570, sq. XIV/7; T10–T20 m).

Sl. 10. (A) Izbor kremenih alatki pronađenih na Badnju (iskopavanja 1986–1987.): 1–2. polumesečasti segmenti; 3. trougao; 4–11. mikrolamele sa hrptom i šiljci-mikrogravete; 12–14. veliki šiljci sa hrptom na odbicima; 15. mali šiljak sa hrptom na odbitku; 16–20. noktasti strugač na odbitku; 21–23. njuškasti strugači; 24–25. dleta; 26. oljušteni komad (prilagođeno po Whallon 1989, Fig. 2); (B) masivno zakrivljeno retuširano sečivo (iskopavanje 1976–1979: inv. 7570, kv. XIV/7; T10–T20 m).



Tbl. 2. All radiocarbon measurements and recently AMS-dated failed samples from Badanj, and relevant AMS dates from other Epigravettian sites/levels in the Eastern Adriatic catchment zone.

Lab ID	Material	Context	Radiocarbon date BP	$\delta^{13}\text{C}$	$\delta^{15}\text{N}$	CN	Calibrated date cal BP (95%)	Posterior density estimate cal BP (95%)	Source
Badanj									
OxA-38111	Red deer antler, barbed point (inv. 7263)	No information	11.320±55	-20.4	2.4	3.3	13.280–13.070	13.290–13.070	This paper
OxA-X-2796-45	Red deer antler, barbed point (inv. 10016)	Level 6, quad. J5B6	11.870±190	-20.3	–	3.3	14.190–13.290	14.140–13.320	This paper
OxA-5859	Charred bone	Level 4, quad. J9D4	13.200±100	-21.7	–	–	16.190–15.510	16.160–15.480	Bronk Ramsey <i>et al.</i> 2002, 33
OxA-2197	Charred bone	Level 6, quad. I7B6	12.380±110	-21.1	–	–	14.910–13.940	14.910–13.940	Whallon 1999
OxA-2196	Charred bone	Level 13, quad. I7C13	13.200±150	-18.4	–	–	16.260–15.340	16.220–15.330	Whallon 1999
P-46030	Incised bone (inv. 10022)	Quad. K9D4	Withdrawn	–	–	–	–	–	–
P-46031	Incised bone (inv. 7602/1)	Quad. XIV/6, 0.8–0.9 m	Withdrawn	–	–	–	–	–	–
Crvena Stijena									
OxA-23313	Red deer, M3 and the left-side mandible	Layer VIII	11.755±55	–	–	–	13.730–13.460	–	Mercier <i>et al.</i> 2017
OxA-23343	Red deer, lower I1, left	Layer X	11.790±50	–	–	–	13.740–13.480	–	Mercier <i>et al.</i> 2017
Mališina Stijena									
OxA-1894	Charred bone	Layer 3b1	13.780±140	-26.0	–	–	17.100–16.240	–	Hedges <i>et al.</i> 1990, 214
Blazi Cave									
Beta-426508	Charcoal	Layer 2-3, (Trench 5)	11.100±40	–	–	–	13.080–12.820	–	Hauck <i>et al.</i> 2017
Beta-426506	Charcoal	Layer 2 (Trench 5)	14.400±50	–	–	–	17.750–17340	–	Hauck <i>et al.</i> 2017
Beta-426501	Charcoal	Layer 3 (Trench 5)	15.360±50	–	–	–	18.770–18.500	–	Hauck <i>et al.</i> 2017
Beta-426504	Charcoal	Layer 3 (Trench 5)	15.140±50	–	–	–	18.580–18.230	–	Hauck <i>et al.</i> 2017
Konispol									
Beta-56414	Charcoal	VIII/28	11.410±80	–	–	–	13.420–13.090	–	Harrold <i>et al.</i> 1999
Vela Spila									
Vera-2346	Charcoal	8/6	12.260±40	–	–	–	14.380–14.010	–	Farbstein <i>et al.</i> 2012

Fig. 12. Barbed points made on red deer antler from Badanj: 1. inv. 10016 (sq. J5B, level 6, OxA-2796-45); 2. inv. 7063 (no context, OxA-38111); 3. inv. 10037 (sq. I7A, level 2); 4. inv. 7807 (sq. XV/6, 0.5-0.6); 5. inv. 7264 (sq. XIV/5, 0.6-0.7).

Sl. 12. Šiljci sa zupcima od jelenskog roga sa Badnja: 1. inv. 10016 (kv. J5B, nivo 6, OxA-2796-45); 2. inv. 7063 (bez konteksta, OxA-38111); 3. inv. 10037 (kv. I7A, nivo 2); 4. inv. 7807 (kv. XV/6, 0,5-0,6); 5. inv. 7264 (kv. XIV/5, 0,6-0,7).

Vera-2345	Animal bone	8/6 (NYT)	12.290±40	–	–	–	14.490–14.050	–	Farbstein <i>et al.</i> 2012
Z-3989	Charcoal	LUP-G (Ly 16)	12.700±100	–	–	–	15.500–14.650	–	Farbstein <i>et al.</i> 2012
Z-3991	Charcoal	LUP-E (Ly 24)	13.300±100	–	–	–	16.280–15.700	–	Farbstein <i>et al.</i> 2012
Z-3992	Charcoal	LUP-D (Ly 32)	14.100±100	–	–	–	17.490–16.800	–	Farbstein <i>et al.</i> 2012
Zemunica									
Beta-218732	Charcoal	SJ143	11.740±90	–	–	–	13.760–13.410	–	Šošić Klindžić <i>et al.</i> 2015b
Kopačina									
Z-2404	Animal bone	20–40 cm	11.980±270	–	–	–	14.910–13.290	–	Obelić <i>et al.</i> 1994
Z-2403	Animal bone	140–160 cm	13.160±310	–	–	–	16.800–14.780	–	Obelić <i>et al.</i> 1994
Vlakno									
Beta-423618	Herbivore bone	Stratum 4	10.270±40	–	–	–	12.370–11.820	–	Cvitkušić <i>et al.</i> 2018
Beta-416303	Herbivore bone	Stratum 4	10.380±40	–	–	–	12.420–12.060	–	Cvitkušić <i>et al.</i> 2018
Beta-363142	Herbivore bone	Stratum 4	10.970±50	–	–	–	12.990–12.720	–	Cvitkušić <i>et al.</i> 2018
Z-3932	Herbivore bone	Stratum 5	11.300±150	–	–	–	13.450–12.830	–	Cvitkušić <i>et al.</i> 2018
Beta-385285	Herbivore bone	Stratum 5	11.710±40	–	–	–	13.600–13.440	–	Cvitkušić <i>et al.</i> 2018
Beta-414467	Herbivore bone	Stratum 5	12.080±40	–	–	–	14.080–13.770	–	Cvitkušić <i>et al.</i> 2018
Beta-414278	Herbivore bone	Stratum 5, above tephra	12.100±40	–	–	–	14.110–13.790	–	Cvitkušić <i>et al.</i> 2018
Beta-277309	Herbivore bone	Underneath tephra, SU 4	12.350±70	–	–	–	14.790–14.080	–	Vujević, Parica 2011
Zala									
Beta-228734	Animal bone	12	13.840±50	–	–	–	16.990–16.500	–	Karavanić <i>et al.</i> 2007
Beta-334805	Animal bone	102	13.340±60	–	–	–	16.250–15.830	–	Šošić Klindžić <i>et al.</i> 2015a
Beta-334806	Animal bone	100	14.100±60	–	–	–	17.240–16.920	–	Šošić Klindžić <i>et al.</i> 2015a
Ljubićeva pećina									
LTL5775A	?	?	13.017±65	–	–	–	15.820–15.300	–	Oros Sršen <i>et al.</i> 2014
GrA-40926	?	Horizon C (niveau 4)	11.350±50	–	–	–	13.300–13.090	–	Percan <i>et al.</i> 2009
Beta-249371	?	Horizon C (niveau 3)	13.230±70	–	–	–	13.280–12.950	–	Percan <i>et al.</i> 2009
Vešanska Peć									
Beta-127706	Charcoal	II/3	11.410±90	–	–	–	13.430–13.080	–	Miracle, Forenbaher 2000
Beta-120275	Charcoal	II/3A	11.530±50	–	–	–	13.470–13.270	–	Miracle, Forenbaher 2000
OxA-8448	Charcoal	IX	12.490±100	–	–	–	15.110–14.210	–	Miracle, Forenbaher 2000

Pupićina Peć									
OxA-8449	Charcoal	39.1 (Horizon T2b)	10.140±180	–	–	–	12.410–11.230	–	Miracle 2005
Beta-131626	Charcoal	33	10.150±60	–	–	–	12.060–11.400	–	Miracle 2001
Z-2574	Charcoal	31, 32, 34	10.610±200	–	–	–	12.960–11.830	–	Miracle 1997
Beta-188919	Charcoal	Horizon S	10.280±50	–	–	–	12.380–11.820	–	Miracle 2005
Beta-145095	Charcoal	373.1 (Horizon U+V)	11.150±80	–	–	–	13.160–12.790	–	Miracle 2005
Z-2636	Charcoal	207	11.160±270	–	–	–	13.570–12.590	–	Miracle 2001
Nugljanska Peć									
OxA-X-2462-22	Charcoal	6	11.160±50	–	–	–	13.130–12.870	–	Pilaar Birch, Miracle 2015
Beta-127705	?	8	11.520±90	–	–	–	13.550–13.160	–	Miracle, Foren-baher 2000
OxA-X-2462-22	?	8	12.510±55	–	–	–	15.090–14.330	–	Pilaar Birch, Miracle 2015
Šandalja II									
GrN-4976	Animal bone	B/g	10.830±50	–	–	–	12.800–12.670	–	Malez, Vogel 1969
OxA-26874	Bone	B/g	12.295±55	–	–	–	14.620–14.040	–	Oros Sršen <i>et al.</i> 2014
KIA-23489	Human bone	B/s	11.025±60	–	–	–	13.040–12.740	–	Richards <i>et al.</i> 2015
GrN-4978	Charcoal	B/s	12.320±100	–	–	–	14.880–13.990	–	Malez, Vogel 1969
Z-2421	Animal bone	B/d	10.140±160	–	–	–	12.390–11.250	–	Obelić <i>et al.</i> 1994
CAMS-12062	Charcoal	B/d	10.990±60	–	–	–	13.010–12.720	–	Miracle 1995
OxA-26872	Bone	B/C	12.035±55	–	–	–	14.050–13.750	–	Oros Sršen <i>et al.</i> 2014
OxA-26871	Bone	B/C	12.680±55	–	–	–	15.290–14.820	–	Oros Sršen <i>et al.</i> 2014
Z-2423	Animal bone	B/C	13.050±220	–	–	–	16.300–14.980	–	Obelić <i>et al.</i> 1994
OxA-26870	Bone	C/s	11.515±50	–	–	–	13.460–13.260	–	Oros Sršen <i>et al.</i> 2014
OxA-26869	Bone	C/s	12.940±55	–	–	–	15.710–15.250	–	Oros Sršen <i>et al.</i> 2014
Z-2424	Animal bone	C/s	13.120±230	–	–	–	16.240–15.070	–	Obelić <i>et al.</i> 1994
Romualdova									
Beta-465337	Charcoal	?	10.880±30	–	–	–	12.800–12.690	–	Ruiz-Redondo <i>et al.</i> 2019
Beta-465338	Charcoal	?	13.970±50	–	–	–	17.180–16.690	–	Ruiz-Redondo <i>et al.</i> 2019
OxA-36127	Charcoal	?	14.250±80	–	–	–	17.600–17.090	–	Ruiz-Redondo <i>et al.</i> 2019

Tab. 2. Sva radiokarbonska merenja i skoriji AMS-datovani neuspeli uzorci sa Badnja zajedno sa relevantnim AMS datumima sa ostalih epigravetijenskih nalazišta/nivoa u istočno-jadranskoj zoni.

Lab oznaka	Materijal	Kontekst	¹⁴ C datum BP	δ ¹³ C	δ ¹⁵ N	CN	Kalibrirani datum cal BP (95%)	Procena posterioorne raspodele verovatnoća cal BP (95%)	Izvor
Badanj									
OxA-38111	Jelenski rog, šiljak sa zupcima (inv. 7263)	Bez informacija	11.320±55	-20.4	2.4	3.3	13.280-13.070	13.290-13.070	Ovaj rad
OxA-X-2796-45	Jelenski rog, šiljak sa zupcima (inv. 10016)	nivo 6, kv. J5B6	11.870±190	-20.3	-	3.3	14.190-13.290	14.140-13.320	Ovaj rad
OxA-5859	Gorela kost	nivo 4, kv. J9D4	13.200±100	-21.7	-	-	16.190-15.510	16.160-15.480	Bronk Ramsey <i>et al.</i> 2002, 33
OxA-2197	Gorela kost	nivo 6, kv. I7B6	12.380±110	-21.1	-	-	14.910-13.940	14.910-13.940	Whallon 1999
OxA-2196	Gorela kost	nivo 13, kv. I7C13	13.200±150	-18.4	-	-	16.260-15.340	16.220-15.330	Whallon 1999
P-46030	Urezana kost (inv. 10022)	Kv. K9D4	Povučen	-	-	-	-	-	-
P-46031	Urezana kost (inv. 7602/1)	Kv. XIV/6, 0.8-0.9 m	Povučen	-	-	-	-	-	-
Crvena Stijena									
OxA-23313	Jelen, M3 leva strane mandibule	Sloj VIII	11.755±55	-	-	-	13.730-13.460	-	Mercier <i>et al.</i> 2017
OxA-23343	Jelen, donji I1, levi	Sloj X	11.790±50	-	-	-	13.740-13.480	-	Mercier <i>et al.</i> 2017
Mališina Stijena									
OxA-1894	Gorela kost	Sloj 3b1	13.780±140	-26.0	-	-	17.100-16.240	-	Hedges <i>et al.</i> 1990, 214
Blazi Cave									
Beta-426508	Ugljen	Sloj 2-3, (Sonda 5)	11.100±40	-	-	-	13.080-12.820	-	Hauck <i>et al.</i> 2017
Beta-426506	Ugljen	Sloj 2 (Sonda 5)	14.400±50	-	-	-	17.750-17340	-	Hauck <i>et al.</i> 2017
Beta-426501	Ugljen	Sloj 3 (Sonda 5)	15.360±50	-	-	-	18.770-18.500	-	Hauck <i>et al.</i> 2017
Beta-426504	Ugljen	Sloj 3 (Sonda 5)	15.140±50	-	-	-	18.580-18.230	-	Hauck <i>et al.</i> 2017
Konispol									
Beta-56414	Ugljen	VIII/28	11.410±80	-	-	-	13.420-13.090	-	Harrold <i>et al.</i> 1999
Vela Spila									
Vera-2346	Ugljen	8/6	12.260±40	-	-	-	14.380-14.010	-	Farbstein <i>et al.</i> 2012
Vera-2345	Životinjska kost	8/6 (NYT)	12.290±40	-	-	-	14.490-14.050	-	Farbstein <i>et al.</i> 2012

Z-3989	Ugljen	LUP-G (Ly 16)	12.700±100	–	–	–	15.500–14.650	–	Farbstein <i>et al.</i> 2012
Z-3991	Ugljen	LUP-E (Ly 24)	13.300±100	–	–	–	16.280–15.700	–	Farbstein <i>et al.</i> 2012
Z-3992	Ugljen	LUP-D (Ly 32)	14.100±100	–	–	–	17.490–16.800	–	Farbstein <i>et al.</i> 2012
Zemunica									
Beta-218732	Ugljen	SJ143	11.740±90	–	–	–	13.760–13.410	–	Šošić Klindžić <i>et al.</i> 2015b
Kopačina									
Z-2404	Životinjska kost	20–40 cm	11.980±270	–	–	–	14.910–13.290	–	Obelić <i>et al.</i> 1994
Z-2403	Životinjska kost	140–160 cm	13.160±310	–	–	–	16.800–14.780	–	Obelić <i>et al.</i> 1994
Vlakno									
Beta-423618	Kost biljojeda	Stratum 4	10.270±40	–	–	–	12.370–11.820	–	Cvitkušić <i>et al.</i> 2018
Beta-416303	Kost biljojeda	Stratum 4	10.380±40	–	–	–	12.420–12.060	–	Cvitkušić <i>et al.</i> 2018
Beta-363142	Kost biljojeda	Stratum 4	10.970±50	–	–	–	12.990–12.720	–	Cvitkušić <i>et al.</i> 2018
Z-3932	Kost biljojeda	Stratum 5	11.300±150	–	–	–	13.450–12.830	–	Cvitkušić <i>et al.</i> 2018
Beta-385285	Kost biljojeda	Stratum 5	11.710±40	–	–	–	13.600–13.440	–	Cvitkušić <i>et al.</i> 2018
Beta-414467	Kost biljojeda	Stratum 5	12.080±40	–	–	–	14.080–13.770	–	Cvitkušić <i>et al.</i> 2018
Beta-414278	Kost biljojeda	Stratum 5, iznad tefre	12.100±40	–	–	–	14.110–13.790	–	Cvitkušić <i>et al.</i> 2018
Beta-277309	Kost biljojeda	Ispod tefre, SU 4	12.350±70	–	–	–	14.790–14.080	–	Vujević, Parica 2011
Zala									
Beta-228734	Životinjska kost	12	13.840±50	–	–	–	16.990–16.500	–	Karavanić <i>et al.</i> 2007
Beta-334805	Životinjska kost	102	13.340±60	–	–	–	16.250–15.830	–	Šošić Klindžić <i>et al.</i> 2015a
Beta-334806	Životinjska kost	100	14.100±60	–	–	–	17.240–16.920	–	Šošić Klindžić <i>et al.</i> 2015a
Ljubićeva pećina									
LTL5775A	?	?	13.017±65	–	–	–	15.820–15.300	–	Oros Sršen <i>et al.</i> 2014
GrA-40926	?	Horizont C (nivo 4)	11.350±50	–	–	–	13.300–13.090	–	Percan <i>et al.</i> 2009
Beta-249371	?	Horizont C (nivo 3)	13.230±70	–	–	–	13.280–12.950	–	Percan <i>et al.</i> 2009
Vešanska Peć									
Beta-127706	Ugljen	II/3	11.410±90	–	–	–	13.430–13.080	–	Miracle, Forenbaher 2000
Beta-120275	Ugljen	II/3A	11.530±50	–	–	–	13.470–13.270	–	Miracle, Forenbaher 2000

OxA-8448	Ugljen	IX	12.490±100	–	–	–	15.110–14.210	–	Miracle, Forenbaher 2000
Pupićina Peć									
OxA-8449	Ugljen	39.1 (Horizont T2b)	10.140±180	–	–	–	12.410–11.230	–	Miracle 2005
Beta-131626	Ugljen	33	10.150±60	–	–	–	12.060–11.400	–	Miracle 2001
Z-2574	Ugljen	31, 32, 34	10.610±200	–	–	–	12.960–11.830	–	Miracle 1997
Beta-188919	Ugljen	Horizont S	10.280±50	–	–	–	12.380–11.820	–	Miracle 2005
Beta-145095	Ugljen	373.1 (Horizont U+V)	11.150±80	–	–	–	13.160–12.790	–	Miracle 2005
Z-2636	Ugljen	207	11.160±270	–	–	–	13.570–12.590	–	Miracle 2001
Nugljanska Peć									
OxA-X-2462-22	Ugljen	6	11.160±50	–	–	–	13.130–12.870	–	Pilaar Birch, Miracle 2015
Beta-127705	?	8	11.520±90	–	–	–	13.550–13.160	–	Miracle, Forenbaher 2000
OxA-X-2462-22	?	8	12.510±55	–	–	–	15.090–14.330	–	Pilaar Birch, Miracle 2015
Šandalja II									
GrN-4976	Životinjska kost	B/g	10.830±50	–	–	–	12.800–12.670	–	Malez, Vogel 1969
OxA-26874	Kost	B/g	12.295±55	–	–	–	14.620–14.040	–	Oros Sršen <i>et al.</i> 2014
KIA-23489	Ljudska kost	B/s	11.025±60	–	–	–	13.040–12.740	–	Richards <i>et al.</i> 2015
GrN-4978	Ugljen	B/s	12.320±100	–	–	–	14.880–13.990	–	Malez, Vogel 1969
Z-2421	Životinjska kost	B/d	10.140±160	–	–	–	12.390–11.250	–	Obelić <i>et al.</i> 1994
CAMS-12062	Ugljen	B/d	10.990±60	–	–	–	13.010–12.720	–	Miracle 1995
OxA-26872	Kost	B/C	12.035±55	–	–	–	14.050–13.750	–	Oros Sršen <i>et al.</i> 2014
OxA-26871	Kost	B/C	12.680±55	–	–	–	15.290–14.820	–	Oros Sršen <i>et al.</i> 2014
Z-2423	Životinjska kost	B/C	13.050±220	–	–	–	16.300–14.980	–	Obelić <i>et al.</i> 1994
OxA-26870	Kost	C/s	11.515±50	–	–	–	13.460–13.260	–	Oros Sršen <i>et al.</i> 2014
OxA-26869	Kost	C/s	12.940±55	–	–	–	15.710–15.250	–	Oros Sršen <i>et al.</i> 2014
Z-2424	Životinjska kost	C/s	13.120±230	–	–	–	16.240–15.070	–	Obelić <i>et al.</i> 1994
Romualdova									
Beta-465337	Ugljen	?	10.880±30	–	–	–	12.800–12.690	–	Ruiz-Redondo <i>et al.</i> 2019
Beta-465338	Ugljen	?	13.970±50	–	–	–	17.180–16.690	–	Ruiz-Redondo <i>et al.</i> 2019
OxA-36127	Ugljen	?	14.250±80	–	–	–	17.600–17.090	–	Ruiz-Redondo <i>et al.</i> 2019

CHIPPED STONE TOOLS

Basler²⁵ reported a rounded total of 250,000 flint artifacts from a relatively small trench that he excavated around the engraved rock. Scrapers, usually circular- or thumb-nail-shaped, predominated, making up 48% of the assemblage. Microgravettes are the second dominant class of tools with 26% of the total assemblage. Below the area of the 1976–1979 excavations, beneath thick levels of sterile *éboulis*, there are reports of Middle Palaeolithic artifacts²⁶ but there is currently limited information about the possible existence of levels older than the Upper Palaeolithic.

There were in total 7860 knapped stone artifacts from the 1986–1987 excavation seasons, excluding the material found in likely mixed contexts of the hearth complex and Level 11M. Analysis of the lithic material from the 1986–1987 excavations has shown that within the general “Epigravettian” lithic industry (Fig. 10), widespread across Mediterranean Europe from southern France to Greece, there are several diachronic trends, suggesting at least two distinct phases in the sequence – early and late, with the transition occurring roughly in the middle of the sequence between Levels 6 and 7a.²⁷ The following observations have been made about marked differences between these two periods: (1) a predominance of backed bladelets with straight or slightly curved backs in the Early period in contrast to a predominance of thumbnail or “circular” scrapers in the Late period; (2) backed bladelets with noticeably curved backs are more a characteristic of the Late period; (3) backed blades and both small and large backed flake points are more frequent in the Late period; (4) geometric microliths (mostly crescents/segments, with about half as many triangles) are exclusively restricted to the Late period; (5) there is a decline of end-of-blade scrapers and large, massive sidescrapers from the Early to Late period; (6) truncations are more common in the Late period.²⁸

Apart from these trends, one could also note that there is only one reported shouldered piece for the whole assemblage excavated in 1986–1987.²⁹ Well-prepared prismatic or pyramidal cores are rare, often these are poorly prepared and highly exhausted. There are also abundant splintered pieces (*pièces esquillées*), made by knapping on hard surfaces with bipolar flaking techniques, which are interpreted as a form of cores for microblades. A spatial analysis of the distribution of lithic finds for representative Level 6 suggests differences between the rear and front of the shelter: a range of tools, such as thumbnail endscrapers and borers in the rear of the rockshelter, close to the area of the hearth complex in the well-sheltered zone, suggests a range of domestic, small-scale craft activities, while end-of-flake scrapers and

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Basler²⁵ izveštava o zaokruženom ukupnom iznosu od 250.000 kremenih artefakata iz relativno male sonde koju je on iskopavao oko velike stene sa gravurom. Strugači, kružni ili noktasti, najzastupljeniji su tipovi, čineći 48% od ukupne zbirke. Mikrogravete su po dominantnosti druga klasa oruđa sa 26% od ukupne zbirke. Ispod površine iskopavane 1976–1979, ispod debelog sloja sterilnog *éboulis*, postoji pomen srednjopaleolitskih artefakata,²⁶ ali trenutno postoje ograničene informacije o mogućem postojanju nivoa koji su stariji od gornjeg paleolita.

Tokom istraživačkih kampanja 1986–1987, pronađeno je 7.860 okresanih kamenih artefakata, ne računajući materijal koji je pronađen u verovatno pomešanim kontekstima kompleksa ognjišta i nivoa 11M. Analiza litičkog materijala sa iskopavanja 1986–1987 pokazala je da među uopšteno “epigravetijskom” litičkom industrijom (sl. 10), koja je rasprostranjena diljem mediteranske Evrope, od južne Francuske do Grčke, postoji nekoliko dijahronijskih trendova, koji upućuju na najmanje dve jasno odvojene faze u ovoj stratigrafskoj sekvenci – rana i starija, sa prelazom do koga ugrubo govoreći dolazi u središnjem delu sekvence između nivoa 6 i 7a.²⁷ Sledeća opažanja su pružena o izrazitim razlikama između ova dva perioda: (1) dominacija malih sečiva sa hrptom sa pravim ili blago zakrivljenim hrptom u ranom periodu u kontrastu sa dominantnim prisustvom noktastih ili “kružnih” strugača u kasnom periodu; (2) mikrolamele sa hrptom sa primetno zakrivljenim hrptom više su osobenost kasnog perioda; (3) sečiva sa hrptom i kako mali tako i veliki šiljci sa hrptom na odbicima učestaliji su u kasnom periodu; (4) geometrijski mikroliti (uglavnom polumesečasti/segmenti, od kojeg su polovinu činili trouglovi) isključivo su ograničeni na kasni period; (5) od ranog do kasnog period opada prisustvo strugača na krajevima sečiva i velike, masivne postruške; (6) oruđa sa retuširanim prelomom učestalija su u kasnom periodu.²⁸

Osim ovih trendova, moguće je takođe primetiti da postoji samo jedan prepoznat kolenasti komad u čitavoj zbirci kremenih artefakata iskopanoj 1986–1987.²⁹ Dobro pripremljena prizmatična ili piramidalna jezgra su retkost, i uglavnom su jezgra loše pripremljena i veoma istrošena. Takođe su obilato prisutni oljušteni komadi (*pièces esquillées*), koji nastaju okresivanjem na tvrdoj podlozi sa bipolarnom tehnikom okresivanja, koji se tumače kao oblik jezgara za lamele. Prostorno analiza distribucije litičkih nalaza za reprezentativni nivo 6 ukazuje na razlike između prednjeg i zadnjeg dela potkapine: opseg oruđa, poput noktastih strugača i probojaca u pozadinskom delu potkapine, u blizini zone sa kompleksom ognjišta u dobro zaštićenoj zoni, ukazuje na

25 Basler 1979b, 349.

26 Whallon 1989, 9.

27 Whallon 1999.

28 Whallon 1999, 337.

29 Whallon 1999, Table 31.3.

25 Basler 1979b, 349.

26 Whallon 1989, 9.

27 Whallon 1999.

28 Whallon 1999, 337.

29 Whallon 1999, Table 31.3.

likely armatures (microgravettes, segments) were concentrated in the front of the shelter, possibly suggesting hide and skin processing activities, as well as activities related to the repair of hunting gear.³⁰

Comparison of the Badanj lithic assemblage with those in adjacent regions provides close parallels between Badanj and the assemblages in Apulia, southern Italy. For instance, the same trend seen at Badanj with regard to the dominance of backed bladelets in the early Epigravettian phases in contrast to the dominance of thumbnail or "circular" scrapers in the later phases is also found in southern Apulian sites (e.g., Romanelli, Taurisano, Fig. 1). The other similarity between the two regions is the recurrent presence of splintered pieces in both regions. One of the key differences between these assemblages, however, is the absence of microburins at Badanj and their persistence in the Italian Epigravettian assemblages. It is interesting to note that similarities in the character of the lithic assemblage between Badanj and southern Apulia are not shared with northern Apulian sites, such as Grotta Paglicci, in the Gargano peninsula (Fig. 1), even though this area is geographically closer to Badanj.³¹

The earliest Upper Palaeolithic level at Crvena Stijena, Montenegro, to the east of Badanj, massive Layer X, has now also been AMS-dated with one measurement to around 24 kya cal BP,³² which would correspond with the duration of the LGM. However, this layer also produced an Epigravettian-age date of 13.740–13.460 cal BP, while a date of similar Epigravettian age also originates from stratigraphically younger Layer VIII. This may suggest problems with the integrity of stratigraphic levels at Crvena Stijena as defined during the first excavations of the site,³³ with the likely presence of intrusions into earlier levels. Layer X was very thick, and four major subdivisions within it were recognized even in Basler's early excavations. The assemblages of lithic artifacts from these subdivisions of Layer X are too small to allow their clear typo-chronological definition, and the distinct possibility of intermixing of materials from the uppermost subdivision Xa and Layers IX and VIII above has been noted.³⁴ There are bipolar cores at Crvena Stijena in Layer X as well as cores for small bladelets. Among tools, there are bladelets and points with straight back, burins, and retouched blades, as well as notched tools and truncations. These elements may suggest a dating consistent with the period preceding the earliest assemblages at Badanj, which would correspond well with the respective characteristics of the assemblages from Layers X-VIII at Crvena Stijena, but a better grip over the chronology of this range of occupations at Crvena Stijena is urgently needed.

niz domaćih, malih zanatlijskih aktivnosti, dok su strugači na krajevima odbitaka i verovatne armature (mikrogravete, segmenti) bili koncentrisani u prednjem delu potkapine, možda upućujući na aktivnosti obrade krzna i kože, kao i aktivnosti vezane za popravku pribora za lov.³⁰

Poređenje litičke industrije sa Badnja i onih iz susednih regiona pruža bliske paralele između Badnja i industrija u Pulji u južnoj Italiji. Na primer, isti trend koji vidimo u Badnju kada je u pitanju dominacija mikrolamela sa hrptom u ranim fazama epigravetijena i obrnuto dominantno prisustvo noktastih ili "kružnih" strugača u kasnijim fazama takođe nalazimo na lokalitetima u južnoj Pulji npr. Romaneli, Taurizano, (sl. 1). Drugu sličnost između ova dva regiona predstavlja kontinuirano prisustvo oljuštenih komada u oba regiona. Međutim, jedna od ključnih razlika između ove dve industrije je odsustvo tehnike mikrodleta na Badnju i njeno prisustvo u epigravetijenskim zbirkama u Italiji. Interesantno je primetiti i da sličnosti u odlikama litičke industrije koje dele Badanj i južna Pulja nisu prisutne na nalazištima u severnoj Pulji, poput pećine Paljići na poluostrvu Gargano (sl. 1), iako je ova oblast geografski bliža Badnju.³¹

Najstariji gornjopaleolitski sloj na Crvenoj Stijeni u Crnoj Gori, koja se nalazi istočno od Badnja, masivni sloj X, sada je AMS datovan jednim merenjem na oko 24.000 cal BP³² što bi odgovaralo trajanju PGM. Međutim, ovaj sloj dao je i datum epigravetijenske starosti od 13.740–13.460 cal BP, dok datum slične epigravetijenske starosti takođe potiče i iz stratigrafski mlađeg sloja VIII. Ovo bi moglo da ukazuje na probleme sa integritetom stratigrafskih nivoa Crvene Stijene, tj. načinom na koji su definisani tokom prvih iskopavanja ovog nalazišta,³³ sa verovatnim prisustvom mlađih intruzija u starije nivoe. Sloj X bio je veoma debeo, i četiri glavne podfaze su prepoznate čak i tokom Baslerovih ranih radova na ovom nalazištu. Zbirke litičkih artefakata iz ovih podfaza sloja X suviše su male da bi dozvolile jasnu tipološko-hronološku definiciju, i već je ukazano na očiglednu mogućnost mešanja materijala iz gornje podfaze Xa i slojeva IX i VIII iznad.³⁴ Na Crvenoj Stijeni u sloju X, javljaju se bipolarna jezgra kao i jezgra za mikrolamele. Među oruđem, ima lamela i šiljaka sa pravim hrptom, dleta i retuširanih sečiva, kao i jamičastih oruđa i oruđa retuširanih na prelomu. Ovi elementi mogli bi da ukažu na datovanje koje bi odgovaralo periodu koji prethodni najranijoj fazi Badnja, što bi bilo u dobroj saglasnosti sa pojedinačnim odlikama kolekcija iz slojeva X-VIII na Crvenoj Stijeni, ali potreban je značajno bolji uvid u hronologiju raspona naseljavanja Crvene Stijene.

S druge strane, slojeve IX i VIII sa Crvene Stijene odlikuje prisustvo zakrivljenih lamela sa hrptom i geometrijskog

³⁰ Whallon 2007b.

³¹ Whallon 1999, 339.

³² Mercier *et al.* 2017.

³³ Cf. Basler 1975.

³⁴ Mihailović 2009, 87; Mihailović *et al.* 2017, 172.

³⁰ Whallon 2007b.

³¹ Whallon 1999, 339.

³² Mercier *et al.* 2017.

³³ Cf. Basler 1975.

³⁴ Mihailović 2009, 87; Mihailović *et al.* 2017, 172.

On the other hand, Layers IX and VIII at Crvena Stijena are characterized by the presence of arched backed bladelets and geometric tools. It seems that similar to the observed diachronic trends in the character of the lithic assemblage from Badanj, circular endscrapers appear in small frequency in Layer IX and are much more present in Layer VIII. Layer IX contained frequent large-sized points. Also, arched backed bladelets and clearly shaped geometric tools (segments, lunates, triangles), backed truncations as well as short circular and thumbnail endscrapers are all more prominent in Layer VIII, which would, similar to the Late period at Badanj, correspond to the Bølling/Allerød interstadial. The one available date for Layer VIII at Crvena Stijena (Tab. 2) agrees with this as well. The similarity is also seen in the presence of splintered pieces in Layer IX at Crvena Stijena. On the other hand, geometric tools, segments and triangles, disappear in Layers VII-VI, although other microlithization trends continued.³⁵ It has been suggested that Level VI at Crvena Stijena may possibly be correlated with Badanj levels 2a and 2b, which may be of Early Holocene date,³⁶ but currently we lack any further support of this claim.

The sites of Mališina Stijena and Medena Stijena, found close to each other in the canyon of the Čehotina River in northern Montenegro (Fig. 1), have also yielded lithic tool types that can be associated with Epigravettian traits. At Mališina Stijena, layer 3b1 has been dated with only one date so far to c. 17.100–16.240 cal BP (Tab. 2), corresponding to the date for the Early phase at Badanj. The lithic industry here is characterized by straight backed bladelets, endscrapers, and burins on blades and flakes. Younger layer 2 is characterized by backed bladelets (some of which are arched), endscrapers on short blades and shouldered blades.³⁷ There are currently no radiocarbon dates for Medena Stijena, where in Upper Palaeolithic levels, Layers IX and X, there were straight backed bladelets, retouched blades, and massive endscrapers and burins, while backed points and a large number of nosed endscrapers on flakes were found in Layer VIII. Chronologically later Layers VII-V contained an industry that may correspond to the pattern seen in the Late period at Badanj, with a large number of thumbnail and circular endscrapers, arched backed bladelets, backed truncations, and geometrics (triangles, lunates).³⁸ Finds from lower levels of the site of Trebački Krš, situated in eastern Montenegro (Fig. 1), may also correspond to the Epigravettian period with the presence of backed bladelets, some of which were arched, and endscrapers.³⁹ A major difference between the assemblage at Badanj and Montenegrin sites relates to the absence of burins at Badanj. There is also a more restricted

oruđa. Čini se da slično uočenim dijahronijskim trendovima u odlikama litičke industrije sa Badnja, kružni njuškasti strugači se pojavljuju u maloj količini u sloju IX a mnogo su prisutniji u sloju VIII. U sloju IX učestali su nalazi šiljaka većih dimenzija. Takođe, zakrivljene lamele sa hrptom i jasno oblikovana geometrijska oruđa (segmenti, polumesečasti oblici, trouglovi), oruđa retuširana strmo na prelomu kao i kratki kružni i noktasti njuškasti strugači učestaliji su u sloju VIII, što bi slično kao tokom kasnog perioda na Badnju, odgovaralo trajanju beling/alared interstadijala. Jedan postojeći datum za sloj VIII sa Crvene Stijene (tab. 2) takođe je u saglasnosti sa ovim zaključkom. Sličnost se takođe vidi i u prisustvu oljuštenih komada u sloju IX sa Crvene Stijene. S druge strane, geometrijska oruđa, segmenti i trouglovi, nestaju u slojevima VII-VI, iako se nastavljaju drugi trendovi mikrolitizacije.³⁵ Predloženo je da nivo VI sa Crvene Stijene može stajati u vezi sa nivoima 2a i 2b sa Badnja, koji bi mogli biti ranoholocenske starosti,³⁶ ali trenutno nije moguće pružiti bilo kakvu potporu ovoj tvrdnji.

Nalazišta Mališina Stijena i Medena Stijena, koja se nalaze blizu jedno drugog u kanjonu reke Čehotine u severnoj Crnoj Gori (sl. 1), takođe pružaju tipove okresanih kamenih artefakata koji imaju epigravetijenske odlike. Na Mališinoj Stijeni, sloj 3b1 datovan je za sada samo jednim datumom na oko 17.100–16.240 cal BP (tab. 2), što bi odgovaralo datumu za ranu fazu Badnja. Litičku industriju ovde odlikuju ravne lamele sa hrptom, njuškasti strugači i dleta na sečivima ili odbicima. Mlađi sloj 2 odlikuju lamele sa hrptom (od kojih su neke zakrivljene), njuškasti strugači na kratkim sečivima i kolenasta sečiva.³⁷ Trenutno nisu dostupna ¹⁴C merenja za slojeve Medene Stijene, gde se u gornjopaleolitskim slojevima IX i X javljaju ravne lamele sa hrptom, retuširana sečiva i masivni njuškasti strugači i dleta, dok su šiljci sa hrptom i veliki broj njuškastih strugača na odbicima prisutni u sloju VIII. U hronološki kasnijim slojevima VII-V javlja se industrija koja bi mogla odgovarati obrascu viđenom tokom kasnijeg perioda na Badnju, sa prisustvom velikog broja noktastih i kružnih njuškastih strugača, zakrivljenih lamela sa hrptom, oruđa strmo retuširanih na prelomu i geometrijskih oruđa (trouglovi, polumesečasti oblici).³⁸ Nalazi iz nižih slojeva nalazišta Trebački Krš, koji se nalazi u istočnoj Crnoj Gori (sl. 1), takođe mogu da odgovaraju epigravetijenskom periodu sa prisustvom lamela sa hrptom, od kojih su neke bile zakrivljene, i njuškastih strugača.³⁹ Glavna razlika između litičke industrije sa Badnje i crnogorskih nalazišta odnosi se na odsustvo dleta na Badnju. Takođe na Badnju se javlja ograničenoj dijapazon oruđa od crnogorskih nalazišta. S druge strane, masivni zakrivljeni šiljci i bilateralno retuširane lamele sa

35 Mihailović 2009, 78.

36 Whallon 1999.

37 Radovanović 1986; Mihailović 2009, 69.

38 Mihailović 1996, 1998.

39 Đuričić 1996.

35 Mihailović 2009, 78.

36 Whallon 1999.

37 Radovanović 1986; Mihailović 2009, 69.

38 Mihailović 1996, 1998.

39 Đuričić 1996.

range of tools at Badanj than at Montenegrin sites. On the other hand, massive arched points and bilaterally retouched backed bladelets common at Badanj are completely absent in Montenegro.⁴⁰

Some similarities with the lithic assemblage from Badanj can also be found in the broadly contemporaneous sequence at Klithi in Epirus,⁴¹ for instance in the presence of backed bladelets with straight and slightly curved backs. Yet there are also differences—at Klithi, there is the absence of splintered pieces, which are common at Badanj. Another difference is the presence of the microburin technique at Klithi. In addition, burin spalls frequent at Klithi are absent at Badanj.⁴²

Finally, there is a rich Epigravettian lithic assemblage excavated and reported from the cave site of Blazi in Albania (Fig. 1) dated to the later phases of the LGM (ca. 18.500–17.000 kya cal BP, Tab. 1),⁴³ thus preceding the sequence at Badanj on the face of the current dating evidence. However, it is of interest to note that at Blazi, similar to the sites in Epirus, burin spalls are present in the assemblage dominated by straight unilaterally backed microblades and bladelets. Microgravettes are also present and microblade cores are common. Splintered pieces are also found in very small quantities, similar to a small number of fan-shaped, circular, and thumbnail endscrapers. In addition, at the currently undated, near-coastal site of Kanali in Albania (Fig. 1), the presence of geometric microliths seems to indicate a later Epigravettian phase.⁴⁴

FAUNAL REMAINS

Apart from the information that the collection of faunal remains from the 1976–1979 excavations at Badanj was studied by B. Sala from the University of Ferrara,⁴⁵ there is no other mention of the faunal remains and the composition of the assemblage from this excavation phase.

The material from the 1986–1987 excavations was analyzed by Preston Miracle and presented in his unpublished

hrptom koje su česte na Badnju potpuno su odsutne u Crnoj Gori.⁴⁰

Neke sličnosti sa litičkom industrijom sa Badnja moguće je takođe pronaći u grubo istovremenoj sekvenci sa Klitija u Epiru,⁴¹ na primer kroz prisustvo lamela sa hrptom sa ravnim i blago zakrivljenim hrptom. Postoje takođe i razlike: sa Klitija su odsutni oljušteni komadi koji se učestalo javljaju na Badnju, druga razlika je prisustvo tehnike mikrodleta na Klitiju, i još, odbici dleta koji su česti na Klitiju odsutni su iz slojeva Badnja.⁴²

Konačno, postoji obimna epigravetijska zbirka pronađene i prezentovane litičke industrije sa nalazišta Blazi u Albaniji (sl. 1) koja je datovana u kasnije faze PGM (oko 18.500–17.000 cal BP, tab. 1),⁴³ po čemu bi prethodila sekvenci sa Badnja na osnovu trenutno dostupnih datuma. Međutim, treba primetiti da se u Blazi, slično nalazištima u Epiru, javljaju odbici dleta u industriji u kojoj su dominantne prave mikrolamele i sečiva sa unilaterlnim okresivanjem. Takođe su prisutne mikrogravete i jezgra za mikrolamele. U veoma malim količinama prisutni su i oljušteni komadi, a slično i mali broj lepezastih, kružnih i noktastih njuškastih strugača. Treba dodati da u Albaniji i na lokalitetu Kanali, koji se nalazi blizu morske obale (sl. 1), a koji trenutno nije apsolutno datovan, imamo prisustvo geometrijskih mikrolita koji bi mogli da ukazuju na kasnu epigravetijsku fazu.⁴⁴

OSTACI FAUNE

Pored dostupne informacije da su ostaci faune prikupljeni tokom iskopavanja Badnja 1976–1979. analizirani od strane B. Sala sa univerziteta u Ferari,⁴⁵ nema drugog pomena ovog materijala i sastava zbirke koja je prikupljena tokom ove istraživačke faze.

Preston Mirakl je analizirao faunistički materijal iskopan 1986–1987, prezentujući rezultate u svojoj nepublikovanoj doktorskoj disertaciji.⁴⁶ Prostorno postoje razlike između prednjih i zadnjih nivoa potkapine u sastavu sisarskih vrsta,

40 Mihailović 2009, 93.

41 Bailey 1997.

42 Whallon 1999, 340.

43 Hauk *et al.* 2017.

44 Hauk *et al.* 2016, 2017.

45 Miracle 1995, 127.

40 Mihailović 2009, 93.

41 Bailey 1997.

42 Whallon 1999, 340.

43 Hauk *et al.* 2017.

44 Hauk *et al.* 2016, 2017.

45 Miracle 1995, 127.

46 Miracle 1995.

Fig. 11. Pointed osseous tools from Badanj. 1. inv. 7775 (sq. XX/11, 0.3–0.4); 2. inv. 7279 (sq. XXI–XXII/15–16, surface); 3. inv. 7762 (sq. XV/7, 1.7–1.8); 4. inv. 6687 (sq. XIII/7, 0.2–0.3); 5. inv. 7763 (sq. XV/6, 0.2–0.3); 6. inv. 6695 (sq. XV/12, 1.1–1.2); 7. inv. 7774 (sq. XIX/9, 1.3–1.4); 8. inv. 7756/2 (sq. XV/5, 0.5–0.6); 9. Red deer antler blank, inv. 7808 (sq. XV/5, 1.0–1.1); 10. inv. 7259 (sq. XII/8, 1.5–1.6).

Sl. 11. Zašiljene koštane alatke sa Badnja. 1. inv. 7775 (kv. XX/11, 0,30–0,40); 2. inv. 7279 (kv. XXI–XXII/15–16, površina); 3. inv. 7762 (kv. XV/7, 1,7–1,8); 4. inv. 6687 (kv. XIII/7, 0,2–0,3); 5. inv. 7763 (kv. XV/6, 0,2–0,3); 6. inv. 6695 (kv. XV/12, 1,1–1,2); 7. inv. 7774 (kv. XIX/9, 1,30–1,40); 8. inv. 7756/2 (kv. XV/5, 0,5–0,6); 9. blenk roga jelena, inv. 7808 (kv. XV/5, 1,0–1,1); 10. inv. 7259 (kv. XII/8, 1,5–1,6).



Ph.D. dissertation.⁴⁶ Spatially, there are differences between the front and back levels of the shelter in mammalian species composition while, at the same time, changes also occur over time. The most abundant hunted species are red deer (*Cervus elaphus*), chamois/ibex (*Rupicapra/Capra* sp.), roe deer (*Capreolus capreolus*), hare (*Lepus* sp.), wild boar (*Sus scrofa*), aurochs (*Bos primigenius*), and wild ass (*Equus hydruntinus*). Carnivores (*Vulpes vulpes*, *Canis* sp., *Meles meles*, *Felis silvestris*, *Felis lynx*) are found in small frequencies. The general trend over time from earlier to later levels is the increase in the frequencies of wild boar and roe deer, and a drop in the frequencies of chamois/ibex (from Level 6 onwards). The red deer is steadily present as the staple hunted game species from the very start of the sequence but its dominance increases further from Level 6 onwards. There is a sharp rise in the hunting of roe deer at the end of the sequence (Levels 2 and 1). These major shifts are explained by environmental changes due to the expansion of forest cover at the expense of angry karst, the latter being a preferred habitat of chamois/ibex.⁴⁷ This would be expected from warmer climatic conditions of the Bølling/Allerød interstadial into which the later part of the Badanj sequence can be placed (Fig. 9). A small number of identified marmot (*Marmota marmota*) remains are restricted to the lower part of the sequence, which would correspond to the assumed duration of the Oldest Dryas. On the other hand, throughout the sequence, red deer, roe deer, and wild boar remains were more frequently found in the back levels of the shelter while chamois/ibex remains were more frequently found in the front levels. Based on his analysis, Miracle⁴⁸ suggested grouping of different levels in the sequence of Badanj into Upper (Levels 1, 2, 2a/2b, 5), Middle (Levels 3, 4, 5a, 6, 7), Lower (Levels 7a, 8, 9, 10, 11, 12, 14), and Lowest (Levels 13, 16, 17).

In some levels (2a, 5a, 4, 12, and 17), large concentrations of land snails (*Helix* sp.) were found, often next to the back of the shelter. By far the largest concentration was found in Level 2a, and it remains unclear to what extent the accumulation of land snails relates to human or environmental factors.⁴⁹ Very few fish specimens were recovered at Badanj (NISP=21) and the discovered remains are primarily concentrated throughout the Later period of the site sequence, which would correspond well with the appearance of barbed points made from antler, which might have possibly been used as harpoons for fishing in the nearby river around the same time (but see below). Yet, it is unclear whether such a small assemblage of fish bones would justify the presence of barbed points, which also could have been used in targeting game, and we will return later to a discussion of this category of tools and their possible function. Bird bones are similarly rare (NISP=16).

dok u isto vreme, do promena dolazi i tokom vremena. Najzastupljenije lovne vrste su jelen (*Cervus elaphus*), divokoza/kozorog (*Rupicapra/Capra* sp.), srndać (*Capreolus capreolus*), zec (*Lepus* sp.), divlja svinja (*Sus scrofa*), divlje goveče (*Bos primigenius*) i divlji magaraca (*Equus hydruntinus*). Mesožderi (*Vulpes vulpes*, *Canis* sp., *Meles meles*, *Felis silvestris*, *Felis lynx*) manje su zastupljeni. Opšti trend tokom vremena od ranijih do kasnijih nivoa je porast u učestalosti divlje svinje i srndaća, i pad u učestalosti divokoze/kozoroga (od nivoa 6 nadalje). Jelen je stalno prisutna glavna lovna vrsta od samog početka sekvence ali njegova dominacija se još više povećava od nivoa 6 nadalje. Dolazi do naglog porasta lova na srndaće na kraju sekvence (nivoi 2 i 1). Ove ključne promene moguće je objasniti promenama prirodne sredine koje su uzrokovane širenjem šumskog pokrivača preko ljutog karsta, koji predstavlja omiljen habitat za divokozu/kozoroga.⁴⁷ Ovo je moguće očekivati od toplijih klimatskih uslova beling/alared interstadijala za koji vezujemo kasniji deo sekvence na Badnju (sl. 9). Mali broj identifikovanih ostataka marmota (*Marmota marmota*) ograničen je na donje slojeve sekvence, što bi odgovaralo pretpostavljenom trajanju starijeg drijasa. S druge strane, tokom čitave sekvence, jelen, srndać i divlja svinja ostaju najčešće nalaženi u pozadinskim nivoima potkapine dok su ostaci divokoze/kozoroga bili češće pronalazeni u prednjim nivoima. Na osnovu njegove analize, Mirakl⁴⁸ je predložio grupisanje različitih nivoa sa sekvence na Badnju u gornje (nivoi 1, 2, 2a/2b, 5), srednje (nivoi 3, 4, 5a, 6, 7), donje (nivoi 7a, 8, 9, 10, 11, 12, 14) i najniže (nivoi 13, 16, 17).

U nekim nivoima (2a, 5a, 4, 12 i 17) pronađene su velike koncentracije ljuštura puževa (*Helix* sp.), često uz pozadinu potkapine. Ubedljivo najveća koncentracija pronađena je u nivou 2a i ostaje nejasno u kojoj meri akumulacija ljuštura puževa ima veze sa ljudskim faktorom ili prirodnim okruženjem.⁴⁹ Veoma mali broj ribljih ostataka je pronađen na Badnju (NISP=21), a otkriveni ostaci uglavnom su bili koncentrisani u kasnijem periodu sekvence ovog nalazišta, što bi bilo u dobroj saglasnosti sa pojavom šiljaka sa zupcima napravljenim od jelenskog roga, a koji su tokom ovog perioda možda mogli biti korišćeni kao harpuni za ribolov u obližnjoj reci (ali videti dole). Ipak nejasno je da li ovako mali broj ribljih kostiju opravdava postojanje šiljaka sa zupcima, koji su takođe mogli biti korišćeni u lovu na divljač, te ćemo se kasnije vratiti na raspravu o ovoj kategoriji oruđa i njegovoj mogućoj nameni. Retko se javljaju kosti ptica (NISP=16).

Mirakl i Obrajan⁵⁰ ispitili su dva tipa pokazatelja sezonalnosti kako bi došli do podataka o sezoni tokom koje je Badanj bio naseljen a u kontekstu postojećih modela o sezonalnoj

⁴⁶ Miracle 1995.

⁴⁷ Miracle, Sturdy 1991.

⁴⁸ Miracle 1995, 138.

⁴⁹ Miracle 1995.

⁴⁷ Miracle, Sturdy 1991.

⁴⁸ Miracle 1995, 138.

⁴⁹ Miracle 1995.

⁵⁰ Miracle, O'Brien 1998.

Miracle and O'Brien⁵⁰ examined two types of seasonality indicators in order to suggest the season of occupation of Badanj against the background of existing models of Palaeolithic foragers' seasonal transhumance and likely changes in patterns of forager logistic mobility in periods of significant climatic unpredictability towards the end of the Pleistocene. There were significant and sometimes rapid climatic and environmental shifts during this period that might have had a knock-on effect on the seasonal density and availability of animal herds and displacements of human population from the presumably productive coastal plain areas, caused by sea level rise, into the hinterland of the Adriatic Basin. Fetal remains of red deer and tooth cementum annulation (TCA) on red deer teeth were examined, considering that red deer is the most dominantly present and thus representative subsistence staple species. While sample sizes for neither of the two methods are particularly large when specimens are disaggregated by different levels of the sequence that spanned several millennia, at face value the data seem to suggest a strong pattern of winter use of the site for targeting hind (female) herds, especially in relation to the Early period (Levels 7, 13) of the sequence. There seems to have been a shift in the Late period (Levels 2b, 3, 5a) of the sequence with more variable seasons of occupation as mortality profiles for red deer shifted into the summer and/or fall, which could be in line with changes brought by the onset of the Bølling/Allerød interstadial around 14.600 kya cal BP, the rise of sea levels, and the assumed general shifts in the scheduling of the seasonal rounds of the wider regional resource exploitation and mobility. The targeting of female herds by Badanj hunters in the winter might have stemmed from the decision to obtain prey of relatively fat-rich individuals compared to malnourished male individuals of red deer during the same season.⁵¹ The relative rarity of red deer antlers, restricted to male individuals, throughout the sequence of the site may corroborate the scenario of the preferential hunting of female herds. On the other hand, the presence of some tools made from red deer antlers from Level 6 onwards (see below) suggests that red deer antlers used in manufacturing these artifacts might have been collected as shed antlers, that some male individuals were hunted after all, and/or that these barbed points might have been made elsewhere and brought to the site as finished products.

We will return to a further discussion of the relevance of the examined indicators of the seasonality of site occupation when modeling and reconstructing a wider pattern of forager residential/seasonal mobility in this part of the Adriatic Basin. This discussion will particularly be relevant when considering the availability, use, and frequencies of certain marine gastropods, scaphopods, and bivalves used as personal adornment in the rich assemblage of these items at Badanj.

transhumanci paleolitskih lovaca-sakupljača i verovatnim promenama u obrascu logističke mobilnosti lovaca-sakupljača tokom perioda koje je odlikovala značajna klimatska nepredvidivost krajem pleistocena. Tokom ovog perioda dolazilo je značajnih i povremeno naglih klimatskih promena kao i promena u prirodnom okruženju koje su mogle da imaju uticaj na sezonsku gustinu i dostupnost životinjskih krda i na izmeštanje ljudske populacije iz pretpostavljenih produktivnih obalskih nizija u jadransko zaleđe zbog porasta nivoa mora. Ovi autori su ispitali fetusne ostatke jelena i anulacije zubnog cementa na jelenskim zubima, uzimajući u obzir da je jelen najdominantnije prisutna i otud reprezentativna glavna prehrambena vrsta. Iako dostupan uzorak nije bio naročito velik za bilo koji od ovih metoda kada se primerci razdvoje po različitim nivoima sekvence koja traje nekoliko milenijuma, na prvi pogled izgleda da podaci ukazuju na izražen obrazac zimskog korišćenja nalazišta za ciljni ulov krda košuta, naročito tokom ranog perioda sekvence (nivoi 7, 13). Izgleda da dolazi do promene tokom kasnog perioda (nivoi 2b, 3, 5a) sekvence sa promenljivijim sezonama naseljavanja s obzirom na to da se starosni profili za jelena pomeraju ka letnjem i/ili jesenjem naseljavanju, što bi moglo da odgovara promenama do kojih dolazi početkom beling/alered interstadijala oko 14.600 cal BP, porastu nivoa mora i pretpostavljenim opštim izmenama u planiranju sezonskih ruta u okviru šire regionalne eksploatacije resursa i mobilnosti. Usredsređenost na krda košuta od strane lovaca sa Badnja tokom zime moglo je poticati iz odluke da se dođe do plena relativno uhranjenih individua u poređenju sa neuhranjenim individuama mužjaka jelena tokom ove iste sezone.⁵¹ Relativna retkost jelenskih rogova, koji se vezuju samo za mužjake, kroz čitavu sekvencu nalazišta mogla bi da potkrepi ovaj scenario prioritarnog lova na krda košuta. S druge strane, prisustvo nekih oruđa načinjenih od jelenskih rogova od nivoa 6 nadalje (videti dole) ukazuje na to da su jelenski rogovi korišćeni u pravljenju ovih artefakata mogli biti kupljeni kao odbačeni rogovi, da su neki mužjaci ipak lovljeni i/ili da su ovi šiljci sa zupcima mogli biti napravljeni negde drugde te da su doneti na nalazište kao gotovi proizvodi.

Kasnije ćemo se vratiti na raspravu o značaju ispitanih pokazatelja sezonalnosti naseljavanja kada se modeluje i rekonstruiše širi obrazac rezidencijalne/sezonalne mobilnosti lovaca i sakupljača u ovom delu Jadranskog bazena. Takva rasprava naročito će biti od značaja kada se uzimaju u obzir dostupnost, upotreba i učestalost određenih morskih gastropoda, skafofoda i školjkaša koji su korišćeni za ukrašavanje tela u bogatoj zbirci ovih predmeta sa Badnja.

50 Miracle, O'Brien 1998.

51 Miracle, O'Brien 1998, 68.

51 Miracle, O'Brien 1998, 68.

MATERIAL AND METHODS

We have examined the largest part of the existing collection of osseous tools and personal ornaments from Badanj but our analysis is not complete at present. Hence the data we present below are preliminary insights with much more detail and a comprehensive coverage to be provided elsewhere. All examined specimens were measured, photographed in several projections with a NIKON D3200 digital camera equipped with macro lens, studied by naked-eye, and further examined using a Colestron Microdirect 1080 HD handheld digital microscope with magnification up to 220x in order to understand feasibility for further techno-functional study. While use-wear and residue analyses are somewhat hampered by the heavy presence of consolidants over the surfaces and writing of museum inventory numbers, a number of artifacts have already been selected for further microscopic examination using both low and high magnification. In addition, in the past, for exhibition purposes, a large number of personal ornaments were strung together, which, for the moment, in some cases prevents their detailed examination. While the osseous materials we examined include specimens found during both 1976–1979 and 1986–1987 excavations at Badanj, the personal ornaments we analyzed come from Basler's excavations only.

OSSEOUS TOOLS

Basler⁵² reports a total of 11 osseous tools from the zone he excavated in the late 1970s. In the museum collection, we have found at least 53 osseous tools that come from Basler's excavations at the site. In the course of the 1986–1987 excavations, osseous tools were also found in low frequency compared to flint implements. It has been noted that stratigraphically the rare occurrence of antler barbed points is restricted to the Late period in the sequence, i.e., from Level 6 onwards.⁵³

POINTED TOOLS

A number of bone tools in the examined assemblage are distal parts of pointed tools (Fig. 11). As with other artifacts, doing use-wear analysis is to some extent hampered by the use of consolidants. Based on manufacturing traces, slightly asymmetrical pointed tools, made on medium to large mammal long bone/metapodial diaphysis, are created by invasive flint scraping of the surfaces. No earlier steps in the production sequence can be observed on the specimens we have examined. A large asymmetrical point with a broken tip was likely made from the ulna of a large mammal (Fig. 11.10). Asymmetric pointed tools made from bone are known from our examination of the assemblage of osseous tools found in the Early to Late Epigravettian-dated Layers VIII and VII at the Crvena Stijena rockshelter in Montenegro

MATERIJAL I METODE

Analizirali smo najveći deo postojeće zbirke koštanih alatki i predmeta za ukrašavanje tela sa Badnja, ali ova analiza trenutno nije potpuna. Otuda, podaci koji će ovde biti prikazani predstavljaju preliminarne zaključke sa više detalja i detaljnim pregledom koji će biti prezentovani drugde. Svi ispitani primerci su mereni, fotografisani u nekoliko projekcija sa digitalnim fotoaparatom NIKON D3200 opremljenim sa makro objektivom, proučavani golim okom i koristeći Colestron Microdirect 1080 HD ručni digitalni mikroskop sa uvećanjem do 220 puta kako bi odredili svrishodnost dalje tehno-funkcionalne studije. Dok su analize tragova upotrebe i rezidualnih ostataka donekle otežani značajnim nanošenjem konsolidanata preko površina artefakata i pisanjem muzejskih inventarnih brojeva, određeni broj artefakata već je odvojen za dalju mikroskopsku analizu koja će uključiti kako niža tako i viša uvećanja. Treba dodati da je u prošlosti zbog njihovog korišćenja za izložbeno izlaganje veliki broj predmeta za lično ukrašavanje nanizan i tako prezentovan, što trenutno u nekim slučajevima sprečava njihovu dalju analizu. Dok je koštani materijal koji smo pregledali uključivao primerke pronađene kako tokom iskopavanja na Badnju 1976-1979 tako i tokom 1986-1987, predmeti za lično ukrašavanje koji su analizirani potiču samo sa Baslerovih iskopavanja.

KOŠTANE ALATKE

Basler⁵² pominje ukupno 11 koštanih alatki iz zone koju je iskopavao tokom kasnih 1970-ih. U muzejskoj zbirci pronašli smo najmanje 53 koštane alatke koje potiču sa Baslerovih iskopavanja. Tokom iskopavanja 1986-1987, koštane alatke takođe su pronalazene u malom broju u poređenju sa kremenim nalazima. Stratigrafski, već je bilo primećeno da je retka pojava šiljaka sa zupcima od jelenskog roga ograničena na kasniji period ove sekvence, tj. od nivoa 6 nadalje.⁵³

ZAŠILJENE ALATKE

Jedan broj koštanih alatki u analiziranoj zbirci su distalni delovi zašiljenih alatki (sl. 11). Kao u slučaju drugih artefakata, analiza tragova upotrebe i ovde je donekle otežana zbog korišćenja konsolidanata. Sudeći po tragovima izrade, blago asimetrične zašiljene alatke, napravljene na dijafizama dugih i/ili metapodijalnih kostiju srednjih do krupnih sisara nastale su invazivnim struganjem kремена po površini. Ranije korake u lancu izrade nije bilo moguće primetiti na analiziranim primercima. Krupan asimetrični šiljak koji je imao polomljen vrh verovatno je bio napravljen od fragmenta ulne krupnog sisara (sl. 11: 10). Asimetrične zašiljene alatke napravljene od kosti javljaju se i u zbirci koštanih alatki koje

⁵² Basler 1979b, 349.
⁵³ Whallon 1999, 338.

⁵² Basler 1979b, 349.
⁵³ Whallon 1999, 338.

(unpublished data). Similar basic shapes can also be found in the assemblage of Early (Layer C/d) and Late (Layer B/d and Complex B) Epigravettian tools from the site of Šandalja II in Istria, Croatia.⁵⁴ Further analogies can be made with the assemblage of bone tools from the Dalmeri rock-shelter in northern Italy (Asiago Plateau), where, along with asymmetric points, numerous projectile points were found as well as blanks made from red deer antler.⁵⁵ There is one tapered point made from a long bone diaphysis (Fig. 11:7) and one symmetric bipoint made from an antler blank (Fig. 11:8). Both of these specimens show developed traces of use. In the course of the Late Upper Palaeolithic, osseous bipoints were widespread across the eastern Alpine region and the eastern Adriatic zone (e.g. Vela Spila). Long tapered points are documented in the Mesolithic layers of Crvena Stijena in Montenegro and in the central Balkans.

A large and fully shaped antler blank (Fig. 11:9), manufactured by double longitudinal grooving along the axis and transversal cutting of its lower, proximal end, is noteworthy. This is likely a roughout, possibly intended for the production of a long projectile point or barbed point. The stratigraphic position of the specimen, which was found in the course of the first excavations at the site at the depth of 1.0-1.1 m, although relatively deep, could still likely be considered roughly at the boundary between the Early and Late Period of occupation of the site as identified in the area excavated in 1986-1987. Hence it could relate to the production of barbed points made from antler.

BARBED POINTS

All of the examined unilateral barbed points (Fig. 12) were made from red deer antler. There were two to three or more barbs on each specimen. One heavily fragmented specimen (Fig. 12:5) does not have preserved barbs, but we include it in this category on the basis of several traits—it was made from red deer antler, oblique transversal cuts on one side and specific use-fracture indicate that a barb might have been present here, and it has a perforation near its distal end—all of which may tentatively suggest it was a barbed point. The specimens exhibit different morphologies. They are well preserved even though they are affected by taphonomical alterations—discoloration and exfoliation of the surface tissue caused by water activity, as well as burning, the latter clearly visible on two specimens (Fig. 12:4-5). No manufacturing traces related to the debitage can be discerned on these specimens as these were scraped out while shaping them, with the exception of one specimen on which longitudinal grooving marks in the shape of deep striations are still visible on the side of the tool where barbs are missing (Fig. 12:3). Overall, double grooving was used for carving all the blanks, which were later regularized by

smo analizirali iz ranih i kasnih epigravetijenskih slojeva VIII i VII potkapine Crvena Stijena u Crnoj Gori (nepublikovani podaci). Slični osnovni oblici mogu se takođe naći u zbirci ranih (sloj C/d) i kasnih (sloj B/d i kompleks B) epigravetijenskih alatki sa lokaliteta Šandalja II u Istri u Hrvatskoj.⁵⁴ Dalje analogije mogu se praviti sa zbirkom koštanih alatki iz potkapine Dalmeri u severnoj Italiji (plato Azijago), gde su, uz asimetrične šiljke, pronađeni brojni pripremljeni blankovi za projekte napravljeni od jelenskog roga.⁵⁵ Javlja se i šiljak od dijafize duge kosti sa pljosnatim proksimalnim krajem (sl. 11: 7) i jedan simetrični šiljak sa vrhovima na oba kraja napravljen od jelenskog roga (sl. 11: 8). Oba primerka pokazuju razvijene tragove upotrebe. Tokom kasnog gornjeg paleolita, koštani šiljci sa vrhovima na oba kraja prisutni su diljem regije istočnih Alpa i u istočno-jadranskoj zoni (npr. Vela Spila). Dugi šiljci sa pljosnatim proksimalnim krajem dokumentovani su u mezolitskim slojevima Crvene Stijene u Crnoj Gori i na centralnom Balkanu.

Treba pomenuti veliki i potpuno pripremljen blank od jelenskog roga (sl. 11: 9), izrađen duplim žljebljenjem duž uzdužne ose i poprečnim sečenjem donjeg, proksimalnog kraja. Ovo je mogući polufabrikat, koji je možda bio namenjen izradi dugih projektilnih šiljaka ili šiljaka sa zupcima. Stratigrafski položaj ovog primerka, pronađenog tokom prvih iskopavanja ovog nalazišta na dubini od 1,0-1,1 m, iako relativno duboko, još uvek je moguće smatrati grubom granicom između ranog i kasnog perioda u naseljavanju ovog mesta po tome kako su ove glavne dve faze određene tokom iskopavanja 1986-1987. Otuda bi ovaj primerak mogao da se odnosi na izradu šiljaka sa zupcima koji su bili napravljeni od jelenskog roga.

ŠILJCI SA ZUPCIMA

Svi analizirani šiljci sa jednostranim zupcima (sl. 12) bili su napravljeni od jelenskog roga. Nalazimo dva do tri ili više zubaca na svakom primerku. Jedan dosta fragmentovan primerak (sl. 12: 5) nema sačuvane zupce, ali je u ovu kategoriju alatki uključen zbog nekoliko odlika – napravljen je od jelenskog roga, poprečni zarez na jednoj strani su koso postavljeni, ima specifičan prelom koji verovatno potiče od upotrebe i ukazuje da je ovde mogao da se nalazi zubac i konačno perforacija se nalazi blizu distalnog kraja. Sve ovo zajedno moglo bi da uslovno ukazuje na šiljak sa zupcima. Primerci u ovoj kategoriji različitih su oblika. Dobro su očuvani iako su bili izloženi tafonomskim promenama – izgubila se boja i površinsko tkivo je oljušteno aktivnošću vode kao i gorenjem, koje je jasno uočljivo na dva primerka (sl. 12: 4-5). Na ovim primercima nema uočljivih tragova izrade u vezi sa lomljevinom jer su bili ostrugani tokom oblikovanja alatki, sa izuzetkom jednog primerka na kome su još vidljivi

⁵⁴ Karavanić et al. 2013, Figs. 17-19.

⁵⁵ Cristiani 2018.

⁵⁴ Karavanić et al. 2013, Sl. 17-19.

⁵⁵ Cristiani 2018.

scraping. Barbs were added at the end of the manufacturing process by tracing them first and subsequently cutting them using a flint tool (Figs. 13-14). A large perforation is visible on two artifacts-on one entire specimen where it was carved and, subsequently enlarged by rotation (Fig. 12:1), and on the partly burnt specimen (Fig. 12:5) where it was carved by deep grooving. Yet, it remains unclear what the exact shape of the latter specimen is, and whether it had barbs on the missing, more proximal part of the tool. All specimens show heavy traces of use. There are visible compaction marks and compacted tissue at the base of the AMS-dated specimen 10016 (Fig. 13:1), which in combination with the presence of a perforation close to the base of the same specimen may point to the use of this barbed point as a proper detachable harpoon head inserted into some sort of haft in order to maintain the link between the prey and the hunter. However, we cannot exclude its possible use as a projectile arrow or that it might have been used with a spearthrower.⁵⁶

Here we prefer to use a more neutral term barbed point (designed to obstruct easy extraction from a wound) rather than the commonly used designation "harpoon." The latter is considered as an operating mode rather than necessarily a particular morphological category of weaponry, i.e., it refers to the mode of predation when a detachable head is attached to a line, "drag," or impediment that always maintains the link between the prey and the hunter.⁵⁷ Based on his examination of the Upper Magdalenian barbed points against the known function of different morphologies of barbed weaponry among North American ethnographic cases, Pétilion⁵⁸ has shown that morphological features of barbed points (e.g., spurs, or holes on proximal ends of barbed projectiles), often used in making an argument that barbed points were used as detachable harpoon heads, are not sufficient traits for an unequivocal distinction between harpoons, which are primarily used in hunting fish, otter, beaver, and other water animals in known ethnographic examples, and a more general category of barbed projectiles, which could have been used as arrows when hunting large game or even as weapons of war.

With two direct AMS measurements (Tab. 2, Fig. 9) now available for two barbed points found during both research phases at Badanj, as well as judging by the stratigraphic position of other barbed specimens, it is possible to confirm that this type of tools is confined to the Late period of the Badanj sequence. Specimen 10016, which was found in Level 6 and dated by OxA-2796-45, suggests the likely appearance of this technological innovation already from around 14.000 kya cal BP to 13.300 kya cal BP, a large span due to large error terms of this measurement. On the other hand, OxA-38111 dates another barbed point specimen (7263),

uzdužni tragovi žljebljenja u obliku dubokih strija na strani alatke gde nedostaju zupci (sl. 12: 3). Uopšteno govoreći, duplo žljebljenje je korišćeno za rezbarenje svih blankova, koji su kasnije oblikovani struganjem. Zupci su dodavani na kraju procesa izrade najpre određivanjem oblika a zatim usecanjem kremenom alatkom (sl. 13: 14). Velika perforacija vidljiva je na dva artefakta-na jednom čitavom primerku gde je bila usečena i potom uvećana rotacijom (sl. 12: 1), kao i na delimično gorelom primerku (sl. 12: 5) gde je oblikovana dubokim žljebljenjem. Ipak, ostaje nejasno šta je bio tačan oblik ovog primerka, i da li su postojali zupci na proksimalnom kraju ove alatke koji nedostaje. Na svim primercima je uočljivo značajno prisustvo tragova upotrebe. Vidljivi su tragovi zbijanja i zgnječenog tkiva na bazalnom delu AMS-datovanog primerka 10016 (sl. 13: 1), koji uz prisustvo perforacije u blizini baze ovog primerka mogu da ukazuju na korišćenje ovog šiljka sa zupcima kao prave odvojive glave harpuna koja je bila usađivana u neku vrstu usadnika preko kojeg je održavala vezu između lovine i lovca. Međutim, ne možemo isključiti moguću upotrebu ove alatke kao projektilne strele ili je pak mogla biti korišćena sa bacačem koplja.⁵⁶

Ovde smo se opredelili da koristimo neutralniji termin šiljak sa zupcima (koji su osmišljeni da spreče lako izvlačenje iz rane) u odnosu na uobičajeno korišćenje termina "harpun" za ovakva oruđa. Pod harpunom se podrazumeva način upotrebe pre nego određena morfološka kategorija oružja, tj. termin se odnosi na način predatornog ponašanja kada je odvojiva glava vezana za struk, "povodac" ili prepreku koja uvek održava vezu između lovine i lovca.⁵⁷ Na osnovu njegove studije kasno-magdalijskih šiljaka sa zupcima u svetlu poznate uloge različitih morfološkija nazupčenog oružja među severnoameričkim etnografskim slučajevima, Petijon⁵⁸ je pokazao da morfološke odlike šiljaka sa zupcima (npr. izbočina ili rupe na proksimalnim krajevima projektila sa zupcima), koje su često korišćene kao argument da su šiljci sa zupcima bili korišćeni kao odvojive glave harpuna, nisu dovoljne osobine koje bi nedvosmisleno pravile razliku između harpuna, koji su prvenstveno korišćeni pri ulovu ribe, vidre, dabra i drugih životinja vezanih za vodu u poznatim etnografskim primerima, i opštije kategorije projektila sa zupcima, koji su mogli biti korišćeni kao strele pri lovu na krupnu divljač ili pri oružanom sukobu.

Dva neposredna AMS merenja (T. 2; sl. 9) sada su dostupna za dva šiljka sa zupcima koji su pronađeni tokom obe istraživačke faze na Badnju, a i sudeći na osnovu stratigrafskog položaja drugih primeraka sa zupcima, moguće je potvrditi da je ovaj tip oruđa usko vezan za kasni period sekvence na Badnju. Primerak 10016, koji je pronađen u nivou 6 i datovan sa OxA-2796-45, ukazuje na moguću pojavu ove

⁵⁶ Cf. Pétilion 2008.

⁵⁷ Pétilion 2008, 77.

⁵⁸ Pétilion 2008.

⁵⁶ Cf. Pétilion 2008.

⁵⁷ Pétilion 2008, 77.

⁵⁸ Pétilion 2008.

found in Basler's trench but, unfortunately, with no precise contextual details. It gives a more precise measurement that falls into the last centuries of the 14th millennium cal BP (Tab. 2). Specimen 10037 (Fig. 12:3) was found in Level 2 and it would be expected that it is of even younger date, perhaps pushing its age to the end of the Bølling/Allerød interstadial in the first centuries of the 13th millennium cal BP, or perhaps even later, but this can only be confirmed by future targeted AMS dating if not of this particular specimen then of datable materials from the uppermost levels of the site. For specimens 7264 and 7807, found during Basler's excavations, recorded depths of 0.5-0.6 and 0.6-0.7 suggest that these clearly belonged to the Late period of the stratigraphic sequence.

These new direct AMS measurements provide an unambiguous confirmation that currently the barbed points from Badanj represent the earliest directly dated appearance of this technological innovation in the whole of southeastern Europe, including the Italian Peninsula. After possible early experimentation during the Gravettian period in western Europe with barbed points,⁵⁹ barbed points make a significant appearance in the Upper Magdalenian period, from around 16.000/15.500 kya cal BP to around 14.000 kya cal BP.⁶⁰ The Badanj harpoons are thus somewhat later and would correspond to the use of barbed points during the Azilian period in western Europe from around 14.000 kya cal BP.⁶¹

At present, in the absence of more robust evidence in the in-between zones (e.g. Italy), it remains difficult to make assumptions about the modalities of cultural transmission of this technological innovation between southwestern France and the Adriatic Basin. Yet, the rather sporadic presence of barbed points during the Epigravettian period of the Adriatic Basin would more likely speak of a cultural transmission of this technological novelty from a center into the Adriatic zone than of an independent local innovation or technological convergence. Furthermore, recent genomic data suggest a widespread European hunter-gatherer gene pool for individuals younger than 14.000 kya cal BP, i.e., from the start of the Bølling/Allerød interstadial, forming the so-called Villabruna cluster named by the oldest individual burial in the cluster from the Epigravettian site of Villabruna in northern Italy.⁶² This genomic study suggested that the population expansion at the end of the LGM might have originated in southeastern Europe and western Asia, but currently we lack good genomic coverage of Epigravettian period in the Balkans. Nevertheless, we could expect greater human mobility⁶³ around this time, and easier transfer of

tehnološke inovacije već od oko 14.000 cal BP do 13.300 cal BP. Ovaj veliki raspon je posledica raspona greške kod ovog merenja. S druge strane, OxA-38111 datuje drugi primerak šiljka sa zupcima (7263), pronađenog u Baslerovoj sondi, ali na žalost, bez preciznih kontekstualnih detalja. Ovo merenje je preciznije i pada u poslednje vekove 14. milenijuma cal BP (tab. 2). Primerak 10037 (sl. 12: 3) je pronađen u nivou 2 i bilo bi za očekivati da je još mlađeg datuma. Možda sa samog kraja beling/alered interstadijala u prvim vekovima 13. milenijuma cal BP ili možda čak kasnije, ali ovo možemo potvrditi samo budućim ciljanim AMS datovanjem ako ne ovog primerka onda materijala koji je moguće datovati iz najviših nivoa nalazišta. Kod primeraka 7264 i 7807, koji su pronađeni tokom Baslerovih iskopavanja, zabeležene dubine od 0,5-0,6 i 0,6-0,7 upućuju na to da ovi primerci jasno pripadaju kasnom periodu stratigrafske sekvence.

Ova nova neposredna AMS merenja pružaju nedvosmislenu potvrdu da u ovom trenutku šiljci sa zupcima sa Badnja predstavljaju najraniju direktno datovanu pojavu ove tehnološke inovacije u čitavoj jugoistočnoj Evropi, uključujući italijansko poluostrvo. Posle moguće rane eksperimentacije sa šiljcima sa zupcima tokom gravetijenskog perioda u zapadnoj Evropi⁵⁹ dolazi do značajnije pojave ovog tipa oruđa tokom kasnomagdalienskog perioda, od oko 16.000/15.500 cal BP do oko 14.000 cal BP.⁶⁰ Harpuni sa Badnja tako su nešto kasniji i odgovarali bi korišćenju šiljaka tokom azelijenskog perioda u zapadnoj Evropi od oko 14.000 cal BP.⁶¹

Trenutno, u odsustvu jasnijih pokazatelja u zonama između ovih dveju regija (npr. u Italiji), nezahvalno je davati pretpostavke o modalitetima kulturnog prenosa ove tehnološke inovacije između jugozapadne Francuske i Jadranskog bazena. Ipak, ono što izgledao kao mestimično prisustvo šiljaka sa zupcima u Jadranskom bazenu tokom epigravetijenskog perioda pre bi govorilo o kulturnom prenosu ove tehnološke novine iz nekog centra u jadransku zonu nego o nezavisnoj lokalnoj inovaciji ili tehnološkoj konvergenciji. Štaviše, skoriji genomske podaci ukazuju na rašireno prisustvo evropskog lovačko-sakupljačkog genetskog pula kod individua mlađih od 14.000 cal BP tj. od početka beling/alered interstadijala, formirajući takozvani Vilabruna skupinu nazvanu po najstarijem individualnom grobu u ovoj skupini sa epigravetijenskog nalazišta Vilabruna u severnoj Italiji.⁶² Ova genomska studija ukazuje da je populaciona ekspanzija s kraja PGM možda potekla iz jugoistočne Evrope i zapadne Azije, ali trenutno manjka dobra genomska pokrivenost epigravetijenskog perioda na Balkanu. Kako bilo, mogli bi da očekujemo veću mobilnost ljudskih grupa⁶³ u ovo vreme

59 See Pétilion 2008, 68 and references therein.

60 For the evidence of recently directly AMS-dated Magdalenian barbed points see Barshay-Szmidt *et al.* 2016.

61 E.g. Julien, Orliac 2004.

62 Fu *et al.* 2016.

63 Including the observed Near Eastern hunter-gatherer genetic pool mixing with the European hunter-gatherers, cf. Fu *et al.* 2016.

59 Videti Pétilion 2008, 68 i popratna literatura.

60 Za rezultate skorije direktno AMS-datovanih magdalijskih šiljaka sa zupcima videti Barshay-Szmidt *et al.* 2016.

61 E.g. Julien, Orliac 2004.

62 Fu *et al.* 2016.

63 Uključujući uočeno mešanje bliskoistočnog lovačko-sakupljačkog genet-

different cultural traits, which incorporated technological innovations. This would be consistent with the evidence at Badanj for the introduction of several novel cultural traits starting from Level 6. Barbed points might have been an introduced part of this package of novelties.

A comparable specimen of a barbed point in the Adriatic Basin comes from the late Epigravettian Layer B/d at the site of Šandalja II in Istria.⁶⁴ Based on two existing radiocarbon measurements from this layer, this specimen is later than the dated Badanj specimens (see Tab. 2). Another two pointed barbed points in the wider Eastern Adriatic region have recently been found in the Epigravettian levels of the site of Vlakno on the island of Dugi Otok (Fig. 2).⁶⁵ Different morphologies found among the Badanj barbed points may point to a long period during which some of these artifacts were sporadically used, as perhaps suggested by the two new radiocarbon measurements and the stratigraphic position of currently undated specimens. Yet, the morphological variability could also point to a long period of experimentation with this novel technological solution in modifying existing patterns of predatory hunting behavior at Badanj.

As to the function of barbed points at Badanj in targeting specific prey, we could speculate that their appearance with the start of the Bølling/Allerød interstadial is not coincidental and that, similar to other cases in Europe, this could relate to the expansion of forest cover with the onset of warmer temperatures. It is also the case that at Badanj the appearance of barbed points from Level 6 onwards coincides with changes in the composition of lithic industry, which was now for the first time characterized by the appearance of geometric microliths, such as lunates and triangles (see above),⁶⁶ which were likely used as armatures for composite tools, possibly forming "lithic barbs," perhaps with some use modifications from the earlier use of backed bladelets in a similar manner.⁶⁷ The likely homology between the use of such composite tools and antler barbed points seems unavoidable, even though the use of antler barbed points seems to have been rather restricted at Badanj compared to the abundance of flint armatures. The common assumption about the use of antler barbed points (through a harpoon operating mode) for fishing and fowling cannot be excluded even though the specimens of both taxa exhibit rather restricted frequencies in the Badanj faunal assemblage (see above).⁶⁸ Other possible small prey targeted by using barbed points might have been lagomorphs (hare, rabbit), which could have some support in the steady presence of this category of prey in the composition of the faunal assemblage throughout the Badanj sequence.⁶⁹ Finally, following the suggestion that based on the evidence for the intro-

i lakši transfer različitih kulturnih odlika, koje su uključivale tehnološke inovacije. Ovo bi bilo u saglasnosti sa pokazateljima sa Badnja u vezi sa uvođenjem nekoliko novih kulturnih odlika počev od nivoa 6 šiljci sa zupcima mogli su biti jedan deo uvedenog paketa novina.

Uporedni primerak šiljka sa zupcima u Jadranskom bazenu nalazimo u kasnom epigravetijenskom sloju B/d na nalazištu Šandalja II u Istri.⁶⁴ Na osnovu dva postojeća radiokarbonska merenja iz ovog sloja, ovaj primerak je kasniji nego datovani primerci sa Badnja (tab. 2). Druga dva šiljka sa zupcima u široj regiji istočne jadranske obale pronađena su u epigravetijenskim nivoima nalazišta Vlakno na Dugom otoku (sl. 2).⁶⁵ Različite morfologije koje nalazimo među šiljcima sa zupcima pronađenim na Badnju mogu da ukažu na dug period tokom koga su neki od ovih artefakata sporadično korišćeni, na šta možda upućuju dva nova radiokarbonska merenja i stratigrafski položaj trenutno nedatovanih primeraka. Ipak, morfološka varijabilnost mogla bi takođe ukazivati na dug period eksperimentacije sa ovim novim tehnološkim rešenjem u modifikovanju postojećih obrazaca predatornog lovnog ponašanja na Badnju.

Kada je u pitanju korišćenje šiljaka sa zupcima sa Badnja za ciljanje posebne lovine, mogli bi izneti spekulaciju da njihova pojava s početka beling/alered interstadijala nije slučajna i da, slično drugim slučajevima u Evropi, ovo može imati veze sa širenjem šumskog pokrivača početkom ovog toplijeg razdoblja. Takođe, izgleda da se pojava šiljaka sa zupcima od nivoa 6 nadalje na Badnju poklapa sa promenama u sastavu litičke industrije, koju u ovom trenutku po prvi put odlikuje pojava geometrijskih mikrolita, poput lunata i trouglova (videti gore),⁶⁶ koji su verovatno bili korišćeni poput armatura za kompozitna oruđa, možda kao "litički zupci," sa nekim upotrebnim modifikacijama u odnosu na raniju upotrebu lamela sa hrptom na sličan način.⁶⁷ Moguća homologija između upotrebe takvih kompozitnih oruđa i šiljaka sa zupcima od jelenskog roga čini se neizbežnom, iako je upotreba šiljaka sa zupcima od jelenskog roga izgleda bila ograničena na Badnju u poređenju sa obiljem kremenih armatura. Uobičajena pretpostavka o korišćenju šiljaka sa zupcima od jelenskog roga (kroz operativni modul harpuna) za ulov ribe ili ptica ne može biti isključena iako obe ove taksonomske grupe pokazuju dosta ograničenu učestalost u fauni Badnja (videti gore).⁶⁸ Druga moguća sitna lovina koja je ciljana korišćenjem šiljaka sa zupcima mogli su biti lagomorfi, što može biti potkrepljeno stalnim prisustvom ove kategorije lovine u sastavu faune kroz sekvencu Badnja.⁶⁹ Konačno, ako uzmemo u obzir i dokaze o tome da je čitav trup

64 Karavanić *et al.* 2013, Fig. 18:8.

65 Vujević 2018, Fig. 6.

66 Whallon 1999.

67 cf. Duches *et al.* 2017.

68 Miracle 1995.

69 Miracle 1995.

skog pula sa evropskim lovcima-sakupljačima, cf. Fu *et al.* 2016.

64 Karavanić *et al.* 2013, sl. 18:8.

65 Vujević 2018, sl. 6.

66 Whallon 1999.

67 cf. Duches *et al.* 2017.

68 Miracle 1995.

69 Miracle 1995.

duction of entire carcasses of red deer to the site,⁷⁰ red deer might have been hunted in the vicinity of the site, with the Bregava River possibly serving as a corridor for the transit of the herds of red deer, we may speculate that antler barbed points might have also been used for hunting this and other ungulate species trapped in water.⁷¹

INCISED BONE SPECIMENS

Sequential and subparallel regular incisions are noted on four examined bone objects (Fig. 15:1-3, 6). Some or all of these specimens might represent broken parts of bone tools, likely utilizing long bone/metapodial diaphyses of medium to large mammals. The incisions are relatively deep on three specimens and somewhat shallower incisions are found on one specimen (Fig. 15:2). They were created by a to-and-from grooving action. Most of the incisions are relatively short notches but in one case some of the present incisions appear longer (Fig. 15:1). There does not seem to be a special preparation of the surface where these notches were made. While these objects are highly fragmented, which may prevent us from understanding the full extent of this sort of sequential incisions over the surfaces of the objects, only one set of incisions seems preserved on each tool apart from specimen 7602/1. We have tried to obtain AMS dates on two of the incised objects (10022 and 7602/1) but the samples were withdrawn due to low pretreatment collagen yield (Tab. 2). Yet, the stratigraphic position of all four objects can be confined to the Late period of the Badanj sequence. One of the objects comes from Level 4 and was discovered during the 1986–1987 excavations at Badanj, while the three other objects are confined either to the depths of 0.9–0.8 m (7602/1 and 7544) or 0.5–0.6 m (7806). Without having a comprehensive insight into all other such incisions on bone or stone objects at the site, one can exclude neither a practical/functional purpose of these notches, perhaps as a hafting feature if indeed these fragments were proximal parts of pointed tools, nor some sort of deliberately decorative/symbolic purpose, as is more evident in the case of other objects with more elaborate incisions (see below). Similar sequential incisions have been found on a number of bone tools (including projectile points and other less curated tools) from both early and late Epigravettian levels of Šandalja II⁷² and Vlakno.⁷³ Such sequential incisions are also not uncommon on both bone and stone artifacts at a number of Epigravettian sites in Italy (e.g. Grotta Paglicci, Riparo Tagliente, Grotta Polesini, Grotta Romanelli, Grotta di Settecanelle, Grotta di Levanzo).⁷⁴

There are two bone objects from Badanj that differ from simple sequential incisions just described and exhibit more complex nonfigurative decorative patterns. Specimen 7540

jelena bio donošen na nalazište,⁷⁰ i da je jelen možda mogao biti lovljen u blizini Badnja, gde je reka Bregava mogla služiti kao koridor za tranzit krda jelena, možemo spekulirati da su šiljci sa zupcima od jelenskog roga mogli takođe biti korišćeni za ulov ovog i drugih vrsta kopitara zaglavljenih u vodi.⁷¹

KOŠTANI PRIMERCER SA UREZIMA

Sledne i paralelne pravilne ureze nalazimo na četiri analizirana koštana predmeta (sl. 15: 1-3, 6). Neki ili svi ovi primerci mogli su predstavljati delove polomljenih koštanih alatki, sa mogućim korišćenjem dijafiza dugih kostiju/metapodijala srednjih i krupnih sisara. Urezi su relativno duboki na tri primerka dok su nešto plići urezi primećeni na jednom primerku (sl. 15: 2). Napravljeni su akcijom žljebljenja napred-nazad. Većina ureza su relativno kratki zarezi ali u jednom slučaju neki od prisutnih ureza duži su (sl. 15: 1). Izgleda da nema naročite pripreme površine na kojoj su napravljeni zarezi. Iako su ovi predmeti značajno fragmentovani, što bi moglo da nas spreči u razumevanju celine ovog tipa slednih urezivanja preko površina predmeta, samo jedan set ureza je sačuvan na svakoj alatki osim primerka 7602/1. Pokušali smo da dobijemo AMS datume na dva predmeta sa zarezi (10022 i 7602/1) ali su uzorci povučeni iz daljeg procesa analize zbog niskog prinosa kolagena tokom inicijalne obrade (tab. 2). Ipak, stratigrafski položaj sva četiri predmeta možemo ograničiti na kasni period badanjske sekvence. Jedan od predmeta potiče iz nivoa 4 i otkriven je tokom iskopavanja na Badnju 1986–1987, dok su preostala tri predmeta ograničena na dubine 0,9–0,8 m (7602/1 i 7544) ili 0,5–0,6 m (7806). Bez sveobuhvatnog uvida u sve druge ovakve ureze na koštanim ili predmetima od kamena sa ovog nalazišta ne možemo isključiti bilo praktičnu/funkcionalnu namenu ovih ureza. Možda kao deo predmeta za usađivanje ukoliko su ovi fragmenti predstavljali proksimalne delove zašiljenih alatki ili neku vrstu namerne dekorativne/simboličke uloge, kao što je očigledno u slučaju drugih predmeta sa više elaboriranim urezima (videti dole). Slična sledna urezivanja pronađena su na jednom broju koštanih alatki (uključujući projektilne šiljke i druga manje formalno oblikovana oruđa) kako iz ranih tako i iz kasnih epigravetijskih nivoa Šandalje II⁷² i Vlakna.⁷³ Takva sledna urezivanja takođe nisu neuobičajna kako na koštanim tako i kamenim artefaktima na jednom broju epigravetijskih nalazišta u Italiji (npr. pećina Paljici, potkapina Taljente, pećina Polezini, pećina Romanelli, pećina Setekanele, pećina Levanco).⁷⁴

Dva dekorisana koštana predmeta sa Badnja razlikuju se od jednostavnih slednih urezivanja koja su gore opisana i pokazuju kompleksnije nefigurativne dekorativne šare. Primerak 7540 (sl. 15: 4) je ravnomerno sivo bojena gorela kost sa starim prelomima. Ovde se javlja osoben obrazac

70 Miracle 1995; Miracle, O'Brien 1998.

71 cf. Julien 1982, 144–150.

72 Karavanić *et al.* 2013; Čujkević-Plečko, Karavanić 2018.

73 Vujević, Parica 2011.

74 Cf. Graziosi 1962; Palma di Cesnola 2004.

70 Miracle 1995; Miracle, O'Brien 1998.

71 cf. Julien 1982, 144–150.

72 Karavanić *et al.* 2013; Čujkević-Plečko, Karavanić 2018.

73 Vujević, Parica 2011.

74 Cf. Graziosi 1962; Palma di Cesnola 2004.

(Fig. 15:4) is evenly gray-color burnt bone with old breaks. It exhibits a specific pattern of decoration, which can only be properly seen aided by a microscopic magnification (Fig. 16:2). The engraved curvilinear line was probably incised first by a burin-like tool leaving a very deep and wide groove, showing a heavily striated bottom. The curvature that the line makes is followed on both sides of the deep groove by a series of short and relatively shallow parallel to subparallel carefully executed incisions. On one, inner side of the groove where it forms an approximately 60-degree angle, the line consisting of diagonally (in relation to the main direction of the groove) placed incisions, is found immediately next to the groove. On the other, outer side of the deeply grooved line, at a short distance from the groove, three parallel curved lines are created by the same technique of placing short diagonal incisions. There is roughly equal spacing between these three lines and the deep groove.

Specimen 7541 (Fig. 15:5, Fig. 16:1) likely represents a proximal part of a broken tool made on a long bone/metapodial diaphysis of a medium-size mammal. The surface of this object was fully scraped, which might have created the unusually even beige/white coloration when compared to other bone specimens from the site. Subsequently, a multiple parallel chevron-like motif was incised on the outer surface of the shaft. The incisions are filled with a dark material, which might have been some sort of resin. This might have been done deliberately in order to create a visual contrast between the incised dark motif and the bright whitish background. Although the surface is completely covered by consolidants, we are currently pursuing further means of identifying what was used as the filling inlay for enhancing the visibility of the engraved motif.

Both of these decorated objects found during Basler's excavation at Badanj come from the Early period in the Badanj's stratigraphic sequence judging by their respective depths of 1.2-1.3 m (inv. 7540) and 1.5-1.6 m (inv. 7541). While the sample of these two objects is obviously small for far-reaching conclusions, it could be that more elaborate decoration is confined to the early part of the Badanj sequence only. This could perhaps also be linked to the stratigraphic position of the engraved rock (see above), which was incised, according to the excavator, in the earlier parts of the sequence and covered by occupation sediments of the later Palaeolithic inhabitants of Badanj.⁷⁵

Engraving of diverse sets of decorative motifs on stone (even flint) or osseous materials, including items of adornment (see also below), is common on Epigravettian sites in the Balkans and Italy. One particular incised stone from Romanelli is similar to specimen 7541 from Badanj in the diagonal execution of parallel incisions forming a line along the incised groove. Another such motif is found on a rock from

ukrašavanja, koji može biti najbolje viđen pre svega uz pomoć mikroskopskog uvećanja (sl. 16: 2). Zakrivljena linija verovatno je najpre bila urezana dletastom alatom ostavljajući tako veoma dubok i širok žljeb, na kome je vidljivo dno sa značajnim brojem strija. Krivu koju pravi ova linija sa obe strane dubokog žljeba prati serija kratkih i relativno plitkih paralelnih i subparalelnih pažljivo izvedenih ureza. S jedne, unutrašnje strane ovog žljeba, gde formira ugao od oko 60 stepeni, linija koju čine dijagonalno (u odnosu na glavni pravac žljeba) postavljeni urezi nalazi se odmah do žljeba. S druge, spoljne strane užljebljene linije, na kratkom razmaku od žljeba, tri paralelne zakrivljene linije načinjene su istom tehnikom postavljanja kratkih dijagonalnih ureza. Razmaci između ove tri linije i dubokog žljeba grubo su jednaki.

Primerak 7541 (sl. 15: 5, sl. 16: 1) verovatno predstavlja proksimalni deo slomljenje alatke načinjene od duge kosti/metapodijalne dijafize sisara srednje veličine. Površina ovog predmeta potpuno je ostrugana, što je moglo da proizvede neobičnu ujednačenu bež/belu koloraciju kod ovog predmeta u poređenju sa drugim koštanim predmetima sa ovog nalazišta. Potom, višestruki paralelni motiv u obliku šefrona urezan je na spoljnoj površini kosti. Urezi su ispunjeni tamnim materijalom, koji bi možda mogao da bude neka vrsta smole. Ovo je možda moglo da bude urađeno s namerom da se napravi vizualni kontrast između urezanog tamnog motiva i svetle beličaste pozadine. Iako je površina potpuno prekrivena konsolidantima, trenutno pokušavamo da nađemo način da identifikujemo šta je korišćeno kao umetak u ispuni kako bi se istakla vidljivost urezanog motiva.

Oba dekorisana predmeta pronađena tokom Baslerovih iskopavanja Badnja potiču iz ranog perioda u stratigrafskoj sekvenci sudeći po pojedinačnim dubinama na kojima su pronađeni: 1,2-1,3 m (inv. 7540) i 1,5-1,6 m (inv. 7541). Iako je uzorak od samo dva predmeta očigledno mali za donošenje dalekosežnih zaključaka, možda je slučaj da prisustvo elaboriranijeg ukrašavanja ima pre veze sa ranim periodom sekvence na Badnju. Ovo bi možda moglo takođe biti vezano za stratigrafski položaj urezane stene (videti gore), koja je po mišljenju njenog prvog istraživača bila urezana tokom ranijeg perioda i potom pokrivena sedimentima kasnijeg paleolitskog naseljavanja Badnja.⁷⁵

Urezivanje različitih setova dekorativnih motiva na kamenu (čak i kremenu) i koštanim materijalima, uključujući tu predmete za ukrašavanje tela (videti takođe dole), često je na epigravetijenskim nalazištima Balkana i Italije. Naročito jedan urezan kamen sa nalazišta Romanelli sličan je primerku 7541 sa Badnja u dijagonalnom izvođenju paralelnih ureza koji formiraju liniju duž urezanog žljeba. Drugi takav motiv nađen je na steni sa lokaliteta pećine Kavalo.⁷⁶ Motivi u obliku šefrona pronađeni su do sada u pećini Kavalo⁷⁷ i potkapi-

⁷⁵ Basler 1979b.

⁷⁶ Martini, Frediani 1997.

⁷⁷ Vigliardi 1972.

⁷⁵ Basler 1979b.

Grotta del Cavallo.⁷⁶ Chevron-like motifs have been found in Grotta del Cavallo⁷⁷ and Riparo Villabruna.⁷⁸ On an ornamented piece of bone from Grotta Paglicci, chevron-like motif was incised over the incised figurative depiction of an ibex.⁷⁹ Deeply grooved curvilinear ornamental motifs are found in Early Epigravettian levels of the site of Grotta di Settecannelle in central Italy,⁸⁰ as well as at the site of Cuina Turcului in the Danube Gorges area of the Balkans.⁸¹

Apart from patterns seen at Badanj, different incised motifs found on Epigravettian sites encompass cross-hatching patterns (Šandalja II;⁸² Riparo Tagliente;⁸³ Grotta del Cavallo;⁸⁴ Grotta delle Veneri),⁸⁵ rectilinear double-grooved lines sometimes filled with parallel incisions or cross-hatching (Vlakno;⁸⁶ Riparo Tagliente;⁸⁷ Riparo Dalmeri;⁸⁸ Grotta Polesini;⁸⁹ Grotta di Settecannelle;⁹⁰ Grotta Romanelli;⁹¹ Grotta del Cavallo;⁹² Grotta delle Veneri⁹³), and zig-zag lines (Grotta del Romito⁹⁴).

PERSONAL ORNAMENTS

There is a large collection of items from the excavations at Badanj that most likely served as personal ornaments (over 1000 specimens from the 1976–1979 excavations alone according to the listings in the museum inventory book, of which we examined 877 specimens) comprising the following mammal body parts and mollusc species: bovid incisors (only two specimens which we will not discuss further), red deer (*Cervus elaphus*) canines, *Tritia gibbosula*, *Tritia neritea*, *Columbella rustica*, *Dentalium* sp., *Glycymeris* sp., *Pecten maximus*, *Lithoglyphus naticoides* and *Theodoxus danubialis*. Non-edible marine and freshwater gastropods, scaphopods, and bivalves were used to create ornaments.

RED DEER CANINES

We examined 31 specimens of red deer canines from Badanj (Fig. 17). The specimens are moderately well preserved. Most of this type of beads in the museum collection had a perforation on the root that was likely used for suspension. A lateral pattern of breakage is noticeable on a number of these holes (Fig. 17:1, 3, 14), which would suggest that these

ni Vilabruna.⁷⁸ Na ornamentisanom komadu kosti iz pećine Paljici, motiv u obliku šefrona urezan je preko izrezbarene figurativne predstave kozoroga.⁷⁹ Duboko užljebljeni krivudavi ornamentalni motivi pronađeni su u ranim epigravetijskim nivoima pećine Setekanele u centralnoj Italiji,⁸⁰ kao i na nalazištu Kuina Turkuluji u oblasti Đerdapa na Balkanu.⁸¹

Osim dekorisanja koje sa javlja na Badnju, različiti urezani motivi pronađeni na epigravetijskim nalazištima uključuju mrežasto šrafranje (Šandalja II;⁸² potkapina Taljente;⁸³ pećina Kavalo;⁸⁴ pećina Veneri)⁸⁵, pravolinijsko duplo užljebljene linije koje su ponekad ispunjene paralelnim urezima ili mrežastim šrafranjem (Vlakno;⁸⁶ potkapina Taljente;⁸⁷ potkapina Dalmeri;⁸⁸ pećina Polezini;⁸⁹ pećina Setekanele;⁹⁰ pećina Romaneli;⁹¹ pećina Kavalo;⁹² pećina Veneri⁹³) i cikcak linijama (pećina Romito)⁹⁴.

LIČNI ORNAMENTI

Postoji velika zbirka predmeta sa iskopavanja Badnja koji su najverovatnije služili kao lični ornamenti (preko 1000 primeraka samo sa iskopavanja 1976–1979. na osnovu liste u muzejskoj inventarnoj knjizi, od čega smo mi pregledali 877 primeraka) koje čine sledeći delovi tela sisara i vrsta mekušaca: sekutići bovida (samo dva primerka koja dalje neće biti pominjana), očnjaci jelena (*Cervus elaphus*), *Tritia gibbosula*, *Tritia neritea*, *Columbella rustica*, *Dentalium* sp., *Glycymeris* sp., *Pecten maximus*, *Lithoglyphus naticoides* i *Theodoxus danubialis*. Nejestivi marinski i slatkodvodni gastropodi, skafo-podi i školjkaši korišćeni su u pravljenju ornamenata.

OČNJACI JELENA

Analizirali smo 31 primerak jelenskih očnjaka sa Badnja (sl. 17). Primerci su umereno dobro očuvani. Većina ornamenata ovog tipa u muzejskoj zbirci imali su perforaciju na korenu koja je verovatno korišćena za kačenje. Primećuje se obrazac lateralnog preloma kod jednog broja perforacija (sl. 17: 1, 3, 14), što bi ukazivalo na to da su ovi predmeti kačeni, možda zašivanjem sa jedne od dve uže, lateralne strane. Na nekim drugim, bio je prelomljen kraj korena (sl. 17: 2, 5, 9). Perforacije na korenu napravljene su pripremom ove zone struganjem, rezultat čega je bilo istanjivanje ove zone kako

76 Martini, Frediani 1997.

77 Vigliardi 1972.

78 Broglio 1992.

79 Mezzena, Palma di Cesnola 1972.

80 Borić, Cristiani 2016 and references therein.

81 Mărgărit 2008; Bonsall et al. 2016; Cărciumaru, Nițu 2019.

82 Karavanić et al. 2013.

83 Leonardi 1983.

84 Martini, Frediani 1997.

85 Cremonesi 1992.

86 Vujević, Parica 2011.

87 Leonardi 1983.

88 Dalmeri 1998.

89 Radmilli 1974.

90 d'Errico, Uccelli Gnesutta 1999.

91 Acanfora 1967.

92 Martini, Frediani 1997.

93 Cremonesi 1992.

94 Graziosi 1962.

78 Broglio 1992.

79 Mezzena, Palma di Cesnola 1972.

80 Borić, Cristiani 2016 i tamo citirana literatura.

81 Mărgărit 2008. Bonsall et al. 2016; Cărciumaru, Nițu 2019.

82 Karavanić et al. 2013.

83 Leonardi 1983.

84 Martini, Frediani 1997.

85 Cremonesi 1992.

86 Vujević, Parica 2011.

87 Leonardi 1983.

88 Dalmeri 1998.

89 Radmilli 1974.

90 d'Errico, Uccelli Gnesutta 1999.

91 Acanfora 1967.

92 Martini, Frediani 1997.

93 Cremonesi 1992.

94 Graziosi 1962.

were suspended, perhaps being sewn up, on one of the narrow lateral sides. On some others, the tip of the root was broken (Fig. 17:2, 5, 9). The holes were created on the root through the preparation of this zone by scraping, which resulted in the thinning of this area in order to facilitate easier perforation (Fig. 18). One specimen was probably intentionally burnt in order to achieve a uniform black color, and a highly polished and shiny surface (Fig. 17:1). A comparable case where the argument about deliberate thermal alteration of beads was made relates to *Tritia neritea* ornaments from Upper Palaeolithic and Mesolithic levels of Franchthi cave in Greece.⁹⁵

There are two specimens that are decorated by transversal incisions over their lobe surfaces (Fig. 18). One of these specimens (7269) had transversal incisions that were very deep and were made using an unretouched flint. An analogous example of transversal incisions over the lobe of the red deer canine is known from the Epigravettian site of Riparo Tagliente.⁹⁶ As red deer canine beads were found at different depths measured from the surface, it seems that they were used throughout the sequence, appearing in both Early and Late periods of the site occupation.

Red deer canines are a relatively common type of beads on both early and late Epigravettian sites in the Adriatic Basin (e.g. Šandalja II,⁹⁷ Vela Spila⁹⁸).⁹⁹ We plan a more detailed study of specimens from Badanj by applying criteria for determining age and sex of individual specimens, and in determining whether any pairs coming from both lateral sides of the same individual can be recognized.¹⁰⁰

TRITIA GIBBOSULA

We examined 25 specimens of *Tritia gibbosula* found at Badanj (Fig. 19:1-8). Beads made of this marine gastropod are overall in a poor state of preservation. Also, some specimens exhibit taphonomic alterations, such as holes created by perforating organisms (Fig. 19:3, 8, Fig. 20:3). All specimens show anthropically made perforations. It is likely that direct pressure was applied from inside to the outside in order to create these holes. Ornaments show developed traces of use indicative of their prolonged handling. Holes are all very worn and enlarged (Fig. 19:5, 7, 8, Fig. 20:2). Red ochre residues, when present, are sometimes scattered over the outside surface of the shell, which may indicate that these derive from the surrounding sediment. However, on some specimens, there are visible ochre residues along the rims, i.e., opening of the shell (Fig. 20:12), suggesting that these red ochre residues probably come from colored organic (sinew?) strings that might have been used to attach

bi se omogućilo lakše perforiranje (sl. 18). Jedan primerak verovatno je bio namerno izlagan vatri kako bi se postigla ujednačena crna boja i veoma polirana i sjajna površina (sl. 17: 1). Sličan slučaj gde je dat argument o namernoj termalnoj promeni perli nalazimo kod *Tritia neritea* gorelih ornamenata iz gornjopaleolitskih i mezolitskih nivoa Frankthi pećine u Grčkoj.⁹⁵

Dva primerka bila su dekorisana transverzalnim urezima preko površine lobusa (sl. 18). Jedan od ovih primeraka (7269) imao je transverzalne ureze koji su bili veoma duboki i bili su napravljeni koristeći neretuširan kremen. Analogan primer transverzalnih ureza preko lobusa jelenskog očnjaka nalazimo na epigravetijenskom nalazištu potkapine Taljente.⁹⁶ S obzirom da su perle od jelenskog kanina pronađene na različitim dubinama mereno od površine, izgleda da su korišćene tokom čitave sekvence, pojavljujući se kako u ranom tako i kasnom periodu naseljavanja nalazišta.

Kanini jelena su relativno čest tip perli kako na ranim tako i kasnim epigravetijenskim nalazištima Jadranskog bazena (npr. Šandalja II,⁹⁷ Vela Spila⁹⁸).⁹⁹ U planu je detaljnija studija primeraka sa Badnja kroz određivanje starosti i pola individualnih primeraka i određivanje da li je moguće prepoznati primerke očnjaka obe strane iste individue.¹⁰⁰

TRITIA GIBBOSULA

Ispitali smo 25 primerka *Tritia gibbosula* pronađenih na Badnju (sl. 19: 1-8). Perle napravljene od ovog morskog gastropoda uglavnom su loše očuvane. Takođe, neki primerci pokazuju tafonomске promene, poput rupa koje prave perforirajući organizmi (sl. 19: 3, 8; sl. 20: 3). Na svim primercima uočljive su antropički napravljene perforacije. Verovatno je da su perforacije pravljene direktnim pritiskom iznutra ka spolja. Ornamenti pokazuju razvijene tragove upotrebe što bi ukazivalo na dugo nošenje. Sve perforacije su veoma istrošene i proširene (sl. 19: 5, 7, 8; sl. 20: 2). Tragovi crvenog okera, u onim slučajevima kada su prisutni, ponekad su rašireni po spoljnoj površini ljuštura, što bi moglo da ukazuje na to da potiču iz okolnog sedimenta. Međutim, na nekim primercima, postoje uočljivi ostaci okera duž ruba, tj. otvora ljuštura (sl. 20: 12), upućujući na to da ostaci crvenog okera verovatno potiču od bojanih organskih uzica (od tetiva?) koje su mogle biti korišćene za kačenje (vezenje?) ovih perli po organskoj površini.¹⁰¹ Ipak, i dalje ostaje teško razdvojiti prisustvo tragova koji su vezani za načine kačenja od tragova koji su se za ljušturu zalepili zbog kontakta sa okolnim sedimentom.

⁹⁵ Perlès, Vanhaeren 2010.

⁹⁶ Leonardi 1983.

⁹⁷ Karavanić et al. 2013, Figs. 17, 19.

⁹⁸ Cristiani et al. 2014a.

⁹⁹ For syntheses of data see Cvitkušić 2017; Borić, Cristiani 2019.

¹⁰⁰ Cf. d'Errico, Vanhaeren 2002.

⁹⁵ Perlès, Vanhaeren 2010.

⁹⁶ Leonardi 1983.

⁹⁷ Karavanić et al. 2013, Figs. 17, 19.

⁹⁸ Cristiani et al. 2014a.

⁹⁹ Za sinteze podataka videti Cvitkušić 2017; Borić, Cristiani 2019.

¹⁰⁰ Cf. d'Errico, Vanhaeren 2002.

¹⁰¹ Cf. Cristiani, Borić 2012; Cristiani et al. 2014b.

(embroider?) these beads to an organic surface.¹⁰¹ Yet, it still remains difficult to distinguish the presence of residues from modes of suspension to residues that stick to a shell due to contact with the surrounding sediment.

Based on the depths associated with the studied specimens of *Tritia gibbosula*, all of the beads come from the Early period in the Badanj sequence. Apart from Badanj, among Epigravettian sites in the eastern Adriatic Basin catchment zone, *Tritia gibbosula* was reported to have been found at only two sites: seven specimens came from Vela Spila on the island of Korčula¹⁰² and two specimens were found in the Epigravettian levels of the site of Mališina Stijena in the deeper hinterland of Montenegro,¹⁰³ the latter dated to ca. 17.000–16.000 kya cal BP (Tab. 2). The absence of these beads in the late Epigravettian (after ca. 14.000 kya cal BP) seems to relate to a relatively confined period of their cultural popularity in this regional context but further investigation into possible environmental reasons for this absence are necessary. Moreover, considering the wider patterning of evidence for body adornment across southeastern Europe throughout the Palaeolithic and Mesolithic, it is worth noting that *Tritia gibbosula* beads are found only within the Eastern Adriatic catchment zone.¹⁰⁴

TRITIA NERITEA

There were 326 specimens of *Tritia neritea* in the collection we were able to examine (Fig. 19:10-29). A number of specimens exhibit post-depositional alterations, such as concretions from the sediment and sometimes water-related activity that exfoliated surfaces of some beads and contributed to their poor state of preservation. Some specimens are entirely burnt while some others are partially burnt so it remains difficult to determine sometimes whether burning was deliberate, as previously suggested for a red deer canine bead (see above), or certain specimens were accidentally burnt due to the burning of the surrounding sediment in which particular beads were deposited. Judging by the evenness of burning and high polish of the surface of a number of specimens one could make a good case for deliberate burning of at least a portion of the assemblage of *Tritia neritea*, which is similar to the treatment of the same bead type at Franchthi cave in Greece.¹⁰⁵ Perforations on the shells were made by gentle pressure from the inside to the outside, i.e., from the mouth of the gastropod outside. There are well developed traces of use and rounding on most of the perforated pieces, suggesting, as with other types of beads in this assemblage, a prolonged period of their use. Preserved residues from red ochre on these beads pose similar dilemma as in the case of *Tritia gibbosula* beads, but it is

Na osnovu dubina analiziranih primeraka *Tritia gibbosula*, sve perle potiču iz ranog perioda badanjske sekvence. Osim Badnja, među epigravetijanskim nalazištima u okviru zone istočnog Jadranskog bazena, *Tritia gibbosula* javljaju se samo na dva nalazišta: sedam primeraka potiču sa Vele Spile na ostrvu Korčula¹⁰² dok su dva primerka iz epigravetijanskih nivoa nalazišta Mališina Stijena koje se nalazi u dubljem zaletu Crne Gore,¹⁰³ a koje je datovano na oko 17.000–16.000 cal BP (tab. 2). Odsustvo ovih perli u kasnom epigravetijenu (posle oko 14.000 cal BP) izgleda da se odnosi na relativno ograničen period njihove kulturne popularnosti u ovom regionalnom kontekstu ali kako bi se ovo bolje razumelo potrebno je dalje ispitati moguće razloge koji mogu imati veze sa promenama u prirodnom okruženju. Šta više uzimajući u obzir šire obrasce svedočanstava o ukrašavanju tela širom jugoistočne Evrope tokom paleolita i mezolita, vredni pomenuti da su perle *Tritia gibbosula* pronađene samo u okviru istočno-jadranske zone.¹⁰⁴

TRITIA NERITEA

Iz zbirke smo uspeli da dokumentujemo 326 primeraka *Tritia neritea* (sl. 19: 10-29). Jedan broj primeraka pokazuju post-depozicione promene, poput konkrecija iz sedimenta i ponekad aktivnosti vode koja je eksfolirala površine nekih od perli što je doprinelo njihovoj lošoj očuvanosti. Neki primerci potpuno su goreli dok su neki drugi delimično goreli te ostaje ponekad teško odrediti da li je gorenje bilo namerno, kao što je prethodno sugerisano u slučaju očnjaka jelena (videti gore), ili su neki primerci slučajno goreli zbog gorenja okolnog sedimenta u kojem su određene perle bile deponovane. Sudeći po ujednačenosti gorenja i visoke poliranosti površine jednog broja primeraka moguće je da je barem jedan deo ove skupine *Tritia neritea* su namerno izlagan vatri, što je slično obradi istog tipa perle u pećini Frankti u Grčkoj.¹⁰⁵ Perforacije na ljušturama napravljene su blagim pritiskom od unutra ka spolja, tj. od usta gastropoda ka spolja. Vidljivi su dobro razvijeni tragovi upotrebe i zaobljenja na većini perforiranih komada, ukazujući na duži period njihove upotrebe, poput drugih tipova perli u ovoj zbirci. Očuvani ostaci od crvenog okera na ovim perlama postavljaju sličnu dilemu poput perli *Tritia gibbosula*, ali je jasno da određeni broj ostataka okera imaju veze sa modalitetima kačenja perli. Na primer, postoji jasan obrazac ostataka crvenog okera na rubovima antropički napravljene perforacije na jednom od primeraka (sl. 20: 7-8). Ovo bi opet moglo da ukaže na to da su verovatno organske uzice (od tetiva?) mogle biti korišćene za kačenje (vezivanje?) ovih perli po organskoj površini. Jedan drugi primerak pokazuje jasno vidljivu crveno boje traku duž lateralne strane ljušture (sl. 20: 9), ukazujući na to da je ona bila ili namerno obojena ili je do stvaranja ove trake

101 Cf. Cristiani, Borić 2012; Cristiani et al. 2014b.

102 Cristiani et al. 2014a.

103 Bogićević, Dimitrijević 2004.

104 Borić, Cristiani 2019.

105 Perlès, Vanhaeren 2010; Perlès 2018.

102 Cristiani et al. 2014a.

103 Bogićević, Dimitrijević 2004.

104 Borić, Cristiani 2019.

105 Perlès, Vanhaeren 2010; Perlès 2018.

clear that a number of residues relate to the modalities of suspension. For instance, there is a clear pattern of red residues on the edge of the anthropically made perforation on one of the specimens (Fig. 20:7-8). This would again suggest that likely red ochre colored organic (sinew?) strings might have been used to attach (embroider?) these beads to an organic surface. Another specimen shows a clearly visible red colored strip along the lateral side of the shell (Fig. 20:9), suggesting it was either colored intentionally or this strip was created through the contact of the shell and a colored material. Future experimental activity may better account for this particular pattern of residues.

When examining information on the depth measurements for the stratigraphic distribution of this type of beads at Badanj, they are found throughout the Badanj sequence. *Tritia neritea* beads are a widespread type of ornament throughout the Palaeolithic and Mesolithic of Mediterranean Europe.¹⁰⁶

COLUMBELLA RUSTICA

We examined 59 specimens of *Columbella rustica* beads found in the Badanj collection (Fig. 19:30-41). These specimens are slightly better preserved than other types of ornaments. Different from *Tritia gibbosula* and *Tritia neritea* beads, perforations on *Columbella rustica* were made through indirect percussion from the outside, possibly by using a flint tool and a pebble. Traces of this procedure have left striations on the shell surface around the lower and upper part of the hole. Some of the holes are large with rounded rims of the perforation, suggesting a prolonged period of use. There are clear residue traces from affixing of the shell to an organic surface where the red ochre residues show up as a rim all around the profile of the shells (Fig. 20:4-5). A number of specimens are of evenly dark burnt coloration (Fig. 19:38-39) and, as in the case of some red deer canines and *Tritia neritea* beads (see above), these specimens might have been deliberately burnt to achieve a desirable color of the bead.

Based on the depth measurements, it seems that *Columbella rustica* are confined to the Late period in the Badanj sequence. This would correspond with other strands of data from other sites in the Adriatic Basin and Greece that suggest a shift towards popularity of *Columbella rustica* in the late phase of the Upper Palaeolithic and particularly in the Mesolithic.¹⁰⁷

DENTALIUM SP.

Based on the number of individual specimens, *Dentalium* sp. is the largest group in the assemblage of personal ornaments from Badanj, with 371 specimens that we have been able to examine (Fig. 19:42-55). Their overall state of preservation varies, but they are moderately well preserved. The applied consolidants over their surfaces prevent us from understanding

došlo kroz dodir ljuštore i obojenog materijala. Kroz buduću eksperimentalnu aktivnost moći ćemo bolje da ukažemo na način stvaranja ovakvog obrasca ostataka okera.

Mere za dubinu svakog primerka u odnosu na stratigrafsku distribuciju ovog tipa perli na Badnju ukazuju na njihovo prisustvo kroz čitavu sekvencu ovog nalazišta. *Tritia neritea* perle široko su rasprostranjen tip ornamenta kroz čitav paleolit i mezolit mediteranske Evrope.¹⁰⁶

COLUMBELLA RUSTICA

Ispitali smo 59 primeraka *Columbella rustica* perli pronađenih u zbirci sa Badnja (sl. 19: 30-41). Ovi primerci su nešto bolje očuvani nego drugi tipovi ornamenata. Za razliku od *Tritia gibbosula* i *Tritia neritea* perli, perforacije na perlama od *Columbella rustica* bile su napravljene posrednim udarcem sa spoljne strane, moguće korišćenjem kremene alatke ili oblutka. Tragovi ove procedure ostavili su striacije na površini ljuštore oko donjeg i gornjeg dela perforacije. Neke perforacije su velike sa zaobljenim obodom perforacije, ukazujući na dug period upotrebe. Postoje jasni tragovi od pričvršćivanja ljuštore na organsku površinu gde se javljaju ostaci crvenog okera poput trake oko čitavog profila ljuštore (sl. 20: 4-5). Jedan broj primeraka bili su ujednačeno tamne spaljene koloracije (sl. 19: 38-39) i, kao u slučaju perli od jelenskih očnjaka i *Tritia neritea* (videti gore), ovi primerci možda su bili namerno spaljeni kako bi se postigla željena boja.

Sudeći po merenjima dubina, izgleda da su *Columbella rustica* bile ograničene na kasni period u sekvenci Badnja. Ovo bi odgovaralo podacima sa drugih nalazišta u Jadranskom bazenu i Grčkoj koji sugerišu da do promene u popularnosti *Columbella rustica* dolazi u kasnoj fazi gornjeg paleolita i naročito u mezolitu.¹⁰⁷

DENTALIUM SP.

S obzirom na broj individualnih primeraka, *Dentalium* sp. je najveća grupa u zbirci ličnih ornamenata sa Badnja, sa 371 primeraka koje smo mogli da dokumentujemo (sl. 19: 42-55). Njihovo opšte stanje očuvanost varira, ali su umereno dobro sačuvani. Konsolidanti koji su premazani preko njihovih površina sprečavaju nas da bolje razumemo način na koji su ovi primerci bili sečeni, tj. segmentovani. Uglavnom, segmenti imaju tendenciju da imaju standardizovanu veličinu od 2 do 3 cm, iako ima nekoliko veoma kratkih i nekoliko dugih primeraka. Ljuštore *Dentalium* imaju zaobljene i zakošene modifikacije oboda ovih segmenata (sl. 20: 1), što je indikacija da su ovi ornamenta korišćeni okačeni tokom dugog perioda ili u kontaktu sa mekim organskim materijalom. Mnogi primerci bili su značajno istrošeni.

¹⁰⁶ E.g., Borić, Cristiani 2019; Perlès 2018.

¹⁰⁷ E.g., Cristiani et al. 2014; Perlès 2018; Borić, Cristiani 2019.

¹⁰⁶ E.g., Borić, Cristiani 2019; Perlès 2018.

¹⁰⁷ E.g., Cristiani et al. 2014; Perlès 2018; Borić, Cristiani 2019.

well the way these specimens were cut, i.e., segmented. In general, segments tend to have a standardized size of 2 to 3 cm, even though there are several very short and several longer specimens. *Dentalium* shells show rounding and beveled modifications of the rims of these segments (Fig. 20:1), which is an indication that these ornaments were used for a long period of suspension or in contact with soft organic material. Many specimens are heavily worn.

Based on the depth measurements, the majority of these beads come from the levels 1.0 m and higher, with only a handful of specimens being found at the depths of 1.4 m or 1.3-1.2 m. This would suggest that the popularity in the use of *Dentalium* sp. peaks in the Late period of occupation, which corresponds well with stratigraphic observations about the presence of these beads in the levels excavated in 1986–1987.¹⁰⁸ Beads from *Dentalium* sp. were found in southeastern Europe since the Aurignacian period, and their popularity increases in the Late Upper Palaeolithic, but in this regional context Badanj stands out as the site with the highest frequency of *Dentalium* sp.

GLYCYMERIS SP.

There were 53 whole or fragmented valves of *Glycymeris* sp. at Badanj (Fig. 21:1-13). Overall, the state of preservation of these specimens is poor due to taphonomic smoothing and exfoliated surfaces or occasional rounding. Thermal alteration of one of the pieces (Fig. 21:6) was probably accidental as it is of uneven coloration. Some specimens might not have been ornaments as they lack perforations, at least on the preserved part of the valve. But most of the best preserved specimens have clear perforations in the proximity of the umbone of the shell (Fig. 21:2, 4, 6, 8, 11). The holes show developed use-wear traces, thus effacing technological traces. The use-wear traces suggest that these were possibly suspended as personal ornaments.

While the majority of specimens seem to be confined to the upper part of the Badanj sequence, i.e., to the Late period, a fair number of specimens were found below 1 m of depth, i.e., down to a depth of 1.4-1.5 m, and this would suggest that this type of ornament was used throughout the Badanj sequence. One complete unperforated *Glycymeris* sp. valve and two fragmented pieces come from Epigravettian Layer VIII at Crvena Stijena in Montenegro.¹⁰⁹ Perforated specimens have been found in the late Epigravettian levels at Šandalja II (one specimen in Layer B/s), Vlakno (11 perforated specimens), and Vela Spila (five specimens) in Croatia.¹¹⁰ Perforated specimens of *Glycymeris* sp. with traces of ochre in the cavity of the shell were also found in the late Upper Palaeolithic levels at Franchthi cave in Greece (14 specimens), where, among other things, they might have had the role of pigment containers.¹¹¹ Badanj here again

Na osnovu merenja dubina, većina ovih perli potiču iz nivoa sa dubine 1,0 m i više, samo sa malim brojem primeraka pronađenih na dubinama 1,4 m ili 1,3-1,2 m. Ovo bi ukazivalo na to da popularnost u korišćenju *Dentalium* sp. dostiže vrhunac u kasnom periodu naseljavanja, što je u saglasnosti sa stratigrafskim opažanjem o prisustvu ovih perli u nivoima iskopavanim tokom 1986-1987.¹⁰⁸ U jugoistočnoj Evropi, perle od *Dentalium* sp. javljaju se od orinjasijenskog perioda, i njihova popularnost raste u kasnom gornjem paleolitu, ali u istočno-jadranskom regionalnom kontekstu Badanj se ističe kao nalazište sa najvećom količinom *Dentalium* sp.

GLYCYMERIS SP.

Pronađeno je 53 cela ili fragmentovana kapka školjke *Glycymeris* sp. na Badnju (sl. 21: 1-13). Uopšteno govoreći, stanje očuvanosti ovih primeraka je loše zbog tafonomskog uglašavanja i oljuštenih površina ili povremenog zaobljenja. Termička promena na jednom od ovih primeraka (sl. 21: 6) bila je verovatno slučajna s obzirom da je koloracija nejednaka. Neki primerci možda nisu bili ornamenti jer nemaju perforaciju, barem ne na očuvanom delu kapka školjke. Ipak, većina dobro sačuvanih primeraka ima jasne perforacije u blizini umbona školjke (sl. 21: 2, 4, 6, 8, 11). Perforacije pokazuju razvijene tragove upotrebe, koji su uklonili tehnološke tragove. Tragovi upotrebe ukazuju na to da su školjke visile kao lični ornamenti.

Dok je većina primeraka izgleda u vezi sa gornjim delom badanjske sekvence, tj. u vezi sa kasnim periodom, priličan broj primeraka pronađeno je ispod 1 m dubine, tj., sve do dubine od 1,4-1,5 m, što bi govorilo o tome da je ovaj tip ornamenta korišćen kroz čitavu sekvencu Badnja. Jedan ceo, neperforiran kapak *Glycymeris* sp. i dve fragmentovana komada potiču iz epigravetijskog sloja VIII sa Crvene Stijene u Crnoj Gori.¹⁰⁹ Perforirani primerci pronađeni su u nivoima kasnog epigravetijena u Šandalji II (jedan primerak u sloju B/s), Vlaknu (11 perforiranih primeraka) i Veloj Spili (5 primeraka) u Hrvatskoj.¹¹⁰ Perforirani primerci *Glycymeris* sp. sa tragovima okera u šupljini školjke takođe su pronađeni u slojevima kasnog gornjeg paleolita u Frankti pećini u Grčkoj (14 primeraka), gde su, između ostalog, mogli imati ulogu spremišta za pigmente.¹¹¹ I u ovom slučaju Badanj se ističe u odnosu na druga nalazišta gornjeg paleolita u jugoistočnoj Evropi sa najvećim brojem *Glycymeris* sp. primeraka.

PECTEN MAXIMUS

Pronađeno je samo nekoliko fragmentovanih komada *Pecten maximus* (sl. 21: 14-15). S obzirom na to da ovi primerci nemaju perforacije, ne možemo biti sigurni da su korišćeni

¹⁰⁸ Whallon 1999, 338.

¹⁰⁹ Borić, Cristiani 2019, Fig. 6:1-3.

¹¹⁰ Cvitkušić 2017; Cvitkušić et al. 2018.

¹¹¹ Perlès 2018, 65–67.

¹⁰⁸ Whallon 1999, 338.

¹⁰⁹ Borić, Cristiani 2019, sl. 6:1-3.

¹¹⁰ Cvitkušić 2017; Cvitkušić et al. 2018.

¹¹¹ Perlès 2018, 65–67.

stands out compared to other southeastern European Upper Palaeolithic sites with by far the highest number of *Glycymeris* sp. specimens.

PECTEN MAXIMUS

Only a couple of fragmentary pieces of *Pecten maximus* (Fig. 21:14-15) were found. As these specimens do not exhibit perforations, we could not be certain these were used as ornaments at Badanj. However, specimens of this type of shell bearing perforations have been documented in other parts of the Upper Palaeolithic Mediterranean.¹¹² At Badanj, these specimens seem to be confined to lower parts of the sequence.

LITHOGLYPHUS NATICOIDES

There were eight specimens of this freshwater gastropod at Badanj. Only four specimens had anthropically made perforations and could be considered beads. Due to the evenness of the color achieved by burning one of these specimens (7432/5, Fig. 19:9), we could suggest that it was deliberately burnt in order to create a desirable color of the bead, similar to other types of thermally altered beads in this assemblage (see above).

THEODOXUS DANUBIALIS

In the museum collection, there was only one anthropically perforated specimen of freshwater gastropod *Theodoxus danubialis*.

DISCUSSION

In hunter-gatherer studies of the Balkan Peninsula, one of the main theoretical models, proposed in the 1960s by Higgs and Vita-Finzi,¹¹³ suggested that we should expect seasonal transhumance of human groups with the pattern of winter occupation in near-coastal areas and summer habitation in the uplands and generally hinterland regions of the Adriatic. This model was in particular suggested for the sites in Epirus, Greece. In a modified version of this model for the same region, Bailey *et al.*¹¹⁴ and later Bailey and Gamble¹¹⁵ suggested Upper Palaeolithic forager population aggregations in the uplands in the summer, with sites in the hinterlands acting as specialized task locations, while winters were spent generally in the lowlands, including coastal lowlands. Others have suggested a pattern of year-round occupation of the coastal plains, such as the Adriatic Plain,¹¹⁶ while the treacherous mountainous terrain of the hinterland might have been utilized infrequently.¹¹⁷ Miracle and O'Brien¹¹⁸

kao ornamenti na Badnju. Međutim, primerci ovog tipa školjke sa perforacijama dokumentovani su u drugim delovima Mediterana tokom gornjeg paleolita.¹¹² Na Badnju, izgleda da su ovi primerci bili pre svega prisutni u donjem delu sekvence.

LITHOGLYPHUS NATICOIDES

Pronađeno je 11 primeraka ovog slatkovodnog gastropoda na Badnju. Četiri primerka imaju antropički napravljene perforacije i mogu se smatrati perlama. S obzirom na ujednačenost boje koja je postignuta izlaganjem vatri jednog od ovih primeraka 7432/5: (sl. 19:9), možemo smatrati ja ovde u pitanju namerno izlaganje gorenju kako bi se postigla željena boja perle, slično drugim tipovima termički izmenjenih perli u ovoj zbirci (videti gore).

THEODOXUS DANUBIALIS

U muzejskoj zbirci, pronašli smo samo jedan primerak slatkovodnog gastropoda *Theodoxus danubialis* sa antropički napravljenom perforacijom.

DISKUSIJA

U studijama lovaca i sakupljača Balkanskog poluostrva, jedan od glavnih teorijskih modela, kojeg su 1960-ih godina izložili Higs i Vita-Finzi,¹¹³ predlaže da treba očekivati sezonalnu transhumancu ljudskih grupa sa obrascem zimskog naseljavanja područja blizu morske obale i letnjim naseljavanjem visija i uopšteno regija u Jadranskom zaleđu. Ovaj model naročito je bio predložen za nalazišta u Epiru u Grčkoj. U nešto izmenjenoj verziji ovog modela za isti region, Bejli i kolege¹¹⁴ i kasnije Bejli i Gejmbli¹¹⁵ predložili su obrazac po kome je do agregacije gornjopaleolitskih populacija lovaca i sakupljača dolazilo u visijama tokom leta, sa nalazištima u zaleđu koja su služila kao lokacije za specijalizovane zadatke, dok su zime provođene uglavnom u nizijama, uključujući obalske nizije. Drugi su predlagali obrazac naseljavanja obalskih nizija, poput Jadranske nizije,¹¹⁶ tokom cele godine dok je nezgodan teren planinskog zaleđa mogao biti korišćen retko.¹¹⁷ Mirakl i Obrajen¹¹⁸ kritikuju ove modele zbog prikazivanja statičke i bezvremene slike tokom veoma dugih perioda koji su bili izloženi različitim oblicima nestabilnosti klime i prirodnog okruženja. Ovi autori su takođe razmatrali valjanost Jokimovog¹¹⁹ modela predvidljivog prirodnog okruženja što rezultira učestalim obrascem upotrebe nalazišta, lokacija i sezonalnosti, što je u kontrastu sa onim periodima kada se javljaju nepredvidljive oscilacije u prirodnom

112 E.g., Álvarez-Fernández *et al.* 2019, Fig. 6:2.

113 Higgs, Vita-Finzi 1966.

114 Bailey *et al.* 1983.

115 Bailey, Gamble 1990.

116 Shackleton *et al.* 1984.

117 van Andel 1989.

118 Miracle, O'Brien 1998, 49.

112 E.g., Álvarez-Fernández *et al.* 2019, sl. 6:2.

113 Higgs, Vita-Finzi 1966.

114 Bailey *et al.* 1983.

115 Bailey, Gamble 1990.

116 Shackleton *et al.* 1984.

117 van Andel 1989.

118 Miracle, O'Brien 1998, 49.

119 Jochim 1991.

criticize these models for depicting a rather static and timeless image over very long periods of time that were riddled by various forms of climatic and environmental instabilities. They also examine the usefulness of Jochim's¹¹⁹ model of environmental predictability with the resulting redundant pattern of site use, location, and seasonality, which stands in contrast to those periods of unpredictable environmental oscillations, which would have resulted in much more variable patterns of site locations, their seasonality, and aspects of use.

Taking into account the location of Badanj against the background of the proposed models for forager logistical mobility and seasonality, the prediction would, then, be that groups occupying more permanent site locations in coastal areas during the winter months might have occupied Badanj en route to more upland areas where resources aggregated during the warmer months. These stays at Badanj, according to the model prediction, thus might have occurred either in the spring or fall.¹²⁰ Also, any changes in environmental predictability in the course of the Badanj sequence, for instance the start and the end of the Bølling/Allerød interstadial, would have created deviations from the regular pattern of use, not least because of changes in the availability of territories on the North Adriatic Plain due to the sea level rise, thus spatially constraining both the distribution of animal herds and human populations.

Contrary to the model predictions, the existing seasonality indicators suggest a strong pattern of winter or late fall through to the early spring occupation of Badanj with some indicators possibly suggesting a shift in the seasonality of occupation in the later part of the sequence. While one has to be cautious with potentially unrepresentative small sample sizes for inferring fine temporal changes in seasonal scheduling at Badanj, it is clear that the site does not conform to the model for winter occupation of coastal areas and summer occupation of the hinterland. Badanj is here taken as a hinterland site despite being found in a lowland site location.¹²¹ On the other hand, while the model of environmental stability and settlement redundancy could perhaps apply to the earlier parts of the sequence, with a break in the expected redundancy of the season of occupation after Level 6, we need both a much better hold over the chronological resolution of the Badanj sequence and more robust seasonality indicators so that changes in the seasonality of occupation and the timings of various environmental shifts can properly be correlated. Despite the strong indicators of the winter occupation of Badanj, Miracle and O'Brien¹²² hesitate to rebrand Badanj as a base camp in a wider regional settlement system and conclude that the site might have

okruženju, koje su rezultirale mnogo nestalnijim obrascima položaja nalazišta, njihove sezonalnosti i aspekata upotrebe.

Uzimajući u obzir lokaciju Badnja u odnosu na predložene modele logističke mobilnosti i sezonalnosti lovaca i sakupljača, mogli bismo da predvidimo da su grupe koje su trajnije naseljavale lokacije u zonama bliže morskoj obali tokom zimskih meseci, naseljavale Badanj na putu ka oblastima visija gde je dolazilo do agregacije resursa tokom toplijih meseci. Po ovom modelu predviđanja, do boravaka na Badnju tako je moglo dolaziti ili tokom proleća ili tokom jeseni.¹²⁰ Takođe, bilo koja promena u predvidljivosti prirodnog okruženja tokom badanjske sekvence, npr. početak i kraj beling/alared interstadijala, mogla je prouzrokovati odstupanja od ustaljenog obrasca upotrebe, u najmanju ruku zbog promena u dostupnim teritorijama severne Jadranske nizije uzrokovanih porastom nivoa mora, što je dovelo do prostornog ograničenja kako distribucije životinjskih krda tako i ljudskih populacija.

U suprotnosti sa predviđanjima ovog modela, postojeći pokazatelji sezonalnosti ukazuju na snažan obrazac zimskog ili kasnojesešnjeg do ranoprolećnog naseljavanja Badnja, sa nekim pokazateljima koji možda sugerišu promenu sezonalnosti naseljavanja tokom kasnijeg dela sekvence. Iako je potreban oprez u vezi sa potencijalno nereprezentativno malim uzorkom za izvođenje zaključaka o nijansiranim dijahronijskim promenama u sezonalnom planiranju korišćenja Badnja, jasno je da ovo nalazište ne odgovara modelu zimskog naseljavanja priobalnih oblasti i letnjeg naseljavanja zaleđa. Ovde Badanj smatramo lokalitetom u zaleđu uprkos tome što se nalazi na nizijskoj lokaciji.¹²¹ S druge strane, dok bi model stabilnosti prirodnog okruženja i učestalosti naseljavanja mogao biti primenjen na rane delove ove sekvence, sa prekidom u očekivanoj učestalosti sezone naseljavanja nakon nivoa 6, potrebna nam je kako bolja hronološka rezolucija badanjske sekvence tako i jasniji pokazatelji sezonalnosti kako bi na odgovarajući način povezali promene u sezonalnosti naseljavanja sa tempiranjem različitih promena u prirodnom okruženju. Uprkos snažnim pokazateljima zimskog naseljavanja Badnja, Mirakl i Obrajen¹²² oklevaju da proglase Badanj baznim kampom u širem regionalnom sistemu naseljavanja i zaključuju da je nalazište moglo biti korišćeno kao specijalizovan kamp za ulov i procesiranje košuta. Na ovom mestu, pored fokusa prethodnih studija o Badnju kako na industriju okresanog kamena tako i na ostatke faune kao najdominantijim klasama arheološkog materijala, smatramo da bi dve druge kategorije materijalne kulture koje smo razmatrali u ovom radu potencijalno mogle pomoći u sklapanju slagalice o (ne)promenljivim ulogama ove lokacije za lovačko-sakupljačke grupe ove regije u dijahronijskoj perspektivi.

119 Jochim 1991.

120 Miracle, O'Brien 1998, 49.

121 Miracle, O'Brien 1998, 67.

122 Miracle, O'Brien 1998, 67–68.

120 Miracle, O'Brien 1998, 49.

121 Miracle, O'Brien 1998, 67.

122 Miracle, O'Brien 1998, 67–68.

been used as a special activity camp to hunt and process female red deer. At this point, apart from the focus of previous studies of Badanj on either the chipped stone industry or faunal remains as the most dominant classes of archaeological material, we believe that two categories of material culture examined in this article could potentially help in piecing together the puzzle of the site's (un)changing roles for forager groups of the region in a diachronic perspective.

Barbed points in the assemblage of osseous artifacts are of particular interest among other osseous tools as their appearance coincided with the start of the Bølling/Allerød interstadial, as shown by new AMS dates, as well as with several other changes, among which the most relevant might have been changes in the structure of lithic tools with the appearance of lunates and triangles as likely armatures for projectile points (even though this assumption needs further confirmation through dedicated use-wear studies). Such composite artifacts with "lithic barbs" might have conveyed the same idea to antler barbed projectile points in a different material. While genomic data still remain limited at present, recent analysis¹²³ suggests a widespread Villabruna cluster of genetic ancestry across Europe in the period after 14.000 kya cal BP, implying higher levels of mobility that might have gone in tandem with the phase of rapid warming across the continent. The tradition of Azilian osseous barbed points from the areas of southern France might have at this time reached Badanj, but it is also true that diverse cultural traits might have been transmitted in different directions. Further, the non-figural decorative patterns on some of the osseous artifacts from Badanj that we examined suggest a shared repertoire of patterns across wide areas of Italy and the Balkans at this time, further strengthening the idea of high levels of regional mobility and transfer of information.¹²⁴

On the other hand, we have already noted high frequencies and varieties of beads at Badanj when compared to other contemporaneous Epigravettian sites in the Adriatic Basin. As the excavation campaigns during which these beads were unearthed were made in the 1970s by the same excavator that previously worked at Crvena Stijena,¹²⁵ where much smaller frequencies of beads have been found in contemporaneous levels¹²⁶ over an area larger than the one investigated at Badanj, it is unlikely that recovery bias can explain this situation.¹²⁷ Both sites are also at similar distances

Šiljci sa zupcima u zbirci koštanih artefakata među ostalim koštanim alatkama naročito su interesantni s obzirom da se njihova pojava poklapa sa početkom beling/alared interstadijala, kao što je pokazano novim AMS datumima, kao i uz nekoliko drugih promena, među kojima su najznačajnije mogle biti promene u strukturi litičkih alatki sa pojavom polumesečastih segmenta i trouglova, koji su verovatno služili kao armature za projektilne šiljke (iako ova pretpostavka dalje mora biti potvrđena kroz posvećenu studiju tragova upotrebe). Takvi kompozitni artefakti sa "litičkim zupcima" mogli su u drugačijem materijalu prenositi istu ideju kao i projektilni šiljci od jelenskog roga. Iako su za sada genomske podaci i dalje ograničeni, skorije analize¹²³ ukazuju na raširenju Vilabruna skupinu genetskog nasleđa širom Evrope u periodu nakon 14.000 cal BP, što bi govorilo o povećanom nivou mobilnosti koji je mogao ići u korak sa fazom naglog otopljenja širom kontinenta. Tradicija azilijenskih koštanih šiljaka sa zupcima iz oblasti južne Francuske mogla je u ovom trenutku dospeti do Badnja, iako je takođe moguće da su različite kulturne odlike mogle biti prenošene u različitim pravcima. Štaviše, nefiguralni dekorativni motivi na nekim koštanim artefaktima sa Badnja koje smo pominjali ukazuju na zajednički repertoar motiva širom prostranih oblasti Italije i Balkana u ovo vreme, što dalje učvršćuje ideju o visokom nivou regionalne mobilnosti i transferu informacija.¹²⁴

S druge strane, već smo primetili veliki broj i raznovrsnost perli na Badnju u poređenju sa drugim istovremenim epigravetijenskim nalazištima u Jadranskom bazenu. S obzirom da su iskopavanja tokom kojih su otkrivene ove perle vršena 1970-ih od strane istog istraživača koji je prethodno radio na Crvenoj Stijeni,¹²⁵ gde je mnogo manja količina perli pronađena u istovremenim nivoima¹²⁶ preko površine koja je bila veća nego ona istražena na Badnju, nije verovatno da razlike u načinu prikupljanja mogu objasniti ovu situaciju.¹²⁷ Oba ova nalazišta takođe su na sličnom odstojanju od najbliže obale Jadranskog mora sa sličnim zahtevnim terenom između. Ovaj kontrast je dalje naglašen kada uporedimo Badanj sa lokalitetima na samom primorju ili u blizini obale Jadrana (npr. Vela Spila, Vlakno), a gde su primenjivani moderni standard iskopavanja i prikupljanja arheološkog materijala sa sveobuhvatnim programom prosejavanja i gde je ipak

123 Fu *et al.* 2016.

124 Cf. Whallon 2006; Whallon *et al.* 2011.

125 See Basler 1976.

126 Borić, Cristiani 2019.

127 Đuro Basler took over excavations at Crvena Stijena in 1960–1963, during which he expanded the extent of the excavation area in order to facilitate access to lower strata of this deeply stratified sequence. By doing this, he removed the largest part of Upper Palaeolithic levels in the rockshelter. One should also note that from 1954 to 1958 Alojz Benac, Borivoje Čović, and Mitja Brodar directed excavations at the site, in various areas already reaching Upper Palaeolithic deposits. However, Epipalaeolithic and deeper levels were primarily reached in a rather small sondage of Trench D in the very back of

123 Fu *et al.* 2016.

124 Cf. Whallon 2006; Whallon *et al.* 2011.

125 See Basler 1976.

126 Borić, Cristiani 2019.

127 Đuro Basler je preuzeo iskopavanja Crvene Stijene 1960–1963, kada je proširio obim zone istraživanja kako bi omogućio pristup donjim slojevima ove duboko stratifikovane sekvence. Na ovaj način, on je uklonio najveći deo gornjopaleolitskih nivoa u potkapini. Treba takođe pomenuti da su 1954–1958, Alojz Benac, Borivoje Čović i Mitja Brodar vodili iskopavanja na ovom nalazištu, u različitim zonama već dosegači depozite gornjopaleolitske starosti. Međutim, epipaleolitski i dublji nivoi prvenstveno su dosegnuti u maloj sondi D u samoj pozadini potkapine, gde je takođe većina nalaza bila koncentrisana (videti Vušović-Lučić *et al.* 2017). Otud nije verovatno da bi razlika u načinu prikupljanja materijala u ovoj ograničenoj zoni u sondi D na Crvenoj Stijeni mogla objasniti dramatično različite obrasce u učestalosti ličnih ornamenata između Crvene Stijene i Badnja.

from the nearest coast of the Adriatic Sea with similarly rugged terrains in between. The contrast is further enhanced when Badanj is compared to coastal or near-coastal sites in the Adriatic (e.g. Vela Spila, Vlakno) where modern standards of excavation and recovery of archaeological materials with extensive programs of sieving were applied and which still produced smaller frequencies of ornamental beads. This patterning strongly suggests that although one might well predict that near-coastal locations will exhibit higher frequencies of marine species, Badanj as a hinterland location defies this prediction with a much higher percentage of different types of marine species used for ornaments than anywhere else (only Franchthi cave shows much higher frequencies of certain ornament types, but the presence of *Glycymeris* sp. at Badanj is significantly higher than at any of the extensively excavated levels at Franchthi). At the same time, these high frequencies of marine ornament types at Badanj do indicate very strong links with the coastal region, either through a pattern of logistical mobility of the groups using Badanj, that might have spent a part of the year in coastal areas where these ornaments were collected directly, or, alternatively, the ornaments might have been acquired through a network of exchanges of people and/or material culture.

Further interesting patterning regarding Badanj relates to the intra-site distribution of ornaments, where most of the material was found in the eastern-central area of the rock-shelter excavated by Basler, i.e., in the area around the engraved rock, rather than in the western zone where the 1986–1987 excavations took place. Badanj is unique in the presence of this engraved rock,¹²⁸ which is a rare occurrence of Upper Palaeolithic “art” in this regional context.¹²⁹ While we still need to obtain precise counts of all ornaments from Badanj from both phases of excavations along with more detailed analysis of spatial and vertical patterns of distribution of these ornaments, by and large we do not expect that the observed intra-site pattern will change. A hypothesis could be put forward that the higher frequency of ornaments found in Basler’s trench could in some way be linked to the presence of the engraved rock, possibly related to heightened levels of symbolic expression in this particular location within the site. We cannot exclude the possibility that the site itself, along with a range of everyday activities (hunting, processing of carcasses, hide processing, flint-knapping, armature preparation, etc.) was also a place imbued with ceremonial and ritual activities, or a place of gatherings of wider groups that shared information or held ceremonies here in the winter months, often wearing ceremonial costumes on

manja učestalost ornamentalnih perli u odnosu na Badanj. Ovaj obrazac izrazito ukazuje da uprkos očekivanju o većoj učestalosti marinskih vrsta perli na lokacijama u blizini morske obale, Badanj sa svojom lokacijom u zaleđu prkosi ovom očekivanju sa mnogo većim procentom različitih marinskih vrsta koje su korišćene kao ornamenti nego bile gde drugde (samo Frankti pećina pokazuje veću učestalost određenih tipova ornamenata, ali je prisustvo *Glycymeris* sp. na Badnju značajno veće nego bilo koji opsežno istraživani nivo Frankti pećine). U isto vreme, ova visoka učestalost marinskih ornamentalnih tipova na Badnju ukazuje na veoma snažne veze sa obalskom regijom, bilo kroz obrazac logističke mobilnosti grupa koje su koristile Badanj, a koje su mogle provoditi deo godine u primorskim zonama gde su ovi ornamenti direktno skupljani, ili, alternativno, ornamenti su mogli biti dobavljeni kroz mrežu razmene ljudi i/ili materijalne kulture.

Dalji interesantan obrazac koji se javlja na Badnju odnosi se na distribuciju ornamenata u okviru samog nalazišta, gde je najviše materijala pronađeno u istočno-centralnoj zoni potkapine koju je iskopavao Basler, tj., u zoni oko stene sa gravurom, pre nego u zapadnoj zoni gde su vršena iskopavanja 1986–1987. Badanj je jedinstven po prisustvu ove stene sa gravurom,¹²⁸ koja predstavlja retku pojavu gornjopaleolitske “umetnosti” u ovom regionalnom kontekstu.¹²⁹ Iako ostaje neophodno da dođemo do preciznog broja svih ornamenata sa Badnja iz obe faze iskopavanja i da detaljno analiziramo prostorne i vertikalne obrasce distribucije ovih ornamenata, ne očekujemo da će ovo značajno promeniti uočen obrazac distribucije ornamenata u okviru nalazišta. Možemo predložiti hipotezu da je veća učestalost ornamenata pronađenih u Baslerovoj sondi mogla na neki način biti vezana za prisustvo stene sa gravurom, možda u vezi sa povišenim nivoima simboličkog izražavanja na ovoj lokaciji u okviru potkapine. Ne možemo isključiti mogućnost da je samo naselje, uz niz svakodnevnih aktivnosti (lov, procesiranje ulova, obrada kože, okresivanje kamena, priprema armatura, itd.) takođe bilo mesto prožeto i ceremonijalnim i ritualnim aktivnostima, ili mesto gde su se okupljale grupe iz šire regije kako bi delile informacije ili ovde održavale ceremonije tokom zimskih meseci, često noseći ceremonijalne kostime na kojima su mogli biti zakačeni različiti ornamenti. Ova hipoteza bi mogla biti dalje ojačana ako uzmemo u obzir sugestiju Kuna i Stajner¹³⁰ da lične ornamente treba razumeti kao oblik informacione tehnologije kojom se odašilju društvene informacije ka širokom krugu korisnika. Bilo bi teško zamisliti da neobično visok broj perli u okviru istočno-jadranske regije sa specifičnim prostornim obrascem u okviru nalazišta, prisustvo retkog primera zidne umetnosti, veoma visok broj predmeta materijalne kulture uopšte

the shelter, where also most of the finds were concentrated (see Vušović-Lučić *et al.* 2017). Hence it is unlikely that the recovery bias in this confined area of sondage D at Crvena Stijena could account for the dramatically different patterns in the frequencies of personal ornaments between Crvena Stijena and Badanj.

128 Basler 1976, 1979b.

129 But see Ruiz-Redondo *et al.* 2019.

128 Basler 1976, 1979b.

129 Ali videti Ruiz-Redondo *et al.* 2019.

130 Kuhn, Stiner 2007.

which various ornaments might have been attached. This could further be strengthened if we take into account Kuhn and Stiner's¹³⁰ suggestion that beads should be seen as a form of information technology for broadcasting social information to wide audiences. It seems difficult to imagine that unusually high numbers of beads for the eastern Adriatic region, with a specific intra-site spatial pattern, the presence of a rare example of parietal art, very high frequency of material culture items, and a seasonal pattern of winter occupation are all coincidental occurrences.

We would tentatively suggest that Badanj might have acted as a nexus of the maximal or regional band, a *persistent place*,¹³¹ in an extended network characterized by the assumed hexagonal packing of spatial units consisting of minimal bands as characteristic of hunter-gatherer settlement systems cross-culturally.¹³² In the light of this evidence, there should be no reason to exclude the role of Badanj as a winter base camp, which might have had several specialized roles for the Epigravettian foragers of the wider regional zone. Future analysis of the available archaeological material from Badanj can further test this hypothesis. In addition, a better understanding of the nature of occupation at other contemporaneous sites in this micro-regional context can provide further insights into the nature of the regional forager settlement system during the Late Glacial period, providing a useful contextualization of the evidence from Badanj.

CONCLUSIONS

In this article we reviewed the existing strands of data about the Badanj sequence and presented our analyses of the previously largely unpublished assemblage of osseous tools, including newly obtained AMS dates on morphologically diagnostic curated barbed points, and the large extant collection of ornamental beads. By doing this, we attempted to re-address the relevance of this site for studies of the Upper Palaeolithic Epigravettian period in the Adriatic Basin and beyond. The unusually high frequency of personal ornaments at Badanj along with their intra-site patterning around the engraved rock suggest to us that the site might not have been used solely as a specialized hunting site for targeting pregnant female red deer herds, as proposed by previous studies, although targeting of pregnant female red deer did represent one of the important subsistence activities at Badanj. Several lines of evidence highlighted in this article suggest that we should perhaps consider Badanj as a persistent place, an important point for gatherings in the winter months, a base camp, which might have included the exchange of information and a range of ceremonial and/or ritual activities, which might have been inextricably linked to practices of hunting and carcass processing, over

i sezonalni obrazac naseljavanja tokom zime, sve zajedno predstavljaju slučajne i nepovezane pojave.

U ovom trenutku predložili bi da je Badanj mogao igrati ulogu jednog od nekusa maksimalnih ili regionalnih grupa lovaca i sakupljača, kao postojano mesto,¹³¹ u razgranatoj mreži koju je odlikovalo pretpostavljeno heksagonalno „pakovanja“ prostornih jedinica koje su činile minimalne grupe kao kros-kulturna odlika sistema naselja lovaca-sakupljača.¹³² U svetlu ovih svedočanstava, nema razloga da se isključi uloga Badnja kao zimskog baznog kampa, koji je mogao imati nekoliko specijalizovanih uloga za epigravetijenske lovce-sakupljače u širem regionalnom okviru. Ova hipoteza može biti dalje testirana kroz buduće analize dostupnog arheološkog materijala sa Badnja. Treba dodati da bolje razumevanje prirode naseljavanja na drugim istovremenim nalazištima u ovom mikro-regionalnom kontekstu može da pruži dalje uvide u prirodu regionalnog sistema naselja lovaca i sakupljača tokom kasnog glacijalnog perioda, što bi pružilo korisnu kontekstualizaciju svedočanstava sa Badnja.

ZAKLJUČCI

U ovom radu pružili smo pregled niza postojećih podataka za sekvencu Badnja i prezentovali naše analize prethodno uglavnom neobjavljene zbirke koštanih alatki, uključujući novodobijene AMS datume na morfološki dijagnostičkim potpuno oblikovanim šiljcima sa zupcima, i velike postojeće zbirke ornamentalnih perli. Na ovaj način, pokušali smo da povratimo relevantnost ovog nalazišta za proučavanje gornjopaleolitskog epigravetijenskog perioda u Jadranskom bazenu i šire. Neobično veliki broj ličnih ornamenata na Badnju uz osoben obrazac distribucije u okviru potkapine oko stene sa urezima govorili bi u prilog tome da nalazište možda nije bilo korišćeno samo kao specijalizovana lovna stanica za ulov krda bremenitih košuta, kao što je predloženo u prethodnim studijama, iako ulov bremenitih košuta jeste predstavljao jednu od važnih aktivnosti vezanih za prehranu na Badnju. Nekoliko svedočanstava istaknutih u ovom radu ukazuju na to da bi možda trebalo da sagledamo Badanj kao postojano mesto, važan punkt za okupljanja u zimskim mesecima, bazni kamp, koji je mogao da uključi aktivnosti poput razmene informacija i niza ceremonijalnih i/ili ritualnih aktivnosti, koje su mogle biti neodvojivo povezane sa praksom lova tokom veoma dugih perioda vremena. Predlažemo da zajedno sa drugim pokazateljima namene ovog nalazišta moramo uzeti u obzir i svedočanstva o velikoj količini različitih tipova perli koje su ovde pronađene, kada se ova količina uporedi sa drugim istovremenim nalazištima Jadranskog bazena i drugde u jugoistočnoj Evropi, prisustvu stene sa urezivanjem, i naročito koncentraciji ornamenata oko ove stene.

¹³⁰ Kuhn, Stiner 2007.

¹³¹ Cf. Schlanger 1992.

¹³² Cf. Whallon 2006, 2007a; Borić, Cristiani 2016.

¹³¹ Cf. Schlanger 1992.

¹³² Cf. Whallon 2006, 2007a; Borić, Cristiani 2016.

a considerable period of time. We suggest that the large amounts of different bead types found here compared to other contemporaneous sites in the Adriatic Basin and elsewhere in southeastern Europe as well as the presence of the engraved rock, and a peculiar concentration of ornaments around this rock, must all be taken into account along with other indicators of site function.

The summarized data and presented material have opened up our thinking toward further research agendas with regard to this outstanding sequence. One aspect of future research that remains of pressing importance is to provide a more robust chronological framework for the complete sequence. Further insights could also be gained through use-wear and residue analysis of stone tools, including ground stones. A better understanding of formation processes would also be possible through micromorphological and sedimentological analyses. Future work on a more fine-grained resolution of site-specific spatial and temporal patterns should be complemented by further regional surveys and excavations of chronologically overlapping sequences in this regional context. Such novel strands of data would aid previous and current efforts in putting together a more comprehensive picture of Badanj's significance for Late Upper Palaeolithic foragers as they navigated challenges brought about by changes of environmental conditions at the end of the Pleistocene.

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Sumirani podaci i prikazan materijal otvaraju razmišljanja u pravcu daljih istraživačkih poduhvata u vezi sa ovom izuzetnom sekvencom. Jedan aspekt budućih istraživanja koji ostaje od ključne važnosti je pružanje utemeljenijeg hronološkog okvira za celokupnu sekvencu. Dalji uvidi mogu se takođe ostvariti kroz analizu tragova upotrebe i mikro-ostataka na kamenim alatima, uključujući tu i glačan kamen. Bolje razumevanje formacijskih procesa takođe bi bilo moguće kroz mikromorfološke i sedimentološke analize. Budući rad na finoj rezoluciji prostornih i hronoloških obrazaca ovog nalazišta treba da bude komplementaran daljim regionalnim rekognosciranjima i iskopavanju hronološki preklapajućih sekvenci u ovom regionalnom kontekstu. Niz novodobijenih podataka pomogao bi prethodnim i trenutnim naporima u dobijanju sveobuhvatnije slike o značaju Badnja za lovce i sakupljače tokom kasnog gornjeg paleolita i njihovoj sposobnosti da prebrode izazove koje su donele promene prirodnih uslova krajem pleistocena.

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Fig. 13. Close-ups of manufacturing traces on barbed points made on red deer antler from Badanj (inv. 10016 [OxA-2796-45] and 7807).

Sl. 13. Detalji tragova izrade šiljaka sa zupcima od jelenskog roga sa Badnja (inv. 10016 [OxA-2796-45] i 7807).



Fig. 14. Close-ups of manufacturing traces on barbed points made on red deer antler from Badanj (inv. 7063 [OxA-38111] and 10037).

Sl. 14. Detalji tragova izrade šiljaka sa zupcima od jelenskog roga sa Badnja (inv. 7063 [OxA-38111] i 10037).



Fig. 15. Bone tools from Badanj with sequential incisions and decorative motifs: 1. inv. 10022 (sq. K9D, level 4); 2. inv. 7602/1 (sq. XIV/6, 0.8-0.9); 3. inv. 7544 (sq. XVII/11, 0.8-0.9); 4. inv. 7540 (sq. XII/8, 1.2-1.3); 5. inv. 7541 (sq. XIII/6, 1.5-1.6); 6. inv. 7806 (sq. XV/5, 0.5-0.6).

Sl. 15. Koštane alatke sa Badnja sa slednim urezima i dekorativnim motivima: 1. inv. 10022 (kv. K9D, nivo 4); 2. inv. 7602/1 (kv. XIV/6, 0,8-0,9); 3. inv. 7544 (kv. XVII/11, 0,8-0,9); 4. inv. 7540 (kv. XII/8, 1,2-1,3); 5. inv. 7541 (kv. XIII/6, 1,5-1,6); 6. inv. 7806 (kv. XV/5, 0,5-0,6).

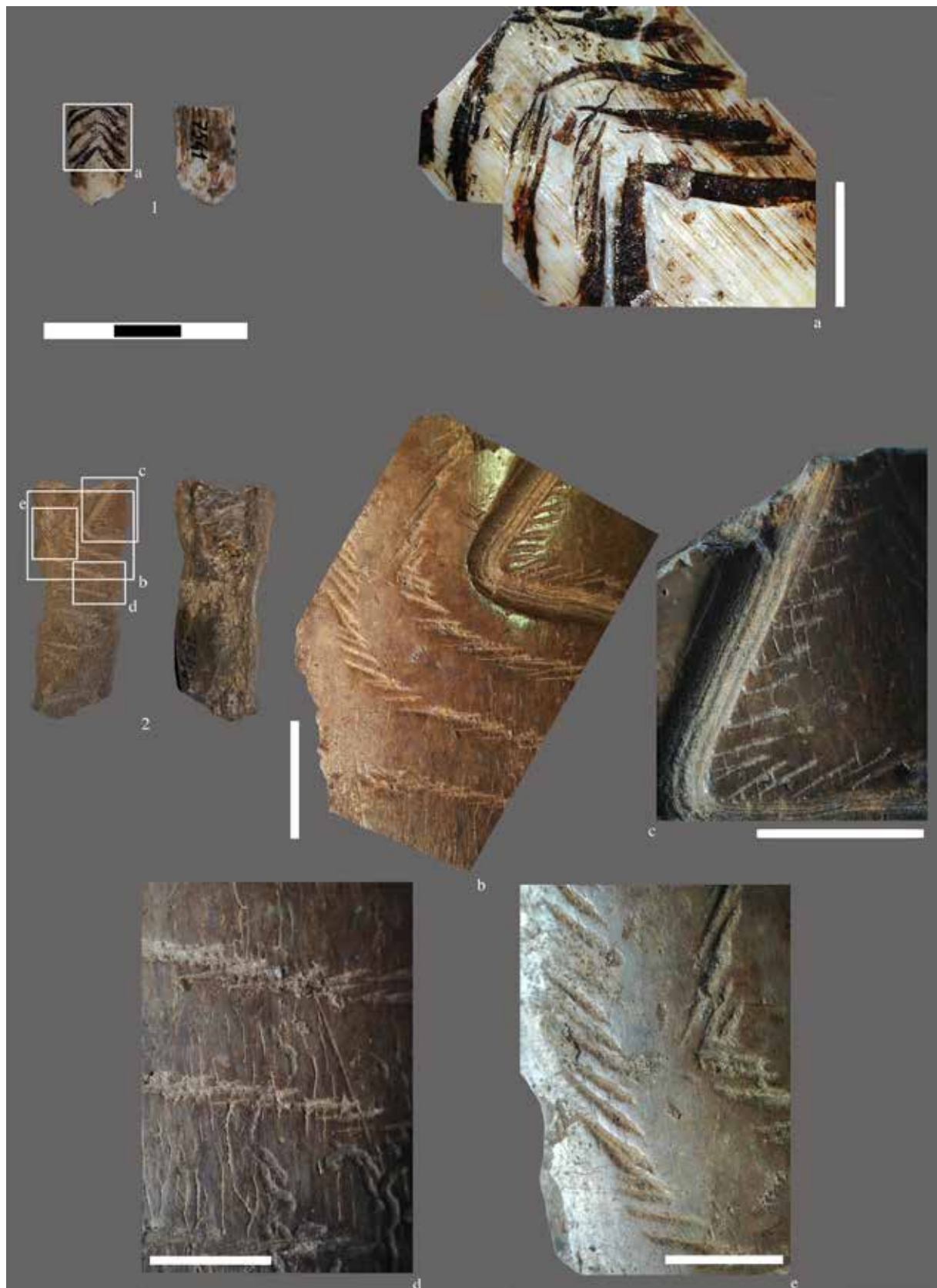


Fig. 16. Close-ups of decorative motifs on two bone artifacts. 1. inv. 7541; 2. inv. 7540.

Sl. 16. Detalji dekorativnih motiva na dva koštana artefakta. 1. inv. 7541; 2. inv. 7540.



Fig. 17. Red deer canines used as personal adornment from Badanj: 1. inv. 6400 (sq. XIII/8, 0.1-0.2); 2. inv. 7736/1 (sq. XV/5, 0.4-0.5); 3. inv. 7268 (sq. XVII/a, 1.5-1.6); 4. inv. 7200 (sq. XXI/14, 0.9-1.0); 5. inv. 7412 (sq. XIV/7, 0.9-1.0); 6. inv. 7745 (sq. XIX/12, 1.1-1.2); 7. inv. 7375 (sq. XIII/7, 1-1.1); 8. inv. 7460 (sq. XVII/a, 1.2-1.3); 9. inv. 7747 (sq. XIX/11, 1.4-1.5); 10. no inv. no. (sq. XV/5, 6, 7, in XIV); 11. inv. 6403 (sq. XVI/8, 0.8-0.9); 12. inv. 7742/1 (sq. XVIII/8, 1.0-1.1); 13. inv. 7746 (sq. XIX/10, 1.2-1.3); 14. inv. 6402 (sq. A, 0.2-0.3); 15. inv. 7742/2 (sq. XVIII/8, 1-1.1); 16. inv. 7736/2 (sq. XV/5, 0.4-0.5); 17. inv. 7269 (sq. XIII/6, 1.1-1.2).

Sl. 17. Očnjaci kanina jelena sa Badnja korišćeni za lično ukrašavanje: 1. inv. 6400 (kv. XIII/8, 0,1-0,2); 2. inv. 7736/1 (kv. XV/5, 0,4-0,5); 3. inv. 7268 (kv. XVII/a, 1,5-1,6); 4. inv. 7200 (kv. XXI/14, 0,9-1,0); 5. inv. 7412 (kv. XIV/7, 0,9-1,0); 6. inv. 7745 (kv. XIX/12, 1,1-1,2); 7. inv. 7375 (kv. XIII/7, 1-1,1); 8. inv. 7460 (kv. XVII/a, 1,2-1,3); 9. inv. 7747 (kv. XIX/11, 1,4-1,5); 10. bez inv. br. (kv. XV/5, 6, 7, osipina u XIV); 11. inv. 6403 (kv. XVI/8, 0,8-0,9); 12. inv. 7742/1 (kv. XVIII/8, 1,0-1,1); 13. inv. 7746 (kv. XIX/10, 1,2-1,3); 14. inv. 6402 (kv. A, 0,2-0,3); 15. inv. 7742/2 (kv. XVIII/8, 1-1,1); 16. inv. 7736/2 (kv. XV/5, 0,4-0,5); 17. inv. 7269 (kv. XIII/6, 1,1-1,2).

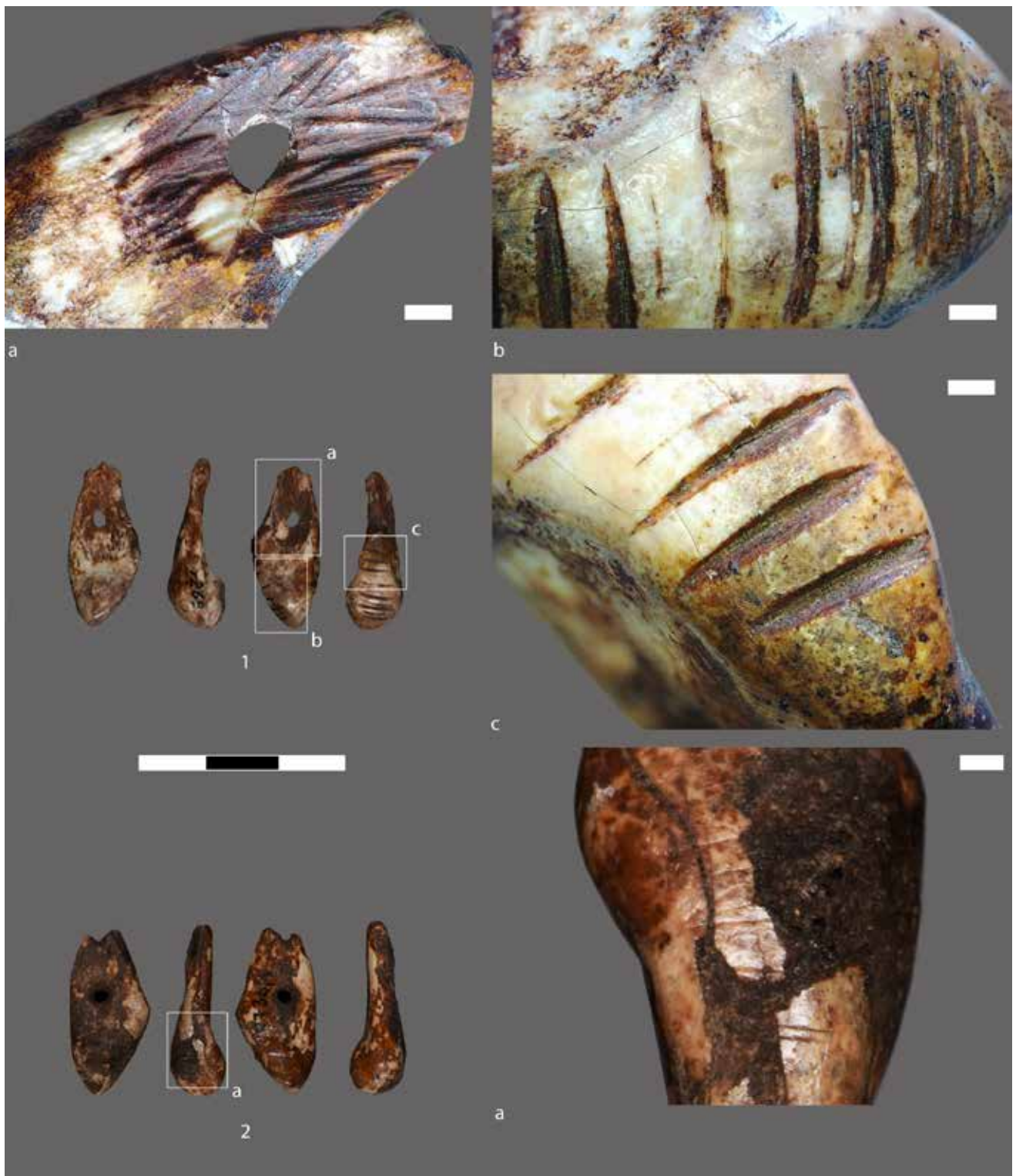


Fig. 18. Close-ups of the incised red deer canine beads from Badanj: 1. inv. 7269; 2. inv. 7736/1.

Sl. 18. Detalji perli od očnjaka jelena sa urezima sa Badnja: 1. inv. 7269; 2. inv. 7736/1.

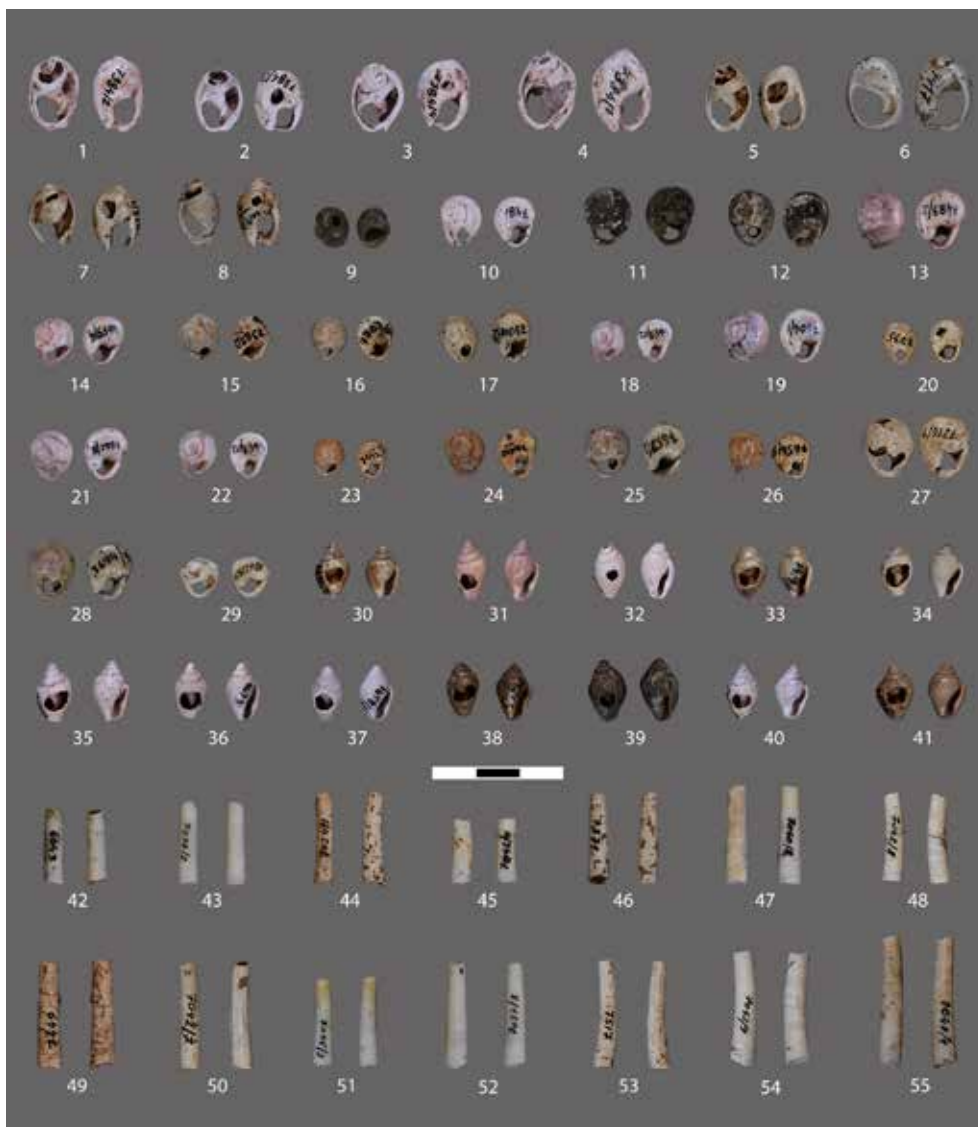


Fig. 19. A selection of different mollusc taxa from Badanj used as beads. *Tritia gibbosula*: 1. inv. 7384/2 (sq. XIV/6, 1.5-1.6); 2. inv. 7384/3 (sq. XIV/6, 1.5-1.6); 3. inv. 7384/4 (sq. XIV/6, 1.5-1.6); 4. inv. 7384/7 (sq. XIV/6, 1.5-1.6); 5. inv. 7733 (sq. XVIII/8, 1.5-1.6); 6. inv. 7417 (sq. XIV/8, 1.9-2.0); 7. inv. 7415 (sq. XIII/6, 1.4-1.5); 8. inv. 7687/1 (sq. XIX/12, 1.5-1.6); *Lithoglyphus naticoides*: 9. inv. 7432/5 (sq. XVII/11, 0.2-0.3); *Tritia neritea*: 10. inv. 7481 (sq. XXI/12, 0.5-0.6); 11. inv. 7703/2 (sq. XV/5, 0.0-0.1); 12. inv. 7731/2 (sq. XVIII/9, 1.3-1.4); 13. inv. 7483/2 (sq. XXI/13, 0.6-0.7); 14. inv. 7659/4 (sq. XV/6, 0.3-0.4); 15. inv. 7383/2 (sq. XIV/6, 1.4-1.5); 16. inv. 7703/1 (sq. XV/5, 0.0-0.1); 17. inv. 7504/2 (sq. XII/10, 0.4-0.5); 18. inv. 7659/12 (sq. XV/6, 0.3-0.4); 19. inv. 7504/1 (sq. XXII/10, 0.4-0.5); 20. inv. 7735 (sq. XVIII/12, 1.5-1.6); 21. inv. 7661/8 (sq. XV/6, 0.5-0.6); 22. inv. 7659/12 (sq. XV/6, 0.3-0.4); 23. inv. 7654/5 (sq. XV/5, 0.1-0.2); 24. inv. 7660/4 (sq. XV/7, 0.3-0.4); 25. inv. 7658/1 (sq. XV/7, 0.2-0.3); 26. inv. 7656/1 (sq. XV/7, 0.0-0.2); 27. inv. 7216/1 (sq. XIV/7, 1.4-1.5); 28. inv. 7694/3 (sq. XX/12, 0.6-0.7); 29. inv. 7225/1 (no context); *Columbella rustica*: 30. inv. 7431/5 (sq. XVII/10, 0.2-0.3); 31. inv. 7431/4 (sq. XVII/10, 0.2-0.3); 32. inv. 7697/4 (sq. XX/11, 0.8-0.9); 33. inv. 7419/1 (sq. XVII/8, 0.2-0.3); 34. inv. 7600 (sq. XIV/6, 0.8-0.9); 35. inv. 7588 (sq. XVII/9, 0.1-0.2); 36. inv. 7673 (sq. XIX/11, 0.1-0.2); 37. inv. 7658/3 (sq. XV/7, 0.2-0.3); 38. inv. 7424/2 (sq. XVII/9, 0.2-0.3); 39. inv. 7210/2 (sq. XIV/7, 0.6-0.7); 40. inv. 7435/4 (sq. XVII/10, 0.4-0.5); 41. inv. 7526 (sq. XV/6-XV/7, section cleaning); *Dentalium* sp.: 42. inv. 6643 (sq. XVI/9, 0.1-0.2); 43. inv. 7036/2 (sq. XIV/6, 0.4-0.5); 44. inv. 7624/1 (sq. XIX/12, 0.5-0.6); 45. inv. 7042/6 (sq. XIII/7, 0.9-1.0); 46. inv. 7371 (sq. XIII/6, 0.4-0.5); 47. inv. 7040/8 (sq. XIV/7, 0.6-0.7); 48. inv. 7042/8 (sq. XIII/7, 0.9-1.0); 49. inv. 7449 (sq. XVII/10, 0.5-0.6); 50. inv. 7042/7 (sq. XIII/7, 0.9-1.0); 51. inv. 7035/2 (sq. XIV/5, 0.4-0.5); 52. inv. 7037/3 (sq. XIV/7, 0.4-0.5); 53. inv. 7517 (sq. XXII/11, 0.6-0.7); 54. inv. 7042/9 (sq. XIII/7, 0.9-1.0); 55. inv. 7047/1 (sq. XIV/5, 0.6-0.7).

Sl. 19. Izbor različitih vrsta mekušaca korišćenih kao perle sa Badnja. *Tritia gibbosula*: 1. inv. 7384/2 (kv. XIV/6, 1,5-1,6); 2. inv. 7384/3 (kv. XIV/6, 1,5-1,6); 3. inv. 7384/4 (kv. XIV/6, 1,5-1,6); 4. inv. 7384/7 (kv. XIV/6, 1,5-1,6); 5. inv. 7733 (kv. XVIII/8, 1,5-1,6); 6. inv. 7417 (kv. XIV/8, 1,9-2,0); 7. inv. 7415 (kv. XIII/6, 1,4-1,5); 8. inv. 7687/1 (kv. XIX/12, 1,5-1,6); *Lithoglyphus naticoides*: 9. inv. 7432/5 (kv. XVII/11, 0,2-0,3); *Tritia neritea*: 10. inv. 7481 (kv. XXI/12, 0,5-0,6); 11. inv. 7703/2 (kv. XV/5, 0,0-0,1); 12. inv. 7731/2 (kv. XVIII/9, 1,3-1,4); 13. inv. 7483/2 (kv. XXI/13, 0,6-0,7); 14. inv. 7659/4 (kv. XV/6, 0,3-0,4); 15. inv. 7383/2 (kv. XIV/6, 1,4-1,5); 16. inv. 7703/1 (kv. XV/5, 0,0-0,1); 17. inv. 7504/2 (kv. XII/10, 0,4-0,5); 18. inv. 7659/12 (kv. XV/6, 0,3-0,4); 19. inv. 7504/1 (kv. XXII/10, 0,4-0,5); 20. inv. 7735 (kv. XVIII/12, 1,5-1,6); 21. inv. 7661/8 (kv. XV/6, 0,5-0,6); 22. inv. 7659/12 (kv. XV/6, 0,3-0,4); 23. inv. 7654/5 (kv. XV/5, 0,1-0,2); 24. inv. 7660/4 (kv. XV/7, 0,3-0,4); 25. inv. 7658/1 (kv. XV/7, 0,2-0,3); 26. inv. 7656/1 (kv. XV/7, 0,0-0,2); 27. inv. 7216/1 (kv. XIV/7, 1,4-1,5); 28. inv. 7694/3 (kv. XX/12, 0,6-0,7); 29. inv. 7225/1 (bez konteksta); *Columbella rustica*: 30. inv. 7431/5 (kv. XVII/10, 0,2-0,3); 31. inv. 7431/4 (kv. XVII/10, 0,2-0,3); 32. inv. 7697/4 (kv. XX/11, 0,8-0,9); 33. inv. 7419/1 (kv. XVII/8, 0,2-0,3); 34. inv. 7600 (kv. XIV/6, 0,8-0,9); 35. inv. 7588 (kv. XVII/9, 0,1-0,2); 36. inv. 7673 (kv. XIX/11, 0,1-0,2); 37. inv. 7658/3 (kv. XV/7, 0,2-0,3); 38. inv. 7424/2 (kv. XVII/9, 0,2-0,3); 39. inv. 7210/2 (kv. XIV/7, 0,6-0,7); 40. inv. 7435/4 (kv. XVII/10, 0,4-0,5); 41. inv. 7526 (kv. XV/6-XV/7, čišćenje profila); *Dentalium* sp.: 42. inv. 6643 (kv. XVI/9, 0,1-0,2); 43. inv. 7036/2 (kv. XIV/6, 0,4-0,5); 44. inv. 7624/1 (kv. XIX/12, 0,5-0,6); 45. inv. 7042/6 (kv. XIII/7, 0,9-1,0); 46. inv. 7371 (kv. XIII/6, 0,4-0,5); 47. inv. 7040/8 (kv. XIV/7, 0,6-0,7); 48. inv. 7042/8 (kv. XIII/7, 0,9-1,0); 49. inv. 7449 (kv. XVII/10, 0,5-0,6); 50. inv. 7042/7 (kv. XIII/7, 0,9-1,0); 51. inv. 7035/2 (kv. XIV/5, 0,4-0,5); 52. inv. 7037/3 (kv. XIV/7, 0,4-0,5); 53. inv. 7517 (kv. XXII/11, 0,6-0,7); 54. inv. 7042/9 (kv. XIII/7, 0,9-1,0); 55. inv. 7047/1 (kv. XIV/5, 0,6-0,7).



Fig. 20. Close-ups of residue traces on shells from Badanj: 1. *Dentalium* sp., inv. 7653 (sq. XIX/11, 0.5-0.6); 2-3. *Tritia gibbosula*, inv. 7687/1 (sq. XIX/12, 1.5-1.6); 4. *Columbella rustica*, inv. 7600 (sq. XIV/6, 0.8-0.9); 5. *Columbella rustica*, inv. 7431/5 (sq. XVII/10, 0.2-0.3); 6. *Tritia neritea*, inv. 7654/3 (sq. XV/5, 0.1-0.2); 7-9. *Tritia neritea*, inv. 7476/3 (sq. XXI/11, 0.4-0.5); 10-11. *Tritia neritea*, inv. 7383/2 (sq. XIV/6, 1.4-1.5); 12. *Tritia gibbosula*, inv. 7360/1 (sq. XIII/5, 1.3-1.4).

Sl. 20. Detalji tragova mikro-ostataka na ljušturama perli sa Badnja: 1. *Dentalium* sp., inv. 7653 (kv. XIX/11, 0,5-0,6); 2-3. *Tritia gibbosula*, inv. 7687/1 (kv. XIX/12, 1,5-1,6); 4. *Columbella rustica*, inv. 7600 (kv. XIV/6, 0,8-0,9); 5. *Columbella rustica*, inv. 7431/5 (kv. XVII/10, 0,2-0,3); 6. *Tritia neritea*, inv. 7654/3 (kv. XV/5, 0,1-0,2); 7-9. *Tritia neritea*, inv. 7476/3 (kv. XXI/11, 0,4-0,5); 10-11. *Tritia neritea*, inv. 7383/2 (kv. XIV/6, 1,4-1,5); 12. *Tritia gibbosula*, inv. 7360/1 (kv. XIII/5, 1,3-1,4).



Fig. 21. Personal adornment from Badanj. *Glycymeris* sp.: 1. inv. 7463 (sq. XVII/11, 0.8-0.9); 2. inv. 7497 (sq. XXI/11, 0.8-0.9); 3. inv. 7705 (sq. XV/5, 0.1-0.2); 4. inv. 7711 (sq. XV/6, 0.8-0.9); 5. inv. 7236/1 (sq. XVII/9, 1.0-1.1); 6. inv. 6676 (sq. XVI/a, 0.7-0.8); 7. inv. 7709 (sq. XV/5, 0.6-0.7); 8. inv. 7706 (sq. XV/5, 0.2-0.3); 9. inv. 7394/1 (sq. XIV/7, 0.9-1.0); 10. inv. 7713 (sq. XIX/12, 1.1-1.2); 11. inv. 7346 (sq. XIIA/8, 1.2-1.3); 12. inv. 7391/2 (sq. XIV/6, 0.6-0.7); 13. inv. 7531 (sq. trench cleaning on 05/09/1978); *Pecten maximus*: 14. inv. 7397 (sq. XIV/6, 1.6-1.7); 15. inv. 7249/1 (sq. XIII/8, 1.1-1.2).

Sl. 21. Lični ornamenti sa Badnja. *Glycymeris* sp.: 1. inv. 7463 (kv. XVII/11, 0,8-0,9); 2. inv. 7497 (kv. XXI/11, 0,8-0,9); 3. inv. 7705 (kv. XV/5, 0,1-0,2); 4. inv. 7711 (kv. XV/6, 0,8-0,9); 5. inv. 7236/1 (kv. XVII/9, 1,0-1,1); 6. inv. 6676 (kv. XVI/a, 0,7-0,8); 7. inv. 7709 (kv. XV/5, 0,6-0,7); 8. inv. 7706 (kv. XV/5, 0,2-0,3); 9. inv. 7394/1 (kv. XIV/7, 0,9-1,0); 10. inv. 7713 (kv. XIX/12, 1,1-1,2); 11. inv. 7346 (kv. XIIA/8, 1,2-1,3); 12. inv. 7391/2 (kv. XIV/6, 0,6-0,7); 13. inv. 7531 (čišćenje sonde 05. 09. 1978.); *Pecten maximus*: 14. inv. 7397 (kv. XIV/6, 1,6-1,7); 15. inv. 7249/1 (kv. XIII/8, 1,1-1,2).

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Prilog istraživanju ranog neolitika u Cetinskoj krajini, Poljanice u Bisku – moguće neolitičko naselje na otvorenom¹

A Contribution to the Study of the Early Neolithic in the Cetinska Krajina: Poljanice in Bisko – A Possible Open Neolithic Settlement¹

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U članku se iznose rezultati zaštitnih arheoloških istraživanja na lokalitetu Poljanice u Bisku, naselju u neposrednoj blizini grada Trilja. Postavlja se teza o karakteru lokaliteta kao naselju na otvorenom. Teza se temelji na dostupnoj tehničkoj dokumentaciji s istraživanja i pokretnom arheološkom materijalu, pohranjenom u Muzeju Cetinske krajine - Sinj, koji ukazuje na prisutnost ljudskog djelovanja na prostoru Cetinske krajine u starijem neolitiku.

Istraživanja su se provodila 1985. godine prilikom izgradnje prilazne ceste za hidroelektranu Đale na rijeci Cetini. Istraženo je 11 sondi iz razdoblja starijeg neolitika, unutar kojih su nađena sveukupno 4 ukopana jamska objekta. S obzirom na to da se radi o mogućem naselju na otvorenom iz doba neolitika, a malo je takvih poznatih u Cetinskoj krajini, javila se potreba objelodaniti rezultate ovoga istraživanja.²

Geografski položaj nalazišta ukazuje na pažljivo promišljanje neolitičkog stanovništva prilikom odabira prostora za život jer omogućuje stano-
vnicima naselja bavljenje svim vrstama primarnih djelatnosti, od lova i ribolova do stočarstva i zemljoradnje.

Ključne riječi: neolitik, impresso, Bisko, naselje na otvorenom

This paper sets out the findings of rescue archaeology at Poljanice in Bisko, a settlement very close to Trilj. The hypothesis that this was an open settlement is based on available technical documentation from the excavations and portable archaeological material in the Museum of the Cetinska Krajina, Sinj, indicating human activity in the Cetinska Krajina in the early Neolithic period.

The excavations were carried out in 1985 ahead of the construction of the access road to the Đale hydro power plant on the river Cetina. Eleven trenches dating from the early Neolithic were dug, within which four buried pit structures were found. Since this was a possible open Neolithic settlement, few of which are known in the Cetinska Krajina, it became necessary to publish the results of these excavations.²

The geographic location of the site suggests that the Neolithic population gave careful thought when choosing a place to live, as it allowed them to carry out a range of primary activities from hunting and fishing to animal farming and agriculture.

Key words: Neolithic, impresso, Bisko, open settlement.

¹ Voditelj istraživanja Ante Milošević u knjizi Arheologija Sinjskog polja, jame na lokalitetu interpretira kao lovačke objekte. Ipak, s obzirom na veliku količinu i vrstu pokretnog arheološkog materijala, interpretaciju karaktera ovog lokaliteta smatramo otvorenom do daljnjih arheoloških istraživanja.

¹ Ante Milošević, who led the excavations, expressed the view in the book Arheologija Sinjskog polja, that the pits at this site were related to hunting. However, given the large quantity and type of movable archaeological material, we believe that any interpretation of the nature of the site is open to further archaeological investigations.

² Zahvaljujemo kolegi Emilu Podrugu, iz Muzeja grada Šibenika, na savjetima i podršci prilikom pisanja ovoga rada.

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PREGLED ISTRAŽIVANJA

Prvi pregled neolitičkih nalazišta u Cetinskoj krajini dao je Ante Vuletić 1973. godine¹, gdje donosi popis nalazišta s kamenom građom na području grada Sinja: Pavića nebasa, Ruduša, Stari grad, Okruglo, Vršci, Obrovac, Radašuša, Kuku-zova glavica i na području grada Trilja: Glavičica, Vojnić, Ržišta, Vedrine, Gornja Tijarica, Nutjak, korito rijeke Cetine. Na području općine Hrvace: Zasiok, Stipanovića pećina, Maljkovo, Kekezove staje, Todorovača, Vučjak, te općine Otok: Gala. Teško da se iz takvih nalazišta mogu izdvojiti ona koja bi se datirala isključivo u stariji neolitik. Ovim nalazištima Ivan Marović 1980. godine dodaje devet novih, također, većinom s litičkim materijalom²: Gospodska pećina, pećina Tamnica u Ruminu, Gradina u Gornjim Koljanima, Zjače u Biteliću, Bajagić, Podi nizvodno na lijevoj obali Cetine, te Šibenica, Krivodol kod Potravlja i Gardun. Dvadesetak godina poslije Ante Milošević je ovim nalazištima pridodao nekoliko novih³: Ledinice u Hrvacama, Ivkovića glavica u Brnazama, Bilokapića gradina u Otoku, Jezero kod Trilja, Šavlina vrtina u Bisku, te Velika gradina u Trilju. Većina ovih nalazišta evidentirana je slučajnim nalazima ili pregledom terena. Od istraživanih ističu se Ledinice i Stipanovića pećina u Hrvacama, Ivkovića glavica u Brnazama te Glavičica kod Trilja. Riječ je o probnim sondiranjima izvođenim pedesetih godina 20. stoljeća koja su rezultirala nalazima impresso keramike i litičkog materijala, dok istraživanja s Glavičice u Trilju nisu dala nikakvih rezultata.⁴

Pokusno istraživanje u Gospodskoj ili Milaševoj pećini na izvoru rijeke Cetine proveo je Ivan Marović 1958. godine, ali prema nalazima pećina je u neolitiku nastanjena tek u hvarskoj fazi.⁵

Važno neolitičko nalazište, pećina Zemunica, istraživano je tijekom 2005. godine u sklopu zaštitnih istraživanja na dionici Dugopolje – Bisko, Jadranske autoceste A1. Pećina se nalazi u podnožju Malog Mosora u blizini sela Bisko. Rezultati tog istraživanja pokazuju kontinuitet stanovanja u pećini od mezolitika do ranoga brončanog doba.⁶

Ovom popisu može se nadodati i lokalitet Mala (Nova) pećina pokraj Muća, koji iako teritorijalno ne pripada Cetinskoj krajini, pripada istom geografskom arealu. Lokalitet je istraživao 2016. godine.⁷

Na lokalitetu Kremena u Košutama kraj Trilja, otkriveno je naselje na otvorenom iz razdoblja neolitika, locirano rekonosciranjem koje je provela Angela Babić iz Muzeja triljskog kraja 2006. godine.⁸

OVERVIEW OF RESEARCH

The first overview of Neolithic settlements in the Cetinska Krajina was in 1973 by Ante Vuletić,¹ who provided a list of sites with lithic material in the Sinj area: Pavića nebasa, Ruduša, Stari grad, Okruglo, Vršci, Obrovac, Radašuša and Kuku-zova glavica; in the Trilj area: Glavičica, Vojnić, Ržišta, Vedrine, Gornja Tijarica, Nutjak, and the bed of the river Cetina; in Hrvace municipality: Zasiok, Stipanovića pećina, Maljkovo, Kekezove staje, Todorovača, Vučjak; and in Otok municipality: Gala. It is difficult to determine which of these could be dated solely to the early Neolithic. In 1980 Ivan Marović added another nine sites, also mainly with lithic material:² Gospodska pećina, Tamnica pećina in Rumin, Gradina in Gornji Koljani, Zjače in Bitelić, Bajagić, Podi downstream on the left bank of the Cetina, and Šibenica, Krivodol near Potravlje and Gardun. Some twenty years later Ante Milošević added a number of new sites:³ Ledinice in Hrvace, Ivkovića glavica in Brnaze, Bilokapića gradina in Otok, Jezero near Trilj, Šavlina vrtina in Bisko, and Velika gradina in Trilj. Most of these sites were recorded on the basis of chance finds or field walks. Among those that have been excavated are Ledinice and Stipanovića pećina in Hrvace, Ivkovića glavica in Brnaze and Glavičica near Trilj, where test pits were dug in the 1950s, yielding impresso pottery and lithic material, with the exception of Glavičica in Trilj, which yielded nothing.⁴

In 1958 trial excavations were carried out by Ivan Marović in Gospodska or Milaševa pećina at the source of the river Cetina, but the finds reveal that the cave was inhabited only in the Hvar phase of the Neolithic.⁵

Zemunica pećina, an important Neolithic site, was investigated in 2005 as part of rescue archaeology on the Dugopolje to Bisko section of the A1 Adriatic motorway. The cave is at the foot of Mali Mosor near the village of Bisko. The findings revealed that the cave was continuously inhabited from the Mesolithic to the Early Bronze Age.⁶

To this list may be added the site of Mala (Nova) pećina near Muć which, though it does not belong territorially to the Cetina Krajina, does belong to the same geographical area. The site was excavated in 2016.⁷

An open Neolithic settlement was discovered at Kremena in Košute, near Trilj, during a survey conducted by Angela Babić of the Trilj Museum in late 2006.⁸

1 Vuletić 1973.

2 Marović 1980, 29.

3 Milošević 1981; 1998.

4 Milošević 1998, 249.

5 Batović 1966, 23; 1979, 482.

6 Šošić, Karavanić 2005, 376.; Šošić *et al.* 2016, 3–46.

7 Drinić *et al.* 2018, 29–70.

8 Babić 2006, 446.

1 Vuletić 1973.

2 Marović 1980, 29.

3 Milošević 1981; 1998.

4 Milošević 1998, 249.

5 Batović 1966, 23; 1979, 482.

6 Šošić, Karavanić 2005, 376.; Šošić *et al.* 2016, 3–46.

7 Drinić *et al.* 2018, 29–70.

8 Babić 2006, 446.

Sl. 1. Karta Hrvatske s položajem Biska.

Fig 1. Map of Croatia with location of Bisko.



Sl. 2. Satelitski snimak lokaliteta Poljanice u Bisku (Geoportal, 2019.).

Fig 2. Satellite image of Poljanice in Bisko (Geoportal, 2019).



POLJANICE U BISKU – REZULTATI ZAŠTITNIH ARHEOLOŠKIH ISTRAŽIVANJA

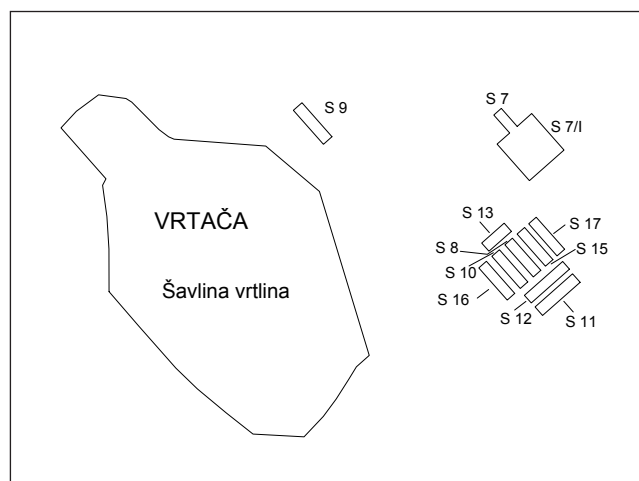
Jedino dosada provedeno istraživanje mogućeg naselja na otvorenom iz starijeg neolitika je proveo Muzej Cetinske krajine – Sinj s voditeljem Antom Miloševićem 1985. godine na lokalitetu Poljanice u Bisku. Zaštitna arheološka istraživanja provodila su se prilikom izgradnje prilazne ceste za hidroelektranu Dale na rijeci Cetini, oko 5-6 kilometara nizvodno od Trilja.⁹ Lokalitet se nalazi na krškom platou smještenom

⁹ Milošević 1986, 60.

POLJANICE IN BISKU – RESULTS OF RESCUE ARCHAEOLOGY

The only excavations to date on this potential open early Neolithic settlement were carried out at Poljanice in Bisko in 1985 by the Museum of Cetinska Krajina, Sinj, led by Ante Milošević. Rescue archaeology was carried out ahead of the construction of the access road to the Dale hydro power plant on the river Cetina, about 5 to 6 kilometres downstream from Trilj.⁹ The site is on a karst plateau between the eastern edge of Bišćansko polje and the Cetina gorge, very close to

⁹ Milošević 1986, 60.

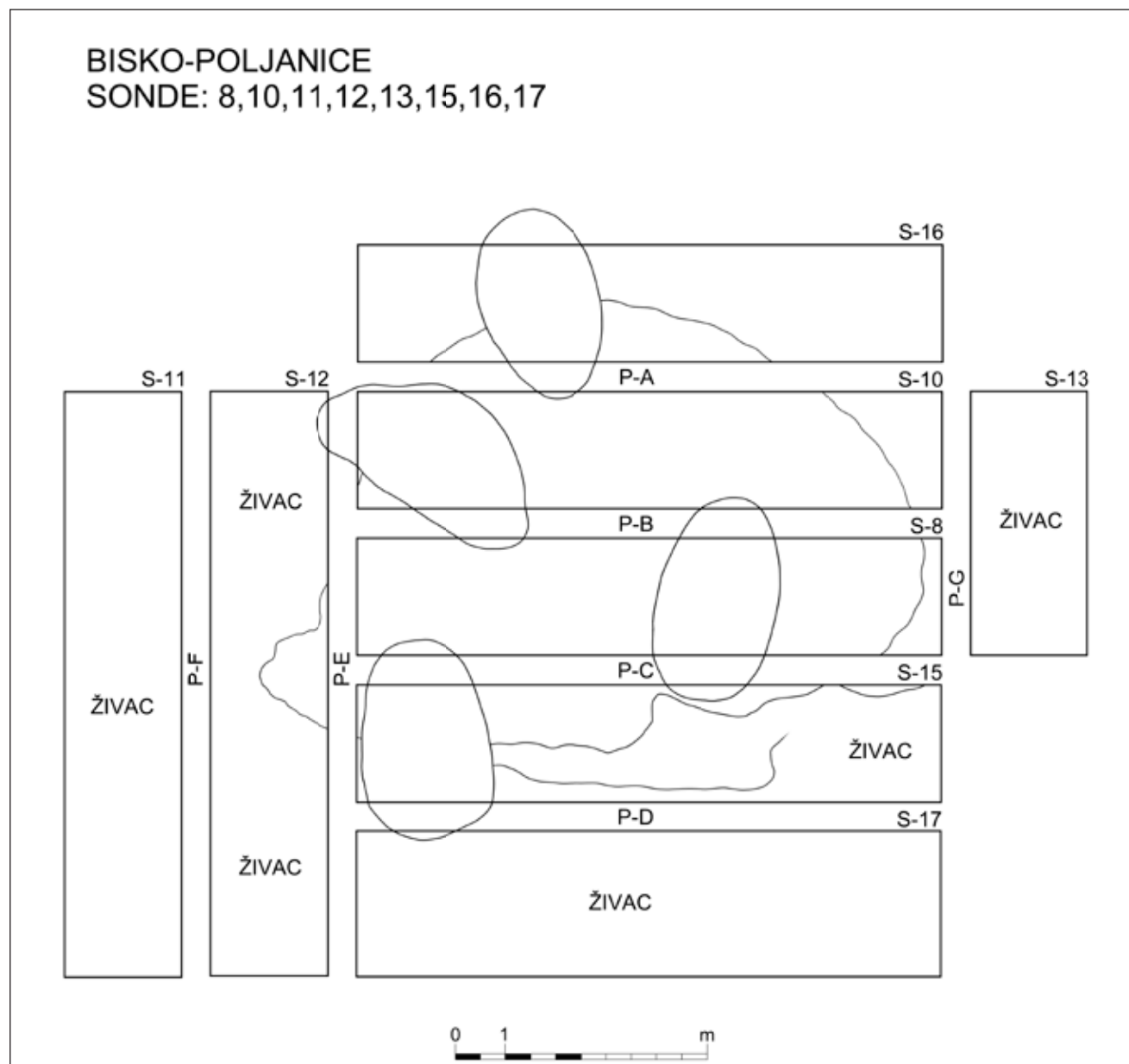


Sl. 3. Skica lokaliteta Poljanice u Bisku, Muzej Cetinske krajine – Sinj (crtež: P. Radović 2019.).

Fig. 3. Drawing of the site of Poljanice in Bisko, Museum of Cetinska Krajina, Sinj (drawn by: P. Radović, 2019).

Sl. 4. Tlocrt sonde na lokalitetu Poljanice u Bisku, Muzej Cetinske krajine – Sinj, DC-90 (crtež: I. Prpa-Stojanac, 1985.).

Fig. 4. Ground plan of trenches at Poljanice in Bisko, Museum of Cetinska krajina, Sinj, DC-90 (drawn by: I. Prpa-Stojanac, 1985).



između istočnog ruba Bišćanskog polja i kanjona rijeke Cetine, u neposrednoj blizini križanja ceste za hidroelektranu s autocestom A1 (sl. 1: 2). Položaj lokaliteta za stanovanje je povoljan jer se nalazi na prijelazu krša u polje i nije daleko od rijeke. Naselje je smješteno pri južnoj, osunčanoj, strani brdašca Runjik, koje ga djelomično štiti od bure. S južne strane uzdiže se Mali Mosor i štiti naselje od jakih udara juga.

Istraživanja su provedena na prostoru od oko 220 m², unutar 11 sonde (sonde 7–17). Smještene su uz rub veće vrtače tzv. Šavlina vrtlina koja nije istraživana (sl. 3). Prema tvrdnjama Ante Miloševića u njoj bi se trebao tražiti nastavak neolitičkog naselja, štoviše, glavninu njegovih objekata. No, pokretni arheološki materijal, ulomak posude iz ranoga brončanog doba te ulomak kućnog lijepa, ne govori tome u prilog. Iako voditelj navodi da o tome svjedoče i brojni površinski nalazi, oni nisu pronađeni među materijalom pohranjenim u Muzeju.¹⁰

OSVRT NA SONDE

Tehnička dokumentacija sadrži tlocrt i shematski prikaz nalazišta te presjek pet sonde (sl. 4, sl. 5).¹¹ Iz dostupne dokumentacije vidljivo je da su sonde bile dimenzija 10 x 2 m. Sonde 8, 10, 15, 16 i 17 su bile centralne sonde vodoravno postavljene paralelno jedna na drugu. Na njih okomito postavljene sonde s istočne strane bile su sonde 11 i 12, a sa zapadne sonda 13. Sjeverno od ovog sklopa sonde nalazile su se sonde 7 i 14, dok se uz sjeverni rub Šavline vrtline nalazila sonda 9. Debljina otkopnog sloja nije poznata, ali je riječ o jedinstvenom kulturnom sloju koji se nalazi nakon skidanja humusnog dijela debljine 20–40 cm. Kulturni sloj je intaktan jer se nalazio na tlu korištenom isključivo za ispašu. Prostor između vapnenačkih stijena upotpunjen je crvenicom što je prirodna pojava, ali nije isključena ni nivelacija terena istom. Unutar sonda 8, 10, 12, 15, 16 i 17 nađene su četiri jamska ukopana objekta (jame A, B, C, D) ukopana u crvenicu koja čini zdravicu i to tako da se jama A proteže kroz sonde 10 i 16, jama B kroz sonde 10 i 12, jama C kroz sonde 8, 10 i 15 te jama D kroz sonde 8, 15 i 17. U sondama 11, 13 i 14 nije pronađen nikakav jamski ukopani objekt niti pokretni arheološki materijal.

SONDE 7, 7/I

Sonde 7 i 7/I nalaze se SZ od centralnog sklopa sonda, prema Bišćanskom polju. Prema skici tlocrta vidljivo je da je sonda 7 pravokutnog oblika, kao i ostale sonde, samo dosta manjih dimenzija. Sonda 7/I donekle je kvadratnog oblika i većih dimenzija te se nadovezuje na sondu 7 s istočne strane. Nema podataka o tome da li se u sondama nalazio ikakav jamski ukopani objekt, ali je u njima pronađena veća količina kućnog lijepa. U sondi 7/I pronađena je veća količina zapečene gline s primjesama sitnog kamenja. S obzirom na

the intersection of the road to the hydro power plant and the A1 motorway (fig. 1: 2). The site was favourable for habitation, located as it is at the point where the karst merges with the field, and is not far from the river. The settlement was located on the south-facing, sunny side of Runjik hill, which affords some protection from the bora (north-easterly wind). Mali Mosor rises to the south, protecting the settlement from strong blasts from the south.

The excavations covered an area of about 220 m², with eleven trenches (trenches 7–17), along the edge of the sizeable karst valley known as Šavlina vrtlina, which has not been investigated (fig. 3). According to Ante Milošević, the Neolithic settlement, or more accurately its major structures, probably extended into the valley. However, the portable archaeological material, a pottery sherd of the Early Bronze Age and a fragment of daub, does not support this suggestion. Though the dig leader states that numerous surface finds support his view, they were not found among the material in the Museum.¹⁰

OVERVIEW OF THE TRENCHES

The technical documentation consists of a ground plan and schematic representation of the site and cross-section of five trenches (fig. 4, fig. 5).¹¹ The documentation available to us reveals that the trenches measured 10 x 2 m. Trenches 8, 10, 15, 16 and 17 were central trenches, set horizontally parallel to each other. To the east, at right angles to these, were trenches 11 and 12, while to the west lay trench 13. Trenches 7 and 14 were to the north of this set of trenches, and trench 9 was located by the northern edge of Šavlina karst valley. The depth of the excavated layer is not known, but it consisted of a single cultural stratum located below a layer of topsoil with a depth of 20–40 cm. The cultural stratum was intact, being located in ground used solely as pasture. The area between the limestone rocks was filled with red soil, a natural phenomenon, though it is possible that the site was levelled with the same soil. Four pit structures (pit structures A, B, C, D) were found in trenches 8, 10, 12, 15, 16 and 17, dug into the red subsoil, with pit structure A extending through trenches 10 and 16, pit structure B through trenches 10 and 12, pit structure C through trenches 8, 10 and 15, and pit structure D through trenches 8, 15 and 17.

Trenches 11, 13 and 14 yielded no pit structures or portable archaeological material.

TRENCHES 7, 7/I

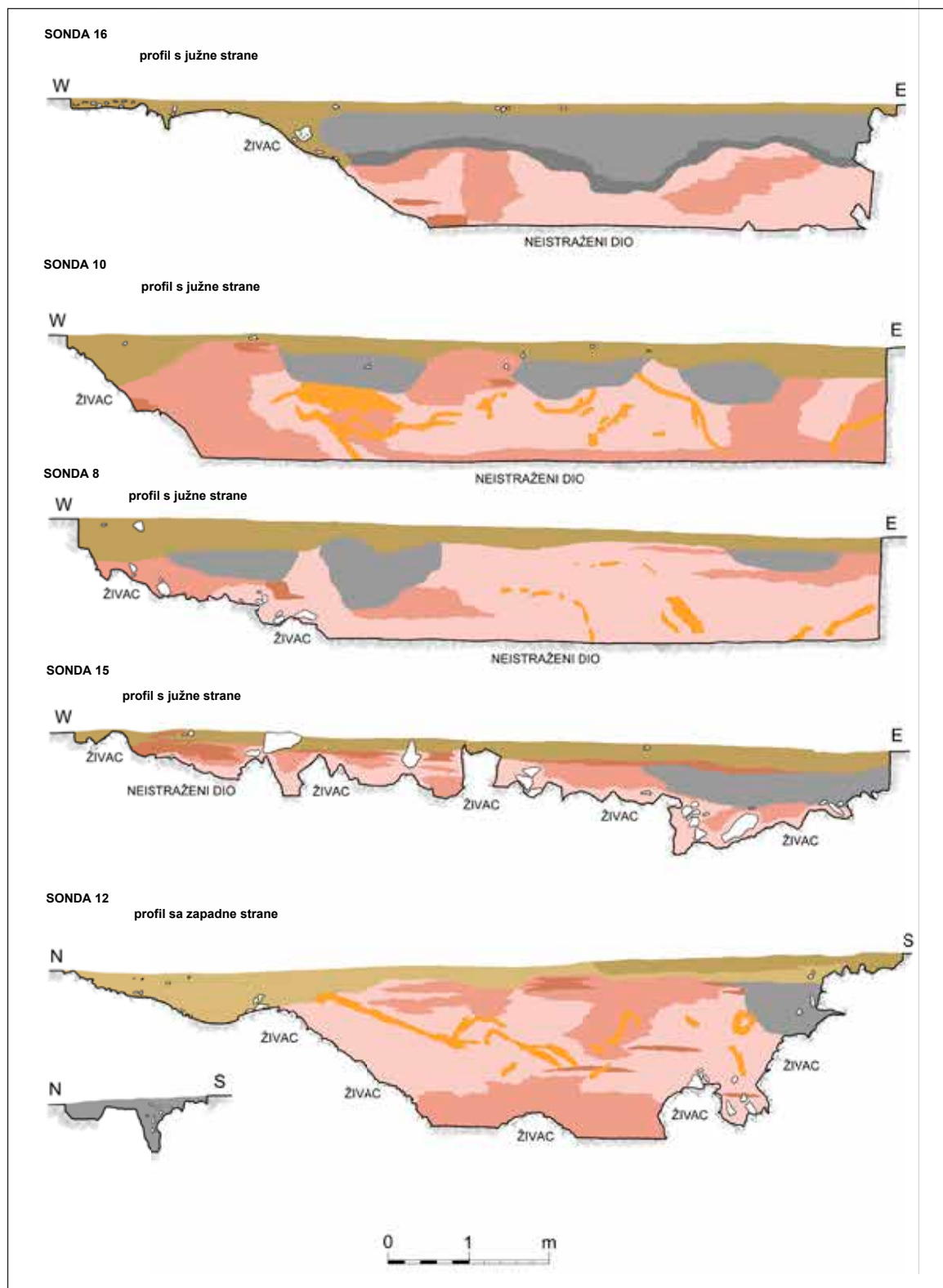
Trenches 7 and 7/I are to the north-west of the central group of trenches, towards Bišćansko polje. The ground plan reveals that trench 7 is rectangular, like the other trenches, but smaller. Trench 7/I is larger and roughly square, abutting onto trench 7 to the east. It is not stated whether any pit

¹⁰ Milošević 1986, 60.

¹¹ Tehničke crteže izradila I. Prpa-Stojanac.

¹⁰ Milošević 1986, 60.

¹¹ The technical drawings were by I. Prpa-Stojanac.



Sl. 5. Presjek sonde na lokalitetu Poljanice u Bisku, Muzej Cetinske krajine – Sinj, DC-91 (crtež: I. Prpa-Stojanac, 1985.)

Fig. 5. Cross-section of trenches at Poljanice in Bisko, Museum of Cetinska krajina, Sinj, DC-91 (drawn by: I. Prpa-Stojanac, 1985).

pronađeni ulomak većih dimenzija koji je četvrtastog oblika s nabijenom ravnom gornjom površinom možemo bez zadržke definirati pronađene ostatke dijelovima ognjišta.

Od pokretnog materijala pronađena je mala količina neukrašene keramike te nekoliko ulomka posuda ukrašenih utiskivanjem i urezivanjem. Od litičkog materijala nađeno je osam odbojaka. Nađen je ulomak donjeg dijela žrvnja izrađen od pješčenjaka.

SONDA 8

Sonda 8 središnja je sonda u centralnom sklopu sonda. Nakon skidanja humusnog sloja, već na dubini od 20-ak cm nalaze se dva ukopana jamska objekta (jama B i jama C), dok je treći (jama D) na dubini od 40 cm. Objekti su ukopani u tvrdu crvenicu. Jama C nalazi se najvećim dijelom unutar sonde dok su druge prisutne u sondi svojim rubnim dijelovima. Veličina jamskih ukopanih objekata varira od oko 7 m² (C i D) do oko 10 m² (B). Dubina najvećeg objekta je oko 85-90 cm. U sondi 8 pronađena je i veća količina kućnog lijepa.

Od pokretnog materijala pronađeno je više ulomaka posuda ukrašenih utiskivanjem, urezivanjem i štipanjem. Nađeno je i više ulomaka neukrašene keramike. Od litičkog materijala nađeno je više odbojaka, sječiva s dva hrpta i sječiva s jednim hrptom te jedna kamena sjekira. Pronađen je i ulomak donjeg dijela žrvnja te ulomci brusa.

SONDA 9

Sonda 9 nalazi se JZ od sklopa centralnih sonda, neposredno uz Šavlinu vrtlinu. Nema dokumentacijskog crteža profila, ali prema skici tlocrta nalazišta vidljivo je da je sonda bila dimenzijama slična ostalim sondama, znači 10 x 2 m. Sukladno nedostatku dokumentacije nije jasno je li unutar sonde bilo ukopanih jamskih objekata. Nađena je samo manja količina kućnog lijepa. Od pokretnog materijala nađeno je podosta litičkog, što jezgri što odbojaka, sveukupno 176 komada, te jedan rastirač ručnog žrvnja. Na tom mjestu može se pretpostaviti radionica ili odlagalište otpadnog litičkog materijala. Nije pronađen nijedan ulomak keramike. Zanimljivo je da je slična situacija pronađena i u naselju Konjevrate kraj Šibenika.¹² Naime, i tamo se u neposrednoj blizini jame, slične konstrukcije kao i jame u Poljanicama, pronašla veća količina litičkog materijala.

SONDA 10

Sonda 10 nalazi se južno od centralne sonde 8. Dimenzije sonde su 10 x 2 m. U njoj su pronađena tri jamska ukopana objekta, A, B i C. Sve jame pojavljuju se na dubini od 20-ak centimetara. Jame, ukopane u crvenicu, dubina su između 40 i 45 cm. U sondi je pronađena veća količina kućnog lijepa. Od keramičkog materijala pronađen je veći broj ulomaka posuda ukrašenih utiskivanjem i štipanjem. Mali broj nađene keramike nije bio ukrašen. Od litičkog materijala nađeni su odbojci te sječiva s jednim i s dva hrpta. Pronađen je i ulomak brusa te ulomak glačane sjekire.

structure was found in these trenches, but a quantity of daub was found there. Trench 7/1 yielded a quantity of burnt clay with an admixture of small stones. A larger, squarish piece with a compacted flat upper surface can without hesitation be identified as part of a hearth.

The portable material included a small quantity of undecorated pottery and a few sherds of a pot with impressed or incised decoration. The lithic material found consisted of eight flakes. A fragment of a sandstone quern was also found.

TRENCH 8

Trench 8 was the middle trench in the central group. After removing the topsoil, two pit structures (pit structures B and C) were found at a depth of about 20 cm, with a third (pit structure D) at a depth of 40 cm. Both were dug into solid red soil. Pit structure C was largely within the trench, whereas only the edges of the others were within the trench. The pit structures varied in size from about 7 m² (C and D) to about 10 m² (B). The largest was about 85-90 cm deep. Trench 8 also yielded a quantity of daub. Portable material included several sherds from pots with impressed, incised or pinched decoration. Several sherds of undecorated pottery were also found. Lithic material included several flakes, a bifacial blade and a unifacial blade, and a stone axe. A fragment of a quern and fragments of a grindstone were also found.

TRENCH 9

Trench 9 was to the south-west of the central group, alongside Šavlina vrtlina. There is no documentary drawing of the profile, but the ground plan of the site reveals that this trench was of similar size to the others, 10x2 m. Given the absence of documentation, it is not clear whether this trench contained a pit structure. A small quantity only of daub was found. The portable material included a quantity of lithics, both cores and flakes, 176 in all, and a hand grindstone. This could have been the site where stone tools were made, or where waste material from this activity was dumped. Not one pottery sherd was found. Interestingly, there is a similar instance at Konjevrate near Šibenik,¹² where a large quantity of lithic material was found very close to a pit structure of similar construction to those at Poljanice.

TRENCH 10

Trench 10, to the south of central trench 8, measures 10x2 m. Three pit structures were found in this trench, A, B and C, all at a depth of about 20 centimetres. Dug into the red subsoil, they are between 40 and 45 cm deep. A quantity of daub was found in the trench, as were numerous pottery sherds with impressed and pinched decoration. A few undecorated pottery sherds were also found. Lithic material consisted of flakes and unifacial and bifacial blades. A fragment of a grindstone and another of a polished axe were also found.

¹² Podrug 2013, 193.

¹² Podrug 2013, 193.

SONDA 12

Sonda 12 nalazi se istočno od pet paralelno postavljenih sondi (S8, S10, S15, S16, S17) te leži okomito na njih. Na rubu sonde prema jugu nalazi se rubni dio jamskog ukopanog objekta B, nađen skidanjem humusa na dubini od oko 40-ak cm. Dubina jame u ovoj sondi je oko 60-ak cm. Pronađena je veća količina kućnog lijepa.

Od pokretnog arheološkog materijala pronađeni su ulomci posuda ukrašenih utiskivanjem te nekoliko ulomaka neukrašene keramike. Od litičkog materijala pronađeni su odbojci te ulomci bruseva.

SONDA 15

Sonda 15 nalazi se sjeverno od centralne sonde sklopa, sonde 8. Dimenzijama je jednaka ostalim sondama. Nakon skidanja humusnog sloja debljine 20-ak cm naišlo se u crvenici jamski ukopani objekt D. Jama je dubine 40-ak cm. Pronađena je izrazito velika količina kućnoga lijepa. Od pokretnog materijala pronađeno je više ulomaka neukrašenih posuda te posuda ukrašenih utiskivanjem, štipanjem i urezivanjem. Od litičkog materijala pronađeni su odbojci, ulomak rastirača ručnog žrvnja, ulomci brusa te jezičasta kamena sjekirica i sječiva.

SONDA 16

Sonda 16 nalazi se južno od sonde 10. Dimenzijama je jednaka ostalim sondama. Skidanjem humusnog sloja, na dubini od svega 10-ak cm, naišlo se na jamski ukopani objekt A. Jama je dubine oko 90 cm. U njoj je nađena veća količina kućnog lijepa.

Od pokretnog materijala nađeno je više ulomaka neukrašenih posuda te posuda ukrašenih utiskivanjem. Od litičkog materijala nađeni su odbojci, sječiva s dva i s jednim hrptom te ulomci brusa.

SONDA 17

Sonda 17 nalazi se sjeverno od sonde 15. Dimenzijama je jednaka ostalim sondama. U njoj su nađeni ostatci jamskog ukopanog objekta D ukopane u crvenicu, ali zbog nedostatka tehničke dokumentacije nije moguće dati podatke o dubinama. U jami su nađene veće količine kućnog lijepa. Od pokretnog arheološkog materijala pronađeni su ulomci posuda ukrašeni štipanjem te utiskivanjem. Neukrašene keramike nađeno je u malom broju. Od litičkog materijala nađeni su odbojci te ulomci brusa.

POKRETNi ARHEOLOŠKI MATERIJAL

Od pokretnog arheološkog materijala najveći postotak pripada ulomcima keramike (66, 21%), odbojcima (21, 4%), ulomcima ognjišta (8, 86 %), zatim ulomcima brusa (1, 43%) i sječivima (1, 43 %) te na koncu ulomcima žrvnja (0, 31%) i sjekirama (0, 31%), (sl. 6).

TRENCH 12

Trench 12 is located east of the five parallel trenches (8, 10, 15, 16 and 17) and lies perpendicular to them. At the edge of the trench towards the south, the edge of pit structure B was found at a depth of about 40 cm, after removing the topsoil. The pit structure in this trench is about 60 cm deep. A quantity of daub was found.

Portable archaeological material consisted of pottery sherds from pots with impressed decoration, and a number of sherds of undecorated pottery. Lithic material consisted of flakes and fragments of grindstone.

TRENCH 15

Trench 15, to the north of central trench 8, is of the same size as the other trenches. After removing the topsoil to a depth of about 20 cm, pit structure D was uncovered in the red subsoil. This pit structure is about 40 cm deep. A very large quantity of daub was found.

Portable material consisted of several sherds from undecorated pots and pots decorated with impressed, pinched or incised decoration. Lithic material included flakes, a fragment from a hand quern, fragments of grindstone, and a small linguiform stone axe and blade.

TRENCH 16

Trench 16, to the south of trench 10, is of the same size as the other trenches. After removing the topsoil, pit structure A, which is about 90 cm deep, was found at a depth of just 10 cm or so. It contained a quantity of daub.

Portable material included several sherds from undecorated pots and pots with impressed decoration. Lithic material consisted of flakes, bifacial and unifacial blades and fragments of grindstone.

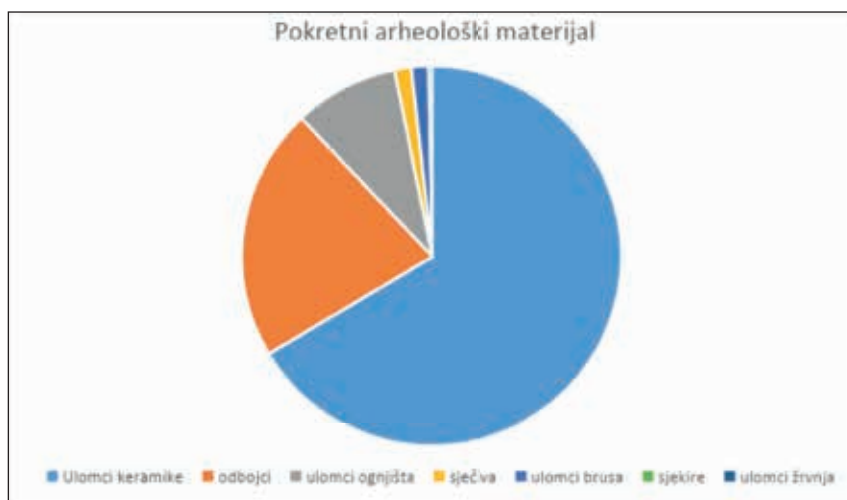
TRENCH 17

Trench 17, to the north of trench 15, is of the same size as the other trenches. The remains of pit structure D were found in this trench, dug into the red subsoil, but due to the absence of technical documentation the depth at which it was found and its own depth are unknown. A quantity of daub was found in the pit structure.

Portable archaeological material found in the trench included sherds from pots with pinched or impressed decoration, along with a few sherds of undecorated pottery. Lithic material consisted of flakes and fragments of grindstone.

PORTABLE ARCHAEOLOGICAL MATERIAL

Most of the portable archaeological material consisted of pottery sherds (66.21%), followed by flakes (21.4%), fragments of hearth (8.86%), fragments of grindstone (1.43%), blades (1.43%), and lastly fragments of quern (0.31%) and axes (0.31%) (fig. 6).



Sl. 6. Dijagram pokretnog arheološkog materijala.

Fig. 6. Diagram of the portable archaeological material.

KERAMIČKI NALAZI

Posude su izrađene od pročišćene gline pomiješane sa sitno drobljenim vapnencem. Površina im je zaglađena, osobito kod onih koje su ukrašene, i premazana tankim slojem razrijeđene gline. Postoje i ulomci kod kojih je površina dosta gruba i rupičasta što bi se moglo povezati i s primjesama organskih tvari koje su mogle sagorjeti u izradi. Boja gline je većim dijelom crvenkasta i crvenkastosmeđa. Manja količina posuda je smeđe i tamnosmeđe boje.

Oblici zastupljeni na lokalitetu su lonci, zdjele, zdjelice i šalice. Od kategorije lonaca prepoznatljivi su klasični ranoneolitički veći, ovalni lonci sa stijenkom ravnomjerno zaobljenom od dna prema otvoru. Zdjelice su zastupljene dvjema kategorijama: zdjelice izduženog tijela zaobljenog od dna prema otvoru, slično kao kod lonaca, te zdjelice blago zaobljenog, polukuglastog oblika s izvijenim obodom. Od šalica nađen je samo tip šalice bikonične forme s niskom nožicom. Dna posuda mogu biti u obliku neznatno naglašene nožice ili ravna i ovalna bez nožice. Kod četiri posude nožice su ukrašene, dok je njih osam neukrašenih. Obodi pronađenih posuda su ravni, osim jednog ulomka kod kojeg je obod blago izvijen i jednog ulomka izrazito izvijenog oboda. Ručke na posudama su trakaste. Pronađena je jedna gotovo cjelovita trakasta ručka, ulomak posude kod koje je vidljiv njezin ostatak te jedan primjerak posude s ostacima trakaste ručke koja je ukrašena kao i u Vrbici i Crnom vrilu samo je ova ukrašena nasumičnim utiskivanjem nokta.¹³

Od ukupnog broja pronađenog keramičkog materijala najveći broj je neukrašenih ulomaka keramičkog posuđa, 75, 99%, dok je ukrašenih ulomaka 24 %.

Ukrašavanje posuđa izvodilo se različitim metodama: utiskivanje (84, 42%), urezivanje (8, 04%) i štipanje (7, 53%) (sl. 7).

Od utiskivanja prisutni su različiti tipovi ukrasa:

- Otisci izvedeni utiskivanjem nokta (T. 1: 1);
- Otisci izvedeni utiskivanjem ruba nazubljene, velike školjke (T. 1: 2);

POTTERY FINDS

The pots were made of processed clay tempered with fine crushed limestone. The surface is smooth, especially in those that were decorated, and finished with a thin coating of slip. Some of the pots had a fairly rough, pitted surface, perhaps the result of an admixture of organic matter that burned during firing. In most cases the clay was reddish or reddish-brown, but in a few pots it was brown or dark brown.

The shapes represented at the site were cooking pots, dishes, bowls and beakers.

The cooking pots included the familiar, classic Early Neolithic, large oval pot, evenly rounded from base to top. Two kinds of bowl were found: those with an elongated body rounded from base to top, similar to the cooking pots, and those of somewhat rounded, hemispherical shape with a curved rim. Only one kind of beaker was found, biconical in shape with a low foot. The base of the pots could have the hint of a foot, or be flat and oval with no foot. Four of the pots had decorated feet, while eight were undecorated. The rims were flat, with the exception of one sherd of which the rim was slightly curved, and one with a markedly curved rim. The handles were strap-like. One almost intact strap handle was found, a sherd from a pot on which the remains of the handle could be seen, and one pot with the remains of a strap handle decorated like those in Vrbica and Crno vrilo, except that this one was decorated with random fingernail impressions.¹³

The majority of the pottery, 75.99%, consisted of sherds from undecorated pots, while decorated sherds accounted for 24%.

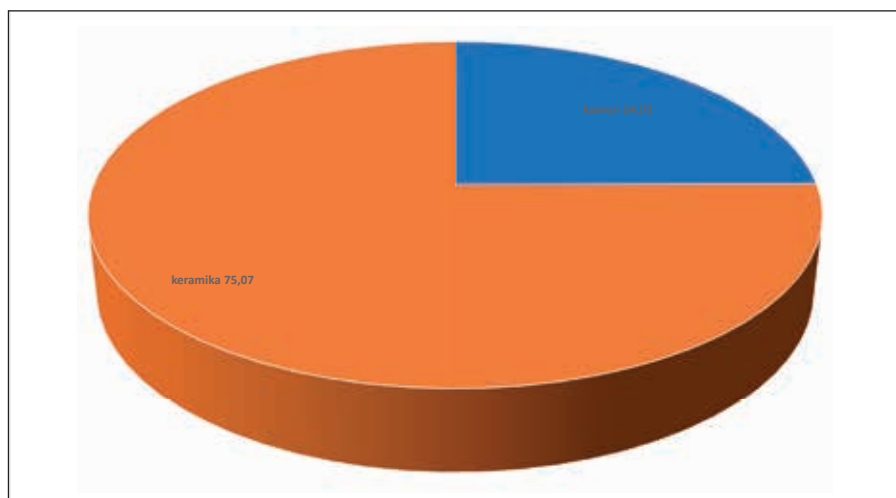
The decoration was executed in various ways: impression (84.42%), incision (8.04%), and pinching (7.53%) (fig. 7).

Different types of impressed decoration were found (fig. 8):

- Fingernail impressions (Pl. 1: 1);
- Impressions made by the edge of a large serrated shell (Pl. 1: 2);
- Impressions made by the edge of a small serrated shell (Pl. 1: 3);

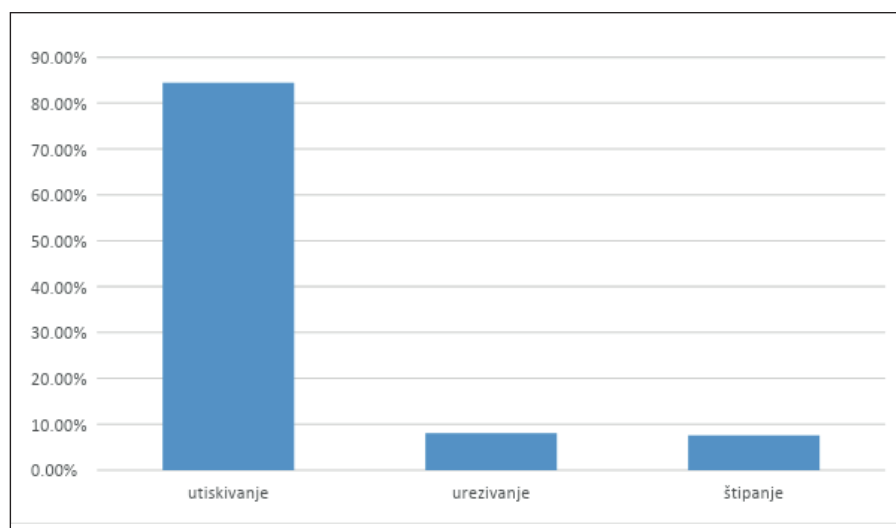
¹³ Brusić 1995, 31; Marijanović 2009, 220.

¹³ Brusić 1995, 31; Marijanović 2009, 220.



Sl. 7. Dijagram načina ukrašavanja keramičkog posuđa.

Fig. 7. Diagram of methods of decoration on pottery.



Sl. 9. Dijagram ukrasa izvedenih tehnikom utiskivanja.

Fig. 9. Diagram of types of impressed decoration.

- Otisci izvedeni utiskivanjem ruba nazubljene, male školjke (T. 1: 3);
- Otisci izvedeni utiskivanjem oštrim predmetom (drvo ili kost?) (T. 1: 4);
- Otisci izvedeni utiskivanjem kružnim predmetom (T. 2: 1)
- Štibanje (T. 2: 2);
- Urezivanjem (T. 2: 3).

Ukras većinom prekriva gotovo cijelu posudu i počinje od samog oboda. Ima i primjera kod kojih cijela površina nije ukrašena. Najbrojniji su ulomci posuda ukrašeni otiscima izvedenim utiskivanjem. Od ovog načina ukrašavanja najprisutniji je ukras izveden utiskivanjem ruba rebraste školjke *Cardium*, veće ili manje. Osim postavljanja otiska u višeredne, horizontalne, nizove utiskivanje rebrastom školjkom izvodilo se i u gustim trakama kakav se nalazi i u Vrbici.¹⁴ Drugi po brojnosti načina ukrašavanja utiskivanjem je utiskivanje noktom. Ukras je nizan horizontalno, u relativno pravilnim razmacima, u višeredne trake. Katkada je razmak između otisaka neprecizan te ukras izgleda kaotično

- Impressions made using a sharp object (wood or bone?) (Pl. 1: 4);
- Impressions using a round object (Pl. 2: 1);
- Pinching (Pl. 2: 2);
- Incision (Pl. 2: 3).

In most cases the decoration covered almost the entire pot from the rim down. There are also pots where the whole surface is not decorated. The most numerous are sherds from pots with impressed decoration, among which the most common method was to use the edge of a large or small ribbed shell of the genus *Cardium*. The decoration would consist of several horizontal rows of such impressions, or of close-packed bands such as those found in Vrbica.¹⁴ The next most common decoration was of fingernail impressions, arranged horizontally, and fairly evenly spaced, in bands of several rows. In some cases the spacing between the rows was so imprecise as to appear random. Some of the decorations of this kind, that appear to have been made with a fingernail, could also have been made using a sharp object imitating the impression of a fingernail.

¹⁴ Brusić 1995, 6.

¹⁴ Brusić 1995, 6.

razmješten. Treba napomenuti da se dio ukrasa koji izgledaju kao da su izvedeni utiskivanjem nokta mogu pripisati i tehnici utiskivanja oštrim predmetom koji imitira otisak nokta. Nekoliko je primjera utiskivanja oštrim predmetima (drvo ili kost?) te utiskivanja kružnim ili trokutastim predmetom. Tehnika urezivanja prisutna je na svega 16 ulomaka. Riječ je o trakastim, plitko izvedenim urezima koji su postavljeni paralelno jedan uz drugoga. Naposljetku, kao treći po redu brojnosti ukras je izveden štipanjem. Ukras se izvodio po cijeloj posudi u više nizova.

KAMENI NALAZI

Najbrojnije izrađevine od kamena su odbojci i oruđe.¹⁵ Od oruđa su zastupljena sječiva. Na lokalitetu su vidljive sve četiri faze proizvodnje kremenih predmeta od faze prikupljanja do završne faze.¹⁶ Najbrojniji nalazi su odbojci. Ne može se sa sigurnošću utvrditi je li koji od odbojaka ipak korišten, ali nikakav retuš nije na njima pronađen. Nisu pronađena ni svrdla ni strugala ni strjelice. Nedostatak strjelica ne povezujemo s isključivanjem lova kao vrste djelatnosti, može se samo isključiti ta tehnika u njezinu prakticiranju.¹⁷ Dvostruko je veći broj sječiva s dva hrpta (T. 3: 1, 2) nego sječiva s jednim hrptom (T. 3: 3, 4). Naime, prvih je nađeno dvanaest komada dok je drugih pronađeno svega šest. Izrađeni su od nekoliko vrsta kremenja, prljavobijelog neprozirnog, neprozirnog sivog sa svijetlosivim primjesama te od smeđeg neprozirnog sa svijetlim primjesama.

Veći broj jezgri i odbojaka od lomljenog kamena, njih 176 komada, nađen je u sondi 9 što bi možda mogla biti neka vrsta radionice, odlagalište sirovine ili radionički deponij. U sondi nije pronađen nijedan završeni proizvod. Da se alat izrađivao u naselju vidi se i po velikoj količini nađenih odbojaka i jezgri koji na sebi nose okorine.

Nađeno je i dosta ulomaka žrnjeva izrađenih od pločastog kremenog pješčenjaka crvenoljubičaste boje te škrljevca koji se u neolitiku većinom koristio za izradu brusova. Takvih nalazimo i na lokalitetu Okruglo na Radošiću kod Sinja.¹⁸

Od predmeta izrađenih od kamena nađene su i četiri glačane sjekire, trapezasta (T. 4: 1) i tri tesle (T. 4: 2). Trapezasta je manja i cjelovita, dimenzija 6, 7 x 3, 7 cm. Izrađena je od tufita s primjesama zelenkaste boje i asocira na *pietra verde*.¹⁹ Najpoznatije nalazište ove vrste tufa u Dalmatinskoj zagori je na planini Svilaji u mjestu Zelovo kraj Sinja gdje se on dugo godina eksploatirao. Tesla je nešto veća, ali oštećena, sačuvanih dimenzija 7, 7 x 5, 3 cm. Sačuvani su i vrhovi još dvije tesle (?) izrađene od bazalta.²⁰ Nađeni su i 4 ulomka ručnog žrnja, dva ulomka donjeg kamena s ravnom površinom te dva ulomka rastirača od kojih je jedan cjelovitiji promjera 6, 7 cm (T. 4: 3).

On some specimens the decoration was made using sharp objects (wood or bone?) or a round or triangular object. Just 16 sherds bore incised decoration, consisting of band-like, shallow, parallel incisions. Finally, the least numerous were sherds with pinched decoration, with several rows covering the entire pot.

LITHICS

The most numerous lithics consist of flakes and tools,¹⁵ including blades. All four stages of tool-making using flint can be observed at the site, from collection to finishing.¹⁶ Most of the finds consist of flakes. It is impossible to say with certainty whether any of these were used, but no retouching was observed on any of them. No borers, scrapers or arrow-heads were found. The absence of arrow-heads does not mean that the inhabitants did not hunt, only that they did not use arrows to kill their prey.¹⁷ There are twice as many bifacial blades (Pl. 3: 1, 2) as unifacial blades (Pl. 3: 3, 4) – twelve of the former were found, and six of the latter. They were made of various types of flint: off-white opaque, opaque grey with light grey inclusions, and opaque grey with pale inclusions.

A quantity of cores and flakes of broken stone, 176 in all, was found in trench 9, which could indicate that this was where flint knapping was carried out, where raw materials were kept, or where waste materials were dumped. Not one finished artefact was found in the trench. It is evident from the large quantity of flakes and cores with knapping scars that tools were made in the settlement.

A good many fragments of querns were found, made of reddish-violet laminated quartzose sandstone and schist, mainly used in Neolithic times to make grindstones – such as those found at Okruglo in Radošić near Sinj.¹⁸

Four polished stone axes were also found, one trapezoid (Pl. 4: 1) and three broad axes (Pl. 4: 2). The trapezoid axe, which is small – 6.7 x 3.7 cm – and intact, was made of tuff with an admixture of greenish tint similar to *pietra verde*.¹⁹ The best-known site of this kind of tuff in the Dalmatian mountains is on Mt. Svilaja, at Zelovo near Sinj, where it was quarried for many years. One broad axe is somewhat larger, but damaged, with only 7.7 x 5.3 cm surviving. The ends of two more broad axes (?) made of basalt were also found.²⁰ Four fragments of hand grindstone were found, along with two fragments of a flat-topped quernstone and two of an upper grindstone, one of which is more complete, with a diameter of 6.7 cm (Pl. 4: 3).

¹⁵ Forenbaher, Kaiser 1997, 20; Korona 2009, 153.

¹⁶ Vujević, Horvat 2012, 32.

¹⁷ Marijanović 2009, 56.

¹⁸ Vuletić 1973, 6.

¹⁹ *Pietra verde* je naziv za ladinjske piroklastične stijene. Glavna su tufna zona Dinarida s najintenzivnijim eksplozivnim vulkanizmom.

²⁰ Crnjaković 2009, 139.

¹⁵ Forenbaher, Kaiser 1997, 20; Korona 2009, 153.

¹⁶ Vujević, Horvat 2012, 32.

¹⁷ Marijanović 2009, 56.

¹⁸ Vuletić 1973, 6.

¹⁹ *Pietra verde* is the name of ladinian pyroclastic rocks forming the main tuff zone of the Dinarics, with the most intense explosive volcanic eruptions.

²⁰ Crnjaković 2009, 139.

ZAKLJUČAK

Analizirajući pokretni arheološki materijal koji se nalazi u Muzeju Cetinske krajine - Sinj, a koji je prikupljen zaštitnim arheološkim istraživanjem 1985. godine na lokalitetu Poljanice u Bisku, utvrđena je mogućnost postojanja naselja na otvorenom u kojem se boravilo tijekom starijega neolitika. Unutar istraženih sonda nađena su četiri jamska objekta, ukopana u crvenicu, ovalnog oblika površine od 7-10 m². Objekti nisu imali čvrstu kamenu konstrukciju niti su nađene rupe za drvene grede koje bi nosile krov, ali su pronađene izrazito velike količine kućnog lijepa, načinjenog od crvenice pomiješane s raznim primjesama, na kojima su otisci oblance.

Neolitičko domaćinstvo koje je boravilo na ovom lokalitetu koristilo je ognjište na otvorenom koje je pronađeno unutar sonde 7/I.²¹ Ovo naselje bi, prema dosada istraženom području, upućivalo na naselje s jednim zajedničkim ognjištem s popratnim objektima, ukopani jamski objekti, koji su mogli imati funkciju spavaonice.

Još jedan objekt koji ukazuje na organizirano domaćinstvo jest radionica, odlagalište sirovine ili radionički deponij koji se nalazio u sondi 9. U sondi nije pronađen nijedan završeni proizvod, ali jest velika količina jezgri i odbojaka.

S obzirom na izrazito kamenjarski karakter terena naselja, pronalazak ručnih žrvnjeva, korištenih za obradu poljoprivrednih kultura, upućuje na poljodjelsku djelatnost u Bišćanskom polju koje se nalazi u neposrednoj blizini. Ne treba zanemariti ni činjenicu da se lokalitet nalazi u blizini rijeke Cetine što je važan čimbenik za funkcioniranje neolitičkog domaćinstva.

Jedinstven depozit s Impresso kulturnom skupinom iz starijeg neolitika ukazuje na funkciju jamskih ukopanih objekata u stambene svrhe, ali i na kratkotrajnost naselja, pošto nema nalaza koji bi upućivali na kontinuitet života u kasnijim razdobljima.

Pozivajući se na tezu B. Tripkovića, kojom utvrđuje stambeni karakter zemunice prema brojnosti ispunjenih kriterija: oblik zemunice, ostatci nadzemnih konstrukcija, artefakti in situ, postojanje ognjišta, zaključili smo da lokalitet u Poljanicama možemo interpretirati kao naselje na otvorenom.²²

Sukladno provedenoj analizi pokretnog arheološkog materijala sa lokaliteta Poljanice u Bisku, jedinog ovakve vrste koji je istražen na području Cetinske krajine, ovaj rad čini značajan doprinos poznavanju neolitika u Cetinskoj krajini, razvoju neolitičkih kultura istočnog Jadrana kao i proučavanju zemuničkih staništa.

CONCLUSION

Analysis of the portable archaeological material in the Museum of Cetinska Krajina, Sinj, collected during rescue archaeology in 1985 at Poljanice in Bisko, suggests that there was an open settlement there, occupied in early Neolithic times. Four oval pit structures were found in the trenches, dug into the red subsoil, and with an area of 7 to 10 m². They had no solid stone construction, nor were any holes found for the wooden beams that would have supported the roof, but a very large quantity of daub was found, made of red soil with various admixtures, bearing the imprint of logs.

The Neolithic people living here used an open hearth, found in trench 7/I.²¹ Judging from the excavations to date, this settlement would have had a single common hearth, with pit structures that could have been used for sleeping.

Another feature indicating an organised community is the flint-knapping workshop, raw materials store or dump in trench 9. Not one finished artefact was found there, but the trench contained a large quantity of cores and flakes.

Given the markedly rocky nature of the area of the settlement, the discovery of hand grindstones, used in the cultivation of crops, points to agriculture in Bišćansko polje, which is in the immediate vicinity. Nor should it be forgotten that the site is close to the river Cetina, an important factor in the life of a Neolithic community.

This unique deposit of the Impresso culture dating from the Early Neolithic suggests that the pit structures were dwellings, but also indicates that it was a short-lived settlement, as there were no finds suggesting that it was occupied in later periods.

In the light of the theory propounded by Boban Tripković, which determines the residential nature of pit structures by their meeting certain criteria – the shape of the structures, the remains of above-ground structures, artefacts in situ, the presence of a hearth – we conclude that the site at Poljanice may be interpreted as an open settlement.²²

In line with the analysis of the portable archaeological material from Poljanice in Bisko, the only one of its kind to be investigated in the Cetinska Krajina, this paper constitutes an important contribution to our knowledge of the Neolithic in the Cetinska Krajina, the development of Neolithic cultures in the eastern Adriatic, and the study of pit-structure settlements.

²¹ Tripković 2013, 12.
²² Tripković 2013, 28.

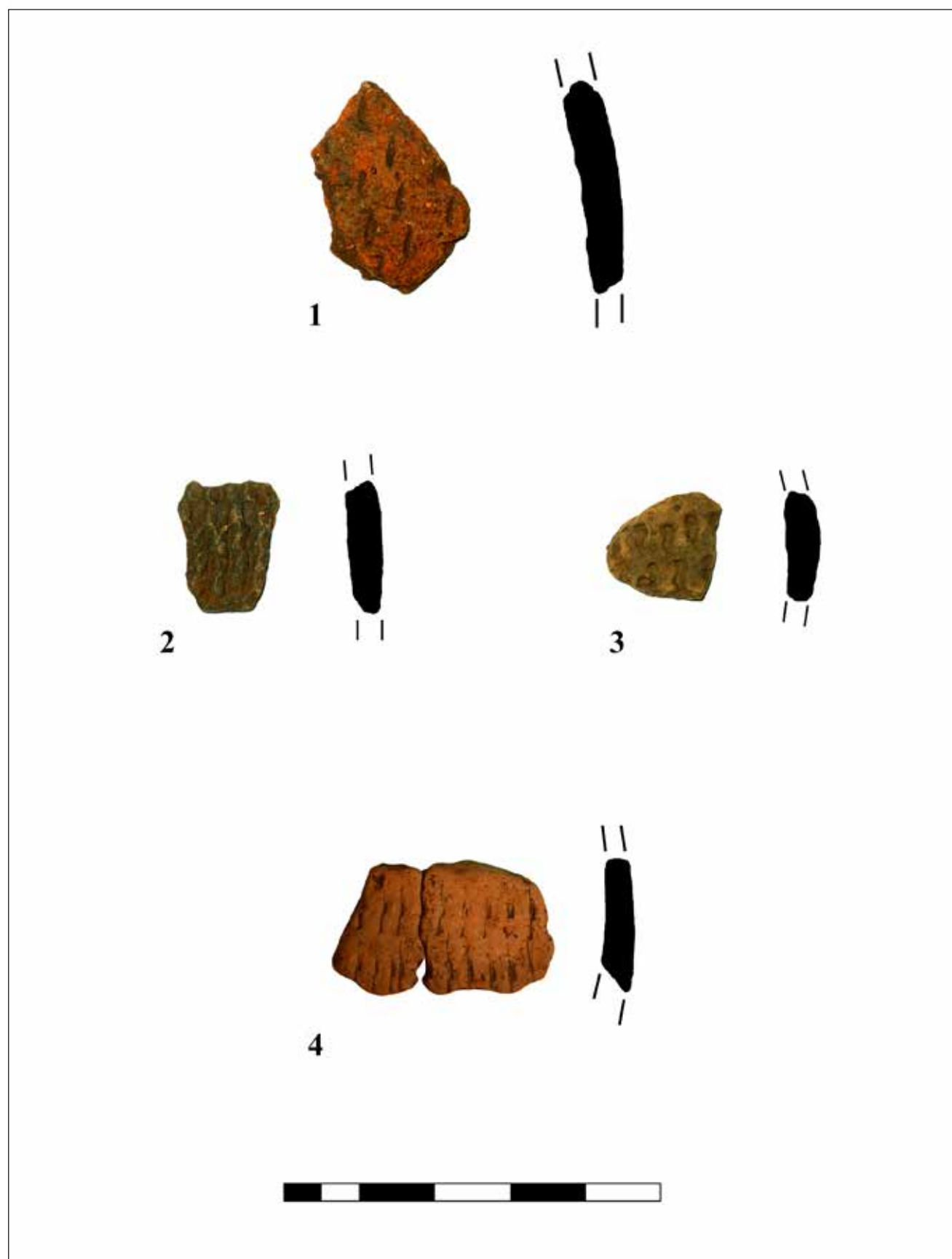
²¹ Tripković 2013, 12.
²² Tripković 2013, 28.

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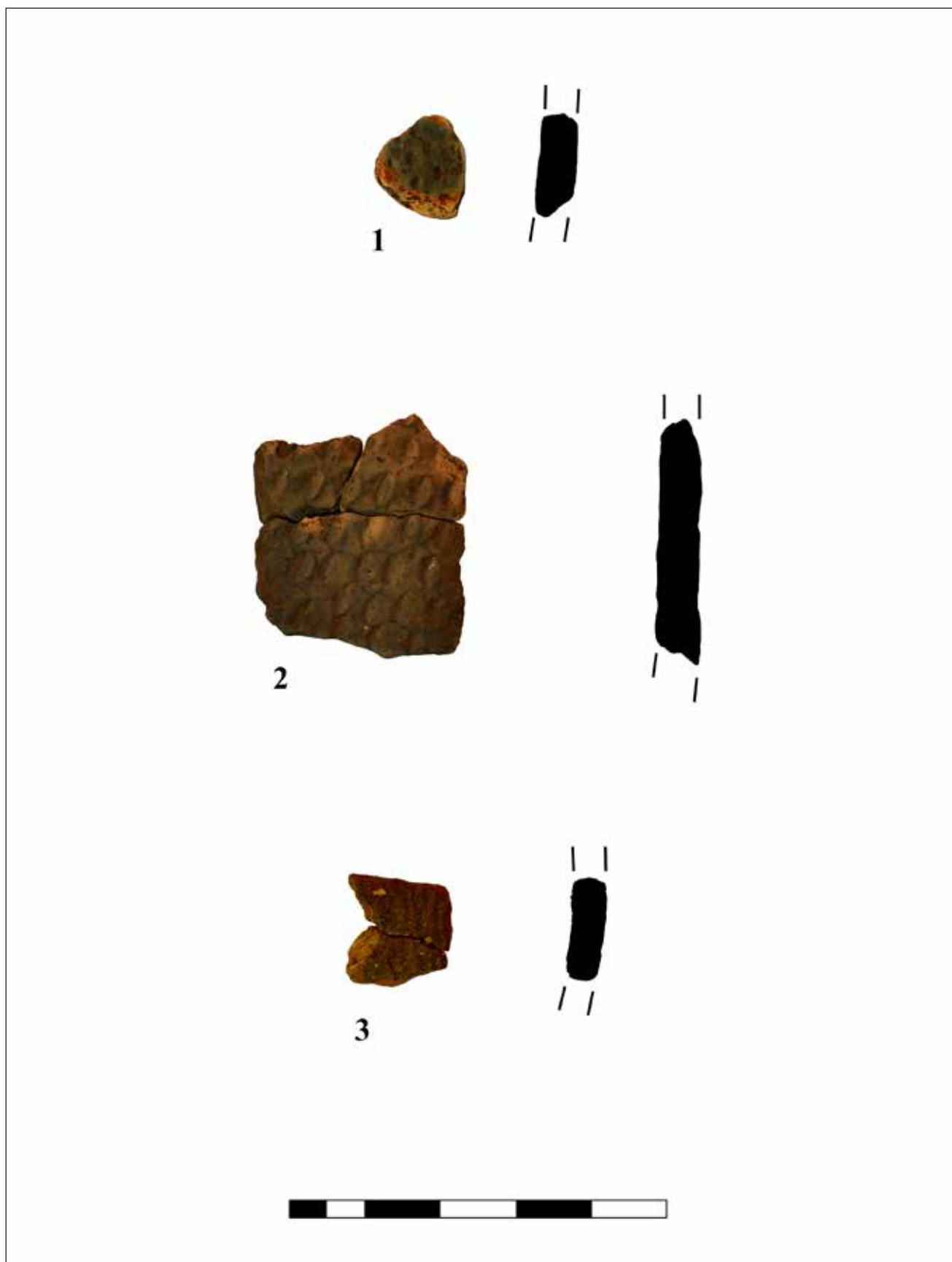
T. 1

Pl. 1



T. 2

Pl. 2



T. 3

Pl. 3



1



2



3



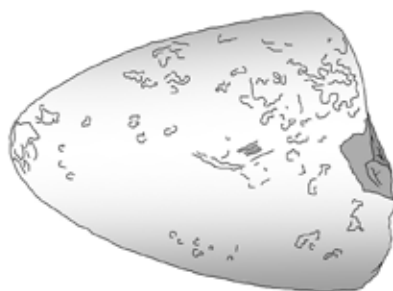
4

T. 4

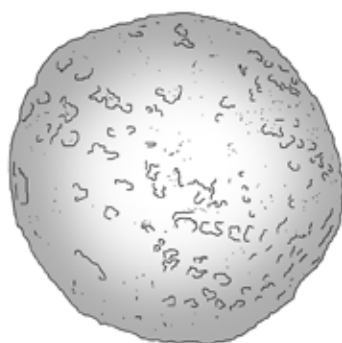
Pl. 4



1



2



3



Specialization in pottery production: An alternative strategy of structurally undersupplied households? - A case study concerning the late Neolithic settlement of Okolište in Central Bosnia

Specijalizacija za izradu grnčarije: Alternativna strategija strukturalno nedovoljno opskrbljenih domaćinstava? - Studija slučaja kasnog neolitskog naselja Okolište u srednjoj Bosni

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Based on a case study on pottery production in Central Bosnia, this contribution explores how production of non-subsistence goods was organized in densely populated Late Neolithic villages of the late 6th and first quarter of the 5th millennium BCE, and to what extent we are already dealing with specialized potters. Since there is no direct evidence for ceramic production, we are reliant on the analysis of the finished products and their find contexts in the large settlement Okolište. Four groups of evidence are studied: 1) the stylistic and technological variability of pottery from a temporal perspective, 2) spatial distribution of pottery styles across households, 3) quantities of pottery produced, and 4) the degree of standardization of vessel dimensions. The result is contradictory insofar as, on the one hand, some indicators speak in favour of a relatively low degree of specialization in pottery production; namely the relatively small quantities of ceramics produced, growing stylistic diversity and low degrees of metrical standardization. On the other, the increasing mastery of firing techniques and the unspecific spatial distribution of ceramic styles indicate a growing importance of specialists in ceramic production and the distribution of finished products across household boundaries. Against the background of a growing social differentiation between economically particularly successful alpha households and structurally undersupplied households in the sphere of subsistence, the notion of whether the production of pottery potentially might have represented an alternative and complementary strategy for securing a sufficient household income is discussed.

Keywords: Late Neolithic, Central Bosnia, Okolište, pottery production, specialisation, quantification, pottery styles, standardisation

Na osnovu studije slučaja o izradi grnčarije u Srednjoj Bosni ovaj rad istražuje kako je izrada neprehrambene robe bila organizirana u gusto naseljenim selima kasnog neolita krajem 6. i u prvoj četvrtini 5. milenija p.n.e. i u kojoj mjeri već možemo govoriti o specijaliziranim grnčarima. U odsustvu izravnih dokaza o izradi keramike oslanjamo se na analizu gotovih proizvoda i konteksta u kojem su nađeni na području velikog naselja Okolište. Proučene su četiri grupe dokaza: 1) stilistička i tehnološka raznolikost grnčarije iz vremenske perspektive, 2) prostorna distribucija grnčarskih stilova po domaćinstvima, 3) količine izrađene grnčarije i 4) stepen standardizacije dimenzija posuda. Rezultat je proturječan utoliko što, s jedne strane, neki indikatori govore u prilog relativno niskog stepena specijalizacije u izradi grnčarije; naime, relativno su male količine keramike izrađene uz veću stilsku raznolikost i nizak stepen standardizacije mjera. S druge strane, sve veće ovladavanje tehnikama pečenja i nespecifična prostorna distribucija stilova keramike ukazuje na sve veću važnost specijalizacije u izradi keramike i širenje distribucije izrađenih proizvoda preko granica domaćinstava. U kontekstu rastuće socijalne diferencijacije između ekonomski naročito uspješnih alfa domaćinstava i strukturalno nedovoljno opskrbljenih domaćinstava u sferi prehrane razmatramo pitanje da li je izrada grnčarije potencijalno mogla predstavljati alternativnu i komplementarnu strategiju za osiguranje dovoljnih prihoda za domaćinstvo.

Glavne riječi: kasni neolitik, srednja Bosna, Okolište, proizvodnja keramike, specijalizacija, kvantifikacija, stilovi keramike, standardizacija

INTRODUCTION

SPECIALIZATION IN THE SOUTHEASTERN EUROPEAN NEOLITHIC

In the second half of the 6th millennium BCE, settlement systems with large densely populated villages developed out of previously very small-scaled settlement structures for the first time in Southeastern Europe. The new demographic conditions in those villages may have posed completely new social and economic challenges for individuals and human societies as a whole. Against this historical background, the question of social complexity of these societies and the degree of social inequality in these population agglomerations has already been the subject of intensive discussion for many years.¹

The nucleated settlement conditions arising from the establishment of permanent villages resulted on the one hand in increased pressure on the available resources, such as arable and grazing land near settlements. On the other hand, a significant increase in local community sizes resulted in scalar communication stresses, which led to higher conflict potential and required the emergence of new social institutions to manage such stresses.² This resulted in a greater likelihood of social differentiation and inequality through the centralization of decision-making processes and appropriation of rare resources by segments of local communities.

Intensification and specialization, in both in craft and subsistence production, are often seen as initial reactions to such scalar communication stress and centralized information management.³ In this respect, the question of the extent to which we can identify such specializations in prehistoric societies, and how the production of subsistence and non-subsistence goods was organized in Neolithic and Chalcolithic societies of Southeastern and Eastern Europe, is highly relevant, particularly in respect to the forms and degrees of labour division and craft specialization.⁴

Specialization in a neutral sense describes a scenario in which *"some people practise skills that others do not"*.⁵ With regard to Neolithic and Chalcolithic societies discussed here, studies of specialization are particularly focused on the extent to which products have been transferred from producers to non-dependents. Increasing specialization is understood by many authors as concomitant to growing societal complexity and hierarchization, phenomena closely related to population growth and emerging social inequality. 'Modes of specialization' are considered as proxies for both general societal development and the evolutionary stage of ancient societies on their path toward increased complexity and statehood.⁶ According to Prudence M. Rice (1981), the concentration of power and wealth in certain social segments and associated differences in terms of access to resources were the main triggers for

UVOD

SPECIJALIZACIJA TOKOM NEOLITA U JUGOISTOČNOJ EVROPI

U drugoj polovini 6. milenija p.n.e. sistemi naselja s velikim, gusto naseljenim selima razvili su se iz ranije mnogo manjih struktura naseobina i to prvi put u jugoistočnoj Evropi. Novi demografski uslovi u tim selima mogli su predstavljati sasvim nove društvene i ekonomske izazove za pojedince i za ljudska društva u cjelini. U tom historijskom kontekstu pitanje društvene složenosti ovih društava i stepena socijalne nejednakosti među tim aglomeracijama stanovništva već je bilo predmetom intenzivnih rasprava dugi niz godina.¹

Nukleirani uslovi stanovanja koji su proistekli iz uspostavljanja stalnih naselja doveli su, s jedne strane, do povećanja pritiska na dostupne resurse, kao što je obradiva zemlja i zemlja za ispašu u blizini naselja. S druge strane, značajan rast veličina lokalnih zajednica doveo je do pojave pritiska u skalarnoj komunikaciji, a to je dovelo do višeg potencijala za sukobe i potrebe za uspostavljanjem novih društvenih institucija koje bi se nosile s tim pritiscima.² Time je povećana vjerovatnoća socijalne diferencijacije i nejednakosti jer su procesi donošenja odluka postali centralizirani i rijetke resurse su prisvajali određeni segmenti lokalnih zajednica.

Intenziviranje i specijalizacija, kako u zanatskoj tako i u prehrambenoj proizvodnji, često se tumače kao inicijalne reakcije na stres u skalarnoj komunikaciji i na centralizaciju upravljanja informacijama.³ U tom smislu je pitanje mjere u kojoj možemo identificirati takve specijalizacije u prethistorijskim društvima i pitanje toga kako je proizvodnja prehrambenih i neprehrambenih dobara bila organizirana u neolitskim i halkolitskim društvima jugoistočne i istočne Evrope izuzetno relevantno, naročito u odnosu na oblik i stepen podjele rada i zanatske specijalizacije.⁴

Specijalizacija u neutralnom smislu opisuje scenarij u kojem *"neki ljudi koriste vještine koje drugi nemaju"*.⁵ Što se tiče neolitskih i halkolitskih društava o kojima je ovdje riječ, studije specijalizacije naročito se fokusiraju na mjeru u kojoj su proizvodi prelazili od proizvođača do nezavisnih članova zajednice. Mnogi autori povećanje specijalizacije tumače kao pojavu koja prati usložnjavanje društvenih odnosa i uspostavljanje hijerarhije, a ovi potonji se usko vežu za rast broja stanovnika i pojavu društvene nejednakosti. 'Modusi specijalizacije' smatraju se zamjenama i za opći razvoj društva i za evolucijski stadij prahistorijskih društava na njihovom putu ka usložnjavanju i državnosti.⁶ Prema Prudence M. Rice (1981.) koncentracija moći i bogatstva u određenim segmentima društva i s njom povezane razlike u smislu

1 e.g. Kaiser and Voytek 1983; Müller *et al.* 2011; Müller *et al.* 2015; Porčić 2018.

2 e.g. Johnson 1982; Bandy 2004; Alberti 2014.

3 Johnson 1982.

4 e.g. Kaiser and Voytek 1983; Tringham and Krstić 1990; Perlès 2001; Porčić 2012; Miloglav and Vuković 2018.

5 Perlès and Vitelli 1999, 96.

6 e.g. Sahlins 1974; Rice 1981; van der Leeuw 1977; Costin 1991; Roux 2003.

1 npr. Kaiser i Voytek 1983; Müller *et al.* 2011; Müller *et al.* 2015; Porčić 2018.

2 npr. Johnson 1982; Bandy 2004; Alberti 2014.

3 Johnson 1982.

4 npr. Kaiser i Voytek 1983; Tringham i Krstić 1990; Perlès 2001; Porčić 2012; Miloglav i Vuković 2018.

5 Perlès i Vitelli 1999, 96.

6 npr. Sahlins 1974; Rice 1981; van der Leeuw 1977; Costin 1991; Roux 2003.

specialization processes. Consequently, specialization processes should be visible first in the emergence of elite, ceremonial and high-value products.

For Neolithic and Chalcolithic societies in Southeastern and Eastern Europe, inconsistent answers have been given regarding the degree of craft specialization and its societal impact. While some authors already see distinctive social differentiation that is partially linked to hereditary differences,⁷ other authors consider this as an overestimation. The latter rather expect “*relatively egalitarian kinship-based agricultural societies living in villages*”⁸ In some interpretations, it is suggested that the observed patterns of production, consumption and (re) distribution are partly inconsistent with common typologies of craft specialization⁹ and that several “modes of specialization” might have coexisted.¹⁰ Certain specializations evident in Early and Middle Neolithic Greece, are understood as being primarily based on individual talents, and oriented along social boundaries defined by kinship.¹¹

For long periods of the Southeastern European Neolithic, direct evidence for pottery production, such as pottery kilns and production waste, are largely lacking. Thus, numerous indirect indicators have been considered as evidence for growing specialization, particularly during the Late Neolithic and Early

pristupa resursima predstavljaju glavne pokretače procesa specijalizacije. Stoga se očekuje da se procesi specijalizacije prvo očituju u pojavi elitnih, obrednih proizvoda visoke vrijednosti.

Za neolitska i halkolitska društva u jugoistočnoj i istočnoj Evropi imamo nedosljedne odgovore na pitanje stepena zanatske specijaliziranosti i njenog utjecaja na društvo. Dok neki autori već vide profilirano društveno raslojavanje koje se dijelom povezuje s nasljednim razlikama,⁷ drugi to smatraju preuveličanom procjenom. Ovi potonji ukazuju na “*relativno egalitarna poljoprivredna društva zasnovana na srodstvu koja žive u naseljima*”⁸ Neka tumačenja sugeriraju da se opaženi obrasci proizvodnje, potrošnje i (re)distribucije dijelom ne poklapaju s uobičajnim tipologijama zanatske specijalizacije,⁹ i ukazuju na mogućnost istovremenog postojanja više “modusa specijalizacije”.¹⁰ Određene specijalizacije otkrivene u periodu ranog i srednjeg neolita u Grčkoj smatraju se primarno zasnovanim na talentima pojedinaca i orijentiranim u skladu s društvenim granicama koje određuje srodstvo.¹¹

Za dugačke periode neolita u jugoistočnoj Evropi nedostaju direktni dokazi o izradi grnčarije, kao što su grnčarske peći i otpad od proizvodnje. Stoga su kao dokazi za porast

Tbl. 1. Indirect and direct indicators that have been considered as evidence for increased specialization in pottery production for the Late Neolithic and Early Chalcolithic in Southeastern and Eastern Europe.

Tab. 1. Direktni i indirektni pokazatelji koji se smatraju dokazom povećane specijalizacije u proizvodnji keramike za kasni neolitik i rani halkolitik u jugoistočnoj i istočnoj Evropi.

Source of empirical evidence/ Izvori empirijskih dokaza	Closer explanation/ Detaljnije pojašnjenje	Evidence in the Working area/ Dokazi u Radnom prostoru
Stylistic and technological perfection of pottery/ Stilistička i tehnološka usavršavanja keramike	Growing quality of the pottery and increasing control of the firing process is considered in as indicator of higher degrees of craft specialisation/ Poboljšanje kvaliteta keramike i kontrole procesa pečenja smatra se pokazateljem viših stupnjeva specijalizacije obrta	Todorova 1978, 56 f. and 71 –73; Todorova 1982; Perlès and Vitelli 1999; Schier 1995; Parzinger 1992/ Todorova 1978, 56 f. i 71 –73; Todorova 1982; Perlès i Vitelli 1999; Schier 1995; Parzinger 1992.
Technological perfection/ Tehnološko usavršavanje	Growing control of the firing process: ability to produce completely reduced or partially re-oxidised pottery fabrics/ Sve veća kontrola procesa pečenja: sposobnost da se proizvode potpuno reducirane ili djelomično reoksidirane keramičke tkanine	e.g. Hofmann 2013/ npr. Hofmann 2013.
Firing temperature/ Temperatura pečenja	Rising firing temperature/ Povećanje temperature pečenja	e.g. Petrasch 1986; Spataro 2018/ npr. Petrasch 1986; Spataro 2018
Intra-site distributions of pottery styles/ Distribucija stilova keramike unutar lokaliteta	Uniform intra-site spatial distributions of pottery styles crossing household boundaries/ Unifomirana prostorna distribucija različitih stilova keramike unutar lokaliteta a izvan gabarita kućanstva	Todorova 1982; Perlès and Vitelli 1999; Perlès 2001; Dammers 2012, 123/ Todorova 1982; Perlès and Vitelli 1999; Perlès 2001; Dammers 2012, 123
Regional distribution of pottery wares/ Regionalna rasprostranjenost keramičkih proizvoda	Regional production centres for certain pottery wares: e.g. Circum-Adriatic distributed Figulina Ware starting from 5500 BCE/ Regionalni proizvodni centri za određenu vrstu keramike: npr. Na području oko Jadrana rasprostranjeno je tkz. Figulina posuđe počevši od 5500. p.n.e.	e.g. Spataro 2009/ npr. Spataro 2009.

7 e.g. Crnobraj 2011; Müller *et al.* 2011; Müller 2012; Windler *et al.* 2013; Arponen *et al.* 2015; Arponen *et al.* 2016.

8 Porčić 2012; cf. also Hofmann *et al.* 2010; Porčić 2018.

9 Perlès and Vitelli 1999; Perlès 2001.

10 Souvatzi 2008, 118–127.

11 Perlès and Vitelli 1999.

7 npr. Crnobraj 2011; Müller *et al.* 2011; Müller 2012; Windler *et al.* 2013; Arponen *et al.* 2015; Arponen *et al.* 2016.

8 Porčić 2012; cf. također Hofmann *et al.* 2010; Porčić 2018.

9 Perlès i Vitelli 1999; Perlès 2001.

10 Souvatzi 2008, 118–127.

11 Perlès i Vitelli 1999.

Stylistic and technological differentiation of vessel assemblages/ Stiliska i tehnološka diferencijacija skupova posuda	(1) In the course of the Neolithic clear increases in number of vessel classes and -types are observed in many regions of Southeast Europe (2) Vessel classes are connected with specific manufacturing techniques, decorations and firing techniques which imply a stronger functional differentiation or clearer categorization in contrast to earlier stages of the Neolithic/ (1) Tokom neolitika jasno se povećava broj klasa i tipova posuda koje su nalaze u mnogim regijama jugoistočne Europe (2) Klase posuda povezane su sa specifičnim tehnikama izrade, ukrašavanja i pečenja - tehnike koje podrazumijevaju jaču funkcionalnu diferencijaciju ili jasniju kategorizaciju u suprotnosti od ranijih faza neolitika	(1) e. g. Todorova 1982; Rasson 1983; Kaiser and Voytek 1983 (2) e.g. Schier 1995, Hofmann 2013/ (1) e. g. Todorova 1982; Rasson 1983; Kaiser i Voytek 1983 (2) npr. Schier 1995, Hofmann 2013.
Temporarily accelerated innovation rates/ Privremeno ubrzane stope inovacija	Higher rates of technical and social innovation are theorized e.g. by Richerson, Boyd, and Bettinger (2009) as related to demographic growth and population agglomeration. Stylistic change of material culture did not run uniformly but in fact particular innovative phases with forced stylistic change have been identified (1). Related to pottery production they are understood as indicators for higher degrees of specialisation under condition of forced competition between producers (2). However, there is so far still little knowledge for the wider working area regarding the question how such phases coincide with regional population dynamics and development of settlement structures/ O većim stopama tehničkih i društvenih inovacija teoretizirali su npr. autori Richerson, Boyd i Bettinger (2009.) u vezi s demografskim rastom i aglomeracijom stanovništva. Stiliska promjena materijalne kulture nije tekla jednoobrazno nego zapravo osobite inovativne faze s forsiranim stilskim promjena su identificirane (1). Vezano za keramičku proizvodnju shvaćeni su kao pokazatelji viših stupnjeva specijalizacije pod uvjetom prisilne konkurencije među proizvođačima (2). Međutim, za sada premalo se zna o širem radnom području u vezi s pitanjem kako se takve faze podudaraju s dinamikom regionalne populacije i razvojem strukture naselja.	(1) Schier 1995; Hofmann 2013 (2) Vitelli 1993, 216 f.; cf. Hofmann 2013; Hofmann 2015/ (1) Schier 1995; Hofmann 2013 (2) Vitelli 1993, 216 f.; cf. Hofmann 2013; Hofmann 2015.
Size of vessels/ Veličina posuda	During Late Neolithic and Early Chalcolithic in some regions huge vessels (pitoi) were produced which are considered as indicator for specialised production taking in consideration the difficulty to produce them/ Tijekom kasnog neolitika i ranog halkolitika u nekim su se regijama proizvodile ogromne posude (pitoi), koje se smatraju pokazateljem za specijaliziranu proizvodnju, uzimajući u obzir poteškoće prilikom proizvodnje	Hansen and Toderas 2012, 131 ff./ Hansen and Toderas 2012, 131 f.
Metrical standardisation of vessels/ Metrička standardizacija posuda	Growing metrical standardisation is theorized to be a result of less numerous and more skilled producers which are involved in the production process/ Teoretizira se da je rastuća metrička standardizacija rezultat manje brojnih i više vještih proizvođača koji su uključeni u postupak proizvodnje	Vuković 2011 (Vinča); Miloglav 2012 (Vučedol)/ Vuković 2011. (Vinča); Miloglav 2012. (Vučedol)
Increasing densities of pottery in settlement layers/ Povećanje obima keramike u slojevima naselja	According to Costin (1992) it is theorised that growing degree of craft specialisation goes along with growing efficiency and production volumes. Thus, in some case studies growing or varying find densities have been registered and partly considered as indicator of economic intensification and rising socio-economic complexity./ Costin (1992.) teoretizira da stupanj specijalizacije obrta raste uz rastuću učinkovitost i obim proizvodnje. Dakle, u nekim studijama slučajevi rasta ili varijacije gustoće nalaza su registrirani su i djelomično se smatraju pokazateljem ekonomske intenzifikacije i rastuće socio-ekonomske složenosti.	Renfrew, Gimbutas, and Elster 1986; Kaiser 1990; Miloglav/ Vuković 2018/ Renfrew, Gimbutas, and Elster 1986; Kaiser 1990; Miloglav/Vuković 2018.
Technology of pottery kilns/ Tehnologija peći za keramiku	In the Cucuteni-Tripolye cultural complex technologically advanced up-draught two-chamber pottery kilns have been discovered. Likely, their operation and maintenance required specialized knowledge./ U kulturnom kompleksu Cucuteni-Tripolje otkrivene su tehnološki napredne dvije komorne lončarske peći. Za njihov rad i održavanje vjerojatno je bilo potrebno specijalizirano znanje.	e.g. Ellis 1984; Petrasch 1986, Willms 1999; Kruts, Korvin-Piotrovskiy, and Rassmann 2014; Videiko et al. 2015; Korvin-Piotrovskiy et al. 2016/ Ellis 1984; Petrasch 1986, Willms 1999; Kruts, Korvin-Piotrovskiy, and Rassmann 2014; Videiko et al. 2015; Korvin-Piotrovskiy et al. 2016.
Intra-site distribution of pottery kilns/ Distribucija peći za keramiku unutar lokaliteta	In settlements of the Cucuteni-Tripolye cultural complex pottery kilns were identified by geomagnetic survey. Their number, size, and intra-site spatial distribution can be set in relation to local population sizes and annual production quantities./ U naseljima kulture Cucuteni-Tripolje složene lončarske peći identificirane su geomagnetskim istraživanjem. Njihov broj, veličina i prostorna distribucija unutar lokaliteta može se posmatrati prema broju lokalnog stanovništva i godišnjoj proizvodnji.	e.g. Rassmann et al. 2014; Ohlrau 2015; Müller, Hofmann, and Ohlrau 2016; Korvin-Piotrovskiy et al. 2016/ Rassmann et al. 2014; Ohlrau 2015; Müller, Hofmann, i Ohlrau 2016; Korvin-Piotrovskiy et al. 2016

Chalcolithic (Table 1). Generally, these studies are limited to the identification of growing degrees of craft specialization.

In order to further progress our understanding of socio-economic conditions during the Neolithic, empirical interdisciplinary studies that take into consideration as many possible different social, economic and ideological aspects and archaeological material groupings of the investigated societies in a holistic sense are necessary. Only such integrated studies can provide deeper understanding of ancient societies and of the factors that 'lie behind' the specific shaping of material culture and its spatio-temporal development. In order to be able to better understand the meaning of material objects within the framework of social borders and cultural change in the future, we need to reconstruct the conditions of the production, distribution and use of material objects across different spatial scales and within the broader context of society as a whole. This provides, among other things, the opportunity to go beyond the mere identification of increasing specialization and the 'simple' reconstruction of organizational forms, and to come up with a deeper understanding of specialization processes in the framework of their overall societal dependencies.

As a contribution to the mentioned discussion surrounding the organization of early production, in this paper an attempt is made to evaluate the degree of specialization in Neolithic and Chalcolithic societies of Southeastern Europe based on the example of pottery production in Late Neolithic Central Bosnia. There, at the spatial scale of a micro-region situated in the valley of the River Bosna, near the towns Visoko and Kakanj, extensive fieldwork and subsequent interdisciplinary analyses have been undertaken. Since various aspects of these Late Neolithic societies have already been examined, we are able to evaluate pottery production in the context of other forms of evidence.

LATE NEOLITHIC OKOLIŠTE IN CENTRAL BOSNIA

Since extensive research carried out between 2002 and 2013 has been outlined in manifold aspects in numerous other publications, here only a basic summary of the research questions and results are provided.¹² The site of Okolište belongs to the Late Neolithic Butmir group; an 'archaeological culture' represented in approximately 30 sites distributed in the low-lying mountain ranges of Central Bosnia. The Butmir group, which represent the westernmost branch of the Southeastern European cultural complex identified bytells, is mainly defined on the basis of the characteristic styles of pottery and anthropomorphic figurines that developed out of the earlier Starčevo-Impresso and Kakanj ceramic styles around 5200 BCE.¹³ Settlements in which evidence of Butmir pottery has been found are distributed in several spatial clusters close to the present day towns of I) Visoko and Kakanj, II) Sarajevo, III) Travnik and IV) Donji Vakuf. Recent research has focused on the region of Visoko and Kakanj, which is considered as a micro-region (or *Siedlungskammer*), clearly bordered by mountainous surroundings.

specijalizacije uzeti u obzir brojni indirektni indikatori, naročito iz perioda kasnog neolita i ranog halkolita (tab. 1). Ove studije su općenito ograničene na utvrđivanje povećanja u stepenu zanatske specijalizacije.

Kako bismo poboljšali naše razumijevanje društveno-ekonomskih prilika za vrijeme neolita, potrebna su empirijska interdisciplinarna istraživanja koja uzimaju u obzir što više različitih društvenih, ekonomskih i ideoloških aspekata i arheoloških materijalnih grupacija ispitivanih društava u holističkom smislu. Samo tako integrirana istraživanja mogu pružiti dublje razumijevanje prahistorijskih društava i faktora koji čine 'pozadinu' konkretnog oblikovanja materijalne kulture i njenog razvoja u prostoru i vremenu. Kako bismo bolje razumjeli značenje materijalnih predmeta u okviru društvenih granica i kulturoloških promjena u budućnosti, moramo napraviti rekonstrukciju prilika proizvodnje, distribucije i upotrebe materijalnih predmeta u različitim dimenzijama prostora i unutar šireg konteksta društva u cjelini. To nam, između ostalog, pruža mogućnost da odemo dalje od puke identifikacije veće specijalizacije i 'proste' rekonstrukcije organizacijskih formi te da steknemo dublje razumijevanje procesa specijalizacije u okviru njihovih ukupnih društvenih zavisnosti.

Ovaj rad doprinosi spomenutoj diskusiji organizacije rane proizvodnje kroz pokušaj da se procijeni stepen specijalizacije u neolitskim i halkolitskim društvima jugoistočne Evrope na osnovu primjera izrade grnčarije u kasnoneolitskoj srednjoj Bosni. Tu, u prostornim razmjerama mikro-regije smještene u dolini rijeke Bosne, u blizini Visokog i Kakanja, proveden je opsežan terenski rad i kasnije interdisciplinarne analize. Pošto su različiti aspekti ovih kasnoneolitskih društava već ispitani, proizvodnju grnčarije možemo procijeniti u kontekstu drugih vrsta dokaza.

KASNONEOLITSKO NASELJE OKOLIŠTE U SREDNJOJ BOSNI

Pošto je opsežan istraživački rad proveden od 2002. do 2013. opisan u mnoštvu aspekata u brojnim drugim publikacijama, ovdje dajemo samo osnovni sažetak istraživačkih pitanja i rezultata.¹² Okolište pripada kasnoneolitskoj butmirskoj grupi; 'arheološkoj kulturi' zastupljenoj u oko 30 nalazišta raspoređenih u nizinskim predjelima planinskih lanaca srednje Bosne. Butmirska grupa, koja predstavlja najzapadniji ogranak kulturnog kompleksa jugoistočne Evrope identificiranog telovima, uglavnom se definira na osnovu karakterističnih stilova grnčarije i antropomorfnih figurica koji su se razvili iz ranijih keramičkih stilova starčevačke i kakanjske kulture iz perioda oko 5200. godine p.n.e.¹³ Naselja u kojima su nađeni tragovi butmirske grnčarije raspoređena su u nekoliko prostornih grupacija blizu današnjeg I) Visokog i Kakanja, II) Sarajeva, III) Travnika i IV) Donjeg Vakufa. Skorašnja istraživanja fokusirana su na područje Visokog i

12 cf. Müller, Rassmann, and Kujundžić-Vejzagić 2013; Hofmann 2013; Hofmann 2015; Hofmann 2020.

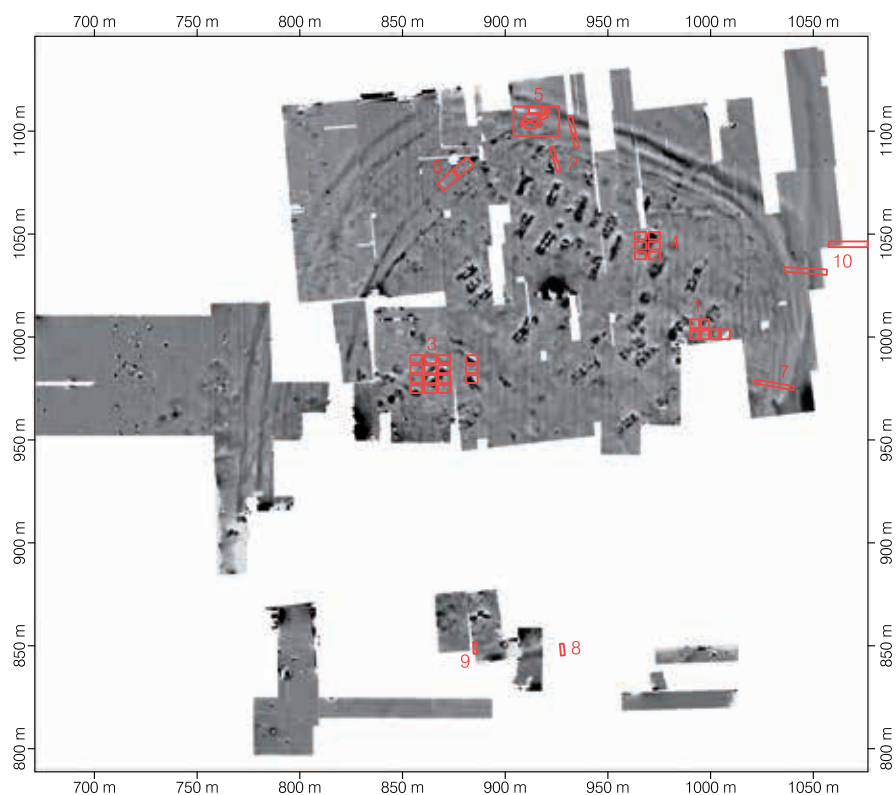
13 Benac 1973; Gimbutas 1974a; Gimbutas 1974b; Perić 1995; Hansen 2007.

12 cf. Müller, Rassmann, i Kujundžić-Vejzagić 2013; Hofmann 2013; Hofmann 2015; Hofmann 2020.

13 Benac 1973; Gimbutas 1974a; Gimbutas 1974b; Perić 1995; Hansen 2007.

Fig. 1. Okolište. Plan of the geomagnetic survey and location of the excavation areas. The coordinates refer to the local measurement system.

Sl. 1. Okolište. Plan geometrijske prospekcije i položaj iskapanih područja. Koordinate se odnose na lokalni mjerni sistem.



The Okolište tell is situated in the northern part of the Visoko basin. With a size of almost 7 hectares, it is by far the largest known settlement of the Butmir group. The site is further distinguished from other settlements by a complex fortification system (Fig. 1). The formation of such a large settlement agglomeration is understood as the result of rapid population growth out of an earlier settlement core situated near the modern town of Kakanj in the period before 5200 BCE.¹⁴ Between 5200 and 4700 BCE, a shift in the pattern of the rank-size distribution of settlements in the Visoko basin is observed, from a pronounced 'primate' distribution – with the large site Okolište at its pinnacle – towards a 'convex' distribution with several settlements of almost identical size.¹⁵ Later, a pronounced dichotomy developed between larger settlements in the main river valleys and much smaller sites around the tributaries at higher elevations.

The subsistence strategy of societies with Butmir pottery was based mainly on livestock – generally cattle – breeding, cultivation of a wide range of crops such as einkorn, emmer, lentils and peas, and gathering of hazelnuts, cornel cherries and apples, and to a lesser degree on hunting.¹⁶ As the amount of arable land in the permanently settled river valleys and basins was clearly limited, the use of land at higher elevations for transhumant livestock breeding had already begun before 5200 BCE, likely during the Middle Neolithic Kakanj period.¹⁷ This elevation-differentiated subsistence strategy is characteristic of

Kaknja koje se smatra mikro-regijom (ili Siedlungskammer) jasno oivičenom planinskim okruženjem.

Tel Okolište smješten je u sjevernom dijelu visočke nizije. S površinom od skoro 7 hektara predstavlja daleko najveće poznato naselje butmirske skupine. Lokalitet se od drugih naselja dodatno izdvaja zbog složenog sistema utvrda (Sl. 1). Uzima se da je tako velika aglomeracija naselja nastala kao rezultat ubrzanog rasta broja stanovnika iz prethodnog jezgra naselja smještenog u blizini današnjeg Kakanja u periodu prije 5200. p.n.e.¹⁴ Između 5200. i 4700. p.n.e. u visočkoj dolini došlo je do promjene obrasca distribucije naselja prema poretku i veličini, od izraženo 'primatne' distribucije – na čijem vrhuncu je veliko nalazište Okolište – ka 'konveksnoj' distribuciji od nekoliko naselja gotovo iste veličine.¹⁵ Kasnije se razvila izražena dihotomija između većih naselja u dolinama glavnih rijeka i mnogo manjih lokaliteta oko pritoka na višoj nadmorskoj visini.

Strategija prehrane društava u kojima je pronađena butmirska grnčarija zasnivala se prevashodno na uzgoju stoke (obično goveda) i raznolikog dijapazona kultura kao što su prapšenica, žito, leća i grašak, te na skupljanju lješnjaka, drijena i jabuka, a u manjoj mjeri i na lovu.¹⁶ Pošto je količina obradive zemlje u stalno naseljenim dolinama rijeke i bazenima bila jasno ograničena, već se prije 5200. p.n.e. počelo s korištenjem zemljišta u uzvišenijim predjelima za sezonsko izmješteno uzgajanje stoke, vjerovatno početkom

¹⁴ Hofmann 2012a; Hofmann 2013.

¹⁵ Hofmann 2014.

¹⁶ Benecke 2006; Kučan 2006; Kroll 2013a; Kroll 2013b; Kroll in press.

¹⁷ Müller 2006; Dörfler 2013.

¹⁴ Hofmann 2012a; Hofmann 2013.

¹⁵ Hofmann 2014.

¹⁶ Benecke 2006; Kučan 2006; Kroll 2013a; Kroll 2013b; Kroll u pripremi.

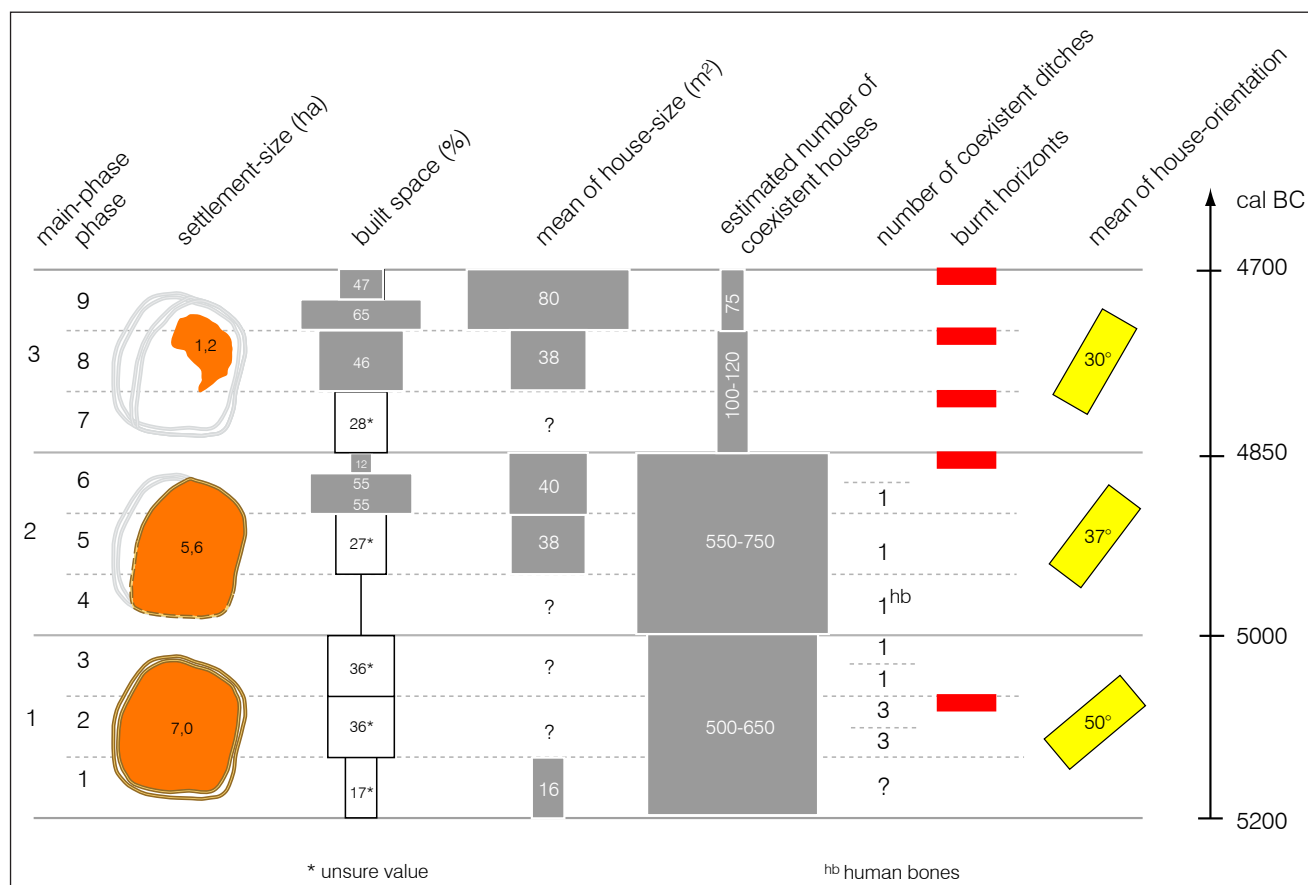


Fig. 2. Okolište. Chronological model and selected proxies for the development of the settlement (after Hofmann 2012a, Fig. 8).

Sl. 2. Okolište. Hronološki model i odabrani pokazatelji razvoja naselja (poslije Hofmann 2012a, sl. 8).

the region even today.¹⁸ The intensified establishment of very small sites along tributaries of the River Bosna at higher elevations in the mountainous surroundings of the Visoko - Kakanj basin after 4900 BCE could be due to an increased specialization of these settlements in livestock breeding. This is, among other things, reflected in the differences of find inventories and densities and in the phosphorus concentrations of the different settlement layers.¹⁹

The mentioned nucleated development at the micro-region scale is mirrored in the development of the Okolište tell (Fig. 2): the village significantly reduced in size in two distinct phases – firstly from 7 ha to 5.6 ha and, later, to 1.2 ha – before it was finally abandoned around 4700 BCE. The second reduction in size (around 4850 BCE) was clearly connected with a significant decline of population from more than 2,000 inhabitants to around 500 or, later, even fewer.

Throughout the entire occupation of the village, a highly regular settlement layout consisting of straight lines of houses and a tiered system of communication routes (alleys, paths, central street) was retained. The evidence yielded by the excavation of architectural remains is best explained as presenting a sequence of houses occupying the same plot, with each

srednjeg neolita u području Kaknja.¹⁷ Ova visinski diferencirana strategija opstanka ostala je karakteristična za ovu regiju do današnjeg dana.¹⁸ Intenzivirano uspostavljanje vrlo malih lokaliteta duž pritoka rijeke Bosne na većim visinama u planinskim predjelima oko visočko-kakanjskog bazena nakon 4900. p.n.e. moglo bi se objasniti povećanom specijalizacijom tih naselja za uzgoj stoke. Ovo se, između ostalog, odražava u razlikama inventara i gustoće nalazišta i u koncentracijama fosfora za različite slojeve naselja.¹⁹

Pomenuti nukleirani razvoj na nivou mikro-regije ogleda se i u razvoju tela Okolište (sl. 2): naselje se značajno smanjilo u dvije jasno razgraničene faze – prvo od 7 ha na 5,6 ha i kasnije na 1,2 ha – prije nego što je konačno napušteno oko 4700. p.n.e. Drugo smanjenje (oko 4850. p.n.e.) jasno je bilo vezano za značajno opadanje broja stanovnika, od preko 2000 do oko 500, odnosno kasnije još i manje.

Tokom cijelog perioda naseljenosti zadržao se visoko uređen raspored sačinjen od pravilnih redova kuća i višerazinskog sistema pravaca komunikacije (uličica, staza, centralne ulice). Dokazi nađeni tokom iskopavanja arhitektonskih ostataka najviše ukazuju na to da se radi o nizu kuća

¹⁸ Beuermann 1967.

¹⁹ Müller-Scheeßel et al. 2010b; Furholt 2012; Furholt 2013; Dreibrödt et al. 2013; Dreibrödt et al. 2013.

¹⁷ Müller 2006; Dörfler 2013.

¹⁸ Beuermann 1967.

¹⁹ Müller-Scheeßel et al. 2010b; Furholt 2012; Furholt 2013; Dreibrödt et al. 2013; Dreibrödt et al. 2013.

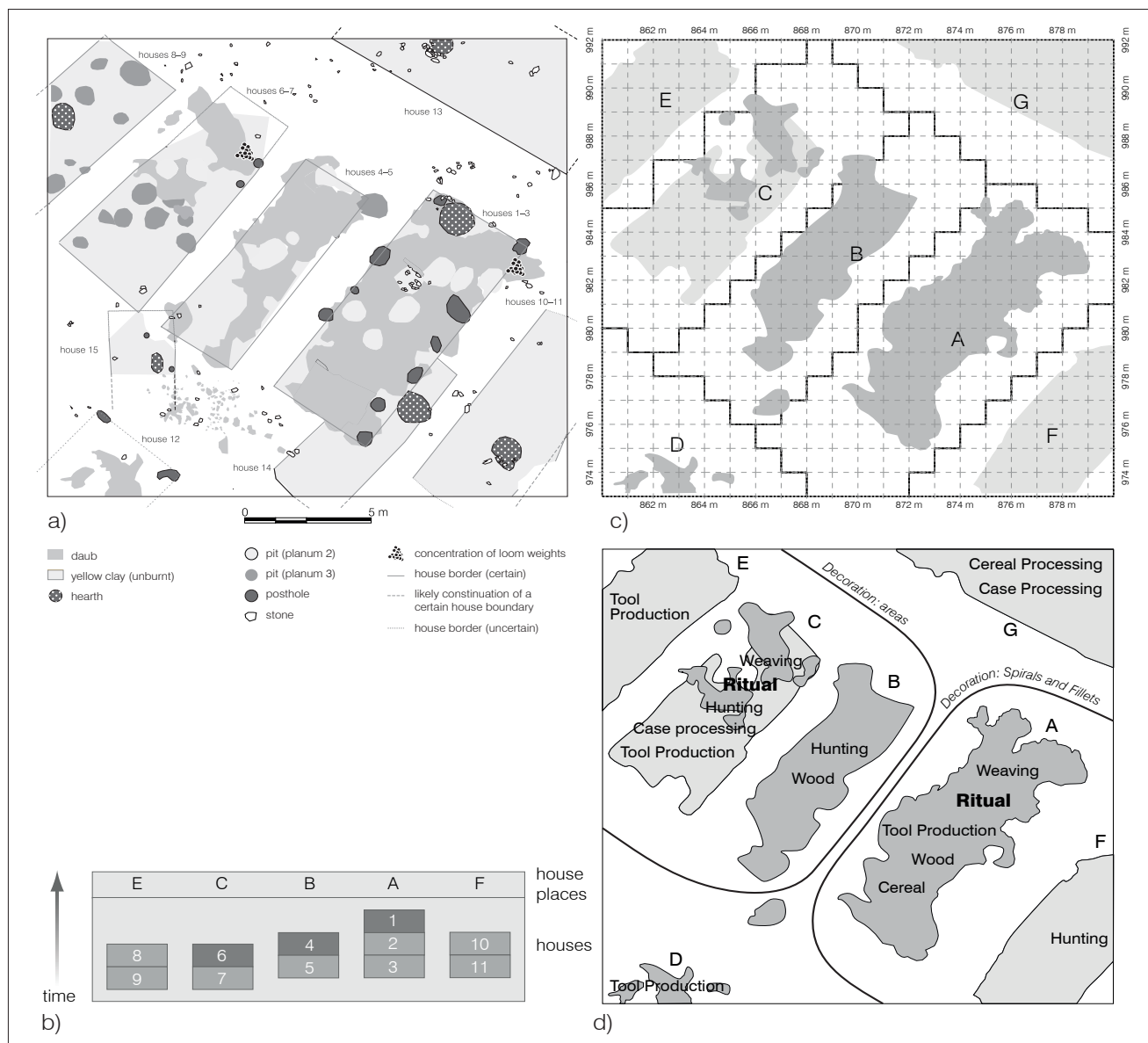


Fig. 3. Okolište. Excavation area 3: a) Interpretation of the excavation results; b) Schematic representation and relative chronology of the sequence of houses in the different house plots; c) Boundaries of the house plots A–E; d) Reconstruction of tasks identified in the different house plots (after Müller et al. 2011, Fig. 11).

Sl. 3. Okolište. Istraženo područje 3: a) Interpretacija rezultata iskopavanja; b) Shematski prikaz i relativna hronologija niza kuća na različitim dubinama; c) Granice kućnih čestica A–E; d) Rekonstrukcija zadataka identificiranih u različitim kućnim česticama (poslije Müller et al. 2011, sl. 11).

iteration having an average lifespan of 33 years.²⁰ After certain periods of continuity of the house plot delineations, restructuring of the built-up area took place. Between about 5000 and 4800 BCE, the floor space of houses in Okolište varied between 30 m² and 60 m², with a mean of about 40 m². Taking into consideration cross-cultural data sets regarding the correlation of floor space and number of inhabitants, it seems that a household was composed of a relatively small number of individuals in Okolište; most likely only a single generation of people: perhaps nuclear families.²¹

In terms of architectural sociology, the settlement layouts are suggestive of a high level of mutual social monitoring, and seem

koje se nalaze na istom zemljištu, pri čemu je svaka od njih u prosjeku imala životni vijek od 33 godine.²⁰ Nakon određenih perioda kontinuiteta u razgraničenju okućnica dolazilo je do prestrukturiranja prostora za izgradnju. Od oko 5000. do 4800. p.n.e. kvadratura kuća u Okolištu varirala je u rasponu od 30 m² do 60 m², a srednja vrijednost je iznosila oko 40 m². Ako uzmemo u obzir međukulturalne skupove podataka o korelaciji između kvadrature i broja stanara dolazimo do zaključka da su domaćinstva u Okolištu obuhvatala relativno mali broj pojedinaca; vjerovatno samo jednu generaciju: možda nuklearne porodice.²¹

U smislu arhitektonske sociologije raspored naselja ukazuje na visok nivo

²⁰ Hofmann 2013, 363–385.

²¹ e.g. Naroll 1962; Brown 1987; Porčić 2011.

²⁰ Hofmann 2013, 363–385.

²¹ npr. Naroll 1962; Brown 1987; Porčić 2011.

to imply a distinctive community-oriented ideology of equality.²² It seems that this ideal must have stood in opposition to distinctive differences regarding economic and ritual activity of individual households.²³ In seven individual houses found within area 3 – the largest excavation area – the observed find distributions show different activity patterns in a long-term perspective. These differences are connected with levels of productivity regarding the cultivation of cereals, the intensity of hunting, the production of knapped stone tools, textile production, woodcraft and also ritual activities (Fig. 3). Elsewhere, we interpreted these differences as evidence of a certain degree of social differentiation, which may have already had a hereditary character when considered in conjunction with the duration of these differences over several household generations.²⁴

If the differences in the distribution of artefacts were representative of age-specific differences between generations, we would expect uniform artefact distributions as every household in such a scenario would have gone through the same phases of increased and decreased production activities. Consequently, we assume instead the existence of particularly active 'alpha households', whose members might have been more involved in political or ritual decision-making processes than members of other households whose productivity was lower.

After the above-mentioned decrease in population size, a clear increase in the floor area of houses is observed. This is interpreted as being connected to the development of enlarged (extended) family units (Fig. 2). This trend towards larger household units continued in other settlements of the Visoko basin after the abandonment of Okolište.²⁵ Around 4300 BCE, in the latest stage of this development, huge multi-family dwellings were in use in the nearby settlement at Donje Moštre. It is likely that several related family units co-inhabited these buildings in separate-but-connected rooms. The agglomerative nature and large size of these houses is analogous to that of buildings in Central Balkan Vinča sites.

At the end of the Late Neolithic, a disintegration of communal-oriented villages occurred, with these fissioning into smaller groups, paralleled by a stronger integration of greater numbers of people in larger, likely economically more independent households. The increase in household size, which is a general trend not only in the Neolithic of Southeastern Europe,²⁶ starts in the Visoko basin at a time when the disintegration of the Late Neolithic population agglomeration in long-lasting settlement mounds had already begun.

Because of this timing, it is possible to discard another, ethnographically observed, scenario where household enlargement reflects a sociologically determined strategy of avoiding scalar stress in the decision-making processes of drastically increased population agglomerations.²⁷ In fact, the increase in household size seems better explainable as a reflection of

uzajamnog društvenog praćenja i na jedinstvenu ideologiju jednakosti usmjerenu na zajednicu.²² Izgleda da je ovaj ideal bio suprotstavljen karakterističnim razlikama u pogledu ekonomske i ritualne djelatnosti pojedinačnih domaćinstava.²³ U sedam pojedinačnih kuća nađenih unutar prostora 3 – najveće iskopine – opažene distribucije nalazišta ukazuju na različite obrasce djelatnosti u dugoročnoj perspektivi. Ove razlike vezane su za nivo produktivnosti u uzgoju žitarica, intenzitet lova, proizvodnju kamenog oruđa, proizvodnju tekstila, drvodjelstvo i ritualne djelatnosti (sl. 3). Drugdje smo ovakve razlike tumačili kao dokaze o određenom stepenu socijalne diferencijacije, koja je možda već bila nasljednog karaktera ako se uzme u obzir trajanje tih razlika kroz nekoliko generacija domaćinstava.²⁴

Kad bi razlike u distribuciji artefakata odgovarale dobro specifičnim razlikama između generacija, onda bismo mogli očekivati ravnomjernu distribuciju artefakata jer bi svako domaćinstvo u tom scenariju prošlo iste faze porasta i opadanja proizvodnih djelatnosti. Umjesto toga, pretpostavljamo da su postojala naročito aktivna 'alfa domaćinstva' čiji su članovi bili više uključeni u političke ili ritualne procese donošenja odluka u odnosu na članove drugih domaćinstava s nižim stepenom produktivnosti.

Nakon gore navedenog opadanja broja stanovnika jasno se opaža povećanje kvadrature nastambi. To se tumači kao povezano s razvojem proširenih porodičnih jedinica (sl. 2). Ovaj trend ka većim domaćinstvima nastavio se u drugim naseljima visokog bazena nakon što je napušteno Okolište.²⁵ U svojoj posljednjoj fazi, oko 4300. p.n.e., opažaju se ogromne nastambe za više porodica u obližnjem naselju Donje Moštre. Vjerovatno je nekoliko porodica povezanih rodbinskim vezama zajednički živjelo u ovim građevinama, u odvojenim ali povezanim prostorijama. Aglomerativna priroda i veličina ovih kuća analogna je građevinama iz centralnobalkanskih nalazišta u Vinči.

Na kraju kasnog neolita dolazi do dezintegracije komunalno orijentiranih sela koja se razdjeljuju na manje grupe, a paralelno se odvija snažnija integracija većeg broja ljudi u veća i ekonomski vjerovatno nezavisnija domaćinstva. Generalni trend povećavanja veličine domaćinstava, koji nije opažen samo u neolitu jugoistočne Evrope,²⁶ počinje u visokom bazenu u vrijeme kada je dezintegracija kasneolitskih aglomeracija stanovništva u dugotrajnim naseljima već počela.

Zbog ove vremenske podudarnosti možemo odbaciti još jedan scenarij, opažen u etnografiji, prema kojem proširenje domaćinstva odražava sociološki određenu strategiju izbjegavanja skalarnog stresa u procesima donošenja odluka drastično većih aglomeracija stanovništva.²⁷ Zapravo, povećanje veličine domaćinstava bolje se može objasniti kao

22 Müller-Scheeßel *et al.* 2010a.

23 Müller *et al.* 2011.

24 Müller *et al.* 2011; Arponen *et al.* 2015; Arponen, Müller, and Ohlrau 2016.

25 Hofmann 2015.

26 e.g. Lichter 1993; Tripković 2009; Müller 2012/13.

27 Johnson 1983.

22 Müller-Scheeßel *et al.* 2010a.

23 Müller *et al.* 2011.

24 Müller *et al.* 2011; Arponen *et al.* 2015; Arponen, Müller, i Ohlrau 2016.

25 Hofmann 2015.

26 npr. Lichter 1993; Tripković 2009; Müller 2012/13.

27 Johnson 1983.

economic requirements regarding the demand on labour forces, long-term risk management in terms of subsistence, and protection of utilization rights or property through inheritance.

INVESTIGATIONS REGARDING THE DEGREE OF POTTERY SPECIALIZATION IN OKOLIŠTE

THEORETICAL CONSIDERATIONS AND DATABASE

Since direct evidence for pottery production is missing at Okolište, in this paper four indirect approaches are applied to evaluate the degree of specialization in the production of pottery vessels. The theoretical basis of the investigation in the large part draws upon four criteria proposed by Cathy L. Costin (1991) for evaluating the degree of specialization. The four indirect approaches are summarized in the following paragraphs.

1. An analysis of the stylistic variability of the pottery through time with regard to innovativeness, diversity, function, and technological traits. In concert with most recent comprehensive treatments of the complex topic of styles, it is assumed that styles can have symbolic functions in intra-societal group communication when pottery production is focused at the household level.²⁸ As the communicative significance of styles depends on their public visibility, it is hypothesized that meaningful styles will especially appear in cases of the representative use of vessels in public rituals (e.g. for feasting, dining rituals or similar events). It is further argued that in cases where pottery styles had such communicative functions and production was at the household level, the diversity of decorations, decoration intensities and vessel morphology should increase with increasing social complexity. In such cases, increasing diversity and decoration intensities could reflect an increasing number of producer groups and/or competition between intra-societal groups. The societal level at which this competition occurs, whether that be the household or a larger group of persons, must be evaluated by intra-site spatial analysis. Contrastingly, it is expected that where production shifts to craft specialists, pottery could lose its symbolic function within social processes, with utilitarian aspects gaining greater importance. Correspondingly, the decoration intensity and diversity of vessel shapes and decoration types should decrease where this is the case.

2. Based on analyses regarding the spatial distribution of pottery styles in households, an attempt is made to determine the concentration of pottery production. A low concentration of stylistically different pottery is seen to be an indicator of household production, while the craft specialization and exchange accompanying more specialized production should produce a more uniform style.

3. The scale and intensity of pottery production is analysed through reconstructions of annual production rates. Under conditions of household production, the annual production rates are hypothesized to be low. With increased specialization, the intensity of production grows and, consequently, higher annual production rates should be observed. Reference values

odraz ekonomskih zahtjeva u smislu opterećenja radne snage, dugoročnog upravljanja rizicima vezanim za opstanak i zaštitom prava na korištenje ili nasljeđivanje imovine.

ISTRAŽIVANJA O STEPENU SPECIJALIZACIJE GRNČARSTVA U OKOLIŠTU

TEORETSKA RAZMATRANJA I BAZA PODATAKA

Budući da ne postoje direktni dokazi o grnčarskoj proizvodnji u Okolištu, u ovom radu primjenjuju se četiri indirektna pristupa za procjenu stepena specijalizacije u proizvodnji grnčarije. Teoretska osnova istraživanja velikim dijelom se oslanja na četiri kriterija koja je predložila Cathy L. Costin (1991.) za procjenu stepena specijalizacije. U produžetku teksta sažeto su opisana četiri indirektna pristupa.

1. Analiza stilske promjenjivosti grnčarije tokom vremena u smislu inovativnosti, raznolikosti, funkcije i tehnoloških osobina. U skladu s najskorijim sveobuhvatnim razmatranjima složene teme stilova, pretpostavlja se da stilovi mogu imati simbolične funkcije u komunikaciji unutar grupe kada je proizvodnja grnčarije fokusirana na nivou domaćinstva.²⁸ Pošto značaj stilova za komunikaciju zavisi od toga koliko su javno vidljivi, predlaže se hipoteza da se stilovi koji prenose značenja pojavljuju naročito u slučajevima reprezentativnog korištenja grnčarije u javnim ritualima (npr. za slavlja, ritualne večere ili slične događaje). Dalje se predlaže da u slučajevima gdje su grnčarski stilovi imali takve komunikativne funkcije i gdje je proizvodnja bila na nivou domaćinstva, raznolikost dekoracija, intenzitet dekoriranosti i morfologija posuda trebali bi se povećavati uporedo s povećanjem složenosti društva. U takvim slučajevima bi povećana raznolikost i intenzitet dekoriranosti mogli odražavati porast broja grupa proizvođača i/ili natjecanje među grupama unutar društva. Društveni nivo na kom se odvija ovo natjecanje, bilo to na nivou domaćinstva ili veće grupe pojedinaca, mora se procijeniti prostornom analizom unutar nalazišta. Za razliku od toga, tamo gdje proizvodnja prelazi u zanatsku specijalizaciju, simbolička funkcija grnčarije unutar društvenih procesa slabi, a utilitarni aspekti dobijaju na značaju. U skladu s tim, u takvim slučajevima opada intenzitet dekoracije i raznolikost oblika posuda i vrsta dekoracije.

2. Utvrđivanje koncentracije izrade grnčarije može se zasnivati na analizi prostorne distribucije stilova grnčarije u domaćinstvima. Niska koncentracija stilski različite grnčarije uzima se kao indikator proizvodnje u domaćinstvu dok se ujednačeniji stil očekuje kod zanatske specijalizacije i razmjene koja prati specijaliziranu proizvodnju.

3. Razmjer i intenzitet proizvodnje grnčarije analiziraju se putem rekonstrukcija godišnje stope proizvodnje. U uvjetima proizvodnje u domaćinstvu pretpostavljaju se niske godišnje stope proizvodnje. Što je veća specijalizacija, raste intenzitet proizvodnje, a s njim se očekuju i više godišnje stope proizvodnje. Referentne vrijednosti dostupne su

28 e.g. Hegmon 1992; Plog 1983, Parkinson 2006.

28 npr. Hegmon 1992; Plog 1983, Parkinson 2006.

are supplied from the ethno-archaeological and ethnographic record. Accordingly, a low production rate is set at <6,000 vessels/year/potter and a high rate of production at >14,000 vessels/year/potter.²⁹

4. Following the approach of Jasna Vuković (2011) and Ina Miloglav (2012; 2013) the degree of metrical standardization of selected vessel classes was analysed for the material from Okolište. The coefficient of variation (CV) is proposed³⁰ as a measure of the degree of metrical standardization. The basic premise for the interpretation of the data is that a rising degree of specialization is accompanied by standardization due to the contribution of fewer producers with more routine. Empirical data suggest that CV-values lower than 3% appear to be connected to large-scale production, while small-scale production leads to values larger than 6%. In cases of higher degrees of specialized production, a range between 2% and 5% is suggested; values of 57.7% point to completely non-standardized production.

Data used as the basis for this study encompasses two different samples.³¹ 1. In a so called bulk recording, the complete inventory of the excavations was recorded and classified with regard to sherd weight and count, affiliations to technological groups (wares), vessel classes and type groups, and decoration forms. This sample includes about 2.4 tons of pottery remains. In a so called individual recording, a sample of 2,700 vessel units was recorded according to technological characteristics, morphological characteristics, vessel type groups and vessel types, and decoration designs, motifs and elements. Both typical and extreme cases with a spatial distribution tailored to the research questions of the PhD project of the author (chronology, spatial intra-site analysis, correlations of technological and morphological traits) were sampled in this second, more detailed, dataset.

TEMPORAL STYLISTIC VARIABILITY OF THE POTTERY

The pottery from Okolište and its temporal development have already been described in detail elsewhere.³² Thus, here, only selected aspects that are important for the topic of this study are emphasized. The observation that the pottery of the formative phase of the settlement still bears the characteristics of the preceding Kakanj period is crucial. The stylistic changes to the Late Neolithic Butmir pottery style took place during a particularly innovative phase in the first 50–150 years of the settlement through the adoption of elements from different origins and a transformation of these elements into a style specific to the low mountain range of Central Bosnia. For example, tempering with limestone was borrowed from Dalmatia, and the production of highly dark-burnished pottery from the Central Balkan region. The posteriority of the stylistic changes to the foundation of the settlement indicates, in our view, that the changes in pottery styles are not primarily the result

u etno-arheološkoj i etnografskoj evidenciji. Prema njima, niska stopa proizvodnje utvrđuje se kao <6.000 posuda godišnje po grnčaru, a visoka stopa proizvodnje kao >14.000 posuda godišnje po grnčaru.²⁹

4. Vodeći se pristupom Jasne Vuković (2011.) i Ine Miloglav (2012; 2013.), u materijalu iz Okolišta analiziran je stepen metričke standardizacije izabranih vrsta posuda. Kao mjera stepena metričke standardizacije predlaže se koeficijent varijacije (CV).³⁰ Osnovna premisa za tumačenje podataka je da standardizacija prati veći stepen specijalizacije zbog doprinosa manjeg broja proizvođača koji rade više rutinski. Empirijski podaci ukazuju na to da vrijednosti koeficijenta varijacije ispod 3% odgovaraju proizvodnji velike razmjere dok je za proizvodnju male razmjere vrijednost koeficijenta preko 6%. Predlaže se raspon od 2% do 5% za visoki stepen specijalizirane proizvodnje; vrijednost od 57,7% ukazuje na potpuno nestandardiziranu proizvodnju.

Podaci korišteni kao osnova za ovu studiju obuhvataju dva različita uzorka:³¹ 1. U tzv. skupnoj evidenciji zabilježen je kompletan inventar iskopina koje su zatim klasificirane prema težini i broju krhotina, pripadnosti tehnološkim grupama (posuđu), vrstama posuda i tipskim grupama i oblicima dekoracije. Ovaj uzorak uključuje oko 2,4 tone ostataka grnčarije. U tzv. pojedinačnoj evidenciji zabilježen je uzorak od 2.700 jedinica posuda prema tehnološkim karakteristikama, morfološkim karakteristikama, tipskim grupama posuda i tipovima posuda, kao i prema dekorativnim mustrama, motivima i elementima. U ovom drugom, detaljnijem skupu podataka uzorkovani su i tipični i ekstremni primjerci čija je prostorna distribucija odgovarala istraživačkom pitanju doktorskog projekta autora (hronologija, prostorna analiza unutar lokaliteta, korelacije između tehnoloških i morfoloških osobina).

STILSKA VARIJABILNOST GRNČARIJE KROZ VRIJEME

Grnčarija iz Okolišta i njen razvoj kroz vrijeme već su drugdje detaljno opisani.³² Stoga su ovdje naglašeni samo izabrani aspekti od značaja za temu ove studije. Ključno je opažanje da grnčarija iz formativne vaze naselja još uvijek nosi karakteristike prethodnog kakanjskog perioda. Stilske promjene butmirske grnčarije kasnog neolita nastupile su tokom naročito inovativne faze u prvim 50–150 godina naselja pod uticajem usvajanja elemenata različitog porijekla i njihove transformacije u stil koji je karakterističan za niski planinski vijenac srednje Bosne. Na primjer, temperiranje krečnjakom posuđeno je iz Dalmacije, a proizvodnja izuzetno tamne i polirane grnčarije iz centralnobalkanske regije. Nastavak stilskih promjena nakon utemeljenja naselja po našem mišljenju ukazuje na to da promjene u grnčarskim stilovima

29 Roux 2003.

30 Coefficient of variation (CV) = standard deviation / mean x 100.

31 Hofmann 2013; Müller-Scheeßel and Hofmann 2013.

32 Hofmann 2012a; Hofmann 2013; Hofmann 2015.

29 Roux 2003.

30 Koeficijent varijacije (CV) = standardno odstupanje / srednja vrijednost x 100.

31 Hofmann 2013; Müller-Scheeßel i Hofmann 2013.

32 Hofmann 2012a; Hofmann 2013; Hofmann 2015.

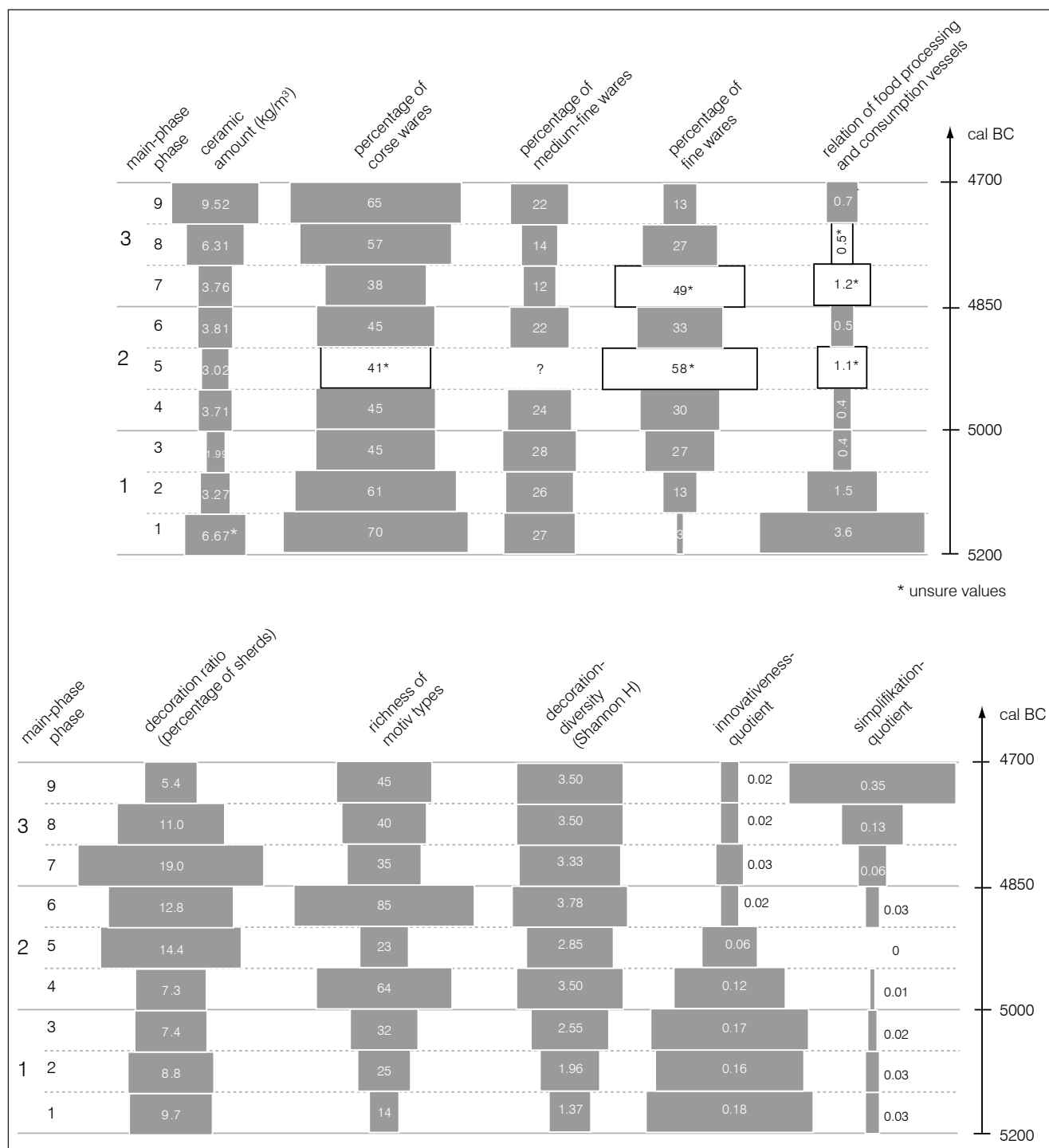


Fig. 4. Okolište. Chronological development of selected archaeological pottery proxies (after Hofmann 2012a, Fig. 15–16).

Sl. 4. Okolište. Hronološki razvoj odabranih arheoloških tipova keramika (poslije Hofmann 2012a, sl. 15–16).

of population mobility but rather of internal social innovation and social dynamics.

During the Central Bosnian Early and Middle Neolithic, fine pottery wares were decorated by different kinds of painting. Beginning in the Middle Neolithic, the production of dark burnished wares was attempted. In the earliest stages of Okolište, the dark colour was still limited to the ceramic surfaces and was achieved only during the final phase of

nisu primarno posljedica mobilnosti stanovništva već inovacija unutar društva i društvene dinamike.

Tokom ranog i srednjeg neolita u srednjoj Bosni fino posuđe od grnčarije ukrašavano je različitim oslikavanjima. Počevši od srednjeg neolita bilježe se pokušaji izrade tamnog poliranog posuđa. U najranijim fazama Okolišta tamna boja bila je još uvijek ograničena na keramičke površine

i postizana je samo tokom konačne faze pečenja. Grube i srednje fine posude često imaju neujednačenu i prošaranu koloraciju. Površine kasnijeg posuda su mnogo ravnomjernije obojene, pošto su proizvođači grnčarije očito savladali potpunu redukciju matriksa gline. Stoga se uz druge stilske promjene jasno uočava unapređenje tehnike pečenja.

Kasnoneolitska grnčarija iz Okolišta sadrži jasno razgraničene kategorije posuda koje karakteriziraju manje ili više jednoobrazne *chaîne opératoires* i tehnološke osobine. Veće posude izrađene su od uskih traka gline, a fine keramičke zdjele i zdjele s postoljem oblikovane su od jednog komada vrlo fine i očito pročišćene gline. Stoga se uočava izvjestan stepen standardizacije u smislu recepata i tehnologije proizvodnje grnčarije.

Na osnovu morfologije posuda, tehnoloških karakteristika (smjesa) i sekundarnih promjena nastalih usljed upotrebe moguće je jasno razvrstati različite kategorije posuda prema funkciji i pratiti njihovu učestalost kroz različite faze naselja.³³ Jasno se uočava porast procenta finog posuda i reprezentativnih fino izrađenih posuda za kratkoročno čuvanje hrane i za objede (zdjele, zdjele s postoljem). Isto se može reći za napor uloženi u izradu posuda, učestalost dekoracije i za raznolikost oblika posuda i dekoracija (sl. 4). Ova opažanja su drugdje protumačena kao dokazi o funkciji posuda za predstavljanje šireg konteksta takmičarskih odnosa među domaćinstvima.³⁴ Ako je ovo tumačenje tačno, opaženi obrasci ukazuju na blizak odnos između proizvođača i korisnika posuda u smislu proizvodnje u domaćinstvu. Međutim, nije moguće na osnovu ovih općih opažanja utvrditi društveni nivo na kom je proizvodnja grnčarije bila smještena. Za kontekstualizaciju proizvodnje grnčarije neophodne su prostorne analize unutar lokaliteta.

PROSTORNA DISTRIBUCIJA STILOVA GRNČARIJE U DOMAĆINSTVIMA

Pitanje distribucije grnčarskih stilova po domaćinstvima unutar naselja još nije dovoljno analizirano, iako bi moglo ponuditi važne naznake o stepenu zanatske specijalizacije. Naša strategija iskopavanja na lokalitetu Okolište zasnivala se na pretpostavci da su kuće vidljive na geomagnetnom istraživanju uništene u jedinstvenom događaju kad je izgorjelo naselje i da se stoga može smatrati da su postojale istodobno (sl. 1). Izvorni koncept naše strategije iskopavanja bio je da se uporedi arhitektura i otkriju inventari izabranih kuća iz različitih dijelova naselja u smislu opstanka, ekonomije i društvenog ustrojstva.³⁵ Međutim, za vrijeme iskopavanja i analize utvrđeno je da građevine vidljive u geomagnetnom planu pripadaju različitim fazama naselja.³⁶ S obzirom na ove hronološke razlike, samo je sedam kućnih čestica bilo pogodno za poređenje istodobnih domaćinstava. Smještene

the firing. Coarse and moderately fine vessels frequently show uneven and blotched surface colouration. Later, the surfaces are much more evenly coloured, with the pottery producers evidently having mastered the complete reduction of the clay matrix. Hence, accompanied by other stylistic changes, clear improvement in the firing technique is observed.

The Late Neolithic pottery from Okolište shows distinct vessel categories that are characterized by more-or-less uniform *chaîne opératoires* and technological traits. Larger vessels were built up from narrow clay strips, while fine ceramic bowls and footed bowls were shaped from a single piece of very fine, obviously purified, clay. Accordingly, a certain degree of standardization in terms of recipes and production technology of pottery can be noticed.

Based on vessel morphology, technological characteristics (pastes), and secondary alteration caused by usage, definitive vessel functions can be assigned to different vessel categories, and their frequency can be traced through the different settlement phases.³³ There is a clear increase in the percentage of fine wares and representative vessels made out of fine ware for short-term storage and consumption (bowls, footed bowls). The same applies to the effort expended for the manufacturing of vessels, to the frequency of decorations, and to the diversity of vessel form and decorations (Fig. 4). The mentioned observations have been interpreted elsewhere as evidence for the function of vessels as a means of representation in the wider context of competitive relationships between households.³⁴ If this interpretation is correct, the observed patterns would indicate a close relationship between producers and users of the vessels in the sense of household production. However, based on these general observations, it is not possible to determine the societal level at which pottery production found its place. In order to contextualize pottery production, spatial intra-site analyses are necessary.

SPATIAL DISTRIBUTION OF POTTERY STYLES IN HOUSEHOLDS

The question of how pottery styles are distributed across households within the settlement has not yet been sufficiently analysed, although it promises important clues to the degree of artisan specialization. Our excavation strategy in Okolište was based on the premise that houses that are visible in the plan of the geomagnetic survey were destroyed in a single instance of burning of the settlement and that they can therefore be considered as contemporaneous (Fig. 1). The original idea behind our excavation strategy was to compare architecture and uncover inventories of selected houses from different parts of the settlement with regard to subsistence, economy and social structure.³⁵ However, during excavations and analysis, it transpired that the house structures visible in the geomagnetic plan belong to different phases of the settlement.³⁶ In view of this chronological variability, only seven house plots were

33 Hofmann 2013, 326–333.

34 npr. Hofmann 2012a; Hofmann 2015.

35 Müller, et al. 2013.

36 Hofmann 2013.

33 Hofmann 2013, 326–333.

34 e.g. Hofmann 2012a; Hofmann 2015.

35 Müller, et al. 2013.

36 Hofmann 2013.

available for a comparison of contemporary households. They are situated in the largest excavation area – 3 – and belong to three parallel lines of houses (Fig. 3a).

In most of the house plots in excavation area 3, the remains of two or three houses lay superimposed on one another. This means they must have been built consecutively at the same place (Fig. 3b). Analyses of the stratigraphy, the different states of preservation of the architectural remains and find distributions indicate that the youngest houses were not abandoned simultaneously, but rather in a process with some duration.³⁷ First, the house plots G, E and F were abandoned; in these places exclusively unburnt house remains that contained almost no finds were observed. The abandonment of the three central house plots probably took place in the order C–B–A. After its abandonment, house plot C was intensively used as a waste disposal area and as a site for the production of flint tools. Correspondingly, the area contained a large amount of finds. The fact that burnt architectural remains were only available in a small part of this house plot is interpreted as evidence that the house had already partly fallen into ruin at the time of the house burning.

The younger building in house plot B yielded evidence of considerably more extensive burnt remains. Here, in contrast to house plot C, only a small amount of material was found and no imported waste was deposited. House plot A stands out as the single case with three building layers lying directly on top of each other. The youngest building layer (house 1) was formed by a partly massive daub package in which numerous reconstructable pottery vessels were embedded. Most likely in this case we are dealing with a Pompeii-like situation, where both a building and a considerable part of its inventory were burnt simultaneously.

The open space in the surrounding of the houses was intensively used for waste disposal and various outside-house activities.³⁸ Comparisons regarding find densities on the spatial scale of the different excavation areas in the central settlement areas on the one hand and the peripheral ditch areas on the other indicate that a major part of the waste was disposed in the direct vicinity of the houses.³⁹

By analysing find distributions and performing taphonomical reconstructions, it could be shown that the reconstructed sequence of abandonment and secondary use of abandoned house plots resulted in different house inventories that are extremely difficult to compare. Among other things, this is reflected in different pottery densities and compositions. From the total quantity (weight) of pottery that was found in Okolište, a maximum of 15% was found in primary contexts, while 57% was deposited in secondary and 28% in tertiary find contexts.⁴⁰

In order to solve this problem and to make the assemblages of the different house plots comparable, it appeared reasonable for us to include the finds from the surroundings of the houses within the analysis, and to assign them to the house

su u najvećoj zoni iskopavanja – 3 – i pripadaju trima paralelnim redovima kuća (sl. 3a).

Kod većine kućnih čestica u zoni iskopavanja 3 ostaci dvije ili tri kuće naslagani su jedni na druge. To znači da su najvjerojatnije izgrađene uzastopno na istom mjestu (sl. 3b). Analize stratigrafije, razlike u stepenu očuvanja arhitektonskih ostataka i distribucije nalazišta ukazuju na to da najmlađe kuće nisu napuštene istovremeno, već tokom procesa koji je imao izvjesno trajanje.³⁷ Prvo su napuštene čestice G, E i F; na tim lokalitetima uočeni su samo neizgoreni ostaci kuća u kojima gotovo ništa drugo nije nađeno. Napuštanje tri centralne čestice vjerovatno se odvijalo redoslijedom C–B–A. Nakon napuštanja čestice C, ona je intenzivno korištena za odlaganje otpada i izradu kremenog oruđa. U skladu s tim, ovo područje se ispostavilo kao bogato nalazište. Činjenica da su spaljeni arhitektonski ostaci nađeni u samo jednom malom dijelu čestice tumači se kao dokaz da je kuća već bila oronula u vrijeme spaljivanja.

Mlađa građevina na čestici B ponudila je dokaze u vidu značajno više spaljenih ostataka. Ovdje, za razliku od čestice C, nađeno je samo malo materijala i nije odlagan otpad. Čestica A ističe se kao jedini slučaj gdje su tri građevine naslagane direktno jedna na drugu. Najmlađi izgrađeni sloj (kuća 1) formira djelomično masivno napakovana žbuka u koju su ugrađeni brojni grnčarski sudovi koje je moguće rekonstruirati. U ovom slučaju najvjerojatnije se radi o situaciji sličnoj Pompejima gdje su i građevina i veliki dio njenog inventara istovremeno spaljeni.

Otvoreni prostor u okolini kuća intenzivno je korišten za odlaganje otpada i razne izvan kućne aktivnosti.³⁸ Poređenja o prostornoj gustoći nalazišta u različitim zonama iskopavanja u centralnom naselju, s jedne strane, i u perifernim područjima, s druge, ukazuju da je veliki dio otpada odlagan u neposrednoj blizini kuća.³⁹

Analizom distribucija nalazišta i tafonomskim rekonstrukcijama može se pokazati da je rekonstruirani redoslijed napuštanja i sekundarnog korištenja napuštenih čestica imao za posljedicu različite inventare kuća koje je izuzetno teško porediti. Ovo se, između ostalog, odrazilo i na različite gustoće i sastave grnčarije. Od ukupne količine (težine) grnčarije nađene na lokalitetu Okolište, najviše 15% je nađeno u primarnim kontekstima, dok je 57% odloženo u sekundarnim, a 28% u tercijarnim kontekstima nalazišta.⁴⁰

Kako bismo riješili ovaj problem i zbirke iz različitih čestica učinili uporedivim, logično je bilo uključiti ono što je nađeno u okolini kuća u analizu i to tako da se ti predmeti pripoje česticama prema lokacijama gdje su nađeni.⁴¹ U osnovi ovog pristupa je pretpostavka da je otpad odlagan u blizini kuća i da stoga većina materijala koji su tu nađeni potiče iz

37 Hofmann *et al.* 2006; Hofmann *et al.* 2008/2009.

38 cf. Hofmann *et al.* 2006, 131–143.

39 Müller-Scheeßel *et al.* 2010; Müller-Scheeßel 2013; Hofmann 2013.

40 Hofmann 2013, 229–262.

37 Hofmann *et al.* 2006; Hofmann *et al.* 2008/2009.

38 cf. Hofmann *et al.* 2006, 131–143.

39 Müller-Scheeßel *et al.* 2010; Müller-Scheeßel 2013; Hofmann 2013.

40 Hofmann 2013, 229–262.

41 cf. Müller *et al.* 2011.

plots according to their find location.⁴¹ The premise of this approach is a waste disposal behaviour that resulted in the majority of the finds remaining in the vicinity of the houses in which they were used. Our analyses of find distributions suggest that this may well be the case.

Since the open areas are not further divided stratigraphically, however, no correspondingly satisfactory temporal resolution is given as in the case of the house plots themselves. Rather, the analysed find inventories represent collections that accumulated, according to our chronological models, over the course of two or three successive house generations, i.e. over a period of 60–90 years. Thus, in the following analysis, not inventories of houses but rather of house plots are compared. Since only a portion of the pottery artefacts have been recorded with xyz coordinates, the majority of the finds can only be spatially attributed by means of the 1x1 m measuring grid (Figure 3c).

In total, within and in the vicinity of the house plots A–G (layer formation 3/2), about 320 kg pottery remains were found. Analyses regarding the distribution of this pottery and the percentage of wares within the individual houses and house plots indicate that the differences that resulted from depositional processes tended to be balanced by the allocation of the finds from the open areas to the house plots.

Identifying exactly what classifies as a 'meaningful stylistic difference' is also important. As suggested by fundamental contributions regarding the operating modes of styles as mediums of communication, not all kinds of artefacts are equally charged with 'meaning' or 'stylistic attention'. Rather, meaning becomes important predominantly in objects with symbolic and social value, particularly when such value is expressed visually.⁴² If we transfer these ideas to the ceramics of Okolište, the criteria apply to representative short-term storage and consumption vessels made of medium-fine and fine wares that were potentially used in feasting or dining rituals. While technological differences might have played a secondary role in communication processes, they fail to fulfil the criterion of public visibility. Therefore, the analyses summarized below focus mainly on vessel shapes and vessel decorations (Tbl. 2).

Elsewhere, pottery decorations from Okolište have been classified according to a hierarchic system with four levels:⁴³ The lowest classification levels are (1a) decoration elements, which describe the smallest components of a decoration such as a line, a stamp or an application made with a certain (1b) decoration technique. One or more decoration elements constitute (2) so-called decoration motifs. These describe, for example, the form of plastic decoration, the shape and manner of execution of a band-motif, or a geometric motif. The next highest level of decoration classification (3) describes so-called decoration patterns; specific designs that can consist of one or several decoration motifs. The highest level of classification concerns the decoration systems that describe the combinations of designs on a vessel. However, due to the high degree of fragmentation, it was often not possible to reconstruct levels 3 and 4 of the hierarchical system.

kuća u kojima su ti materijali korišteni. Naše analize distribucije nađenog materijala ukazuju da je upravo to i bio slučaj.

Pošto otvorene površine nisu dalje stratigrafski podijeljene, nije moguće na zadovoljavajući način ponuditi odgovarajući vremenski slijed kao što je to moguće kod zemljišnih čestica samih kuća. Umjesto toga, analizirani inventari nađenog materijala predstavljaju kolekcije koje su se, prema našim hronološkim modelima, formirale kroz tri uzastopne generacije domaćinstava, tj. u periodu od 60–90 godina. Stoga se u analizi koja slijedi ne porede inventari kuća već kućnih čestica. Pošto je samo dio primjeraka grnčarije evidentiran s xyz koordinatama, većinu nađenog materijala moguće je prostorno smjestiti samo uz pomoć mjerne mreže 1 x 1 m (sl. 3c).

Ukupno je unutar i u blizini kućnih čestica A–G (formacija sloja 3/2) nađeno 320 kg grnčarije. Analize distribucije nađene grnčarije i procenta robe unutar pojedinačnih kuća i kućnih čestica ukazuju na to da razlike uzrokovane procesima taloženja obično nestaju kad se uzme u obzir raspored nađenog materijala sa otvorenih površina oko kućnih čestica.

Također je važno precizno utvrditi šta se klasificira kao 'značajna stilaska razlika'. Kako se sugerira u temeljnim radovima o načinima funkcioniranja stilova kao sredstava komunikacije, nisu sve vrste artefakata jednako ispunjene 'značenjem' niti se kod svih pridaje jednaka 'pažnja stilu'. Zapravo, značenje postaje bitno prevashodno kod predmeta od simboličke i društvene vrijednosti, naročito kad je ta vrijednost vizuelno izražena.⁴² Ako ove ideje prenesemo na keramiku iz Okolišta, kriteriji se primjenjuju na reprezentativne posude za kratkoročno čuvanje i konzumaciju i na fino posuđe koje se moguće koristilo prilikom proslava ili ritualnih objeda. Iako su tehnološke razlike eventualno imale sekundarnu ulogu u komunikacijskim procesima, ipak ne ispunjavaju kriterij javne vidljivosti. Stoga se analize koje su ukratko predstavljene u produžetku teksta fokusiraju uglavnom na oblike posuda i njihove dekoracije (tab. 2).

Drugdje su dekoracije grnčarije iz Okolišta klasificirane prema hijerarhijskom sistemu s četiri nivoa:⁴³ Najniži nivoi klasifikacije su (1a) dekorativni elementi koji se odnose na najmanje sastavne dijelove dekoracije kao što su linija, otisak ili aplikacija napravljena određenom (1b) dekorativnom tehnikom. Dekorativni elementi pojedinačno ili grupno čine (2) tzv. dekorativne motive. Oni obuhvataju, na primjer, formu plastične dekoracije, oblik i način izrade trakastog ili geometrijskog motiva. Sljedeći nivo klasifikacije dekoracije (3) obuhvata tzv. dekorativne obrasce; specifične dezene koji se mogu sastojati od jednog ili više dekorativnih motiva. Najviši nivo klasifikacije tiče se dekorativnih sistema koji obuhvataju kombinacije dezena na posudi. Međutim, usljed visokog stepena fragmentiranosti, često nije moguće rekonstruirati nivo 3 i 4 hijerarhijskog sistema.

41 cf. Müller *et al.* 2011.

42 e.g. Wiessner 1985.

43 Hofmann 2013; 172, Fig. 82, 202–220.

42 npr. Wiessner 1985.

43 Hofmann 2013; 172, Fig. 82, 202–220.

Tbl 2. Summary of analysis regarding the spatial distribution of pottery styles in house plots in excavation area 3 of Okolište (only layer formation Oko 3/2). Explanation of abbreviations in the column 'type of analysis': UVS = univariate statistic; CA = correspondence analysis. *As result of the heavy fragmentation of the material, the number of vessel units is probably not identical to the number of vessels. Data is available as supplementary material.

Tab. 2. Sažetak analize prostornog rasporeda keramičkih stilova na kućnim česticama iskapanog područja 3 u Okolištu (samo sloj Oko 3/2) Objašnjenje skraćenica u stupcu „vrsta analize“: UVS – univarijantna statistika; CA – analiza korespondencije. Zbog velike fragmentiranosti materijala, broj jedinica posuda vjerovatno nije identičan broju posuda. Tabele s podacima su dostupne kao dodatni materijal.

Object of investigation/ Predmet istraživanja	Kind of analysis/ Vrsta analize	Sample / source criticism/ Uzorak / Izvor kritike	Description of results/ Opis rezultata	Interpretation/ Interpretacija
Pottery density/ Gustoća keramike	UVS/ UVS	- Bulk recording 320 kg (layer formation Oko 3/2)/ - Grupno snimanje 320 kg (sloj Oko 3/2)	Equal distribution between 0.7 and 0.9 kg/m² (outlier house place E=0.4 kg/m²)/ Jednaka raspodjela između 0,7 i 0,9 kg/m² (mjesto van kuće E=0,4 kg/m²)	Imbalances are equalized which result from depositional processes/ Neravnoteže koje nastaju procesima taloženja su izjednačene
Percentage of wares/ Procenat posuda	UVS/ UVS	- Bulk recording 320 kg (layer formation Oko 3/2)/ - Grupno snimanje 320 kg (sloj Oko 3/2)	Equal ware distribution in house places/ Jednaka distribucija posuda u kućama	Imbalances are equalized which result from depositional processes/ Neravnoteže koje nastaju procesima taloženja su izjednačene
Associations of decoration patterns/ Poveznice ukrasnih uzoraka (Musterguppen)	CA/ CA	- Unequal distributed - Individual recording - Max. 614 vessel units with 654 decoration patterns*/ - Nejednako raspoređeni - Pojedinačno snimanje - Maks. 614 jedinica posuda sa 654 ukrasnih uzoraka	- Frequent decoration pattern are found in almost all house places. - Decoration pattern with Adriatic (Hvar) and Central Balkan references (Vinča) are found in almost all house places. 1st factor of the CA: tendency to a differentiation between the house places A–C–B–F+E–D+G. House place A is stronger associated with fillets, ribbon pattern and rows of plastic elements while other house places are more associated with spirals and groups of plastic elements./ - Ukrasni uzorci se često nalaze u svim kućama. - Dekoratívni uzorci sa jadranskim (Hvar) i centralnobalkanskim (Vinča) poveznicama su pronađeni u skoro svim kućama. 1. čimbenik CA: sklonost diferencijacija između kuća A–C–B–F+E–D+G. Kuća A je jače povezana s filetima, uzorkom vrpce i redovima plastičnih elemenata dok su druge kuće povezane sa spiralama i grupama plastičnih elemenata	- Results are probably influenced by sampling (e.g. higher number of coarse pottery recorded in house place A; unequal distribution of recorded units in house places). - No clear stylistic borders detectable at the classification level of decoration patterns. - Decoration patterns with foreign references crossing borders between households./ - Rezultati su vjerojatno pod utjecajem uzorkovanja (npr. veći broj grube keramike zabilježen je u kući A; nejednaka raspodjela snimljenih jedinica u kući) - Na razini klasifikacije ukrasnih uzoraka nema jasnih stilskih granica. - Dekoratívni uzorci sa stranim referencama prelaze granice između kućanstava.
Association of decoration motifs (Motivgruppen)/ Poveznica dekorativnih motiva (Motivgruppen)	CA/ CA	- Unequal distributed - Individual recording - Max. 597 vessel units with 693 decoration motifs*/ - Nejednako raspoređeni - Pojedinačno snimanje - Maks. 597 posuda sa 693 dekorativna motiva	- Frequent decoration motifs are found in almost all house places. - Decoration motifs with Adriatic (Hvar) and Central Balkan references (Vinča) are found in almost all house places. 1st factor: shows similar tendencies of differentiation between house places as shown above for decoration patterns. 2nd factor: tendency for differentiation/ - Česti dekorativni motivi se nalaze u skoro svim kućanstvima; - Dekoratívni uzorci sa jadranskim (Hvar) i centralnobalkanskim (Vinča) poveznicama su pronađeni u skoro svim kućama. - Prvi faktor: pokazuje slične tendencije diferencijacije između kućanstava kao što je gore prikazano za ukrasne uzorke -Drugi faktor: tendencija za diferencijaciju	Cf. decoration patterns/ Isto kao i za ukrasne uzorke
Association of vessel types/ Poveznica tipova posuda	CA/ CA	- Unevenly distributed - Individual recording 76 vessel units classified at type level/ - Nejednako raspoređeni - Pojedinačno snimanje 76 posuda klasificirano tipološki	1st factor: differentiation between house places A and C./ - Prvi faktor: diferencijacija između kuća A i C	- Due to the small sample size it is hard to evaluate if given differences between the house places reflect stylistic differences/ - Zbog malog broja uzoraka teško je procijeniti da li razlike između kuća pokazuju stilističke diferencijacije

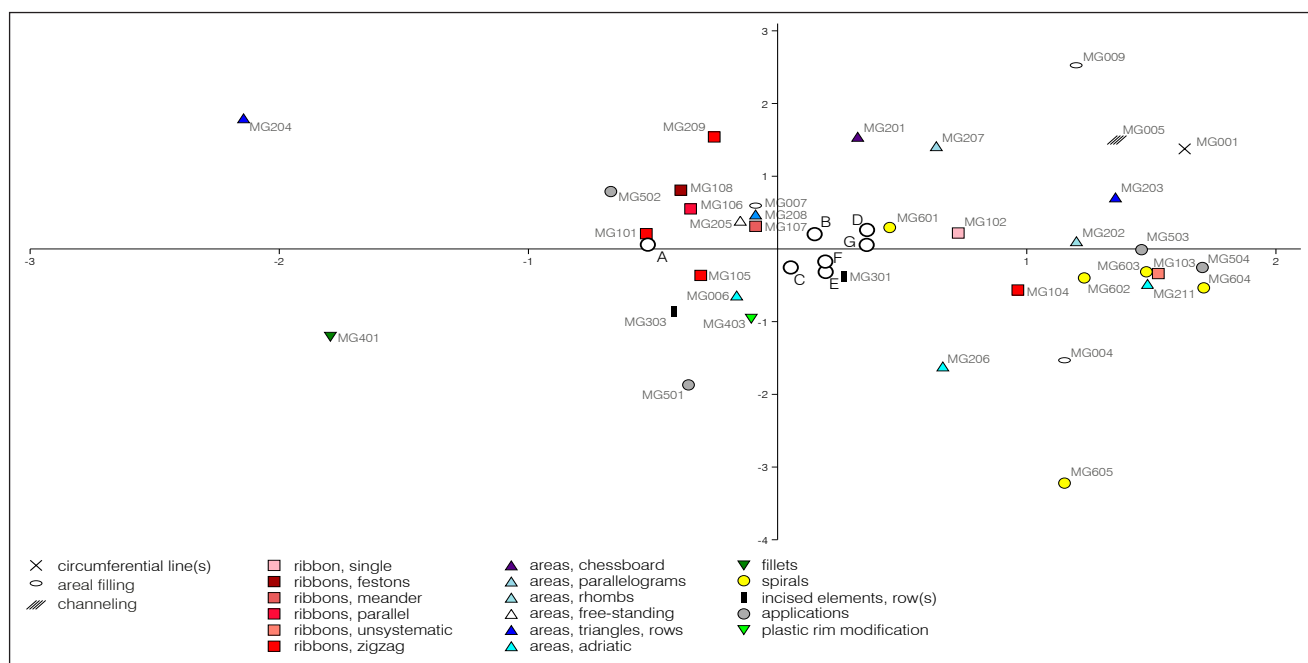


Fig. 5. Okolište. Excavation area 3: Correspondence analysis of decoration patterns in house plots. The decoration patterns are described in Hofmann 2013, 213–215. The data table is available as supplementary material. Displayed are the first and second axes, which explain 36% and 19% of total variation.

Sl. 5. Okolište. Istraženo područje 3. Analiza korespondencije ukrasnih motiva na kućnim česticama. Dekorativni motivi su opisani u Hofmann 2013, 213–215. Tabela sa podacima je dostupna kao dodatni materijal. Prikazane su prva i druga os, koje objašnjavaju 36% i 19% ukupne varijacije.

Within excavation area 3 of Okolište, no clear differences between the house plots can be noticed at the level of decoration patterns or decoration motifs. What is noticed, however, is a difference in frequency of ornaments. Indeed, there is a certain differentiation of house plots visible on the first factors of a correspondence analysis (Fig. 5). Accordingly, house plot A is more strongly associated with fillets, ribbon pattern and rows of plastic applications, while other house plots are more associated with spirals and groups of plastic elements. Since, however, these results primarily mirror differences in the frequency of decorations, they are probably decisively influenced by imbalances in sample size and therefore cannot be used as clear indicators of stylistic differences between households.

In the sites of the Visoko Basin, sixteen vessel classes were distinguishable according to morphological and technological characteristics. These classes are further divided into 78 types and, in the cases of bowls (class S) and pots (class T), additionally into several type groups.⁴⁴ Due to the heavy fragmentation, only a small sample of 76 ceramic units is available from excavation area 3 for the contextual analysis. Due to the sampling and depositional conditions, these are quite unevenly distributed between the house plots. The most important vessel classes and type groups are present in both of the better-represented house plots; A and C. However, there are clear differences between these house plots at the vessel type classification level within these major vessel classes. These differences are responsible for the differentiation between the house plots A and C along the first axis of a correspondence analysis; other house plots are grouped in-between them (Fig. 6).

Unutar iskopa 3 u Okolištu nije bilo moguće utvrditi jasne razlike između kućnih čestica na nivou dekorativnih obrazaca i dekorativnih motiva. Međutim, primijećena je razlika u učestalosti ornamenata. Uistinu, kućne čestice se na izvjesne načine razlikuju prema prvim faktorima analize podudarnosti (sl. 5). Prema tome, kućna čestica A snažnije je vezana za filete, mustru vrpce i redove plastičnih aplikacija, dok su druge kućne čestice više vezane za spirale i grupe plastičnih elemenata. Međutim, pošto ovi rezultati prvenstveno odražavaju razlike u učestalosti dekoracija, vjerovatno su u odlučujućoj mjeri uvjetovani razlikama u veličini uzorka i stoga se ne mogu koristiti kao jasni indikatori stilskih razlika među domaćinstvima.

Na lokalitetima u visočkom bazenu posuđe je svrstano u šesnaest kategorija prema morfološkim i tehnološkim karakteristikama. Te kategorije su dalje podijeljene na 78 tipova, a u slučaju zdjela (kategorija S) i lonaca (kategorija T) i na još nekoliko grupa tipova.⁴⁴ Zbog izražene fragmentiranosti samo je mali uzorak od 76 keramičkih jedinica dostupan iz iskopa 3 za kontekstualnu analizu. Uslijed uzorkovanja i uvjeta taloženja ovi primjerci su dosta neravnomjerno distribuirani između kućnih čestica. Najvažnije kategorije posuda i tipske grupe prisutne su i na obje bolje zastupljene kućne čestice, A i C. Međutim, postoje jasne razlike između ovih kućnih čestica na nivou klasifikacije tipova posuda unutar glavnih kategorija posuđa. Ove razlike su razlog za diferencijaciju između kućnih čestica A i C na prvoj osi analize

44 Hofmann 2013, 171–195.

44 Hofmann 2013, 171–195.

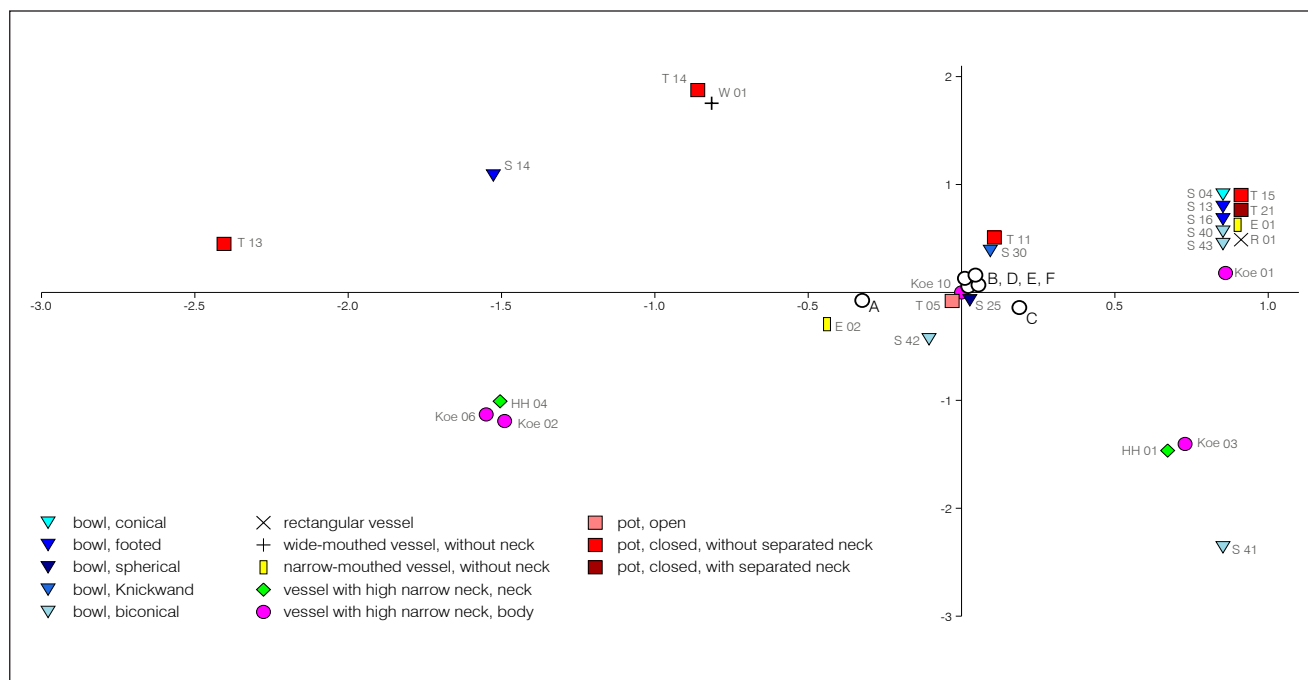


Fig. 6. Okolište. Excavation area 3: Correspondence analysis of vessel types in house plots. The vessel types are described in Hofmann 2013, 171–195. The data table is available as supplementary material. Displayed are the first and second axes, which explain 37% and 33% of total variation.

Sl. 6. Okolište. Istraženo područje 3: Analiza korespondencije tipova posuda na kućnim česticama. Tipovi posuda su opisani u Hofmann 2013, 171–195. Tabela sa podacima je dostupna kao dodatni materijal. Prikazane su prva i druga os, koje objašnjavaju 37% i 33% ukupne varijacije.

podudarnosti; druge kućne čestice grupirane su između njih (sl. 6).

U skladu s tim, a za razliku od dekoracija, određene razlike između kućnih čestica uočljive su na nivou tipova posuda. Ipak, ova diferencijacija nije nedvosmislena i to iz dva razloga: Prvo, dostupni uzorak je prilično ograničen i neravnomjerno raspoređen. Drugo, na kućnoj čestici C, koja predstavlja jednu krajnost ove diferencijacije, nađen je visok postotak uvezenog otpada nepoznatog porijekla. Stoga se slici koja se stiče na osnovu distribucija grnčarske dekoracije daje veća težina jer je zasnovana na značajno većem uzorku.

Veći stepen uvjerljivosti ove slike može se ilustrirati između ostalog i na osnovu prostorne distribucije keramičkih dekoracija sa stranim geografskim referencama. Unutar grnčarske skupine iz Okolišta naročito se ističu dekoracije u stilu istočnojadranske hvarske skupine i žljebovi koji su potencijalno nadahnuti kontaktima s društvima centralnobalkanske vinčanske ili sopotske kulture (sl. 7). Ravnomjerna distribucija ovih stilova na istraživanim kućnim česticama ukazuje na to da se njihova proizvodnja odvijala na višim prostornim razmjerima kako je zabilježeno u ispitivanom dijelu naselja (sl. 8). Stoga nije za očekivati da će keramička proizvodnja u Okolištu biti očita na prostorno-društvenom nivou pojedinačnih kuća. Umjesto toga, vjerovatniji su drugi scenariji s visokim stepenom specijaliziranog zanatstva. Međutim, ti scenariji nisu identificirani u ispitivanom iskopu (vidi raspravu u produžetku teksta).

Accordingly, in contrast to decorations, certain differences between house plots can be observed at the vessel type level. This differentiation is, however, not unambiguous, for two reasons: First, the available sample is rather small and unevenly distributed. Second, in house plot C, which represents one major pole of this differentiation, a high percentage of imported waste of unknown origin was found. Therefore, the picture provided by the distributions of pottery decoration is given more weight, as it is based on a considerably larger sample.

The greater plausibility of this image can be illustrated on the basis of, among other things, the spatial distribution of ceramic decorations with foreign geographical references. Within the ceramic assemblage from Okolište, decorations in the style of the Eastern Adriatic Hvar group and flutings – potentially inspired by contacts with societies in the central Balkan Vinča or Sopot culture – are particularly identifiable (Fig. 7). The uniform distribution of these styles in the investigated house plots indicates that their production took place at a higher spatial scale, as recorded in the examined settlement section (Fig. 8). Accordingly, we may not expect the ceramic production in Okolište to be evident on the spatio-social level of individual houses. Rather, other scenarios with higher degrees of specialized craftsmanship are more likely. These scenarios, however, cannot be identified in the examined excavation area (see discussion below).

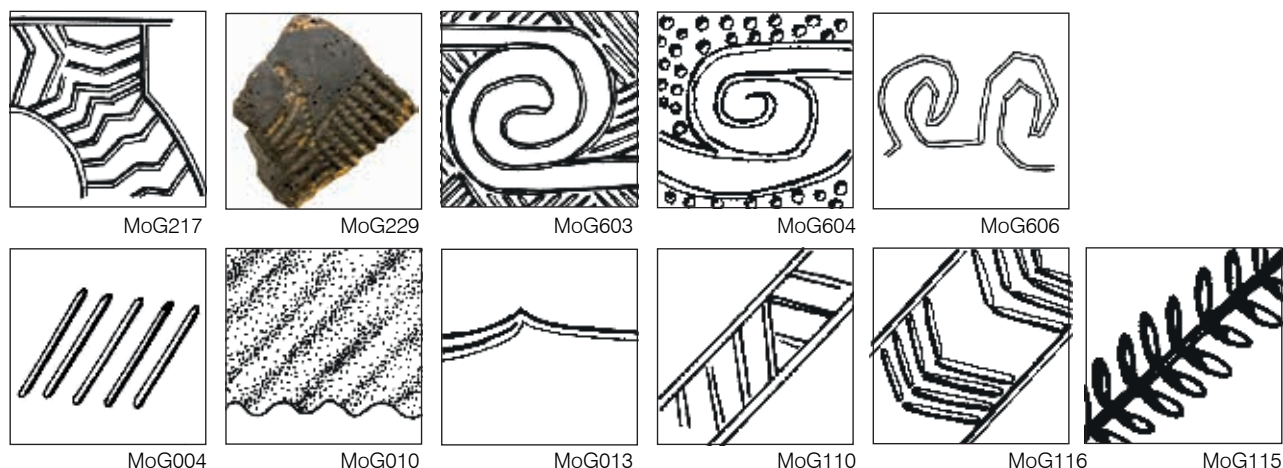


Fig. 7. Okolište. Decoration motifs for which an external link to the Adriatic region is assumed on the one hand, and the Central Balkans on the other (after Hofmann 2013, 202–220).

Sl. 7. Okolište. Dekorativni motivi za koje se s jedne strane pretpostavlja vanjska veza s jadranskim prostorom a s druge strane sa centralnim Balkanom. (poslije Hofmann 2013, 202–220).

ESTIMATING ANNUAL POTTERY PRODUCTION RATES

DETERMINING CERAMIC DENSITIES

In line with ethnographic analogies, a low rate of pottery production is considered evidence for household production, while high production rates are regarded as one indicator for more specialized forms of production. Since corresponding investigations are still rare in the region of focus, comparisons with other sites are still difficult. Much more research in the same direction is necessary to facilitate an evaluation of the overall variability and diachronic development of production rates. Thus, conclusions drawn from the Okolište material must be regarded as merely preliminary.

The approach presented here to estimate the scale of pottery production aims at the extrapolation of the excavated amount/densities of pottery to the entire volume of the settlement mound and the differentiation of these amounts in accordance with the changing settlement size and number of contemporaneous houses. These parameters have been reconstructed elsewhere based on the plan of the geomagnetic survey, excavation results, drill-cores and GIS analysis.⁴⁵ A further requirement is detailed knowledge of the date(s) at which the find assemblages accumulated. Sufficient temporal resolution is given due to the chronological model of the site that was developed based on stratigraphy, modelling of 14C dates, geomagnetic results and analyses regarding associations of decorative motifs.⁴⁶

The calculations could, however, be biased due to several factors. Primarily, these concern the unknown amount of pottery that could be disposed outside of the settlement or lost due to post-depositional processes such as weathering. Since a detailed analysis of the waste disposal behaviour at Okolište

PROCJENA GODIŠNJIH STOPA PROIZVODNJE GRNČARIJE

ODREĐIVANJE GUSTINA KERAMIKE

U skladu s etnografskim analogijama, niska stopa proizvodnje grnčarije smatra se dokazom proizvodnje u domaćinstvu, dok se visoke stope proizvodnje uzimaju kao jedan od indikatora za više specijalizirane oblike proizvodnje. Pošto su odgovarajuća ispitivanja još uvijek rijetka u regiji u fokusu, i dalje je teško praviti poređenja s drugim nalazištima. Potrebno je više istraživanja u istom smjeru kako bi se omogućila evaluacija ukupne varijabilnosti i dijahronog razvoja stopa proizvodnje. Stoga se zaključci izvedeni na osnovu materijala iz Okolišta moraju smatrati tek preliminarnim.

Pristup koji je ovdje predstavljen za procjenu razmjera proizvodnje grnčarije nastoji izvesti procjene iz iskopanih količina/gustina grnčarije koje će biti primjenjive na ukupni volumen nalazišta i pomoću kojih će biti moguća diferencijacija tih količina u skladu s promjenama u veličini naselja i broju istovremenih kuća. Ovi parametri rekonstruirani su drugdje na osnovu plana geomagnetnog istraživanja, rezultata iskopavanja, uzoraka jezgre i GIS analize.⁴⁵ Dalje je potrebno detaljno utvrditi datum(e) kada su pronađeni skupovi materijala nastali. Odgovarajuća vremenska rezolucija temelji se na hronološkom modelu nalazišta koji je izrađen na osnovu stratigrafije, modeliranja 14C datuma, geomagnetnih rezultata i analiza o povezanosti dekorativnih motiva.⁴⁶

Međutim, proračuni bi mogli biti pristrasni zbog niza faktora. Tu se prvenstveno pojavljuje pitanje nepoznate količine grnčarije koja se odlagala izvan naselja ili koja je izgubljena u procesima raspadanja nakon taloženja. Pošto detaljna

⁴⁵ Hofmann 2012b; Hofmann 2013.

⁴⁶ Hofmann 2013, 263–314, Fig. 185.

⁴⁵ Hofmann 2012b; Hofmann 2013.

⁴⁶ Hofmann 2013, 263–314, Fig. 185.

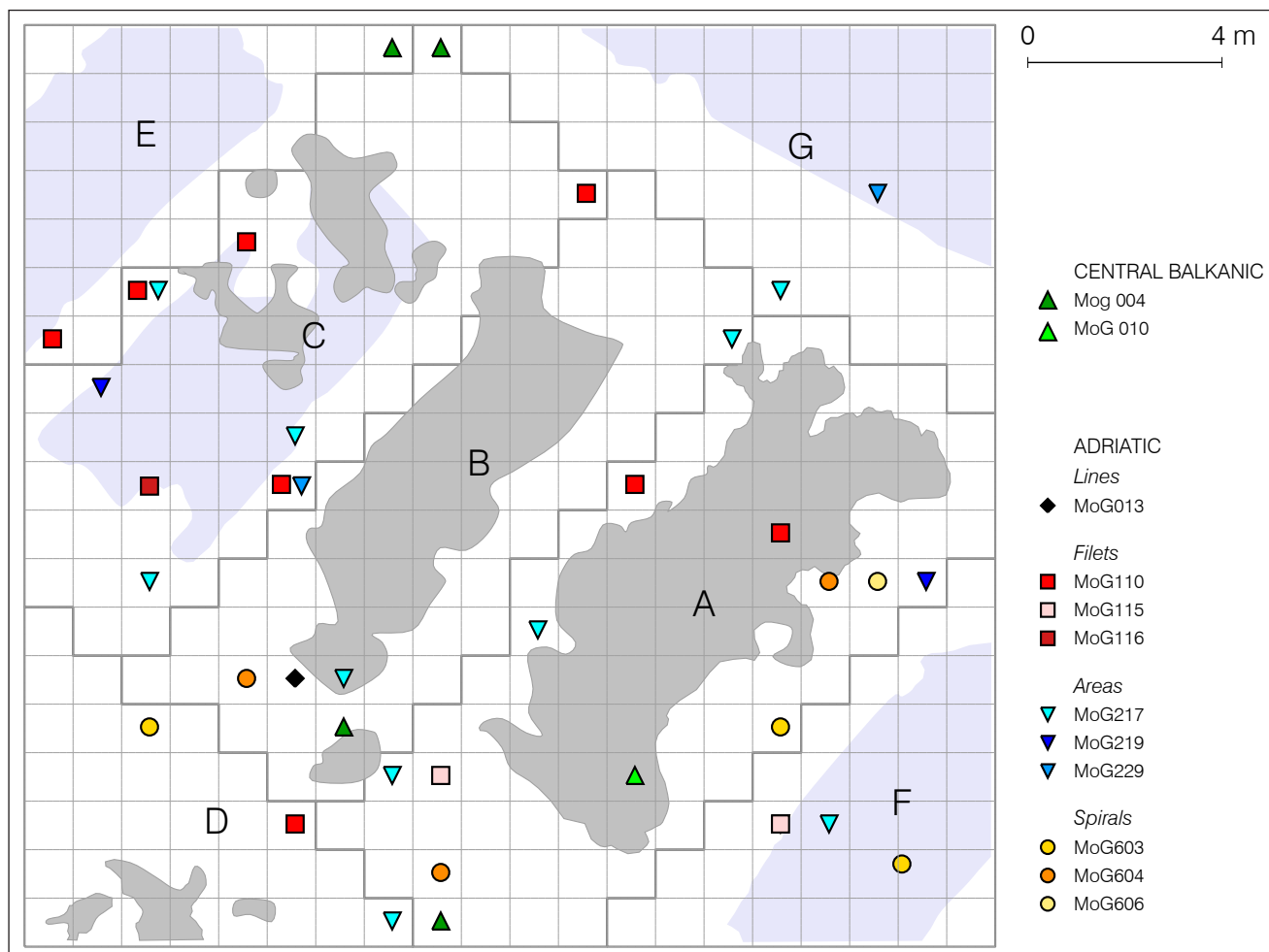


Fig. 8. Okolište. Excavation area 3. Spatial distribution of decoration motifs for which an external link is assumed.

Sl. 8. Okolište. Istraženo područje 3. Prostorna distribucija dekorativnih motiva koji se smatraju vanjskim uticajem.

suggests that most of the waste was disposed of in the direct vicinity of the houses, this first source of error can be avoided: It was found during this analysis that the find density in peripheral ditch areas of the settlement mound is significantly lower than in central, built areas, and therefore the different zones of ceramic densities must be considered when extrapolating to the whole mound.

Calculations of the total tell volume have been conducted based on measurements of the surface relief of the site on the one hand, and about 50 drilling cores on the other. The latter enable a rough reconstruction of the lower edge of the settlement deposits. The difference between this upper and lower surface was calculated using the 'transform'raster function in the GIS software Manifold. The total volume of anthropogenic deposits amounts to roughly 130,000m³. Around 1000 m³, or 0.8% of this volume, was excavated. The calculations presented below refer both to the tell volume as a whole and to volumes for the three main phases of settlement. Certain excavation areas are considered to be partially or fully representative of the different main phases of the settlement.

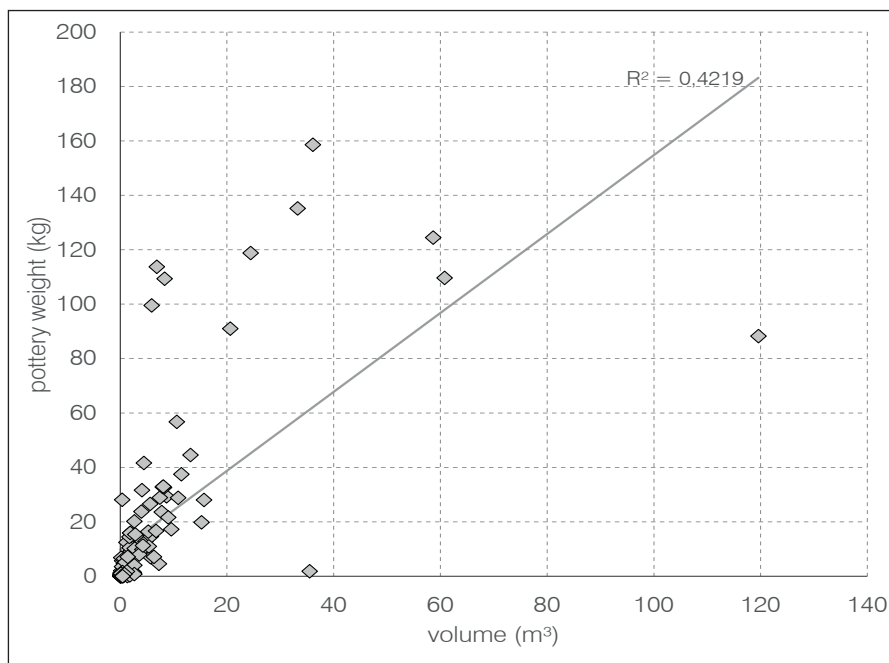
The main variable for the estimation of annual production rates is the sherd weight per cubic metre of excavated earth.

analiza odlaganja otpada u Okolištu ukazuje na to da se većina otpada odlagala u neposrednoj blizini kuća moguće je izbjeći prvi izvor potencijalnih grešaka: tokom analize je utvrđeno da je gustina nađene građe u perifernim jarcima naselja značajno manja u odnosu na centralna izgrađena područja i stoga se pri izvođenju zaključaka za cijelo nalazište moraju uzeti u obzir različite zone gustine keramičke građe.

Proračuni ukupnog volumena tela zasnovani su na mjerenjima površinskog reljefa lokacije, s jedne strane, i 50 bušotinskih uzoraka, s druge. Ovi potonji omogućuju približnu rekonstrukciju donje ivice naslaga naselja. Razlika između gornje i donje površine izračunata je uz pomoć raster funkcije 'transform' u GIS softveru Manifold. Ukupni volumen antropogenih naslaga iznosi oko 130.000 m³. Iskopano je oko 1000 m³, ili 0.8% ovog volumena. Proračuni predstavljeni u produžetku teksta odnose se i na volumen tela u cijelosti i na volumene tri osnovne faze naselja. Smatra se da su određena područja iskopa djelomično ili potpuno reprezentativna za različite osnovne faze naselja.

Fig. 9. Okolište. Relation between earth volume and pottery weight in layer groups. Data is available as supplementary material.

Sl. 9. Okolište. Odnos između zapremine zemlje i težine keramike u slojevima. Podaci su dostupni kao dodatni materijal.



Since the investigated sample is rather small in relation to the total earth volume of the mound, the ceramic densities used for the extrapolations are of outstanding importance for the result. It is assumed that the overall variability was detected through the different, spatially widely distributed, excavation areas and feature categories.

DIFFERENT METHODS OF CALCULATION WERE TESTED:

1. The simplest way to calculate pottery densities consists of division of the total amount of pottery from an excavation area by the total volume of excavated earth. In Okolište, this method results in densities of 2.8 kg/m³ for area 6 (main phases 1 and 2), 2.6 kg/m³ for area 3 (main phase 2), 2.8 kg/m³ for area 1 and 5.1 kg/m³ for area 4 (both main phase 3).

The disadvantage of this method is that in this calculations the volume of the upper layers (topsoil), which are very poor in finds, are included. The extent of such layers varies significantly between the different excavation areas. The scarcity of finds in the top layers is probably a result of weathering and upward-directed movement of earth by bioturbation (earthworms). In the periphery of the mound, erosion processes are also responsible for the formation of colluvial deposits, which are, in the most cases, poor in finds as well. The integration of layers that are poor in finds into the calculations has unfavourable effects on the comparability of find densities: This especially applies to the case of main phase 1, which is represented exclusively by one layer package in the deeper part of trench 6, and which contains no top layers.

2. It seems to be more accurate to calculate the earth volume by summation of the volumes of the different features and to test them with regard to specific find densities. This method of calculation makes it easier to determine which feature categories are overrepresented in the different excavation

Glavna varijabla za procjenu godišnjih stopa proizvodnje je težina ulomka po kubnom metru iskopane zemlje. Pošto je istraživani uzorak prilično mali u odnosu na ukupni volumen zemlje, gustine keramičke građe koje se koriste za izvođenje zaključaka od izuzetnog su značaja za rezultate. Pretpostavlja se da je općenita varijabilnost prisutna u svim prostorno široko raspoređenim područjima iskopa i da se odnosi na sve kategorije osobina.

TESTIRANE SU RAZLIČITE METODE IZRAČUNA:

1. Najjednostavniji način izračuna gustine grnčarije podrazumijeva da se se ukupna količina grnčarije iz određenog iskopa podijeli s ukupnim volumenom iskopane zemlje. U Okolištu ova metoda daje rezultate za gustinu od 2.8 kg/m³ za područje 6 (osnovne faze 1 i 2), 2.6 kg/m³ za područje 3 (osnovana faza 2), 2.8 kg/m³ za područje 1 i 5.1 kg/m³ za područje 4 (oba iz osnovne faze 3).

Nedostatak ove metode je da se u izračunavanje uključuje volumen gornjih slojeva (površinskog sloja) koji oskudijevaju nađenom građom. Razmjere tih slojeva značajno se razlikuju od jednog do drugog iskopa. Oskudica nađene građe u gornjim slojevima vjerovatno je posljedica propadanja i pomicanja zemlje prema gore bioturbacijom (gliste). Na periferiji nalazišta je zbog procesa erozije došlo do formiranja koluvijalnih slojeva koji u većini slučajeva također oskudijevaju građom. Uključivanje slojeva koji oskudijevaju građom u izračune nepogodno utiče na uporedivost gustina građe: Ovo se naročito odnosi na osnovnu fazu 1 koja je zastupljena samo u jednom sloju dubljeg dijela iskopa 6 u kojem nema gornjih slojeva.

2. Čini se da bi bilo tačnije izračunati volumen zemlje sabiranjem volumena različitih osobina i njihovim testiranjem u odnosu na specifične gustine građe. Ova metoda izračuna

Tbl 3. Okolište. Densities of pottery remains in feature categories. The data on which the calculations are based is available as supplementary material. *Weighted average without top layer.

Tab. 3. Okolište. Gustoća ostataka keramike u ciljanim kategorijama. Tabele s podacima su dostupne kao dodatni materijal. Vagan je prosjek, bez početnog sloja.

feature category/ Kategorija obilježja	Total (all areas)/ Ukupno (sva područja iskopa)					Main phase 1 (excavation area 6)/ Glavna faza 1 (područje iskopa 6)					Main phase 2 (excavation area 3)/ Glavna faza 2 (područje iskopa 3)					Main phase 3 (excavation area 4)/ Glavna faza 3 (područje iskopa 4)				
	n cases / n slučajeva	average / prosjek	STD (kg/m ³)	min kg/m ³ 2 σ	max kg/m ³ 2 σ	n cases / n slučajeva	average / prosjek	STD	min kg/m ³ 2 σ	max kg/m ³ 2 σ	n cases / n slučajeva	average / prosjek	STD	min kg/m ³ 2 σ	max kg/m ³ 2 σ	n cases / n slučajeva	average / prosjek	STD	min kg/m ³ 2 σ	max kg/m ³ 2 σ
Top layer/ Gornji sloj	3	1.55	0.72	0.11	3.00						1	0.74		0.74	0.74	1	1.8		1.80	1.80
Alluvial layer/ Aluvijalni sloj	2	0.53	0.71	0.00	1.95															
Buried soil/ Zakopano tlo	1	1.51		1.51	1.51	1	1.51		1.51	1.51										
Daub package/ Daub paket	3	2.77	1.27	0.24	5.30															
Sunken house/ Potopljena kuća	2	6.38	1.92	2.55	10.22	1	7.74		7.74	7.74										
Open area/ Otvoreno područje	8	19.25	27.19	0.00	73.64															
Alley/ Uličica	11	7.20	4.40	0.00	16.00						6	4.15	1.29	1.56	6.73	4	11.89	3.71	4.47	19.31
Pit/ Jama	28	4.25	3.42	0.00	11.08	7	5.07	2.97	2.10	8.05	7	2.81	1.68	0.00	6.16					
Colluvial layer /top layer/ Koluvijani sloj / gornji sloj	4	3.42	3.49	0.00	10.39															
Postholes (row)/ Rupe za stubove (red)	1	0.55		0.55	0.55	1	0.55		0.55	0.55										
Layer package/ Paket slojeva	12	8.44	13.03	0.00	34.49	3	3.41	0.72	2.69	4.13										
Unburnt house/ Neizgorena kuća	19	3.54	2.78	0.00	9.10	1	0.63		0.63	0.63	8	2.48	0.54	1.39	3.56	3	6.3	3.69	0.00	13.67
Burnt house/ Izgorena kuća	11	4.23	1.59	1.05	7.42	1	2.66		2.66	2.66	4	3.81	0.29	3.23	4.40	3	5.65	2.32	1.02	10.29
Way/ Put	3	8.45	7.30	0.00	23.04						2	4.24	0.25	3.75	4.73					
Ditch/ Rupa	12	2.54	2.57	0.00	7.69	6	1.64	1.66	0.00	4.97	4	2.79	1.52	1.27	4.31					
Rampart/ Bedem	7	1.12	1.09	0.00	3.30	3	0.93	1.55	0.00	4.03										
Top layer/ Gornji sloj		1.55		0.11	3.00		1.55		0.11	3.00		1.55		0.11	3.00					
Settlement area*/ Područje naselja		5.58		0.20	15.18		3.34		2.68	4.00		3.66		2.63	4.70		9.91		4.30	15.72
Ditch area*/ područje jarka		2.41	2.17	0.00	7.30		1.56		0.00	4.86	4	2.79	1.52	1.27	4.31					

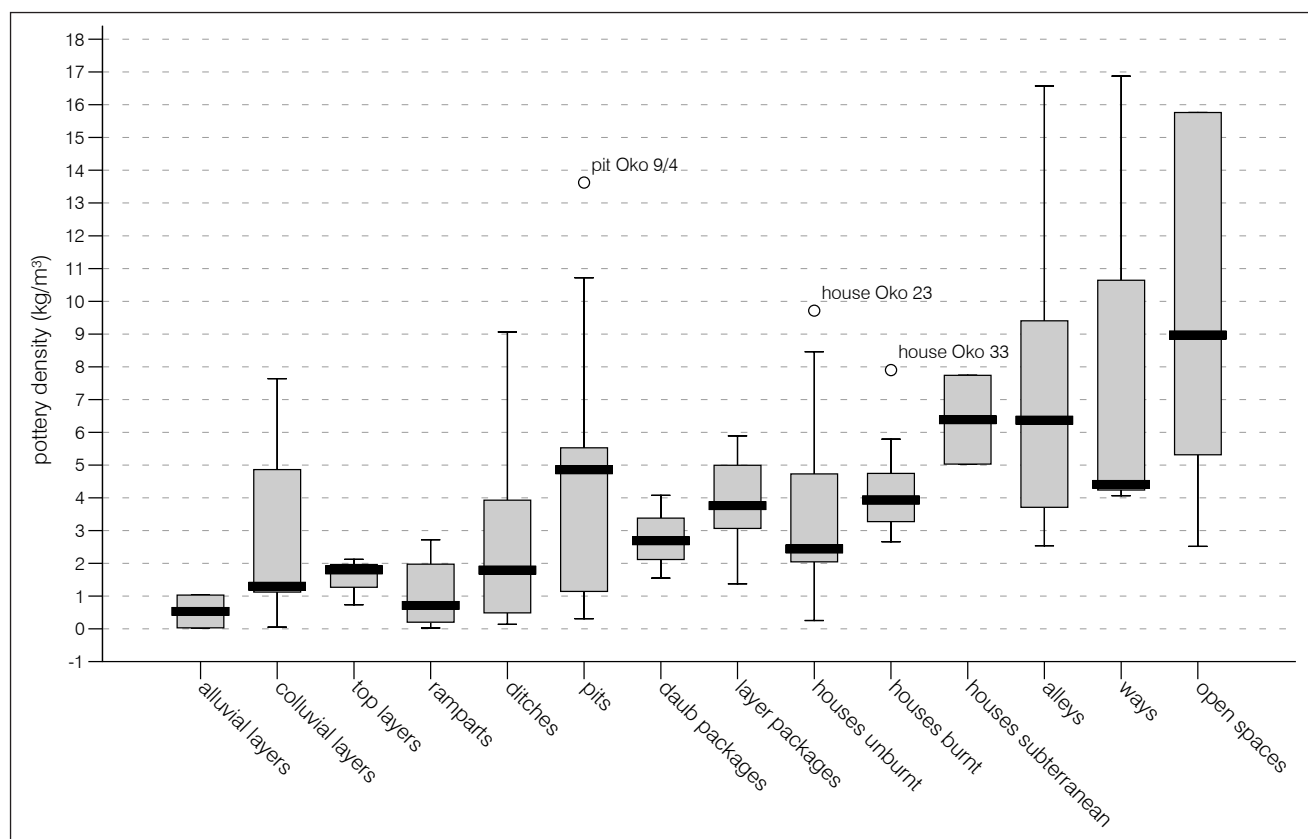


Fig. 10. Okolište. Box-plot diagram of pottery weights per cubic metre of earth in feature categories. The data table is available as supplementary material.

Sl. 10. Okolište. Box-plot dijagram težine keramike po kubnom metru zemlje u posmatranim kategorijama. Podaci su dostupni kao dodatni materijal.

situations in relation to the total volume of the mound (especially in the upper layers of the settlement mound, in excavation areas 1, 3, and 4).

We classify features as small-sectioned units that can be delimited from one another based on material properties such as the type and colour of the soil substrate, and the type, amount and size of contained non-plastic admixtures. The basis for the calculations presented here are groupings of such features into larger units that undertook on the basis of three hierarchical levels that include functional interpretations.⁴⁷ In the uppermost level of this grouping, we combined features into layer formations that belong to a settlement phase with unchanged spatial organization.

We performed detailed calculations of the excavated earth volume for the intermediate level of layer groups, where features are grouped into houses, different kinds of open spaces, and pits. Overall there is indeed a general – but not very strong – correlation between the volume of features and the amount of pottery remains contained therein (Fig. 9). Clear differences also exist regarding find densities between the categories, but considerable variability is also evident within these individual categories (Fig. 10). Open areas near the houses contain the highest pottery densities, with a median of 9 kg/m³, while other feature categories show much lower pottery densities.

olakšava određivanje kategorija osobina koje su prekomjerno zastupljene u različitim situacijama iskopa u odnosu na ukupni volumen nalazišta (naročito u gornjim slojevima naselja u područjima iskopa 1, 3 i 4).

Osobine klasificiramo kao male razdvojene jedinice koje se mogu razgraničiti jedne od drugih na osnovu materijalnih karakteristika kao što su tip i boja supstrata tla, količina i veličina neplastičnih primjesa koje sadrže. Osnova za izračune koji su ovdje predstavljeni su grupacije tih osobina okupljene u veće jedinice na osnovu tri hijerarhijska nivoa s funkcionalnim tumačenjima.⁴⁷ Na najvišem nivou ovog grupisanja obuhvatili smo osobine u formacije sloja koje pripadaju fazi naselja bez izmjena u prostornoj organizaciji.

Obavili smo detaljne izračune iskopanog volumena zemlje za srednji nivo grupacija slojeva gdje su osobine razvrstane prema kućama, različitim otvorenim prostrima i jamama. Ukupno gledajući, uistinu postoji općenita – ali ne pretjerano snažna – korelacija između volumena osobina i količine sadržane grnčarske građe (sl. 9). Postoje i jasne razlike u gustinama građe između kategorija, ali značajna varijabilnost prisutna je i unutar ovih pojedinačnih kategorija (sl. 10). Otvorena područja u okolini kuća sadrže najviše gustine grnčarije, sa srednjom vrijednosti od 9 kg/m³, dok druge kategorije osobina imaju mnogo niže vrijednosti gustine grnčarske građe.

47 Hofmann 2013, 263–314, Figure 185.

47 Hofmann i dr. 2006; Hofmann 2013, 54–57.

For each feature category, average sherd densities were calculated for the settlement mound as a whole, as well as for its three main phases (Tbl. 3). Using the 2-sigma standard deviation, a minimal and maximal find density can be calculated for every feature category with a probability of 95.4%.

Two different methods were used to divide the total volume of the settlement mound into the individual feature categories:

- A. A differentiation was made between 1. top layers, 2. ditch areas and 3. built areas across the whole settlement mound. The proportions of these large units in relation to the total tell volume could be estimated only roughly. The volume of the top layer was calculated using its observed average thickness in the excavation areas and the settlement size (surface area x average thickness). The volumes of the ditch areas were calculated by multiplication of the area of the ditches in the cross sections of the excavations by the lengths of the ditches according to the geomagnetic prospection. The volume of the built space was considered to be the remainder resulting from the subtraction of the total volume of the mound by the two previously mentioned units. Further division of these units into the different main phases was performed according to observed layer thicknesses from the excavated areas.
- B. The proportions of the different feature categories in the excavated areas were applied to the volume of the entire settlement mound. Since the portions of these feature categories vary considerably across the excavation area, weighted averages were used, rather than a simple mean (Tbl. 3).

Although the overall uncertainties of the calculations are considerable, the data nevertheless reflects at least the general dimensions of the annual pottery production and consumption (Tbl. 4). Based on the assumption of an equal production rate over the entire duration of the settlement, the annual production amounts to a maximum of 3000 kg. The average, however, of 1000 kg is clearly far below this value. When the production is split between the three main phases, the maximum amount produced in main phase 1 is about 1000 kg, in main phase 2 about 2000 kg, and in main phase 3 again approximately 1000 kg.

For critical evaluation of these values, it is helpful to take into consideration the number of coexisting houses. These were reconstructed elsewhere based on excavation data and the volume and size of the settlement mound.⁴⁸ According to those calculations, 550 houses existed contemporaneously during the main phases 1 and 2, before their number decreased to 100 during a significant reduction in settlement size at the beginning of main phase 3. The average amount of pottery produced per year and household increased from about 1 kg (max. 1.88 kg) in main phase 1, to 2.5 kg (max. 3.5 kg) in main phase 2, and, finally, to 6 kg (max. 9.8 kg) in main phase 3.

Accordingly, a significant increase in the annually produced amount of pottery seems to occur in main phase 3. When

Za svaku kategoriju osobina izračunate su prosječne gustine ulomaka za naselje u cjelini i za njegove tri osnovne faze (tab. 3). Upotrebom 2-sigma standardnog odstupanja moguće je izračunati minimalnu i maksimalnu gustinu grade za svaku kategoriju s vjerovatnoćom od 95, 4%.

Dvije različite metode upotrijebljene su za podjelu ukupnog volumena naselja na pojedinačne kategorije osobina:

- A. Diferencirani su 1. površinski slojevi, 2. jarci i 3. izgrađena područja na cijelom nalazištu naselja. Proporcije ovih velikih jedinica u odnosu na ukupni volumen tela mogu se samo grubo procijeniti. Volumen površinskog sloja izračunat je na osnovu opažene prosječne debljine u iskopima i veličine naselja (površina x prosječna debljina). Volumeni jaraka izračunati su množenjem površine jaraka u poprečnom presjeku iskopa s dužinom jaraka iz geomagnetnog istraživanja. Ono što ostane kada se od ukupnog volumena nalazišta oduzmu ove dvije prethodne jedinice smatra se volumenom izgrađenih prostora. Dalja podjela ovih jedinica na različite osnovne faze rađena je prema uočenim debljinama slojeva u iskopima.
- B. Proporcije različitih kategorija ostataka u iskopima primijenjene su na volumen cjelokupne humke nalazišta. Pošto udjeli ovih kategorija ostataka značajno variraju u iskopima, umjesto jednostavne aritmetičke sredine korišteni su ponderirani prosjeci (tab. 3).

Iako su ukupne nesigurnosti izračuna značajne, podaci ipak odražavaju barem općenite dimenzije godišnje proizvodnje i potrošnje grnčarije (tab. 4). Na osnovu pretpostavke jednake stope proizvodnje tokom cjelokupnog trajanja naselja, godišnja proizvodnja iznosi maksimalno 3000 kg. Prosjek od 1000 kg je, međutim, jasno manji od ove vrijednosti. Kada se proizvodnja podijeli između tri osnovne faze, maksimalna količina proizvedena u osnovnoj fazi 1 je oko 1000 kg, u osnovnoj fazi 2 oko 2000 kg, a u osnovnoj fazi 3 ponovo oko 1000 kg.

Za kritičku procjenu ovih vrijednosti korisno je uzeti u obzir broj istovremenih kuća. Ovi podaci su rekonstruirani drugdje na osnovu podataka iskopavanja i volumena i veličine humke naselja.⁴⁸ Prema tim izračunima, 550 kuća postojalo je istovremeno tokom osnovne faze 1 i 2, a onda se njihov broj smanjio na 100 za vrijeme značajnog smanjenja veličine naselja početkom osnovne faze 3. Prosječna količina grnčarije proizvedene na godišnjem nivou i na nivou jednog domaćinstva povećana je sa oko 1 kg (max. 1,88 kg) u osnovnoj fazi 1 do 2,5 kg (max. 3,5 kg) u osnovnoj fazi 2 i konačno do 6 kg (max. 9,8 kg) u osnovnoj fazi 3.

Shodno tome, izgleda da je došlo do značajnog porasta godišnje proizvodnje grnčarije u osnovnoj fazi 3. Kada procjenjujemo ovu opservaciju trebamo uzeti u obzir da su u iskopu 4, na kojem se zasnivaju naši izračuni, pronađene

48 Hofmann 2013, 383 ff.

48 Hofmann 2013, 383 ff.

Tbl 5. Okolište, average amount (weight in kg) of pottery remains per house which accumulated during the whole average life span of 33 years attributed to the main phases of the settlement. The excavation data refer in case of main 2 on the layer formations Oko 3/1 and 3/2 (excavation area 3, 624 kg pottery, 10.75 houses) and in the case of main phase 3 on the layer formations Oko 4/1 and Oko 4/2 (excavation area 4, 570 kg pottery remains, 2.42 houses). For main phase 1, a corresponding calculation cannot be performed.

Tab. 5. Okolište, prosječna količina (težina u kg) ostataka keramike po kući koja se akumulirala tijekom prosječnog životnog vijeka od 33 godine pripisanih glavnim fazama naselja. Istražni podaci odnose se na, u slučaju glavne faze 2, slojeve formacija Oko 3/1 i 3/2 (iskopna površina 3, 624 kg keramike, 10,75 kuća), a u slučaju glavne faze 3, slojeve formacija Oko 4/1 i Oko 4/2 (iskop 4, 570 kg ostataka keramike, 2,42 kuće). Nije moguće izvršiti odgovarajući izračun za glavnu fazu 1.

main phase/ glavna faza	global kg / house/ globalno kg / kuća			excavationskg / house/ iskopavanja kg / kuća
	min	average / prosjek	max	
1	26.4	39.6	62.7	-
2	52.8	85.8	115.5	58
3	82.5	201.3	323.4	235

TRANSLATION INTO COUNTS OF VESSELS

The extrapolated amount of ceramics can only be reliably used as a proxy for the scale of pottery production if we are able to translate these weights into counts of vessels. The weight of an individual vessel depends to a large degree on both its volumetric capacity and several technological traits, such as wall thickness, form of tempering, etc. Because of this, weights of pottery cannot be directly compared between different cultural contexts.

To perform the 'translation' of pottery weight into vessel counts, information regarding the weights of vessels of different classes and their variability is required. To gather this information, complete vessels should be available in sufficient number. Unfortunately, in Okolište, the number of such cases is very low, despite considerable effort to reconstruct complete vessels. Due to this, partly preserved vessel units with complete profiles have also been used, with consideration given to the percentage of their preservation. The sherd weight of a partly preserved vessel was extrapolated to the whole vessel weight according to rim, belly and bottom percentage (Tbl. 6). Nevertheless, the sample of individual vessel weights contains only about 30 cases, and is actually significantly too small for the needs of this study⁵¹.

Another problem is that the composition of ceramic assemblages in both primary and secondary waste disposal contexts is not equal to that of 'living' inventories.⁵² Rather, certain vessel categories are overrepresented, since their probability of breakage was higher. This concerns, for example, pots used for food preparation made of coarse wares; these vessels were more strongly represented in outdoor areas than inside the houses. Here, it is assumed that these secondary contexts perhaps mirror actual needs, and therefore the profile

Tbl. 6 Okolište. Average weight of vessel classes. Data are available in the in (Hofmann, 2013), pp. 200–202, Table 70. *Vessel classes are detailed described ibidem 171–195.

Tab. 6. Okolište. Prosječna težina posuda. Podaci su dostupni u Hofmann 2013, str. 200–202, Tablica 70. *Vrste posuda detaljno su opisane u istoj publikaciji, str. 171–195.

vessel class / tip posude	abbreviation* / skraćenica	average weight (kg) / prosječna težina (kg)
bowls / zdjele	S	1
footed bowls (hollow foot) / zdjele s nogom (šuplja noga)	F	0.25
footed bowls (solid foot) / zdjele s nogom (ispunjena noga)	F	0.5
pots / lonci	T	3
serving/short term storage vessels / posude za serviranje/kratkotrajnu pohranu	E/HH/K/Kö	3
cone-necked vessel / posude sa koničnim vratom	Tr	1
cup / šolja	N	0.05

PRETVARANJE U BROJKE POSUDA

Ekstrapolirana količina keramike može se pouzdano koristiti kao zamjenska vrijednost za razmjere proizvodnje grnčarije samo ako izračunate težine pretvorimo u broj posuda. Težina pojedinačne posude u velikoj mjeri zavisi i od njenog volumetrijskog kapaciteta i od nekoliko tehnoloških osobina kao što su debljina stijenke, vrsta pečenja, itd. Stoga se težine grnčarije iz različitih kulturnih konteksta ne mogu direktno porediti.

Kako bi se težina grnčarije 'pretvorila' u broj posuda potrebne su informacije o težinama posuda različitih klasa i o njihovoj varijabilnosti. Za prikupljanje tih informacija potreban je dovoljan broj potpunih posuda. Nažalost, u Okolištu je uprkos značajnim naporima da se rekonstruiraju potpune posude izrazito malo takvih slučajeva. Zbog toga su također korištene djelomično očuvane posude s kompletnim profilima, pri čemu se vodilo računa o postotku njihove očuvanosti. Iz težine ulomka djelomično očuvane posude izveden je zaključak o njenoj ukupnoj težini na osnovu postotka koji otpada na rub, trbuh i dno (tab. 6). Ipak, uzorak težina pojedinačnih posuda sastoji se od samo 30 jedinica i zapravo je značajno nedovoljan za potrebe ovog istraživanja.⁵¹

Još jedan problem je što sastav keramičke građe i u primarnim i u sekundarnim kontekstima odlaganja otpada nije jednak onom iz 'živućih' inventara.⁵² Umjesto toga, određene kategorije posuda su prezastupljene zbog veće vjerojatnoće lomljenja. Ovo se, na primjer, odnosi na posude za pripremu hrane napravljene od grubih materijala; ove posude zastupljenije su u vanjskim prostorima nego unutar kuća. Ovdje se pretpostavlja da ovi sekundarni konteksti možda odražavaju stvarne potrebe, a time i profil proizvodnje,

51 Hofmann 2013, 200–202, Tbl. 70.

52 Hofmann 2013, 253 ff.

51 Hofmann 2013, 200–202, tab. 70.

52 Hofmann 2013, 253 ff.

Tbl. 7. Okolište. Frequency of vessel classes in different samples of the bulk and individual recording for the whole settlement mound. Since the percentage of vessel classes can vary in time, for the three main phases the calculations have been performed separately based on the data from representative excavation areas (main phase 1: area 6; main phase 2: area 3; main phase 3: area 4). Due the limited space in this volume data are available with supplemental materials.

Tab. 7. Okolište. Učestalost različitih klasa posuda u uzorcima skupnog i pojedinačnog snimanja za cijeli humak. Budući da postotak klasa posuda može varirati tijekom vremena, za tri glavne faze izračuni su obavljani odvojeno na temelju podataka iz reprezentativnih područja iskopavanja (glavna faza 1: područje 6; glavna faza 2: područje 3; glavna faza 3: područje 4). Zbog ograničenog prostora u ovoj publikaciji podaci su dostupni kao dopunski materijal.

	bulk recording/ skupno snimanje						individual recording/ individualno snimanje		bulk + individual r./ skupno + individu- alno s.	
vessel class/ klasa posude	count sherds/ broj fragmenata	%	weight/ težina	%	count data sets/ broj skupova podataka	%	average (%)/ prosjeak (%)	count ceramic units/ broj keramičkih jedinica	%	average (%)/ prosjeak (%)
E/HH/K/Kö	424	3.45	11.79	4.68	330	4.47	4.20	243	18.62	11.41
F	1518	12.34	54.46	21.64	968	13.13	15.70	220	16.86	16.28
S	7342	59.68	94.29	37.46	4490	60.88	52.67	347	26.59	39.63
S-conical	65	0.53	2.77	1.10	51	0.69	0.77	37	2.84	1.80
T	2825	22.96	84.97	33.76	1434	19.44	25.39	416	31.88	28.63
N	8	0.07	0.38	0.15	7	0.09	0.10	5	0.38	0.24
Si	31	0.25	0.52	0.21	25	0.34	0.27	6	0.46	0.36
Tr	3	0.02	0.04	0.02	2	0.03	0.02	5	0.38	0.20
Ku	42	0.34	1.36	0.54	35	0.47	0.45	17	1.30	0.88
Ryth	8	0.07	0.18	0.07	7	0.09	0.08	4	0.31	0.19
M	13	0.11	0.63	0.25	8	0.11	0.15	4	0.31	0.23
Miniatur	24	0.20	0.29	0.12	18	0.24	0.18	1	0.08	0.13
	12303		251.69		7375			1305		

of production, much better than the remains of 'living' assemblages, as the latter contain a greater proportion of vessel categories with much longer lifespans.

Due to fragmentation of the ceramic material, it is generally extremely difficult to determine the relative frequencies of the different vessel categories within pottery assemblages of settlements. Ultimately, this problem can only be solved through rigorous and as-complete-as-possible registration (and partial estimation) of rim, belly and bottom portions. Based on such data, the minimum number of individuals (MNI) can be calculated for each vessel category.⁵³ Since in Okolište such measures have only partially been recorded, for this study the classifications of different samples of the bulk and individual recording have been used.⁵⁴ However, it should be noted that these samples only include parts of the material, and a bias has very likely been introduced by the detectability of different vessel classes and subjective selection.

Since the sample of the individual recording reflects a subjective selection of typical and extreme cases, it is most likely biased. The different samples from the bulk recording are, therefore, more suitable. However, as it is not possible to definitively assign a large portion of wall sherds to vessel categories, these samples are likely also biased. Given this lack of clarity

mnogo bolje od ostataka 'živućih' skupina, imajući u vidu da ove potonje sadrže veći udio kategorija posuda s mnogo dužim životnim vijekom.

Zbog izlomljenosti keramičkog materijala općenito je izrazito teško odrediti relativne učestalosti različitih kategorija posuda unutar skupina grnčarije jednog naselja. Na koncu se ovaj problem može riješiti samo putem rigorozne i što potpunije registracije (i djelomične procjene) dijelova ruba, trbuha i dna. Na osnovu tih podataka moguće je izračunati minimalni broj pojedinačnih primjeraka (MNI) za svaku kategoriju posuda.⁵³ Pošto su u Okolištu ta mjerenja samo dijelom zabilježena, za potrebe ovog istraživanja korištene su klasifikacije različitih uzoraka ukupne građe i pojedinačno evidentiranog posuda.⁵⁴ Međutim, treba imati na umu da ovi uzorci uključuju samo dijelove ukupnog materijala i da je pristrasnost vrlo vjerovatno prisutna zbog upitne mogućnosti raspoznavanja različitih klasa posuda i zbog subjektivne selekcije.

Pošto uzorak pojedinačnih evidencija odražava subjektivnu selekciju tipičnu za krajnje slučajeve, najvjerovatnije je prisutna pristrasnost. Stoga su pogodniji različiti uzorci iz ukupne evidencije. Međutim, pošto nije moguće sa

53 Sum of measurements (for each measure and vessel category) / 100.

54 A) Bulk recording: count of data sets/vessel category; B) Bulk recording: sum weight/vessel category; C) Bulk recording: sum of sherds/vessel category; D) Individual recording: count of vessel units/vessel category.

53 Zbir mjerenja (za svaku mjeru i kategoriju posuda) / 100.

54 A) Ukupna evidencija: broj skupova podataka/kategorija posuda; B) Ukupna evidencija: zbirna težina/kategorija posuda; C) Ukupna evidencija: zbir ulomaka/kategorija posuda; D) Pojedinačna evidencija: broj pojedinačnih posuda/kategorija posuda.

Tbl. 8. Okolište. Conversion of the pottery quantities that have been calculated for the three main phases and the total settlement mound in the previous steps of analysis and their attribution to the contemporaneous households. The values for vessel per household and year describe the average annual renewal rate per household.

Tab. 8. Okolište. Pretvorba količine keramike koje su izračunate za tri glavne faze i ukupni humak u prethodnim koracima analize i njihovo pripisivanje istodobnim kućanstvima. Vrijednosti po posudi po kućanstvu i godini opisuju prosječnu godišnju stopu obnove po kućanstvu.

	vessels total / year/ ukupno posuda / godina			vessels / household / year/ posuda/kućanstvo/godina		
	min	average / prosjek	max	Min	average / prosjek	max
main phase 1 / glavna faza 1	221	541	871	0.7	1.1	1.6
main phase 2 / glavna faza 2	831	1295	1762	1.5	2.4	3.2
main phase 3 / glavna faza 3	215	527	849	2.2	5.3	8.5
Total	36	1003	2697			

about which sample best reflects the relative frequencies of vessel classes, for this study averages derived from the different samples of bulk and individual recording were calculated (Tbl. 7).

In all phases, bowls (S) are the most frequent vessel category; they represent, together with other serving vessels, about 50%–60% of the assemblage. Pots (T), at 20%–35%, are the next most frequent category, and likely served for food preparation. Unfortunately, the frequencies of different categories of representative closed vessels (E=narrow-necked vessels, HH=high-necked vessels, K=pear-shaped vessels) that might have been used during private or communal feasting rituals were particularly problematic to determine. With a proportion of only 5%–8% in the sample to which bulk recording was applied, these vessels are probably underrepresented.

Tbl. 8 displays the results of the conversion of the pottery quantities into vessels and the subsequent extension of vessel quantities from the excavation areas to the whole settlement mound. Accordingly, in Okolište a maximum of nearly 3,000 (2,697) vessels were produced per year. It is also possible that the production volume was lower.

The conversion of these values to the reconstructed number of contemporary households reveals two things. On the one hand, there is a clear trend over time toward an increasing amount of pottery vessels per household. On the other, the average annual renewal rate of vessels per house (= household?) was at a maximum of around 3 (vessels/house x year). Greater renewal rates can only be determined for the third main phase where, however, they could also reflect the longer lifespan of these houses.

DISCUSSION OF THE CERAMIC DENSITIES

The calculations presented in this case study, which are based on existing, excavated pottery assemblages, might somehow look like a game with numbers. Despite considerable uncertainties concerning the different steps of the calculations, the extrapolations appear to, at the least, clarify the general scale of pottery production. It was found that a maximum of ca. 3,000 vessels were produced at Okolište per year. In comparison with Roux's ethno-archaeological case study of pottery in a rural settlement in India, where even small-scale pottery production

sigurnošću razvrstati veliki dio ulomaka stijenke po kategorijama posuđa i ti uzorci su vrlo vjerovatno prisutni. Pošto nije jasno koji uzorak najbolje odražava relativne učestalosti klasa posuđa, za potrebe ovog istraživanja izračunate su prosječne vrijednosti izvedene iz različitih uzoraka ukupne i pojedinačne evidencije (tab. 7).

U svim fazama zdjele (S) su najučestalija kategorija posuđa; zajedno s drugim posudama za serviranje hrane na njih otpada oko 50–60% ukupne građe. Lonci (T), na koje otpada 20–35%, sljedeća su najučestalija kategorija i vjerovatno su služili za pripremu hrane. Nažalost, bilo je naročito problematično utvrditi učestalosti različitih kategorija reprezentativnih zatvorenih posuda (E = posude uskog grla, HH = posude visokog grla, K = kruškaste posude) koje su možda korištene tokom privatnih ili zajedničkih ritualnih objeda. S udjelom od samo 5–8% u uzorku na koji je primijenjena ukupna evidencija, ove posude su vjerovatno podzastupljene.

Tabela 8 prikazuje rezultate konverzije količina grnčarije u količine posuđa i kasnije prenošenje količina posuđa iz iskopa na cijelu humku naselja. Prema tome, u Okolištu je godišnje proizvedeno maksimalno skoro 3.000 (2.697) posuda. Također je moguće da je obim proizvodnje bio manji.

Konverzija ovih vrijednosti u odnosu na rekonstruirani broj istovremenih domaćinstava otkriva dvije stvari. S jedne strane, postoji jasan trend kroz vrijeme ka povećanju količine grnčarije po domaćinstvu. S druge strane, prosječna godišnja stopa obnove posuđa po kući (= domaćinstvu?) bila je maksimalno oko 3 (posude / kući x godišnje). Veće stope obnove moguće je utvrditi samo za treću osnovnu fazu gdje, međutim, također mogu odražavati i duži životni vijek kuća o kojima je riječ.

DISKUSIJA: GUSTINA KERAMIKE

Kalkulacije predstavljene u ovoj studiji, a koja se temelji na postojećoj iskopanoj grnčarskoj građi, mogu u neku ruku izgledati kao igranje s brojkama. Uprkos značajnim nesigurnostima u raznim koracima izračunavanja, ekstrapolacije, ako ništa drugo, unose dozu jasnoće o općenitoj razmjeri proizvodnje grnčarije. Utvrđeno je da je u Okolištu proizvedeno maksimalno oko 3.000 posuda godišnje. Ova

resulted in 6,000 vessels/year/potter;⁵⁵ this rate of production seems rather small. The potters of Roux's case study, however, worked with fast-rotating potters' wheels; their high production rates are, thus, incomparable to Neolithic production.

It is also likely that vessels were lost during the firing process. According to our observations, misfired ceramic remains are not represented in the investigated excavation areas. According to ethnographical, ethno-archaeological and experimental analogies, such loss during firing amounts at least 10%.⁵⁶ Even if a certain portion of the vessels that were damaged during the firing process could have been repaired and used, it is certainly necessary to account for those that were unsalvageable.

Comparable reconstructions of prehistoric production volumes are extremely rare in the wider region. For Neolithic societies of Southeastern Europe, similar data is available solely for two Greek sites: 1. In Franchthi cave on the Peloponnese it was estimated that 12–13 vessels were produced annually across the whole site.⁵⁷ This was based on the total quantity of ceramics found (100 kg), the average weight of a vessel (1 kg), the estimated percentage of the site excavated (2%), and a minimum settlement duration of 400 years. 2. Based on summed surface areas of sherds, Pyke and Yiouni (1996, 118 ff.) calculated that the quantity of pottery remains that were found at the settlement site Nea Nikomedia corresponded to 1,115 vessels.⁵⁸ Based on the state of preservation of the sherds, the researchers assumed that 70%–75% of the pottery was lost through depositional and post-depositional processes. Accordingly, they reconstructed the size of the 'living' assemblage for the excavated settlement section as 3,700–4,500 vessels. The division of this quantity by 50–150 years of occupation results in an annual renewal rate of 25–90 vessels. Since the excavation area (0.1 ha) corresponds to about 5.25% of the settlement area (1.9 ha), the annual production volume of the whole settlement can be calculated to range between 476 and 1,714 vessels.

If, on the other hand, it is assumed that most of the pottery remains survived (100%), the annual renewal rate for the excavated area would amount to between 7.43 and 22 vessels ($1115/150 = 7.43$, $1115/50 = 22$) and for the total settlement to between 142–420 vessels. If we take in account also the number of houses that appear to have continuity in nine groups over three horizons, and 6–7 complete houses situated within the excavation area, one would end up with a range of 1–3.7 vessels per year per household. This is an almost identical value to that calculated at Okolište. According to Pyke's calculations, the annual renewal of pottery would be amount between 3.6 and 15 vessels per house, which seems to be too high a value.⁵⁹ Such a high renewal rate would imply

stopa proizvodnje doima se dosta malom u poređenju s Rouxovom etnoarheološkom studijom slučaja o grnčariji u ruralnom naselju u Indiji, gdje je čak i grnčarska proizvodnja malih razmjera dala rezultat od 6.000 posuda/godišnje/grnčaru.⁵⁵ Međutim, grnčari iz Rouxove studije slučaja radili su s brzorotirajućim grnčarskim točkovima; stoga njihove visoke stope proizvodnje nije moguće porediti s neolitskom proizvodnjom.

Također je vjerovatno da su posude izgubljene tokom procesa pečenja. Prema našim opažanjima, u istraženim iskopima nisu zastupljeni ostaci keramike koja je loše pečena. Prema etnografskim, etnoarheološkim i eksperimentalnim analogijama, na takve gubitke tokom pečenja otpada najmanje 10%.⁵⁶ Čak i je ako određeni udio posuda koje su oštećene tokom procesa pečenja bilo moguće popraviti i koristiti, ipak je neophodno uzeti u obzir one koje su morale biti odbačene.

Usporedive rekonstrukcije prethistorijskih obima proizvodnje izuzetno su rijetke u široj regiji. Za neolitska društva jugoistočne Evrope slični podaci dostupni su samo za dva grčka lokaliteta: 1. U spilji Franchthi na Peloponezu procjenjuje se da je godišnje na cijelom lokalitetu proizvedeno 12–13 posuda.⁵⁷ Ova brojka se temelji na ukupnoj količini nađene keramike (100 kg), prosječnoj težini posude (1 kg), procjeni postotka lokaliteta koji je iskopan (2%) i minimalnom trajanju naselja od 400 godina. 2. Na osnovu zbira površi ulomaka Pyke i Yiouni su izračunali da količina ostataka grnčarije nađenih na lokalitetu naselja Nea Nikomedia odgovara broju od 1.115 posuda.⁵⁸ Na osnovu očuvanosti ulomaka istraživači su pretpostavili da je 70%–75% grnčarije izgubljeno u procesima taloženja i post-depozicijskih promjena. Prema tome su rekonstruirali obim 'živućih' asortimana za iskopani dio naselja kao 3.700–4.500 posuda. Podjelom ove količine na 50–150 godina trajanja naselja došli su do godišnje stope obnove od 25–90 posuda. Pošto površina iskopa (0,1 ha) iznosi oko 5, 25% površine naselja (1,9 ha), godišnji obim proizvodnje za cijelo naselje može se izračunati u rasponu između 476 i 1.714 posuda.

Ako se, međutim, pretpostavi da je većina ostataka grnčarije preživjela (100%), godišnja stopa obnove za iskopano područje iznosila bi od 7,43 do 22 posude ($1115/150 = 7.43$, $1115/50 = 22$), a za cijelo naselje od 142–420 posuda. Ako također uzmemo u obzir broj kuća koje su po svemu sudeći imale kontinuitet u devet grupa kroz tri horizonta, kao i 6–7 kompletnih kuća smještenih unutar područja iskopavanja, došli bismo do raspona od 1–3,7 posuda godišnje po domaćinstvu. Ta vrijednost je gotovo identična onoj koja je izračunata za Okolište. Prema Pykeovim izračunima, godišnja obnova grnčarije iznosila bi od 3,6 do 15 posuda po kući, što se čini pretjeranim.⁵⁹ Tako visoka stopa obnove ukazivala bi na

⁵⁵ Roux 2003, 769.

⁵⁶ Rice 1987.

⁵⁷ Vitelli 1993, 210.

⁵⁸ Pyke, Yiouni 1996, 118 ff.

⁵⁹ After reinterpretation of the 14C data, Martin Furholt 2017 assumes duration of the occupation between 100 and 200 years, with higher probability for 100 years: $1115/100=11.15=1.6-1.9$ vessels/year/household.

⁵⁵ Roux 2003, 769.

⁵⁶ Rice 1987.

⁵⁷ Vitelli 1993, 210.

⁵⁸ Pyke, Yiouni 1996, 118 ff.

⁵⁹ Nakon ponovnog tumačenja podataka 14C, Martin Furholt 2017 pretpo-

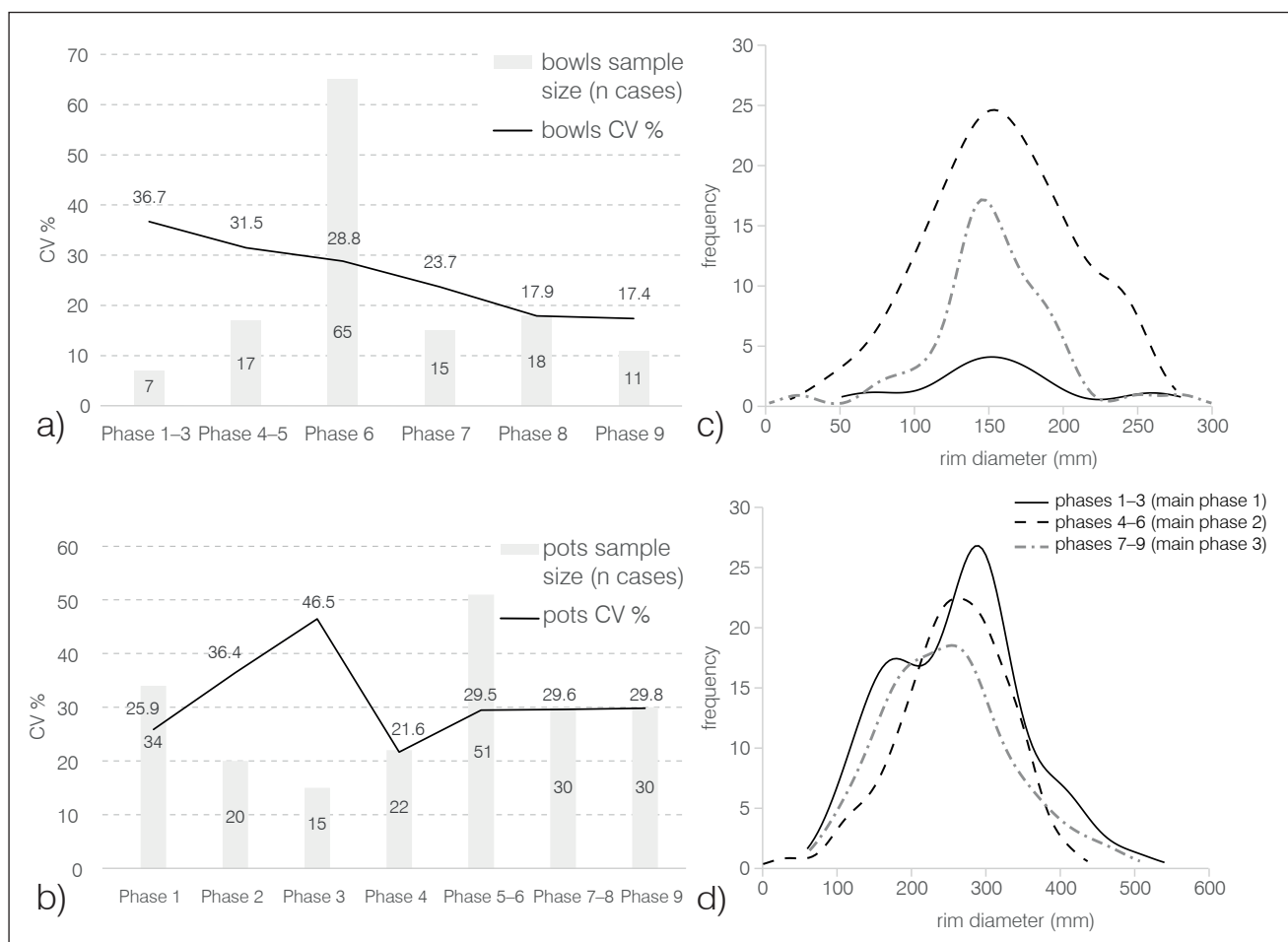


Fig. 11. Okolište. Development of rim diameter for selected vessel classes or type groups: a) Coefficient of variation and sample size of biconical bowls; b) a) Coefficient of variation and sample size of pots; c) Kernel density distribution of rim diameters of biconical bowls in main phases 1–3; d) Kernel density distribution of rim diameters of pots in main phases 1–3. The data tables are available as supplementary material.

Sl. 11. Okolište. Razvoj dijametara ruba za odabrane tipove posuda ili grupacije: a) koeficijent varijacije i veličina uzoraka bikoničnih zdjela; b) koeficijent varijacije i veličina uzoraka posuda; c) Distribucija gustoće zrna na obodima bikoničnih zdjela tokom faza 1-3; d) Distribucija gustoće zrna na obodima posuda tokom faza 1-3. Tabele s podacima su dostupne kao dodatni materijal.

a very short usage life of vessels. There is no evidence of this in either the ethno-archaeological or the ethnological record. On the contrary, cross-cultural studies show that vessels have relatively specific and uniform lifespans that depend on their function⁶⁰.

In view of the apparent uniformity regarding quantity and rate of renewal of vessels over extended periods of time, the usefulness of the number of vessels per household as a variable for calculation of the degree of specialization is very limited. To support this preliminary conclusion, additional case studies are certainly needed.

Furthermore, in order to derive the degree of specialization from production volumes, additional information regarding the degree of concentration or locus of the organization of production is required. Unfortunately, in the Bosnian case study, information related to this issue is very limited. In view of the low average annual renewal rates per household, production at the level of individual houses appears unlikely, at least

vrlo kratak upotrební vijek posuđa. Za to ne postoje dokazi ni u etnoarheološkoj ni u etnološkoj dokumentaciji. Sasvim suprotno, međukulturalna istraživanja pokazuju da posude imaju relativno specifičan i ujednačen životni vijek koji zavisi od njihove funkcije.⁶⁰

Uzimajući u obzir prividnu ujednačenost količine i stope obnove grnčarije tokom dužih vremenskih perioda, broj posuda po domaćinstvu nije od velike koristi kao varijabla za izračun stepena specijalizacije. Ovaj preliminarni zaključak morao bi se potvrditi kroz dodatne studije slučaja.

Nadalje, kako bi se iz obima proizvodnje izveo stepen specijalizacije, potrebne su dodatne informacije o stepenu koncentracije ili lokusu organizacije proizvodnje. Nažalost, u bosanskoj studiji informacije o ovom pitanju su vrlo ograničene. S obzirom na niske stope godišnje obnove po domaćinstvu, proizvodnja na nivou pojedinačnih kuća čini se malo

stavljajući da je naselje trajalo od 100 do 200 godina, a vjerovatnije 100 godina: $1115/100=11,15=1,6-1,9$ posuda/godišnje/domaćinstvu.

⁶⁰ npr. Varien, Mills 1997.

⁶⁰ e.g. Varien, Mills 1997.

during the main phases 1 and 2. Rather, given these pottery quantities, we must assume that production was likely organized at a level higher than that of the individual household (see general discussion below).

DEGREE OF METRICAL STANDARDIZATION

In Okolište, the testing of metrical standardization of vessel dimensions could only be performed on the most common vessel categories, as the available sample sizes are generally relatively small. The example of the analysis of the rim diameters of biconical bowls and (cooking?) pots is presented here. The coefficient of variation of biconical bowls (sample of individual recording) continuously decreases; from 37% in building phases 1–3 to 17% in phase 9 (Fig. 11a). However, the sample size of several building phases is clearly below the required minimum value of 30. The coefficient of variation of pots, on the other hand, is rather uniform; around 30%, although some fluctuations in building phases 2–4 are evident (Fig. 11b).

The presented results appear problematic for several reasons. Firstly, the analysed samples include items from different parts of the settlement. This could, potentially, have resulted in higher variation coefficients than if vessels had been separated by context. Secondly, the analysed samples include vessel units of different size classes, as indicated by kernel density distributions of rim diameters. These size classes could mask forms of standardization present (Fig. 11c–d). Finally, the quality (accuracy) of the rim measurements was likely influenced by the high degree of fragmentation of the material.

The preliminary conclusion of this analysis is that the variation coefficients in all investigated cases exceeded 15%, generally ranging between 15% and 30%. They clearly rank above values considered as indicators for mass production and higher degrees of specialization in craftsmanship. Accordingly in Okolište, from the point of view of metrical standardization, small-scale production and a low degree of specialization can be assumed. Due to various problems with the analysed samples, it remains unclear how the trend of increasing standardization should be interpreted.

DISCUSSION

In the following, the different lines of evidence concerning the degree of specialization in pottery production in the settlement at Okolište are discussed and interpreted in the broader context of Late Neolithic societies. Due to the lack of direct evidence related to pottery production, we exclusively rely on the analysis of pottery from primary and secondary waste disposal contexts. Several characteristics indicate a degree of specialization in pottery production at Okolište. From a stylistic point of view, these characteristics include clearly distinguishable vessel classes with specific *chaîne opératoires*; from a technological point of view, the increased level of control required for the production of highly polished dark burnished fine wares with uniform colour stands out; it is highly likely that specialist knowledge was required to master the more advanced techniques of firing and clay preparation.

vjerovatnom, barem u slučaju osnovne faze 1 i 2. Umjesto toga, uzimajući u obzir ove količine grnčarije, moramo zaključiti da je proizvodnja vjerovatno bila organizirana na nivou iznad pojedinačnog domaćinstva (vidi općenitu diskusiju ispod).

STEPEN METRIČKE STANDARDIZACIJE

U Okolištu se testiranje metričke standardizacije dimenzija posuda moglo uraditi samo na najuobičajenijim kategorijama posuđa jer su dostupni uzorci generalno bili relativno mali. Ovdje je predstavljen primjer analize prečnika rubova bikoničnih zdjela i lonaca (za kuhanje?). Koeficijent varijacije bikoničnih zdjela (uzorak pojedinačne evidencije) kontinuirano opada; od 37% u fazama izgradnje 1–3 do 17% u fazi 9 (sl. 11a). Međutim, veličina uzorka nekoliko faza izgradnje jasno je ispod minimalne potrebne vrijednosti od 30. Koeficijent varijacije lonaca, s druge strane, dosta je ujednačen; oko 30%, mada su uočene izvjesne fluktuacije u fazama izgradnje 2–4 (sl. 11b).

Predstavljeni rezultati čine se problematičnim iz nekoliko razloga. Prvo, analizirani uzorci uključuju predmete iz različitih dijelova naselja. To bi potencijalno moglo dovesti do viših koeficijenata varijacije u odnosu na slučaj da su posude podijeljene prema kontekstu. Drugo, analizirani uzorci uključuju jedinice posuđa različitih klasa veličine, na šta ukazuju distribucije gustine jezgre prečnika ruba. Ove klase veličina mogle bi zamaskirati prisutnu standardizaciju (sl. 11c–d). Konačno, kvalitet (tačnost) mjerenja rubova vjerovatno je narušen zbog visokog stepena izlomljenosti materijala.

Preliminarni zaključak ove analize je da koeficijenti varijacije u svim istraženim slučajevima prelaze 15%, a općenito se kreću od 15% do 30%. Jasno je da se nalaze iznad vrijednosti koje se smatraju indikatorima masovne proizvodnje i viših stepena zanatske specijalizacije. Stoga za Okolište, sa stanovišta metričke standardizacije, vrijedi pretpostavka o proizvodnji malih razmjera i niskog stepena specijalizacije. Zbog različitih problema kod analiziranih uzoraka ostaje nejasno kako treba tumačiti trend porasta standardizacije.

DISKUSIJA

U nastavku razmatramo različite linije dokaza o stepenu specijalizacije u proizvodnji grnčarije u naselju Okolište i tumačimo ih u širem kontekstu kasnoneolitskih društava. Zbog nedostatka direktnih dokaza o proizvodnji grnčarije isključivo se oslanjamo na analizu grnčarije iz konteksta primarnog i sekundarnog odlaganja otpada. Nekoliko karakteristika ukazuje na stepen specijalizacije u proizvodnji grnčarije u Okolištu. Te karakteristike u stilskom smislu uključuju jasno razgraničene klase posuđa sa specifičnim *chaîne opératoires*; sa tehnološkog stanovišta ističe se povećan nivo kontrole koji je potreban za proizvodnju finog tamnog posuđa visokog sjaja i ujednačene boje; vrlo je vjerovatno da je bilo

The spatial distribution of pottery styles in seven contemporary house plots (households?) implies a certain organization of pottery production 'beyond' individual houses. No clear inventory differences are visible across multiple levels of classification. Even pottery styles showing external relations, such as the Adriatic Hvar style or fluting with stylistic relations to the Central Balkans, tend to occur in all house plots.

However, the temporarily increased diversification of the range of vessel shapes and decorations, the increased decoration rates, and the enhanced effort required for the production of vessels between 5100 and 4750 BCE is more difficult to reconcile with the idea of increased specialization in pottery production. Similar phenomena have been interpreted as indicators of economic intensification in the core area of Vinča.⁶¹ There, however, these phenomena are accompanied by other clear indicators of increasing specialization, such as growing metrical standardization, increased ceramic quantities, advanced firing techniques, and larger vessel capacities. In the investigated case of Okolište, most of these other indicators are not present. While an improvement of firing techniques and increased work input for the production of vessels are observed, the degree of metrical standardization remains low and there is no trend toward increased vessel capacities evident. Due to the lack of comparable data within the wider study area, the intensity of production cannot be fully evaluated. However, the calculated production rates are rather low, and not significantly different from those of the Early Neolithic period.

In light of the described findings, we should probably assume a significantly lower degree of specialization in pottery production for the Neolithic society of Okolište than for the core area of societies with Vinča pottery styles. Due to lack of production evidence, the specific organization of production and distribution are still poorly understood. Indeed, against the backdrop of our overall interpretation of societies with Butmir pottery styles, it seems plausible to interpret the increase of stylistic diversity as an indicator of enhanced investment in the symbolic functions of pottery as a means of representation in the wider context of competitive relationships between households or groups of households. Such an interpretation is, in principle, supported by low rates of vessel production and a low degree of metrical standardization.

However, the nonspecific distribution of ceramic styles within the settlement seems incompatible with the scenario that pottery styles could have served as markers of social or ethnic boundaries. The nonspecific distribution of pottery styles linked to other regions is particularly relevant to this argument. As mentioned above, corresponding distributions of pottery styles that cross the borders between households are a widespread phenomenon in Neolithic settlements of South-eastern Europe. This might suggest that pottery was produced 'beyond' (i.e. further up than) the socio-economic level of individual households, and perhaps also of larger kinship groups. It could furthermore imply that pottery styles in Okolište were

potrebno specijalističko znanje za ovladavanje naprednijim tehnikama pečenja i pripreme gline.

Prostorna distribucija grnčarskih stilova u sedam istovremenih kućnih čestica (domaćinstava?) ukazuje na određenu organizaciju proizvodnje grnčarije koja 'prelazi granice' pojedinačnih kuća. Nisu primjetne jasne razlike u inventaru između više nivoa klasifikacije. Čak i grnčarski stilovi koji ispoljavaju vanjske veze, kao što je jadransko-hvarski stil ili žljebovi koji su stilski vezani za centralni Balkan, obično se pojavljuju na svim kućnim česticama.

Međutim, privremeno povećana diversifikacija oblika posuda i dekoracija, povećane stope ukrašavanja i značajniji napor potreban za proizvodnju posuda od 5100. do 4750. p.n.e. teže je primiriti s idejom povećane specijalizacije u proizvodnji grnčarije. Slične pojave tumačene su kao indikatori povećanja intenziteta privrede u središnjem području Vinče.⁶¹ Tu su, međutim, te pojave praćene drugim jasnim indikatorima povećanja specijalizacije, kao što je rastuća metrička standardizacija, povećanje količina keramike, napredne tehnike pečenja i veći kapaciteti posuda. U ispitivanom slučaju u Okolištu izostaje većina ovih drugih indikatora. Iako se uočavaju unapređenija tehnika pečenja i više uloženog rada u proizvodnju posuda, stepen metričke standardizacije ostaje nizak i nije primjetan trend ka povećanju kapaciteta posuda. Zbog nedostatka uporedivih podataka unutar šireg područja istraživanja nije moguće u potpunosti procijeniti intenzitet proizvodnje. Međutim, izračunate stope proizvodnje dosta su niske i ne razlikuju se značajno od onih iz ranog neolita.

U svjetlu opisanih nalaza vjerovatno bismo trebali pretpostaviti značajno niži stepen specijalizacije u proizvodnji grnčarije u slučaju neolitskog društva u Okolištu u odnosu na središnje područje društava koja su imala vinčanske stilove grnčarije. Zbog nedostatka dokaza o proizvodnji još uvijek se nedovoljno razumije specifična organizacija proizvodnje i distribucije. Uistinu, sagledano u kontekstu ukupnog tumačenja društava sa butmirskim stilovima grnčarije čini se opravdanim tumačiti povećanje stilske raznolikosti kao indikator unapređenog ulaganja u simbolične funkcije grnčarije kao reprezentativnog sredstva u širem kontekstu konkurentnih odnosa među domaćinstvima ili grupama domaćinstava. U prilog takvom tumačenju u principu idu niske stope proizvodnje posuda i nizak stepen metričke standardizacije.

Međutim, nespecifična distribucija keramičkih stilova unutar naselja čini se nespojivom sa scenarijem u kojem bi stilovi grnčarije mogli služiti kao markeri društvenih ili etničkih granica. Za ovaj argument naročito je relevantna nespecifična distribucija stilova grnčarije povezanih s drugim regijama. Kako je ranije navedeno, podudarne distribucije stilova grnčarije koji prelaze granice između domaćinstava rasprostranjena su pojava u neolitskim naseljima jugoistočne Evrope. To bi moglo ukazivati na proizvodnju grnčarije 'korak dalje' (tj. iznad) društveno-ekonomskog nivoa pojedinačnih domaćinstava, možda i širih srodničkih skupina.

61 Kaiser, Voytek 1983.

61 Kaiser, Voytek 1983.

distributed based on mechanisms other than ethnic identification or kinship.

If we start from the premise that externally linked pottery styles were produced by different potters, then we should take into consideration the notion that the demand of households for ceramic vessels might have been stated by different potters. At present, there is nothing to suggest that these potters needed to have belonged to the same social groups as the consumers. As an affiliation to ethnic or kinship groups can be excluded as the basis for the intra-site distribution of pottery styles, we must consider other distribution criteria. If we exclude kinship-based cooperation as the main distribution mechanism, we need to answer the question of which other goods or services were received in exchange for (the production of) pottery.

As described above in a more detailed fashion, the Late Neolithic society of Okolište was likely marked by an egalitarian ideology. From an architectural-sociological viewpoint, this is manifested by a strong axial settlement layout, which is suggestive of a high level of social monitoring.⁶² Convex spaces for negotiations of communal concerns are largely absent in the settlement layout. However, in contrast to this, the distribution of grinding stones and other artefacts within individual house plots indicates a certain degree of specialization in production and rising social inequality.⁶³ One driving factor behind this development might have been a scarcity of arable land in the valleys and basins of Central Bosnia. According to this interpretation, particular economically active 'alpha' households achieved a surplus not only in critical subsistence goods like cereals, but also in other goods and the ritual sphere.⁶⁴ These 'alpha' households potentially also achieved a surplus in political power over other households with underproduction. An example of a reason for this early, potentially hereditary, inequality could be ownership or control of particularly suitable land situated in the vicinity of the settlement.

The idea that some households supplied others with pottery could indeed be easily integrated into this reconstruction. But this would raise the question: Which households produced the pottery? Those that achieved overproduction and were particularly active in other fields, or those that were the 'losers' in terms of this other development? Numerous analogies from ethnographic case studies show that potters are not usually considered as belonging to the 'upper class' within societies.⁶⁵ Exceptions to this trend do, however, occur in societies with community specialization. Applying this trend to the case of Okolište, an increased degree of specialization in pottery production could therefore possibly be understood as a consequence of – and response to – increased inequality. The production of pottery for other families could be an alternative strategy to increase a household's income and an attempt to maintain reciprocal socio-economic relationships within the society. An alternative interpretation would assume that

Štaviše, moglo bi ukazivati i na to da su stilovi grnčarije u Okolištu distribuirani na temelju mehanizama nevezanih za etničku pripadnost ili srodstvo.

Ako krenemo od pretpostavke da su stilove grnčarije s vanjskim vezama proizvodili različiti grnčari, onda trebamo uzeti u obzir mogućnost da su potražnju domaćinstava za keramičkim posuđem ispunjavali različiti grnčari. Trenutno ne postoji ništa što bi sugeriralo da su ti grnčari nužno morali pripadati istoj društvenoj skupini kao i korisnici grnčarije. Pošto možemo isključiti pripadnost etničkim ili srodničkim grupama kao osnovu za distribuciju stilova grnčarije unutar lokaliteta, moramo razmotriti druge kriterije za distribuciju. Ako isključimo saradnju zasnovanu na srodstvu kao osnovni mehanizam distribucije, onda moramo odgovoriti na pitanje koja se to druga roba ili usluga davala u zamjenu za (proizvodnju) grnčarije.

Kako je ranije detaljnije opisano, kasnoneolitsko društvo Okolišta vjerovatno je obilježeno egalitarnom ideologijom. Sa arhitektonsko-sociološkog stanovišta ovo se ogleda u izrazito aksijalnom rasporedu naselja, što ukazuje na visok nivo socijalnog praćenja.⁶² U rasporedu naselja uglavnom nema konveksnih prostora za pregovaranje o zajedničkim pitanjima. Međutim, za razliku od toga, distribucija žrnjeva i drugih artefakata unutar pojedinačnih kućnih čestica ukazuje na određen stepen specijalizacije u proizvodnji i na rastuću socijalnu nejednakost.⁶³ Jedan pokretački faktor za ovaj razvoj mogla bi biti oskudnost obradivog zemljišta u dolinama i bazenima centralne Bosne. Prema ovom tumačenju naročito privredno aktivna 'alfa' domaćinstva postizala su višak vrijednosti ne samo u ključnim namirnicama kao što su žitarice, već i u drugim dobrima i u ritualnoj sferi.⁶⁴ Ova 'alfa' domaćinstva potencijalno su također postizala višak političke moći nad drugim domaćinstvima koja su manje proizvodila. Primjer razloga za ovu ranu, potencijalno nasljednu, nejednakost moglo bi biti vlasništvo ili kontrola nad naročito pogodnim zemljištem smještenim u blizini naselja.

Ideja da su neka domaćinstva snabdijevala druga grnčarijom zaista bi se lako mogla uklopiti u ovu rekonstrukciju. Ali to bi povuklo za sobom pitanje: Koja su domaćinstva proizvodila grnčariju? Ona koja su postizala prekomjernu proizvodnju i koja su bila naročito aktivna u drugim poljima ili ona koja su bila 'gubitnici' u ovom drugom razvojnom smislu? Brojne analogije iz etnografskih studija slučaja pokazuju da se grnčari obično nisu smatrali pripadnicima 'više klase' unutar društava.⁶⁵ Izuzeci od ovog trenda se, međutim, pojavljuju u društvima sa specijalizacijom u zajednicama. Ako ovaj trend primijenimo na slučaj Okolišta, povećan stepen specijalizacije u proizvodnji grnčarije mogao bi se stoga potencijalno shvatiti kao posljedica povećane nejednakosti i reakcija na nju. Proizvodnja grnčarije za druge porodice mogla je biti alternativna strategija za povećanje

62 Müller-Scheeßel *et al.* 2010a.

63 Müller *et al.* 2011.

64 Arponen *et al.* 2015; Arponen *et al.* 2016.

65 e.g. Rice 1987.

62 Müller-Scheeßel *et al.* 2010a.

63 Müller *et al.* 2011.

64 Arponen *et al.* 2015; Arponen *et al.* 2016.

65 npr. Rice 1987.

'alpha' households were particularly actively involved in the production of vessels.

The question of how to explain the temporarily increasing diversity of vessel shapes and decorations in the context of the proposed interpretations is difficult to answer. This phenomenon also occurs in other societies – including the Late Neolithic Vinča culture in the Central Balkan region – and is seen as a sign of economic intensification and a growing degree of specialization.⁶⁶ This diversification might indicate the involvement of an increased number of producers in the production process. Since this seems unlikely in the light of the presented data, it is possible that we should take into consideration increased competition between producers. However, it remains unclear at present why the amount of produced and consumed vessels did not increase under such circumstances, as seen elsewhere, but remained – at least as far as can be seen from the evidence available at present – at the level of Early Neolithic pottery production.

CONCLUSION

In the case of the Central Bosnian Late Neolithic settlement of Okolište, several indicators of specialization processes in pottery production could be identified. However, the degree of specialization remained at a low level, and this development was not sustainable. The mentioned specialization processes took place between 5200 and 4850 BCE under changed demographic and economic conditions in a society with local population agglomerations of several thousand people.

It is highly likely that pottery production was not organized at the level of individual households in Okolište, but was rather concentrated to a certain degree. Unfortunately, it is difficult to evaluate at which societal level the production took place: exclusively within kinship groups or also beyond them. However, the uniform spatial distribution of pottery styles with external links seems to indicate the distribution of vessels across kinship borders.

The low amount of produced pottery provides clear evidence to oppose the notion of the existence of full-time specialists. Rather, we have to assume part-time specialization was in play. In the context of social differentiation processes, pottery production may well have proved to be an alternative strategy of structurally undersupplied households' securing of their subsistence.

Certain differences are observed with regard to a comparison with Late Neolithic societies in the core area of distribution of Vinča pottery, which concern, on the one hand, the amount of produced pottery and, on the other, the degree of standardization. These differences suggest that, compared to the so-called 'Butmir communities' studied in this paper, higher degrees of craft specialization existed in terms of ceramic production among communities with Vinča pottery styles.

prihoda domaćinstva i pokušaj da se održe recipročni društveno-ekonomski odnosi unutar društva. Prema alternativnom tumačenju bi se pretpostavilo da su 'alfa' domaćinstva bila naročito aktivno uključena u proizvodnju posuđa.

Teško je dati odgovor na pitanje kako objasniti privremeno povećanje raznolikosti oblika i dekoracija posuđa u kontekstu predloženih tumačenja. Ova pojava zabilježena je i u drugim društvima – uključujući kasnoneolitsku vinčansku kulturu regije centralnog Balkana – i smatra se znakom povećanja intenziteta privrede i rastom stepena specijalizacije.⁶⁶ Ova diversifikacija mogla bi ukazivati na uključenost većeg broja proizvođača u proces proizvodnje. Pošto se to čini malo vjerovatnim u svjetlu predstavljenih podataka, možda bismo trebali uzeti u obzir povećanu konkurenciju među proizvođačima. Međutim, zasad ostaje nejasno zašto se količina proizvedenog i korištenog posuđa nije povećala pod takvim okolnostima, kao što se to drugdje dešavalo, već je ostala – bar koliko se može zaključiti iz trenutno dostupnih dokaza – na nivou ranoneolitske proizvodnje grnčarije.

ZAKLJUČAK

U slučaju centralnobosanskog kasnoneolitskog naselja Okolište uočljivo je nekoliko indikatora procesa specijalizacije u izradi grnčarije. Međutim, stepen specijalizacije ostao je na niskom nivou, a takav trend nije bio održiv. Spomenuti procesi specijalizacije odvijali su se između 5.200. i 4.850. p.n.e. pod izmijenjenim demografskim i ekonomskim uslovima u društvu s aglomeracijama lokalnog stanovništva od nekoliko hiljada ljudi.

Vrlo je vjerovatno da proizvodnja grnčarije nije bila organizirana na nivou pojedinačnih domaćinstava u Okolištu već da je bila u izvjesnoj mjeri koncentrirana. Nažalost, teško je procijeniti na kojem se društvenom nivou odvijala proizvodnja: isključivo unutar srodničkih grupa ili i izvan njih. Međutim, ujednačena prostorna distribucija stilova grnčarije s vanjskim poveznicama sugerira distribuciju posuđa preko srodničkih granica.

Mala količina proizvedene grnčarije pruža jasan dokaz da nije postojala potpuna specijalizacija. Umjesto toga moramo pretpostaviti postojanje djelomične specijalizacije. U kontekstu procesa društvenog raslojavanja proizvodnja grnčarije je vrlo moguće bila alternativna strategija strukturalno nedovoljno snabdjevenih domaćinstava da si osiguraju opstanak.

Određene razlike opažene su u pogledu poređenja s kasnoneolitskim društvima u središnjem području distribucije vinčanske grnčarije, a tiču se, s jedne strane, količine proizvedene grnčarije i stepena standardizacije, s druge. Ove razlike sugeriraju da je u odnosu na tzv. 'butmirske zajednice' koje su predmet izučavanja u ovom radu kod zajednica s vinčanskim stilovima grnčarije postojao viši stepen zanatske specijalizacije za proizvodnju keramike.

66 Kaiser and Voytek 1983.

66 Kaiser i Voytek 1983.

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Brončanodobni nalazi jantara s nekropola glasinačkog područja

Bronze Age Amber Finds from Cemeteries at the Glasinac Area

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Pretpovijesni su tumuli Glasinac i okolice, u jugoistočnom dijelu Bosne i Hercegovine, dali jednu od najvećih poznatih zbirki nalaza jantara iz europskog brončanog i željeznoga doba. Kontinuirano korištenje nakita od jantara, u obliku grobnih priloga, dokazano je na tom području višestrukim ukopima, koji obuhvaćaju razdoblje od gotovo tisuću godina između sredine 2. te sredine 1. milenija pr. Kr. Iako je ovaj fenomen općenito prepoznat od strane mnogih znanstvenika, još uvijek postoje brojni problemi vezani s kronologijom i formalnom karakterizacijom artefakata od jantara. Ovaj rad nastoji razjasniti nedoumice vezane za grobove koji sadrže jantar, a dosad su datirani u brončano doba (faze Glasinac II do Glasinac III). Nalazi jantara vremenski su determinirani na osnovi procjene kronologije pronađenih artefakata i, u nekim slučajevima formalnih karakteristika samih perli. Upravo ispitivanje formalnih karakteristika samih perli čini osnovu za reviziju prethodnih tipoloških atributa razmatranih nalaza. Kao rezultat toga četiri groba s jantarom pouzdano su datirana u brončano doba, dok su tri isključena iz ove skupine zbog činjenice da nije bilo dovoljno dokaza za takvu klasifikaciju ili su se pokazali mlađima. Osim toga, u slučaju nekoliko artefakata predložena je nova tipološka determinacija.

Glavne riječi: jantar, Glasinac, brončano doba, kronologija, tipologija, Bosna i Hercegovina, Zemaljski muzej Bosne i Hercegovine

The prehistoric tumuli of Glasinac and the surrounding area, in the southeastern part of Bosnia and Herzegovina, has yielded one of the largest collections of amber finds known from the European Bronze and Iron Ages. The continuous use of amber jewellery as grave goods is evidenced in the area by multiple burials, spanning a period of almost one thousand years between the mid-2nd and mid-1st millennium BC. Even though this phenomenon has generally been recognized by many scholars, there are still numerous problems connected with chronology and formal characterization of the amber artefacts. This paper sets out to clarify these issues in respect to the graves containing amber, hitherto dated to the Bronze Age (phases Glasinac II to III). The temporal position of amber assemblages was evaluated by verification of co-occurring finds' chronologies and, in some cases, the formal characteristics of the beads themselves. Examination of the latter aspects formed the basis for the revision of previous typological attributions of the discussed artefacts. As a consequence, four graves with amber were reliably dated to the Bronze Age, whereas three others were excluded from this group, due to the fact that they bore insufficient evidence for such classification or were proven to be younger. Additionally, in the case of several artefacts, a new typological definition was suggested.

Key words: amber, Glasinac, Bronze Age, chronology, typology, Bosnia and Herzegovina, National Museum of Bosnia and Herzegovina

UVOD

U bogatoj arheološkoj zbirci Zemaljskog muzeja Bosne i Hercegovine u Sarajevu (Zemaljski muzej Bosne i Hercegovine, skraćeno ZMBiH), mogu se naći brojni artefakti od jantara pronađeni u tumulima koji se nalaze istočno od Sarajeva, na takozvanom glasinackom području. Tumuli se, zajedno sa svojim inventarima, smatraju dokazom dugog, kontinuiranog života na ovom području, koje obuhvaća gotovo cijelo brončano i željezno doba. Obilje jantara u nekim od grobova svjedoči o posebnom društvenom statusu ili položaju onih s kojima su takvi artefakti pokopani. Skupa, ovi nalazi čine jednu od najvećih zbirki pretpovijesnog jantara koja je trenutačno poznata na području Balkana.

Artefakti od jantara privukli su pozornost znanstvenika koji su iskopali humke na Glasincu već u 19. stoljeću. Na temelju kronološke procjene nalaza, većinom izrađenih od bronce, jedan je dio njih datiran u brončano doba¹ i kao takav katalogiziran od strane A. Palavestra.² Tijekom proteklih 25 godina rezultati Palavestrinog istraživanja nisu bili osporavani niti mijenjani. Nedavna istraživanja vezana za jantare nalaze, dosad datirane u brončano doba, uz pregled relevantne literature, doveli su u pitanje ispravnost prethodno utvrđene kronologije i tipologije niza tih artefakata. Ovaj rad predstavlja rezultat ponovnog ispitivanja spomenutih nalaza.

GEOGRAFSKI POLOŽAJ I HISTORIJA ISTRAŽIVANJA

Područje Glasinca smješteno je u istočnom dijelu Bosne i Hercegovine: proteže se od planine Romanije na zapadu do rijeke Drine na istoku. Na sjeveru je ovo područje omeđeno planinama Kopit i Devetak, a na jugu dolinom rijeke Prače. Preciznije rečeno, to je i naziv kojim se opisuje kompleks nekropola koje se sastoje od tumula nastalih na tom području tijekom brončanog i željeznog doba, formirajući izvanredne grobne pejzaže jedinstvene u ovom dijelu Europe. Fenomen kontinuiranog korištenja istog područja za ukope više od tisuću godina naveo je Borivoja Čovića da uvede razliku između glasinacke grupe i glasinacke kulture.³

Pretežiti najveći dio arheoloških nalaza s područja Glasinca pronađen je arheološkim iskopavanjima koja su vodili Č. Truhelka, G. Stratimirović, F. Fiala i V. Čurčić između 1888. i 1897. godine, istovremeno s osnivanjem ZMBiH.⁴ Osim toga, brojni nalazi dolaze s iskopavanja provedenih u 20. stoljeću⁵ i slučajnih grobnih nalaza iz Kusača, Kosova i Sokoca.⁶ Početnu sintezu rezultata, isključivo brončanog doba, uradili su A. Benac i B. Čović 1956. godine.⁷ Rad je objavljen kao katalog

INTRODUCTION

Within the rich collection of archaeological finds stored in the National Museum of Bosnia and Herzegovina in Sarajevo (*Zemaljski muzej Bosne i Hercegovine*, abbreviated ZMBiH), one can find numerous artefacts made of amber, recovered from the tumuli located to the east of Sarajevo, in the so-called Glasinac area. The tumuli, along with their inventories, are considered evidence of a very long habitation of this area, spanning almost the entirety of the Bronze and Iron Ages. Moreover, the abundance of amber in some of the graves testifies to a special social status or position of those with which such artefacts are buried. Altogether, these materials compose one of the largest assemblages of prehistoric amber currently known upon the territory of the Balkans.

Amber artefacts came to the attention of scholars excavating the burial mounds at Glasinac as early as the 19th century. On the basis of chronological evaluation of co-occurring finds, mostly made of bronze, a portion of these have been dated to the Bronze Age¹ and, as such, catalogued by A. Palavestra.² For the past 25 years, the results of Palavestra's study have stood unchanged and undisputed. Recent queries related to the amber finds, hitherto dated to the Bronze Age, alongside an overview of related literature, have, however, brought into question the correctness of the previously determined chronology and typology of a number of these artefacts. This paper presents the outcome of a re-examination of these finds.

LOCALISATION AND RESEARCH HISTORY

The area of Glasinac is a region located in the eastern part of Bosnia and Herzegovina, extending from Romanija Mountain in the west to the Drina River in the east. To the north, this area is delimited by the Kopit and Devetak mountains, and to the south by the valley of the Prača River. In more justified manner, it is also the name used to describe the complex of necropolises consisting of tumuli that were created in that area throughout the Bronze and Iron Ages, forming extraordinary burial landscapes unique in this part of Europe. The phenomenon of continuous occupation of the same land as a burial ground for more than one thousand years, led Borivoj Čović to distinguish the Glasinac Group and Glasinac Culture.³

By far the largest portion of archaeological finds from the Glasinac area dates back to the excavations of Č. Truhelka, G. Stratimirović, F. Fiala and V. Čurčić between 1888 and 1897, contemporaneous to the establishment of ZMBiH.⁴ Additionally, a number of finds come from excavations conducted in the 20th century⁵ and chance grave finds from Kusače, Kosovo and Sokolac.⁶ An initial synthesis of the results, concerning solely the Bronze Age barrows, was carried out by A. Benac and B. Čović in 1956.⁷ It was released as a catalogue of excavated

1 Benac, Čović 1956; Čović 1981; 1983a.

2 Palavestra 1993.

3 Čović 1983a, 413–432; 1987, 575–643.

4 Truhelka 1889a, 23–35; 1889b, 26–44; 1889c, 2–23; 1890, 386–401; 1891, 306–315; Stratimirović 1891, 338–349; Fiala 1892, 384–444; 1893, 717–763; 1894, 721–760; 1895, 535–565; 1896, 429–461; 1897, 585–620.

5 Govedarica 1978, 15–37; 1979, 171–180.

6 Mandić 1937, 5–9; Benac 1954, 169, sl. 2; Čović 1965, 57–82.

7 Benac, Čović 1956.

1 Benac, Čović 1956; Čović 1981; 1983a.

2 Palavestra 1993.

3 Čović 1983a, 413–432; 1987, 575–643.

4 Truhelka 1889a, 23–35; 1889b, 26–44; 1889c, 2–23; 1890, 386–401; 1891, 306–315; Stratimirović 1891, 338–349; Fiala 1892, 384–444; 1893, 717–763; 1894, 721–760; 1895, 535–565; 1896, 429–461; 1897, 585–620.

5 Govedarica 1978, 15–37; 1979, 171–180.

6 Mandić 1937, 5–9; Benac 1954, 169, Fig. 2; Čović 1965, 57–82.

7 Benac, Čović 1956.

istraženih lokaliteta, dopunjen tipo-kronološkim pregledom nalaza koji se čuvaju u zbirkama ZMBiH od njihova otkrića. Godinu dana poslije objavljena je publikacija sa sličnim prikazom materijala željeznog doba.⁸ Kao rezultat, grobne su humke s područja Glasinca podijeljene u pet faza: Glasinac I (otprilike istovremeno s ranim brončanim dobom), Glasinac II (srednje brončano doba), Glasinac III (kasno brončano doba), Glasinac IV (starije željezno doba) i Glasinac V (mlađe željezno doba), koje su dalje podijeljene na kraće faze. Čović je ovu kronologiju revidirao nekoliko puta,⁹ a konačna verzija periodizacije razrađena je u četvrtom svesku Praistorije jugoslavenskih zemalja – Bronzano doba.¹⁰

NEKOLIKO NAPOMENA O KRONOLOGIJI BRONČANOG DOBA NA GLASINCU

Da bi uspostavili podudarnost između periodizacije nekropole na Glasincu i opće kronologije brončanog doba u centralnoj Europi, Benac i Čović koristili su sustav koji je uveo P. Reinecke:¹¹ tako da je u finalnoj publikaciji faza Glasinac II u velikoj mjeri podudarna sa srednjim brončanim dobom BrB-BrC(1), dok je podfaza IIIa povezana s krajem faze BrC(2) i većinom faze BrD.¹² Problematičnija je uspostava vremenske korelacije između kasnog brončanog doba na Glasincu i razdoblja razvoja kulture polja sa žarama. Na kraju, faza IIIb povezana je s kasnim BrD i HaA, dok je IIIc povezana s HaB1-2.¹³ Zatim slijede faze IV i V, koje označavaju razdoblje željeznog doba.¹⁴ Zahvaljujući toj paralelizaciji mogu se procijeniti realni vremenski okviri pojedinih faza. Tako je faza II smještena u razdoblje koje je trajalo između 1500. i 1300. godine pr. Kr., faza IIIa izjednačena je s 1300. – 1200. godina pr. Kr., IIIb s 1200. – 1000. godina pr. Kr., a IIIc s 1000. – 800. pr. Kr.¹⁵

U kasnijem je fazama svoga rada na periodizaciji Glasinca Čović došao do zaključka da se materijal iz faze IIIb pretežno odnosi na relativno ranu fazu kasnog brončanog doba (kraj 13. i 12. st. pr. Kr., kasni BrD – HaA1 stupanj).¹⁶ Jedan od glavnih problema bio je pronalaženje dokaza među nalazima s Glasinca pogrebne prakse u posljednjem stoljeću 2. milenija pr. Kr., što odgovara HaA2. Budući da je glasinačka faza IIIc bila povezana s mlađom etapom (HaB, oko 1000. – 800. g. pr. Kr.), znanstvenik je bio suočen s otprilike 100-godišnjim hijatom, što ga je pokušao popuniti brojnim nalazima koji približno odgovaraju periodu srednjeg razdoblja kulture polja sa žarama. Kao rješenje, Čović je podijelio fazu IIIb u dvije podfaze: IIIb-1 i IIIb-2. Ranija podfaza nastala je revizijom materijala izvorno pripisanih fazi IIIa.¹⁷ Ova posljednja faza bila je u korelaciji s horizontom Mlađ – Maravić – Borovsko,

sites, supplemented by a typo-chronological overview of finds that had been kept in the collections of ZMBiH since their discovery. Another publication followed, a year later, with a similar presentation of Iron Age materials.⁸ As a consequence, the barrow cemeteries from the Glasinac area were divided into five phases: Glasinac I (roughly concurrent with the Early Bronze Age), II (Middle Bronze Age), III (Late Bronze Age), IV (Early Iron Age), and V (Late Iron Age), which were further sub-divided into shorter stages. This chronological system was later revised by Čović several times,⁹ with the final version of the periodisation being elaborated in the 4th volume of Praistorija Jugoslavenskih Zemalja – bronzano doba (Prehistory of the Yugoslav Lands – Bronze Age).¹⁰

A FEW REMARKS REGARDING THE BRONZE AGE CHRONOLOGY OF GLASINAC

In order to establish concordance between periodisation of the Glasinac necropolises and a general chronology of the Bronze Age in Central Europe, Benac and Čović used the system devised by P. Reinecke:¹¹ thus, according to the final version, the Glasinac II phase was largely correlated to the Middle Bronze Age phases BrB-BrC(1), whereas the subsequent sub-phase IIIa was linked to the end of phase BrC(2) and the majority of phase BrD.¹² More problematic was the establishment of a temporal correlation between the Late Bronze Age at Glasinac and the period of Urnfield culture development. Finally, phase IIIb was linked to late BrD and HaA, while IIIc was correlated to HaB1-2.¹³ The latter of these is followed by phases IV and V, signifying the Iron Age period.¹⁴ Thanks to this parallelization, real time frames of the individual phases could be estimated. Thus, phase II was placed in a period approximately spanning between 1500 and 1300 BC, phase IIIa was equated with 1300-1200 BC, IIIb with 1200-1000 BC, and IIIc with 1000-800 BC.¹⁵

In the later stages of his work on Glasinac periodization, Čović came to the conclusion that materials from phase IIIb predominantly refer to a relatively early stage of the Late Bronze Age (end of the 13th and 12th cent. BC; late BrD-HaA1)¹⁶. One of the major problems was finding any evidence among Glasinac materials for funerary practices in the final century of the 2nd millennium BC, corresponding with HaA2. As Glasinac phase IIIc was linked with a younger stage of the Urnfield culture (HaB; around 1000-800 BC), the scholar was confronted with an approximately 100-year-long gap, which he attempted to fill with a number of finds approximately corresponding to the middle Urnfield culture period. As a solution, Čović split phase IIIb into two sub-phases: IIIb-1 and IIIb-2. The earlier sub-phase was created through a revision of materials originally attributed to phase IIIa.¹⁷ The latter phase was correlated with the horizon

8 Benac, Čović 1957.

9 Čović 1965, 57–82; 1981, 99–140.

10 Čović 1983a, 413–432.

11 Cf. Reinecke 1902; 1924.

12 Čović 1981, 111, Drechsler-Bižić 1983, 261–262.

13 Čović 1981, 111, 1983a, 415–418.

14 Benac, Čović 1957; Čović 1959; 1965; 1981; 1987, 575–643.

15 Čović 1983a, 418; 1983b, 809.

16 Čović 1983a, 415–418.

17 Benac, Čović 1956, 31; 1981, 111–124; Čović 1983a: 416, 418.

8 Benac, Čović 1957.

9 Čović 1965, 57–82; 1981, 99–140.

10 Čović 1983a, 413–432.

11 Cf. Reinecke 1902; 1924.

12 Čović 1981, 111, Drechsler-Bižić 1983, 261–262.

13 Čović 1981, 111, 1983a, 415–418.

14 Benac, Čović 1957; Čović 1959; 1965; 1981; 1987, 575–643.

15 Čović 1983a, 418; 1983b, 809.

16 Čović 1983a, 415–418.

17 Benac, Čović 1956, 31; 1981, 111–124; Čović 1983a: 416, 418.

dok se humke koje su prije pripisivane fazi IIIa primarno preimenovane u podfazu IIIb-1. Shodno tome, Glasinac IIIb-1 identificirala se uvođenjem fibula u obliku violinskoga guda – tzv. horizont *Peschiera*-fibula, što odgovara završnom dijelu BrD i HaA1.¹⁸ Ključan za razlikovanje ovog razdoblja jest grob 1 iz tumula I na mjestu Štrpci, gdje je pronađena fibula u obliku violinskoga guda.¹⁹

Za podfazu Glasinac IIIb-2 Čović je, uz značajne rezerve, uspio odabrati samo mali broj grobova s potencijalnim porijeklom u ovom intermedijarnom razdoblju. Treba naglasiti da su nalazi koje je Čović izabrao kao reprezentativne za ovu fazu uglavnom jednostavni dijelovi brončanog nakita u obliku narukvica, prstenja i privjesaka.²⁰ Autor je izrazio rezerve u pogledu korisnosti tih objekata kao pokazatelja zasebne kronološke faze. Istovremeno je naglasio da takvi nalazi ne postoje u grobnicama koje se pripisuju Glasincu IIIb-1 ili IIIc.²¹

Osim toga, Čović je podijelio i završnu fazu kasnog brončanog doba na Glasincu na dvije podfaze: IIIc-1 i IIIc-2.²² Glavno opravdanje za tu odluku bilo je razlikovanje starijih i mlađih varijanti lučnih fibula tipa Golinjevo. Glasinačku verziju ovog tipa fibule karakterizira uglavnom nepostojanje dva dugmeta na luku fibule. Važan kronološki pokazatelj fibule tipa Golinjevo jest dizajn poprečnog presjeka luka. Primjerice: fibula s osmerokutnim lukom iz Brezja, tum. V, grob 1 (1896.)²³ bliža je starijoj varijanti, dok fibule iz Taline, tum. XX, grob 3 (1895.)²⁴ i Vrlazija, tum. IV, grob 2 (1894.)²⁵ predstavljaju mlađu verziju. U komparativnom pristupu faza Glasinac IIIc izjednačena je sa srednjoeuropskim fazama HaB1 (IIIc-1) i HaB2 (IIIc-2).²⁶

U godinama koje su slijedile nakon objavljivanja kronološke Benčeve i Čovićeve sheme nekoliko autora koji su se bavili nalazima s Glasinca ponudili su svoje korekcije izvorne periodizacije. Rad C. E. F. Parea na sistematizaciji nalaza koji dokumentiraju prijelaz iz kasnog brončanog doba u starije željezno doba u odabranim dijelovima Europe rezultirao je međusobnim podudaranjem lokalnih periodizacija.²⁷ Iako ga neki znanstvenici kritiziraju zbog neosnovane selektivnosti u slučaju materijalnih dokaza i netočnosti u terminološkoj sferi,²⁸ rad ipak pruža dobre osnove za daljnju raspravu i predlaže novu, prilagođenu verziju sustava Müller-Karpe.²⁹ Jedna od najvažnijih modifikacija jest poništavanje faze HaB2 i pripisivanje relevantnih materijala fazama HaB1 i HaB3. U slučaju glasinačkog materijala Pare je predložio inkorporaciju nalaza koji su do sada bili povezani s fazom IIIc (tj. starije varijante fibula tipa Golinjevo) u

Mlađ-Maravići-Borovsko, whereas barrows formerly ascribed to phase IIIa primarily became re-attributed to sub-phase IIIb-1. Consequently, Glasinac IIIb-1 became identified with the introduction of the violin bow fibula – the so-called *Peschiera* fibulae horizon, corresponding to the final part of BrD and HaA1.¹⁸ Crucial in distinguishing this period is grave 1 from tumulus I at the site of Štrpci, where a violin bow fibula was found.¹⁹

For the sub-phase Glasinac IIIb-2, Čović, with considerable reservations, was able to select only a small number of graves with potential origins in this intermediary period. It has to be emphasized that finds chosen by Čović as representative for this stage are mainly simple elements of bronze jewellery in the form of bracelets, rings and pendants.²⁰ The author expressed reservations about the usefulness of those objects as indicators of a separate chronological phase; however, at the same time, he underlined that such finds are absent from graves attributed to Glasinac IIIb-1 or IIIc.²¹

Furthermore, Čović also split the final phase of the Glasinac Late Bronze Age into two sub-phases: IIIc-1 and IIIc-2.²² The main justification for this decision was a distinction between older and younger variants of arched fibula of the Golinjevo type. The Glasinac version of this fibula type is characterized mainly by the absence of the two nodules on the bracket. An important chronological indicator of Golinjevo type fibula is the design of the cross-section of the bracket: for example, the fibula with an octagonal bracket from Brezje, Tum. V, grave 1 (1896)²³ is closer to the older variant, whereas the fibula from Taline, Tum. XX, grave 3 (1895)²⁴ and Vrlazije, Tum. IV, grave 2 (1894)²⁵ are representative of a more recent version. In a comparative approach, Glasinac phase IIIc was equated with Central European phases HaB1 (IIIc-1) and HaB2 (IIIc-2).²⁶

In the years following the publication of the chronological scheme of Benac and Čović, several authors dealing with materials from Glasinac made corrections to the original periodization. C.E.F. Pare's work on systematization of finds documenting transition from the Late Bronze Age to the Early Iron Age in selected areas of Europe resulted in mutual concordance of local periodizations.²⁷ Although criticized by some scholars for undue selectivity in the case of material evidence, and incorrectness in the terminological sphere,²⁸ the work nonetheless offers good grounds for further discussion and proposes a new, adjusted version of the Müller-Karpe system.²⁹ One of the most important modifications is the cancellation of the HaB2 phase and re-attribution of relevant materials to phases HaB1 and HaB3. In the case of Glasinac materials, Pare proposed the incorporation of finds hitherto linked with phase IIIc (i.e. older

18 Čović 1981, 111–112; 119–124; 1983a, 418, 424–425.

19 Fiala 1897, 610–613, sl. 57; Čović 1981, 117–118, sl. 2; 1983a, 416, 418, 424, sl. 29; 9, tab. LXIII: 8.

20 Čović 1983a, 425, sl. 29; 10, 11, 12; T. LXIII: 13–15.

21 Čović 1981, 124–126.

22 Čović 1981, 126–129; 1983a, 418, 426–427; Gabrovec, Čović 1897, 909.

23 Benac, Čović 1956, 23, tab. XXXII: 3; Čović 1983a, 426, tab. LXIV: 4.

24 Fiala 1895, 550; Benac, Čović 1956, 24, tab. XXXIV: 5.

25 Fiala 1894, 725, sl. 11; Benac, Čović 1956, 10, tab. IV: 5.

26 Čović 1971, 322; 1983a, 426, sl. 29; Gabrovec, Čović 1987, 909.

27 Pare 1998.

28 Vidi npr. Majnarić-Pandžić 2002, 342–343.

29 Za preciznu dataciju faza Hallstatt A – C pogledati: Pare 1998, 299.

18 Čović 1981, 111–112; 119–124; 1983a, 418, 424–425.

19 Fiala 1897, 610–613, Fig. 57; Čović 1981, 117–118, Fig. 2; 1983a, 416, 418, 424, Fig. 29; 9, Pl. LXIII: 8.

20 Čović 1983a, 425, Fig. 29; 10, 11, 12; T. LXIII: 13–15.

21 Čović 1981, 124–126.

22 Čović 1981, 126–129; 1983a, 418, 426–427; Gabrovec, Čović 1897, 909.

23 Benac, Čović 1956, 23, Pl. XXXII: 3; Čović 1983a, 426, Pl. LXIV: 4.

24 Fiala 1895, 550; Benac, Čović 1956, 24, Pl. XXXIV: 5.

25 Fiala 1894, 725, Fig. 11; Benac, Čović 1956, 10, Pl. IV: 5.

26 Čović 1971, 322; 1983a, 426, Fig. 29; Gabrovec, Čović 1987, 909.

27 Pare 1998.

28 See: e.g. Majnarić-Pandžić 2002, 342–343.

29 For precise dating of Hallstatt phases A–C see: Pare 1998, 299.

fazu Ia, označavajući početak starijega željeznog doba, dok je sljedeća faza IVa preimenovana u BI,³⁰ te uključuje nalaze prethodno klasificirane od strane N. Lucentini.³¹ Iako postoji konsenzus da nalazi koji se pripisuju fazi IIIC nemaju dokaza koji ih direktno stavljaju u razdoblje HaB3, Pareov prijedlog naišao je na kritiku zbog nedostatka diferencijacije između starijih i mlađih fibula tipa Golinjevo.³²

Još jednu reviziju kronologije Glasinca ponudio je M. Gavranović, koji je prilagodio vremenske okvire faza III i IV.³³ Za razliku od Pare, Gavranović smatra da fibule tipa Golinjevo, osim nekoliko primjera najmlađe varijante, treba ostaviti pripisane fazi IIIC. Prema njegovoj verziji periodizacije faza IIIa u velikoj mjeri odgovara kraju faze BrC i većim dijelom fazi BrD (oko 1350. – 1250. godina pr. Kr.), dok je IIIB istovremena s HaA (oko 1250. – 1100./1050. pr. Kr.).³⁴ Autor je pomjerio fazu IIIC tako da je istodobna s fazom HaB1, pri čemu je prva podfaza (IIIC-1) približno 1100. – 1000. godina pr. Kr., a druga (IIIC-2) pada u razdoblje od 1000. – 900. godina pr. Kr. U ovom pristupu, vremenska granica između faza HaA2/B1 i HaB2/B3 – obično postavljena oko 950./900. pr. Kr. – i koja odgovara prelazu iz faze Glasinac IIIC u fazu Glasinac IVa – prepoznata je kao prijelaz između bronzanog i željeznog doba u ovom dijelu Balkana.³⁵

STANJE ISTRAŽENOSTI JANTARNIH NALAZA S GLASINCA

Izuzetno velik dio nalaza jantara s Glasinca definitivno potječe iz željeznodobnih grobova. Ipak, određeni broj jantarnih perli pripisuje se ukopima iz bronzanog doba. Iako Benac i Čović spominju predmete od jantara u inventarnim popisima grobova koje su objavili, isključivo zahvaljujući Palavestri ovi nalazi su sveobuhvatno katalogizirani i poredani unutar sistematizirane tipologije. Zanimljivo je da Palavestra spominje određeni dokument u ZMBiH – tipološku shemu koja se namjeravala primijeniti na spomenute predmete – koja, međutim, na kraju nikada nije objavljena niti službeno korištena u bilo kojem djelu.³⁶ Sveukupno, Palavestra je prebrojao 228 grobova s cijelog područja Glasinca koji sadrže jantarne nalaze, što iznosi 31,6% ukupnog broja iskopanih grobnih humaka.³⁷ Ta se statistika ni na koji način ne može smatrati konačnom niti preciznom, jer su mnogobrojni nalazi neobjavljeni ili ih je nemoguće pripisati određenom grobu.³⁸ Prema Palavestri, šest je tumula iz bronzanog doba s područja Glasinca sadržavalo jantarne nalaze.³⁹ Ipak, treba

variants of the Golinjevo type fibula) into phase IA, signifying the beginning of the Early Iron Age, whereas the subsequent phase IVa was renamed IB,³⁰ covering materials previously classified by N. Lucentini.³¹ Even though there is a consensus that materials attributed to phase IIIC lack any evidence relating to the HaB3 period, Pare's proposition was met with criticism for the lack of differentiation between the older and younger Golinjevo type fibula.³²

Another review of the Glasinac chronology was undertaken by M. Gavranović, who adjusted the timeframes of phases III and IV.³³ In contrast to Pare, Gavranović argued that the Golinjevo type fibula, apart from a few examples of the youngest variant, should remain attributed to phase IIIC. According to his version of the periodization, phase IIIa largely corresponds to the end of phase BrC and the majority of BrD (circa 1350-1250 BC), while IIIB is contemporaneous with HaA (circa 1250-1100/1050 BC).³⁴ The author shifted phase IIIC, so that it is concurrent with stage HaB1, with the first sub-phase (IIIC-1) approximating 1100-1000 BC, and the second (IIIC-2) falling in the period 1000-900 BC. In this approach, the temporal boundary between stages HaA2/B1 and HaB2/B3 – usually set at around 950/900 BC and corresponding with the transition from Glasinac phase IIIC to phase IVa – is recognized as the transition between the Bronze and the Iron Ages in this part of the Balkans.³⁵

STATE OF KNOWLEDGE REGARDING AMBER FINDS FROM GLASINAC

An overwhelming proportion of the amber finds from Glasinac definitely originate from Iron Age graves. Nevertheless, a limited number of beads have been attributed to Bronze Age burials. Although Benac and Čović mention objects of amber in the inventory lists pertaining to the selection of graves that they published, it is to the sole merit of Palavestra that these finds were comprehensively catalogued and subsequently ordered within a systematized typology. Interestingly, Palavestra mentions a certain document in ZMBiH – a typological scheme that was intended to be applied to the discussed materials – which was, however, eventually never published nor officially used in any works.³⁶ In total, Palavestra counted 228 graves from the entire area of Glasinac that included amber, which amounts to 31.6% of the overall number of excavated mounds.³⁷ These statistics can in no way be regarded as definitive, nor accurate, as many materials remain unpublished or are impossible to assign to a specific grave.³⁸ According to Palavestra, six tumuli dating to the Bronze Age from the area of Glasinac contained amber finds.³⁹ Nevertheless, reasons for the chronological

30 Pare 1998, 333–336.

31 Lucentini 1981, 67–162.

32 Gavranović 2011, 34.

33 Gavranović 2011, 32–38, Abb. 1.

34 Datumi u zagradama su približni, ukazuju na vjerojatni vremenski raspon tijekom kojeg je određena faza mogla započeti i završiti.

35 Čović 1983a, 415–418; 1987, 581–582; Pare 1998, 333–336, tab. 3; Gavranović 2011, 32–38, Abb. 1.

36 Palavestra 1993, 112.

37 Prema Čoviću, 1203 su tumula istražena u razdoblju od 1880. do 1957; međutim, nisu svi bili pogodni za znanstvenu analizu (Čović 1963, 42).

38 Palavestra 1993, 127.

39 Palavestra 1993, 112–113.

30 Pare 1998, 333–336.

31 Lucentini 1981, 67–162.

32 Gavranović 2011, 34.

33 Gavranović 2011, 32–38, Abb. 1.

34 Dates in the brackets are approximated, indicating the probable timespan during which the given phase could have started and ended.

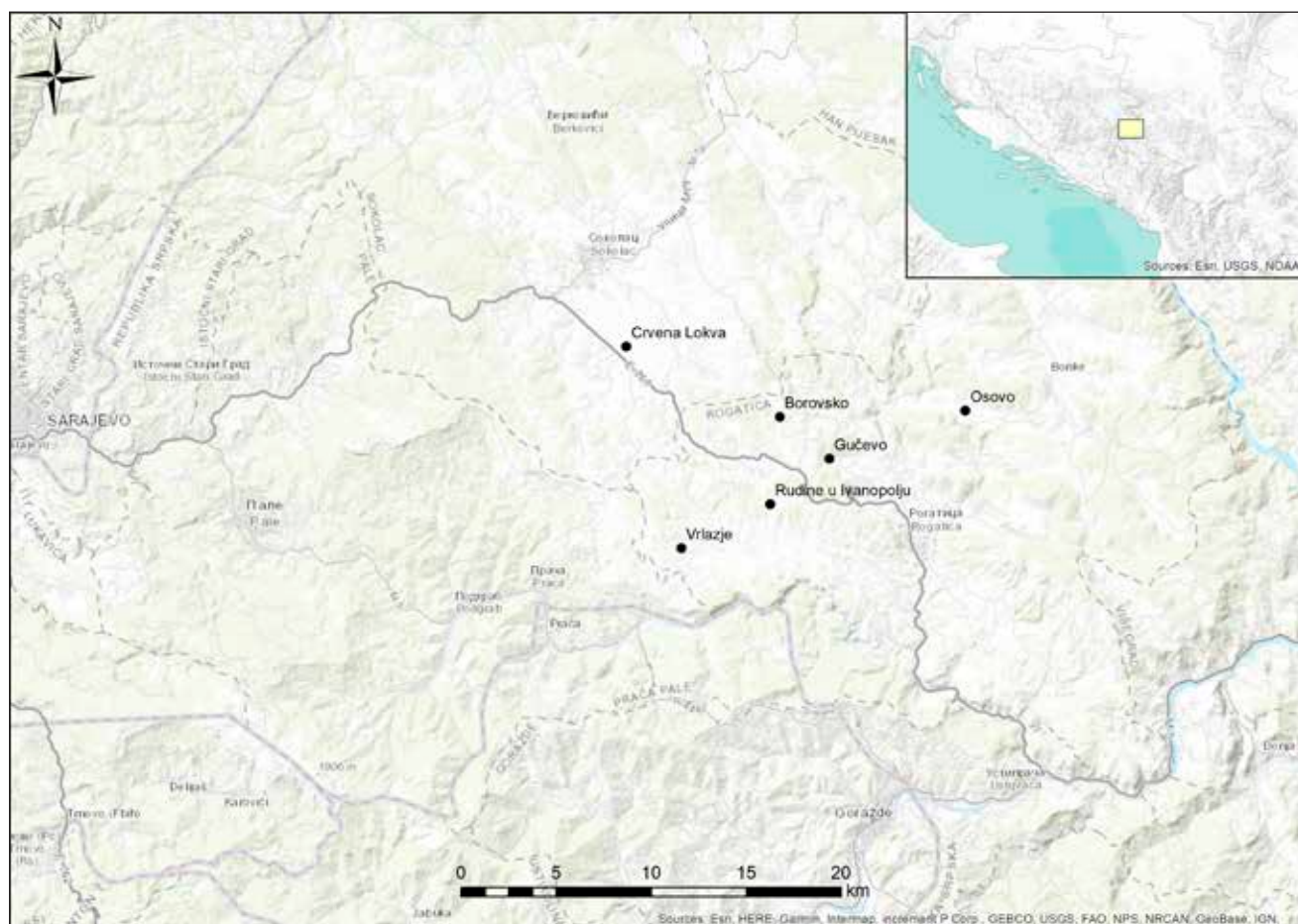
35 Čović 1983a, 415–418; 1987, 581–582; Pare 1998, 333–336, Tab. 3; Gavranović 2011, 32–38, Abb. 1.

36 Palavestra 1993, 112.

37 According to Čović, 1203 tumuli were explored from 1880 to 1957; however not all of them were suitable for scientific analysis (Čović 1963, 42).

38 Palavestra 1993, 127.

39 Palavestra 1993, 112–113.



Karta 1. Područje Glasinca, s lokalitetima koji se spominju u tekstu

Map 1. Glasinac area, with locations of sites cited in the text

razjasniti razloge za kronološku procjenu tih grobova kao suvremenih sa uzastopnim fazama brončanog doba, jer u svjetlu novih razmatranja nisu u potpunosti u skladu s originalnim datacijama koje su dali Benac i Čović, a kasnije ih upotrijebio Palavestra. Isti komentar vrijedi i za tipološko određivanje koje je predložio zadnji autor; mnoge jantarne perle zahtijevaju ponovnu procjenu. Treba dodati da samo nekolicina oblika jantarnih perli koje se pojavljuju na Balkanu tijekom brončanog doba imaju jasno određenu prostornu distribuciju i datiranje.⁴⁰ Tako se samo nekoliko tipova koje Palavestra ističe mogu koristiti neovisno kao kronološki markeri (uglavnom jantarne perle tipa Tiryns i Allumiere - tipovi 1-4), dok se ostatak može datirati samo pomoću drugih nalaza iz istog konteksta.

assessment of those graves as being contemporary with successive phases of the Bronze Age should be clarified, as in the light of new considerations they do not fully conform to original dating of Benac and Čović, later used by Palavestra. The same comment applies to the typological determination proposed by the latter author; many of the beads require reassessment. It has to be added that only a few of the amber bead forms occurring in the Balkans during the Bronze Age have a clearly delineated spatial extent and dating.⁴⁰ Thus, only a few types distinguished by Palavestra can be used independently as chronological markers (mainly those reflecting the Tiryns and Allumiere beads – types 1-4), whereas the remainder can only be dated through reference to concomitant finds in the same contexts.

40 Cf. Cwaliński u tisku.

40 Cf. Cwaliński forthcoming.

REVIZIJA KRONOLOGIJE I TIPOLOGIJE

SREDNJE BRONČANO DOBA – GLASINAC II

Utvrdjivanje prvobitne pojave jantara na Glasincu i u neposrednoj okolini predstavlja značajan problem. Među do sada objavljenim grobnim kontekstima vezanim uz najranije faze razvoja Glasinca mogu se naći samo oskudne primjedbe o jantaru. Dosad se smatralo da jedini humak koji sadrži jantar, a datiran je u razdoblje prije kasnog brončanog doba, jest tumul I na mjestu Rudine, Ivanpolje, te pripada fazi Glasinac IIb.⁴¹ Nova istraživanja omogućila su provjeru ovog navoda, i dodavanje još jednoga humka spomenutoj fazi: Gučevo, tumul IV, grob 1 (1895.), uz podešavanje kronologije navedenog tumula.

GLASINAC IIA – GUČEVO, TUMUL IV, GROB 1 (1895.)

Grob 1 u tumulu IV na lokalitetu Gučevo najvjerojatnije predstavlja najstariji kontekst u kojem je evidentiran jantar (karta 1). Tumul IV jedna je od šest gomila koje je na lokalitetu istražila arheološka ekipa pod vodstvom F. Fiale i V. Čurčića 1895. godine. Prema Fialinom izvještaju samo su dva groba pronađena unutar tumula: grob 1, sa skeletnim ukopom i grob 2, koji sadrži kremirane kosti i ostatke lomače.⁴² Fiala nije precizirao koji predmeti pripadaju kojem grobu. Ipak, na temelju tragova izgaranja Benac i Čović podijelili su nalaze na dvije cjeline, s nekim artefaktima – uključujući dvije jantarne perle (T. 1: 4, 8) – koje se pripisuju grobu s kremacijom.⁴³

Međutim, upitno je jesu li nalazi iz tumula IV kod Gučeva originalno ispravno podijeljeni u spomenute odvojene grobove.⁴⁴ Činjenica da je grob 1 sadržavao vrlo slične predmete (brončanu dugmad s ušicom na unutarnjoj strani) kao i inventar groba 2 navodi na mogućnost da se svi nalazi mogu datirati u isto razdoblje. Takav bi pristup prouzročio da se kronologija svih materijala iz tumula, uključujući i jantarne nalaze, prebaci u fazu Glasinac IIA.

Pretpostavka na osnovi koje su nalazi podijeljeni u dva inventara – tragovi izgaranja – ostavlja prostora za sumnju. Jantar, kao lako zapaljiv materijal, najvjerojatnije bi izgorio da je stavljen na pogrebnu lomaču. U stvarnosti, artefakti iz spomenutog groba ne ukazuju na jasne tragove kontakta s vatrom ili bilo kakve promjene stanja uzrokovane visokom temperaturom. Nalazi su mogli biti dodani grobu nakon kremiranja; međutim, pitanje na temelju čega su jantarne perle dodijeljene grobovima i dalje ostaje neriješeno.

Fialin dnevnik sa iskopavanja iz 1895. godine daje jasniju, ali još uvijek nepotpunu sliku o sadržaju grobnih nalaza u tumulu IV kod Gučeva. Prema terenskom dnevniku, u središtu tumula pronađene su izmiješane kosti iz dvije vrste pokapanja: skeletnog i kremiranog. Nalazi iz groba 1 (skeletni

REVISION OF CHRONOLOGY AND TYPOLOGY

MIDDLE BRONZE AGE – GLASINAC II

Determining the initial emergence of amber in Glasinac and its vicinity poses a significant problem. Among the grave contexts linked to the earliest stages of the Glasinac development that have been published to date, one can find only scarce remarks concerning amber. Hitherto, it was believed that the only mound containing amber preceding the Late Bronze Age is tumulus I at the site of Rudine, on Ivanpolje, dated to Glasinac phase IIb.⁴¹ Recent investigations allowed the verification of this notion and, furthermore, supplemented this image with the addition of a further barrow: Gučevo, tumulus IV, grave 1 (1895), through adjustment of the latter's chronology.

GLASINAC IIA – GUČEVO, TUMULUS IV, GRAVE 1 (1895)

Most probably the earliest context in which amber is found is grave 1 in tumulus IV at the site of Gučevo (Map 1). Tumulus IV is one of six mounds excavated at the site by an archaeological expedition led by F. Fiala and V. Čurčić in 1895. According to Fiala's report, only two graves were found inside this tumulus: grave 1 with an interred burial and grave 2 containing cremated bone and residues of a pyre.⁴² Fiala did not specify which objects belonged to which grave. Nevertheless, on the basis of combustion traces, Benac and Čović divided the finds into two assemblages, with some artefacts – including two amber beads (Pl. 1: 4, 8) – being ascribed to the cremation burial.⁴³

The problem remains, however, as to whether the materials from tumulus IV at Gučevo were originally correctly divided into separate graves.⁴⁴ The fact that grave 1 contained very similar objects (bronze buttons with a lug on the inner side) to the inventory of grave 2 prompts one to speculate whether all finds may come from the same period. Such an approach would cause the chronology of all materials from the barrow, including the amber finds, to be shifted to Glasinac phase IIA.

The premise on which the materials were separated into two inventories – traces of combustion – raises some doubts. Amber, as an easily combustible material, would most likely burn as a result of being placed on a funeral pyre. In reality, the artefacts from the discussed grave do not indicate any clear traces of contact with fire, or any transformations caused by high temperature. The finds could have been added to the grave after the cremation; however, this still leaves the question as to the basis upon which the beads were assigned to the graves unresolved.

Fiala's diary from the excavations of 1895 gives a clearer, but still incomplete, picture regarding the composition of the grave finds in tumulus IV at Gučevo. According to the field diary, in the centre of the tumulus mixed bones belonging to two burials were found: one interred and one cremated. Materials from grave 1 (interred burial) consist of thirteen bronze domed

41 Palavestra 1993, 112.

42 Fiala 1895, 539–540, sl. 7.

43 Benac, Čović 1956, 10, tab. V: 28–33.

44 Benac, Čović 1956, 10.

41 Palavestra 1993, 112.

42 Fiala 1895, 539–540, Fig. 7.

43 Benac, Čović 1956, 10, Pl. V: 28–33.

44 Benac, Čović 1956, 10.



Sl. 1. Glasinac – Gučevo, tumul IV, grob 1 (1895.) Brončana narukvica s proširenim i zadebljanim krajevima, ukrašena motivom ribljeg mjehura i trakama paralelnih linija (crtež: M. Bešliagić)

Fig. 1. Glasinac – Gučevo, tumulus IV, grave 1 (1895). The bronze bracelet with buffer terminals, decorated with an incised 'fish bladder' motif and bands of parallel lines (drawing: M. Bešliagić)

ukop) sastoje se od trinaest brončanih kupolastih dugmadi, brončane aplikе, četiri cjevčice od spiralno savijene brončane žice (saltaleone), brončane narukvice s proširenim i zadebljanim krajevima,⁴⁵ ukrašene rezbarenim ornamentima, dvije jantarne perle i brončanim prstenom. U grobu 2 pronađen je sličan prsten, nekoliko ulomaka brončanih dugmadi i aplikа, te ulomci spiralno namotane brončane žice.⁴⁶ Navedeni podatci znače da su nalazi pronađeni u tu-

buttons, a bronze applique, four spiral tubes (saltaleone), a bronze bracelet with buffer terminals,⁴⁵ decorated with carved ornamentation, two amber beads and a bronze ring. Grave 2 yielded a similar ring, several fragments of bronze buttons and appliques, and fragments of spirals of rolled-up bronze wire.⁴⁶

⁴⁵ Also known as *stempelförmig* (stamp-shaped) in other literature.

⁴⁶ From Fiala's field diary 1895, National Museum of Bosnia and Herzegovina, Department of Archaeology. Tumulus IV. 10 m, 8 m, 0,60 m. Untere Schichte 0,20 m aus Erde, obere 0,40 aus Steinen und Erde, verwachsen, flach, Ell In der Mitte des Tumulus fand man ganze und verbrannte Knochen, gemischt, von zwei Bestattungen. An Beigaben wurden bei Numero 1 13 Stück Knöpfe aus bronze Blech, ein Blechbeschlag, 4 Spiralhülsen, ein Armband, zwei Bernsteinperlen, ein Schmuckring, bei Numero 2 ein Fingerring und mehrere Bruchstücke von Knöpfen und Beschläge aus Bronze, Bruchstücke von Schmuckringen aus Bronzedraht, gefunden. Im ganzen Tumulus Topfscherben zerstreut.

⁴⁵ Također poznat kao *stempelförmig* (u obliku pečata) u drugoj literaturi.

⁴⁶ Iz Fialinog terenskog dnevnika 1895., Zemaljski muzej Bosne i Hercegovine, Odjeljenje za arheologiju: Tumulus IV. 10 m, 8 m, 0,60 m. Untere Schichte 0,20 m aus Erde, obere 0,40 aus Steinen und Erde, verwachsen, flach, Ell In der Mitte des Tumulus fand man ganze und verbrannte Knochen, gemischt, von zwei

mulu pogrešno pripisani ukopima u sintezi koju su napisali Benac i Čović. To se prije svega odnosi na dvije jantarne perle koje bi, umjesto groba 2 (kremirani ukop), trebalo povezati s grobom 1 (skeletalni ukop). Brončana narukvica s proširenim i zadebljanim krajevima, ukrašena motivom ribljeg mjehura i trakama paralelnih linija⁴⁷ služi kao dobra odrednica kronologije nalaza (sl. 1). Ovaj primjerak i druge slične narukvice iz Glasinca jednoglasno su datirane u fazu IIa, što odgovara srednjoeuropskim stupnjevima BrB1–BrB2/C1.⁴⁸ Takvo datiranje potvrđeno je poznatim analogijama iz, primjerice, pogrebnog kompleksa Padine – Ročević u istočnoj Bosni,⁴⁹ kao i brojnih lokaliteta širom zapadne Srbije.⁵⁰

Stoga je potrebno pomjeriti dataciju dvije jantarne perle iz tumula IV kod Gučeva do faze IIa, što ih čini najranijim nalazom te vrste na području Glasinca. U pogledu tipologije jantarnih perli potrebno je naglasiti: jedna od njih ima specifičan kubični oblik (T. 1: 8), i probušena je širokom rupom te je Palavestra klasificira kao tip 35b.⁵¹ Takvi kubični oblici jantarnih perli rijetko se susreću tijekom brončanog doba. U slučaju Balkana, najbliže iako neprecizne analogije dolaze iz Metohije, gdje su u grobu 1 Iglareva I faze BrC2 pronađene perle s četverokutnim/pravokutnim poprečnim presjecima.⁵² Nadalje, treba napomenuti da je na nekropoli u Tápeu u jugoistočnoj Mađarskoj pronađena jedna kronološki uporediva kubična perla. Ipak, ne može se smatrati izravnim pandanom perli s Glasinca, jer joj nedostaje rupa za suspenziju i stoga je prethodno protumačena kao amulet, a ne kao perla.⁵³

Druga perla koja dolazi iz Gučeva nešto je veća, ima nepravilan ovalni presjek i profil koji se najbolje opisuje kao spljošteno-bikoničan sa širokim, blago iskrivljenim, gornjim i donjim bazama (T. 1: 4), te rupom za suspenziju koja prolazi kroz njegovu kraću os. Palavestra je prvobitno klasificirao perlu kao amorfnu.⁵⁴ Po našem mišljenju, bikonični profil druge perle s karakterističnim ostrim rubom po obodu čini se previše pravilnim da bi se tretirao kao da nema nikakvog jasnog oblika. Ova posljednja značajka omogućuje uvođenje artefakta u specifičnu skupinu bikoničnih perli, među kojima se tip 11, prema Palavestrom, čini najprikladnijim.⁵⁵ Ovaj je tip poznat samo s nekoliko lokaliteta, uglavnom datiranih u

The information presented above means that the finds discovered inside the mound were wrongly attributed to the burials in the synthesis of Benac and Čović. Foremost, this concerns the two amber beads which, instead of grave 2 (cremated burial), should be linked to grave 1 (inhumed burial). The bronze bracelet with buffer terminals, decorated with *fish bladder* motif and bands of parallel lines⁴⁷ serves as a good determinant of the assemblage's chronology (Fig. 1). The specimen and other similar bracelets from Glasinac are unanimously dated to phase IIa, corresponding with Central European stages BrB1–BrB2/C1.⁴⁸ Such dating is confirmed in light of analogies known from, for example, the Padine–Ročević funeral complex in Eastern Bosnia,⁴⁹ as well as from numerous sites throughout Western Serbia.⁵⁰

Consequently it is necessary to shift the dating of the two amber beads from tumulus IV at Gučevo to phase IIa, thus making them the earliest find of their kind within the area of Glasinac. One further comment is required, however, regarding the typology of the beads: One of them has distinct cubic shape (Pl. 1: 8), with a wide hole centrally drilled through it and was classified as type 35b by Palavestra.⁵¹ Such cubic forms are rarely encountered among Bronze Age amber beads. In the case of the Balkans, the closest, albeit imprecise analogies come from Metohija, where beads with quadrangular/rectangular cross-sections were found in grave 1 at the Iglarevo I cemetery dated to phase BrC2.⁵² Furthermore, it should be noted that a single chronologically comparable cubic bead was found at the cemetery of Tápe in south-eastern Hungary. Nevertheless, it cannot be regarded as a direct counterpart to the bead from Glasinac, as it lacks the hole for suspension and, thus, has previously been interpreted as an amulet rather than a bead.⁵³

The other bead coming from Gučevo is slightly larger, has an irregular oval cross-section, and a profile that is best described as flattened-biconical with wide, slightly skewed, upper and lower bases (Pl. 1: 4), and a hole for suspension running through its shorter axis. Palavestra originally classified the bead as amorphous.⁵⁴ In our opinion, the biconical profile of the second bead with a characteristic sharp edge around the circumference, seems too regular to treat as being devoid of any clear form. The latter feature allows the introduction of the artefact to a specific group of biconical beads, among which type 11, according to Palavestra, seems to be the best fit.⁵⁵ This type is known only from a handful of sites, mostly dated to the Iron

Bestattungen. An Beigaben wurden bei Numero 1 13 Stück Knöpfe aus bronze Blech, ein Blechbeschlag, 4 Spiralhülsen, ein Armband, zwei Bernsteinperlen, ein Schmuckring, bei Numero 2 ein Fingerring und mehrere Bruchstücke von Knöpfen und Beschläge aus Bronze, Bruchstücke von Schmuckringen aus Bronzedraht, gefunden. Im ganzen Tumulus Topfscherben zerstreut.

Za čitanje Fialinog dnevnika autori su zahvalni Dejanu Zadri, a za prijevod Ivi Dragičeviću.

Valja naglasiti da su podatke iz Fialinog terenskog dnevnika iz 1895. kasnije upotrijebili Benac i Čović u sintezi željeznog doba Glasinca, osobito za podjelu materijala iz tumula XXXV na Gosinji planini (Benac, Čović 1957, 23).

47 Benac, Čović 1956, tab. V: 1, 1a, 1b.

48 Benac, Čović 1956, 63–64; Drechsler–Bižić 1983, 261–262; usp. Čović 1983, T. XXXVIII: 11.

49 Kosorić, Krstić 1988, 44–45, T. XI: 2–3.

50 Zotović 1985, T. IX: 1, 3; Dmitrović 2016, 166, fig. 113: 1.

51 Benac, Čović 1956, 10, tab. V: 33; Palavestra 1993, 112, tab. II: 35b.

52 Palavestra 1997, tab. 1: 5.

53 Sprincz, Beck 1981, 483, fig. 5: 47.

54 Palavestra 1993, 112.

55 Palavestra 1993, 33, tab. I: 11.

For reading Fiala's diary, the authors are grateful to Dejan Zadro, and for translation to Ivo Dragičević.

It should be emphasized that data from Fiala's field diary of 1895 was later used by Benac and Čović in their synthesis of the Glasinac Iron Age, particularly for the division of materials from tumulus XXXV at Gosinji planina (Benac, Čović 1957, 23).

47 Benac, Čović 1956, Pl. V: 1, 1a, 1b.

48 Benac, Čović 1956, 63–64; Drechsler–Bižić 1983, 261–262; cf. Čović 1983, T. XXXVIII: 11.

49 Kosorić, Krstić 1988, 44–45, T. XI: 2–3.

50 Zotović 1985, T. IX: 1, 3; Dmitrović 2016, 166, Fig. 113: 1.

51 Benac, Čović 1956, 10, Pl. V: 33; Palavestra 1993, 112, Pl. II: 35b.

52 Palavestra 1997, Pl. 1: 5.

53 Sprincz, Beck 1981, 483, Fig. 5: 47.

54 Palavestra 1993, 112.

55 Palavestra 1993, 33, Pl. I: 11.

željezno doba.⁵⁶ Ipak, profil perle podsjeća na brojne bikonične jantarne perle (tipovi 12 i 13), poznate još iz balkanskog brončanog doba, među kojima je i jedna pronađena u tumulu I kod Rudina, na Ivanpolju, te će biti opisana u nastavku.

GLASINAC IIB – RUDINE, NA IVANPOLJU, TUMUL I (1894.)

Dokaz o prisutnosti jantara u fazi Glasinac IIB dolazi samo iz tumula I s lokaliteta Rudine na Ivanpolju (karta 1), koji se ranije smatrao najstarijim kontekstom u kojem je poznat jantar iz tog područja. Gomila je jedan od dva humka koje je na lokalitetu iskopala arheološka ekspedicija predvođena F. Fialom 1894. godine.⁵⁷ Tumul I u vrijeme istraživanja imao je ovalni oblik, prečnika od 7 m do 11 m i visinu od 0.8 m. Sastojao se od hrpe lomljenog kamenja, koje je bilo prekriveno slojem treseta. Unutra je otkriveno nekoliko neizgorelih ljudskih kostiju položenih zajedno s grobnim prilozima. Međutim, u izvještaju Fiale nije jasno navedeno je li riječ o ukopu samo jedne osobe.⁵⁸ Unatoč tome, nalazi pronađeni unutar konteksta kasnije su dodijeljeni jednom jedinom skeletnom ukopu, uvjetno nazvanom grobom 1.⁵⁹ Dok istovremeno iskopani tumul II nije imao grobnih priloga, tumul I sadržavao je nekoliko nalaza, među kojima je najznačajnija otvorena, brončana narukvica s proširenim i zadebljanim krajevima, ukrašena rezbarenim ornamentima trokuta (tzv. motiv vučji zubi), trakama linija i redovima točaka (sl. 2: 2).⁶⁰ Preostali su nalazi tri saltaleone (cjevčice izrađene od spiralno savijene brončane žice; sl. 2: 3–5)⁶¹ i jedna jantarna perla u spljoštenom, bikoničnom obliku,⁶² koju je Palavestra kasnije svrstao kao primjer tipa 12a (sl. 2: 1, T. 1: 3).⁶³ U prvoj publikaciji Benca i Čović,⁶⁴ na temelju spomenute narukvice, grobnica je kronološki pripisana fazi Glasinac IIB – klasifikacija koja je potvrđena u naknadnim publikacijama.⁶⁵

Otvorene narukvice s trokutastim poprečnim presjekom i povremeno s proširenim i zadebljanim krajevima smatraju se karakterističnim brončanim predmetima koji pripadaju fazi IIB; podsjećaju na narukvice poznate iz prethodne faze (IIb), no tijekom faze IIB postaju uže, s ornamentima sastavljenim gotovo samo od urezanih linija, oblikovanih u trake, rombove, trokute i kombinirane u metopama.⁶⁶ Takav stil dekoracije zamjenjuje ukrase od isprekidanih linija, vijenaca i motiva ribljeg mjehura poznatog iz prethodne faze.⁶⁷ Ova stilska promjena vidljiva je i u narukvicama poznatim iz obližnjeg

Age.⁵⁶ Nonetheless, the profile of the bead further alludes to numerous biconical amber beads (of types 12 and 13) known from the Balkan Bronze Age, among them one which was found in tumulus I at Rudine, on Ivanpolje, described below.

GLASINAC IIB – RUDINE, ON IVANPOLJE, TUMULUS I (1894)

Evidence of the presence of amber in Glasinac phase IIB comes exclusively from tumulus I at the site of Rudine, on Ivanpolje, (Map 1), previously regarded as the oldest context in which amber is known from the area. The mound is one of the two barrows excavated at the site by an archaeological expedition led by F. Fiala in 1894.⁵⁷ Tumulus I, at the time of the survey, had an oval outline and measured 7 m to 11 m in diameter and 0.8 m in height. It consisted of a heap of crushed stones, which was covered with a layer of turf. Several unburnt human bones were discovered inside, lying together with some grave goods. However, Fiala's report does not clearly state whether or not these belonged to the grave of a single person.⁵⁸ Despite this uncertainty, materials found inside the barrow were later assigned to a single skeletal burial, tentatively named as grave 1.⁵⁹ While the concurrently excavated tumulus II was devoid of any grave goods, tumulus I yielded several finds among which the most significant is an open, bronze bracelet with buffer terminals, decorated with carved ornamentation of hatched triangles (a so-called *wolf's teeth* motif), bands of lines and rows of dots (Fig. 2: 2).⁶⁰ The remaining items consist of three *saltaleone* (tubes formed of rolled-up bronze wire; Fig. 2: 3–5)⁶¹ and a single amber bead in flattened, biconical form,⁶² later classified by Palavestra as an example of type 12a (Fig. 2: 1; Pl. 1: 3).⁶³ On the basis of the aforementioned bracelet, the grave was chronologically defined as belonging to Glasinac phase IIB in the first overview by Benac and Čović⁶⁴ – a classification that has been upheld in subsequent publications.⁶⁵

Open bracelets with a triangular cross-section and, occasionally, expanded buffer terminals are considered to be characteristics of bronze objects belonging to phase IIB. They are reminiscent of the bracelets known from the previous stage (IIa), however during phase IIB they become increasingly narrow, with the ornamentation composed almost exclusively of incised lines, formed in bands, rhombuses, triangles and combined in metopes.⁶⁶ Such a style of decoration replaces ornamentation made of dashed lines, garlands and *fish bladder* motifs known from the previous phase.⁶⁷ This stylistic change is also evident in bracelets known from neighbouring area of

56 Palavestra 1993, 190.

57 Fiala 1894, 750.

58 Fiala 1894, 750.

59 Benac, Čović 1956, 14.

60 Fiala 1894, 750; Benac, Čović 1956, 14, tab. XIV: 6, 6a, 6b; Čović 1981, 106, 108, tab. II: 9; Drechsler-Bižić 1983, 262, tab. XL: 7.

61 Benac, Čović 1956, 14, tab. XIV: 8; Čović 1981, 106.

62 Benac, Čović 1956, 14, tab. XIV: 7; Čović 1981, 106.

63 Palavestra 1993, 112, 116, 123, T. I: 12a.

64 Benac, Čović 1956, 28.

65 c.f. Čović 1981, 106, 108; Drechsler-Bižić 1983, 262.

66 Benac, Čović 1956, tab. XIV: 1, 1a, 1b; Drechsler-Bižić 1983, 262, tab. XXXIX: 1–2, tab. XL: 7, 11, 12.

67 Benac, Čović 1956, 26–27.

56 Palavestra 1993, 190.

57 Fiala 1894, 750.

58 Fiala 1894, 750.

59 Benac, Čović 1956, 14.

60 Fiala 1894, 750; Benac, Čović 1956, 14, Pl. XIV: 6, 6a, 6b; Čović 1981, 106, 108, Pl. II: 9; Drechsler-Bižić 1983, 262, Pl. XL: 7.

61 Benac, Čović 1956, 14, Pl. XIV: 8; Čović 1981, 106.

62 Benac, Čović 1956, 14, Pl. XIV: 7; Čović 1981, 106.

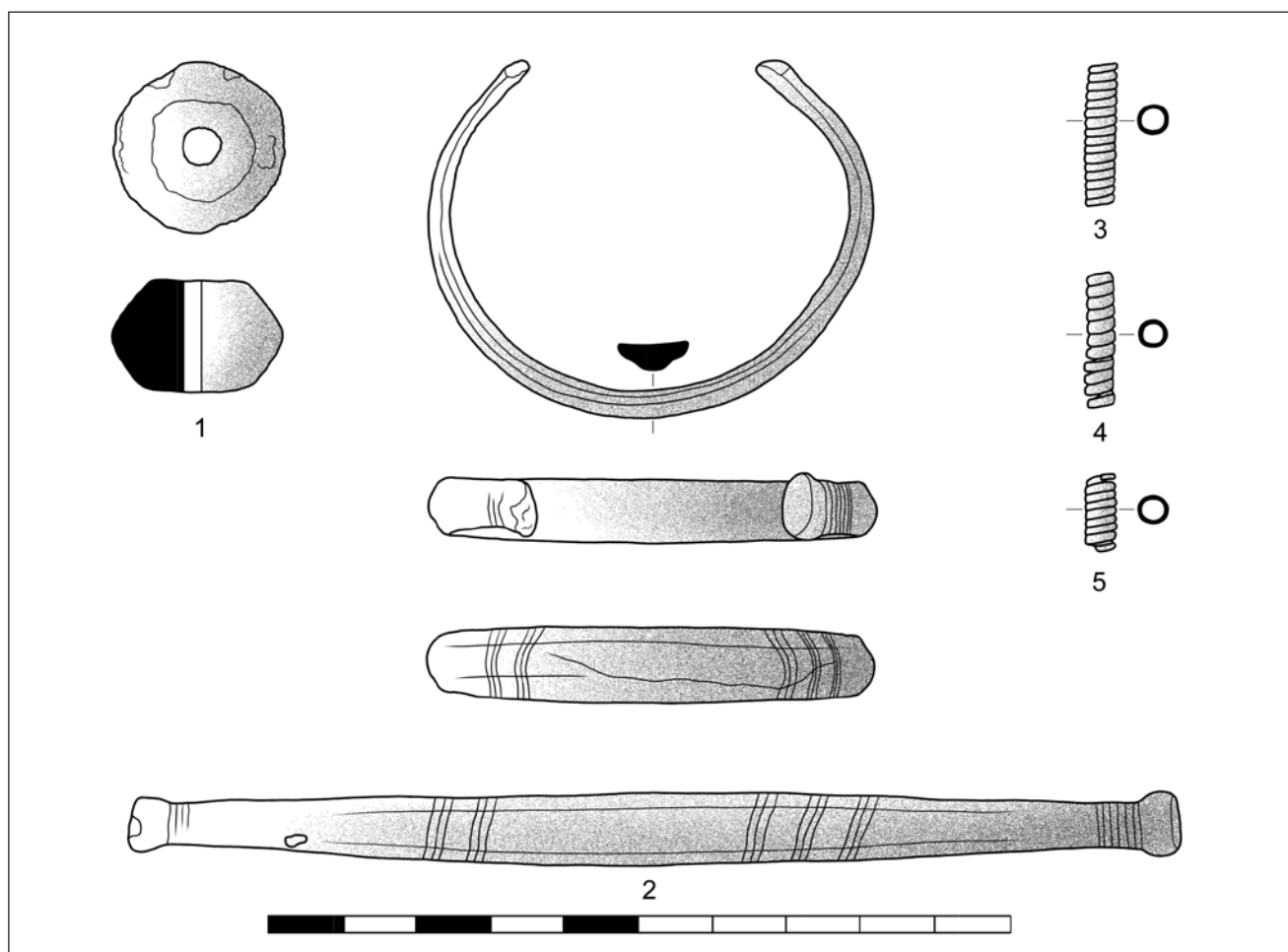
63 Palavestra 1993, 112, 116, 123, Pl. I: 12a.

64 Benac, Čović 1956, 28.

65 See: Čović 1981, 106, 108; Drechsler-Bižić 1983, 262.

66 Benac, Čović 1956, Pl. XIV: 1, 1a, 1b; Drechsler-Bižić 1983, 262, Pl. XXXIX: 1–2, Pl. XL: 7, 11, 12.

67 Benac, Čović 1956, 26–27.



Sl. 2. Glasinac – Rudine, na Ivanpolju, tumul I (1894.), inventar (crtež: M. Bešlagić)

Fig. 2. Glasinac – Rudine, on Ivanpolje, tumulus I (1894), inventory (drawing: M. Bešlagić)

područja zapadne Srbije, a datiraju se u fazu BrC2 i oko nje,⁶⁸ iako se mora spomenuti da drugdje slični dekorativni uzorci se ponekad pojavljuju na nešto kasnijim otvorenim narukvicama sa trokutastim poprečnim presjecima datiranim od BrD do HaA1.⁶⁹

Vremenski raspon približno odgovara kronologiji spljoštenih bikoničnih jantarnih perli (tip 12a) poznatih iz raznih dijelova Balkana. Geografski su najbliži primjeri takvih perli iz tumula Belotić – Bela Crkve i Pađine – Ročević iz nekropole u Podrinju, datirani u cca. BrC1 – C2⁷⁰ i sa spomenute nekropole Iglarevo u Metohiji.⁷¹ Izum bikoničnog oblika jantarnih perli i njihovo širenje Europom općenito se pripisuje kulturi tumulusa, koja je u to vrijeme (otprilike 1500. – 1300. godina pr. Kr.) utjecala na metalurgiju lokalnih

Western Serbia dated to and around phase BrC2,⁶⁸ although it must be mentioned that elsewhere similar decorative patterns sometimes appear on slightly later open bracelets with triangular cross-sections, dated from BrD up to HaA1.⁶⁹

The timespan roughly corresponds with the chronology of flattened biconical amber beads (type 12a) known from various parts of the Balkans. Geographically, the closest examples of such beads are from the tumuli of the Belotić-Bela Crkva and Pađine-Ročević cemeteries in Podrinje, dated to ca. BrC1-C2,⁷⁰ and from the already-mentioned cemetery of Iglarevo in Metohija.⁷¹ The invention of the biconical form of amber bead and its spread throughout Europe are generally attributed to the Tumulus Culture, which at the time (ca. 1500-1300 BC) was influencing

⁶⁸ Zotović 1985, T. X: 14–15; Dmitrović 2016, sl. 113: 4.

⁶⁹ Čović 1981, 102, 106–108; Dmitrović 2016, 168.

⁷⁰ Garašanin, Garašanin 1962, 51, sl. 7; Kosorić, Krstić 1972, tab. VI: 2; Kosorić 1978, tab. V: 7; usp. Palavestra 1993, 110–111, 139–140.

⁷¹ Palavestra 1997, tab. 1: 8–14; Palavestra, Krstić 2006, 50, 52.

⁶⁸ Zotović 1985, T. X: 14–15; Dmitrović 2016, Fig. 113: 4.

⁶⁹ Čović 1981, 102, 106–108; Dmitrović 2016, 168.

⁷⁰ Garašanin, Garašanin 1962, 51, Fig. 7; Kosorić, Krstić 1972, Tab. VI: 2; Kosorić 1978, Tab. V: 7; cf. Palavestra 1993, 110–111, 139–140.

⁷¹ Palavestra 1997, Pl. 1: 8–14; Palavestra, Krstić 2006, 50, 52.

kultura zapadne Srbije i istočne Bosne.⁷² Pljosnate bikonične perle ostale su u uporabi tijekom narednog razdoblja kulture polja sa žarama, što je dokumentirano nalazima iz Trcele-Vranjica, blizu Solina u Dalmaciji,⁷³ kao i iz Križevaca u sjevernoj Hrvatskoj⁷⁴ i iz Majdana u srbijanskom Banatu.⁷⁵ Kao rezultat kronološkog određivanja nalaza iz tumula I na mjestu Rudine, na Ivanpolju, početna cezura cjelokupnog konteksta može se datirati u fazu IIb, iako postoje naznake produžene kronologije koja potencijalno ulazi u fazu IIIa.

KASNO BRONČANO DOBA – GLASINAC III

Identifikacija jantarnog materijala koji bi se mogao povezati s fazom Glasinac III, koja označava kasno brončano doba na ovom području, još je problematičnija. Kronološka revizija svih konteksta s nalazima jantara, dosad pripisanih ovoj fazi, pokazala je da nema dovoljno dokaza za takvu klasifikaciju u gotovo svim slučajevima. Jedan od konteksta jest već opisani grob 1 tumula IV na mjestu Gučeva (1895.), koji je, prema revidiranoj kronologiji, stariji nego što se prije mislilo. Nadalje, moguće je da je tumul I iz Rudine na Ivanpolju (1894.) barem djelomično paralelan s podfazom IIIa. Međutim, identifikacija glasinackog konteksta s jantarnim nalazima koji bi se odnosio na razvijeno razdoblje kasnoga brončanog doba čini se sada, na osnovi dostupnih materijalnih dokaza, nemoguća. Tri groba inicijalno povezana s podfazama IIIb-1 (Crvena lokva, tumul II (1890.) i Osovo, tumul I (1895.)) i IIIb-2 (Borovsko, tumul II (1892.)), za razliku od ranijih pretpostavki, najvjerojatnije su nastala u starijem željeznom dobu.

OSOVO, TUMUL I (1895.)

Jedan od tri humka iskopana na lokalitetu Osovo (karta 1) tijekom arheološkog istraživanja pod vodstvom F. Fiale i V. Čurčića 1895., tumul I, među ostalim artefaktima, dao je i nekoliko jantarnih perli. U vrijeme istraživanja razmatrani humak imao je ovalni oblik, prečnika 8 m do 11 m i visine 1 m. Jezgra je bila izrađena od lomljenog i nagomilanog kamenja, prekrivenog zemljom. Fiala u svom izvještaju navodi da je unutar humka otkriveno ukupno sedam grobova. Međutim, on daje vrlo neprecizne opise pojedinih grobova i njihovih inventara; na primjer: samo nejasno spominje prisutnost "nekoliko jantarnih perli".⁷⁶

Benac i Čović su poslije podijelili i pripisali pojedinačnim ukopima grobne priloge pronađene u humku; u slučaju kremiranog ukopa (br. 4) uglavnom oslanjanjem na vidljive tragove izgaranja.⁷⁷ Autori tvrde da je u tumulu bilo sedam jantarnih perli, u njihovom katalogu navedene kao inventar

the metallurgy of local cultures inhabiting Western Serbia and Eastern Bosnia.⁷² Flattened biconical beads remained in use during the subsequent Urnfield period, as documented by the finds from Trcela-Vranjic, near Solin in Dalmatia,⁷³ as well as from Križevci in Northern Croatia⁷⁴ and Majdan in Serbian Banat.⁷⁵ As a result of the chronological determination of finds from tumulus I at the site of Rudine, on Ivanpolje, the initial caesura of the entire context can be dated to phase IIb, although there are hints of a prolonged chronology potentially entering phase IIIa.

LATE BRONZE AGE – GLASINAC III

The identification of amber materials that could be linked with Glasinac phase III, signifying the Late Bronze Age in this area, is more problematic. Chronological revision of the contexts with amber hitherto attributed to this phase revealed insufficient evidence for such classification in almost all cases. One of the contexts is the already described grave 1 of tumulus IV at the site of Gučevo (1895) which, according to the revised chronology, is older than previously thought. Furthermore, it is possible that tumulus I from Rudine, on Ivanpolje (1894) is at least partially concurrent with sub-phase IIIa. However, identifying a Glasinac context with amber datable to an advanced period of the Late Bronze Age seems, at present, to be beyond the possibilities offered by the available material evidence. The three graves originally associated with sub-phases IIIb-1 (Crvena Lokva, tumulus II (1890), and Osovo, tumulus I (1895)) and IIIb-2 (Borovsko, tumulus II (1892)) are, in contrast to earlier assumptions, much later, most likely having origins in the Early Iron Age.

OSOVO, TUMULUS I (1895)

One of the three mounds excavated at the site of Osovo (Map 1) by an archaeological expedition led by F. Fiala and V. Čurčić in 1895, tumulus I, yielded, among other artefacts, several amber beads. At the time of the survey, the discussed mound had an oval shape and measured 8m to 11m in diameter and 1m in height. Its core was made of crushed and heaped stones, which was covered with an earthen mantle. Fiala states in his report that seven burials were discovered within the mound in total. However, he gives highly inaccurate descriptions of individual graves and their inventories; for instance only vaguely mentioning "several amber beads".⁷⁶

The grave goods found inside the mound were later divided and ascribed to individual graves by Benac and Čović; in the case of the cremated burial (no. 4) mostly through reliance on visible traces of combustion.⁷⁷ The authors claim that the tumulus contained seven amber beads, which have been listed in their catalogue as an inventory of grave 4,⁷⁸ along with pieces

72 Czebreszuk 2011, 51, fig. 13: 1–3; Woltermann 2016, 386; usp. Filipović 2008; id. 2013; Dmitrović 2016.

73 Marović 1960, 8, 15, fig. 2: 2; Čović 1971, 315, 318; Batović 1980, 38, pl. XII, 15, 16; 1983, 345, fig. 21: 5, 6, tab. XLVIII: 5–7; Palavestra 1993, 65.

74 Homen 1982, tab. II: 8; usp. Palavestra 1993, 170–171.

75 Rašajski 1988, fig. 64–66; usp. Palavestra 1993, 140–141.

76 Fiala 1895, 538–539.

77 Benac, Čović 1956, 18, tab. XXIII: 17–32.

72 Czebreszuk 2011, 51, Fig. 13: 1–3; Woltermann 2016, 386; cf. Filipović 2008; id. 2013; Dmitrović 2016.

73 Marović 1960, 8, 15, Fig. 2: 2; Čović 1971, 315, 318; Batović 1980, 38, Pl. XII, 15, 16; 1983, 345, Fig. 21: 5, 6, Pl. XLVIII: 5–7; Palavestra 1993, 65.

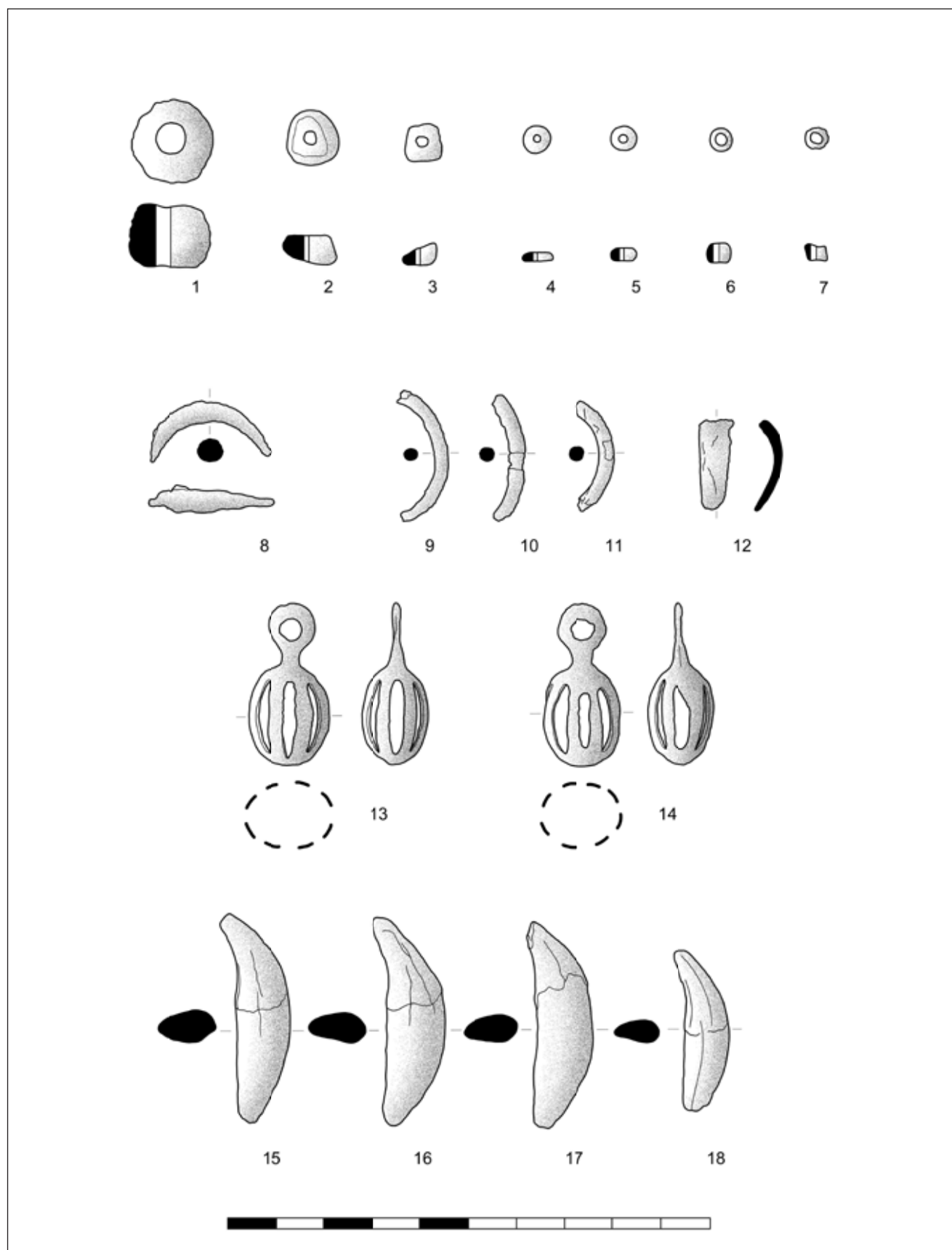
74 Homen 1982, Tab. II: 8; cf. Palavestra 1993, 170–171.

75 Rašajski 1988, Fig. 64–66; cf. Palavestra 1993, 140–141.

76 Fiala 1895, 538–539.

77 Benac, Čović 1956, 18, Pl. XXIII: 17–32.

78 Benac, Čović 1956, 18, Pl. XXIII: 22, 25–28, 31.



Sl. 3. Glasinac – Osovo, tumul I (1895.), inventar (crtež: M. Bešlagić)

Fig. 3. Glasinac – Osovo, tumulus I (1895), inventory (drawing M. Bešlagić)

groba 4,⁷⁸ uz fragmente srebrnog prstena, fragment brončane fibule i nekoliko staklenih perli. Cjelokupna zbirka pripisana je kasnijem željeznom dobu, što odgovara fazi Glasinac V.

Zanimljivo je da je Palavestra sortirao jantarne perle pronađene u tumulu pripisujući ih ne samo grobu 4 nego i grobu 1,⁷⁹ iako Benac i Čović u svojoj publikaciji sve jantarne nalaze pripisuju grobu 4. Također, istražujući kolekcije ZMBiH utvrđeno je da su pronađeni nalazi upisani pod oznakom Osovo, tumulus 1, grob 4 (1895.), dok nijedna jantarna perla nije inventirana s dvije brončane narukvice dodijeljene grobu 1. Štoviše, Palavestra je naveo ukupno jedanaest perli iz groba 1 i šest iz groba 4 – broj koje premašuje onaj koji su dali Benac i Čović. Dakle, pojavljuju se dva problema posmatrajući navedeni tumul: prvi, koji se odnosi na točan broj jantarnih nalaza, a drugi – na njihovu atribuciju i kronologiju.

Kao što je već spomenuto, Fiala je zabilježio “nekoliko jantarnih perli”, dok su Benac i Čović u inventaru tumula naveli sedam perli. Naposljetku, Palavestra je identificirao sedamnaest jantarnih perli, no nikakva podudarnost tih predmeta s perlama prikazanim u publikaciji Benca i Čovića nije dana. Danas se u ZMBiH čuvaju samo četiri jantarne perle (sl. 3: 2 – 5). Dvije od njih imaju diskoidni oblik s okruglim poprečnim presjekom, konveksne strane i paralelne osnove (sl. 3: 4, 5), što ih povezuje s Palavestrinim tipovima 8a i 8b, koje je autor potvrdio u slučaju oba groba iz Osova, tumul I.⁸⁰ Riječ je o jednom od najjednostavnijih tipova jantarnih perli, uobičajenih tijekom čitavog brončanog doba u većini susjednih područja gdje se pojavio jantar, te se zbog toga ne mogu uzeti kao pokazatelji kronologije ili kulturne pripadnosti.⁸¹ Što se tiče balkanskog brončanog doba, diskoidne kuglice tipova 8a i 8b poznate su, među ostalima, iz Dalmacije,⁸² Istre,⁸³ Like⁸⁴ i zapadne Srbije.⁸⁵ Preostale dvije perle više su nepravilnog oblika. Jedna od njih, iako polomljena, ima otprilike četvero-kutni poprečni presjek (sl. 3: 3), te možda predstavlja tip 35b, koji je Palavestra identificirao u slučaju groba 4.⁸⁶ Drugu je (sl. 3: 2) teško povezati s bilo kojim specifičnim tipom i zbog toga vjerojatno treba biti klasificirana kao pojava amorfnе perle.

Obilje nalaza s iznimno raznovrsnim kronologijama koji su, navodno, nađeni u tumulu I u Osovu znači da jantarne perle mogu pripadati ili brončanom ili željeznom dobu. Palavestra je datirao jedanaest perli iz groba 1 u glasinačku fazu IIIb-1, dok je preostalih šest perli dodijelio grobu 4 iz faze V. Bitno je spomenuti da Fiala te nalaze nije posebno pripisivao pojedinačnim ukopima, već ih je naveo skupa kao nalaze iz najstarijeg sloja u humku kojem su pripadali grobovi 1-4.⁸⁷

of a silver ring, a fragment of a bronze fibula and several glass beads. The entire assemblage was assigned to the late Iron Age, corresponding with phase Glasinac V.

Interestingly, Palavestra divided the amber beads found in the tumulus, attributing them not only to grave 4, but also grave 1,⁷⁹ even though publication of Benac and Čović assigns all amber jewellery to the former. Also, the investigation of the collections held by ZMBiH clearly showed that the discussed finds were inventoried under the label Osovo, tumulus 1, grave 4 (1895), whereas no amber beads were inventoried with the two bronze bracelets assigned to grave 1. Moreover, Palavestra in total listed eleven beads from grave 1 and six from grave 4 – quantities that exceed those given by Benac and Čović. Consequently, two problems appear in relation to the discussed tumulus: the first concerning the exact number of amber objects, and the second referring to their attribution and chronology.

As mentioned earlier, Fiala reported “several amber beads”, whereas Benac and Čović listed seven beads in the content of the tumulus. Finally, Palavestra identified seventeen beads of amber, however no concordance of these items with beads illustrated in the publication of Benac and Čović is given. Today ZMBiH holds only four amber beads (Fig. 3: 2-5). Two of these have a discoid form with round cross-section, convex sides and parallel bases (Fig. 3: 4, 5), thus related to Palavestra’s types 8a and 8b, confirmed by the author in the case of both graves from Osovo, tumulus I.⁸⁰ These are one of the simplest types of amber beads, common throughout the entire Bronze Age in most of the neighbouring regions where amber occurred, and hence are not helpful as indicators of chronology or cultural affiliation.⁸¹ In the case of the Balkan Bronze Age, discoid beads pertaining to types 8a and 8b are known, inter alia, from Dalmatia,⁸² Istria,⁸³ Lika⁸⁴ and Western Serbia.⁸⁵ The remaining two beads are more irregular in terms of form. One of them, albeit broken, has a roughly quadrangular cross-section (Fig. 3: 3), and hence possibly reflects type 35b as identified by Palavestra in the case of grave 4.⁸⁶ The other (Fig. 3: 2) is difficult to correlate to any specific type, and hence probably should be classified as an occurrence of an amorphous bead.

The abundance of materials with extremely varied chronologies that were reportedly found within tumulus I at Osovo means that the amber beads may belong to either the Bronze Age or Iron Age. Palavestra dated eleven beads from grave 1 to Glasinac phase IIIb-1, whereas he assigned the remaining six beads from grave 4 to phase V. It is worth mentioning at this point that Fiala did not specifically attribute the materials to individual graves, but instead listed them together as finds

78 Benac, Čović 1956, 18, tab. XXIII: 22, 25–28, 31.

79 Palavestra 1993, 112, 115.

80 Palavestra 1993, 112, 115.

81 Cf. Sprincz, Beck 1981; Palavestra 1993; Negroni Catacchio *et al.* 2006; Czebreszuk 2011.

82 Batović 1983, T. XLIV: 10, 12.

83 Buršić-Matijašić 1989, sl. 1: 3; 2003, sl. 6: 8.

84 Drechsler-Bižić 1979/1980, tab. XXV: 6.

85 Nikitović, Vasić 2002, tab. III: 1; Lazić 2007, T. IV: 16.

86 Palavestra 1993, 115.

87 Fiala 1895, 538–539.

79 Palavestra 1993, 112, 115.

80 Palavestra 1993, 112, 115.

81 Cf. Sprincz, Beck 1981; Palavestra 1993; Negroni Catacchio *et al.* 2006; Czebreszuk 2011.

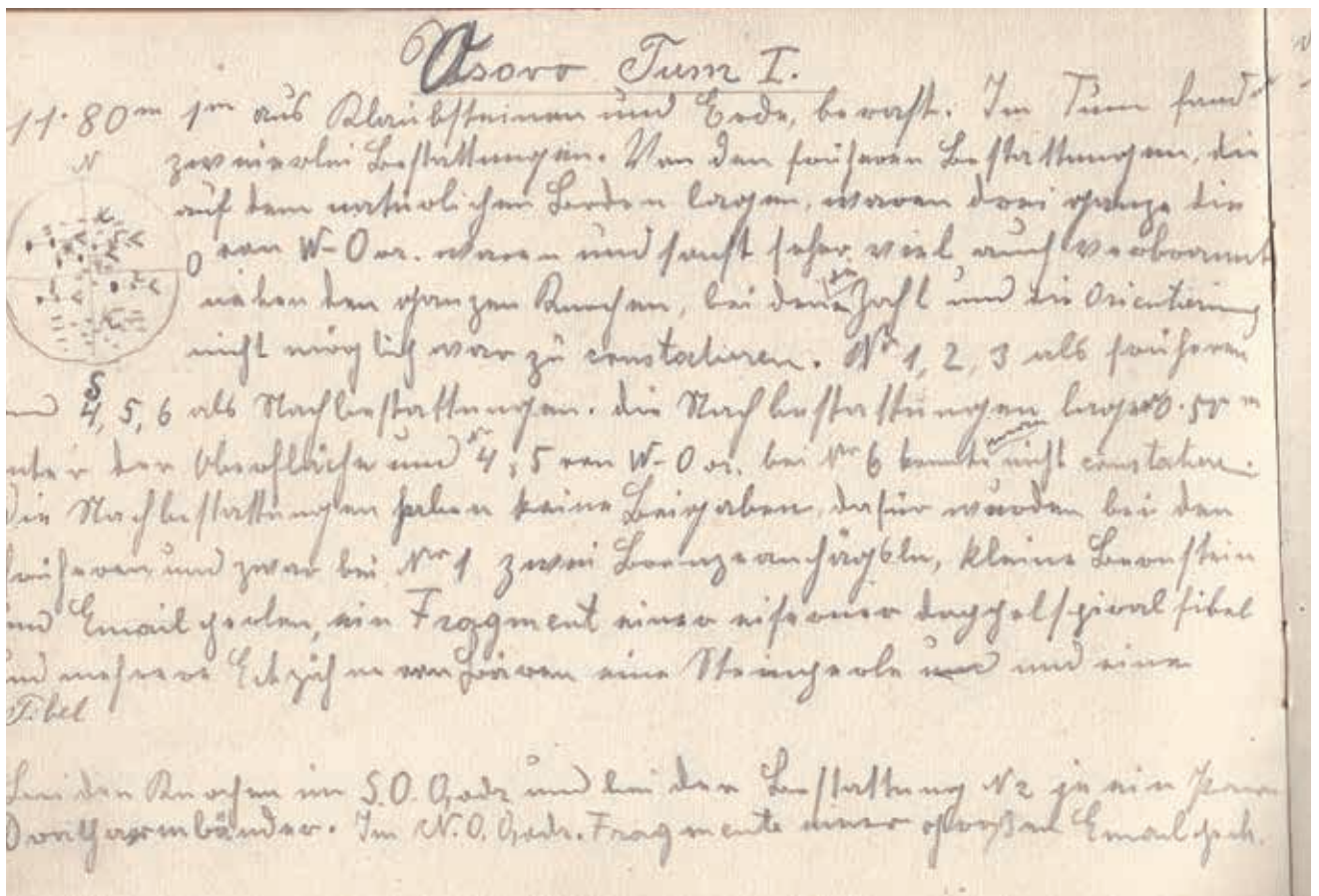
82 Batović 1983, T. XLIV: 10, 12.

83 Buršić-Matijašić 1989, Fig. 1: 3; 2003, Fig. 6: 8.

84 Drechsler-Bižić 1979–1980, Tab. XXV: 6.

85 Nikitović, Vasić 2002, Tab. III: 1; Lazić 2007, T. IV: 16.

86 Palavestra 1993, 115.



Slika 4. Fiala terenski dnevnik, 1895. iskopavanja u Glasincu, Osovo, tumulus I. Zemaljski muzej Bosne i Hercegovine.

Figure 4. Fiala's field diary, 1895 excavations at Glasinac, Osovo, tumulus I. National Museum of Bosnia and Herzegovina.

Najvjerojatnije rješenje gore opisanog problema, a koje je i sam Palavestra potvrdio,⁸⁸ jest da je prilikom istraživanja nalaza u ZMBiH autor slučajno pogrešno protumačio jantarne perle iz Osova, tumul 1, grob 1 (1897.) kao nalaz iz humka koji je nosio istu oznaku, ali je istražen 1895. godine. Ova greška proizlazi iz činjenice da su na početku svake kampanje znanstvenici koji su istraživali tumule na Glasincu davali oznake počevši od broja 1. Stoga se broj koji se pripisuje bilo kojem ukopu u kasnijem istraživanju mora dopuniti godinom iskopa kako bi se izbjegla zabuna. U ovom slučaju, nepouzdanost vezana uz godinu tijekom koje su vršena arheološka istraživanja i otkriveni jantarni nalazi dovela je do dvostrukog popisa tih nalaza u katalogu: prvo, kao inventar Osova, tumul 1, grob 1 (1895.), te kao inventar Osova, tumul 1, grob 1 (1897.).

Nepodudaranje broja jantarnih perli iz Osova, tumula I (1895.), o kojem su uzastopno pisali autori, očigledno je

coming from the basal level of the mound, where graves 1–4 were also registered.⁸⁷

The most plausible solution to the problem described above, and confirmed by Palavestra himself,⁸⁸ is that during an investigation of the finds in ZMBiH the author accidentally misinterpreted amber beads from Osovo, tumulus 1, grave 1 (1897) as finds from a mound with the same designation, but excavated in 1895. This error stems from the fact that, at the beginning of each campaign, investigators exploring the Glasinac mounds started the numeration of excavated features from '1'. Hence the numeral attributed to a mound in any later study must be supplemented by the year of excavation so as to avoid confusion. In this case, uncertainty related to the excavation campaign during which the discussed amber artefacts were discovered has led to a double-listing of these finds in the catalogue: firstly as the inventory of Osovo, tumulus 1,

⁸⁷ Fiala 1895, 538–539.

⁸⁸ Osobna komunikacija s A. Palavestrom. Autori se iskreno zahvaljuju prof. A. Palavestri na neprocjenjivim informacijama koje su pomogle u pisanju ovoga rada.

⁸⁸ Personal communication with A. Palavestra. The authors would like to sincerely thank Prof. A. Palavestra for the invaluable information that helped in the process of writing this paper.

rezultat katalogizacije svih jantarnih nalaza s lokaliteta u inventarnom popisu ZMBiH bez odvajanja prema pojedinačnim kampanjama. Štoviše, čini se da se stvarna količina perli smanjila tijekom godina iz različitih razloga, tako da umjesto sedam koje su zabilježili Benac i Čović, a šest Palavestra, sada su samo četiri zavedene pod oznakom: Osovo, tumulus I, grob 4 (1895).

Ipak, treba naglasiti da je sam postupak pripajanja materijala u inventare pojedinačnih ukopa još uvijek upitan. Razlika je napravljena na temelju tipološke kronologije grobnih priloga, dok je inventar kremiranog ukopa (grob 4) definiran na temelju tragova izgaranja. Kao što je ranije spomenuto, takve pretpostavke mogu biti pogrešne, uzimajući u obzir zapaljivost jantara. Stoga se atribucija jantarnih perli grobu 4 također treba posmatrati s oprezom.

Nove informacije dobivene najnovijim istraživanjima potiču na potpunu reviziju dugogodišnjih pretpostavki o grobovima i pripadajućim inventarima tumula I u Osovu. Nedavno otkriće dokumentacije o Fialinim iskopavanjima 1895. godine⁸⁹ u Zemaljskom muzeju Bosne i Hercegovine baca novo svjetlo na tumule i grobne priloge opisujući ih detaljnije od Fialinog izvještaja objavljenog 1895. godine.⁹⁰ U Fialinom terenskom dnevniku navedeno je da su tri najstarija ukopa skeletni, položeni na sterilno tlo s orijentacijom Z – I (označeno brojevima 1, 2 i 3), zajedno s ostatcima nekoliko spaljenih kostiju sekundarnih ukopa. Ukopi 1, 2 i 3 stratigrafski su mlađi, dok su ukopi 4, 5 i 6 kasniji. Potonji su ukopani jedni pored drugih, 0,50 m ispod površine gornjeg sloja tla, u sjevernoj polovici tumula, bez priloga.

Ukop br. 1 navodno je sadržavao dva brončana privjeska, male jantarne i emaljirane perle, jednu kamenu kuglicu, nekoliko veprovih kljova, fragmente srebrnog prstena (ili možda srebrne fibule) i fragment druge fibule. U II kvadrantu, uz grob br. 2, pronađen je par narukvica. U SI kvadrantu nađen je fragment jedne velike perle s ocaklinom. Preostali grobovi bili su bez ikakvih priloga.

Na temelju informacija iz Fialinog terenskog dnevnika moguće je dodijeliti jantarne perle, zajedno s nalazima koji su ranije pripisani ukopima br. 3 i 4, skeletnom ukopu br. 1. Inventar ukopa koji se povezuje s perlama sadrži, među ostalim, gore spomenute kljove (sl. 3: 15–18), perlu s ocaklinom

grave 1 (1895) and secondly as the inventory of Osovo, tumulus I, grave 1 (1897).

The discrepancies in numbers of amber beads from Osovo, tumulus I (1895) reported by the successive authors were apparently the result of the cataloguing of all amber materials from the site in the ZMBiH's inventory list without separation according to individual campaigns. Moreover, it seems the actual quantity of beads must have decreased over the years due to various reasons, so instead of the seven reported by Benac and Čović, and six by Palavestra, now there are only four stored under the label Osovo, tumulus I, grave 4 (1895).

Nonetheless, it should be underlined that the procedure of separating the materials into assemblages of individual graves still raises some doubts. The distinction was made on the basis of typological chronology of grave goods, whereas the inventory of the cremated burial (grave 4) was defined based on traces of combustion. As mentioned earlier, such assumptions may prove to be misleading, taking into account the combustibility of amber. Hence, the attribution of amber beads to grave 4 should also be approached with caution.

New information gathered through the latest research prompts a complete revision of the long-held assumptions regarding the graves and respective inventories of tumulus I at Osovo. The recent discovery of Fiala's 1895 excavations documentation⁸⁹ in the National Museum of Bosnia and Herzegovina sheds a new light on the tumuli and grave goods, describing them in a more detailed manner than Fiala's report published in 1895.⁹⁰ According to Fiala's field diary (Fig. 4), the three earliest burials were skeletons deposited on the sterile soil with a W-E orientation (marked with nos. 1, 2 and 3), along with remnants of some burnt bone belonging to secondary interments. Burials 1, 2 and 3 are stratigraphically earlier, while the burials 4, 5 and 6 are later. The latter burials were situated next to each other, 0.50 m below the topsoil surface, in the northern half of the tumuli, without any furnishings.

Burial no. 1 reportedly contained two bronze pendants, small amber and enamel beads, one stone bead, several boars' tusks, fragments of a silver ring (or possibly of a silver fibula) and a fragment of another fibula. In the SE quadrant of the mound, adjacent to burial no. 2, a pair of bracelets was found. Moreover, in the NE quadrant, a fragment of a single, large enamel bead was found. The remaining graves were devoid of any goods.

89 Iz Fialinog terenskog dnevnika 1895., Zemaljskog muzeja Bosne i Hercegovine, Odjeljenja za arheologiju: Osovo. Tumulus I. 11,80 m 1 m aus Klaubsteinen und Erde, berast. Im Tumulus fanden zweierlei Bestattungen. Von den früheren Bestattungen, die auf dem natürlichen Boden lagen, waren drei ganze, die von W-O orientiert waren und sonst sicher viel auch verbrannt neben den ganzen Knochen, bei denen die Zahl und die Orientierung nicht möglich war zu constatieren. Nummer 1, 2, 3 als früheren i 4, 5, 6 als Nachbestattungen. Die Nachbestattungen lagen 0,50 m unter der Oberfläche und Nummer 4, 5 von W-O orientiert, bei Nummer 6 konnte man nicht constatieren. Die Nachbestattungen haben keine Beigaben, dafür wurden bei den früheren und zwar bei Nummer 1 zwei Bronzeanhängsl, kleine Bernstein- und Emailperlen, ein Fragment einer eisernen Doppelspiralfibel und mehrere Eckzähne von Bähren, eine Steinperle und eine Fibel. Bei den Knochen im S.O. Quadrant und bei den Bestattungen Nummer 2 je ein Paar Drahtarmbänder. Im N.O. Quadrant Fragmente einer großen Emailperle. Die Nachbestattungen lagen in der Nordhälfte des Tumulus und knapp nebeneinander. Im Tumulus fand man auch verzierte Thonscherben.
Za čitanje Fialinog dnevnika, autori su zahvalni Dejanu Zadri, a za prijevod Ivi Dragičeviću.

90 Fiala 1895, 538–539.

89 From Fiala's field diary 1895, National Museum of Bosnia and Herzegovina, Department of Archaeology. Osovo. Tumulus I. 11,80 m 1 m aus Klaubsteinen und Erde, berast. Im Tumulus fanden zweierlei Bestattungen. Von den früheren Bestattungen, die auf dem natürlichen Boden lagen, waren drei ganze, die von W-O orientiert waren und sonst sicher viel auch verbrannt neben den ganzen Knochen, bei denen die Zahl und die Orientierung nicht möglich war zu constatieren. Nummer 1, 2, 3 als früheren i 4, 5, 6 als Nachbestattungen. Die Nachbestattungen lagen 0,50 m unter der Oberfläche und Nummer 4, 5 von W-O orientiert, bei Nummer 6 konnte man nicht constatieren. Die Nachbestattungen haben keine Beigaben, dafür wurden bei den früheren und zwar bei Nummer 1 zwei Bronzeanhängsl, kleine Bernstein- und Emailperlen, ein Fragment einer eisernen Doppelspiralfibel und mehrere Eckzähne von Bähren, eine Steinperle und eine Fibel. Bei den Knochen im S.O. Quadrant und bei den Bestattungen Nummer 2 je ein Paar Drahtarmbänder. Im N.O. Quadrant Fragmente einer großen Emailperle. Die Nachbestattungen lagen in der Nordhälfte des Tumulus und knapp nebeneinander. Im Tumulus fand man auch verzierte Thonscherben.

For reading Fiala's diary, the authors are grateful to Dejan Zadro, and for translation to Ivo Dragičević.

90 Fiala 1895, 538–539.

(sl. 3: 1, 6–7), ulomke srebrnih fibula (sl. 3: 8–12) i brončane privjeske (sl. 3: 13–14), a posljednji ukazuju na mnogo kasniju kronologiju od brončanodobnih glasinacskih faza. Šuplji, perforirani, duguljasti privjesci i staklom emajlirane kuglice tipični su za faze IVb i IVc.⁹¹ Fragmenti fibula pronađenih među grobnim priložima potvrđuju takvo datiranje. Iako se u ovom trenutku ne može odrediti precizna tipologija svih nalaza, njihove opće karakteristike omogućuju datiranje ukopa br. 1 iz tumula I u Osovu (1895.) u fazu IV, čime se isključuje iz daljnjih razmatranja o brončanodobnom jantaru s područja Glasinca.

CRVENA LOKVA, TUMUL II (1890.)

Druge jantarne perle koje su do sada bile pogrešno pripisane fazi Glasinac IIIb-1 potječu iz tumula II s lokaliteta Crvene lokve (karta 1). Dvije gomile (ili možda više) koje pripadaju ovom lokalitetu iskopane su 1890. godine tijekom ekspedicije koju je vodio Č. Truhelka.⁹² Gomile su bile koncentrirane u grupama od kojih je jedna bila 3 km južno od sela Čardak. Prema informacijama koje je Truhelka dao u svom izvještaju istraživani humci predstavljaju različite faze brončanog i željeznog doba.

Većina je bila bogata grobnim priložima: brončanim nakitom i željeznim alatima ili oružjem. Osim toga, na lokalitetu su pronađeni privjesci od kamena i jantara, unatoč činjenici da su neke grobnice jako oštećene kremiranjem pokojnika (kao u slučaju tumula II).⁹³ Truhelkin nedavno otkriveni terenski dnevnik daje sljedeće detalje o tumulu: visina mu je bila 0,5 m iznad razine tla, a promjer mu je bio 9 m. Nalazio se oko 8 metara od tumula I. Kostii pronađene u humku bile su smrvljene i pomiješane s ugljenom. Na jugozapadnom je rubu bilo moguće identificirati ostatke dječjeg ukopa, dok su druge kosti vjerojatno pripadale skeletu "mlađe" osobe. Mnogobrojni nalazi otkriveni unutar tumula nisu razvrstani i pripisani pojedinačnim ukopima od strane Truhelke, što ne iznenađuje s obzirom na loše stanje i miješanje kostiju, o kojima je izvjestio sam autor. Iz dnevnika se može zaključiti položaj nalaza u odnosu na četiri kvadranta humka (pod nazivom a, b, c i d) koji se razlikuju po istraživačima. Bez obzira na to, bez ikakvih planova humka nemoguće je rekonstruirati originalni položaj jednih u odnosu na druge, kao i ostataka skeleta.

Unatoč tome, na temelju tragova izgaranja, dva su predmeta iz inventara naknadno povezana s jantarnim perlama (T. 1: 9–14; T. 2: 133–138): privjesak u obliku prstena s ručkom i dijadema izrađena od debele brončane ploče, koja je vjerojatno imala krajeve u obliku spiralnih diskova (T. 2: 1; T. 5: 167).⁹⁴

On the basis of information provided within Fiala's diary, it is possible to assign the amber beads together with materials earlier attributed to burials nos. 3 and 4 to inhumed burial no. 1. The grave assemblage associated with the beads includes, inter alia, the aforementioned boars' tusks (Fig. 3: 15–18), enamel beads (Fig. 3: 1, 6–7), fragments of silver fibula (Fig. 3: 8–12) and bronze pendants (Fig. 3: 13–14), the latter indicating a much later chronology than Glasinac's Bronze Age phases. The hollow, openwork, oblong pendants and glass-enamelled beads are typical of phases IVb and IVc.⁹¹ The fragments of fibula found among the grave goods seem to confirm such a dating. Even though a precise typology of all objects cannot be determined at present, their general characteristics enable the dating of burial no. 1 from tumulus I at Osovo (1895) to phase IV, hence leading to its exclusion from further considerations regarding Bronze Age amber from the Glasinac area.

CRVENA LOKVA, TUMULUS II (1890)

Other amber beads hitherto incorrectly attributed to Glasinac phase IIIb-1 come from tumulus II at the site of Crvena Lokva (Map 1). Two mounds (or possibly more) belonging to this site were excavated in 1890 during an expedition led by Č. Truhelka.⁹² The mounds were concentrated in groups, with one of them located 3km south of Čardak village. According to information provided by Truhelka in his report, the mounds investigated represent various phases of the Bronze and Iron Ages. Most of them were richly furnished with bronze jewellery and iron tools or weapons. Moreover, stone and amber pendants were discovered at the site, despite the fact that some grave goods were severely damaged due to cremation of the deceased (as in the case of tumulus II).⁹³ Truhelka's recently discovered field diary gives the following details regarding the tumulus: its height measured 0.5m above ground level while its diameter was 9m. It was situated approximately 8m from tumulus I. The bones found inside the mound were crumbled and mixed with charcoal. At the southwestern edge it was possible to identify the residues of a child burial, whereas other bones possibly belonged to the skeleton of a 'younger' person. The numerous finds discovered inside the tumulus were not divided and attributed to individual burials by Truhelka, a fact that is hardly surprising taking into account the poor condition and mixing of the bones reported by the author. What can be inferred from the diary is the position of the finds in respect to the four quadrants of the mound (named a, b, c and d) distinguished by the excavators. Nonetheless, without any plans of the mound, it is impossible to reconstruct their original distribution with respect to each other, or the skeletal remains.

Despite this fact, two objects from the inventory were subsequently associated with amber beads (Pl. 1: 9–14; Pl. 2: 133–138) on the basis of combustion traces: a pendant in the shape of a ring with handle and a diadem made of a thick bronze

⁹¹ Čović 1987, 596, 598, 609, 611, sl. 35: 12, 26.

⁹² Truhelka 1890, 391, 394, T. I: 4. Prema Truhelkinom terenskom dnevniku koji se čuva u njegovoj ostavštini u Hrvatskom državnom arhivu u Zagrebu, na tom lokalitetu su 1890. godine iskopana tri humka. HR HDA 835, Osobni fond Čiro Truhelka 1826–1971, kutija 10, 7.1.2. „Skizzenbuch 1890“. Podatke nam je ustupio kolega Dejan Zadro.

⁹³ Truhelka 1890, 391.

⁹⁴ Čović 1981, 120, T. IV: 9–10.

⁹¹ Čović 1987, 596, 598, 609, 611, Sl. 35: 12, 26.

⁹² According to Truhelka's field diary, which is preserved in his legacy in the Croatian State Archives in Zagreb, three tumulus were explored at that location in 1890. HR HDA 835, Personal file of Čiro Truhelka 1826–1971, box 10, 7.1.2. „Skizzenbuch 1890“. The data was given to us by our colleague Dejan Zadro.

⁹³ Truhelka 1890, 391.

Osim ovih nalaza u humku su pronađene tri cjelovite fibule i fragment druge fibule glasinakčkog tipa, sa stopom u obliku Beotskog štita⁹⁵ (T. 3: 139–142). Ovaj se tip fibule pojavljuje kao grobni prilog u Glasincu tijekom faze IVc.⁹⁶ Nadalje, postoje četiri fibule od brončane ploče oblikovane u četiri spojene polukružnice, svaka s koncentričnom izbočinom u sredini, koje također indiciraju fazu Glasinac IVa.⁹⁷ Važno je spomenuti i pojasnu kopču u obliku kotača s perforiranim ornamentom (T. 3: 143–146). Takvi se elementi nošnje često ponavljaju u fazi IVb.⁹⁸ N. Lucentini je te nalaze detaljno razmatrala predlažući njihovu podjelu u nekoliko tipova i varijanti.⁹⁹ Pare je protumačio pomenute pojasne kopče kao indikativne za fazu Glasinac Ib u njegovoj kronološkoj podjeli materijala željeznog doba s grobova na platou, u rasponu od otprilike od 800. do 730./720. god. p.r. Kr.¹⁰⁰

Ostali značajni elementi jesu: narukvice od debele brončane šipke s ovalnim, polukružnim ili konveksno-konkavnim (U-oblika) poprečnim presjecima. Oblikovane su od dva namotaja šipke, s krajevima koji se preklapaju i ukrašeni su kratkim urezanim linijama (T. 4: 148–151). Ovakve su narukvice uobičajene među nalazima s Glasinca iz faze IVa-c,¹⁰¹ kao standardni oblik koji se dalje razvija u različite varijante. Naposljetku, humak je sadržavao željezno naoružanje (T. 6: machaira (T. 6: 175): nož (?) (T. 6: 176) – nije sigurno da li se radi o nožu ili maču – i tri koplja (T. 6: 173–174, 177). Takvo oružje pojavljuje se među nalazima s Glasinca počevši od faze IVb,¹⁰² i ostaje u uporabi tijekom sljedećih faza. Ostali brončani predmeti uključuju jednostavne nalaze nakita ili dijelova nošnje, kao što su kuka za pojas, saltaleone, dugmad i prethodno opisane šuplje perforirane privjeske ili perle (T. 5: 161–166, 168–172). Osim metalnih nalaza treba spomenuti i 88 minijturnih prstenastih staklenih perli sivkaste boje (T. 2: 6 – 93), te još 39 malo većih staklenih perli tamne boje i cilindričnog ili jajastog oblika (T. 2: 94–132).

Ponovo, osnova na kojoj su ti nalazi podijeljeni u odvojene skupove čini se sumnjivom, jer podroban pregled omogućuje prepoznavanje sličnih znakova oštećenja, vjerojatno nastalih spaljivanjem, na većini artefakata. Navedeni se nalazi ne razlikuju mnogo u smislu kronološke atribucije – većina se njih može svrstati u najranije faze željeznog doba na Glasincu (faze IVa–b). Problem separacije privjeska s drškom i brončane trake („dijademe“), zajedno s jantarnim perlama, djelimično proizlazi iz datacije tih nalaza koju je ustanovio Čović, a koja se, u svjetlu novih istraživanja, više ne čini opravdanom.

Dijadema (T. 4: 152–155; Pl. 5: 156–160), zapravo dio brončane trake, iako nije rebrasta, na temelju oblika njezinih završetaka asocira na dijademe poznate iz faza IIb i IIIa

sheet, with the ends presumably formed into spiral discs (Pl. 2: 1; Pl. 5: 167).⁹⁴

Apart from these finds, the mound yielded three whole fibulae and a part of another double-loop fibula of the Glasinac type, with the foot in the form of 'Beotian shield'⁹⁵ (Pl. 3: 139–142). This type of fibula appears among grave inventories at the Glasinac during phase IVc.⁹⁶ Furthermore, there are four fibula with large brackets of bronze sheet shaped into four connected semicircles, each with a concentric bulge in the middle, also indicative of Glasinac phase IVa.⁹⁷ It is also important to mention a wheel-shaped belt buckle with openwork ornament (Pl. 3: 143–146). Such elements of costume are especially recurrent in phase IVb.⁹⁸ N. Lucentini considered these objects in detail, proposing their classification into several types and variants.⁹⁹ Pare interpreted the discussed belt buckles as being indicative of Glasinac phase Ib in his chronological division of Iron Age materials from the graves at the plateau, spanning a period from approximately from 800 to 730/720 BC.¹⁰⁰

Other significant elements are bracelets made of thick, bronze rod with oval, semi-circular or convex-concave (U-shaped) cross-sections. They are formed with two coils/scrolls of the rod with the ends overlapping each other and decorated with bandundles of short, incised lines (Pl. 4: 148–151). Bracelets like these are common among the Glasinac finds during phases IVa-c,¹⁰¹ as a standard form developed further into different variants. Finally, the mound contained iron armaments (Pl. 6): a machaira (Pl. 6: 175): a knife (?) (Pl. 6: 176) (it is uncertain as to, whether we are dealing with a knife or a sword) and three spearheads (Pl. 6: 173–174, 177). Such weapons appear among Glasinac grave inventories starting from phase IVb,¹⁰² and remain in use during subsequent stages. Other bronze objects include simple elements of jewellery or costume, such as a belt-hook, saltaleone, buttons, and the previously described hollow openwork pendants or beads (Pl. 5: 161–166, 168–172). Apart from metal elements, we should mention 88 miniature annular glass beads of a greyish colour (Pl. 2: 6–93), and another 39 slightly larger glass beads of a dark colour and cylindrical or ovoid in shape (Pl. 2: 94–132).

Once more, the grounds on which these finds were divided into separate assemblages seem dubious, as a closer inspection allows one to discern similar signs of damage, probably stemming from incineration across most of the artefacts. The finds presented above do not differ much in terms of chronological attribution – the majority of them can be easily assigned to the earliest stages of the Iron Age at Glasinac (phases IVa–b). The problem with separation of the pendant with a handle and bronze tape ("diadem"), along with amber beads, partly stems

95 Čović 1987, 602–604, T. LXI: 13, 16.

96 Čović 1987, 618, tab. LXII: 5, 9.

97 Čović 1987, 586, sl. 33: 10, T. LX: 10.

98 Čović 1987, 596, sl. 35: 7–8, T. LXI: 7–8, 11, 19.

99 Lucentini 1981, 82–83.

100 Pare 1998, 335–336, Abb. 20: 9–12, T. 3.

101 Čović 1987, 583–586, 598, sl. 35: 2–3, tab. LX: 5, 8, 11, LXI: 15, 18.

102 Čović 1987, 591, sl. 34: 9–12.

94 Čović 1981, 120, Pl. IV: 9–10.

95 Čović 1987, 602–604, Pl. LXI: 13, 16.

96 Čović 1987, 618, Pl. LXII: 5, 9.

97 Čović 1987, 586, Fig. 33: 10, Pl. LX: 10.

98 Čović 1987, 596, Fig. 35: 7–8, Pl. LXI: 7–8, 11, 19.

99 Lucentini 1981, 82–83.

100 Pare 1998, 335–336, Abb. 20: 9–12, T. 3.

101 Čović 1987, 583–586, 598, Fig. 35: 2–3, Pl. LX: 5, 8, 11, LXI: 15, 18.

102 Čović 1987, 591, Fig. 34: 9–12.

prema Čoviću. Međutim, samo jedan od fragmenata brončane trake nađen u tumulu II kod Crvene lokve ima kraj koji, moguće, završava spiralnim diskom (kraj je oštećen i njegov se izgled može samo nagađati), dok devet drugih fragmenata svakako podsjeća na dijademe karakteristične za fazu IVb.¹⁰³

S druge strane, privjesak (T. 5: 167) iznenađujuće je sličan onom iz Plješivice, tumula I (1895.) koji se, navodno, pojavio među nalazima tipičnim za fazu IIIb-1: spiralnonaočarasti privjesci s izduženim spiralno namotanim srednjim dijelom, kupolasta i profilirana dugmad sa središnjim osovinama i prstenje/narukvice od uvijene žice sa zadeljanim krajevima.¹⁰⁴ Ta su opažanja navela Čovića da pripoji oba humka prvoj od spomenutih faza, te da prstenje i privjesak s ručkom tretira kao indikativno za potonju fazu.¹⁰⁵ Njegov je argument bio da dobre analogije za te privjeske, navodno, dolaze iz nekoliko ostava faze II kulture polja sa žarama u sjevernoj Hrvatskoj, koji se danas smatraju tipom Veliko Nabrđe.¹⁰⁶ Ipak, detaljno poređenje privjesaka tipa Veliko Nabrđe i nalaza iz tumula kod Crvene lokve i Plješivice pokazuje značajne razlike. S. Pabst, nakon K. Kiliana, svrstao je predmete iz Crvene lokve i Plješivice kao privjeske tipa Ghidici čiji su predstavnici.¹⁰⁷ Privjesci se mogu datirati u prvu fazu starijeg željeznog doba u Srbiji, koja počinje najkasnije od sredine 9. stoljeća pr. Kr., što približno odgovara fazi HaB2/3.¹⁰⁸ Ako se prihvati tumačenje Kiliana/Pabsta, privjesak, zajedno s jantarnim perlama iz tumula II kod Crvene lokve treba pripojiti fazi Glasinac IVa.

Potreban je daljnji komentar vezan za tipologiju jantarnih perli iz tumula II kod Crvene lokve (T. 1: 9–14). Među sedam perli pronađenih u humku Palavestra je prvobitno istaknuo jednu koja predstavlja tip 35b (kubična perla), dok je ostale pripisao tipu 18c (spljoštene cilindrične perle).¹⁰⁹ Nedavna provjera tih nalaza pokazala je da su ipak morfološki različiti i zahtijevaju ponovnu analizu. Jedna (T. 1: 10), dosad smatrana tipom 35b, u stvarnosti pokazuje četverokutni poprečni presjek, no profil perle se čini bikoničnim, za razliku od drugih primjera ovog tipa, na primjer, već raspravljene perle iz groba 2 u tumulu IV kod Gučeva. Uzimajući u obzir specifičan oblik predmeta vjerujemo da bi ovoj perli trebalo dati novu klasifikaciju (možda varijanta 35d u proširenoj Palavestrinoj tipologiji). Pored toga, sve osim jedne od preostalih šest perli također ne pokazuju sličnosti s prethodno definiranim tipovima. Čini se da samo jedna perla odražava oblik klasificiran kao tip 18c (T. 1: 12). Druga ima spljošteni profil, pa se može smatrati potencijalnim primjerom; međutim, njezin presjek je više ili manje četverokutan, a ne okrugao, kao što je slučaj s tipičnim cilindričnim perlama (T.

from the dating of such objects established by Čović which, in light of new studies, no longer seems justified.

The diadem (Pl. 4: 152–155; Pl. 5: 156–160), actually a strip of bronze tape, although not ribbed, alludes by the shape of its terminations to diadems known from phases IIb and IIIa according to Čović. However, only one of the pieces of bronze tape found in tumulus II at Crvena Lokva has an end that potentially terminates in a spiral disc (the termination is broken and its appearance may only be guessed to), while nine other fragments definitely resemble diadems characteristic of phase IVb.¹⁰³

In turn, the pendant (Pl. 5: 167) is strikingly similar to the one from Plješivica, tumulus I (1895) which reportedly appeared among objects regarded as typical to phase IIIb-1: spectacle pendants with an elongated spirally coiled intermediate part, domed and profiled buttons with central mandrels, and rings/bracelets made of twisted wire with looped ends.¹⁰⁴ These observations prompted Čović to attribute both barrows to the former of the mentioned phases, and to treat the rings and pendant with a handle as indicative of the latter.¹⁰⁵ His argument was that good analogies for those pendants supposedly come from several hoards of phase II of the Urnfield Culture in northern Croatia, nowadays regarded as the Veliko Nabrđe type.¹⁰⁶ Nevertheless, detailed comparison of the Veliko Nabrđe pendants and the objects from the tumuli at Crvena Lokva and Plješivica shows significant differences. S. Pabst, after K. Kilian, classified the objects from Crvena Lokva and Plješivica as pendants representative of the Ghidici type.¹⁰⁷ The latter can be dated to the first stage of the Serbian Early Iron Age, starting around the middle of the 9th century BC at the latest, so roughly corresponding with phase HaB2/3.¹⁰⁸ If interpretation of Kilian/Pabst is to be accepted, then the pendant, together with amber beads from tumulus II at Crvena Lokva, should be placed in Glasinac phase IVa at the earliest.

Further comment is required regarding the typology of amber beads from tumulus II at Crvena Lokva (Pl. 1: 9–14). Among the seven beads found within the mound, Palavestra originally distinguished one representing type 35b (cubic bead), while the remaining items were attributed to type 18c (flattened cylindrical beads).¹⁰⁹ The recent re-inspection of these finds has revealed that they are morphologically more varied, and thus require reappraisal. One (Pl. 1: 10), hitherto considered as belonging to type 35b, in reality demonstrates a quadrangular cross-section, however its profile seems biconical, unlike other examples of this type, for instance the already-discussed bead from grave 2 in tumulus IV at Gučevo. Taking into consideration its distinct shape, we believe that this bead should be given a new classification (perhaps that of variant 35d in an expansion of Palavestra's typology). Moreover, all but one of

103 Čović 1981, 120, T. IV: 10; 1987, 596, sl. 35: 5, T. LXI: 9.

104 Čović 1981, 120, T. IV: 9.

105 Čović 1981, 120–121.

106 Čović 1981, 119, T. IV: 9; VI: 8; vidi i Vinski-Gasparini 1973, T. 44: 18, T. 56: 35 za usporedbu.

107 Kilian-Dirlmeier 1979, 6, 8, T. 108:1–2; Pabst 2008, 633–634.

108 Pabst 2008, 623–628, Abb. 7; usp. Vasić 1977, 13, 17, T. 11: 8–16.

109 Palavestra 1993, 112.

103 Čović 1981, 120, Pl. IV: 10; 1987, 596, Fig. 35: 5, Pl. LXI: 9.

104 Čović 1981, 120, Pl. IV: 9.

105 Čović 1981, 120–121.

106 Čović 1981, 119, Pl. IV: 9; VI: 8; see also Vinski-Gasparini 1973, Pl. 44: 18, Pl. 56: 35 for comparison.

107 Kilian-Dirlmeier 1979, 6, 8, Pl. 108:1–2; Pabst 2008, 633–634.

108 Pabst 2008, 623–628, Abb. 7; cf. Vasić 1977, 13, 17, Pl. 11: 8–16.

109 Palavestra 1993, 112.

1: 11). Od ostala četiri nalaza bilo je moguće izdvojiti jednu perlu sličnu sferoidnom tipu 5b (T. 1: 14) i dva ovalna diskoida – tip 9 (T. 1: 9, 13). Uz izuzetak pojedinačne perle tipa 35, svi nalazi jantara iz Crvene lokve, tumula II, nalikuju popularnim oblicima koji su ušli u uporabu tijekom brončanog doba, ali su korišteni i u narednom razdoblju, te nisu naročito korisni prilikom kronološke determinacije.

Uzimajući u obzir sve gore iznesene argumente, preporučuje se da se perle iz tumula II kod Crvene lokve (1890.) isključe iz razmatranja o brončanodobnim nalazima jantara s području Glasinca. Mišljenja smo da jantarni nalazi pronađeni u humku trebaju biti okvirno datirani u fazu Glasinac IVa-IVb.

BOROVSKO, TUMUL II (1892.)

Budući da se javila potreba za što detaljnijom datacijom nalaza koji se pripisuju Glasinačkoj fazi IIIb, Čović je istu podijelio u dvije podfaze: stariju IIIb-1 (o kojoj je već bilo govora u tekstu) i mlađu IIIb-2. Ukupno je pet ukopa ukombinirano u fazu IIIb-2, a svi su relativno siromašni grobnim priložima. Jedna od gomila – Borovsko, tumul II (1892.) – navodno je sadržavala jednu jantarnu perlu.¹¹⁰ Tumul II jedan je od 140 humaka iskopanih u sezoni 1892., a ekspediciju je vodio F. Fiala (karta 1).¹¹¹ Tumulus je prečnika 12 m, visine 1,3 m, a građen je od velikog kamenja prekrivenog zemljom. Unutra je bilo devet skeletnih ukopa, orijentiranih duž osi I-Z. Osim jantarne perle i spiralnonaočarastog privjeska, koji se tumači kao indikator faze IIIb-2,¹¹² ukop je sadržavao i primjerke željeznodobnog oružja (željezno koplje i nož), nakita (brončanu ukosnicu) i fragmente keramičke posude.

Jedina jantarna perla pronađena u ukopu još uvijek se čuva u zbirkama ZMBiH (T. 1: 7). Nažalost, postavlja se pitanje može li se perla uopće pripisati grobu 1, koji je Čović uključio u fazu IIIb-2. Do danas se određivanje osnove na temelju koje je perla pripisana ovom ukopu pokazalo teškim. Čović je metalne nalaze iz tumula II (1892.) tipo-kronološki podijelio; međutim, druge nalaze nije uzeo u razmatranje. Jednako je moguće da je opisana jantarna perla pripadala jednom od skeletnih ukopa datiranih u željezno doba. Stoga se atribuciji perle grobu 1, kako je predložio Palavestra,¹¹³ treba pristupiti sa znatnom količinom opreza. Zbog nedostatka originalne terenske dokumentacije, predlaže se da se nalazi iz ovog konteksta isključe iz razmatranja o nalazima brončanodobnog jantara s Glasinca, barem dok se ne dođe do novih informacija.

the remaining six beads are also far from resembling the previously defined types. Only one bead seems to reflect the form classified as type 18c (Pl. 1: 12). Another one has a flattened profile, and so could be considered a potential example; however its cross section is more or less quadrangular, not round, as is the case with typical cylindrical beads (Pl. 1: 11). Of the other four items, it was possible to distinguish a single bead akin to spheroidal - type 5b (Pl. 1: 14) and two oval discoid - type 9 (Pl. 1: 9, 13). With the exception of the single bead pertaining to type 35, all amber finds from Crvena Lokva, tumulus II resemble popular forms introduced in the Bronze Age but also used in the subsequent period, and hence they are not particularly useful in determining chronology.

Taking into consideration all arguments presented above, it is recommended that the beads from tumulus II at Crvena Lokva (1890) be excluded from considerations regarding Bronze Age amber in the Glasinac area. It is our opinion that the amber finds recovered from the mound should be broadly dated to the Glasinac IVa-IVb phase.

BOROVSKO, TUMULUS II (1892)

In response to a need for a detailed temporal sequence of the finds attributed to Glasinac phase IIIb, the latter was divided by Čović into two sub-phases: the older IIIb-1 (already discussed) and the younger IIIb-2. In total, five burials were combined into phase IIIb-2, all of which were relatively poorly equipped tombs. One of the barrows – Borovsko, tumulus II (1892) – was reported to contain single amber bead.¹¹⁰ Tumulus II was one of 140 mounds excavated in the 1892 season by an expedition under the leadership of F. Fiala (Map 1).¹¹¹ The tumulus measured 12m in diameter, 1.3m in height, and was constructed from large stones covered with an earthen mantle. Inside were nine inhumed burials, oriented along an E-W axis. Apart from an amber bead and a spectacle pendant, the latter being interpreted as indicative of phase IIIb-2,¹¹² it also contained pieces of Iron Age weaponry (iron spearhead and knife) and jewellery (bronze hairpin), and fragments of ceramic vessels.

The single amber bead found in the barrow is still present within ZMBiH's collections (Pl. 1: 7). Unfortunately there is a question over whether the bead can be attributed to grave 1, included by Čović in the phase IIIb-2. To date, determination of the basis upon which the bead was assigned to this burial has proven difficult. Čović divided metal objects from tumulus II (1892) in terms of typo-chronology; however, he did not consider other materials. It is equally possible that the discussed amber bead belonged to one of the other burials interred during the Iron Age. Therefore, the bead's attribution to grave 1, as proposed by Palavestra,¹¹³ should be approached with a considerable amount of caution. Due to the lack of the original

110 Iako je Palavestra nedvojbeno analizirao spomenutu jantarnu perlu, u svojoj publikaciji pogrešno je pripisao još jednoj gomili na Borovskom, također nazvanoj II, ali iskopanoj godinu dana kasnije, 1893., bez nalaza jantara (vidi: Fiala 1892, 439, sl. 59; Čović 1981, 124, sl. 4a, usporedi s: Palavestra 1993, 113).

111 Fiala 1892, 439, sl. 59.

112 Čović 1981, 124–125, sl. 4a; 1983a, sl. 29: 10.

113 Palavestra 1993, 113.

110 Although Palavestra undoubtedly analysed the discussed amber bead, in his publication he incorrectly attributed it to another barrow at Borovsko, also denominated as 'II', but excavated a year later in 1893 and devoid of amber finds (see: Fiala 1892, 439, Fig. 59; Čović 1981, 124, Fig. 4a; compare with Palavestra 1993, 113).

111 Fiala 1892, 439, Fig. 59.

112 Čović 1981, 124–125, Fig. 4a; 1983a, Fig. 29: 10.

113 Palavestra 1993, 113.

GLASINAC IIIC

Konačno, moguće je odrediti mali broj grobova relevantnih za završnu fazu kasnoga brončanog doba – faza IIIC – uključujući i dva koja do sada nisu razmatrana.

VRLAZJE, TUMUL IV, GROB 2 (1894.)

Jedan od grobova koji sadrži jantar a može svrstati u završnu fazu kasnog brončanog doba Glasinac (faza IIIC) jest Vrlazje, tumul IV, grob 2 (1894.). Tumul IV jedan je od trinaest humaka koje je na lokalitetu iskopala arheološka ekspedicija 1894. godine predvođena F. Fialom (karta 1).¹¹⁴ U vrijeme istraživanja humak je imao prečnik 9 metara i visinu od 1 m, a sastojao se od nagomilanog lomljenog kamenja. U južnom dijelu smješteno je sedam skeleta, od kojih su tri najvjerojatnije bila orijentirana S-J. Skeleti su pokopani u različitim stratigrafskim slojevima. Dva od sedam grobova mogu se pouzdano datirati u brončano doba. Fialin izvještaj ne pruža detaljan opis konstrukcije grobnica, te osim inventara grobova 1 i 2 ne povezuje ostale nalaze s pojedinačnim ukopima. U grobu 1 pronađena je jedna kamena sjekira, koja potječe iz mnogo ranijeg perioda (možda ranog brončanog doba faza Glasinac I). Grob 2, unutar kojeg je otkrivena jedna jantarna perla (T. 1: 5), predstavlja posljednji horizont glasinačke kulture tijekom kasnog brončanog doba, definiran kao podfaza IIIC-2. Artefakt od presudne važnosti za takvo kronološko određivanje jest mlađa varijanta fibule tipa Golinjevo (sl. 5: 1).¹¹⁵ Grob 2 sadrži također nalaze brončanog nakita koji se pojavljuju u mnogim fazama: šest komada saltaleone (sl. 5: 4–9),¹¹⁶ prsten od jednostruke brončane trake (sl. 5: 3)¹¹⁷ i kupolasto dugme s ušicom na unutarnjoj strani (sl. 5: 10).¹¹⁸ Još jedna stavka unutar inventara zahtijeva detaljniji opis: fragment dvije međusobno povezane spirale od brončane žice, koje su Benac i Čović izvorno definirali kao oštećeni spiralnonočarasti privjesak¹¹⁹ (sl. 5: 2).

Ponovnom analizom nalaza otkriveni su tragovi slomljene aplikacije, okomito izbočene iz centra jedne spirale. Uzimajući u obzir sva zapažanja, čini se da je predmet spiralnonočarasta fibula, a ne privjesak. Zanimljivo je da je Fiala u svom originalnom izvještaju o iskopavanju tako i definira,¹²⁰ iako je ta interpretacija očigledno kasnije napuštena. Analogije za analizirani primjerak mogu se naći u starijim verzijama spiralnonočarastih fibula bez petlje u obliku broja osam poznatim iz Karpatskog bazena i središnjeg Balkana.¹²¹ Razmatrani primjerak posebno podsjeća na makedonsku varijantu tipa Suseni, koju karakterišu manje dimenzije u poređenju sa sjevernim tipovima. Prema najnovijoj studiji, ovaj tip fibula ušao je u široku uporabu tijekom faze HaA2/HaB1, što kronološki odgovara procijenjenom vremenskom okviru faze Glasinac IIIC.¹²²

field documentation, it is suggested that the finds from this context be excluded from considerations regarding the Bronze Age amber finds from Glasinac, at least until further information comes to light.

GLASINAC IIIC

Finally, it is possible to pinpoint a small number of graves that seem relevant to the final stage of the Late Bronze Age – phase IIIC – including two that have not previously been taken under consideration.

VRLAZJE, TUMULUS IV, GRAVE 2 (1894)

One of the graves containing amber that can be assigned to the final stage of the Late Bronze Age of Glasinac (phase IIIC) is Vrlazje, tumulus IV, grave 2 (1894). Tumulus IV is one of the thirteen mounds excavated at the site by an archaeological expedition led by F. Fiala in 1894 (Map 1).¹¹⁴ At the time of the survey, the mound had a diameter of 9m and height of 1m, and was composed of heaped crushed stones. Seven skeletons were situated in the southern part, three of them most likely oriented N-S. Skeletons were deposited within various stratigraphic layers. Two of the seven graves can be reliably dated to the Bronze Age. Fiala's report does not offer any detailed description of their construction, and apart from the inventories of graves 1 and 2, does not connect other finds to individual burials. Grave 1 yielded a single stone axe originating from a much earlier period (perhaps the Early Bronze Age – Glasinac phase I). Grave 2, inside which a single amber bead was discovered (Pl. 1: 5), represents the final horizon of the Glasinac Culture during the Late Bronze Age, defined as sub-phase IIIC-2. One artefact of crucial importance for such chronological determination is the Golinjevo-type fibula of a younger variant¹¹⁵ (Fig. 5: 1). Grave 2 also contained items of bronze jewellery recurrent in many phases: six pieces of saltaleone¹¹⁶ (Fig. 5: 4–9), a ring made of single coil of bronze sheet¹¹⁷ (Fig. 5: 3) and a domed button with a lug on the inner side¹¹⁸ (Fig. 5: 10). One other item within the inventory requires a more elaborate description; fragments of two interconnected spirals of bronze wire, were originally defined by Benac and Čović as a damaged spectacle pendant¹¹⁹ (Fig. 5: 2).

Re-analysis of the object revealed traces of a broken appendix, perpendicularly protruding from the centre of one spiral. With all observations taken into account, it seems that the object is a spectacle fibula, rather than a pendant. Interestingly, Fiala likewise defined it as a spectacle fibula in his original excavation report,¹²⁰ although this interpretation was apparently later abandoned. One can find close analogies for the analysed specimen among older versions of spectacle fibula without a figure-of-eight loop, known from the Carpathian Basin and the Central Balkans.¹²¹ The discussed example bears a particular resemblance to the Macedonian variant of the Suseni type, characterized by its smaller dimensions in comparison with its northern

114 Fiala 1894, 725, sl. 10–11.

115 Benac, Čović 1956, 10, T. IV: 5; v. također: Gavranović 2011, 34.

116 Benac, Čović 1956, 10, T. IV: 2.

117 Benac, Čović 1956, 10, T. IV: 4.

118 Benac, Čović 1956, 10, T. IV: 8a, 8b.

119 Benac, Čović 1956, 10, T. IV: 3.

120 Fiala 1894, 725.

121 Vidi: Bader 1983, 56–60, Taf. 11–13; Vasić 1999, 29–36, Taf. 8–11.

122 Pabst 2008, Abb. 12: 2.

114 Fiala 1894, 725, Fig. 10–11.

115 Benac, Čović 1956, 10, Pl. IV: 5; see also: Gavranović 2011, 34.

116 Benac, Čović 1956, 10, Pl. IV: 2.

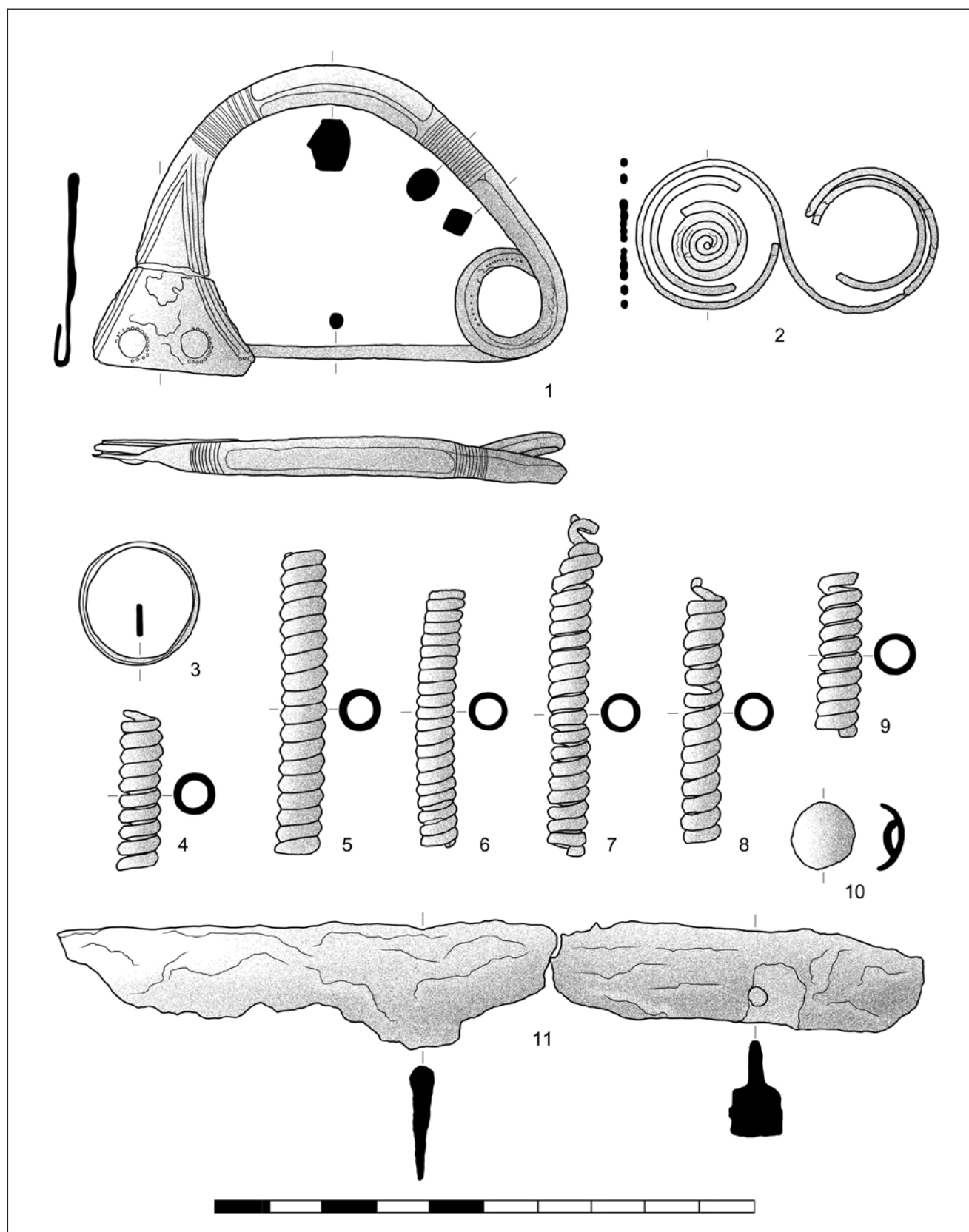
117 Benac, Čović 1956, 10, Pl. IV: 4.

118 Benac, Čović 1956, 10, Pl. IV: 8a, 8b.

119 Benac, Čović 1956, 10, Pl. IV: 3.

120 Fiala 1894, 725.

121 See Bader 1983, 56–60, Taf. 11–13; Vasić 1999, 29–36, Taf. 8–11.



Sl. 5. Glasinac – Vrlazje, tumul IV, grob 2 (1894.), inventar (crtež: M. Bešliagić)

Fig. 5. Glasinac – Vrlazje, tumulus IV, grave 2 (1894), inventory (drawing M. Bešliagić)

S druge strane, treba napomenuti da su se prve verzije spiralnonaočarstih fibula bez petlje u obliku broja osam razvile u vrlo slične ranoželjeznodobne varijante, npr. tip Rudovci.¹²³ Prema originalnoj kronološkoj podjeli nalaza sa Glasinca koju je predložio Čović spiralnonaočarste fibule bez petlje u obliku broja osam pojavljuju se prvi put u fazi IVa, no postale su uobičajne tek kasnije, u fazama IVb-c.¹²⁴ Spomenuti je predmet iz groba 2, tumula IV kod Vrlazja u veoma oštećenom stanju, što onemogućuje detaljniju tipološku procjenu. Ipak, formalne značajke nalaza svakako omogućuju da se tretira kao spiralnonaočarasta fibula.

Nešto kasnija kronologija razmatranog konteksta može se sugerirati prisutnošću jako oštećene oštrice željeznog noža, navodno nađene u grobu 2¹²⁵ (sl. 5: 11). Iako se prvi predmeti od željeza, isključivo u obliku nakita (prsteni i narukvice) pojavljuju u fazi Glasinac IIIc,¹²⁶ oružje i alati od ovog metala postali su široko rasprostranjeni tijekom faze IVb.¹²⁷ Čak i ako stanje očuvanosti spomenutog noža ne dopušta više specifičnih tipoloških razmatranja, njegova prisutnost u grobu (jasno navedena od strane Fiale) ipak otvara pitanje treba li kontekst datirati u kasno brončano doba ili starije željezno doba. Predmeti karakteristični za fazu IV (željezni nož i eventualno spiralnonaočarasta fibula) mogu se smatrati dokazom o nešto kasnijoj kronologiji groba. S druge strane, tipološki i vremenski položaj uzastopnih varijanata fibula tipa Golinjevo (uključujući gore spomenuti primjerak iz groba) prilično je čvrst u literaturi, tvoreći osnovu za datiranje mnogih arheoloških konteksta, ne samo s područja Glasinca. Stoga se kao najbolje rješenje, čini grob 2, iz tumula IV iz Vrlazja kao prijelaz iz kasnog brončanog doba (podfaza IIIc-2) u starije željezno doba (faze IVa i IVb), te u isto vrijeme kao i posljednju grobnicu s jantrom koja se može povezati s brončanim dobom na području Glasinca.

Jedini nalaz jantara iz tumula (T. 1: 5) također zaslužuje kratak komentar. Perla je bila prilično oštećena kad ju je otkrio Fiala, a kao takvu su je ilustrirali Benac i Čović.¹²⁸ Na temelju sačuvanog fragmenta Palavestra ju je definirao kao pravokutnu perlu tipa 37.¹²⁹ Riječ je o sasvim unikatnom primjerku; njezin oblik otkriva neku pravilnost i nalikuje drugim kubičnim oblicima poznatim s Balkana, no ipak, daleko je od reprezentativnog primjera tipa koji je utvrdio Palavestra.¹³⁰ Pažljivo promatranje perle omogućuje utvrđivanje razlika od spomenutog tipa: presjek nalaza je trapezoidan, kao i njegov bočni presjek. Usto, umjesto jedne rupe, izbušene duž veće osi, kuglica ima drugu, široku okomitu (nedovršenu?) perforaciju, izbušenu duž kraće osi, vjerojatno s namjerom spajanja s drugom rupom. Međutim, iz toga proizlazi pitanje: jesu li te dvije rupe i prilično jedinstven oblik

counterparts. The chronology of these fibula also corresponds to the estimated timeframe of Glasinac phase IIIc – according to the most recent study, they became widespread during phase HaA2/HaB1.¹²²

On the other hand, it should be noted that the first versions of spectacle fibula without a figure-of-eight loop developed into very similar Early Iron Age variants, e.g. the Rudovci type.¹²³ According to the original chronological division of Glasinac materials proposed by Čović, spectacle fibula without a figure-of-eight loop appeared for the first time in phase IVa, however they only became common at a later date, during phases IVb-c.¹²⁴ The severely damaged condition of the discussed object from grave 2, tumulus IV at Vrlazje, prevents a more detailed typological assessment. Nevertheless, its formal characteristics certainly allow it to be treated as a spectacle fibula.

A slightly later chronology of the discussed context may be suggested by the presence of a heavily corroded blade of an iron knife, reportedly found associated with grave 2¹²⁵ (Fig. 5: 11). Although the first items made of iron, exclusively in form of jewellery (rings and bracelets), initially appeared in Glasinac phase IIIc,¹²⁶ weapons and tools of this metal only became widespread during phase IVb.¹²⁷ Even if the state of preservation of the discussed knife does not allow for more specific typological considerations, its presence in the grave (clearly stated by Fiala) nonetheless opens up the question as to whether the context should be dated to the Late Bronze Age or to the Early Iron Age. The objects characteristic of phase IV (iron knife and, possibly, a spectacle fibula) may be regarded as evidence testifying to a slightly later chronology of the grave. On the other hand, the typological and temporal position of consecutive variants of Golinjevo-type fibula (including the above-mentioned specimen from the grave) is quite firm in the literature, forming the basis for the dating of many archaeological contexts, not only from the Glasinac area. As a consequence, the best solution is to consider grave 2, tumulus IV from Vrlazje as a feature documenting transition from the Late Bronze Age (sub-phase IIIc-2) to the Early Iron Age (phases IVa and IVb), and at the same time as the final tomb containing amber that can be linked with the Bronze Age in the area of Glasinac.

A single amber find from the barrow (Pl. 1: 5) also deserves a short comment. The bead was already quite damaged when discovered by Fiala, and, as such, was illustrated by Benac and Čović.¹²⁸ Based on a single preserved fragment, Palavestra defined it as a rectangular bead of type 37.¹²⁹ It is a quite unique specimen; its shape reveals some regularity and resembles other cubic forms known from the Balkans, however it is still far from exemplifying the exact type determined by Palavestra.¹³⁰ Careful observation of the bead allows the ascertainment of differences from the given type: its cross-section is trapezoidal, as is its lateral-section. Additionally, instead of a single hole,

123 Pabst 2008, 624, Abb. 11: 2.

124 Čović 1987, 583, 594, sl. 33: 11, T. LX: 21, LXI: 17.

125 Fiala 1894, 725; Benac, Čović 1956, 10, T. IV: 7.

126 Čović 1983a, 428.

127 Čović 1987, 591–592, sl. 34.

128 Benac, Čović 1956, 10, T. IV: 6.

129 Palavestra 1993, 113.

130 Cf. Palavestra 1993, 202, T. II: 37.

122 Pabst 2008, Abb. 12: 2.

123 Pabst 2008, 624, Abb. 11: 2.

124 Čović 1987, 583, 594, Fig. 33: 11, Pl. LX: 21, LXI: 17.

125 Fiala 1894, 725; Benac, Čović 1956, 10, Pl. IV: 7.

126 Čović 1983a, 428.

127 Čović 1987, 591–592, Fig. 34.

128 Benac, Čović 1956, 10, Pl. IV: 6.

129 Palavestra 1993, 113.

130 Cf. Palavestra 1993, 202, Tab. II: 37.

rezultat popravke ili promjene napravljene na originalno različitoj perli?

Što se tiče dviju ukrštenih rupa na perli iz Vrlazje, primjetno je da se u materijalima brončanog doba rijetko javljaju jantarne perle sa sličnim složenim načinom perforacije. Može biti govora o razmaknicama od jantara, no prisutnost istih na području Balkana još uvijek nije zabilježena. Što se tiče brončanog doba u susjednim područjima (Srbija i Hrvatska), postoji mali broj poznatih perli s ukrštenom perforacijom: Paulje, tumul A¹³¹ i Vrsi, grob 89.¹³² Ipak, oni ne tvore nikakvu tipološki koherentnu klasu, pa stoga sve (uključujući Vrlazje) treba smatrati jedinstvenim primjercima.

VRLAZJE, TUMUL III, GROB 3 (1894.) I VRLAZJE, TUMUL XI, GROB 1 (1894.)

Vrlo vjerojatno sadržaj groba 3 u tumulu III na lokalitetu Vrlazje (1894.) treba biti datiran u fazu IIIc ili možda čak IIIb. Gomila smještena u neposrednoj blizini prethodno razmatranog tumula IV iskopana je tijekom ekspedicije iz 1894., godine koju je vodio F. Fiala (karta 1). Prečnik je bio 9 m, a visina 1 m. U središtu se nalazila gomila masivnog kamenja, ali ispod nisu pronađeni arheološki nalazi. U istočnoj polovici humka otkriveno je pet skeletnih ukopa, od kojih su tri opremljena grobnim priložima. Jedan od grobova (br. 3) sadržavao je dvije jantarne perle, kojima nisu pripisani nikakvih dodatni nalazi u inventaru.¹³³ Drugi pokop (br. 1) sadržavao je naočarasti privjesak i malu, okruglu brončanu pločicu sa slomljenom središnjom trnom (možda privjesak štit - *Stachleschiebe*), pa se može grubo datirati u brončano doba. Grob 2 je sigurno mlađi, jer je sadržavao željezno koplje.¹³⁴

U grobu 3 otkrivene su dvije jantarne perle: jedna cilindrična sa srednjim rebrom oko oboda (T. 1: 1), a druga s velikim rupom i ovalnim profilom (T. 1: 2), koje je kasnije Palavestra klasificirao kao tipove 124 i 16.¹³⁵ Zbog nedostatka kronološki dijagnostičkih nalaza u grobu obje su perle dodijeljene grupi nedatiranih konteksta.¹³⁶ Nedavnim pregledom oblika i analizom predmeta dokazano je da se prva perla, zahvaljujući svom specifičnom srednjem rebru, može smatrati primjerom tipa Tiryns sa spljoštenim profilom – tip 1b po Palavestrinoj tipologiji.¹³⁷ Također, može se tvrditi da drugi predmet podsjeća na prstenaste kuglice koje pripadaju tipu 7b, umjesto diskoidno-lentikularnih elemenata (tip 16) koje karakterizira oštar rub u profilu i rupa mnogo manja od ukupnog promjera artefakta.

drilled longitudinally along the longer axis, the bead has another, wider perpendicular (unfinished?) perforation, drilled along the shorter axis probably with the intention of its merging with the other bore. A question arises from this, however: could the two holes and rather unique shape be the results of a repair, or alterations made to an originally different bead?

As for the two criss-crossing suspension holes of the bead from Vrlazje, it is notable that amber beads with a similarly complex manner of perforation rarely occur among Bronze Age materials. Amber spacers can be discussed; however their presence has not been recorded in the Balkans thus far. Regarding the Bronze Age in the neighbouring areas (Serbia and Croatia), there are a small number of beads with two criss-crossing perforations known: Paulje, tumulus A¹³¹ and Vrsi, grave 89.¹³² Nonetheless, they do not form any typologically coherent class, and therefore all (including the bead from Vrlazje) should be regarded as unique specimens.

VRLAZJE, TUMULUS III, GRAVE 3 (1894) AND VRLAZJE, TUMULUS XI, GRAVE 1 (1894)

There is, furthermore, a considerable likelihood that the contents of grave 3 in tumulus III at the site of Vrlazje (1894) should be dated to phase IIIc or perhaps even IIIb. The mound, located in the vicinity of the previously discussed barrow IV, was excavated during an expedition led by F. Fiala in 1894 (plan 1). It measured 9 m in diameter and 1 m in height. A concentration of massive stones was situated in the centre, but no finds were revealed below it. Five skeletal burials were discovered in the eastern half of the mound, three of which were equipped with grave goods. One of the burials (no. 3) was furnished with two amber beads, however no other elements of inventory accompanied these.¹³³ Another burial (no. 1) contained a spectacle pendant with coiled intermediate part and a small, round bronze plaque with a broken central mandrel (possibly a shield pendant – *Stachleschiebe*), and thus it can be roughly dated to the Bronze Age. Grave 2 is definitely younger, as it contained an iron spearhead.¹³⁴

Grave 3 yielded two amber beads: one cylindrical with a median rib around its circumference (Pl. 1: 1) and the other with a large hole and oval profile (Pl. 1: 2), later classified by Palavestra as types 124 and 16.¹³⁵ Due to an absence of chronologically diagnostic finds in the grave, both beads were assigned to the group of undated contexts.¹³⁶ A recent overview of the figures and analysis of the objects proved that the first bead, thanks to its distinct median rib, can be regarded as an example of the Tiryns type with flattened profile – type 1b in the typology of Palavestra.¹³⁷ Moreover, it can be argued that the second object

131 Bulatović et al. 2017, T. XIV: 16.

132 Batović 1983, T. XLIV: 10.

133 Fiala 1894, 724, sl. 9a–b.

134 Fiala 1894, 724.

135 Usporediti s: Palavestra 1993, 116, tab. I: 16; tab. XIII: 124.

136 Palavestra 1993, 116.

137 Donekle su nejasni razlozi zbog kojih Palavestra tretira cilindrično zrno sa srednjim rebrom kao jedinstven oblik za koji pravi novi tip 124. Sigurno je bio upoznat s vrlo sličnim nalazima iz Vrsa (Batović 1959, 44, 47, sl. 4: 4; 1980, 38, T. V: 11–12; 1983, 325, T. XLIV: 9–12) ili Privlake (Batović 1959, 44, sl. 4: 1; 1980, 38, T. V: 13–14; 1983, 325, T. XLIV: 19–21), koji su u njegov katalog uključeni kao predstavnici tipa 1b (Palavestra 1993, 50–51).

131 Bulatović et al. 2017, T. XIV: 16.

132 Batović 1983, T. XLIV: 10.

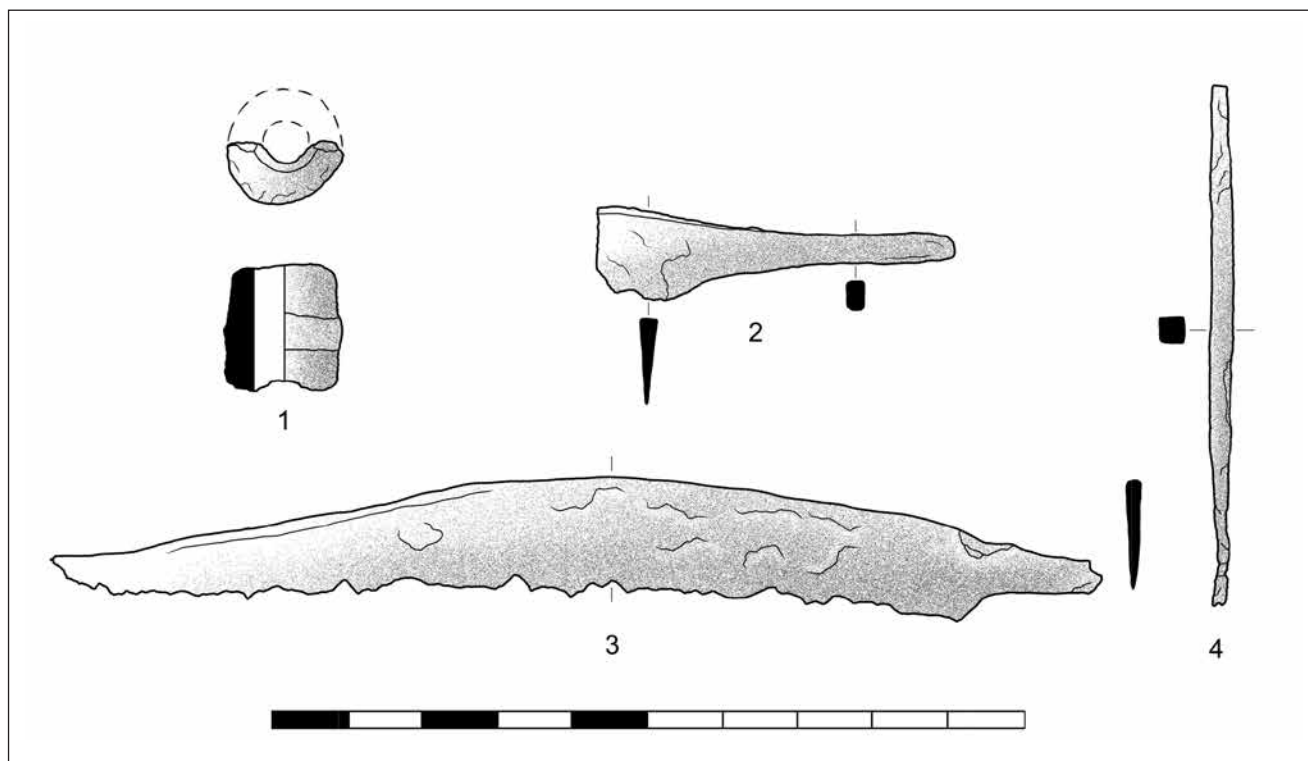
133 Fiala 1894, 724, Figs. 9a–b.

134 Fiala 1894, 724.

135 Compare with Palavestra 1993, 116, Pl. I: 16; Pl. XIII: 124.

136 Palavestra 1993, 116.

137 The reasons for Palavestra treating the cylindrical bead with median rib as a unique form and creating for it the new type 124 are somewhat puzzling. He surely must have been familiar with very similar objects from Vrsi (Batović 1959, 44, 47, Fig. 4: 4; 1980, 38, Pl. V: 11–12; 1983, 325, Pl. XLIV: 9–12) or Privlaka (Batović 1959, 44, Fig. 4: 1; 1980, 38, Pl. V: 13–14; 1983, 325, Pl. XLIV: 19–21), which were included in his catalogue as representatives of type 1b (Palavestra 1993, 50–51).



Sl. 6. Glasinac – Vrlazje, tumulus XI, grob 1 (1894.), inventar (crtež: M. Bešlagić)

Fig. 6. Glasinac – Vrlazje tumulus XI, grave 1 (1894), inventory (drawing: M. Bešlagić)

Trebalo bi spomenuti i tumul XI iz Vrlazje, iskopan iste godine kao i dva gore opisana, jer je sadržavao fragment (otprilike polovicu) perle koju je Palavestra svrstao kao drugi i jedini primjer tipa 124 (T. 1: 6).¹³⁸ Ovaj humak bio je promjera 7,5 m i visine 1 m. U blizini ostataka skeleta (grob 1), otkrivenog na neodređenom mjestu unutar tumula, pronađena je željezna oštrica noža/-eva (sl. 6: 2, 3), ulomci drugog sličnog predmeta, željezna šipka nalik na stilus, šilo (sl. 6: 4), nekoliko ulomaka keramike¹³⁹ i spomenuti komad jantara (sl. 6: 1). Posljednji nalaz, iako ima karakteristično horizontalno rebro tipa Tiryns, ima različite dimenzije u poređenju s perlom iz groba 3, tumula III, iz Vrlazje; više je izduženog oblika, te se ne može svrstati u varijantu 1b. Ipak, velik dio predmeta nedostaje, pa je konačno određivanje njegove tipologije nemoguće, čak i ako se tip 1 čini najvjerojatnijim. Preostali predmeti nemaju preciznu tipo-hronološku klasifikaciju, što sprečava određivanje pripadnosti perle bilo kojoj specifičnoj fazi u

resembles annular beads belonging to type 7b, rather than discoid-lenticular elements (type 16) characterized by a sharp edge in the profile, and a hole much smaller than the total diameter of the artefact.

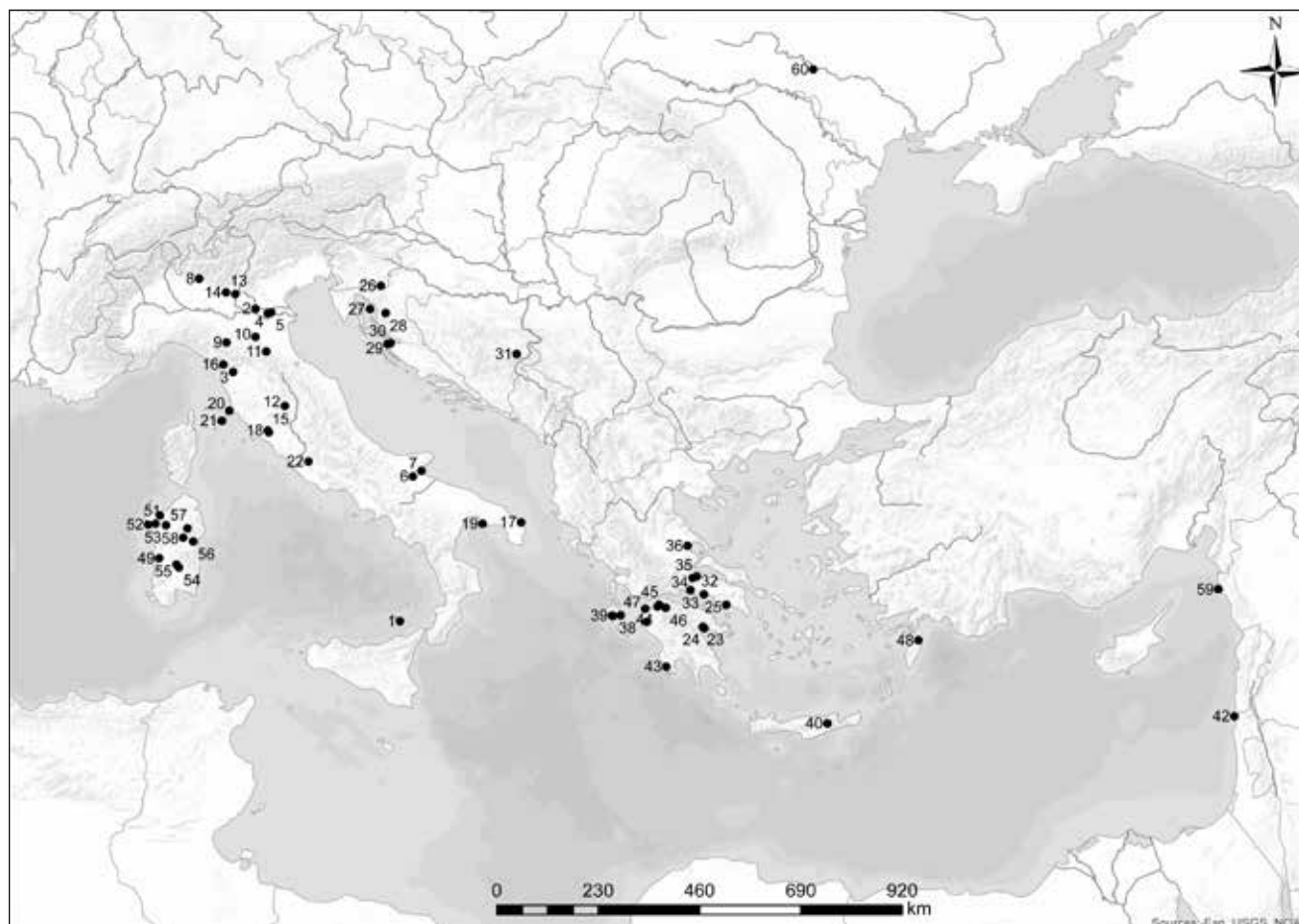
Tumulus XI located at Vrlazje excavated in the same year as the two described above should also be mentioned, as it contained a fragment (approximately a half) of a bead classified by Palavestra as the second and only other example of type 124 (Pl. 1: 6).¹³⁸ This mound was 7.5m in diameter and 1m in height. Near the skeletal remains (grave 1), discovered in an unspecified location within the tumulus, the blade of an iron knife(s) (Fig. 6: 2, 3), fragments of another similar item, an iron rod resembling a stylus – an awl (Fig. 6: 4), some pottery sherds¹³⁹ and the aforementioned piece of amber (Fig. 6: 1) were found. The latter element, even though exhibiting a characteristic horizontal rib pertaining to the Tiryns type, has different dimensions in comparison with the bead from the Vrlazje tumulus III, grave 3; it reflects more of an elongated form, and thus cannot be assigned to variant

¹³⁸ Fiala 1894, 728; Palavestra 1993, 116.

¹³⁹ Ulomci keramike spomenuti u Fialinom izvještaju (Fiala 1894, 728.) nisu zabilježeni u inventarnoj knjizi kao nalazi iz ovoga groba. Prema inventarnoj knjizi ZMBiH sadržaj grobnice bio je sljedeći: 6974 – oštrica željeznog noža; 6976 – ulomci drugog željeznog noža i željezne šipke nalik šilu (pod istim inventarnim brojem); 6975 – jantarno zrno.

¹³⁸ Fiala 1894, 728; Palavestra 1993, 116.

¹³⁹ Pottery sherds mentioned in Fiala's report (Fiala 1894, 728) are not recorded in the inventory book as finds from this grave. According to the inventory book in the ZMBiH, the contents of the grave were as follows: 6974 – blade of an iron knife; 6976 – fragments of another iron knife and iron rod resembling an awl (under the same inventory number); 6975 – amber bead.



Karta 2. Distribucijska karta jantarnih perli tipa *Tyrins*: 1) Piazza Monfalcone; 2) Fondo Paviani; 3) Fossa Nera di Porcari; 4) Frattesina di Frata Polesine; 5) Campestrin di Grignano Polesine; 6) Capitanata; 7) Coppa Nevigata; 8) Costa Cavallina; 9) Bismantova; 10) Borgo Panigale; 11) Monte Battaglia; 12) panicarola; 13) Peschiera, Imboccatura del Mincio; 14) Ponte San Marco; 15) Ponte San Pietro; 16) Riparo dell'Ambra; 17) Roca Vecchia; 18) Scarceta; 19) Torre Castelluccia; 20) Populonia; 21) Isola d'Elba; 22) osteria dell'Osa; 23) Tyrins; 24) Ayia Moni, Nauplion; 25) Salamis; 26) Debeli vrh; 27) otok Krk; 28) Kompolje; 29) Privlaka; 30) Vrsi; 31) Vrlazje (tumulus III, grob 3 i tumulus XI, grob 1); 32) Thisbhe; 33) Medeon; 34) Elateia; 35) Zeli; 36) Ayios Georghios; 37) Metaxata; 38) Diakata; 39) Lakkithra; 40) Antro Dicteo; 41) Elis; 42) Akhziv; 43) Pylos; 44) Kallithea; 45) Klauss; 46) Agios Ionnis; 47) Teichos Dymaion; 48) Ialysos; 49) Motrox'e Bois; 50) Serra Niedda di Sorso; 51) Nuraghe Attentu; 52) Nuraghe Flumenelongu; 53) Monte Sant'Antonio; 54) Santa Vittoria Serri; 55) Forraxi-Nioi Nuragus; 56) Sa Sedda 'e Sos Carros; 57) Romanzesu; 58) Nuradole; 59) ras Shamra, Ugarit; 60) Gordievka (dopunjena nakon Negroni Catacchio 1999; 2014; Blečić Kavrur 2014).

Map 2. *Tyrins* type amber beads distribution map: 1) Piazza Monfalcone; 2) Fondo Paviani; 3) Fossa Nera di Porcari; 4) Frattesina di Frata Polesine; 5) Campestrin di Grignano Polesine; 6) Capitanata; 7) Coppa Nevigata; 8) Costa Cavallina; 9) Bismantova; 10) Borgo Panigale; 11) Monte Battaglia; 12) panicarola; 13) Peschiera, Imboccatura del Mincio; 14) Ponte San Marco; 15) Ponte San Pietro; 16) Riparo dell'Ambra; 17) Roca Vecchia; 18) Scarceta; 19) Torre Castelluccia; 20) Populonia; 21) Isola d'Elba; 22) osteria dell'Osa; 23) Tyrins; 24) Ayia Moni, Nauplion; 25) Salamis; 26) Debeli vrh; 27) Island of Krk; 28) Kompolje; 29) Privlaka; 30) Vrsi; 31) Vrlazje (tumulus III, grave 3 and tumulus XI, grave 1); 32) Thisbhe; 33) Medeon; 34) Elateia; 35) Zeli; 36) Ayios Georghios; 37) Metaxata; 38) Diakata; 39) Lakkithra; 40) Antro Dicteo; 41) Elis; 42) Akhziv; 43) Pylos; 44) Kallithea; 45) Klauss; 46) Agios Ionnis; 47) Teichos Dymaion; 48) Ialysos; 49) Motrox'e Bois; 50) Serra Niedda di Sorso; 51) Nuraghe Attentu; 52) Nuraghe Flumenelongu; 53) Monte Sant'Antonio; 54) Santa Vittoria Serri; 55) Forraxi-Nioi Nuragus; 56) Sa Sedda 'e Sos Carros; 57) Romanzesu; 58) Nuradole; 59) ras Shamra, Ugarit; 60) Gordievka (supplemented after Negroni Catacchio 1999; 2014; Blečić Kavrur 2014).

periodizaciji Glasinca. Prisutnost željeznog noža ukazuje na kronologiju željeznog doba, no treba imati na umu da se sličan predmet pojavio u već raspravljenom tumulu IV, grobu 2 u Vrlazju.

Na temelju trenutnog stanja istraživosti¹⁴⁰ može se zaključiti da jantarne perle tipa *Tyrins* imaju određenu prostornu distribuciju, praktički ograničenu na centralni Mediteran s izoliranim nalazima registriranim dalje na istoku, u

1b. Still, a large part of it is missing, and therefore complete determination of its typology is impossible, even if type 1 seems the most plausible choice. The remaining objects evade any precise typo-chronological classification – a factor that has prevented the bead's assignment to any specific phase in the Glasinac periodization. The presence of an iron knife indicates an Iron Age chronology, however it should be remembered that a similar object appeared in the previously discussed tumulus IV, grave 2 at Vrlazje.

¹⁴⁰ Vidi npr. Harding, Hughes-Brock 1974; Negroni Catacchio 1999; 2014; Negroni Catacchio et al. 2006; Bellintani 2014.

razdoblju od 1200. do 900. godina pr. Kr. (karta 2). U slučaju Grčke, najraniji primjer spomenuog tipa pronađen je na lokalitetu Napflio u Argolidi, datiranom na LHIIIA2-IIIB, dakle otprilike između 1450. i 1200. godine pr. Kr. Međutim, većina relevantnih nalaza datirana je u fazu LHIIIC, što odgovara cca. 1200.–1060. god. pr. Kr.¹⁴¹ Slične datacije perli tipa Tiryns općenito su prihvaćene gledajući talijanske nalaze (koje odgovaraju kasnim periodima *Bronzo Recente* i *Bronzo Finale* (oko 1200.–950. godina pr. Kr.), iako su pojedinačni nalazi evidentirani u kasnijim kontekstima, datiranim u 9. stoljeće pr. Kr. (npr. Osteria dell'Osa u Laciju).¹⁴² Što se tiče primjera sa zapadnog Balkana perli tipa Tiryns, poznatih iz primorskog dijela Hrvatske, i u jednom slučaju, Slovenije, predlaže se slična kronologija.¹⁴³ Zaključno, perla iz groba 1, tumula 3 na lokalitetu Vrlazje (T. 1: 1), na osnovi sličnosti s tipom Tiryns, može se općenito datirati u faze HaA1-A2/B1, tako da razdoblje približno odgovara fazi Glasinac IIIb-c. S druge strane, grob 1 iz tumula XI (T. 1: 6), koji također sadrži takvu perlu, zbog prisutnosti željeznih predmeta, može se najranije datirati oko prelaza iz faze Glasinac IIIc u fazu IVa (otprilike HaB1-HaB2/3, oko 900. godina pr. Kr.). Uzevši u obzir kontekst obje perle, čini se prikladnijim smjestiti ih u završnu fazu kasnoga bronzanog doba područja Glasinca (faza IIIc-2), čime je moguće dokumentirati završni horizont perli tipa Tiryns.

PROVENIJENCIJA GLASINAČKIH JANTARNIH NALAZA

Kao dodatak gore navedenim razmatranjima autori bi u svjetlu najnovije analize provenijencije ukratko analizirali pitanje porijekla jantara pronađenog u glasinackim tumulima. Znanstveno zanimanje za ovo pitanje potječe još iz sedamdesetih godina prošlog stoljeća, kada su četiri uzorka jantara iz nekih grobova analizirali C. W. Beck i njegove kolege iz Laboratorija za istraživanje jantara Vassar Collegea, SAD. Koristeći infracrvene spektre kao determinante jantarnog podrijetla, znanstvenici su sva četiri uzorka proglasili sukcinom (obično poznatim kao „baltički jantar“).¹⁴⁴ Ipak, jantari podvrgnuti analizi uzeti su isključivo iz željeznodobnih tumula, pa sve donedavno nije bilo indikacija o provenijenciji nalaza jantara s područja Glasinca koji se odnose na bronzano doba.

Ovo pitanje se rješava u okviru projekta „Kružni jadranski ogranak jantarne rute u bronzanom dobu“, koji finansira Poljski nacionalni znanstveni centar (br. 2015/17/N/HS3/00052), a vodi ga Mateusz Cwaliński u suradnji s Laboratorijom za istraživanje jantara.¹⁴⁵ Do sada su za analizu provenijencije odabrana četiri uzorka jantarnih nalaza otkrivena u grobovima s dosad pretpostavljenom kronologi-

On the basis of the current state of research,¹⁴⁰ it can be inferred that the Tiryns-type amber beads appeared in a limited spatial scope, practically limited to the Central Mediterranean with isolated finds registered further to the east, during a period from 1200 to 900 BC (Map 2). In the case of Greece, the earliest example of discussed form occurred at the site Napflio in Argolid, dated to LHIIIA2-IIIB, so approximately between 1450 and 1200 BC. However, the bulk of relevant finds are dated to the LHIIIC phase, corresponding to ca. 1200-1060 BC.¹⁴¹ Similar dating of the Tiryns-type beads is generally accepted in respect to Italian finds (corresponding with the late *Bronzo Recente* and *Bronzo Finale*; ca 1200-950 BC), although singular finds are present in a later contexts, dated to the 9th century BC (e.g. Osteria dell'Osa in Lazio).¹⁴² Regarding the Western Balkan examples of the Tiryns type, known from the coastal part of Croatia and – in one case – Slovenia, a similar chronology is suggested.¹⁴³

To conclude, the bead from grave 1, tumulus 3 at the site of Vrlazje (Pl. 1: 1), on the basis of formal similarity to the Tiryns type, can be generally dated to phases HaA1-A2/B1, so a period roughly corresponding to Glasinac phase IIIb-c. On the other hand, grave 1 from tumulus XI (Pl. 1: 6), also containing such a bead, due to the presence of iron items, can be dated around the transition from Glasinac phase IIIc to IVa at the earliest (approximately HaB1-HaB2/3; around 900 BC). Taking into consideration the context of both beads, it seems more fitting to position them towards the final Late Bronze Age stage of the Glasinac area (phase IIIc-2), thus potentially documenting the closing horizon of the Tiryns-type beads.

PROVENANCE OF THE GLASINAC AMBERS

As a supplement to the above considerations, the authors would like to briefly discuss the issue of origins of amber found in the Glasinac barrows in light of the latest provenance analysis. The scientific interest in this matter dates back to as far as the 1970s, when four amber samples from some of the graves were analysed by C.W. Beck and his colleagues from the Amber Research Laboratory of Vassar College, USA. Using infrared spectra as determinants of amber origin, the scholars proclaimed all four samples to be succinite (commonly known as Baltic amber).¹⁴⁴ Yet the ambers subjected to the analysis were taken exclusively from the Iron Age mounds, and therefore until recently there have been no provenance indications of any amber artefacts from the Glasinac area datable to the Bronze Age.

This issue is addressed by the project 'Circum-Adriatic branch of the amber route in the Bronze Age' financed by the Polish National Science Center (no. 2015/17/N/HS3/00052), and conducted by Mateusz Cwaliński in collaboration with the

141 Czebreszuk 2011, 88, T. 9.

142 Vidi npr. Negroni Catacchio 1999; 2014; Bellintani 2014.

143 Lo Schiavo 1970, tab. 23: 9–11, 13–16; 42: 19, 20; Hirschbäck-Merhar 1984, 94, T. 9; Glogović 1989, 24–25, tab. 43: 1; Teržan 1984; Палавестра, Крстић 2006, 44, sl. 16; Blečić Kavur 2014, 56–60, sl. 25; Križ 2017, 33–34.

144 Todd *et al.* 1976, 324–325, tab. 2.

145 Cwaliński *et al.* 2018.

140 See e.g. Harding, Hughes-Brock 1974; Negroni Catacchio 1999; 2014; Negroni Catacchio *et al.* 2006; Bellintani 2014.

141 Czebreszuk 2011, 88, T. 9.

142 See e.g. Negroni Catacchio 1999; 2014; Bellintani 2014.

143 Lo Schiavo 1970, Pl. 23: 9–11, 13–16; 42: 19, 20; Hirschbäck-Merhar 1984, 94, T. 9; Glogović 1989, 24–25, Pl. 43: 1; Teržan 1984; Палавестра, Крстић 2006, 44, Fig. 16; Blečić Kavur 2014, 56–60, Fig. 25; Križ 2017, 33–34.

144 Todd *et al.* 1976, 324–325, Tab. 2.

jom brončanog doba (Crvena lokva, tumul II; Osovo, tumul I, grob 4; Vrlazje, tumul III, grob 3 i grobnica IV, grobnica III. 2). Također, veća grupa uzoraka jantara uzetih iz željeznodobnih nalaza s Glasinca podvrgnuta je sličnoj studiji, sa svrhom uspoređivanja rezultata i promatranja svih dugoročnih trendova u korištenju određenih vrsta fosilnih smola na tom području.

Prikupljeni uzorci jantara analizirani su *Fourier-Transform Infrared (FTIR)*-spektroskopijom upotrebom peleta kalijeve bromida (KBr). Peleti su pripremljeni s 1 do 2 mg jantarnog uzorka i 100 mg bezvodnog KBr (> 99% od: *Sigma Aldrich Chemical Co.*). Analiza je provedena korištenjem modela *Thermo Nicolet FTIR Nexus 670*, postavljenog na 32 skeniranja i 4 cm⁻¹ rezolucije.

Analiza putem FTIR-spektroskopije pokazala je (sl. 8–9) da se svi uzorci mogu klasificirati kao sukcinin na temelju prisutnosti klasičnog "baltičkog ramena" – karakterističnog obilježja u IR-spekttru, koji se sastoji od horizontalne police ili ramena između 1250 i 1175 cm⁻¹, nakon čega slijedi oštar vrh između 1160 i 1150 cm⁻¹, koji nije zabilježen na bilo kojim drugim, nebaltičkim, europskim fosilnim smolama koje su do sada testirane.¹⁴⁶ Navedena vrsta jantara ne može se pronaći na području Balkana, već u pojasu koji pokriva nizinsku zonu Europe, od obale Baltika do Volinja i dnjeparskog bazena u Ukrajini.¹⁴⁷ Najbogatija nalazišta sukcinina (baltički jantar) javljaju se u morskim sedimentima paleogena u nekim dijelovima Poljske i Rusije, poznatim kao Sambijsko nalazište.¹⁴⁸ Premještanje jantara od izvornih nalazišta i dalje traje procesima erozije dna Baltičkog mora i kontinuiranom obalnom sedimentacijom. Zahvaljujući ovom fenomenu, jantar se može skupljati, u malim količinama, s obale, naročito nakon oluja, bez potrebe za rudarskim metodama.

Rezultati najnovije provenijencijske studije o nalazima balkanskog jantara potvrđuju zaključke dobivene tijekom prethodnih analiza.¹⁴⁹ Ovo opažanje posebno je važno u odnosu prema nalazima koji tipološki odgovaraju analiziranim artefaktima s Glasinca, između ostalog perle tipa Tiryns iz ostave Debeli vrh u Dolenjskoj (Slovenija)¹⁵⁰ i na Kompolju, iz groba 293 (1903. – 1905.),¹⁵¹ koji je tek nedavno analiziran¹⁵² tako da se može pretpostaviti kako je velika većina jantara uvezana na područje Glasinca iz Sjeverne Europe, kroz lanac radionica i centara za redistribuciju, kao što su *Frattesina di Fratta Polesine* i *Campestrin di Grigano Polesine* u dolini Po, koji su pokazali tragove prerade jantara u obliku polugotovih proizvoda perli i proizvodnog otpada.¹⁵³

Amber Research Laboratory.¹⁴⁵ To date, four samples of amber finds discovered in barrows with hitherto assumed Bronze Age chronology have been selected for provenance analysis (Crvena Lokva, tumulus II; Osovo, tumulus I, grave 4; Vrlazje, tumulus III, grave 3 and tumulus IV, grave 2). Furthermore, a larger group of samples taken from Glasinac Iron Age amber artefacts has been subjected to a similar study, with the aim of comparing the results and observing any long-term trends in the use of certain types of fossil resins in the area.

The collected amber samples were analysed via *Fourier-Transform Infrared (FTIR)* spectroscopy using KBr (*potassium bromide*) pellets. The pellets were prepared with 1–2 mg of amber sample and 100 mg of anhydrous KBr (>99% from *Sigma Aldrich Chemical Co.*). The analysis was carried out using a *Thermo Nicolet FTIR Nexus 670* model, set to 32 scans, and 4 cm⁻¹ resolution.

Analysis via FTIR spectroscopy showed (Fig. 8–9) that all samples can be classified as succinite based on the presence of the classic 'Baltic shoulder' – a characteristic feature in the IR spectrum, comprising a horizontal shelf or shoulder between 1250 and 1175 cm⁻¹, followed by a sharp peak between 1160 and 1150 cm⁻¹, not shared with any other non-Baltic European fossil resin tested to date.¹⁴⁶ The aforementioned type of amber does not occur naturally in the Balkan area, but in the belt covering the lowland zone of Europe, from the Baltic coast to Volhynia and the Dnieper Basin in Ukraine.¹⁴⁷ The richest deposits of succinite (Baltic amber) occur in the Palaeogene marine sediments across some parts of Poland and Russia, known as the Sambian deposit.¹⁴⁸ Displacement of original amber deposits continues to this day with the processes of erosion of the Baltic Sea floor and ongoing coastal sedimentation. Thanks to this phenomenon, amber can be collected in small quantities from the shore, especially after storms, without the need to resort to mining methods.

The results of the most recent provenance study of Balkan amber finds confirm conclusions reached during previous analyses.¹⁴⁹ This observation is especially important in relation to finds typologically corresponding to the analysed Glasinac artefacts, inter alia the Tiryns-type beads from the Debeli Vrh hoard in Dolenjska (Slovenia)¹⁵⁰ and Kompolje, grave 293 (1903–1905),¹⁵¹ the latter analysed only recently.¹⁵² Therefore, one can assume that the vast majority of amber was imported to the Glasinac area from the Northern Europe, through a chain of workshops and redistribution centres, such as *Frattesina di Fratta Polesine* and *Campestrin di Grigano Polesine* in the Po Valley, which yielded traces of amber processing in the form of semi-finished beads and production waste.¹⁵³

146 Beck et al. 1964, 1965, 103; Beck 1986, 73–74.

147 Beck 1999, 33; Kosmowska-Ceranowicz 1999, 91.

148 Kosmowska-Ceranowicz 1999, 75.

149 Cf. Todd et al. 1976; Hadži, Orel 1978; Teržan 1984; Rašajski 1988; Beck 1996.

150 Hirschbäck-Merhar 1984, T. IX: 17.

151 Bakarić 2017, 26, cat. br. 9.

152 Cwaliński et al. 2018.

153 Cf. Negroni Catacchio 1972; Bellintani 2014; Bellintani et al. 2015; Bietti Sestieri et al. 2015.

145 Cwaliński et al. 2018.

146 Beck et al. 1964, 1965, 103; Beck 1986, 73–74.

147 Beck 1999, 33; Kosmowska-Ceranowicz 1999, 91.

148 Kosmowska-Ceranowicz 1999, 75.

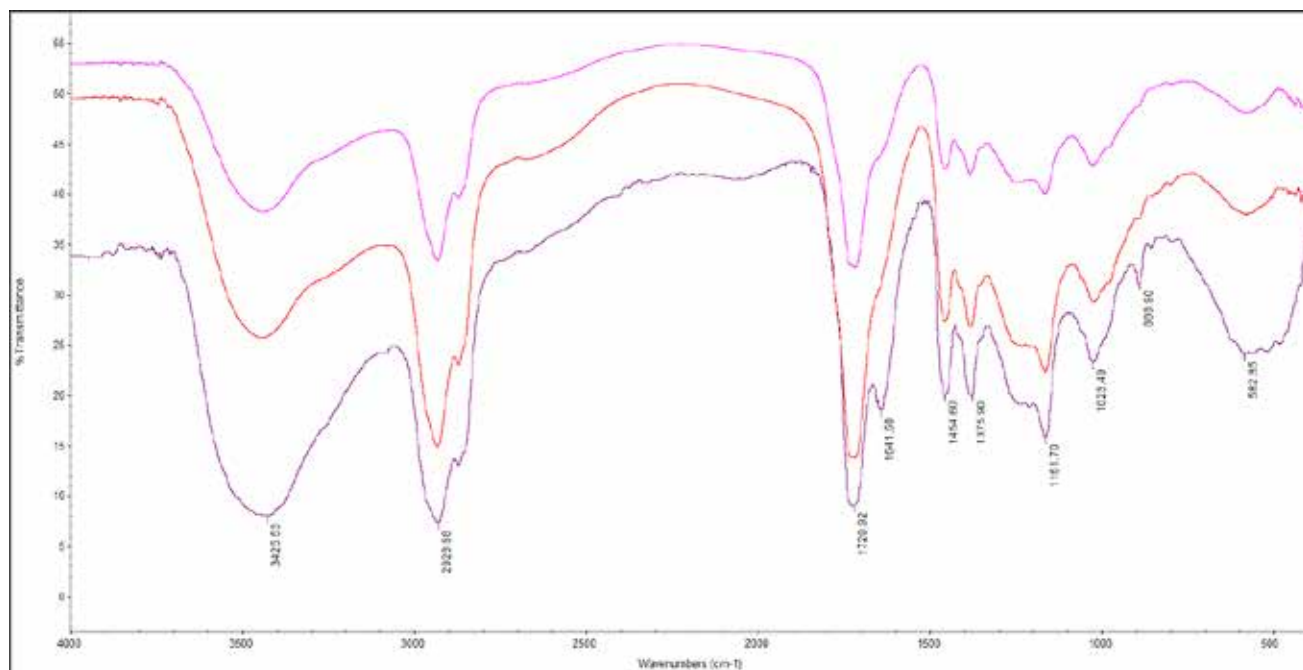
149 Cf. Todd et al. 1976; Hadži, Orel 1978; Teržan 1984; Rašajski 1988; Beck 1996.

150 Hirschbäck-Merhar 1984, T. IX: 17.

151 Bakarić 2017, 26, cat. No. 9.

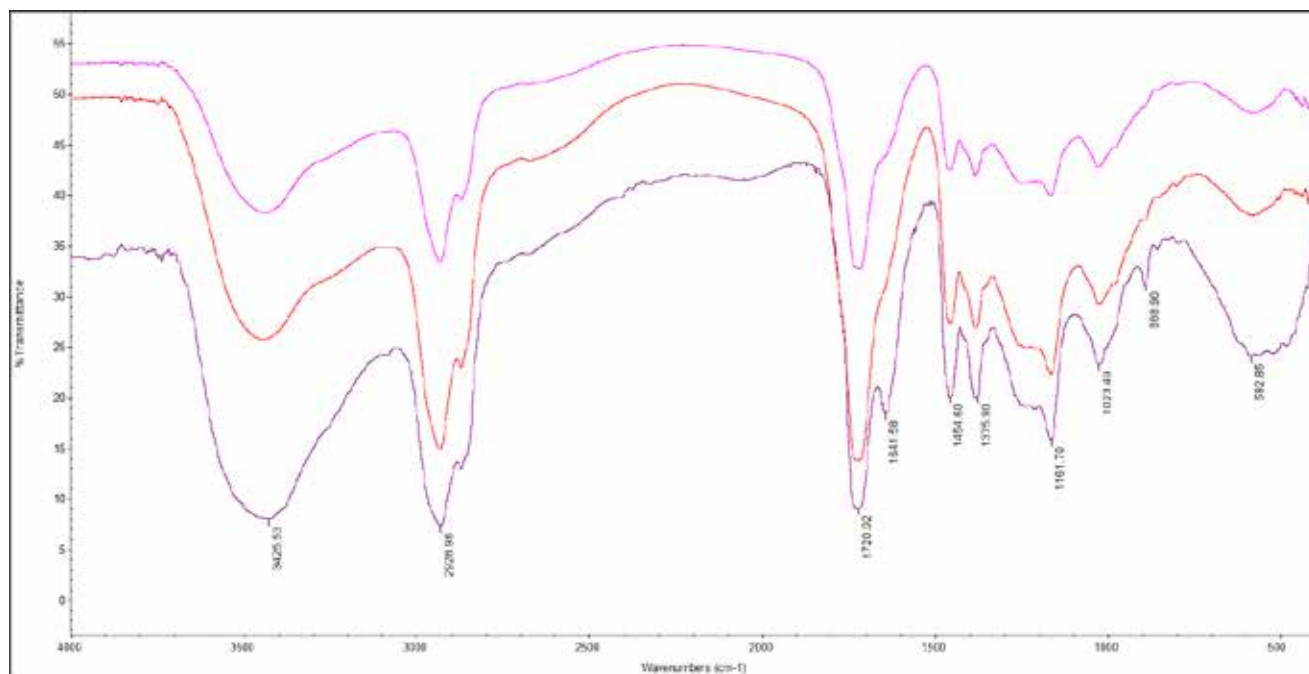
152 Cwaliński et al. 2018.

153 Cf. Negroni Catacchio 1972; Bellintani 2014; Bellintani et al. 2015; Bietti Sestieri et al. 2015.



Slika 7. Superponirani FTIR spektri uzoraka jantara iz Crvene Lokve, tumula II (br. 8488; gornja/ružičasta), Osova, tumula I (br. 8489; srednji/crveni) i referentnog uzorka sukcinita (dno/ljubičasta).

Figure 7. Superimposed FTIR spectra of amber samples from Crvena Lokva, tumulus II (no. 8488; top/pink), Osovo, tumulus I (no. 8489; middle/red) and referential succinite sample (bottom/violet).



Slika 8. Superponirani FTIR spektri uzoraka jantara iz Vrlazje, tumula IV, groba 2 (br. 8487; gornja/plava), Vrlazje, tumula III, groba 3 (br. 8486; srednji/crveni) i referentnog uzorka sukcinita (dno/ljubičasta).

Figure 8. Superimposed FTIR spectra of amber samples from Vrlazje, tumulus IV, grave 2 (no. 8487; top/blue), Vrlazje, tumulus III, grave 3 (no. 8486; middle/red) and referential succinite sample (bottom/violet).

ZAKLJUČCI

Navedena razmatranja u određenoj mjeri razjašnjavaju stanje istraženosti brončanodobnih nalaza jantara na Glasinačkoj visoravni. Zahvaljujući provedenom istraživanju, na temelju pregleda dosad objavljene literature i analize nalaza u ZMBiH bilo je moguće verificirati kronologiju i tipologiju većine nalaza. Nažalost, neke nalaze nije bilo moguće locirati, dok u drugim slučajevima predmeti sačuvani u muzejskoj zbirci ne predstavljaju nalaze kakve su objavili Benac i Čović, ili kasnije Palavestra.

Trenutno, moguće je pouzdano datirati dva groba s nalazima jantara u razdoblje srednjeg brončanog doba na Glasincu (faza II). Svakako najstariji od njih je grob 2, tumul IV (1895.) na Gučevu. Nešto mlađi je tumul I (1894.) na mjestu Rudine, na Ivanpolju. Grob 3, tumul III (1894.) u Vrlazju najvjerojatnije bi trebalo pripisati razvijenom kasnobrončanom dobu na Glasincu (faza IIIb-c), dok grob 2, tumul IV i grob 1, tumul XI, (1894.) s istog mjesta eventualno evidentirati kao prijelaz u starije željezno doba (faze IIIc-2/IVa-b).

Mnoge se neizvjesnosti vezuju za nalaze iz još dva humka: Crvena lokva, tumul II (1890.) i Borovsko, tumul II (1892.). Za sada ne postoji sigurna osnova po kojoj bi mogli biti datirani u brončano doba. Nepostojanje sigurne naznake njihova originalnog položaja unutar tumula znači da se ne mogu povezati s drugim artefaktima i ostacima ukopa. S druge strane, potrebna je nova temeljita procjena vjerodostojnosti dosadašnje pretpostavljene kronologije nekih nalaza koji se uporedo javljaju (dijademe, privjesci s drškom i spiralnonaočarasti privjesci). Buduća istraživanja trebaju biti fokusirana na određivanje kojim grobovima su originalno pripadale jantarne perle iz razmatranih tumula i s kojim bi ostalim nalazima trebale biti povezane. Prije nego što se odgovori na ova pitanja nalaze iz ta dva humka ne bi trebalo smatrati brončanodobnim.

I konačno, moguće je sveobuhvatno procijeniti kronologiju nalaza jantara i preostalih artefakata iz Osova, tumula I (1895.). Najvjerojatnije, cijeli kontekst s nalazima jantara (grob br. 1) treba pripisati ranoj fazi željeznog doba Glasinca, točnije fazi IV.

Ovaj članak ističe nekoliko problema koji se odnose na stanje očuvanosti i stvarni izgled nalaza jantara koji se razmatraju. Razlike u broju artefakata objavljenih u literaturi i onih koji se trenutačno čuvaju u ZMBiH (kao u slučaju Osova, tumul I) mogu se riješiti pomoću otkrivene originalne dokumentacije starih iskopavanja, te putem izravnoga kontakta sa znanstvenicima. U nekim slučajevima razlike između objavljenog i činjeničnog izgleda nalaza toliko su važne da se prethodna tipološka određenost više ne može smatrati opravdanom. Treba naglasiti da autorima nije bila namjera kritizirati Palavestrinu tipologiju i odbacivati njegove zaključke vezane za perle s Glasinca. Svrha je bila preispitati formalne značajke artefakata u svjetlu najnovijih istraživanja o jantaru tijekom brončanog doba na Balkanu i Mediteranu. Rezultati takvoga pristupa najizraženiji su u slučaju nalaza iz

CONCLUSIONS

The considerations presented clarify, to a certain extent, the state of knowledge in respect to the Bronze Age amber finds upon the Glasinac plateau. Thanks to the conducted research, based on a review of hitherto published literature and an investigation of the finds held in ZMBiH, it was possible to verify the chronology and typology of a majority of the finds. Unfortunately, it was not possible to locate some of the materials, whereas in other cases artefacts preserved within the museum's collections do not reflect finds as published by Benac and Čović, or later by Palavestra.

Currently, it is possible to reliably date two graves with amber to the Middle Bronze Age at Glasinac (phase II). Definitely the oldest of these is grave 2, tumulus IV (1895) at Gučevo. Slightly younger is tumulus I (1894) at the site of Rudine, on Ivanpolje. Grave 3, tumulus III (1894) at Vrlazje should most probably be assigned to the developed Late Bronze Age at Glasinac (phase IIIb-c), whereas grave 2, tumulus IV and grave 1, tumulus XI, (1894) from the same site potentially document the transition to the Early Iron Age (phases IIIc-2/IVa-b).

Much uncertainty surrounds the finds from another two mounds: Crvena Lokva, tumulus II (1890) and Borovsko, tumulus II (1892). At present there is no safe basis upon which they could be dated to the Bronze Age. The absence of a reliable indicator of their original position within the tumulus means that they cannot be linked to other artefacts and burial remains. On the other hand, the credibility of the hitherto assumed chronology of some reportedly co-occurring finds (diadems, ring pendants with a handle and spectacle pendants) needs to be thoroughly reappraised. A necessary future avenue of research is the determination which graves the amber beads from the discussed mounds originally belonged to, and which other finds they should be associated with. Before these questions are answered, finds from those two barrows should not be considered as belonging to the Bronze Age.

And finally, it was possible to comprehensively assess the chronology of the amber finds and remaining artefacts from Osovo, tumulus I (1895). With all probability, the entire context containing amber finds (grave no. 1) should be assigned to the Early Iron Age stage of Glasinac development, more specifically phase IV.

The presented study highlights several problems referring to the state of preservation and actual appearance of amber finds under consideration. Discrepancies between the number of artefacts reported in the literature and those currently stored by ZMBiH (as in the case of Osovo, tumulus I) could be solved with the help of original documentation of the old excavations, and through direct contact with scholars. In some cases, differences between the published and factual appearance of the finds are so significant that the previous typological determination can no longer be seen as justified. It should be underlined that it was not the authors' intention to criticise the typology of Palavestra and reject his findings regarding the Glasinac beads. The actual aim was to reconsider the formal characteristics of the artefacts in light of the latest studies on amber in the Bronze Age in the Balkans and the Mediterranean.

Vrlazja, tumula III, groba 3 i tumula XI, groba 1 (1894.) – dvije perle s lokaliteta mogu se klasificirati kao reprezentativne za tip Tiryns. Što se tiče drugih nalaza, predložene su alternativne vjerojatne tipološke atribucije.

Na kraju, vrijedno je napomenuti da nedavna analiza koju je proveo Laboratorij za istraživanje jantara na Vassar Collegeu, omogućuje rješavanje pitanja provenijencije nalaza jantara s Glasinca. Spektri uzoraka jantara iz četiri groba o kojima se raspravlja u ovom članku odgovaraju baltičkom spektru jantara (sukcinita). Analizirana su još 24 nalaza jantara iz željeznodobnih grobnica s Glasinca i dobiveni su slični rezultati.¹⁵⁴ Rezultat istraživanja potvrđuje zaključke do kojih je C. W. Beck i njegov tim došao 1976. godine nakon što su ispitali porijeklo još četiri uzorka jantara s Glasinca.¹⁵⁵ U svjetlu ovih nedvosmislenih rezultata čini se mogućim tvrditi da je tijekom brončanog i željeznog doba na područje Glasinca iz sjeverne Europe uvezen jantar, iako bi putove kojima se taj proces odvijao trebalo ostaviti za drugo istraživanje.

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The effects of such an approach are most evident in the case of finds from Vrlazje, tumulus III, grave 3 and tumulus XI, grave 1 (1894) – two of the beads from the site can be classified as being representative of the Tiryns type. In respect to other finds, alternative plausible typological attributions have been suggested.

In the end, it is worth mentioning that the recent analysis carried out by the Amber Research Laboratory at Vassar College allows the settling the issue of the provenance of Glasinac amber artefacts. Spectra of amber samples from four graves discussed in the paper all conform to the Baltic amber (succinite) spectrum. Another 24 analysed amber artefacts from the Iron Age Glasinac graves yielded similar results.¹⁵⁴ The outcome of the study confirms the conclusions that C.W. Beck and his team gave in 1976 after examining the origins of four other samples of Glasinac amber.¹⁵⁵ In the light of these unequivocal results, it seems plausible to state that throughout the Bronze and Iron Ages amber was imported to the Glasinac area from the northern Europe, although the routes by which this process occurred should be left for another contribution.

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¹⁵⁴ Cwaliński *et al.*, 2018.

¹⁵⁵ Todd *et al.*, 1976, 324–325, tab. 2.

¹⁵⁴ Cwaliński *et al.*, 2018.

¹⁵⁵ Todd *et al.*, 1976, 324–325, Tab. 2.

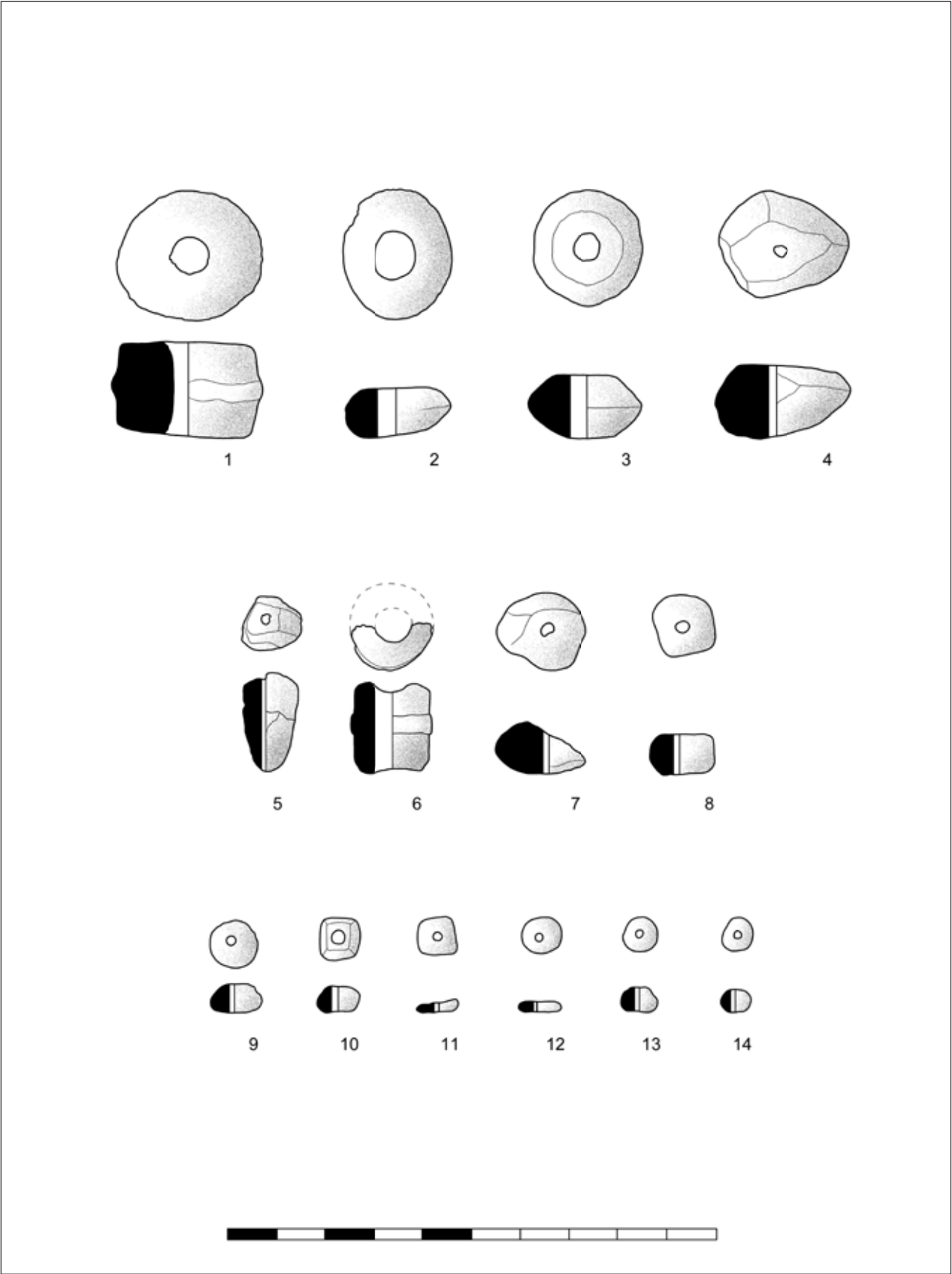
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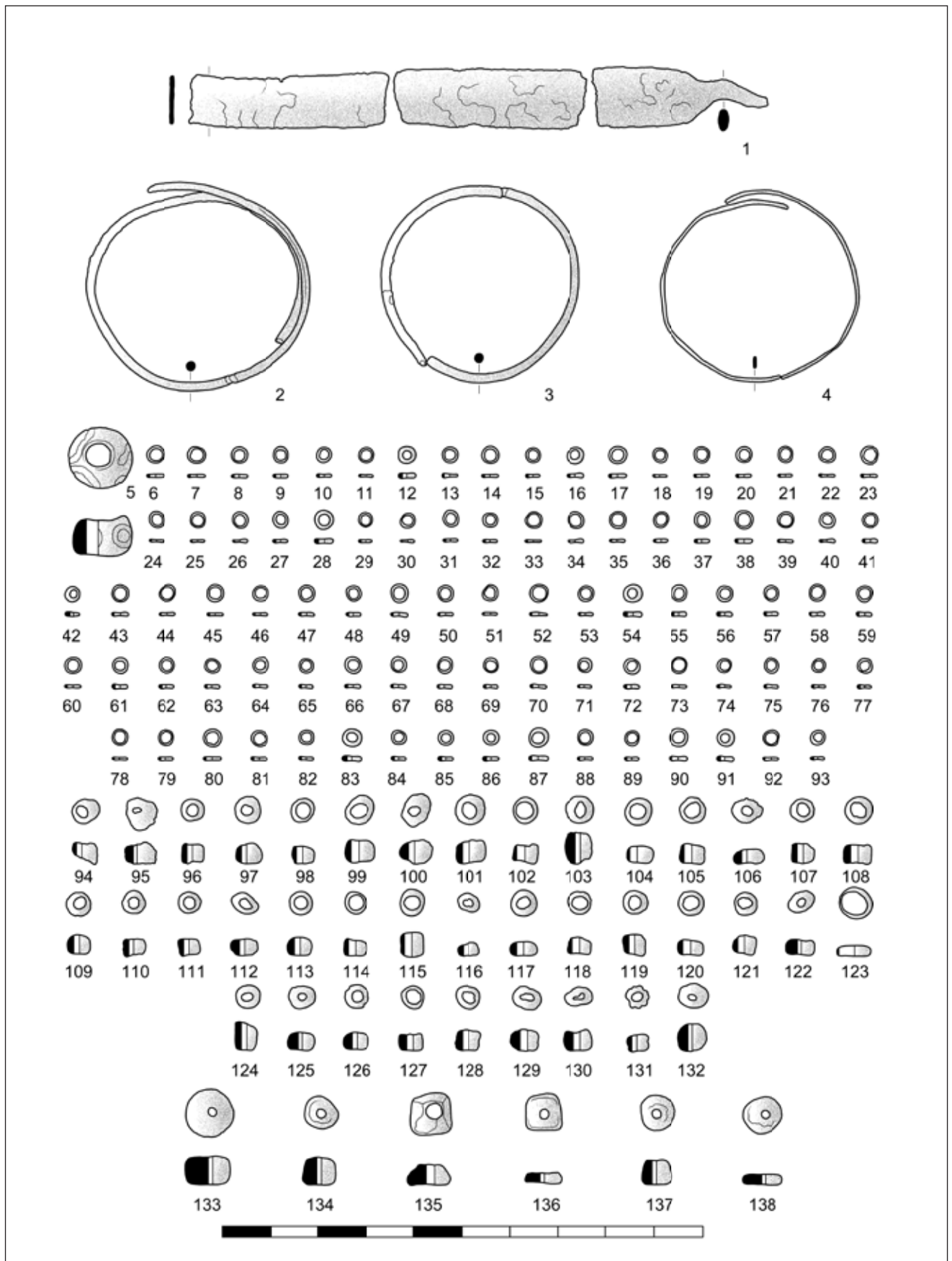
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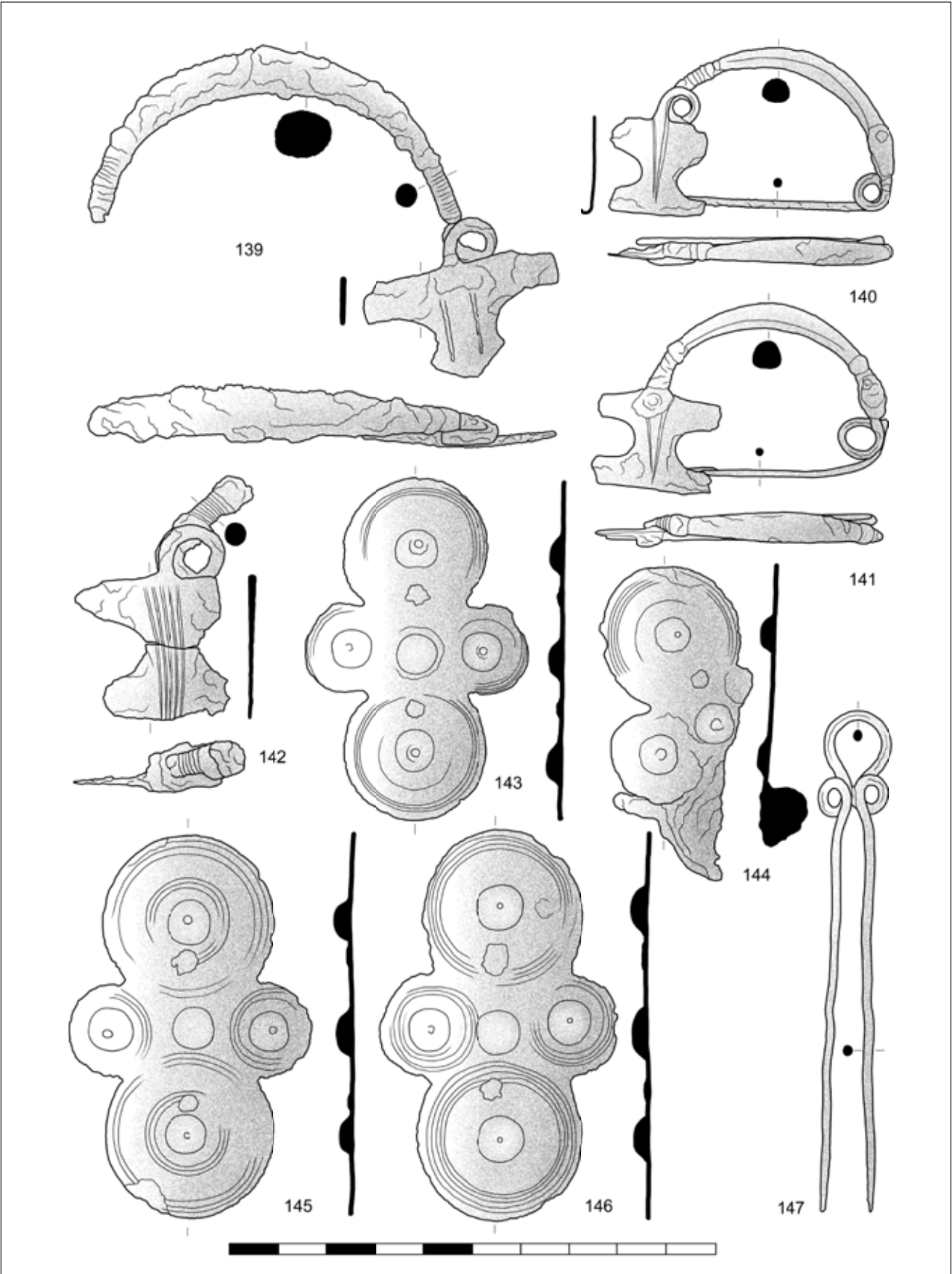
Pl. 1



T. 2

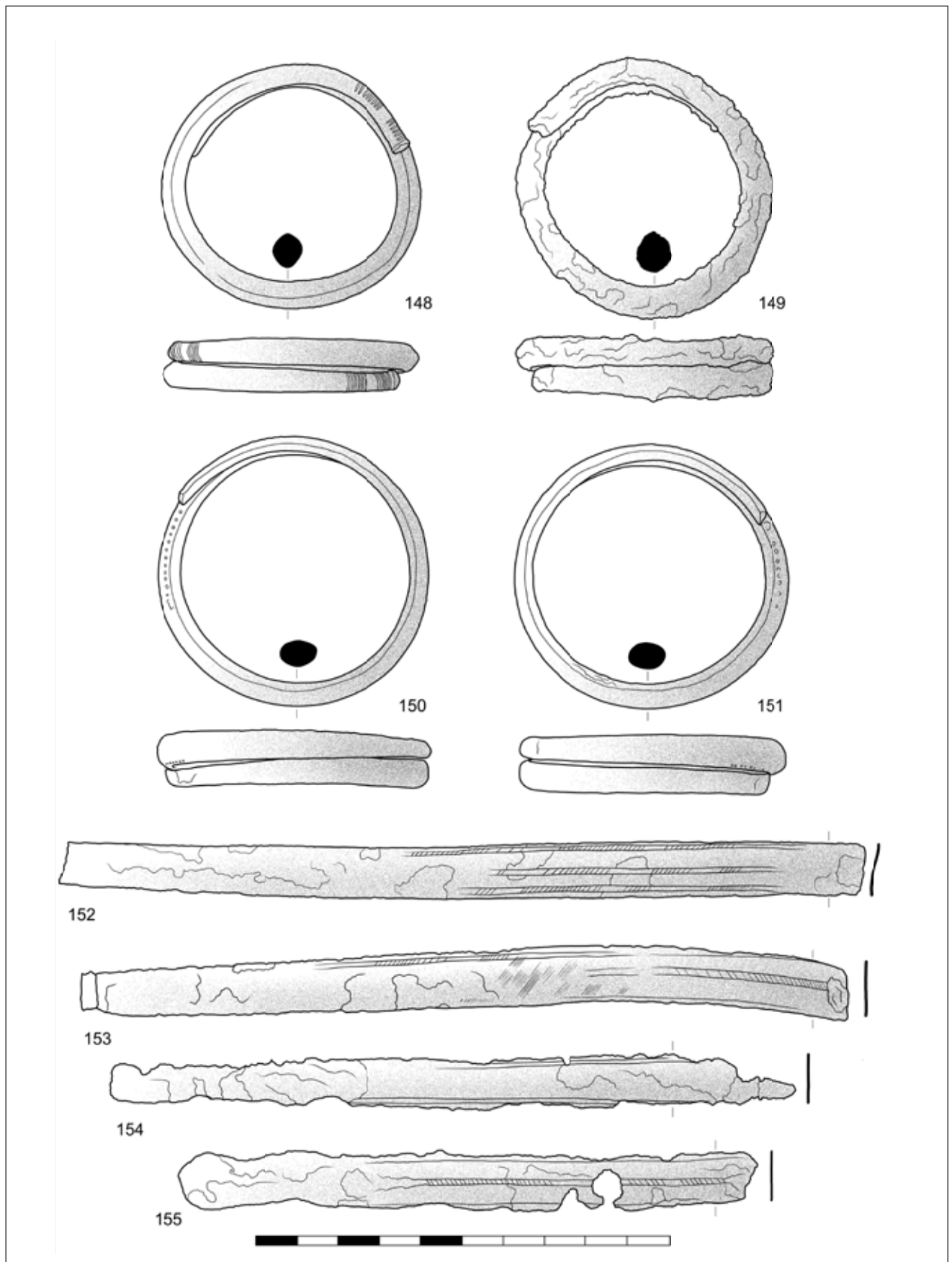
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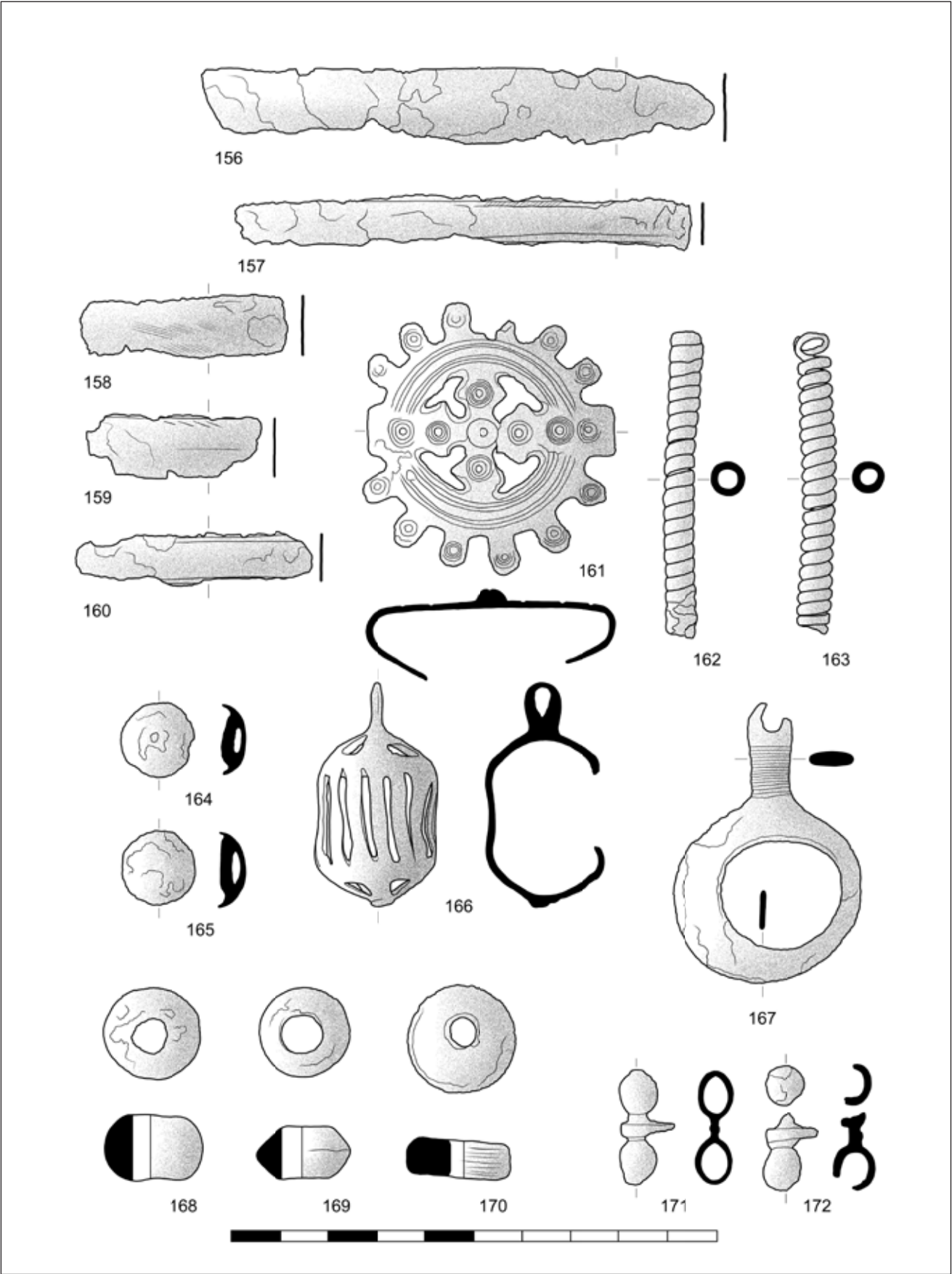




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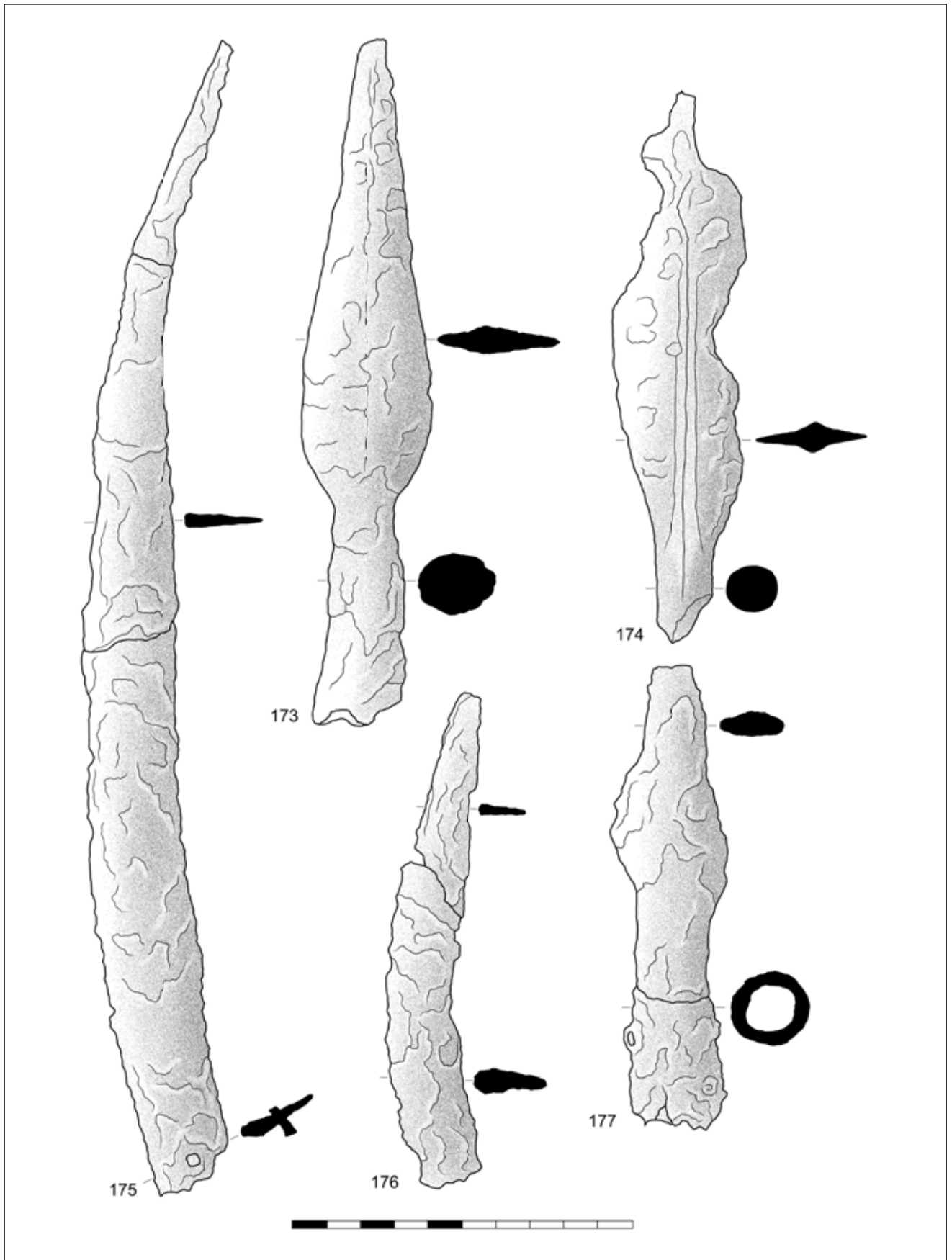
Pl. 4





T. 6

Pl. 6



Fragmenta selecta mlađeželjeznodobni grobni nalazi iz Ključa

Fragmenta selecta Late Iron Age grave finds from Ključ

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U radu se obrađuje nalaz brončanih dijelova nošnje, fibula i narukvica, trenutačno pohranjenih u Muzejskoj zbirci Ključ. Detaljna tipološko-kronološka analiza ukazala je na vjerojatnu domaću produkciju, odnosno, preuzimanje poznatih tipova nakita i njihovo prilagođavanje lokalnom ukusu. Okolnosti nalaza nisu poznate, ali tipološka raznolikost i vremenski raspon koji ovi predmeti pokrivaju ukazuju na činjenicu da bi se moglo raditi o grobnim nalazima iz uništene nekropole mlađeg željeznog doba.

Ključne riječi: Ključ, Bosna i Hercegovina, fibule, narukvice, tipologija, kronologija, mlađe željezno doba.

This paper deals with the find of bronze attire pieces, fibulae and bracelets, currently stored within the collections of the local museum collection in Ključ (Muzejska zbirka Ključ). A detailed typological-chronological analysis has shown probable domestic production, i.e., the acquisition of familiar types of jewellery and their adaptation to local tastes. The circumstances of the find are not known, but the typological variety and timespan covered by these objects indicate that they could be grave finds from a destroyed cemetery dating to the Late Iron Age.

Key words: Ključ, Bosnia and Herzegovina, fibulae, bracelets, typology, chronology, Late Iron Age.

UVOD

Muzejska zbirka Ključ u svojoj kolekciji posjeduje zanimljivu i posve jedinstvenu skupinu nalaza iz mlađeg željeznog doba. Skupni nalaz brončanih fibula i narukvica predstavlja izuzetno rijetku pojavu u našoj arheologiji. Iako okolnosti nalaza nisu poznate, te ne postoje tragovi o dospjeću nalaza u muzejsku kolekciju, to ovaj arheološki nalaz ne čini nimalo manje vrijednim. Naprotiv, neobičan i jedinstven dizajn pojedinih komada ukazuje na specifičnu skupinu predmeta modeliranih u lokalnim radionicama pod utjecajem nadregionalne mode mlađeg željeznog doba. Arheološka interpretacija zasnovana je na usporednoj analizi sa sličnim nalazima iz ovog dijela Bosne.

Općina Ključ nalazi se u sjeverozapadnoj Bosni. Geografski to je područje smješteno u uskoj kotlini uz rijeku Sanu, između brdsko-planinskih masiva Manjače i Grmeča. Sjeverno od grada Ključa rijeka Sana probija se kroz usku kotlinu koja oko 30 km prema sjeveru dospijeva do prostranije doline, u kojoj je smješten Sanski Most. Na tom se području dodiruju i međusobno isprepliću dva potpuno različita kulturološka kompleksa. Jedan sa sjevera, povezan sa posavsko-podunavskim kulturama, drugi s juga i jugozapada, povezan s protohistorijskim zajednicama jadranske obale i zaleđa. Slijedom navedenog, a u kulturno-povijesnom smislu to je regija iz koje potječe najveći broj prapovijesnih nalaza i koji se kulturološki i kronološki mogu dovesti u blisku vezu s nalazima iz Ključa. Zbog svog specifičnog geografskog položaja, prapovijesna naselja u dolini Sane formirana su na dominantnim gradinskim položajima od kojih je mali broj istražen, a još manji broj kronološki i kulturološki interpretiran. Istraživanja prapovijesnih nalazišta na području Sane provode se još od kraja 19. stoljeća. Iz tog vremena datira najveći dio građe prikupljene iz nekropola, te manjim dijelom iz naselja, a obrađen je i iznova vrjednovan više puta. Opsegom najveća istraživanja obavljena su na željeznodobnoj nekropoli u Sanskom Mostu.¹ Međutim, prva istraživanja visinskih, tj. gradinskih naselja u okolini Ključa obavljana su tek poslije Drugog svjetskog rata. Jamakovića gradina, zapadno od doline Sane u naselju Krasulje kod Ključa, čini jedan 80×50 m veliki plato na kojem su 1962. godine provedena iskopavanja pod vodstvom Zdravka Marića. Nalazi iz kulturnog sloja dubine oko jedan metar datirani su u kasno brončano i željezno doba, no ne postoje nikakve popratne ilustracije ili opisi.² Osim Jamakovića gradine, Alojz Benac je 1948. godine sondirao i otvoreno ravničarsko naselje Otoka u Vrpolju kod Sanskog Mosta, datirano u finalnu fazu brončanog i rano željezno doba.³

INTRODUCTION

The local museum collection in Ključ contains an interesting and completely unique group of finds from the Late Iron Age. A collective find of bronze fibulae and bracelets represents an extremely rare phenomenon in our archaeology. Although the circumstances of the find are unknown and there is no evidence of the provenance of the findings in the museum collection, this does not negate the value of this archaeological find. On the contrary, the unusual and unique design of individual pieces points to a specific set of objects fashioned at local workshops under the influence of the supra-regional trends of the Late Iron Age. The archaeological interpretation is based on a comparative analysis with similar findings from this part of Bosnia.

Ključ municipality is located in north-western Bosnia. Geographically speaking, this area is located in a narrow valley along the river Sana, between the mountainous massifs of Manjača and Grmeč. North of Ključ, the river Sana flows through a narrow valley, which, about 30 kilometres north of the town, reaches the vast valley in which the town of Sanski Most is located. In this area, two completely different cultural complexes intertwined with one another. One from the north, connected with the Sava-Danube cultures, the other from the south and the southwest, associated with the proto-historical communities of the Adriatic coast and adjacent hinterland. Accordingly, in the cultural and historical sense, this is the region from which the largest number of prehistoric finds, that can be culturally and chronologically linked to the findings from the Ključ, have been discovered. Due to its specific geographic position, prehistoric settlements in the Sana valley were formed on dominant hillfort sites, out of which only a small number have been researched and an even smaller number have been chronologically and culturally interpreted. Research on prehistoric sites in the Sana area has been carried out since the end of the 19th century. It is from this period that the largest portion of finds collected, mainly from the cemeteries and rarely from settlements, which have been studied and evaluated several times, originated. The largest-scale research was performed on the Iron Age cemetery in Sanski Most.¹ However, the first surveys of the highland, i.e. hillforts, in the vicinity of Ključ, were only performed after the Second World War. Jamakovića gradina (hillfort), to the west of the Sana valley in Krasulje, near Ključ, consists of a plateau 80 × 50 metres in size, where excavations were performed in 1962 under the supervision of Zdravko Marić. Finds from a cultural layer of about one metre in depth are dated to the Late Bronze and Early Iron Age, but there are no illustrations or descriptions accompanying the publications.² In addition to the Jamakovića gradina excavations, Alojz Benac undertook some preliminary excavations of the open flat settlement of Otok in Vrpolje, near Sanski Most, which he dated to the final stage of the Bronze Age and Early Iron Age.³

1 Fiala 1896; 1897; Čović 1987, 232.

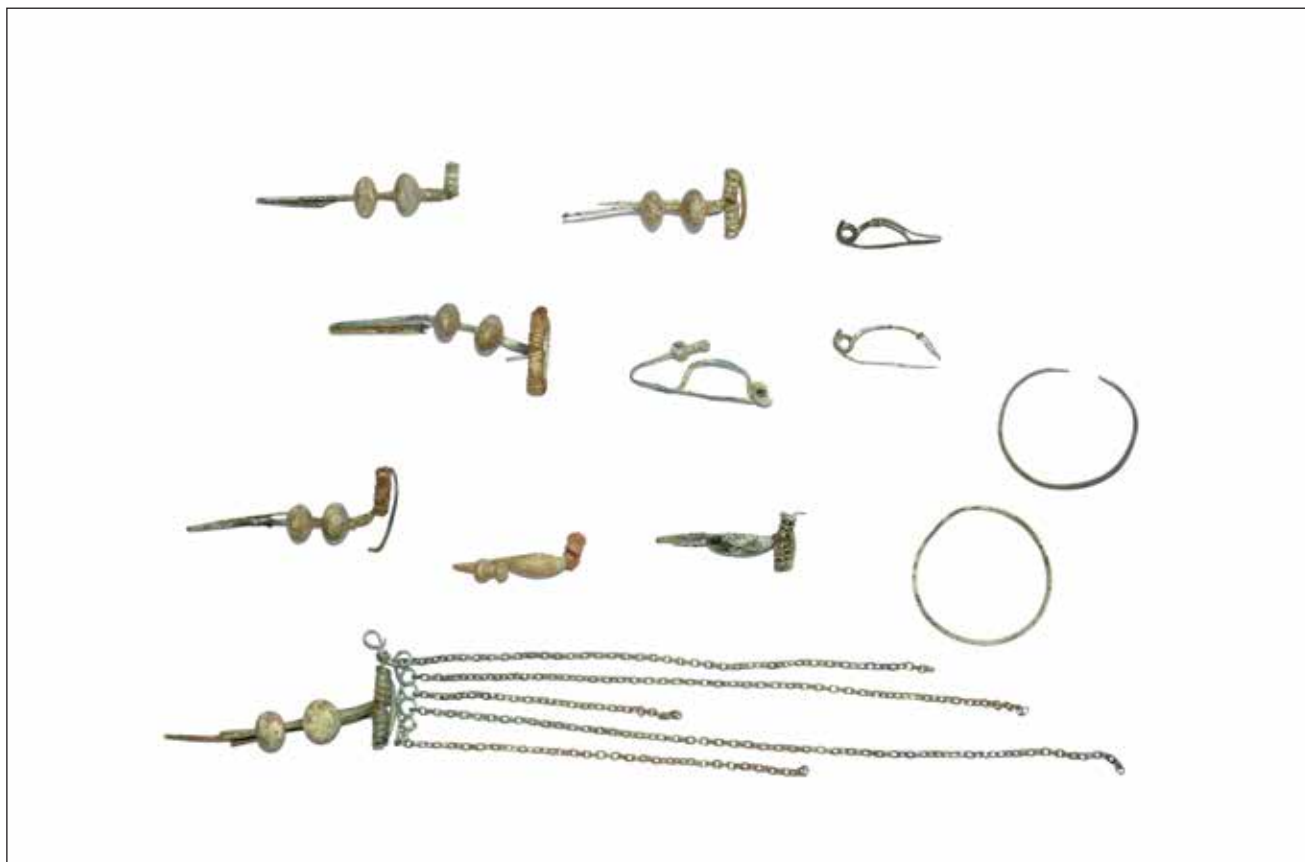
2 Čović 1988, 147; Gavranović, Jašarević 2016, 107.

3 Čović 1987, 233.

1 Fiala 1896; 1897; Čović 1987, 232.

2 Čović 1988, 147; Gavranović, Jašarević 2016, 107.

3 Čović 1987, 233.



Sl. 1. Fotografija sačuvanog dijela nalaza iz Ključa (snimio: A. Jašarević 2018, Muzejska zbirka Ključ, inv. br. bb)

Fig. 1. Photography of preserved part of the finds from Ključ (photo by: A. Jašarević 2018, Local museum collection Ključ, inv. no. w/n)

TIPOLOŠKO-KRONOLOŠKA ANALIZA MATERIJALA

Nalaz iz Ključa (sl. 1) sastoji se od cjelovito i fragmentarno sačuvanih 12 fibula i 6 narukvica, koje se daju tipološki razvrstati u četiri osnovna tipa fibula, odnosno tri osnovna tipa narukvica.⁴ Kronološki ovi nalazi pokrivaju dulje vremensko razdoblje od gotovo tri stoljeća, što govori u prilog ideji da potječu iz razorenih grobova.

Prvu skupinu fibula čine tri primjerka koja pripadaju tipu Karaburma 63, odnosno varijantama b i e toga tipa (T. 1: 1–3). Spomenute fibule u literaturi su različito definirane i datirane – često su predstavljene samo opisno⁵, češće su pripisivane tipu Duchcov,⁶ a ponekad su bile uklopljene i u

TIPOLOGICAL - CHRONOLOGICAL ANALYSIS OF THE MATERIAL

The assemblage from Ključ (fig. 1) consists of 12 fibulae and 6 bracelets – preserved in their entirety or only fragmentarily – which are typologically classified into four basic types of fibulae and three basic types of bracelets.⁴ Chronologically, these finds cover a long period of almost three centuries, which speaks in favour of the idea that they originate from scattered graves.

The first group of fibulae consists of three examples of the Karaburma 63 type of fibulae, or its Variants b and e, to be more precise (Pl. 1: 1–3). The mentioned fibulae were differently defined and dated in the literature: quite often they were just described,⁵ more often they were ascribed to the Duchcov type,⁶ and sometimes they were classified

⁴ U radu se obrađuju predmeti koji su bili zatečeni i evidentirani tijekom 2016. godine. Nažalost, prilikom ponovne posjete zbirci u Ključu 2018. godine, određen broj predmeta je nedostajao (2 fibule i 4 narukvice, up. sl. 1 i T. 1; T. 2). Autori su odlučili objaviti prvobitno stanje nalaza, a ovom prilikom se zahvaljuju kolegici Dijani Koljić iz Ključa na ustupljenom materijalu.

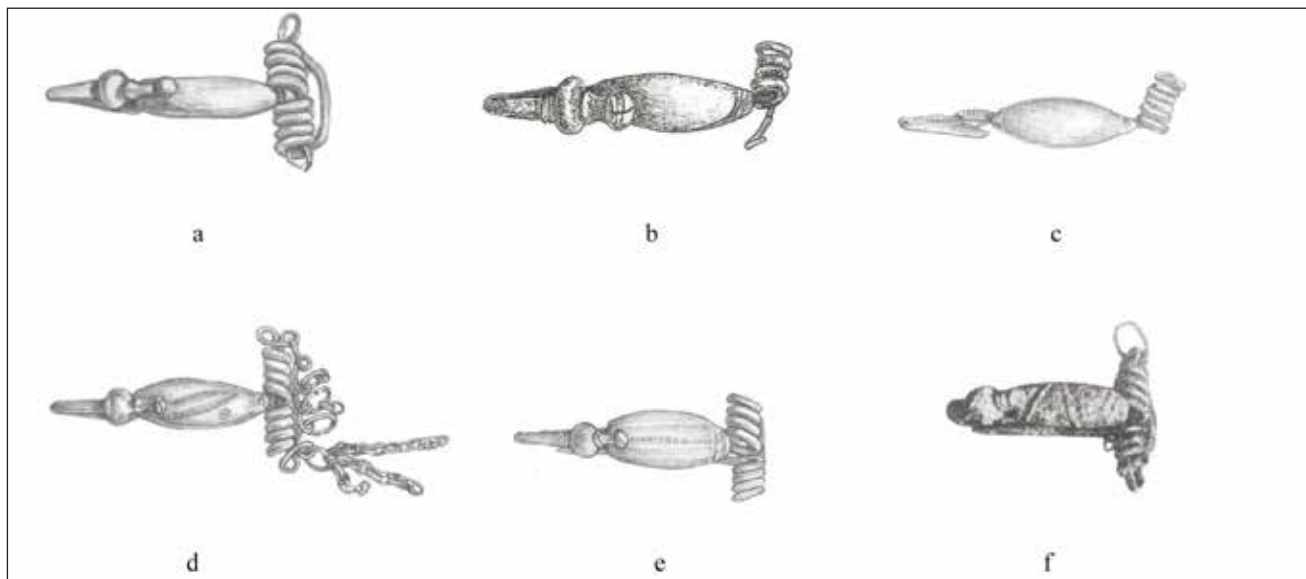
⁵ Radimský 1893, 246, T. VI: 10; Fiala 1894, 737, sl. 30; Truhelka 1901, 249, sl. 16; 1902, 266, T. XII: 4; 525, T. XXVII: 26; 1903, 535, T. XLIX: 3; 547, T. LIII: 10, 11; 1904, 445, sl. 49; Brunšmid 1909, 233–235, sl. 23: 1, 2; Benac, Čović 1957, 24, T. XLVIII: 4; 25, T. L: 1–6; Kosorić 1982, 125, T. IV: 35; Čović 1987, 505, T. LIII: 26; Spasić 1992, 6, T. I: 1.

⁶ Radimský 1892, 234, sl. 2; Majnarić-Pandžić 1970, 17–18, T. III: 2, 4, 10; T. IV: 5; T. V: 5; 25, T. IX: 2, 9, 10; 39, T. XXV: 3; 45, T. XXII: 1, 2; 52, T. LI: 10; 95, T. XL: 7; Popović 1996, 119–121, sl. 12: 15–23; sl. 13: 1–11; 14; Stojić 2000, 60–61, T. I: 37–41; Paškvalin 2002, 331–333, T. 4: 1–3; Dizdar 2011, 101; Ljuština, Spasić 2012, 393–395, T. 1: 1, 12.

⁴ This paper deals with objects that were recognized and recorded during 2016. Unfortunately, during a re-visit to the collection in Ključ in 2018, a certain number of items were missing (2 fibulae and 4 bracelets, compare fig. 1 and Pl. 1; Pl. 2). The authors decided to publish the original condition of the find and would like to thank Ms. Dijana Koljić for her assistance.

⁵ Radimský 1893, 246, Pl. VI: 10; Fiala 1894, 737, fig. 30; Truhelka 1901, 249, fig. 16; 1902, 266, Pl. XII: 4; 525, Pl. XXVII: 26; 1903, 535, Pl. XLIX: 3; 547, Pl. LIII: 10, 11; 1904, 445, fig. 49; Brunšmid 1909, 233–235, fig. 23: 1, 2; Benac, Čović 1957, 24, Pl. XLVIII: 4; 25, Pl. L: 1–6; Kosorić 1982, 125, Pl. IV: 35; Čović 1987, 505, Pl. LIII: 26; Spasić 1992, 6, Pl. I: 1.

⁶ Radimský 1892, 234, fig. 2; Majnarić-Pandžić 1970, 17, 18, Pl. III: 2, 4, 10; Pl. IV: 5; Pl. V: 5; 25, Pl. IX: 2, 9, 10; 39, Pl. XXV: 3; 45, Pl. XXII: 1, 2; 52, Pl. LI: 10; 95, Pl. XL: 7; Popović 1996, 119–121, fig. 12: 15–23; fig. 13: 1–11; 14; Stojić 2000, 60–61,



Sl. 2. Varijante a–f fibula tipa Karaburma 63 (a–e Donja Dolina, crtao: D. Sinančević, f Bogdanovci, prema: Brunšmid 1909, sl. 23: 2)

Fig. 2. Variants a–f of Karaburma 63 type of fibulae (a–e Donja Dolina, drawings by: D. Sinančević, f Bogdanovci, after: Brunšmid 1909, fig. 23: 2)

zasebne tipologije.⁷ Najprecizniju definiciju donio je Dragan Božić,⁸ prema kojoj su fibule tipa Karaburma 63 bronzane i imaju luk zaobljeno pravokutnog oblika, zadebljan, s lećastim ili elipsastim presjekom. Unazad savijena noga trokutastog oblika ima dugo ležište za iglu, često ukrašeno kosim crtama, a završava okruglim dugmetom omeđenim sa dva svitka. Dugme ima nastavak na čijem je kraju manje dugme, dvije kuglice, trokutasta pločica ili mala palmeta. U maloj opruzi, koja obično ima osam, rjeđe šest navoja i vanjsku tetivu, nalazi se žica s okruglim ili osmičastim petljama/omčicama na kraju. S tih petljica ili sa petljaste žice umetnute u oprugu vise lančići koji ponekad završavaju trokutastim pločastim ili paličastim privjescima. Gornja strana luka može biti ukrašena bademastim, cik-cak ili kombiniranim motivom, sastavljenim iz badema i po jednoga kružića s točkom na svakom kraju.⁹ Prema načinu dekoracije luka i oblikovanja noge moguće je razlikovati šest osnovnih varijanti ovoga tipa, s dodatnim podvarijantama u određenim slučajevima (sl. 2).¹⁰

Fibule tipa Karaburma 63 datiraju se u stupanj LT B2,¹¹ primarno na temelju grobnih cjelina 60 i 63 sa eponimnog lokaliteta u Beogradu. Grob 60 s

as having unique typologies.⁷ The most precise definition was presented by Dragan Božić,⁸ after whom fibulae of the Karaburma 63 type are defined as being made of bronze, having a rounded rectangular shape of the thickened bow, and with a lenticular or ellipsoidal cross-section. The reverted foot forms acute angle with the catchplate and bears a spherical knob, often flanked by two collars, which has an extension with variously shaped endings (smaller knob, two small spheres, triangular small plate or small palmette, as examples). The catch plate is long and often decorated with incised lines. The spring is made of eight – occasionally six – coils and has an external chord. Within the spring, there is often a wire, rounded or figure-of-eight-shaped at the end. From these loops or from looped wire inside the spring are hung small chains, which sometimes end with triangular sheet rod-shaped pendants. The bow can be undecorated or decorated with three different motifs (almond-like, zig-zag or combined motif, consisted of an almond stem with one ring-and-dot on each side).⁹ According to the method of bow decoration and shape of the foot, it is possible to distinguish six variants of this Type, with additional sub-variants in certain cases¹⁰ (fig. 2).

7 Todorović 1968, 50–51, sl. 13, T. 12: 1–4, 7, 8; T. 13: 1, 5; 1972, 61–62, T. XXI: 9; T. XXIII: 2.

8 Božić 1981, 317, 327, oblik 15, bilj. 52, T. 1: 15; T. 6: 3; T. 11: 4.

9 Božić 1981, 327, bilj. 52.

10 Detaljna tipološka analiza svih poznatih primjeraka ovih fibula urađena je za potrebe prezentacije i članka *Material culture of the La Tène B2 phase in Bosnia and Herzegovina* u sklopu međunarodnog simpozija *Latenizacija na prostoru od jugovzhodnih Alp do hrvaško-srbskega Podonavja* održanog u Kobaridu 2012. godine. Zbornik skupa nikada nije objavljen, iako je rad primljen za objavu. Ista je tema detaljnije razrađena u neobjavljenoj doktorskoj disertaciji Ane Marić, tako da će se u nastavku ovoga rada citirati na taj način (Marić 2017).

11 Božić 1981, 317, 320–321, 324, tab. 2.

Pl. I: 37–41; Paškvalin 2002, 331–333, Pl. 4: 1–3; Dizdar 2011, 101; Ljuština, Spasić 2012, 393–395, Pl. 1: 1, 12.

7 Todorović 1968, 50–51, fig. 13, Pl. 12: 1–4, 7, 8; Pl. 13: 1, 5; 1972, 61, 62, Pl. XXI: 9; Pl. XXIII: 2.

8 Božić 1981, 317, 327, shape 15, n. 52, Pl. 1: 15; Pl. 6: 3; Pl. 11: 4.

9 Božić 1981, 327, n. 52.

10 Detailed typological analysis of all known examples of these fibulae was undertaken for the presentation and article *Material culture of the La Tène B2 phase in Bosnia and Herzegovina* within the international meeting *Latenizacija na prostoru od jugovzhodnih Alp do hrvaško-srbskega Podonavja* held in Kobarid, Slovenia, in 2012. Proceedings of the meeting were never published, although the article was accepted for publication. The same subject was later studied in greater depth in the unpublished

nekropole na Karaburmi¹² sadržavao je, među ostalom, narukvicu koja se vrlo jasno datira u stupanj LT B2 na temelju srodnosti sa sličnom narukvicom iz groba 5 moravske nekropole Brno – Maloměřice, a koji je datiran u stupanj LT B2¹³ ili pak s narukvicom iz groba G-1-3 283 s nekropole u Pečina, koji je datiran u isti stupanj.¹⁴ Pored narukvice, nanožnica iz spomenutog groba pripada tipu koji se datira u stupanj LT B2.¹⁵ Slične primjerke nanožnica nalazimo u grobovima 9 nekropole Brno – Maloměřice¹⁶ te 951 i 1038 nekropole Ludas – Varjú-dűlő u sjeveroistočnoj Mađarskoj,¹⁷ koji se datiraju jednako u stupanj LT B2.¹⁸ Drugi grob s ove nekropole, grob 63 po kojem su fibule i nazvane, između ostalog, sadržavao je i specifičan nakit – par srebrnih naušnica od tordirane žice ili pak sljepoočnicarki,¹⁹ koje se pojavljuju i u prethodnom stupnju,²⁰ ali traju i u stupnju LT B2.²¹ Područje rasprostiranja fibula tipa Karaburma 63 obuhvaća hrvatsko-srpsko Podunavlje i prostor južno od njega (karta 1²²).

Prva dva primjerka iz Ključa (T. 1: 1, 2) pripadaju varijanti b, koju karakteriziraju dva do četiri plitka ureza ili uska rebra na glavi fibule, dok je ostatak luka neukrašen. Unazad savijena noga ima loptasto ili spljošteno loptasto dugme s trubastim završetkom koji ponekad ima urezani ukras. Držač igle najčešće je neukrašen, rjeđe ukrašen urezanim crtama, a presjek luka može biti segmentan, lečast ili ovalan.²³ Pored navedenih temeljnih tipoloških značajki, oba primjerka pokazuju određene različite detalje. Primjerice, tako trubasti završetak noge fibule na jednom je primjerku ukrašen urezanim crtama, a na drugom urezanim motivom X. Razlikuju se i presjeci luka (ovalni i lečasti), kao i način ukrašavanja glave fibule (tri rebra, odnosno, četiri ureza). Na primjerku s cjelovito sačuvanom oprugom nalazi se i ostatak žice na koju su se kačili lančići, dok na drugom primjerku nedostaje dio opruge i kompletna igla, a osovina je bila željezna. Sigurnih uporišta za dataciju ove varijante nema, s obzirom na to da je većina primjeraka otkrivena kao slučajni nalaz ili potječu iz uništenih grobova, poput primjeraka iz Okruta (nepubliciran materijal),²⁴ a jedine dvije sigurne grobne cjeline nisu sadržavale databilan materijal. Grob 116 na nekropoli u Jezerinama²⁵ nije imao drugog grobnog inventara osim fibule varijante b, dok je u grobu 125 na nekropoli u Ribiću,²⁶ pored fibule, otkriveno samo jedno križno dugme, kronološki nažalost neupotrebljivo s obzirom na pretpo-

The Karaburma 63 type fibulae are dated to the LT B2 phase¹¹ primarily based on the sealed contexts of grave assemblages 60 and 63 from the type-site in Belgrade. Grave 60 from the cemetery in Karaburma¹² contained, among other things, a bracelet which is clearly dated to the phase LT B2 based on similarities to a bracelet from grave 5 at the Moravian cemetery of Brno-Maloměřice, dated to the phase LT B2¹³ or to a bracelet from grave G-1-3 283 from cemetery in Pečine, dated likewise.¹⁴ In addition to the bracelet, an anklet from above mentioned grave at Karaburma belongs to the Type which is also dated to the phase LT B2.¹⁵ Similar examples of anklets are found in grave 9 at the cemetery of Brno-Maloměřice¹⁶ and in graves 951 and 1038 at the cemetery of Ludas-Varjú-Dűlő, in northeastern Hungary,¹⁷ which are also dated to the phase LT B2.¹⁸ The second grave from this cemetery after which these fibulae were named, grave 63, contained, among other things, specific jewellery – a pair of silver earrings or temple rings made of twisted wire,¹⁹ which appear in the archaeological record in the preceding LT B1 phase,²⁰ but also persist into phase LT B2.²¹ The distribution area of Karaburma 63 fibulae covers the Croato-Serbian Danube region and the area south of this (map 1²²).

The first two examples from Ključ (Pl. 1: 1, 2) belong to Variant b, which is characterized by two, three or four shallow incisions or narrow ribs at the head of the fibula, while the rest of the bow remains undecorated. The reverted foot bears a spherical or flattened spherical knob with trumpet-like ending, sometimes decorated with small incisions. The catch plate is usually undecorated, occasionally decorated with incised lines, while its cross-section can be segmental, lenticular or oval.²³ In addition to these basic typological characteristics, both examples show certain different details. For example, the trumpet-like foot ending has small incisions on one example and an incised 'X' motif on the other. The cross-sections are also different (oval and lenticular), as are the types of decoration on the heads of the fibulae (three ribs compared to four incisions). The example with the fully preserved spring still bears remnants of the wire for pendants, while the other example is missing a part of the spring and the entire pin, while the axis was made of iron. Since the majority of examples of this variant originate as chance finds or from destroyed graves, such as the examples from Okruti (unpublished material),²⁴ it is not

12 Todorović 1972, 25–26, T. XXI: 1–14; Božić 1981, 317, 320–321, 324, tab. 2.

13 Čizmarová 2005, 21, 102, T. LX: 8, 10, 11.

14 Jovanović 1984, 67, 71, 73, sl. 4: 1; 2018, 61, T. 26: 19; 131–132, sl. 50: 2.

15 Čizmar 1975, 424, sl. 4: 8.

16 Čizmarová 2005, 103, T. LXI: 12, 14.

17 Szabó, Tankó 2006, sl. 4: 15.

18 Čizmarová 2005, 21; Szabó, Tankó 2006, 333.

19 Todorović 1972, T. XXIII: 3, 4.

20 Božić 1981, 315, bilj. 10; Rustoiu 2012, 365; Rustoiu, Urşutiu 2013, 80.

21 Jovanović 1994, 115; 2007, 825.

22 Autori se zahvaljuju Mateji Belak (Inštitut za arheologiju, ZRC SAZU, Ljubljana), koja je izradila karte rasprostiranja kao i dr. Draganu Božiću na iscrpnim komentarima koji su poboljšali kvalitetu rada.

23 Marić 2017, 78.

24 Marić 1963, 71, bilj. 57.

25 Radimský 1893, 246, T. VI: 10.

26 Ćurčić 1898, 641; Marić 1968, T. VIII: 26, 27.

dissertation of Ana Marić, so following citations in this paper will refer to the dissertation (Marić 2017).

11 Božić 1981, 317, 320–321, 324, Tab. 2.

12 Todorović 1972, 25–26, Pl. XXI: 1–14; Božić 1981, 317, 320–321, 324, Tab. 2.

13 Čizmarová 2005, 21, 102, Pl. LX: 8, 10, 11.

14 Jovanović 1984, 67, 71, 73, fig. 4: 1; 2018, 61, Pl. 26: 19; 131–132, fig. 50: 2.

15 Čizmar 1975, 424, fig. 4: 8.

16 Čizmarová 2005, 103, Pl. LXI: 12, 14.

17 Szabó, Tankó 2006, fig. 4: 15.

18 Čizmarová 2005, 21; Szabó, Tankó 333.

19 Todorović 1972, Pl. XXIII: 3, 4.

20 Božić 1981, 315, n. 10; Rustoiu 2012, 365; Rustoiu, Urşutiu 2013, 80.

21 Jovanović 1994, 115; 2007, 825.

22 Authors would like to thank Mateja Belak (Institute of Archaeology, ZRC SAZU, Ljubljana), who prepared distribution maps as well as Dragan Božić, PhD, on his exhaustive comments which improved quality of this paper.

23 Marić 2017, 78.

24 Marić 1963, 71, n. 57.

stavljeno dugotrajno korištenje, tj. pojavu u grobnim cjelinama sa znatno mlađim materijalom.²⁷ Fibule ove varijante rasprostranjene su isključivo na području Bosne, odnosno u njezinom sjeverozapadnom, zapadnom i središnjem dijelu, uz jedan slučajni nalaz iz Hercegovine (karta 1, ). S obzirom na kompletno područje rasprostiranja fibula tipa Karaburma 63 može se pretpostaviti kako je varijanta b lokalni izričaj jednog većeg regionalnog trenda. Treća fibula tipa Karaburma 63 iz Ključa (T. 1: 3) pripada varijanti e, koju karakterizira unazad savijena noga s loptastim ili spljošteno loptastim dugmetom, te rebrastim ili završetkom s blagim proširenjem. Proširenje, kao i držač igle mogu biti neukrašeni ili ukrašeni urezivanjem. Fibule ove varijante imaju trakast ili zadebljano trakast luk, te lečast ili segmentan presjek luka. Gornja površina luka ukrašena je jednostrukim ili dvostrukim longitudinalnim crtama ili rebrima uz rub, koji mogu biti ukrašeni sitnim crticama, a na sredini luka nalaze se dvije longitudinalne crte, između kojih može biti rebro, neukrašeno ili ukrašeno poprečnim crticama. Na jednom primjerku se javljaju dva takva rebra. Na velikom broju primjeraka javljaju se i mali urezi ili plitka rebra na početku i kraju luka.²⁸ Primjerak iz Ključa ima rebrasti nastavak noge ukrašen na vrhu urezima, blago zadebljan trakasti luk segmentnog presjeka ukrašen crtama uz rubove i dvostrukom longitudinalnom crtom po sredini, te oprugu sa šest navoja i vanjskom tetivom. Za datiranje ove varijante ne postoje sigurna uporišta, s obzirom na to da su gotovo svi poznati primjerci slučajni nalazi, tako da se jedino dâ pretpostaviti kako je ona istovremena s drugim varijantama tipa Karaburma 63. Jedini primjerak ove varijante koji potječe iz sigurnog konteksta jest fibula iz grobne cjeline sa skeletnim ukopom žene s Kamenjače u Brezi.²⁹ Cjelina se datira u stupanj LT C2 prema fibuli tipa Boljevci – Zemun kao najmlađem nalazu u grobu, dok su ostali nalazi iz groba protumačeni kao stariji elementi u sklopu čuvanja tradicije.³⁰ S izuzetkom tri slučajna primjeka iz Dalja kod Vukovara,³¹ svi ostali primjerci ove varijante ponovno se nalaze isključivo na području Bosne, ali uočljivo istočnije, što bi možda ukazivalo na postojanje dvije lokalne radionice (karta 1, ). Ukoliko se usporede primjerci iz Ključa s ostalim primjercima varijanti b i e s područja današnje Bosne i Hercegovine, primjetno je da se tipološki razlikuju samo u određenim detaljima, poput postojanja i izgleda ukrasa na završetku noge. Većina primjeraka varijante b potječe iz Doline, što potencijalno ukazuje na radioničko središte odakle su se dalje te fibule širile dolinama rijeka Une, Sane i Vrbasa, dok radioničko središte za fibule varijante e u ovom trenutku nije moguće pretpostaviti.

Najzastupljeniji tip fibula u nalazu iz Ključa, prisutan sa šest primjeraka, jesu fibule s dvije kuglice na luku i nozi, odnosno fibule sheme C, prema tipologiji Annette Bieger.³² Ta

easy to date. The only two grave assemblages with sealed contexts did not contain datable material. Grave 116 at the cemetery in Jezerine²⁵ contained only a fibula of Variant b, while Grave 125 at the cemetery in Ribić²⁶ contained, beside fibula, one cross-shaped button, chronologically unusable due to its long period of use, as attested to by its appearance in grave assemblages with significantly later material.²⁷ Fibulae of this variant are distributed exclusively on the territory of Bosnia – or in its northwestern, western and central parts to be precise – with one chance find from Herzegovina (map 1, ). Considering the entire distribution area of Karaburma 63 fibulae, it is possible to conclude that Variant b is a local version of a larger regional trend. The third fibula of the Karaburma 63 type from Ključ (Pl. 1: 3) belongs to Variant e, which is characterized by a reverted foot with spherical or flattened spherical knob and an ending, which can be ribbed or slightly widened. The widening can be undecorated or decorated with incisions, as can the catchplate. Fibulae of this variant have a band-shaped or slightly thickened band-shaped bow with lenticular or segmental cross-section. The bow is decorated with single or double longitudinal lines or ribs along the edges, which can be decorated with tiny lines. Two longitudinal lines with rib between, undecorated or decorated with tiny lines, are placed along the middle of the bow. On one example there are two such ribs. A large number of examples also have small incisions or shallow ribs at the beginning and at the end of the bow.²⁸ The example from Ključ has a ribbed extension on the foot, decorated with incisions at its top, a slightly thickened band-shaped bow decorated with lines along the edges and double longitudinal line along its middle and a spring with six coils and an external chord. Almost all known examples of this variant are chance finds, so it is quite hard to prove dating, other than to presume that they are concurrent with other variants of the Karaburma 63 type. The only example of this variant which originates from a secure grave assemblage is a fibula from a grave with a burial of a woman from Kamenjača in Breza.²⁹ The burial is dated to the phase LT C2, with the Boljevci-Zemun type fibula within the assemblage acting as a *terminus post quem*, while the other finds from the grave were understood as older elements preserved in a process of retaining tradition.³⁰ With the exception of three chance finds from Dalj near Vukovar,³¹ all other examples of this variant originate once again from Bosnia, but distinctively located to the east, thus indicating existing of two local workshops (map 1, ). If we compare examples from Ključ with other examples of Variants b and e from the Bosnia and Herzegovina, it is noticeable that they differ only in details, such as presence and style of decoration on the foot ending. The majority of examples of Variant b originate from

25 Radimský 1893, 246, Pl. VI: 10.

26 Ćurčić 1898, 641; Marić 1968, Pl. VIII: 26, 27.

27 Marić 1968, Pl. XXII: 1–5.

28 Marić 2017, 79–80.

29 Paškvalin 2002, 331–333, T. 4: 3; 2008, 120–121, T. 13: 9; Marić 2015, 152, T. 2: 1.

30 Marić 2015, 152–153.

31 Majnarić-Pandžić 1970, 17–18, 79, Pl. III: 4, 10; Pl. V: 5.

27 Marić 1968, T. XXII: 1–5.

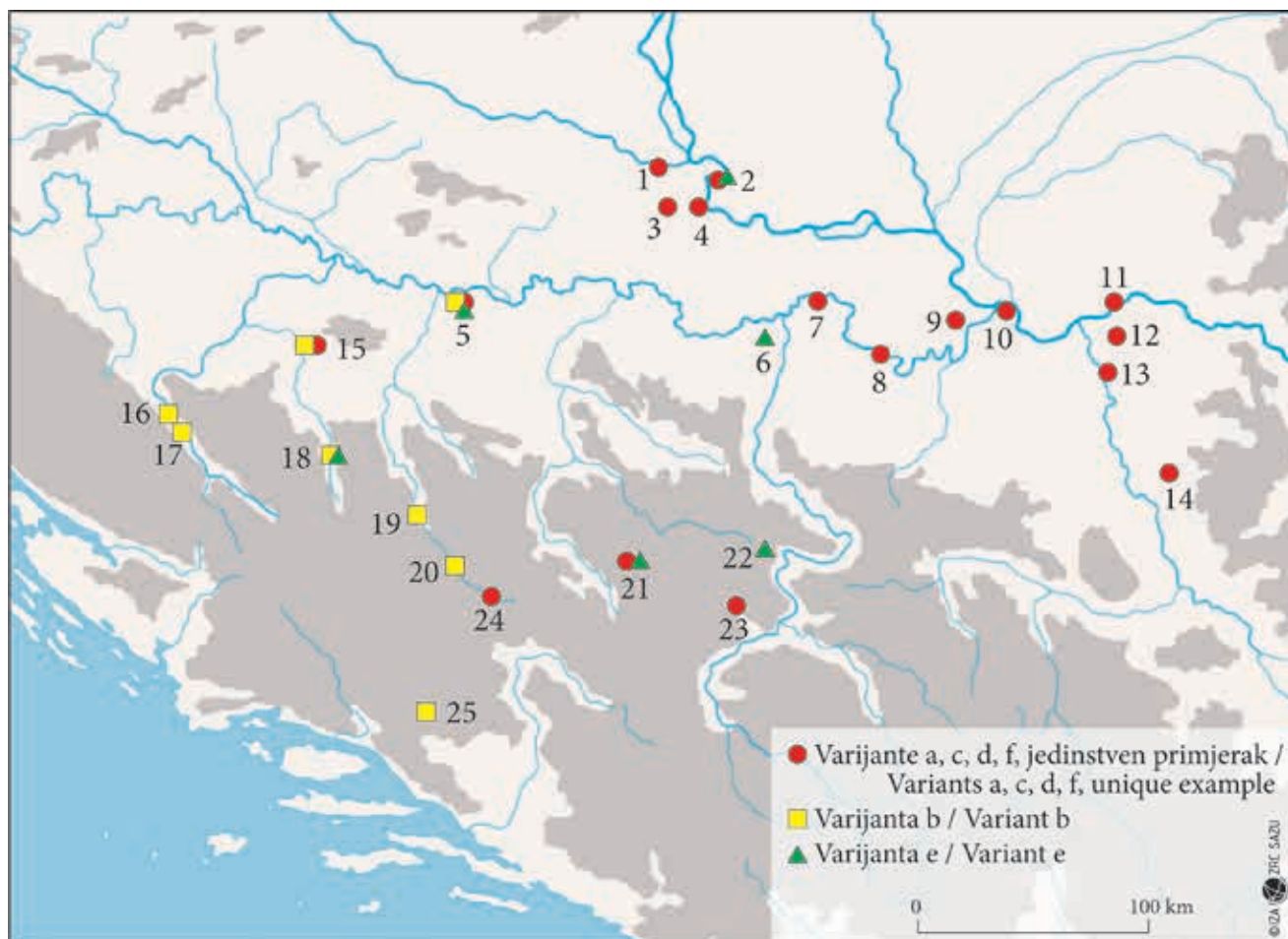
28 Marić 2017, 79–80.

29 Paškvalin 2002, 331–333, T. 4: 3; 2008, 120–121, T. 13: 9; Marić 2015, 152, T. 2: 1.

30 Marić 2015, 152–153.

31 Majnarić-Pandžić 1970, 17–18, 79, T. III: 4, 10; T. V: 5.

32 Bieger 2003, 17.



Karta 1. Rasprostriranje fibula tipa Karaburma 63.

1. Donji Grad u Osijeku; 2. Dalj kod Vukovara; 3. Bogdanovci kod Vukovara; 4. Vukovar; 5. Donja Dolina kod Bosanske Gradiške; 6. Rapanović Polje u Triješnici kod Bijeljine; 7. Sremska Mitrovica; 8. Kupinovo u Vojvodini; 9. Surčin kod Beograda; 10. Karaburma u Beogradu; 11. Čair kod Starog Kostolca; 12. Viminacium; 13. Požarevac; 14. Glavica kod Šetnje; 15. Okruti u Baltinim Barama kod Prijedora; 16. Ribić kod Bihaća; 17. Jezerine kod Bihaća; 18. Ključ; 19. Sinjakovo na Majdanskog gradini; 20. Pod kod Bugojna; 21. Kamenjača u Brezi; 22. Podilijak na Glasincu; 23. Rusanovići na Glasincu; 24. Čolaci kod Donjeg Vakufa; 25. Zagradina na Rakitnom polju.

Map 1. Distribution area of Karaburma 63 type of fibulae.

1. Donji Grad near Osijek; 2. Dalj near Vukovar; 3. Bogdanovci near Vukovar; 4. Vukovar; 5. Donja Dolina near Bosanska Gradiška; 6. Rapanović Polje in Triješnica near Bijeljina; 7. Sremska Mitrovica; 8. Kupinovo in Vojvodina; 9. Surčin near Beograd; 10. Karaburma in Beograd; 11. Čair near Stari Kostolac; 12. Viminacium; 13. Požarevac; 14. Glavica near Šetnje; 15. Okruti in Baltine Bare near Prijedor; 16. Ribić near Bihać; 17. Jezerine near Bihać; 18. Ključ; 19. Sinjakovo on Majdanska gradina; 20. Pod near Bugojno; 21. Kamenjača in Breza; 22. Podilijak on Glasinac; 23. Rusanovići on Glasinac; 24. Čolaci near Donji Vakuf; 25. Zagradina on Rakitno polje.

varijanta fibula predstavlja kombinaciju shemâ A2 i B, gdje su obje kuglice smještene i na luku i na nozi, ali je prijelaz iz luka u nogu napravljen pod kutom od 90° i druga je kuglica smještena upravo na tom mjestu prijelaza. Datiraju se u drugu polovinu stupnja LT C2 i početak stupnja LT D1,³³ a njihovo područje rasprostiranja obuhvaća uglavnom sjevernu Europu, s primjercima iz Ribića kao najjužnijim nalazom.³⁴ Fibule sheme C iz Ključa imaju specifičan detalj kakav ne srećemo ni na jednom drugom primjerku u okviru svih shema ovoga tipa fibulâ. Naime, jedna fibula iz Ključa u opruzi ima žicu na koju je okačena dodatna žica oblikovana u vidu

Donja Dolina, which could potentially indicate a workshop, from where fibulae were spread through valleys of the Una, Sana and Vrbas, while workshop for the Variant e fibulae is not possible to determine.

The most common fibula type from Ključ, with six examples present, is the type with two knobs on the bow and foot, or fibulae of scheme C after Annette Bieger.³² This variant is a combination of schemes A2 and B, where both of the knobs are placed both on the bow and on the foot, but transition from the bow to the foot is at the right angle, with the second knob being placed precisely upon the angle. They are dated to the second half of phase LT C2 and the

³³ Bieger 2003, 75–76, sl. 45.

³⁴ Bieger 2003, karta 5, lista 2.

³² Bieger 2003, 17.

Sl. 3. Lokalna izvedba fibule s dvije kuglice šeme C iz Ključa (snimio: A. Jašarević 2018, Muzejska zbirka Ključ, inv. br. bb)

Fig. 3. Local version of fibula with two knobs scheme C from Ključ (photo by: A. Jašarević 2018, Local museum collection Ključ, inv. no. w/n)



petlji/omčica iz kojih vise lančići (sl. 3). Osim toga primjerka pronađena su još dva kompleta lančića odvojena od fibula. Taj način ukrašavanja često se javlja na fibulama tipa Karaburma 63,³⁵ ali bi se na temelju cjelovito sačuvanog primjerka fibule sheme C s lančićima, dalo pretpostaviti kako su odvojeni lančići u ovom slučaju pripadali upravo tim fibulama. Svih šest primjeraka (T. 1: 4–8; T. 2: 1) izrađeno je od bronce, s tim da četiri imaju željeznu osovinu (sl. 1; T. 1: 5–8). Dužina je uglavnom oko 9 cm, s izuzetkom jednog manjeg primjerka (T. 1: 6); noga je duga, uglavnom jednako kao luk i oblikovana u obliku slova U. Svi imaju jednak presjek luka – okrugli koji prelazi u trakasti između dvije kuglice ili neposredno prije opruge. Kuglice su loptaste, blago spljoštene ili bikonične, broj navoja u opruzi (gdje je cjelovito sačuvana) kreće se u rasponu od sedam do četrnaest, a tetiva je vanjska, osim u jednom primjerku gdje se omotava oko luka s vanjske strane, iako postoji mogućnost da to nije originalna konstrukcija. Zbog nedostatka arheološkog konteksta nije ih moguće precizno datirati, osim na temelju usporedbe sa srodnim primjercima iz drugih poznatih grobnih cjelina. S prostora Pounja poznata su četiri primjerka fibula sheme C – jedan iz groba 403 na nekropoli u Jezerinama,³⁶ te tri primjerka iz grobova 122,³⁷ 174³⁸ i 240³⁹ s nekropole u Ribiću. Grob 403 s nekropole u Jezerinama, prema Z. Mariću, datiran je u fazu Va u kronologiji pounjskih nekropola, odnosno, razdoblje između 110. i 35. godine prije Krista,⁴⁰ s tim da autor naglašava kako se fibule s dvije kuglice javljaju već krajem prethodne faze IV.⁴¹ Druga fibula iz toga groba pripada skupini specifičnih domaćih proizvoda – fibula s dvije spirale i jantarnim zrnima na luku, uz napomenu kako je u fazi Va počeo proces smanjivanja broja jantarnih zrna.⁴² Isti je autor grobove 174 i 240 s nekropole u Ribiću datirao jednako u fazu Va,⁴³ dok je grob 122 datirao nešto kasnije, u fazu Vb⁴⁴.

beginning of phase LT D1,³³ while their distribution area covers mainly northern Europe, with examples from Ribić being the most southern finds.³⁴ Fibulae of scheme C from Ključ have a unique detail, which is found nowhere else: one fibula has a wire in the spring which has an additional looped wire for chains (fig. 3). This method of decoration is common among fibulae of the Karaburma 63 type,³⁵ but it is possible to assume that separated chains belonged to fibulae of scheme C, based on preserved example. All six examples (Pl. 1: 4–8; Pl. 2: 1) are made of bronze, but four of them have an iron axis (fig. 1; Pl. 1: 5–8). The length is approximately around 9 cm, with exception of one smaller example (Pl. 1: 6); the foot is elongated, almost the same length as the bow and U-shaped. All examples have an identical cross-section – rounded transitioning to band-shaped between two knobs or just before the spring. The knobs are spherical, slightly flattened or biconical, the coils in the spring (where preserved) number between seven and fourteen, the chord is external, except for one example, where it wraps around the bow from the outside, although, there is a chance that this is not the original construction. Due to a lack of secure archaeological contexts, it is not possible to date these precisely, but instead only to compare them with similar examples from secure grave groups. From the Una valley there are four examples of fibulae of scheme C – one from grave 403 at the cemetery in Jezerine³⁶ and three examples from graves 122,³⁷ 174³⁸ and 240³⁹ from the cemetery in Ribić. Grave 403 from cemetery in Jezerine is dated to the phase Va, or the period between 110 and 35 BC, after Z. Marić's chronology for the Una valley,⁴⁰ with a remark from the author that fibulae with two knobs appear at the end of the previous phase IV.⁴¹ Another fibula from that grave belongs to a group of specific indigenous products – fibulae with two springs and amber beads on the bow, with a remark that a reduction in the number of amber beads started in phase Va.⁴² Z. Marić

35 Truhelka 1902, T. XII: 4; 1903, T. XLIX: 3; Brunšmid 1909, sl. 23: 1; Spajić 1954, T. VI: 37; 1956, T. X: 6; T. XI: 1, 2; 1962, T. XIV: 8; T. XV: 9; Benac, Čović 1957, T. L: 1–3, 5; Majnarić-Pandžić 1970, T. IX: 9: 10; Todorović 1972, T. XXIII: 2; Kosorić 1982, 125, T. IV: 35; Čović 1987, T. LIII: 26; Paškvalin 2002, T. 3: 1.

36 Radimský 1893, 412, T. VII: 11; X: 6.

37 Marić 1968, T. XII: 10–20; XV: 68, 69.

38 Marić 1968, T. XI 4, 5.

39 Marić 1968, T. VII: 53–56; XI: 35–40.

40 Marić 1968, 74, bilj. 244.

41 Marić 1968, 27.

42 Marić 1968, 29.

43 Marić 1968, 74, bilj. 244.

44 Marić 1968, 75, bilj. 273.

33 Bieger 2003, 75–76, fig. 45.

34 Bieger 2003, map 5, list 3.

35 Truhelka 1902, Pl. XII: 4; 1903, Pl. XLIX: 3; Brunšmid 1909, fig. 23: 1; Spajić 1954, Pl. VI: 37; 1956, Pl. X: 6; Pl. XI: 1, 2; 1962, Pl. XIV: 8; Pl. XV: 9; Benac, Čović 1957, Pl. L: 1–3, 5; Majnarić-Pandžić 1970, Pl. IX: 9: 10; Todorović 1972, Pl. XXIII: 2; Kosorić 1982, 125, Pl. IV: 35; Čović 1987, Pl. LIII: 26; Paškvalin 2002, Pl. 3: 1.

36 Radimský 1893, 412, Pl. VII: 11; Pl. X: 6.

37 Marić 1968, Pl. XII: 10–20; Pl. XV: 68, 69.

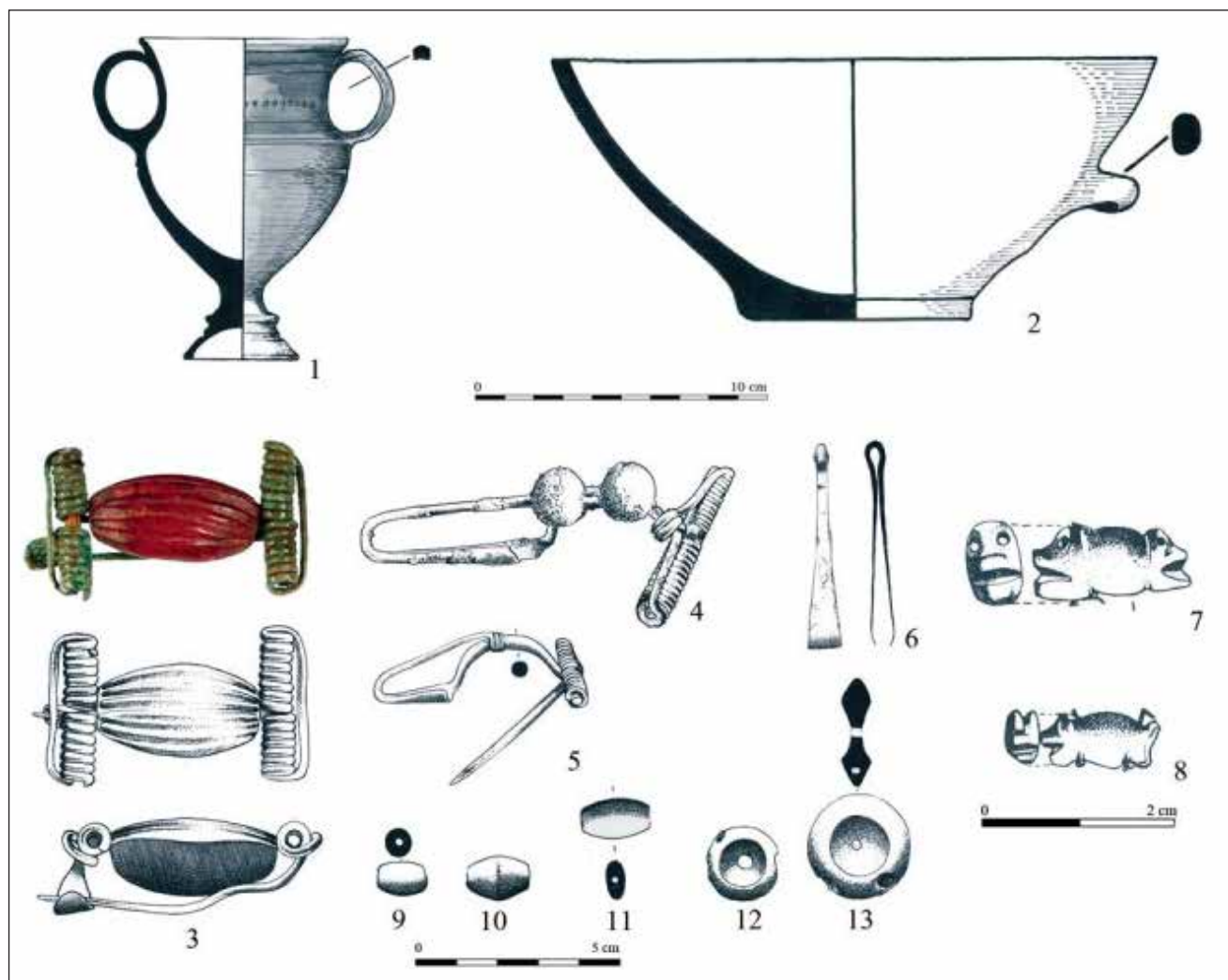
38 Marić 1968, Pl. XI, 4, 5.

39 Marić 1968, Pl. VII: 53–56; Pl. XI: 35–40.

40 Marić 1968, 74, n. 244.

41 Marić 1968, 27.

42 Marić 1968, 29.



Sl. 4. Grob 122 na nekropoli u Ribiću (obrađeno: A. Jašarević prema: Marić 1968, T. XII: 10–20)

Fig. 4. Grave 122 at the cemetery in Ribić (processing by: A. Jašarević after: Marić 1958, Pl. XII: 10–20)

Grobovi 174⁴⁵ i 240⁴⁶ nisu sadržavali kronološki indikativne elemente, za razliku od groba 122 (sl. 4). Dvospiralna fibula s velikim narebrenim jantarnim zrnom na luku iz toga groba najbližu paralelu ima u fibuli iz groba 152 sa iste nekropole,⁴⁷ u kojem se među ostalim nalazila i fibula tipa Alesia⁴⁸ datirana u drugu polovinu 1. stoljeća prije Krista.⁴⁹ S druge strane, kantharos iz groba 122 (sl. 5) datiran je u 3. – 2. stoljeće prije Krista,⁵⁰ odnosno u sredinu i drugu polovicu 2. stoljeća prije Krista kao dio cjeline,⁵¹ ali ne treba isključiti mogućnost da su takvi ekskluzivni predmeti ostajali u uporabi duže od vremena njihova nastanka. Veliki vremenski raspon pojave određenih elemenata materijalne kulture moguće je objasniti zadržavanjem tradicije i dugotrajnim čuvanjem predmeta u uporabi, na što je Z. Marić

also dated graves 174 and 240 from the cemetery in Ribić to phase Va,⁴³ while he dated grave 122 as being slightly later, to phase Vb.⁴⁴ Graves 174⁴⁵ and 240⁴⁶ did not contain datable material, unlike grave 122 (fig. 4). A fibula with two springs and ribbed amber bead from that grave finds its closest parallel in a fibula from grave 152 from the same cemetery,⁴⁷ where it was accompanied, among other things, by an Alesia type fibula,⁴⁸ dated to the second half of the 1st century BC.⁴⁹ On the other hand, a *kantharos* from grave 122 (fig. 5) is dated to the 3rd to 2nd century BC,⁵⁰ or to the middle and second half of the 2nd century BC as part of the assemblage,⁵¹ but the possibility that such exclusive objects were in use until much later than the

45 Marić 1968, T. XI: 4, 5.

46 Marić 1968, T. VII: 53–56; XI: 35–40.

47 Marić 1968, T. XVIII: 8.

48 Marić 1968, T. XVIII: 7.

49 Demetz 1999, 163–164.

50 Parović-Pešikan 1986, 45, kat. br. 10, T. III: 4.

51 Miše 2005, 32.

43 Marić 1968, 74, n. 244.

44 Marić 1968, 75, n. 273.

45 Marić 1968, Pl. XI: 4, 5.

46 Marić 1968, Pl. VII: 53–56; Pl. XI: 35–40.

47 Marić 1968, Pl. XVIII: 8.

48 Marić 1968, Pl. XVIII: 7.

49 Demetz 1999, 163–164.

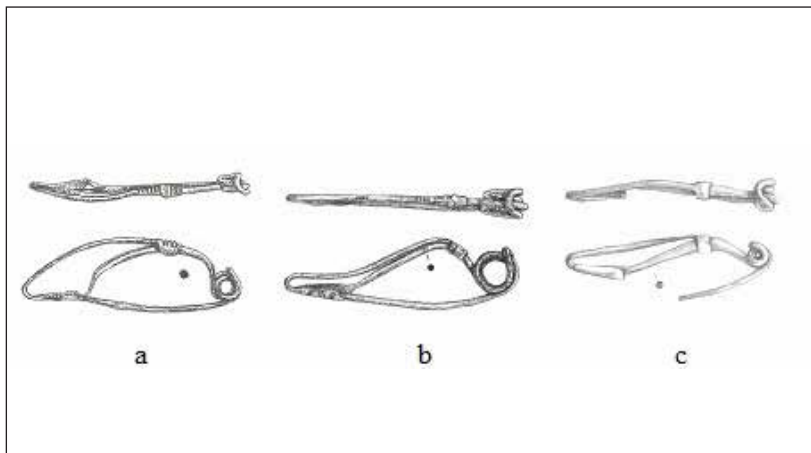
50 Parović-Pešikan 1986, 45, cat. no. 10, Pl. III: 4.

51 Miše 2005, 32.



Sl. 5. Kantaros iz groba 122 na nekropoli u Ribiću (snimio: Global Digital Heritage 2019, Zemaljski muzej Bosne i Hercegovine, inv. br. 17399)

Fig. 5. *Cantharos* from grave 122 at the cemetery in Ribić (photo by: Global Digital Heritage 2019, National Museum of Bosnia and Herzegovina, inv. no. 17399)



Sl. 6. Varijante a–c žičanih fibula srednjolatske sheme s dva navoja u opruzi i vanjskom tetivom (a Debelo Brdo, b Gorica, c Donja Dolina, crtao: D. Sinančević)

Fig. 6 Variants a–c wire fibulae of Middle La Tène scheme with two coils in the spring and an external chord (a Debelo Brdo, b Gorica, c Donja Dolina, drawing by: D. Sinančević)

već i ukazao na primjeru fibule iz groba 122.⁵² Na temelju iznesene analize, fibule sheme C, a sukladno njima i fibule sheme C lokalne varijante Ključ, mogu se vjerojatno datirati u stupanj LT D, s mogućom pojavom krajem stupnja LT C2. Karakteriziramo ih kao izrazito lokalnu varijantu, primarno zbog pojave lančića na opruzi.

Sljedeće dvije fibule iz Ključa (T. 2: 4, 5) pripadaju velikoj skupini žičanih fibula srednjolatske sheme raširenih na području cijelog Podunavlja u razdoblju kasnog latena i neposredno prije toga.⁵³ Na području Bosne i Hercegovine fibule srednjolatske sheme s dva navoja u opruzi i vanjskom tetivom su brojne, a moguće ih je dalje podijeliti u tri varijante s nekoliko podvarijanti prema veličini same fibule, veličini opruge, obliku luka i obliku noge (sl. 6).⁵⁴

Fibule iz Ključa pripadale bi varijanti a koju karakteriziraju bronca kao izbor materijala, dimenzije od 4 do 8, 75 cm, kružni oblik luka, te spajanje noge za luk najčešće na njegovoj sredini. Presjek luka može biti okrugao, romboidan, pravokutan ili kvadratan, a spojnica jednostavna ili prstenasta, ovisno o podvarijanti.⁵⁵ Datiranje ovih fibula otežano je činjenicom da većina srodnih primjeraka potječe izvan arheološkog konteksta (slučajni nalazi, rastureni grobovi, kulturna mjesta, naselja), tako da jedino grobne cjeline iz Pounja, odnosno, tri groba iz nekropole u Ribiću pružaju određene, iako nepotpune informacije. Relativno sličan primjerak nalazimo u grobu 87b,⁵⁶ koji je sadržavao još tri fibule te jantar- na i staklena zrna. Dvospiralna fibula sa ulomkom staklene

time of their initial appearance in the archaeological record should not be ruled out. The long span of time across which particular objects appear in the archaeological record can be explained as being the result of tradition, something already considered by Z. Marić in relation to the example of the fibula from grave 122.⁵² Based on this analysis, fibulae of scheme C, including examples from Ključ, can be probably dated to phase LT D, with their appearance possibly occurring at the end of phase LT C2. The Ključ examples are a distinctively local variant, primarily because of the hung chains acting as pendants.

The following two fibulae from Ključ (Pl. 2: 4, 5) belong to a huge group of wire fibulae of the middle La Tène scheme, which spread across the Danube Region during the late La Tène and slightly earlier.⁵³ On the territory of present-day Bosnia and Herzegovina, fibulae of this type which have a spring with two coils and an external chord, which can be further divided into three variants with several additional subvariants according to fibula size, spring size, shape of the bow and shape of the foot,⁵⁴ are quite numerous and varied.

The fibulae from Ključ would belong to Variant a characterized by bronze as the chosen material, size between 4 and 8.75 cm, rounded shape of the bow, and the connection between the foot and the bow is usually in its middle. The cross section of the bow can be rounded, rhomboidal, rectangular or square, while the clasp is simple or annular, depending on the sub-variant.⁵⁵ Dating of these fibulae is difficult, largely due to the fact that the majority of examples were obtained out-of-context (chance finds, destroyed graves, cult places, settlements), with the exception of three

⁵² Marić 1968, 31.

⁵³ Dizdar 2001, 109.

⁵⁴ Marić 2017, 131–135.

⁵⁵ Marić 2017, 131.

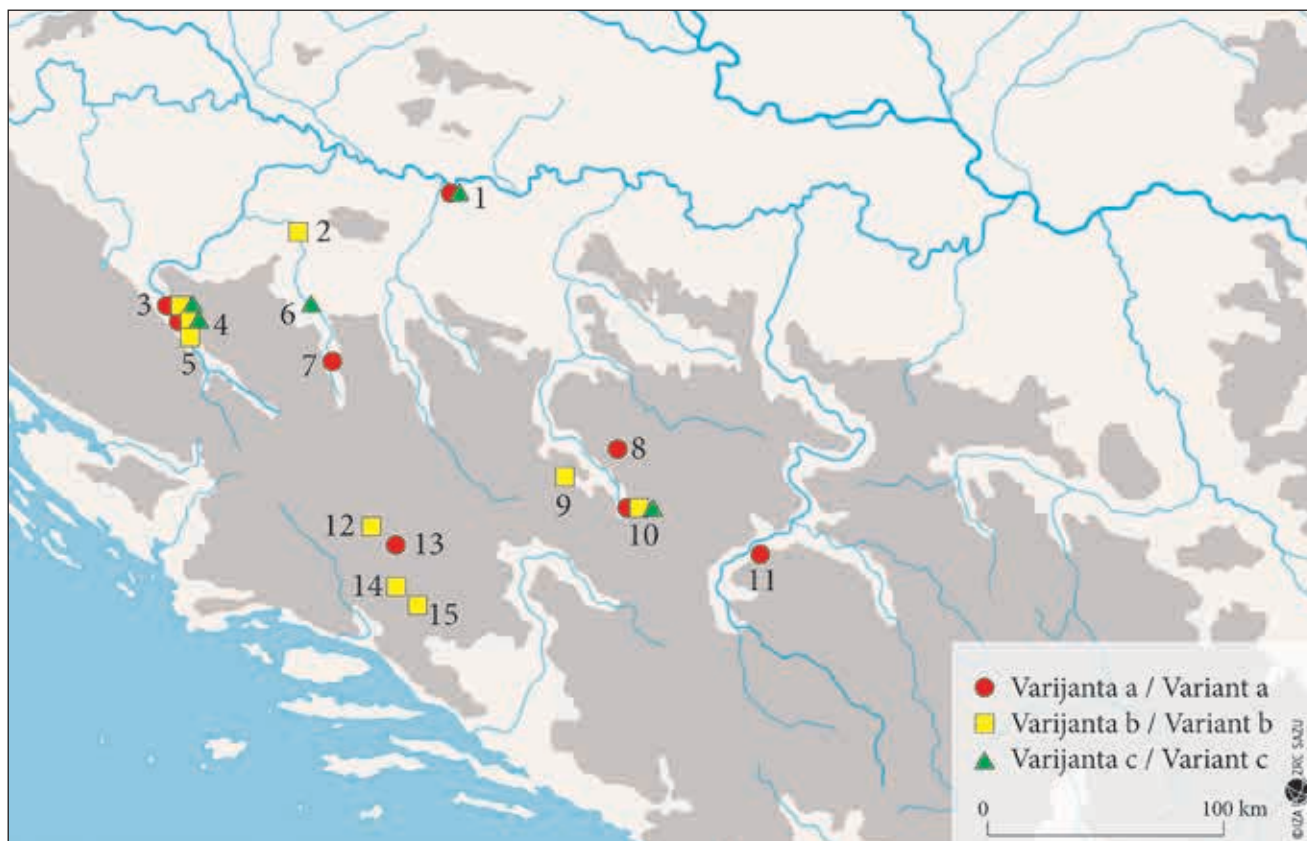
⁵⁶ Marić 1968, T. XIII: 4–10; T. XV: 8, 9.

⁵² Marić 1968, 31.

⁵³ Dizdar 2001, 109.

⁵⁴ Marić 2017, 131–135.

⁵⁵ Marić 2017, 131.



Karta 2. Rasprostriranje jednostavnih žičanih fibula s dva navoja u opruzi na prostoru BiH (Varijanta a – ●, varijanta b – ■, varijanta c – ▲).

1. Donja Dolina kod Bosanske Gradiške; 2. Okruti –Baltine Bare kod Prijedora; 3. Ribić kod Bihaća; 4. Jezerine kod Bihaća; 5. Ripač kod Bihaća; 6. Sanski Most; 7. Ključ; 8. Kamenjača u Brezi; 9. Fojnica; 10. Debelo brdo kod Sarajeva; 11. Mahrevići kod Čajniča; 12. Gorica kod Gruda; 13. Tomislavgrad; 14. Zagradina na Rakitnom polju; 15. Vir kod Posušja.

Map 2. Distribution of simple wire fibulae with two coils in the spring on the territory of Bosnia and Herzegovina.

1. Donja Dolina near Bosanska Gradiška; 2. Okruti –Baltine Bare near Prijedor; 3. Ribić near Bihać; 4. Jezerine near Bihać; 5. Ripač near Bihać; 6. Sanski Most; 7. Ključ; 8. Kamenjača in Breza; 9. Fojnica; 10. Debelo brdo near Sarajevo; 11. Mahrevići near Čajniče; 12. Gorica near Grude; 13. Tomislavgrad; 14. Zagradina on Rakitno polje; 15. Vir near Posušje.

narukvice na luku⁵⁷ može se datirati u stupanj LT C2 na temelju poređenja sa sličnim narukvicama u okviru mokronoške kulturne skupine,⁵⁸ iako ne treba zanemariti činjenicu kako bi fibula ipak mogla biti nešto mlađa, odnosno, da je ulomak narukvice kasnije sekundarno upotrebljen kao ukras luka. Za fibulu srednjolatske sheme s profiliranom spojnicom i konusnim zrnem emajla/koralja na unazad savijenoj nozi iz toga groba⁵⁹ Z. Marić kaže da se javlja na samom kraju potfaze Va, ali naglašava kako je ipak specifična za sljedeću potfazu Vb, što bi odgovaralo vremenskom okviru između 35. godine prije Krista i 10 – 20. godine po Kristu.⁶⁰ Analiza grobnih inventara u cjelinama koje su sadržavale ovakve fibule ukazala je na nešto drugačije datiranje, odnosno moguću dugotrajnu uporabu ovakvih fibula i to kroz cijelo 1. stoljeće prije Krista. Primjerice, u grobu 37 par takvih fibula

graves from the cemetery in Ribić which provide certain, albeit incomplete information. The relatively similar example is to be found in grave 87b,⁵⁶ which contained three more fibulae and glass beads. The fibula with two springs and a fragment of a glass bracelet on the bow⁵⁷ can be dated to phase LT C2, based on the dating of similar bracelets within the Mokronog cultural group,⁵⁸ although there is a possibility that this particular fibula could be somewhat younger, given the bracelet fragment's secondary use as bow decoration. The fibula of middle La Tène scheme with profiled clasp and conical enamel/coral bead on a reverted foot from this grave⁵⁹ is dated to phase Vb, or the period between 35 BC and 10-20 AD, with appearances in the archaeological record beginning at the end of the phase Va, according to Z. Marić.⁶⁰ Analysis of inventories of grave groups with such fibulae suggested different dating and a potentially long

57 Marić 1968, T. XIII: 5.

58 Dizdar 2006, 82.

59 Marić 1968, T. XIII: 4.

60 Marić 1968, 30, 34.

56 Marić 1968, Pl. XIII: 4–10; Pl. XV: 8, 9.

57 Marić 1968, Pl. XIII: 5.

58 Dizdar 2006, 82.

59 Marić 1968, Pl. XIII: 4.

60 Marić 1968, 30, 34.

upotpunjen je parom kopljastih fibula,⁶¹ koje se datiraju na kraj 2. i 1. stoljeće prije Krista, tj. stupanj LT D.⁶² Fibula tipa Picugi varijante Vir iz groba 161⁶³ također je datirana u kasnolatsko razdoblje.⁶⁴ S druge strane, bogati grob 10 sadržavao je, među ostalim, i fibulu tipa Alesia⁶⁵, koja se datira u stupanj LT D2,⁶⁶ jednako kao i fibula tipa Jezerine,⁶⁷ koja prati fibulu srednjolatske sheme s profiliranom spojnicom i konusnim zrnem emajla iz groba 238.⁶⁸ Preostala dva groba s nekropole u Ribiću pokazuju sličnu sliku. Grob 15⁶⁹ sadržavao je još i fibulu tipa Kastav varijante Kastav, tipa koji je primarno datiran u razdoblje srednjeg latena,⁷⁰ da bi se kasnije ispostavilo da su grobne cjeline na kojima je temeljena datacija nesigurne.⁷¹ Grob 255⁷² sadržavao je još jednu fibulu, koja nam, nažalost, ne može reći ništa preciznije o datiranju, s obzirom na to da se najčešće nalazi kao jedini prilog u grobovima pounskih nekropola.⁷³ Na temelju iznesenih analogija, fibule srednjolatske sheme s oprugom sa dva navoja i visokom tetivom iz Ključa moguće je datirati u stupanj LT D, s mogućnošću njihove eventualne ranije pojave. Osim u Ključu, takve su fibule u svim svojim varijantama otkrivene na području cijele Bosne i Hercegovine (karta 2), s najvećom koncentracijom varijante a u srednjoj Bosni, odnosno, na lokalitetima Debelo brdo kod Sarajeva i Kamenjača u Brezi.

Posljednja fibula iz Ključa, odnosno, ulomak fibule (T. 2: 6) pripada tipu fibula s emajlom, odnosno, varijanti toga tipa čija je glavna značajka kružna pločica ukrašena motivom X, a u praznim poljima između krakova smješteni su kružići s točkicama. S područja Bosne i Hercegovine poznata su još dva takva ulomka iz Donje Doline,⁷⁴ te jedan cjelovito sačuvani primjerak iz groba 153 s nekropole u Ribiću.⁷⁵ U spomenutom se grobu, između ostalog, nalazila i fibula srednjolatske sheme sa oprugom sa dva navoja i visokom tetivom, prema kojoj bi se cijeli grob dao datirati u stupanj LT D, kao što je prethodno objašnjeno. Svi ostali poznati primjerci ovakvih fibula potječu iz Vinice,⁷⁶ što nam ne govori ništa o dataciji s obzirom na nesigurne grobne cjeline,⁷⁷ ali ukazuje na moguće proizvodno središte.

Inače, fibule s emajlom obuhvaćaju veliku skupnu brončanih, željeznih i bimetalnih fibula koje na unazad savijenoj

period of use throughout the entire 1st century BC. For example, in grave 37, a pair of such fibulae was accompanied by a pair of lanceolate fibulae⁶¹ which can be dated to the end of the 2nd and the 1st century BC, or to phase LT D.⁶² The Picugi – Vir type fibula from grave 161⁶³ is also dated to the late La Tène period.⁶⁴ On the other hand, the rich grave 10 contained, among other artefacts, an Alesia type fibula⁶⁵ which is dated to phase LT D2,⁶⁶ as was the Jezerine type fibula,⁶⁷ which was found together with a fibula of middle La Tène scheme with a profiled clasp and conical enamel/coral bead on reverted foot in grave 238.⁶⁸ The remaining two graves from the cemetery in Ribić show a similar picture. Grave 15⁶⁹ also contained a Kastav – Kastav type fibula, initially dated to the middle La Tène,⁷⁰ which was later refuted due to the fact that the grave groups used for dating were not contextually sealed.⁷¹ Grave 255⁷² contained another fibula, which is unfortunately of no use for dating, since it was discovered as a lone item in the Una valley graves.⁷³ Based on analogies, fibulae of the middle La Tène scheme with a spring with two coils and high chord can be dated to the phase LT D, with their initial appearance possibly being earlier. Besides Ključ, such fibulae with all their variants were discovered all over Bosnia and Herzegovina (map 2), with largest concentration of Variant a occurring in the central parts, at the sites of Debelo brdo, near Sarajevo, and Kamenjača, in Breza.

The last fibula from Ključ, or fibula fragment to be precise (Pl. 2: 6), belongs to the type of fibulae with enamel, or the variant of this type that is characterized by a rounded plate decorated with an 'X' motif with additional ring-and-dots in empty fields between the arms of the 'X'. From the territory of Bosnia and Herzegovina, there are two more fragments from Donja Dolina,⁷⁴ and one entirely preserved example from grave 153 from the cemetery in Ribić.⁷⁵ Within this grave's inventory is also another fibula of middle La Tène scheme with a spring with two coils and high chord, after which the grave could be dated to phase LT D, as previously explained. All other examples of such fibulae originate from Vinica,⁷⁶ which, although they cannot tell anything about the dating, due to the lack of contextual certainty of the grave groups,⁷⁷ may point to a possible production centre.

Otherwise, the type of fibulae with enamel is composed of a large group of bronze, iron and bimetallic fibulae which bear a plate with an indentation for enamel or glass paste on

61 Marić 1968, T. XIV: 21.

62 Popović 1994, 58–62.

63 Marić 1968, T. XIV: 10.

64 Guštin 1987, 52, 53; 1991, 31, 32, 38.

65 Marić 1968, T. XVIII: 31.

66 Božić 2008, 146, tab. 5.

67 Božić 2008, 146, tab. 5.

68 Marić 1968, T. XIV: 33–36; T. XV: 48, 49.

69 Marić 1968, T. XIII: 16–21; T. XV: 12.

70 Guštin 1987, 50–51, sl. 6–8.

71 Blečić 2002, 79.

72 Marić 1968, T. VII: 50; X: 37–39.

73 Marić 1968, T. XII: 26–32, 37.

74 Truhelka 1902, 264, T. X: 8; drugi primjerak je neobjavljen.

75 Marić 1968, T. VII: 50; X: 33–36.

76 Primjerci potječu iz grobova H, Z, 40, 170, 219 i 290. Dostupno na stranici Peabody Museum Collections Online (<https://pmem.unix.fas.harvard.edu:8443/peabody/>, posljednji pristup 13. 04. 2020.).

77 Božić 2009.

61 Marić 1968, Pl. XIV: 21.

62 Popović 1994, 58–62.

63 Marić 1968, Pl. XIV: 10.

64 Guštin 1987, 52, 53; 1991, 31, 32, 38.

65 Marić 1968, Pl. XVIII: 31.

66 Božić 2008, 146, Tab. 5.

67 Božić 2008, 146, Tab. 5.

68 Marić 1968, Pl. XIV: 33–36; Pl. XV: 48, 49.

69 Marić 1968, Pl. XIII: 16–21; Pl. XV: 12.

70 Guštin 1987, 50–51, fig. 6–8.

71 Blečić 2002, 79.

72 Marić 1968, Pl. VII: 50; Pl. X: 37–39.

73 Marić 1968, Pl. XII: 26–32, 37.

74 Truhelka 1902, 264, Pl. X: 8; the second example is unpublished.

75 Marić 1968, Pl. VII: 50; Pl. X: 33–36.

76 Examples originate from graves H, Z, 40, 170, 219 and 290. Available on site Peabody Museum Collections Online (<https://pmem.unix.fas.harvard.edu:8443/peabody/>, last entry 13. 04. 2020.).

77 Božić 2009.

nozi nose pločicu s udubljenjem u koje se smješta email ili staklena pasta. Ovisno o vrsti metala te obliku pločice i udubljenja na istoj, razlikuje se nekoliko varijanti koje se i vremenski daju razlučiti.⁷⁸ Njihovo područje rasprostiranja obuhvaća cjelokupnu Karpatsku kotlinu,⁷⁹ a na temelju rasprostiranja pojedinih varijanti moguće je utvrditi i pojedinačne radionice.⁸⁰ Činjenica da za primjerak iz Ključa nemamo izravnih analogija na cjelokupnom području rasprostiranja ukazuje na njihov lokalni karakter i ponavljanje već poznate sheme prihvatanja nadregionalnih trendova i njihova prilagođavanja lokalnom ukusu.

NARUKVICE

Prvu skupinu narukvica čine tri primjerka brončanih, sitno narebrenih narukvica otvorenih krajeva koji se dodiruju (T. 2: 7, 8, 12). Krajevi narukvica su različito dekorirani – na jednom primjerku (T. 2: 7) krajevi nemaju narebrenja, već su ukrašeni izduženom V-linijom, dok je na drugom primjerku (T. 2: 8) taj ukras nešto složeniji i sastoji se od kraćih dvostrukih V-linija, okrenutih vrhovima jedan prema drugom, između kojih su smještene dvostruke longitudinalne crte uz rubove, a prostor između njih je popunjen sitnim crticama. Na oba je primjerka kraj jednak i sastoji se od žlijeba sa proširenjem na samom završetku. Treći je primjerak sačuvan fragmentarno (T. 2: 12), ali je moguće pretpostaviti da je bio jednako oblikovan.

Sljedeći primjerak (T. 2: 11) pokazuje sličnosti s prvom skupinom narukvica u načinu oblikovanja krajeva, no narebreni ukras nije raspoređen cijelom dužinom narukvice, već je smješten samo na početku. Pored toga, ovaj primjerak ima otvorene krajeve.

Posljednja dva primjerka (T. 2: 9, 10) su glatke, neukrašene narukvice, koje se međusobno razlikuju po dimenzijama i masivnosti, ali ne pružaju mogućnosti za detaljniju analizu.

Za razliku od fibula iz ovoga nalaza koje pokazuju srodnosti s cijelim nizom široko rasprostranjenih latenskih i latenski inspiriranih fibula, za narukvice je teško naći direktne analogije. Najsrodniji primjerci ukrašenim narukvicama otkriveni su u grobu sa skeletnim ukopom žene na lokalitetu Kamenjača u Brezi kod Sarajeva.⁸¹ Iako analogije za narukvice iz Kamenjače koje navodi autor nisu ispravne,⁸² datacija koju na kraju iznosi⁸³ vjerojatno se može održati. U širem europskom kontekstu nije moguće naći identične primjerce, no srodne narukvice javljaju se na području današnje Češke⁸⁴ i Slovačke⁸⁵ još od stupnja LT B1.

a reverted foot. There are several, differently dated, variants, based on type of metal, shape of the plate and the shape of the indentation.⁷⁸ Their distribution area covers the Carpathian basin,⁷⁹ and it is even possible to determine particular workshops on the basis of the distribution of particular variants.⁸⁰ Since there are no direct parallels for the Ključ examples, one can conclude that they were made locally, by repeating an already-known pattern of accepting supraregional fashion and its adjustment to local taste.

BRACELETS

The first group of bracelets consists of three examples of bronze, tiny ribbed bracelets with open touching endings (Pl. 2: 7, 8, 12). The endings of these bracelets are each decorated differently – on one example (Pl. 2: 7) the endings do not have ribs, but instead are decorated with an elongated V-shaped line, while on another example (Pl. 2: 8) that decoration is more complex and consists of shorter double V-shaped lines, with the tips pointed toward each other, while in-between are double longitudinal lines along the edges, with the space between them being filled with small lines. The ending is the same upon both examples, and consists of a groove that widens at its end. The third example is only fragmentarily preserved (Pl. 2: 12), but it is plausible that it was similarly shaped.

The following example (Pl. 2: 11) shows similarities to the first group of bracelets in the way of how the ends are shaped, but the ribbed ornament is not distributed over the entire length of the bracelet, but is placed only at the beginning. In addition, this specimen has open ends.

The last two examples (Pl. 2: 9, 10) are smooth, undecorated bracelets, which differ in dimensions and massiveness, but do not provide any possibility for a more thorough analysis.

Unlike fibulae from this find, which bear similarities to other examples within the huge range of widely distributed La Tène and La Tène-inspired fibulae, it is difficult to find direct parallels for the bracelets. The closest to decorated bracelets were discovered in grave with a burial of a woman from Kamenjača in Breza, near Sarajevo.⁸¹ Although parallels for bracelets from Kamenjača suggested by author are not entirely correct,⁸² the proposed date concluded by the author⁸³ can probably be attested to. In the wider European area, it is not possible to find identical examples, but similar ones have been discovered in Bohemia⁸⁴ and Slovakia⁸⁵ starting with phase LT B1.

78 Popović 2002; Guštin 2011, 125–126, sl. 8; Dizdar 2013, 245–250; 2014; 2019.
79 Guštin 2011, sl. 8.

80 Dizdar 2014, 106–107.

81 Paškvalin 2002, 336, T. V, 1–4.

82 Paškvalin 2002, bilj. 58–61.

83 Paškvalin 2002, 336, bilj. 64.

84 Filip 1956, T. XXXI: 11; T. XXXV: 1–6; T. LIX: 7, 11; LXIV: 4.

85 Bujna 2005, sl. 3: A1–D, A4–B.

78 Popović 2002; Guštin 2011, 125–126, fig. 8; Dizdar 2013, 245–250; 2014; 2019.
79 Guštin 2011, fig. 8.

80 Dizdar 2014, 106–107.

81 Paškvalin 2002, 336, Pl. V, 1–4.

82 Paškvalin 2002, n. 58–61.

83 Paškvalin 2002, 336, n. 64.

84 Filip 1956, Pl. XXXI: 11; Pl. XXXV: 1–6; Pl. LIX: 7, 11; Pl. LXIV: 4.

85 Bujna 2005, fig. 3: A1–D, A4–B.

ZAKLJUČAK

Na temelju iznesene analize materijala moguće je donijeti određene zaključke koji su, nažalost, nepotpuni, s obzirom na činjenicu nepoznavanja konteksta nalaza. Tipološki, riječ je o materijalu koji bi se uslovno mogao nazvati „latenski inspiranim“, a koji podrazumijeva preuzimanje široko rasprostranjenih ideja te njihovo prilagođavanje domaćem ukusu. To se najbolje vidi na primjerku fibule s dvije kuglice i lančićima, jedinom poznatom te vrste, iako je takav način oblikovanja različitih elemenata nošnje specifičan za razdoblje mlađeg željeznog doba na području današnje Bosne i Hercegovine.

S druge strane, vrlo je zanimljivo razlučiti smjerove kulturnih utjecaja koji se očituju na zastupljenom materijalu. U slučaju fibula tipa Karaburma 63, najočitija je veza s Podunavljem preko tzv. Posavskog koridora sa istaknutom pozicijom Donje Doline, velikim trgovačkim središtem koje je još uvijek snažno egzistiralo na samom početku mlađeg željeznog doba. Kasniji materijal, fibule s dvije kuglice, jednostavne žičane te fibula s emajlom na prvi pogled pokazuju veze s drugim područjima – primarno s područjem Pounja, Bele Krajine ali i srednje Bosne, dok je veza s Donjom Dolinom oslabjela. Ipak, ni ovdje nije riječ o isključivo unutarnjoj komunikaciji, s obzirom na to da su navedeni primjerci iz Pounja i srednje Bosne nastali kao rezultat utjecaja iz latenskog svijeta južne Panonije. Prevladavajući tip nošnje u obliku importa ili ideje dospio je na razmatrano područje, gdje je prihvaćen i u većoj ili manjoj mjeri prilagođen lokalnom ukusu. Pozicija Ključa u zaleđu rudonosnog gorja oko Sanskog Mosta i Prijedora, utjecala je svakako i na kreaciju vlastite produkcije pojedinih elemenata autohtone kulture, ali i na pojavu značajnih uvezenih elemenata koji su prilagođeni lokalnim potrebama. Većina nalaza iz Ključa može se pripisati ženskoj nošnji, kako nam to pokazuju analogne grobne cjeline iz doline Une i Kamenjače u Brezi, a ženski ukopi generalno odražavaju određenu matricu ili sličnost u odabiru nakita i funkcionalnih dijelova nošnje karakteristične za širi prostor jugoistočne Europe. Pounske su nekropole egzistirale kroz cijelo razdoblje mlađeg željeznog doba, pa i kasnije, ali na temelju sačuvanog materijala jasno je kako su zadržali visoki stupanj autohtonosti i tradicije. Mlađeželjeznodobni materijal iz srednje Bosne najzastupljeniji je od srednjeg latena, pa dalje, s tim da ne postoje sačuvane nekropole koje bi dale detaljan uvid u kronologiju.

U tom kontekstu, nalazi iz potencijalne nekropole u Ključu djelomično rasvjetljavaju razdoblje mlađeg željeznog doba na području današnje Bosne i Hercegovine, odnosno, potvrđuju složene procese kulturnih utjecaja, primanja i transformacija ideja u zadnja tri stoljeća posljednjeg milenija prije Krista.

CONCLUSION

Based on a detailed analysis of the material, it is possible to draw some conclusions. However, due to the unknown contexts of the finds, any such conclusions must be treated as incomplete. Typologically, the material could be best described as 'La Tène-inspired', which implies the uptake of widely spread ideas and their adaption to local tastes. This influence is most evident on fibulae with two knobs and chains, the only known examples of this kind, although a similar method of decoration on particular pieces of attire is not uncommon during Late Iron Age in Bosnia and Herzegovina.

On the other hand, it is interesting to distinguish directions of cultural influences visible within the presented material. In the case of the Karaburma 63 fibulae, the most obvious connection is with the Danube Region through Sava corridor, with the prominent position of Donja Dolina, a large trade centre which was still active at the beginning of the Late Iron Age. Later material, fibulae with two knobs, wire fibulae and the fibula with enamel evidence connection to different areas at first glance – primarily the Una valley, Bela Krajina and also Central Bosnia, while connection with Donja Dolina is less visible. Still, this is not just an internal connection, because all the examples from Una valley and Central Bosnia are the result of influence from the La Tène world of southern Pannonia. An archetypal piece (or pieces) would have been imported or brought in the form of an idea to the discussed area, where it would have been adapted to local taste to a greater or lesser degree. The positioning of Ključ in the hinterland of the ore-rich mountains around Sanski Most and Prijedor would have influenced the creation of particular elements of indigenous culture, but also impacted on the appearance of imported elements, which were adapted to local taste. Most of the finds from Ključ can be attributed to female costume, as seen in similar grave finds from the Una valley and Kamenjača in Breza, but female burials in the wider area of Southeastern Europe generally show patterns or similarity in terms of jewellery and attire pieces. The Una valley cemeteries existed through entire period of the Late Iron Age and even later, but they retained a high degree of indigenous elements and tradition, as can be seen from the material culture. Late Iron Age material from Central Bosnia most commonly occurs from the Middle La Tène and later, but unfortunately there are no preserved cemeteries to provide information regarding chronology.

In this way, finds from what is presumed to be a cemetery in Ključ give a partial insight into the period of the Late Iron Age on the territory of present-day Bosnia and Herzegovina, and confirm the complex processes of cultural influence, acceptance and transformation of ideas in last three centuries of the first millennium BC.

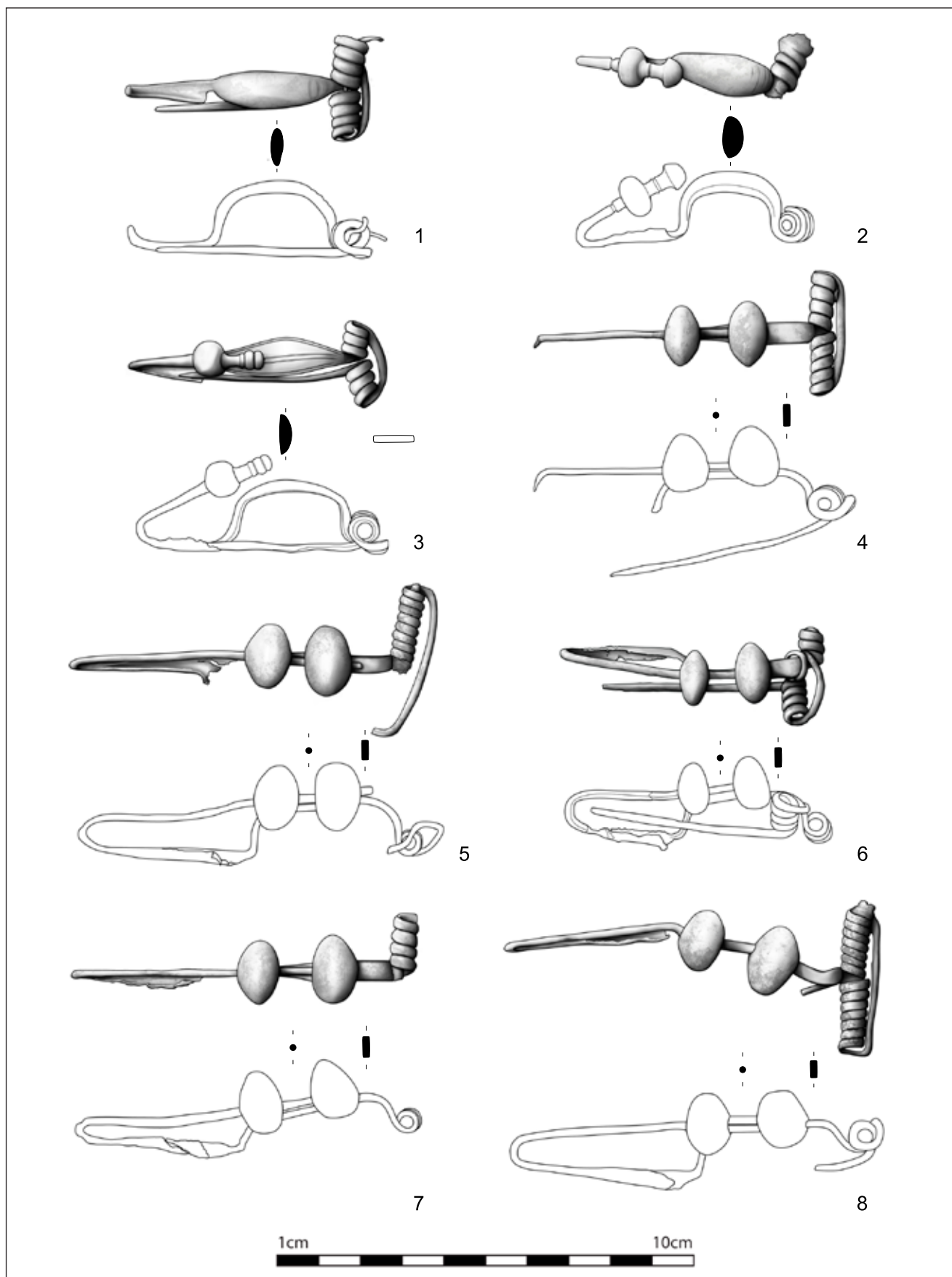
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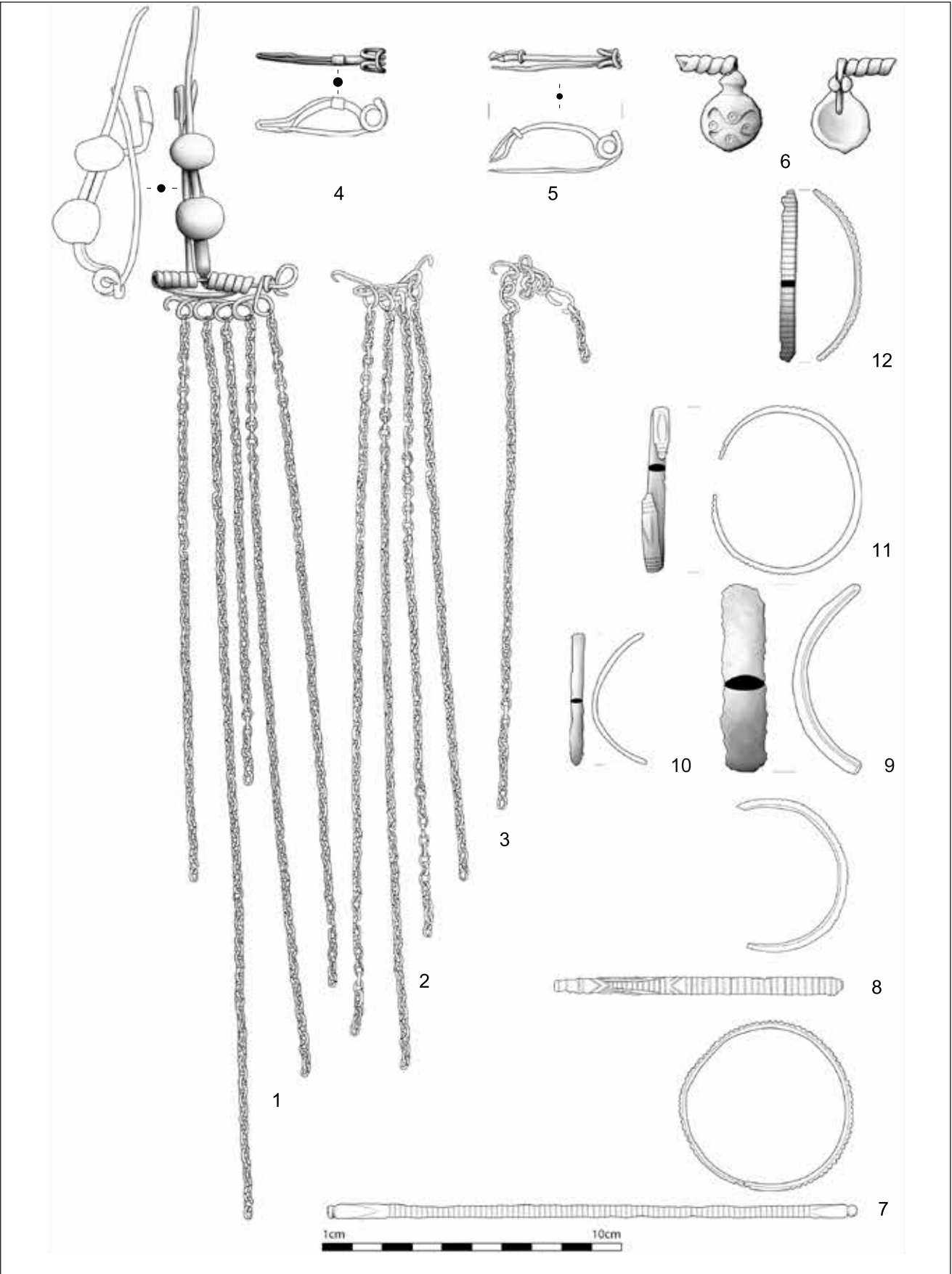
T. 1

Pl. 1



T. 2

Pl. 2



Late Iron Age coins produced in the Đurđevac (Gjurgjevac) tradition from Donja Dolina – a new subtype of late Đurđevac (Gjurgjevac) tetradrachms “Donja Dolina”

Mlađeželjeznodobne kovanice izrađene u đurđevačkoj tradiciji iz Donje Doline – novi podtip kasnih đurđevačkih tetradrahmi “Donja Dolina”

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The numismatic record of the Donja Dolina site includes eleven Late Iron Age copper alloy coins with an undisclosed amount (if any) of silver. It appears that these coins can be incorporated within an umbrella category of coins produced in the Đurđevac tradition, an apparently widespread phenomenon reflecting the influence of an earlier type of Tauriscan coins from the eponymous hoard. This coin group seems to have emerged as distinctive local variants, several of which have been recognised and named after the respective sites at which they were found and – where such evidence exists – presumably also produced. The Donja Dolina assemblage has allowed one such local variant to be defined and named after the site; however, it does not encompass all the coins produced in the Đurđevac tradition found on the right bank of the Sava. Nevertheless, the remaining coins clearly belong to the same tradition and, save a single specimen, may well also have been produced locally.

Key words: Donja Dolina, Late Iron Age, coins produced in the Đurđevac (Gjurgjevac) tradition, Tauriscan coinage

Numizmatički nalazi s lokaliteta Donja Dolina obuhvaćaju i jedanaest mlađeželjeznodobnih kovanica načinjenih od bakrene legure s mogućom primjesom srebra. Čini se da se te kovanice mogu podvesti pod općenitu kategoriju kovanica izrađenih u đurđevačkoj tradiciji, koja izgledno predstavlja široko rasprostranjenu pojavu, te odražava utjecaj ranijeg tipa taurišćanskih kovanica koje potječu iz istoimene ostave. Ova kategorija kovanica pojavljuje se u nizu različitih lokalnih varijanti, od kojih su neke izdvojene i imenovane prema lokalitetima gdje su pronađene te, kada postoje određeni dokazi, gdje je dopušteno pretpostaviti i da su proizvedene. Nalazi iz Donje Doline dopuštaju izdvajanje upravo jedne takve lokalne varijante – te njezino imenovanje prema samom lokalitetu – ali ona ne obuhvaća sve kovanice proizvedene u đurđevačkoj tradiciji pronađene na ovom lokalitetu na desnoj obali Save. Bez obzira na to, preostale kovanice jasno pripadaju istoj tradiciji proizvodnje te su, uz jednu moguću iznimku, mogle biti iskovanice na samom lokalitetu ili u njegovoj blizini.

Ključne riječi: Donja Dolina, mlađe željezno doba, đurđevačka tradicija, kovanice, taurišćanske kovanice

COINS PRODUCED IN THE ĐURĐEVAC TRADITION

Recent archaeological excavations in north-western Croatia, together with the reassessment of relevant numismatic material kept in public collections in Zagreb (The Archaeological Museum), Sisak (City Museum), Sesvete (Museum of Prigorje) and Sveti Ivan Zelina (Sveti Ivan Zelina Museum) have revealed a hitherto poorly understood and almost unrecognised group of Tauriscan coins.¹ These coins were made of various copper alloys, sometimes with a variable proportion of silver (billon, alloyed silver), or with a silver or silver-appearing surface (it would appear that, in most cases, this is a consequence of a silver-enriched surface but perhaps occasionally due to the application of a silver plating). Besides this debasement of tetradrachms (tdrs) originally containing a greater proportion of silver, a process of reduction in size of flans is also observable, along with a poorer standard of execution and production. It is possible to classify these objects as coins produced in the Đurđevac tradition, with the Đurđevac type of coins itself representing an uncharacteristically widespread (both in terms of geography and chronology) grouping of Tauriscan coinage. The assemblage of Late Iron Age coins from Donja Dolina – the subject of this study – decidedly belongs to this tradition of coin production. The coins in question, kept at the National Museum of Bosnia and Herzegovina in Sarajevo, were previously cursorily and hypothetically attributed to this tradition, but here an in-depth study of the assemblage supporting this assertion is given.²

The new deliberations, now widely accepted, on the chronology of Tauriscan coins in general, naturally influenced the absolute dates of the Đurđevac coins in particular.³ It is also an accepted fact that the coin series from eponymous hoards of Tauriscan coins testify to a short production period and an almost immediate deposition.⁴ This inference must, however, be qualified with respect to the 'afterlife' of certain specific coin types, of which the Đurđevac coins are a prime example. Thus, while it is possible to date the production and deposition of the coins from the Đurđevac hoard to shortly after the production and deposition of the coins from the Varaždin, Samobor-Okčić and Ljubljana hoards (the Lt C2/D1 transition, i.e. the late first half to the early second

KOVANICE IZRAĐENE U ĐURĐEVAČKOJ TRADICIJI

Recentna arheološka istraživanja provedena na području sjeverozapadne Hrvatske, zajedno s ponovnom evaluacijom relevantnog numizmatičkog materijala koji se čuva u javnim ustanovama u Zagrebu (Arheološki muzej u Zagrebu), Sisku (Gradski muzej Sisak), Sesvetama (Muzej Prigorja) i Svetom Ivanu Zelini (Muzej Sveti Ivan Zelina), otkrili su dosada slabo poznatu, gotovo neprepoznatu, skupinu taurišćanskih kovanica.¹ Te kovanice načinjene su od različitih legura bakra, ponekad s većim ili manjim udjelom srebra (tzv. *billon* ili legura s manjim udjelom srebra), ili sa srebrnom ili srebrnkastom površinom. Čini se da je u većini slučajeva srebrn(kast) izgled posljedica obogaćivanja površine srebrom, ali ponekad je moguće da je riječ o posrebreanju. Pored ove devalvacije tetradrahmi koje su originalno bile izrađivane od legure s većim udjelom srebra, primjetan je i proces redukcije u veličini kovanih pločica kao i skromniji standard izvedbe kovanica. Tetradrahme s tim karakteristikama moguće je klasificirati kao kovanice izrađene u đurđevačkoj tradiciji, dok kovanice tipa Đurđevac i same predstavljaju nekarakteristično rasprostranjen i dugotrajan tip taurišćanskih kovanica. Numizmatički nalazi mlađeg željeznog doba iz Donje Doline, koji su predmet ove rasprave, zasigurno pripadaju upravo ovoj tradiciji proizvodnje kovanica. Ti predmeti, koji se čuvaju u Zemaljskom muzeju Bosne i Hercegovine u Sarajevu, dosad su bili samo usputno i hipotetski pripisani ovoj tradiciji, ali ovdje će kroz temeljitiju analizu kovanica ta tvrdnja biti poduprijeta.²

Nova razmišljanja – danas široko prihvaćena – o općenitoj kronologiji taurišćanskih kovanica, prirodno su utjecala na spoznaje o apsolutnoj dataciji specifično đurđevačkih tetradrahmi.³ Istovremeno, općenito je prihvaćeno i mišljenje da serije kovanica prisutne u eponimnim ostavama taurišćanskog novca svjedoče o kratkom razdoblju proizvodnje te njihovom gotovo trenutnom odlaganju nakon izrade.⁴ No, ove spoznaje moraju se uzeti s oprezom kada je riječ o nastavku "života" određenih tipova kovanica, među kojima je đurđevački tip najjasniji primjer. Na taj način, dok je proizvodnju i odlaganje kovanica iz đurđevačke ostave moguće datirati kratko nakon proizvodnje i odlaganja kovanica iz varaždinske, samoborsko-okčićke i ostave iz rijeke Ljubljanice (prijelaz Lt C2/D1, tj., kasna prva polovica 2. st. pr. Kr.), tj., u rano razdoblje perioda Lt D1 (rana druga polovica 2. st. pr.

1 Bilić 2022. On the appropriateness of the term 'Tauriscan coinage' see Schachinger 2020, 60. In archaeological terms, these coins are part of the material culture of the Mokronog group, while in terms of ethno-cultural affiliations they were issued within the orbit of the Taurisci tribal alliance (Božić 1999, 192; Dizdar 2011, 71–73, 89–90; 2013, 11–12; Potrebica, Dizdar 2014, 137).

2 I would like to thank Ana Marić, the curator of the Numismatic Collection at the National Museum of Bosnia and Herzegovina, for allowing me the opportunity to study and publish the coins from Donja Dolina. The objects are kept as part of the Numismatic and Prehistoric Collections of the National Museum. One can find a cursory treatment of the assemblage in Bilić 2022, 127 n. 63.

3 The key work on the dating of Tauriscan coinage is Kos, Šemrov 2003; see also Kos 2007; 2012; Kos, Mirnik 2011. On the Đurđevac coinage, see Bilić 2017a, 230; 2022; forthcoming; Bilić, Dizdar 2016, 118–119; Bilić, Falileyev 2021, 11.

4 Kos, Mirnik 2011, 100, 102 (the Varaždin hoard), Kos 2009, 308–311 (the Đurđevac hoard), Kos, Šemrov 2003, 385–386, 389–390 (the Ljubljana hoard), Bilić forthcoming (the Samobor hoard). See also Gorini 2009, 120 and Schachinger 2020, 60–62, 64, 68.

1 Bilić 2022. O prikladnosti termina "taurišćanske kovanice" vidi Schachinger 2020, 60. U arheološkim terminima, te kovanice dio su materijalne kulture mokronoške skupine, dok su u terminima etno-kulturološke pripadnosti one kovane unutar zone utjecaja plemenskog saveza Tauriska (Božić 1999, 192; Dizdar 2011, 71–73, 89–90; 2013, 11–12; Potrebica, Dizdar 2014, 137).

2 Želio bih se ovom prigodom zahvaliti Ani Marić, kustosici Numizmatičke zbirke Zemaljskog muzeja Bosne i Hercegovine, što mi je omogućila uvid u numizmatički materijal iz Donje Doline te njegovu objavu. Predmeti se čuvaju kao dio Numizmatičke i Prehistorijske zbirke Zemaljskog muzeja. Kratka rasprava o nalazima objavljena je u Bilić 2022, 127 bilj. 63.

3 Ključni rad za datiranje taurišćanskog novca je Kos, Šemrov 2003; vidi također Kos 2007; 2012; Kos, Mirnik 2011. O đurđevačkim kovanicama vidi Bilić 2017a, 230; 2022; u tisku; Bilić, Dizdar 2016, 118–119; Bilić, Falileyev 2021, 11.

4 Kos, Mirnik 2011, 100, 102 (ostava iz Varaždina), Kos 2009, 308–311 (ostava iz Đurđevca), Kos, Šemrov 2003, 385–386, 389–390 (ostava iz Ljubljane), Bilić u tisku (samoborska ostava). Vidi također Gorini 2009, 120 i Schachinger 2020, 60–62, 64, 68.

half of the 2nd century BCE), that is, in the early Lt D1 period (early second half of the 2nd century BCE), at the other end of the time spectrum, the use of Đurđevac tdrs in the second half of the 1st century, perhaps up to ca. 10 BCE, is attested at Gomolava in Syrmia.⁵ In addition, a small hoard of heavily worn die-linked Đurđevac tdrs of (presumably alloyed) silver from Balina glavica (Dalmatia) allowed Peter Kos to infer that they were in circulation in Pannonia ca. 10 BCE–10 CE.⁶ The wear, weight and apparent metal content, as well as their association with counterpart bronze Kapostal tdrs, all point to a later date both for the production and use (as well as deposition) of these coins, but perhaps a somewhat wider timespan would be more in line with the present state of research (as Kos himself acknowledges). The later date of the Đurđevac coins from the Balina glavica hoard is adduced – in terms of evidence intrinsic to the coin type in question – primarily on the strength of the average weight reduction criterion, together with an apparent debasement of the four coins.⁷ The inadequacies of this approach are obvious, for which reason numismatists are always aware of the tenacity of this type of argumentation, but it remains a rather useful heuristic device for grappling with the problems of relative chronology. But, in the main, the argument seems to rely on the date of the counterpart coin type; the Kapostal bronze coins. This must be assessed here in some detail, due to its importance for both relative and absolute chronology of the usage of Đurđevac coins.

The main issue is that the dating of Kapostal coins is actually derived, at least partly, from the Đurđevac coins themselves. At the Szalacska coin workshop, the dies for the production of Kapostal drachms, as well as silver Kapostal coins themselves, were found together with what appeared to be a bronze Đurđevac type.⁸ The obverse of the coin in question was made with TKN obv. die no. 71 (or thereabouts), while the reverse was most likely made with TKN rev. die no. 140.⁹ At the same time, three Đurđevac coins from Balina glavica were made with dies 70-137, while the fourth was

Kr.), na drugom kraju vremenskog spektra, upotreba đurđevačkih tetradrahmi potvrđena je na lokalitetu Gomolava u Srijemu u drugoj polovici 1. st. pr. Kr., možda sve do oko 10. g. pr. Kr.⁵ Također, manja ostava jako istrošenih đurđevačkih tetradrahmi, međusobno povezanih kalupima i izrađenih od srebra (vjerojatno legure bakra s manjim udjelom srebra), iz Baline glavice u Dalmaciji, ponukala je P. Kosa na pretpostavku da su one bile u optjecaju u Panoniji između oko 10. g. pr. Kr. i 10. g.⁶ Istrošenost, težine i – koliko je to moguće procijeniti – sastav metala, kao i njihovo odlaganje usporedo s brončanim tetradrahmama tipa Kapostal, indikacije su kasnijeg datuma i za produkciju i za upotrebu i sklanjanje tih kovanica, ali možda bi nešto širi vremenski okvir bio više u skladu s trenutnim spoznajama o tim tipovima novca (što primjećuje i P. Kos). Kasnija datacija đurđevačkih kovanica iz Baline glavice temelji se – u terminima dokaza izvedenih iz samog tipa kovanica – primarno na kriteriju smanjenja prosječne težine kovnih pločica, zajedno s pretpostavljenom devalvacijom četiriju kovanica.⁷ Problematičnost ovog pristupa je očigledna, što je i razlog što su numizmatičari uvijek svjesni provizorne naravi ovog tipa argumentacije, ali on ostaje relativno korisna heuristička metoda za hvatanje u koštac s problemima relativne kronologije. No, čini se da se argumentacija uglavnom oslanja na datiranje brončanih kovanica tipa Kapostal, odloženih zajedno s đurđevčanicama. Iz tog razloga o toj dataciji se mora ponuditi detaljnija rasprava, poradi njezine važnosti za relativnu i apsolutnu kronologiju korištenja kovanica tipa Đurđevac.

Glavna okolnost je da je vrijeme proizvodnje kapoštalskih kovanica zapravo izvedeno, barem djelomično, iz samih đurđevačkih kovanica. U kovničarskoj radionici iz Szalacske kalupi za izradu kapoštalskih drahmi pronađeni su zajedno sa srebrnim kovanicama istog tipa te, čini se, brončanom tetradrahmom koja pripada đurđevačkom tipu.⁸ Avers te tetradrahme otkovan je kalupom TKN av. 71 (ili sličnim kalupom), dok je revers najvjerojatnije otkovan kalupom TKN rev. 140.⁹ Istovremeno, tri đurđevačke kovanice iz Baline glavice otkovane su kalupima 70-137, dok je četvrta otkovana

5 Bilić 2017b, 462–463, with references. From a poor-quality photograph, it is nevertheless certain that this coin is of the 'classical' Đurđevac type, almost certainly produced with a pair of dies used for the production of the coins from the eponymous hoard. What is more, it can be classified as belonging to Kos' first (earlier) group of Đurđevac hoard coins (TKN 53-119 or thereabouts?). It is thus an early issue, conceivably testifying to the type's longevity – or at least its wide distribution – in terms of circulation (in the widest possible sense of the term, for which see Wigg-Wolf 2011, 303 n. 14), but not in terms of production. On the other hand, it is possible that Gomolava was settled already in the Lt C2 period, while its phase Vla certainly dates from the second half of the 2nd century BCE, i.e. Lt D1 (Mihajlović 2019, 204, 211), so it is impossible to know when the coin actually arrived there. I am not sure how far we can rely upon the published results of these excavations.

6 Kos 2002, 154. Šeparović 2020, 40 uses the name 'Balijina glavica', but I will continue using Kos' name throughout, since it is already widely disseminated in numismatic literature.

7 Kos 2002, 154.

8 Torbágy 1997, 12; 1998, 634; 2000, 38; 2001–2002, 244; 2008, 205.

9 Gohl 1907, 52 Fig. 14. The die identification depends on the veracity of the published drawing, which is impossible to inspect, since the entire assemblage was destroyed during WWII. The main (I would also say, the only) difference between the Szalacska coin and TKN 71 is in the area at the back of the head, where the former appears to have an unusual formation in place of the final curl.

5 Bilić 2017b, 462–463, s literaturom. Bez obzira na slabu kvalitetu objavljene fotografije jasno je da je ovdje riječ o "klasičnom" đurđevačkom tipu, te da je kovanica gotovo sigurno izrađena pomoću kalupa korištenih za kovanje predmeta iz eponimne ostave. Štoviše, moguće ju je klasificirati u Kosovu prvu (raniju) grupu đurđevačkih kovanica iz istoimene ostave (TKN 53-119 ili slično?). Riječ je dakle o ranom kovu, koji možda svjedoči o dugom "životu" đurđevačkog tipa – ili barem širokoj distribuciji – u terminima optjecaja (u najširem mogućem značenju te riječi, za koje vidi Wigg-Wolf 2011, 303 bilj. 14), ali ne i u terminima proizvodnje. S druge strane, moguće je da je Gomolava bila naseljena već tijekom razdoblja Lt C2, dok tamošnja faza Vla sigurno potječe iz druge polovice 2. st. pr. Kr., tj., razdoblja Lt D1 (Mihajlović 2019, 204, 211), tako da nije moguće utvrditi kada je kovanica zapravo stigla na lokalitet. Nisam siguran možemo li se u potpunosti osloniti na objavljene rezultate tih istraživanja.

6 Kos 2002, 154. Šeparović 2020, 40 koristi naziv "Balijina glavica", ali u nastavku će biti korišten Kosov naziv jer je već postao uvriježen u numizmatičkoj literaturi.

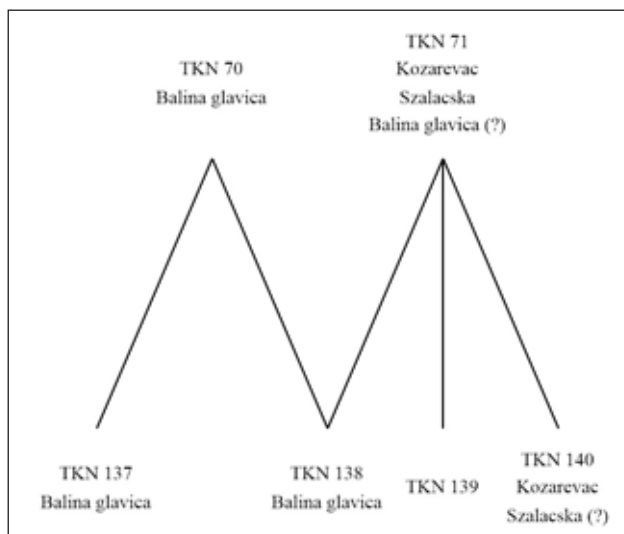
7 Kos 2002, 154.

8 Torbágy 1997, 12; 1998, 634; 2000, 38; 2001–2002, 244; 2008, 205.

9 Gohl 1907, 52 Fig. 14. Identifikacija kalupa ovisna je o vjernosti objavljenog crteža originalu, što je nemoguće provjeriti, jer je sav materijal uništen u Drugom svjetskom ratu. Glavna – rekao bih i jedina – razlika između crteža kovanice iz Szalacske i TKN 71 je u području zatiljka, gdje kovanica iz Szalacske ima nekakav neobičan oblik umjesto završnog pramena.

Fig. 1 Die relations between the Đurđevac coins found at Balina glavica, Kozarevac and Szalacska. Produced with the aid of diagrams.net.

Sl. 1. Povezanost pečata između đurđevačkih kovanica iz Baline glavice, Kozarevca i Szalacske. Izrađeno uz pomoć diagrams.net.



made with the rv. die no 138 (the obverse is too worn to allow a precise identification).¹⁰ None of these dies were present in the Đurđevac hoard, but the die combination 71-140 was present in the Kozarevac hoard,¹¹ which should be distinguished from the Đurđevac hoard.¹² The Kozarevac hoard, in its turn, further contained die-combinations 55-120 (TKN no. 12), 62a-130 (TKN no. 60), 63-131 (TKN nos. 68, 70) and 67-133 (TKN no. 84). The first (conditionally) and last of these four combinations also appear in the Đurđevac hoard, with rv. die no. 130 and obv. die 63 also being frequently present in the latter.¹³ Thus the contents of the Đurđevac and Kozarevac hoards consistently overlap, as do partially the contents of the Kozarevac and Balina glavica hoards (via TKN rv. die 138, which was combined both with obv. dies 70 – present in Balina glavica – and 71 – present in Kozarevac). In addition, the Đurđevac coin from the Szalacska workshop is also die-related to the two latter hoards, once again via TKN rv. die 138, which was combined with both obv. dies 70 and 71, so the die-related Đurđevac coins were found in all three contexts. This suggests a certain contemporaneity of Đurđevac, Kozarevac, Balina glavica and Szalacska coin records, at least in terms of their production date.

Traditional chronology, which is, as already noted, heavily influenced by the chronology of Đurđevac coins, postulates that the Kapostal coins were minted from the mid-2nd century to the late 1st century BCE.¹⁴ With the application of the developmental model, which accords temporal primacy to silver, bronze Kapostal coins were supposed to have been minted in the second half of the 1st century BCE.¹⁵ But, more recently, the starting date for the bronze Kapostal coinage

reversnim kalupom br. 138 (avers ove kovanice je previše istrošen za preciznu determinaciju).¹⁰ Niti jedan od ovih kalupa nije korišten za izradu kovanica iz đurđevačke ostave. No, par kalupa 71-140 bio je korišten za izradu kovanica iz ostave iz Kozarevca,¹¹ koju treba razlikovati od đurđevačke ostave.¹² Kozarevačka ostava, s druge strane, sadržavala je i tetradrahme otkovane kombinacijama kalupa 55-120 (TKN br. 12), 62a-130 (TKN br. 60), 63-131 (TKN br. 68, 70) i 67-133 (TKN br. 84). Prva (uvjetno) i posljednja od ove četiri kombinacije također se pojavljuje u ostavi iz Đurđevca, gdje su u većem broju prisutne i kovanice izrađene reversnim kalupom 130 i aversnim kalupom 63.¹³ Na taj način sastavi ostava iz Đurđevca i Kozarevca sustavno se preklapaju, kao i, djelomično, sastavi ostava iz Kozarevca i Baline glavice (preko TKN rev. kalupa 138, koji je kombiniran s av. kalupom 70 – prisutnim u Balinoj glavici – i 71 – prisutnim u Kozarevcu). Nadalje, đurđevačka tetradrahma iz kovničarske radionice u Szalacskoj također je povezana kalupima s dvije posljednje ostave, ponovno preko TKN rev. kalupa 138, koji je kombiniran s aversnim kalupima 70 i 71, tako da su đurđevačke kovanice povezane kalupima pronađene u sva tri konteksta. To sugerira određenu istovremenost numizmatičkih nalaza iz Đurđevca, Kozarevca, Baline glavice i Szalacske, barem u terminima vremena proizvodnje.

Prema tradicionalnoj kronologiji, koja je, kao što je već napomenuto, snažno pod utjecajem kronologije đurđevačkog tipa, kovanice kapostalskog tipa izrađivane su od sredine 2. do kasnog 1. st. pr. Kr.¹⁴ Primjenom evolucionog modela, koji temporalno prvenstvo daje srebrnom novcu, brončane kovanice tipa Kapostal datirane su u drugu polovicu 1. st. pr. Kr.¹⁵ No, početak kovanja brončanih kovanica

¹⁰ Kos 2002, 149, 150 Figs. 5–8.

¹¹ TKN Đurđevac no. 103 (TKN 130).

¹² Bilić, Falileyev 2021, 11. Indeed, the coins from Kozarevac were thus not included in Kos' study of the Đurđevac hoard (Kos 2009).

¹³ Kos 2009, 291–293, 296–300, 303–307, nos. 8–16, 22–24, 45–75, 98–142.

¹⁴ Torbágy 1997, 13; 1998, 634–635; 2000, 38; 2001–2002, 244, 246; Kos 2002, 152; Militký 2015, 145.

¹⁵ Torbágy 1998, 634; 2000, 39.

¹⁰ Kos 2002, 149, 150 sl. 5–8.

¹¹ TKN Đurđevac br. 103 (TKN 130).

¹² Bilić, Falileyev 2021, 11. Uistinu, kozarevačke kovanice nisu uključene u Kosovu analizu đurđevačke ostave (Kos 2009).

¹³ Kos 2009, 291–293, 296–300, 303–307, br. 8–16, 22–24, 45–75, 98–142.

¹⁴ Torbágy 1997, 13; 1998, 634–635; 2000, 38; 2001–2002, 244, 246; Kos 2002, 152; Militký 2015, 145.

¹⁵ Torbágy 1998, 634; 2000, 39.

was moved back to the late 2nd or early 1st century BCE, which is (almost) contemporary to the starting date of the silver coinage of the same type.¹⁶ In addition, some circumstantial evidence may exist for the earlier starting date of Kapostal coinage as a whole. Once again, this inference is drawn from its correlation with Tauriscan coin types. Thus, Kapostal silver tdrs circulated contemporaneously with the Transdanubian Mászlonypuszta (*Zopfreiter*) type of coins at the site of Medina.¹⁷ Under the influence of the new chronology of Tauriscan coinage, this coin type is now dated to the mid-2nd century BCE.¹⁸ Thus there is a significant overlap in the chronology of Varaždin, Đurđevac, Kapostal and Mászlonypuszta coins, which suggests that they all belong to the coinage produced in the south-eastern Alps, southern Pannonia and Transdanubia at the pinnacle of activity in the mid-2nd century BCE. If indeed the Kapostal bronze coins were struck as early as the 2nd century BCE, which seems likely, then all coins from the Balina glavica hoard might have been issued – but not necessarily deposited – much earlier than presently believed.¹⁹ This conforms to the inference drawn from the analysis of the Đurđevac coins from the hoard outlined immediately above.

Besides the hitherto adduced tentative evidence (Gomolava, Balina glavica), more secure archaeological confirmation for the longevity of Đurđevac coins also exists: a late alloyed silver Đurđevac tdr was found in an early imperial layer at the micro-location of Frankopanska no number in Sisak (Roman Siscia).²⁰ At the same time, silver Đurđevac fractions were used perhaps as late as the Early Principate in Styria,²¹ while a small silver Đurđevac coin found at Magdalensberg can probably be associated with the occupation phases of the site that encompass the Lt D2 period and the early Principate; from the mid-1st century BCE to the mid-1st century CE in absolute dates.²²

In light of these facts, the appearance of local workshops producing copper alloy, alloyed silver or silver-plated coins in the Đurđevac tradition, inspired by original Đurđevac tdrs, but differing from them in a number of important ways, does not seem surprising. The main evidence for the existence of this tradition comes from two sites in north-western Croatia; Bartolovec-Jalžabet (the finds kept at the Archaeological Museum in Zagreb – AMZ) and Donje Orešje-Graci (the

tipa Kapostal pomaknut je nedavno na kasno 2. ili rano 1. st. pr. Kr., što je (gotovo) istovremeno s vremenom početka kovanja srebrnih kovanica istog tipa.¹⁶ Dodatno, moguće je predložiti neizravne dokaze za raniji početak kovanja kapostalskih kovanica općenito. Ponovo, ovi su prijedlozi izvedeni iz korelacije s taurišćanskim tipovima novca. Tako su tetradrahme tipa Kapostal bile u optjecaju istovremeno s transdanubijskim kovanicama tipa Mászlonypuszta (*Zopfreiter*) na lokalitetu Medina.¹⁷ Pod utjecajem nove kronologije taurišćanskih kovanica ovaj tip tetradrahmi sada se datira u sredinu 2. st. pr. Kr.¹⁸ Na taj način postiže se značajno preklapanje kronologije kovanica tipova Varaždin, Đurđevac, Kapostal i Mászlonypuszta, što sugerira da svi oni pripadaju grupi kovanica proizvedenih u jugoistočnoalpskoj regiji, južnoj Panoniji i Transdanubiji, s vrhuncom intenziteta aktivnosti sredinom 2. st. pr. Kr. Ako su zaista brončane kovanice tipa Kapostal nastale tako rano, dakle već u 2. st. pr. Kr., što se čini izvjesnim, tada su sve tetradrahme iz Baline glavice mogle biti otkovane – ne nužno i odložene – mnogo ranije nego što se to sada misli.¹⁹ To odgovara zaključku izvedenom iz gore iznesene analize đurđevačkih kovanica iz istoimene ostave.

Pored dosad iznesenih ne sasvim pouzdanih slučajeva (Gomolava, Balina glavica), postoje i određeni čvršći dokazi o dugotrajnosti optjecaja đurđevačkih kovanica. Tako je kasna đurđevačka tetradrahma, izrađena od legure s manjim udjelom srebra, pronađena u ranocarskom kontekstu na položaju Frankopanska b.b. u Sisku, rimskoj Sisciji.²⁰ Istovremeno, manje srebrne nominale tipa Đurđevac možda su bile korištene sve do ranog principata u Štajerskoj,²¹ dok se mala srebrna đurđevačka kovanica pronađena na Magdalensbergu vjerojatno može povezati s fazama naseljavanja tog lokaliteta, koje obuhvaćaju razdoblje Lt D2 te rani period Principata – u terminima apsolutne kronologije, od sredine 1. st. pr. Kr. do sredine 1. st. pr. Kr.²²

U svjetlu ovih činjenica, pojava lokalnih radionica koje su proizvodile kovanice u đurđevačkoj tradiciji od legura bakra, legura s manjim udjelom srebra ili posrebrene kovanice, inspiriranih izvornim đurđevačkim tetradrahmama, ali različite na niz bitnih načina, ne čini se iznenađujućom. Glavni dokazi za postojanje takve tradicije potječu s dva lokaliteta u sjeverozapadnoj Hrvatskoj, Bartolovec-Jalžabet (nalazi se čuvaju u AMZ-u) i Donje Orešje-Graci (nalazi se čuvaju u Muzeju Sveti Ivan Zelina). Analogno sa situacijom na drugim

16 Torbágy 2013, 68. Unfortunately, no arguments were offered for this chronological shift. It might be due to the fact that the earlier group of bronze Kapostal coins are considered related to a later group of silver ones and to the suggestion that they were struck simultaneously (Torbágy 1998, 633–634).

17 Torbágy 2001–2002, 244.

18 Torbágy 2014, 177; 2016, 131. The Varaždin coins were overstruck by the Mászlonypuszta (*Zopfreiter*) type of coins (eight such pieces in the Nagyhorcsökpuszta hoard) (Pink 1939, 98; Torbágy 1997, 11–12 with Taf. 1.12; 2000, 33; 2001–2002, 243 with fig. 1; 2014, 177 n. 20; 2016, 129–130 with figs. 7 and 13 on p. 133).

19 Kos 2002, 154.

20 Bilić 2017b, 462, 468 no. 24; 2018, 269 no. 3.

21 Schachinger 2001, 18, 21 no. 11, 28–29; however, both the identification of the coin and the layer in which it was found are placed under a question mark by Schachinger.

22 Krmnicek 2010, 17.

16 Torbágy 2013, 68. Nažalost, ovaj kronološki pomak nije poduprijeo specifičnim argumentima. Moguće je da je on uzrokovan činjenicom što se smatra kako je ranija grupa brončanih kovanica tipa Kapostal povezana s kasnijom grupom srebrnih kovanica istog tipa te prijedlogom po kojem su te dvije grupe kovane istovremeno (Torbágy 1998, 633–634).

17 Torbágy 2001–2002, 244.

18 Torbágy 2014, 177; 2016, 131. Kovanice tipa Varaždin prekovane su tetradrahmama tipa Mászlonypuszta (*Zopfreiter*) (osam prekova u ostavi iz Nagyhorcsökpuszte) (Pink 1939, 98; Torbágy 1997, 11–12 i Taf. 1.12; 2000, 33; 2001–2002, 243 i fig. 1; 2014, 177 bilj. 20; 2016, 129–130 i figs. 7 i 13 na str. 133).

19 Kos 2002, 154.

20 Bilić 2017b, 462, 468 br. 24; 2018, 269 br. 3.

21 Schachinger 2001, 18, 21 br. 11, 28–29. Ipak, i identifikacija kovanice i sloj u kojem je pronađena stavljeni su pod znak pitanja.

22 Krmnicek 2010, 17.

finds kept at the Museum Sveti Ivan Zelina). By analogy with other regions faced with the onslaught of Roman power, the pressure or influence of the Roman state and its expansionist policy appears to have instigated a number of changes in local minting practices (on this see more below). The gradual debasement of silver coinage appears to have been introduced, with the latest surviving types of Late Iron Age (LIA) coins – the Samobor- and Đurđevac-type tdrs – containing no silver whatsoever.²³ Weight and size reduction were apparently introduced simultaneously, resulting in coins that bear only a vague iconographical resemblance to Tauriscan coins of the mid-2nd century BCE. With this in mind, it seems more appropriate to introduce the term ‘Đurđevac tradition’ to discussions of the later locally produced debased and reduced coins (both in weight and in size) derived from the earlier ‘regular’ Đurđevac coins. The process is reflected in the numismatic record of the Bartolovec-Jalžabet site (near Varaždin), with its final phase observable in the numismatic record of the Donje Orešje-Graci site (near Sveti Ivan Zelina), both in north-western Croatia. It is also attested by several late coins issued in the Đurđevac tradition found on both banks of the Kupa in Sisak, ancient Segestica/Segesta/Siscia, the most important settlement in the region. Finally, the archaeologically excavated hillfort site of Kuzelin on Medvednica, near Zagreb, has provided some important information on the production of late Đurđevac coins in south-western Pannonia.

The Bartolovec-Jalžabet numismatic record offers a rare set of Đurđevac coins that consists of a number of exclusively copper alloy or alloyed silver tetradrachms, in other words, of imitations of standard Đurđevac tdrs or coins produced in the Đurđevac tradition.²⁴ The die-links established between seven of the total number of twelve LIA coins strongly suggest that at least these seven, if not all twelve, indeed represent a hoard.²⁵ The coins, both those die-linked and others, were made predominantly of copper alloy or alloyed silver, with several specimens having a visible silverish surface, perhaps due to the use of a silver-looking alloy, but also perhaps due to the presence of actual silver in the alloy. In this case, as in other similar cases that will be discussed in the remainder of this paper, it is hard to determine whether the silver(-looking) surface is the (un)intentional product of the technological process of coin production (when speaking of coins with a silver-rich surface, the possible causes could be the cooling procedure of the alloy or mechanical-stress-induced diffusion, but also intentional chemical treatment of the coin surface, so-called ‘depletion silvering’, or simply the application of a silver plating). A related phenomenon is the potentially intentional selection of a tin-lead alloy for its silverish appearance, further enhanced by processes called

područjima koja su bila suočena s rimskom silom, čini se da je pritisak ili utjecaj rimske države i njezine ekspanzionističke politike potakao niz promjena u lokalnim aktivnostima vezanima uz kovanje novca (o ovome više kasnije). Čini se da je jedna od posljedica bilo uvođenje postupene devalvacije srebrnog novca, da bi najkasniji preživjeli tipovi mlađeželjeznodobnih kovanica – kasne tetradrahme samoborskog i đurđevačkog tipa – bili izrađivani bez imalo srebra u leguri.²³ Redukcije u težini i veličini su izgledno bile uvedene istovremeno, što je rezultiralo kovanicama koje su pokazivale samo slabu ikonografsku sličnost taurišćanskim kovanicama sredine 2. st. pr. Kr. Uzimajući ove okolnosti u obzir, činilo se prikladnim uvesti termin “đurđevačka tradicija” u raspravu o kasnim lokalnim devalviranim i reduciranim u težini i veličini kovanicama izvedenima iz ranijih “regularnih” đurđevačkih tetradrahmi. Ovaj proces odražava se u numizmatičkim nalazima s lokaliteta Bartolovec-Jalžabet u blizini Varaždina, a njegova završna faza primjetna je u numizmatičkim nalazima s lokaliteta Donje Orešje-Graci u blizini Svetog Ivana Zeline (oba lokaliteta nalaze se u sjeverozapadnoj Hrvatskoj). Proces se odražava i u nekoliko kasnih kovanica izrađenih u đurđevačkoj tradiciji pronađenih na obje obale Kupe u Sisku, gdje je pretpovijesna Segest(ik)a/Siscija predstavljala najvažnije naselje u regiji. Naposlijetku, arheološki istraženi visinski lokalitet Kuzelin na Medvednici u blizini Zagreba pruža niz važnih informacija o proizvodnji kasnih đurđevačkih kovanica u jugozapadnoj Panoniji.

Numizmatički nalazi s lokaliteta Bartolovec-Jalžabet sadrže rijedak primjer grupe đurđevačkih kovanica koja se sastoji isključivo od tetradrahmi izrađenih od bakrene legure ili legure s manjim udjelom srebra – drugim riječima, od imitacija standardnih đurđevačkih kovanica ili kovanica izrađenih u đurđevačkoj tradiciji.²⁴ Ustanovljene povezanosti kalupa, prisutne među sedam od ukupno dvanaest mlađeželjeznodobnih kovanica, snažno sugeriraju da barem tih sedam, ako već ne svih dvanaest, predstavljaju ostavu.²⁵ Sve kovanice, dakle i one koje su povezane kalupima i one koje nisu, načinjene su uglavnom od bakrene legure ili legure s manjim udjelom srebra, dok nekoliko primjeraka ima vidljivu srebrnkastu površinu, što može biti posljedica upotrebe legure koja nalikuje srebru ili prisustva samog srebra u leguri. U ovom slučaju, kao i u drugim sličnim situacijama o kojima će se raspravljati u nastavku teksta, teško je odrediti je li srebrn(kast), a površina (slučajna ili namjerna) posljedica tehnološkog postupka izrade kovanica (kod kovanica s površinom obogaćenom srebrom mogući uzroci su posljedice hlađenja legure ili mehanička difuzija uzrokovana udarcem, ali također i svjesni kemijski tretman površine kovanice koji se naziva deplecijsko posrebrjenje ili, jednostavno, posrebrjenje); povezana pojava je potencijalno namjerni odabir legure kositra i olova zbog njezinog srebrnkastog izgleda, koji je dalje naglašen procesima nazvanim “znojenje kositra”

23 Bilić 2022, 126, 131–133 (AMZ inv. nos. A6419 and A8866, both Samobor A coins from Sisak; Sisak-Railway Station PN 2085).

24 A fuller study in Bilić 2022, 127–129 and Bilić forthcoming.

25 It was provisionally treated as such in Bilić 2017a and Bilić, Nađ 2017.

23 Bilić 2022, 126, 131–133 (AMZ inv. br. A6419 i A8866, obje kovanice tipa Samobor A iz Siska; Sisak-Željeznički kolodvor PN 2085).

24 Opsežnija analiza u Bilić 2022, 127–129 i Bilić u tisku.

25 Nalaz je provizorno tretiran kao ostava u Bilić 2017a i Bilić, Nađ 2017.

'tin-sweat' and 'lead-sweat', producing tin- and lead-enriched surfaces of a silverish appearance.²⁶ Indeed, it appears that the actual silver content was not a decisive factor in determining the value of the coin, at least not in most contexts in which the coins were used (this observation would probably exclude their hypothetical use in market exchange). Their value (not necessarily monetary value) was rather estimated by their appearance, so a silver-looking coin (whether made of a silver-imitating metal or having a silver-rich surface) could pass as an actual precious metal coin, regardless of its actual metal content.²⁷ In any case, the poor workmanship further suggests that we are dealing here with 'irregular' issues, in other words imitations of 'regular' Đurđevac coins, and thus with coins produced in the Đurđevac tradition, but not Đurđevac coins proper. The average weight of the 12 coins is 9.57 g, which is fairly close to the average weight of Đurđevac coins proper.²⁸ Thus these 'irregular' issues conform fairly closely to the 'official' weight of Đurđevac issues, suggesting their contemporaneous production, and thus a rather early date, perhaps even the early second half of the 2nd century BCE, when the Đurđevac coins were first issued. At least the 'silver'-enriched coins and/or those that correspond in weight to Đurđevac tdrs were intended to pass as regular Đurđevac tdrs, and we can presume that this also applies to the remainder of the coins.²⁹

Imitations in copper alloy found at the Donje Orešje-Graci site are another example of local coins produced in the Đurđevac tradition, but these cannot be considered early imitations.³⁰ It does not appear that metrological considerations played any role in the production of these coins, which challenges their potential affiliation with the monetary system of the Taurisci. The Donje Orešje-Graci coins testify to the process of extreme debasement (their appearance suggests that they contained little or almost no silver whatsoever) and weight (and size) reduction of Đurđevac tdrs.

Several examples of coins produced in the Đurđevac tradition are part of the numismatic record of Sisak, ancient Segestica, undisputedly the most important urban or proto-urban centre of the region.³¹ Some are kept in public collections,³² others were found in archaeological excavations on both banks of the Kupa River. One of the latter was found

ili "znojenje olova", s posljedičnom površinom obogaćenom kositrom i olovom, što joj daje srebrnkast izgled.²⁶ Uistinu, čini se da stvarni udio srebra nije bio odlučujući faktor u određivanju vrijednosti kovanice, barem ne u većini konteksta u kojima su kovanice bile korištene (ova činjenica vjerovatno isključuje njihovu hipotetsku upotrebu u tržišnoj razmjeni). Njihova vrijednost (ne nužno monetarna vrijednost) bila je procjenjivana njihovim izgledom te je srebrnkasta kovanica (bilo da je izrađena od legure koja je imitirala srebro ili joj je površina obogaćena srebrom) mogla proći kao kovanica izrađena od plemenitog metala, bez obzira na njezin stvarni sastav metala.²⁷ U svakom slučaju, slaba izvedba kovanica dalje sugerira da ovdje susrećemo "neregularne" kovove, drugim riječima, imitacije "regularnih" izdanja đurđevčana, tj. kovanice izrađene u đurđevačkoj tradiciji, ali ne autentične kovanice tipa Đurđevac. Prosječna težina svih dvanaest kovanica s lokaliteta Bartolovec-Jalžabet je 9,57 g, što je prilično blizu prosječnoj težini autentičnih kovaniica tipa Đurđevac.²⁸ Tako ova "neregularna" izdanja prilično vjerno slijede "službenu" težinu đurđevačkih tetradrahmi, što sugerira njihovu istovremenost, te posljedično, prilično rani datum njihovog nastanka, možda čak rano 2. st. pr. Kr., kada su otkovani đurđevčani iz istoimene ostave. Izvjesno je da su barem one kovanice koje imaju površinu obogaćenu "srebrom" te one koje u težini odgovaraju đurđevačkim tetradrahmama imale biti tretirane kao regularne đurđevačke kovanice, a možemo pretpostaviti da isto vrijedi i za ostale kovanice iz nalaza.²⁹

Drugi primjer lokalnih kovanica izrađenih u đurđevačkoj tradiciji nalazimo u imitacijama izrađenima od legure bakra pronađenima na lokalitetu Donje Orešje-Graci; no, njih ne možemo smatrati ranim imitacijama.³⁰ Čini se da metrološka razmatranja nisu igrala nikakvu ulogu u proizvodnji ovih kovanica, što predstavlja znatnu prepreku u pokušaju njihovog uključivanja u monetarni sustav Tauriska. Kovanice s lokaliteta Donje Orešje-Graci svjedoče procesu ekstremne devalvacije (prema njihovom izgledu jasno je da sadrže malo ili nimalo srebra) te redukciji u težini i veličini đurđevačkih tetradrahmi.

Nekoliko primjeraka kovanica izrađenih u đurđevačkoj tradiciji dio su korpusa numizmatičkih nalaza iz Siska, mlađeželjeznodobne i antičke Segest(ik)e/Siscije, neosporno najvažnijeg urbanog ili proto-urbanog središta regije.³¹ Dio ih se čuva u javnim zbirkama,³² dok su druge pronađene u

26 Šmit *et al.* 2020, 1–2/12, 6–8/12, 10/12, cf. Šmit, Kos 1984, 418; Woytek, Blet-Lemarquand 2017, 212–213; Butcher 2020, 11; George 2020, 80–82, 90; Ponting 2020, 34–38, 40. This phenomenon is exemplified by the coin from Sisak (AMZ inv. no. A8866), in which the share of tin on the coin surface is six times greater than its share in the metal nearer the core (Bilić 2022, 132–133).

27 Šmit *et al.* 2020, 8/12. For a parallel case involving gold coins in Britain, see Creighton 2000, 38, 40.

28 TKN, Synchronogramm Ostnoriker; Kos 2002, 154; 2009, 308–310.

29 Since there is little difference in alloy composition between the coins that now appear silver-enriched and those that do not, it stands to reason that both groups were originally silverish in appearance. The same in general applies to both the die-related and unrelated coins.

30 A fuller study in Bilić 2022, 129–130 and Bilić forthcoming.

31 A fuller study in Bilić 2022, 130–134 and Bilić forthcoming.

32 Inv. no. A6757 = Bilić 2017b, 468 no. 21, 8.43 g; inv. no. G2195 = Bilić 2017b, 468 no. 23, 9.76 g.

26 Šmit *et al.* 2020, 1–2/12, 6–8/12, 10/12, cf. Šmit, Kos 1984, 418; Woytek, Blet-Lemarquand 2017, 212–213; Butcher 2020, 11; George 2020, 80–82, 90; Ponting 2020, 34–38, 40. Ova pojava dobro je vidljiva na primjerku iz Siska (AMZ inv. br. A8866), gdje je udio kositra na površini kovanice šest puta veći u odnosu na udio u metalu bliže jezgri (Bilić 2022, 132–133).

27 Šmit *et al.* 2020, 8/12. Za analognu situaciju sa zlatnim kovanicama u Britaniji vidi Creighton 2000, 38, 40.

28 TKN, Synchronogramm Ostnoriker; Kos 2002, 154; 2009, 308–310.

29 Kako je mala razlika u sastavu legure između kovanica koje danas izgledaju obogaćene srebrom i one koje tako ne izgledaju, čini se razumnim pretpostaviti da su obje grupe izvorno izgledale srebrnkasto. Isto je primjenjivo i na kovanice međusobno povezane kalupima te one koje nisu na taj način povezane.

30 Opsežnija analiza u Bilić 2022, 129–130 i Bilić u tisku.

31 Opsežnija analiza u Bilić 2022, 130–134 i Bilić u tisku.

32 Inv. br. A6757 = Bilić 2017b, 468 br. 21 (8,43 g); inv. br. G2195 = Bilić 2017b,

in a La Tène deposit,³³ another in an early imperial context,³⁴ while it is unclear whether yet another was found in a La Tène or early Imperial deposit.³⁵ The fourth coin was found on the opposite (i.e. right) bank of the Kupa, more precisely at Pogorelec, the site of the major La Tène settlement most likely involved in the conflict with the Romans in the 30s BCE.³⁶ While the piece found in an early Imperial context has offered solid archaeological evidence for the continued presence of late La Tène coins produced in the Đurđevac tradition in the early post-LIA period, it appears highly unlikely that this coin, or any other coin made in this tradition, was actually produced after the Roman conquest, and it does not seem warranted, on present evidence, to postulate their potential use in the Roman monetary system of the early Imperial period. They were probably produced at various points during the second half of the 2nd and first half of the 1st centuries BCE, perhaps as a response to the mounting pressure exercised by Rome as its expansionist policy approached the region.

In addition to this group of coins, three more Tauriscan, apparently debased and reduced, coins were found at Sisak. Two of these belong to the Samobor A type.³⁷ These finds suggest that even a coin type with a much more circumscribed distribution might have undergone a process of debasement and weight reduction, although certainly not on the scale of Đurđevac coins.³⁸ The same applies to the third coin from Sisak, presumably a copper alloy SC 23 type found at the Keltsko micro-location at the site of Pogorelec.³⁹ Finally, another copper alloy Tauriscan coin that belongs to this group in general terms was found during dredging of the Kupa in Sisak.⁴⁰ Its obverse is somewhat reminiscent of Liščić's Samobor type I variant 'g' (= TKN Samobor B obv. die 37),⁴¹ but perhaps not enough to classify it to this subgroup. I am somewhat hesitant to categorise it outright as a coin produced in the Đurđevac tradition, but it certainly generally belongs, in terms of alloy composition and style (if not in terms of weight and/or size reduction), to the same chronological horizon.

The numismatic record of ancient Segestica is thus an important part of the puzzle reflecting the production and distribution of the coins inspired by the Đurđevac issues proper, as well as by other Tauriscan coin types. The fact that these coins were accepted – I must emphasise once again that this does not refer to an acceptance as currency

arheološkim istraživanjima na obje obale Kupe. Među ovim drugima, jedna je pronađena u kasnolatskom kontekstu,³³ jedna u ranocarskom,³⁴ dok je za treću nejasno pripada li mlađeželjeznodobnom ili ranocarskom kontekstu.³⁵ Četvrta je pronađena na suprotnoj desnoj obali Kupe, preciznije, na Pogorelcu, lokaciji značajne mlađeželjeznodobne naseobine najvjerojatnije uključene u sukobe s Rimljanima tijekom 30-ih godina pr. Kr.³⁶ Dok primjerak pronađen u ranocarskom kontekstu pruža čvrstu arheološku potkrjepu kontinuiranom prisustvu kasnolatskih kovanica izrađenih u đurđevačkoj tradiciji tijekom ranog postlatenskog razdoblja, čini se malo vjerojatnim da je ova tetradrahma, ili bilo koja kovanica proizvedena u toj tradiciji, bila otkovana nakon rimskog osvajanja te se, prema trenutno dostupnim informacijama, ne čini opravdanim pretpostaviti njihovu potencijalnu upotrebu unutar rimskog monetarnog sustava ranocarskog razdoblja. Te kovanice su vjerojatno bile izrađivane u različitim prigodama tijekom druge polovice 2. i prve polovice 1. st. pr. Kr., možda kao odgovor na rastući pritisak Rima dok se njegova ekspanzionistička politika približavala regiji.

Uz ovu skupinu kovanica još su tri taurišćanske, čini se devalvirane i reducirane u težini, kovanice pronađene u Sisku. Dvije je moguće klasificirati kao tetradrahme tipa Samobor A.³⁷ Ti nalazi također sugeriraju da je čak i tip kovanice s ograničenijom distribucijom mogao proći proces devalvacije i redukcije u težini, iako svakako ne na razini na kojoj su taj proces prošle đurđevačke tetradrahme.³⁸ Isto se odnosi i na treću kovanicu iz Siska, vjerojatno načinjenu od legure bakra, tipa SC 23, pronađenu na položaju Keltsko na Pogorelcu.³⁹ Konačno, još jedna taurišćanska kovanica načinjena od legure bakra koja općenito pripada ovoj grupi pronađena je tijekom jaružanja Kupe u Sisku.⁴⁰ Njezin avers podsjeća na Liščićev tip Samobor A, varijanta "g" (= TKN Samobor B av. kalup 37),⁴¹ ali vjerojatno ne dovoljno da bi ju se bez zadržke klasificiralo u ovu podgrupu. Iako treba zadržati oprez prilikom kategorizacije ove kovanice kao tetradrahme izrađene u đurđevačkoj tradiciji, ona generalno neosporno pripada – u terminima sastava metala i stila (ako već ne u terminima redukcije u težini i veličini) – istom kronološkom horizontu.

Numizmatički nalazi mlađeželjeznodobne i antičke Segest(ik)e/Siscije su na ovaj način bitan dio slagalice koja reflektira proizvodnju i distribuciju kovanica inspiriranih "regularnim" đurđevačkim tetradrahmama, kao i drugim

33 Bilić 2018, 268–269, no. 2; Škrkulja 2018, 120, 122.

34 Bilić 2018, 269, no. 3; Škrkulja 2018, 122–123.

35 Bilić, Nađ forthcoming.

36 Bilić 2020, 153, Fig. 97.2 on p. 152.

37 Inv. no. A8866 = Bilić 2017b, 467 no. 15 (9,27 g); inv. no. A6419 = Bilić 2017b, 468 no. 17 (7,68 g).

38 With respect to the alloy composition of the coins from the Samobor hoard itself, the only data is found in Hrčić 1943, 30 (cf. Liščić 1977–1978, 239, 253), where a chemical analysis of a Samobor A coin (AMZ inv. no. A10433, TKN Samobor 35–93A) yielded the following composition: Cu 59.57%, Ag 30.97%, Pb 5.04%, Sn 3.27%.

39 Inv. no. GMS 21686 = Bilić 2017b, 467 no. 6 (9,37 g), wrongly identified.

40 AMZ inv. no. A7021 (9,37 g).

41 Liščić 1977–1978, Pl. II.14.

468 br. 23 (9,76 g).

33 Bilić 2018, 268–269, br. 2; Škrkulja 2018, 120, 122.

34 Bilić 2018, 269, br. 3; Škrkulja 2018, 122–123.

35 Bilić, Nađ u tisku.

36 Bilić 2020, 153, sl. 97.2 na str. 152.

37 Inv. br. A8866 = Bilić 2017b, 467 nr. 15 (9,27 g); inv. br. A6419 = Bilić 2017b, 468 br. 17 (7,68 g).

38 Što se tiče sastava legure kojom su izrađivane kovne pločice kovanica iz same samoborske ostave, jedini podaci su oni iz Hrčić 1943, 30 (cf. Liščić 1977–1978, 239, 253), gdje je kemijska analiza jedne kovanice tipa Samobor A (AMZ inv. br. A10433, TKN Samobor 35–93A) dala sljedeće rezultate: Cu 59,57 %, Ag 30,97 %, Pb 5,04 %, Sn 3,27 %.

39 Inv. br. GMS 21686 = Bilić 2017b, 467 br. 6 (9,37 g), pogrešno determiniran.

40 AMZ inv. br. A7021 (9,37 g).

41 Liščić 1977–1978, T. II.14.

in market exchange – in such an important (proto-)urban centre suggests that their value was indeed estimated by their appearance, regardless of the actual metal content of the flans.

At the same time, the coin record of Kuzelin hillfort, consisting of a large number of Tauriscan coins, indicates the importance of the site for our understanding of the production and distribution of LIA coins in the region.⁴² Thus, a die link between some of the coins found at Kuzelin and other late Tauriscan coins found elsewhere in the region suggests the existence of a local variant of late Đurđevac coins, perhaps produced at the very site. For present purposes, it should be noted that all Kuzelin coins were found in a secure archaeological context of the late La Tène stratum of the site, widely distributed throughout the hillfort.⁴³ It seems that the archaeological material from the site belongs exclusively to the La Tène D1 phase,⁴⁴ in absolute dates ca. 150/130–70/50 BCE, which would thus make the latter date the *terminus ante quem* for the appearance of the types of coins found at Kuzelin. At the same time, this archaeological period would naturally provide the deposition context for the Kuzelin finds.

The obverse die used to produce the coin found at Kuzelin in the flooring of an LIA house⁴⁵ is identical to the die used to produce another coin from Kuzelin,⁴⁶ as well as the coin found in the context of a late La Tène settlement in Zagreb's Upper Town.⁴⁷ In addition, the same obverse die was used to produce an unprovenanced coin kept at the AMZ,⁴⁸ which shares the same pair of dies with two coins found by metal detectors allegedly on two hillforts in modern Lika; Gradina at Bruvno⁴⁹ and Obljaj.⁵⁰ This group of coins (six in total), which all share an obverse die, while at the same time having been produced with two or three reverse dies, might be classified in a group of late Đurđevac coins for which I propose the name 'Kuzelin A', on account of the fact that two of these coins are ascertained to have been found at the Kuzelin hillfort.⁵¹ Their presence suggests the existence of a regional production centre or travelling workshop, active in the Zagreb region during the Lt D1 period. This situation should be understood as an uninterrupted continuation of previous tradition of coin production attested in the region for the Lt C2 and/or Lt C2/D1 period.

taurišćanskim izdanjima. Činjenica da su te kovanice bile prihvaćene – još jednom vrijedi naglasiti da se ovo ne odnosi na prihvaćanje kao valute u tržišnoj razmjeni u ovako važnom (proto-)urbanom središtu sugerira da je njihova vrijednost uistinu procjenjivana na temelju njihovog izgleda, bez obzira na stvarni sastav metala od kojeg su izrađene kovne pločice.

U isto vrijeme, numizmatički nalazi s gradinskog položaja Kuzelin, koji sadrže znatan broj taurišćanskih kovanica, naznačuju važnost ovog lokaliteta u razumijevanju produkcije i distribucije mlađeželjeznodobnih kovanica u regiji.⁴² Tako povezanost među kalupima između nekih kovanica pronađenih na Kuzelinu i drugih kasnijih taurišćanskih kovanica pronađenih drugdje u regiji sugerira postojanje lokalne varijante kasnih đurđevačkih kovanica koja je možda bila otkovana upravo na tom lokalitetu. Sve kovanice s Kuzelina pronađene su u arheološkom kontekstu tj. kasnolatskom sloju lokaliteta, raspršene po cijelom gradinskom položaju.⁴³ Čini se da se arheološki materijal s lokaliteta može datirati isključivo u period Lt D1,⁴⁴ u terminima apsolutnih datuma oko 150/130–70/50. pr. Kr., što bi dakle ovaj posljednji datum činilo kao *terminus ante quem* za pojavu tipova kovanica pronađenih na Kuzelinu. U isto vrijeme, ovaj arheološki period prirodno bi predstavljao kontekst odlaganja kuzelin-skih nalaza.

Aversni kalup upotrijebljen za kovanje tetradrahme pronađene u podnici mlađeželjeznodobne kuće⁴⁵ identičan je kalupu upotrijebljenom za kovanje još jedne tetradrahme s Kuzelina,⁴⁶ kao i kovanice pronađene u kontekstu kasnolatskog naselja na zagrebačkom Gornjem gradu.⁴⁷ Nadalje, isti aversni kalup upotrijebljen je za kovanje tetradrahme bez zabilježenog mjesta nalaza koja se čuva u AMZ-u,⁴⁸ a koja dijeli kombinaciju kalupa s dvije kovanice pronađene detektorima metala, navodno na dvije gradine u Lici, Gradini kod Bruvna⁴⁹ i Obljaju.⁵⁰ Ova grupa kovanica (ukupno šest), koje sve dijele aversni kalup, a istovremeno su otkovane pomoću dva ili tri reversna kalupa, mogu se klasificirati kao tip kasnih đurđevačkih kovanica za koje je predložen naziv "Kuzelin A", poradi činjenice što su dvije takve kovanice nađene upravo na Kuzelinu.⁵¹ Njihovo prisustvo na tom lokalitetu sugerira postojanje regionalnog centra proizvodnje ili putujuće kovničarske radionice, aktivne u zagrebačkoj regiji tijekom perioda Lt D1. Ovu situaciju treba razumjeti kao neprekinut nastavak ranije tradicije kovanja novca u regiji, koja je potvrđena tijekom Lt C2 i/ili Lt C2/D1 perioda.

42 A fuller study in Bilić 2022, 136–138 and Bilić forthcoming.

43 Sokol 2001, 14.

44 Dizdar 2011, 87–88.

45 Sokol 2001 no. 4 = MPS 169/94 (in publications) = MPS 4184 (actual inv. no.). No. 53/2002 (MPS, uninventoried).

47 MGZ 499 A; Škoberne 1994, 32, 67–68; for the context cf. Majnarić-Pandžić 1994, 3, 11; 2009, 202, 205. Unfortunately, there is no information on the precise depositional context of this find. The site in question is the Zagreb City Museum-Poor Clares (Clarisse) Monastery.

48 AMZ inv. no. A919, weight 8.34 g, containing only 5.5% silver.

49 8.02 g (unpublished). I am grateful to Mato Ilkić for bringing my attention to, and providing data for, this coin.

50 7.99 g (Cesarik, Kramberger 2018, 125, 138–139 no. 44).

51 Bilić forthcoming.

42 Opsežnija analiza u Bilić 2022, 136–138 i Bilić u tisku.

43 Sokol 2001, 14.

44 Dizdar 2011, 87–88.

45 Sokol 2001 br. 4 = MPS 169/94 (u publikacijama) = MPS 4184 (stvarni inv. br.). Br. 53/2002 (MPS, neinventirano).

47 MGZ 499 A; Škoberne 1994, 32, 67–68; za arheološki kontekst cf. Majnarić-Pandžić 1994, 3, 11; 2009, 202, 205. Nažalost, precizne informacije o kontekstu odlaganja ove kovanice nisu dostupne. Lokalitet o kojem je riječ je Muzej Grada Zagreba-Samostan Klarisa.

48 AMZ inv. br. A919, težina 8,34 g, legura sadrži samo 5,5 % srebra.

49 8,02 g (neobjavljeno). Zahvaljujem Mati Ilkiću što me upozorio na postojanje ovog nalaza i što mi je dostavio podatke o kovanici.

50 7,99 g (Cesarik, Kramberger 2018, 125, 138–139 br. 44).

51 Bilić u tisku.



Fig. 2. Coins of the Kuzelin A type (1–2 Kuzelin (1 MPS 4184, photo by the author; 2 MPS uninventoried, photo by the author with permission of the MPS); 3 Zagreb Upper Town (MGZ 499 A, photo by M. Gregl; with permission of the MGZ); 4 AMZ A919 (photo by I. Krajcar); 5 Obljaj (private collection, photo by V. Kramberger; published in *Cesarik, Kramberger 2018*, 139 no. 44); 6 Gradina at Bruvno (private collection, photo by M. Ilkić, reproduced with permission)). Scale 1:1.

Sl. 2. Kovanice tipa Kuzelin A (1–2 Kuzelin (1 MPS 4184, fotografirao autor; 2 MPS neinventirano, fotografirao autor; uz dozvolu MPS); 3 Gornji grad (MGZ 499 A, fotografirao M. Gregl; uz dozvolu MGZ); 4 AMZ A919 (fotografirao I. Krajcar); 5 Obljaj (private collection, photo by / privatna zbirka, fotografirao V. Kramberger; published in / objavljeno u *Cesarik, Kramberger 2018*, 139 no. 44); 6 Gradina at Bruvno / kod Bruvna (private collection, photo by / privatna zbirka, fotografirao M. Ilkić, reproduced with permission / reproducirano uz dozvolu)). Scale / mjerilo 1:1.

Furthermore, another copper alloy imitation belonging to a group of coins that can be subsumed under an umbrella term 'coins produced in the Đurđevac tradition' was also found at Kuzelin.⁵² The reverse die used to produce this piece is clearly related to the one used for another late Đurđevac coin excavated at Kuzelin,⁵³ once again suggesting the existence of a local variant of Đurđevac coins perhaps produced in some connection with – or indeed at – the site. In addition, the AMZ holds another similar coin, unfortunately of unknown provenance.⁵⁴ Even though it is not possible to ascertain the find site of this coin, it seems safe to presume that it was found, as well as produced, somewhere in the region. These three coins might be classified in a group of late Đurđevac coins for which I proposed the name 'Kuzelin B', on account of the fact that two of the three coins from this group were found at the Kuzelin hillfort.⁵⁵

It appears that the numismatic record from Kuzelin testifies to both the debasement and weight reduction of Tauriscan, in the first place Đurđevac, coinage. Since it seems that the archaeological material from the site belongs exclusively to the La Tène D1 phase, in absolute dates ca. 150/130–70/50 BCE, it is likely that both debasement and weight reduction were already occurring in this early period, although certainly not so radically as that evidenced at the Donje Orešje-Graci site.

The chronological position of archaeological finds from Kuzelin corresponds to the absolute chronology (as understood at present) of the Late Iron Age coins found at this site. In contrast, the LIA coins from the Donje Orešje-Graci site can hardly belong to such an early period (even though

Nadalje, još jedna imitacija od legure bakra koja pripada grupi kovanica koje se mogu podvesti pod široku kategoriju "kovanica izrađenih u đurđevačkoj tradiciji" pronađena je na Kuzelinu.⁵² Reversni kalup korišten za kovanje ove tetradrahme očito je u vezi s kalupom upotrijebljenim za kovanje još jedne kasne đurđevačke kovanice pronađene na Kuzelinu,⁵³ što sugerira postojanje još jedne lokalne varijante đurđevačkih kovanica, koje su možda otkovane u nekoj vezi s lokalitetom ili čak na samom lokalitetu. Uz to, u AMZ-u se čuva još jedna slična kovanica, nažalost bez poznatog mjesta nalaza.⁵⁴ No, iako nije moguće sa sigurnošću utvrditi njezino mjesto nalaza, čini se opravdanim pretpostaviti da je ona pronađena, a i otkovana, negdje u regiji. Ove tri kovanice mogu se klasificirati kao grupa kasnih đurđevačkih tetradrahmi za koju je predložen naziv "Kuzelin B", poradi činjenice što su dvije od tri kovanice ove grupe pronađene upravo na Kuzelinu.⁵⁵

Čini se da numizmatički nalazi s Kuzelina svjedoče devalvaciji i redukciji težine taurišćanskih, u prvom redu đurđevačkih, kovanica. Kako arheološki materijal s lokaliteta potječe isključivo iz perioda Lt D1, u apsolutnim datumima oko 150/130–70/50. pr. Kr., izvjesno je da su devalvacija i redukcija težine bili aktualni već u ovom ranom razdoblju, iako sigurno ne u tako radikalnoj mjeri kao što je to dokumentirano na lokalitetu Donje Orešje-Graci.

Uz to, kronološki položaj arheoloških nalaza s Kuzelina odgovara apsolutnoj kronologiji (u onom obliku kako je ona u ovom trenutku prihvaćena) mlađeželjeznodobnih kovanica pronađenih na lokalitetu. Nasuprot tome, mlađeželjeznodobne kovanice s lokaliteta Donje Orešje-Graci teško mogu pripadati tako ranom razdoblju (iako se to ne može

⁵² MPS 7377 (9,70 g).

⁵³ Sokol 2001 no. 2 = MPS 167/94 (in publications) = MPS 4186 (actual inv. no.).

⁵⁴ AMZ A14013 (8,98 g).

⁵⁵ Bilić forthcoming.

⁵² MPS 7377 (9,70 g).

⁵³ Sokol 2001 br. 2 = MPS 167/94 (u publikacijama) = MPS 4186 (stvarni inv. br.).

⁵⁴ AMZ A14013 (8,98 g).

⁵⁵ Bilić u tisku.

this cannot be conclusively excluded), and the Late Iron Age coins on these two sites likely belong to different chronological horizons. At the same time, after the LIA settlement on the Kuzelin ceased to function, probably during the late 1st century BCE, there is no record of Roman presence until the second half of the 2nd century CE, which, from a numismatic perspective, partially corresponds with the situation at the Donje Orešje-Graci site.⁵⁶

I will only cursorily mention, as a final example of coins produced in the Đurđevac tradition, the poorly documented assemblage from the Gradina ('Hillfort') site at Western Papuk (Zapadni Papuk).⁵⁷ The site was rather methodically 'surveyed' by looters using metal detectors, who apparently reported that a large number of coins were found. Moreover, the coins were allegedly of the "same type", whatever that means, while those who seem to be more versed in LIA academic numismatics reported that the coins were all of a "local Đurđevac type" (i.e. that which I have termed *coins produced in the Đurđevac tradition*). Unfortunately, I had only a single such coin at my disposal: The coin in question is indeed a debased and reduced-in-weight late Đurđevac tdr (6.70 g), i.e. a coin produced in the Đurđevac tradition. Metal analysis has shown that the coin was produced from an alloy of copper, tin and lead, while the 'plating' consisted of silver.⁵⁸ Thus, some care was taken to ensure that the coin gave the impression of being made of silver, maintaining and replicating the appearance of the Đurđevac coins proper. The eye socket and ear on the obverse head are similar to those on the Kuzelin B type (where they are more emphasised), while the reverse also shows clear similarities to the Kuzelin B coins, especially the funnel-shaped 'open' snout. However, the Gradina coin cannot be subsumed under the hitherto established Đurđevac tradition (sub)types, and deserves its own label. One particular suggestion, the Papuk type, seems appropriate, and I shall accept it as a designation for this particular type of late Đurđevac coins.⁵⁹

DONJA DOLINA NUMISMATIC RECORD

Following the logic by which a distinctive group of Tauriscan coins is thus established, we are well-equipped to approach the numismatic material from Donja Dolina. The site needs little introduction, since it is a well-established prehistoric landmark.⁶⁰ However, the LIA coins from this site were hitherto not subjected to serious numismatic study, with any possibility of a stratigraphic analysis a remote hope at the moment. The only attempt at stratigraphic review has applied, in terms of numismatic material, a manifestly

u potpunosti isključiti), te mlađeželjeznodobne kovanice s ta dva lokaliteta vjerojatno pripadaju različitim vremenskim horizontima. U isto vrijeme, nakon što je mlađeželjeznodobno naselje na Kuzelinu prestalo funkcionirati, vjerojatno tijekom kasnog 1. st. pr. Kr., rimsko prisustvo na lokalitetu nije dokumentirano prije druge polovice 2. st., što, iz numizmatičke perspektive, djelomično odgovara situaciji na lokalitetu Donje Orešje-Graci.⁵⁶

Kao posljednji primjer kovanica izrađenih u đurđevačkoj tradiciji kratko će biti spomenuti slabo dokumentirani nalazi s lokaliteta Gradina na zapadnom Papuku.⁵⁷ Lokalitet je prilično sustavno uz upotrebu detektor metala opljačkan. "Nalaznici" su, čini se, izvijestili da je na Gradini pronađena velika količina kovanica. Štoviše, kovanice su navodno sve bile "istog tipa", stogod to značilo, dok su "nalaznici" s boljim poznavanjem mlađeželjeznodobne akademske numizmatike prenijeli informaciju da je riječ o "lokalnom tipu đurđevčana" što bi moglo odgovarati onome što je prethodno nazvano kovanicama izrađenima u đurđevačkoj tradiciji. Nažalost, bio sam u mogućnosti pregledati svega jednu kovanicu s papučke Gradine. Riječ je uistinu o devalviranoj kasnoj đurđevačkoj kovanici reducirane težine (6,70 g), tj. kovanci izrađenoj u đurđevačkoj tradiciji. Analiza metala pokazala je da je kovna pločica izrađena od legure bakra, kositra i olova, dok je njezina površina posrebrjena.⁵⁸ Na taj način uloženi je trud kako bi se osiguralo da kovanica odaje dojam srebrnjaka, zadržavajući i replicirajući izgled "regularnih" đurđevačkih tetradrahmi. Očna duplja i samo oko aversnog portreta nalik su onima s tipa Kuzelin B (gdje su naglašeniji), dok reversni prikaz također pokazuje jasne sličnosti s onima s tipa Kuzelin B, osobito "otvorenu" ljevkastu njušku. Ipak, kovanica s Gradine ne može se podvesti pod dosad utvrđene (pod)tipove kovanica izrađenih u đurđevačkoj tradiciji te joj se mora dodijeliti zaseban naziv. Jedan raniji prijedlog, tip Papuk, čini se prikladnim te ga je opravdano prihvatiti za ovaj specifični tip kasnih đurđevačkih tetradrahmi.⁵⁹

NUMIZMATIČKI NALAZI S LOKALITETA DONJA DOLINA

Uz ovako ustanovljenu karakterističnu grupu taurišćanskih kovanica može se adekvatno pristupiti analizi jedanaest mlađeželjeznodobnih kovanica iz Donje Doline. Lokalitet ne treba posebno predstavljati, jer je riječ o dobro poznatom pretpovijesnom nalazištu.⁶⁰ S druge strane, mlađeželjeznodobne kovanice s ovog lokaliteta nisu dosad bile predmet ozbiljne numizmatičke analize, dok se mogućnost stratigrafske analize u ovom trenutku ipak čini previše optimističnom. U jedinom dosadašnjem pokušaju stratigrafskog pregleda

56 Bilić 2022, 138 and forthcoming.

57 A fuller study in Bilić forthcoming.

58 Analysed and interpreted by Damir Doračić of the analytical laboratory of the Archaeological Museum in Zagreb.

59 The name was proposed by Vjekoslav Kramberger (pers. comm. 2020), who thus should be credited for distinguishing the Papuk type of late Tauriscan coins.

60 On the history of the Donja Dolina excavations, see briefly in Gavranović 2007, 406–408 and Jašarević 2012, 8.

56 Bilić 2022, 138 i u tisku.

57 Opsežnija analiza u Bilić u tisku.

58 Analiza i interpretacija Damira Doračića (analitički laboratorij Arheološkog muzeja u Zagrebu).

59 Naziv je predložio Vjekoslav Kramberger (pers. comm. 2020), kojemu stoga treba pripisati zasluge za izdvajanje papučkog tipa kasnih taurišćanskih kovanica.

60 O povijesti istraživanja lokaliteta Donja Dolina vidi ukratko u Gavranović 2007, 406–408 i Jašarević 2012, 8.

inadequate approach, assigning coins to occupational phases based solely on the presumed issuing date of the former.⁶¹ Still, it seems sensible to provisionally accept the nature of the Donja Dolina numismatic record as settlement finds in most general terms.

Although little is known of their stratigraphic context, several late Đurđevac tetradrachms were found at Donja Dolina. If they were actually deposited within the area of the settlement, which I have accepted as a working hypothesis, they must have been deposited in a pre-Roman context.⁶² Truhelka mentions that five of the total of ten coins “from Donja Dolina” were found during the excavations of the pile-dwelling settlement itself – on the inherent impossibility of this contextualisation see immediately below – with the remainder found at the Gradina – ‘hillfort’ – above the pile-dwelling settlement, or in the hillfort’s immediate vicinity, but there is no way of knowing whether the late Đurđevac coins belong to either of these groups.⁶³ It is, however, almost certain that they belong to both. In any case, this might not be especially significant, since both positions are parts of the multi-layer and multi-period Donja Dolina-Gradina settlement complex (another similar piece was later indeed found at the Gradina micro-location).⁶⁴ On the other hand, since the Early Iron Age pile-dwelling settlement itself, as opposed to the later one situated at Gradina, is dated from the 8th to the 4th centuries BCE,⁶⁵ the presence of (at the very earliest) Lt C2/D1 coins in the pile-dwelling settlement naturally cannot be explained by their use by the inhabitants of the (Early Iron Age) pile-dwellings.⁶⁶ The LIA settlement at Gradina (dated from the 4th to 1st centuries BCE) is surely the context in which these coins should be studied.⁶⁷ This context apparently includes three Roman Republican coins also found at Gradina, issued from 169/157 to 131 BCE, as well as a single Syrmian-type drachm of Phase B or C (traditionally dated to the second half of the 2nd and first half of the 1st century BCE, but more likely earlier than the mid-2nd century BCE)⁶⁸ and a mid-3rd century BCE (dated to a period spanning several decades on either side) bronze coin of Hiero II.⁶⁹ None of these coin types, known for their chronological unreliability, offer an unambiguous chronological clue for the approximate date at which they

primjenjena je, u terminima numizmatičkog materijala, krajnje manjkava metodologija, tj. pripisivanje kovanica naseobinskim horizontima isključivo na temelju pretpostavljenog vremena kovanja istih tih kovanica.⁶¹ Bez obzira na te okolnosti, čini se prihvatljivim provizorno prihvatiti numizmatičke nalaze s Donje Doline kao naseobinske nalaze u najširem mogućem smislu.

Iako posjedujemo malo podataka o njihovom stratigrafskom kontekstu, nekoliko kasnih đurđevačkih tetradrahmi sigurno je pronađeno u Donjoj Dolini. Ukoliko su uistinu odložene unutar područja naseobine, što je ovdje prihvaćeno kao radna hipoteza, one su nužno morale biti odložene u predrimskom kontekstu.⁶² Truhelka je izvijestio kako je pet od ukupno deset kovanica “iz Donje Doline” pronađeno tijekom iskopavanja samog sojeničkog naselja – o neupitnoj nemogućnosti ovakve kontekstualizacije vidi niže u tekstu – dok su preostale pronađene na Gradini iznad sojeničkog naselja ili u njezinoj neposrednoj blizini, ali nema načina da se utvrdi kojoj grupi pripadaju kasne đurđevačke kovanice (ipak, gotovo sigurno pripadaju objema grupama).⁶³ U svakom slučaju, to ne mora biti osobito značajno, jer oba položaja pripadaju višeslojnom i višeperiodnom naseobinskom kompleksu Donja Dolina-Gradina (još jedan sličan primjerak uistinu je kasnije pronađen na Gradini).⁶⁴ S druge strane, kako se stariježeljeznodobno sojeničko naselje, za razliku od kasnijeg na položaju Gradina, datira od 8. do 4. st. pr. Kr.,⁶⁵ prisustvo kovanica nastalih (najranije) u Lt C2/D1 razdoblju u sojeničkom naselju naravno ne može biti objašnjeno njihovim korištenjem od strane stanovnika (stariježeljeznodobnih) sojenica.⁶⁶ Tako je mlađeželjeznodobno naselje na Gradini (datirano od 4. do 1. st. pr. Kr.) zasigurno kontekst unutar kojeg treba promatrati te kovanice.⁶⁷ Taj kontekst, čini se, uključuje tri rimske republikanske kovanice također pronađene na Gradini, otkovane između 169/157. i 131. pr. Kr., kao i jednu drahmu sremskog tipa faze B ili C (te kovanice tradicionalno se datiraju u drugu polovicu 2. i prvu polovicu 1. st. pr. Kr., ali vjerojatnije su izrađivane već prije sredine 2. st. pr. Kr.)⁶⁸ te brončanu kovanicu Hijerona II iz sredine (nekoliko desetljeća s obje strane) 3. st. pr. Kr.⁶⁹ Niti jedan od ovih tipova kovanica, poznatih po svojoj kronološkoj nepouzdanosti, ne nudi nedvojbeni kronološki trag za približno vrijeme u kojem su one – ili taurišćanske kovanice uz njih – bile

61 Marić 1964, 47, 49.

62 Marić 1964, 49–51; Bilić 2017a, 236; 2022, 127 n. 63.

63 Truhelka 1904, 73; cf. 1901, 249.

64 Marić 1964, 49, Pl. XXII.4.

65 Marić 1964, 11; Čović 1987, 236, 240, 244, 265–266; Gavranović 2007, 407; 2018, 437.

66 At the same time, the pile-dwelling settlement ‘below’ Gradina seems to have lain at the part of the Gradina hillfort itself sloping towards the Sava, so Truhelka’s material “from the pile-dwellings excavations” might have originated – must have originated – in the LIA layers of the hillfort (cf. Gavranović 2007, 406–407 on the spatial relationship between the pile-dwelling settlement and the Gradina hillfort).

67 On the LIA settlement at Gradina, see Jašarević 2020, 14–16; cf. Čović 1987, 284–285 and Gavranović 2007, 407 (with the chronological span given in the main body of the text).

68 Militký 2015, 147 and Bilić forthcoming.

69 Mandić, 1929, 39, Pl. V.m, n; Marić 1964, 47, 49, Pl. XXII.2–3, 5–6; Mirnik 1987, 383; Bilić 2017a, 236.

61 Marić 1964, 47, 49.

62 Marić 1964, 49–51; Bilić 2017a, 236; 2022, 127 bilj. 63.

63 Truhelka 1904, 73; cf. 1901, 249.

64 Marić 1964, 49, T. XXII.4.

65 Marić 1964, 11; Čović 1987, 236, 240, 244, 265–266; Gavranović 2007, 407; 2018, 437.

66 Istovremeno, čini se da je sojeničko naselje “ispod” Gradine bilo smješteno na dijelu samog uzvišenja Gradine, čiji su se obronci spuštali do Save. Na taj način, materijal “iz iskopavanja sojeničkog naselja” može potjecati – zapravo, mora potjecati – iz mlađeželjeznodobnih slojeva gradinskog naselja (cf. Gavranović 2007, 406–407 o prostornom odnosu između sojeničkog naselja i uzvisine Gradina).

67 O mlađeželjeznodobnom naselju na Gradini vidi Jašarević 2020, 14–16; cf. Čović 1987, 284–285 i Gavranović 2007, 407 (gdje se može naći i vremenski raspon citiran u glavnom tekstu).

68 Militký 2015, 147 i Bilić u tisku.

69 Mandić, 1929, 39, T. V.m, n; Marić 1964, 47, 49, T. XXII. 2–3, 5–6; Mirnik 1987, 383; Bilić 2017a, 236.

– or the Tauriscan coins alongside them – were used (in whatever way) and/or deposited at Donja Dolina. However, perhaps an earlier (Lt C2 and/or D1) date is more likely than a later one.

Truhelka claimed that all save a single coin belonged to the ‘same type’, i.e. that the nine coins known to him represent late Đurđevac tdrs.⁷⁰ In addition, he observed that none of these coins shared either obverse or reverse dies.⁷¹ My inspection of the coins from Donja Dolina mainly supports Truhelka’s analysis.⁷² I was able to study eleven coins, five of which were already published as drawings and, in one case, photographs.⁷³ They all appear to represent late Đurđevac tdrs, meaning the copper alloy imitations inspired by the Đurđevac coins from the eponymous hoard, which I have classified under the umbrella term ‘coins produced in the Đurđevac tradition’. As noted immediately above, these coins should be understood as pertaining to a Lt C2 and/or D1 – perhaps also Lt D2 – period settlement at Donja Dolina, but with no stratigraphic data it is impossible to offer more substantiated opinions on this topic.

Truhelka’s assertion that all the coins he was familiar with belong to the ‘same type’ thus might be accepted in the form that the eleven coins (including those unknown to Truhelka) represent late Đurđevac tdrs, or coins produced in the Đurđevac tradition. His additional observation – that none of these coins share either obverse or reverse dies – is largely, but not completely, supported by my inspection of the numismatic material from Donja Dolina (both those coins available to Truhelka and others). Thus a little more nuanced discussion of the late Đurđevac coins from the site is indeed possible. What is immediately obvious is that the bulk of Tauriscan coins from Donja Dolina differ from the local Kuzelin types, and even more so from the assemblages of the Bartolovec-Jalžabet and Donje Orešje-Graci sites. But their workmanship is still rather poor, and the bullion used for the production of flans was apparently a copper alloy with varying proportions of silver (some coins perhaps contained no silver whatsoever). They as a rule appear to imitate Đurđevac coins, although it is possible to postulate some direct (i.e. not by way of Đurđevac coins) influence from the Samobor types on several coins.⁷⁴

Both the obverse and reverse depictions on one piece (inv. 444) bear a strong resemblance to the Kuzelin A coins (the reverse is very similar to the reverses of this type on the

korištene (na bilo koji način) i/ili odložene u Donjoj Dolini. No možda je ranije (Lt C2 i/ili D1) razdoblje ipak vjerojatnije od kasnijeg.

Truhelka je tvrdio da sve osim jedne kovanice pripadaju “istom tipu”, tj. da devet kovanica koje je imao na raspolaganju predstavljaju kasne đurđevačke tetradrahme.⁷⁰ Uz to, primijetio je da niti jedna od tih kovanica ne dijeli niti aversne ni reversne kalupe.⁷¹ Moja analiza kovanica iz Donje Doline uglavnom podupire Truhelkinu.⁷² Na raspolaganju sam imao jedanaest kovanica, od kojih je pet već bilo objavljeno u obliku crteža i, u jednom slučaju, fotografija.⁷³ Čini se da sve one predstavljaju kasne đurđevačke tetradrahme, odnosno imitacije od legure bakra inspirirane đurđevačkim kovanicama iz istoimene ostave, koje se mogu podvesti pod široku grupu “kovanica izrađenih u đurđevačkoj tradiciji”. Kao što je upravo primijećeno, te kovanice moraju se vezati uz nasebinski horizont perioda Lt C2 i/ili D1 – možda i Lt D2 – Donje Doline, ali bez stratigrafskih podataka nije moguće ponuditi potkrepljenije mišljenje o ovom problemu.

Dakle, Truhelkina tvrdnja da sve kovanice koje je imao na raspolaganju pripadaju “istom tipu” može se prihvatiti u obliku da jedanaest kovanica (uključujući one koje nisu bile poznate Truhelki) iz Donje Doline predstavljaju kasne đurđevačke tetradrahme ili kovanice izrađene u đurđevačkoj tradiciji. Moja analiza uglavnom, ali ne u potpunosti, potvrđuje njegovu drugu tvrdnju da niti jedna od tih kovanica ne dijeli niti aversne ni reversne kalupe s bilo kojom drugom (to se također odnosi i na materijal koji Truhelki nije bio dostupan). Na taj način moguća je nešto nijansirana rasprava o kasnim đurđevačkim kovanicama iz Donje Doline. Ono što je odmah jasno, je da se glavnina taurišćanskih kovanica iz Donje Doline razlikuje od lokalnih kuzelinskih tipova, a još više od kovanica s lokaliteta Bartolovec-Jalžabet i Donje Orešje-Graci. Kvaliteta njihove proizvodnje je i dalje skromna, a metal korišten kao sirovina za izradu kovanih pločica je, čini se, bio legura bakra s različitim udjelima srebra (neke kovanice možda nisu uopće sadržavale srebro). U pravilu one imitiraju đurđevačke kovanice, iako je moguće prepoznati određeni izravni (tj., ne preko đurđevačkih kovanica) utjecaj samoborskih tipova na nekoliko kovanica iz Donje Doline.⁷⁴

I aversni i reversni prikaz na jednoj kovanici (inv. 444) snažno nalikuju na prikaze na kovanicama tipa Kuzelin A (revers je vrlo sličan reversima ovoga tipa s dvije kovanice iz Like te s kovanice AMZ A919, sl. 2. 4–6), do te mjere da

70 Truhelka 1901, 250; 1904, 74.

71 Truhelka 1901, 250.

72 The coin illustrated in Truhelka 1901, 250 Fig. 18 = 1904, 74 fig. 52 = Marić 1963, 73, T. II.13 is not among those kept in the National Museum of Bosnia and Herzegovina at Sarajevo today. The drawing of this coin, in addition, does not really correspond to Truhelka’s description (Truhelka 1901, 250; 1904, 74). I shall therefore exclude it from consideration.

73 Truhelka 1901, 250, Figs. 19–22 = 1904, 74, Figs. 53–56 = Marić 1963, 73 Pl. II.11–12, 14–5; Marić 1964, 49, Pl. XXII.4.

74 This is perhaps reflected in “Sergejewski’s” (i.e. Dimitrije Sergejevski from the National Museum of Bosnia and Herzegovina) “nine Samobor coins” from Donja Dolina (cited by Pink 1939, 136, without further reference). It is perhaps also the reason why Kopač (1974, 6, 8) classified the specimens published by Truhelka as Samobor-type coins.

70 Truhelka 1901, 250; 1904, 74.

71 Truhelka 1901, 250.

72 Kovanica ilustrirana u Truhelka 1901, 250 sl. 18 = 1904, 74 sl. 52 = Marić 1963, 73, T. II.13 ne nalazi se među materijalom koji se danas čuva u Zemaljskom muzeju Bosne i Hercegovine. Također, crtež te kovanice zapravo ne odgovara Truhelkinom opisu u tekstu (Truhelka 1901, 250; 1904, 74). Stoga ću ovu kovanicu izuzeti iz analize.

73 Truhelka 1901, 250, sl. 19–22 = 1904, 74, sl. 53–56 = Marić 1963, 73 T. II.11–12, 14–5; Marić 1964, 49, T. XXII.4.

74 Ovo možda stoji iza “Sergejewskijevih” (Dimitrije Sergejevski iz Zemaljskog muzeja Bosne i Hercegovine) “devet samoborskih kovanica” iz Donje Doline (citirano u Pink 1939, 136, bez reference). To je možda također razlog zašto je Kopač (1974, 6, 8) klasificirao kovanice koje je objavio Truhelka kao kovanice tipa Samobor.

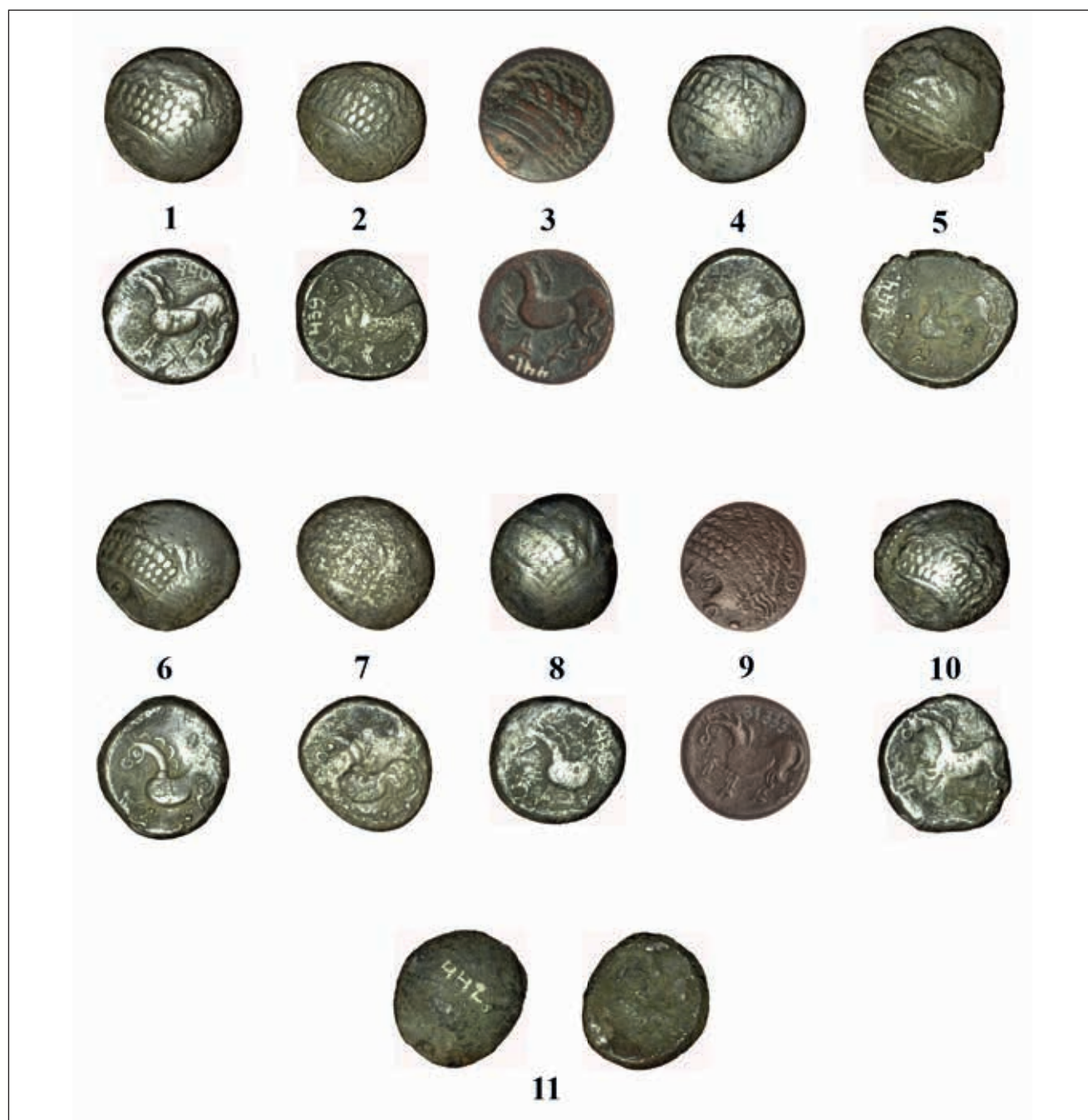


Fig. 3 Late Iron Age Tauriscan coins from Donja Dolina (1–2, 4–8, 10–11 photo by the author 3, 9 photo by Adnan Šahbaz Scale 1:1.

Sl. 3. Mlađeželjeznodobne taurišćanske kovanice iz Donje Doline (1–2, 4–8, 10–11 fotografirao autor; 3, 9 fotografirao Adnan Šahbaz). Scale / mjerilo 1:1.

two coins from Lika and the AMZ A919 piece, Fig. 2.4–6), so much so that it could almost be subsumed under this subtype of coins inspired by the Đurđevac tradition. Its low weight (7.80 g) corresponds fairly well with the average weight of the Kuzelin A coins (8.045 g, six pieces with recorded weight). Finally, the flan of this coin is noticeably thinner and of a larger diameter in comparison to all other Tauriscan coins from Donja Dolina, thus setting it apart from the rest of the assemblage.

je gotovo moguće ovu kovanicu klasificirati među one koje pripadaju tom podtipu kovanica izrađenih u đurđevačkoj tradiciji. Njezina manja težina (7,80 g) prilično dobro odgovara prosječnoj težini kovanica tipa Kuzelin A (8,045 g, na temelju šest primjeraka s dokumentiranom težinom). Konačno, kovna pločica ove tetradrahme primjetno je tanja i većeg promjera u odnosu na sve ostale taurišćanske kovanice iz Donje Doline, što je na taj način odvaja od ostatka numizmatičkih nalaza.

Furthermore, several coins can be grouped in a well-defined subtype of coins inspired by the Đurđevac tradition: these are inv. 439, 440, 441 and 31334. Despite Truhelka's observation, inv. 439 and 440 do in fact share an obverse die. These coins appear to have been inspired by – or are related in a more direct way to – TKN obv. die 71 (or thereabouts), which is itself derived via several intermediaries from the regular Đurđevac die-pairings attested in the eponymous hoard (such as, more specifically, 62-130). These coins could be provisionally classified in a group of late Đurđevac coins for which I propose the name 'Donja Dolina'. The average weight of these coins (8.88 g) is higher than that of the Kuzelin A type (8.045 g), but far below the average weight of either the first (earlier, 9.84 g) or the second (later, 9.67 g) group of the Đurđevac coinage proper, i.e. the coins from the eponymous hoard.⁷⁵ At the same time, it is much nearer to the average weight of the heavily worn Đurđevac coins from the partially comparable assemblage, the Balina glavića hoard (8.97 g).⁷⁶

Other Tauriscan coins from the assemblage exhibit greater diversity. They do not deviate completely from the 'Donja Dolina' subtype, but do show some significant differences from it. Thus several coins might be said to have similarly been inspired by – or are related in a more direct way to – TKN obv. die 71 or thereabouts. But, in addition to their differences from the 'Donja Dolina' subtype, these coins are widely divergent from each other, and in most cases cannot in any way be subsumed under a distinctive subtype, even though, in one case, two of the coins share a reverse die. Thus the reverse horse of inv. 31333 has an atypical front left leg, but it is an unmistakable Đurđevac specimen, as are, even more so, the horses of inv. 443, 9211 and 31332, with the latter two actually sharing the same die. The obverse portraits of inv. 438, 443 and 31333 have a noticeably outlined rhomboid eye socket, which is not clearly visible on 9211 (but it is nevertheless presumably present on this specimen). The reverse horse of the two coins that share the reverse die (inv. 9211 and 31332), with the latter's obverse unfortunately illegible, shows some resemblance to Samobor horses, as well as to the reverse of inv. 444 and some of the Kuzelin A reverse horses mentioned above. Significantly, the reverse of inv. 9211/31332 is also similar to the reverse inv. 439 of the Donja Dolina type (as well as to rev. inv. 438), indicating some connection with the 'main type' of Donja Dolina coins. Both dies (i.e. 9211/31332 and 439) depict a horse with a torque (it is also depicted on inv. 438, 440 and, perhaps, 443), which is otherwise a rare occurrence on Tauriscan horses, but which does appear on some of the Kuzelin A-type horses. Thus, this iconographic motif seems to be a distinguishing characteristic of coins produced in the Đurđevac tradition. The remaining Tauriscan coin found at Donja Dolina (inv. 442) is completely illegible.

Nadalje, nekoliko kovanica moguće je grupirati u prepoznatljiv podtip kovanica inspiriranih đurđevačkom tradicijom: to su kovanice inv. 439, 440, 441 i 31334. Suprotno Truhelkinoj tvrdnji, kovanice 439 i 440 dijele aversni kalup. Te su kovanice, čini se, nastale inspirirane – ili su čak s njim povezane na izravniji način aversnim kalupom TKN br. 71 (ili slično), koji je sam izveden preko nekoliko prijelaznih kalupa iz regularnih đurđevačkih parova kalupa koji se pojavljuju u eponimnoj ostavi (kao npr. 62-130). Navedene kovanice mogu se provizorno klasificirati u grupu kasnih đurđevačkih tetradrahmi za koju predlažem naziv "Donja Dolina". Prosječna težina ovih kovanica (8,88 g) viša je od one kovanica tipa Kuzelin A (8.045 g), ali je daleko ispod prosječne težine kovanica koje pripadaju prvoj (ranijoj, 9,84 g) ili drugoj (kasnijoj, 9,67 g) grupi đurđevačkih tetradrahmi, tj., kovanica iz eponimne ostave.⁷⁵ Istovremeno, ona je puno bliža prosječnoj težini jako istrošenih đurđevačkih kovanica iz djelomično usporedivog nalaza, ostave s Baline glaviće (8,97 g).⁷⁶

Ostale taurišćanske kovanice iz Donje Doline pokazuju više raznolikosti. One se ne razlikuju u generalnim osobinama od podtipa "Donja Dolina", ali ipak pokazuju određene nezanemarive razlike u odnosu na taj podtip. Tako se za neke od preostalih kovanica može tvrditi da su slično bile inspirirane ili povezane na izravniji način s aversnim kalupom TKN br. 71 (ili sličnim kalupom). Uz njihove razlike u odnosu na podtip "Donja Dolina", ova grupa kovanica razlikuje se na razne načine i međusobno, te se u većini slučajeva ne može grupirati u neki karakteristični podtip, iako, u jednom slučaju, dvije kovanice čak dijele reversni kalup. Reversni prikaz konja na inv. 31333 tako ima atipičnu prednju lijevu nogu, ali je nedvojbeno riječ o đurđevačkom konju, što još više vrijedi za konje na inv. 443, 9211 i 31332. Posljednja dva primjerka upravo su one dvije kovanice koje dijele reversni kalup. Portreti na aversima inv. 438, 443 i 31333 imaju naglašeno romboidnu očnu duplju, koja nije jasno vidljiva na 9211, iako je bez obzira na to vjerojatno prisutna i na ovom primjerku. Reversni konj na dvama kovanicama koje dijele reversni kalup (inv. 9211 i 31332) – avers posljednje kovanice nažalost je nečitak – pokazuje određenu sličnost sa samoborskim konjima, kao i s reversom inv. 444, te nekim od reversnih konja na kovanicama podtipa Kuzelin A, koje su neposredno prije spomenute. Značajno je da je revers 9211/31332 također sličan reversu kovanice tipa Donja Dolina inv. 439 (kao i reversu inv. 438), što sugerira određenu povezanost s "glavnim tipom" kovanica iz donje Doline. Oba kalupa (tj. 9211/31332 i 439) prikazuju kornja s torkvesom oko vrata (također prikazan na inv. 438, 440 i, možda, 443), što se rijetko susreće na taurišćanskim konjima, ali što se ipak pojavljuje na nekim konjima tipa Kuzelin A. Na ovaj način, taj ikonografski motiv čini se da predstavlja razlikovnu karakteristiku kovanica proizvedenih u đurđevačkoj tradiciji. Preostalu taurišćansku

75 Kos 2009, 308–310.

76 Kos 2002, 154.

75 Kos 2009, 308–310.

76 Kos 2002, 154.

Some of these coins, or perhaps all of them, must have been produced locally, inspired by earlier Tauriscan coins, most notably those deposited in the Đurđevac hoard.⁷⁷ This particular type of Tauriscan coin appears to have circulated rather widely through the region (and, uncharacteristically for Tauriscan coins, even beyond south-western Pannonia), even though the precise connection between the dies used for the production of coins deposited in the eponymous hoard and those that are derived from them and clearly belong to the same type, but were not present within the Đurđevac hoard itself, is not completely clear.⁷⁸ Indeed, two Đurđevac tetradrachms proper were found at Mačkovac, approximately 7 km upstream along the Sava, on its left bank.⁷⁹ One is made from a die combination evidenced in the eponymous hoard (56-127),⁸⁰ while another (69-136) is absent from the hoard.⁸¹ The latter has a distinctive rhomboid eye socket (TKN obv. die no. 69), which does not mean much in itself, since this iconographical solution appears on a number of obverse dies evidenced within the Đurđevac hoard, but it does testify to the presence of coins produced by this specific group of dies in the immediate vicinity of the Donja Dolina settlement during the LIA period. These characteristic coins – not the actual Mačkovac specimen, naturally – were certainly known to the commissioners and die-engravers of the Donja Dolina coin assemblage, and they were clearly inspired by these models. The result of this familiarity and a wish to imitate these silver tetradrachms is a varied set of coins locally produced in the Đurđevac tradition, some of which can be grouped under a distinctive subtype, but most of which were produced by divergent dies. The die relationships established among the coins, despite the modest volume of the assemblage, certainly indicate a short period of production, as well as a short period of circulation prior to the deposition of the coins.

At the beginning of this paper, I argued for a certain contemporaneity of Đurđevac, Kozarevac, Balina glavica and Szalacska coin records, pivoting on the TKN obv. die 71 and

kovanicu iz Donje Doline (inv. 442) nije moguće detaljnije identificirati zbog lošeg stanja sačuvanosti.

Neke od tih kovanica, a možda i sve, morale su biti otkovane lokalno, a njihov nastanak bio je inspiriran ranijim taurišćanskim kovanicama, pretežito onima koje su odložene u ostavi iz Đurđevca.⁷⁷ Ovaj specifičan tip taurišćanskih kovanica kolao je širokim prostorom regije (te, nekarakteristično za taurišćanske tipove, čak i izvan jugozapadne Panonije), iako preciznu definiciju veze između kalupa kojima su izrađene kovanice odložene u eponimnoj ostavi te onih koji su iz njih izvedeni te očito pripadaju istom generalnom tipu kovanica, ali koji nisu prisutni u samoj ostavi iz Đurđevca, nije moguće ponuditi.⁷⁸ Uistinu, dvije regularne kovanice đurđevačkog tipa pronađene su u Mačkovcu, oko 7 km uzvodno od Donje Doline na lijevoj obali Save.⁷⁹ Jedna je izrađena uz pomoć kombinacije kalupa prisutne u eponimnoj ostavi (56-127),⁸⁰ dok je druga izrađena iz kombinacije koja nije prisutna u samoj ostavi (69-136).⁸¹ Na aversu ove posljednje kombinacije pojavljuje se izražena romboidna očna duplja (TKN av. kalup br. 69), što samo po sebi ne znači puno, jer se ovo ikonografsko rješenje pojavljuje na nizu kalupa prisutnih u ostavi iz Đurđevca, ali svjedoči prisustvu kovanica izrađenih ovim specifičnim kalupima u neposrednoj blizini naselja u Donjoj Dolini tijekom mlađeg željeznog doba. Te specifične kovanice – naravno, ne upravo primjerak iz Mačkova – sigurno su bile poznate naručiteljima i rezačima kalupa kovanica iz Donje Doline, a njih su očito inspirirali upravo ti modeli. Rezultat toga poznavanja i želje za imitiranjem srebrnih tetradrahmi je grupa raznolikih lokalno proizvedenih kovanica u đurđevačkoj tradiciji, od kojih je neke moguće grupirati u jedan karakteristični podtip, no većina kojih je proizvedena raznolikim kalupima. Utvrđene povezanosti kalupa između nekih kovanica, nasuprot skromnom broju poznatih predmeta, sigurno sugeriraju da su one nastale unutar kratkog vremenskog odsječka, kao i da je njihov period korištenja prije odlaganja bio jednako kratak.

77 Cf. Kopač 1974, 6, 8, who attributed the production of the dies used to strike the Donja Dolina assemblage to "folk die-cutters"; his attribution of the production of the coins specifically to the lapodes – Kopač 1974, 8–9 – is most likely influenced by Hrčić's similar inference as to the affiliation of the Samobor-hoard coins. For what it's worth, according to the scarce reports of classical authors, the area seems to have been inhabited by the elusive Osseriates (Domić Kunić 2006, 79–80; cf. Čović 1987, 281, 286; Dizdar, Potrebica 2002, 119). The area to the north of the Sava across from Donja Dolina in general appears to have been a zone of intense contact between the Scordisci and Taurisci (Dizdar, Potrebica 2002; 2005), but the presence of only a single Scordiscan coin at Donja Dolina (Marić 1964, T. XXII.5; Popović 1987, 50) strongly suggests that the numismatic influence was dominantly exercised from the numismatic complex generally attributed to the Taurisci. Indeed, the Nova Gradiška section of the Sava valley, the immediate neighbour of Donja Dolina across the Sava to the north, seems primarily to have been under the cultural influence of the Taurisci (Mihaljević, Dizdar 2007, 118, 132, 136, 146).

78 On TKN obv. die 71 specifically see an earlier part of the present paper.

79 Although Mihaljević, Dizdar 2007, 132 claim that two Đurđevac tetradrachms were found alongside late La Tène pottery at the Mačkovac-Crišnjevi Late Bronze Age settlement site, it is only the latter that was actually recovered from the site (Karavanić, Mihaljević, Kalafatić 2002, 55), while the coins were found in the (immediate?) vicinity (Karavanić, Mihaljević, Kalafatić 2002, 49).

80 Kos 2009, 295.

81 Mihaljević, Dizdar 2007, 131 Figs. 9–10 (die attribution by Andrej Šemrov, see Mihaljević, Dizdar 2007, 132 n. 16).

77 Cf. Kopač 1974, 6, 8, koji pripisuje izradu kalupa korištenih u kovanju tetradrahmi iz Donje Doline "rezačima iz naroda"; njegovo pripisivanje autorstva kalupa specifično Japodima (Kopač 1974, 8–9) vjerojatno je uvjetovano Hrčićevom sličnom idejom o etno-kulturalnoj pripadnosti izrađivača kovanica iz samoborske ostave. Bez procjenjivanja vrijednosti te informacije, prema šturim izvještajima antičkih autora, čini se da je ovaj prostor bio naseljen malo poznatim Oserijatima (Domić Kunić 2006, 79–80; cf. Čović 1987, 281, 286; Dizdar, Potrebica 2002, 119). Čini se da je područje sjeverno od Save nasuprot Donje Doline generalno predstavljalo zonu intenzivnih kontakata između Skordiska i Tauriska (Dizdar, Potrebica 2002; 2005), ali prisustvo samo jedne skordističke kovanice u Donjoj Dolini (Marić 1964, T. XXII. 5; Popović 1987, 50) snažno sugerira da su numizmatički utjecaji dominantno stizali iz smjera numizmatičkog kompleksa koji se uobičajeno pripisuje Tauriscima. Uistinu, čini se da je novogradiški dio Posavine, neposredni susjed Donje Doline sjeverno od Save, bio primarno pod kulturološkim utjecajem Tauriska (Mihaljević, Dizdar 2007, 118, 132, 136, 146).

78 Specifično o TKN av. kalupu br. 71 vidi u ranijem dijelu ovog rada.

79 Iako Mihaljević, Dizdar 2007, 132 tvrde da su dvije đurđevačke tetradrahme pronađene zajedno s kasnolatskom keramikom na kasnobrončanodobnom naselju Mačkovac-Crišnjevi, zapravo je samo keramika pronađena na lokalitetu (Karavanić, Mihaljević, Kalafatić 2002, 55), dok su kovanice pronađene u (neposrednoj?) blizini (Karavanić, et. al. 2002, 49).

80 Kos 2009, 295.

81 Mihaljević, Dizdar 2007, 131 sl. 9–10 (determinacija kalupa djelo je Andreja Šemrova, vidi Mihaljević, Dizdar 2007, 132 bilj. 16).

Tab. 1. Late Iron Age Tauriscan coins from Donja Dolina

Tbl. 1: Mlađeželjeznodobne taurišćanske kovanice iz Donje Doline

Cat. / kat.	Inv. no. / inv. br.	Bibliography / literatura	Type / tip	Bullion / metal (according to / prema Truhelka 1901; 1904)	Weight / težina (g)	Diameter / promjer (mm)
1	Num. Coll. 440	Truhelka 1901, 250, Fig. 19; 1904, 74, Fig. 53;* Marić 1963, 73, Pl. II, 14	Đurđevac tradition / đurđevačka tradicija - Donja Dolina (shares obv. die with / dijeli aversni pečat s 2)	copper alloy, alloyed silver / bakrena legura, legura bakra i srebra	9.35	22
2	Num. Coll. 439	Truhelka 1901, 250, Fig. 21; 1904, 74, Fig. 55; Marić 1963, Pl. II, 15	Đurđevac tradition / đurđevačka tradicija - Donja Dolina (shares obv. die with / dijeli aversni pečat s 1)	copper alloy, alloyed silver / bakrena legura, legura bakra i srebra	9.26	21
3	Num. Coll. 441	Truhelka 1901, 250, Fig. 22; 1904, 74, Fig. 56; Marić 1963, Pl. II, 12	Đurđevac tradition / đurđevačka tradicija - Donja Dolina	copper alloy, alloyed silver / bakrena legura, legura bakra i srebra	8.9	22
4	Prehist. Coll. 31334		Đurđevac tradition / đurđevačka tradicija - Donja Dolina		8.01	22
5	Num. Coll. 444	Truhelka 1901, 250, Fig. 20; 1904, 74, Fig. 54; Marić 1963, 73, Pl. II, 11	Đurđevac tradition / đurđevačka tradicija - Kuzelin A (?)	copper alloy, alloyed silver / bakrena legura, legura bakra i srebra	7.80	25
6	Num. Coll. 9211		Đurđevac tradition / đurđevačka tradicija (shares rv. die with / dijeli reversni pečat s 7)		9.41	23
7	Prehist. Coll. 31332	Marić 1964, Pl. XXII, 4	Đurđevac tradition / đurđevačka tradicija (shares rv. die with / dijeli reversni pečat s 6)		8.65	22
8	Num. Coll. 438		Đurđevac tradition / đurđevačka tradicija	copper alloy, alloyed silver / bakrena legura, legura bakra i srebra	9.81	22
9	Prehist. Coll. 31333		Đurđevac tradition / đurđevačka tradicija		9.50	21
10	Num. Coll. 443		Đurđevac tradition / đurđevačka tradicija	copper alloy, alloyed silver / bakrena legura, legura bakra i srebra	8.67	22
11	Num. Coll. 442		Đurđevac tradition (?) / đurđevačka tradicija (?)	copper alloy, alloyed silver / bakrena legura, legura bakra i srebra	8.21	22

* In Truhelka 1901, 250 and 1904, 74, Figs. 53–56 and 19–22 are not labelled individually, so Figs. 54–55/20–21 could refer to either the upper right or the lower left coin, depending on whether we read them horizontally or vertically. I have opted for the former.

the neighbouring obverse and their accompanying reverse dies (see Figure 1). With the interpretation of the inspirations for the Donja Dolina assemblage presented here, together with the evidence from the nearby Mačkovac coin record, it can be proposed that the Donja Dolina corpus of coins produced in the Đurđevac tradition shares a similar time-frame in that it certainly postdates the TKN obv. die 71-centered nexus (as a shorthand term), but perhaps not by much.⁸² The coins used as models were most likely in circulation only for a short time, so in order to provide the inspiration for the Donja Dolina corpus of imitations, the latter should not have been produced much later than their models. With that said, the Lt D1 period, as the production date of the Donja Dolina Tauriscan imitations, appears the best fit for all the available evidence.

CONCLUSION

Taking into account the position of Đurđevac coins in the relative chronology of Tauriscan coinage, which is at least not contradicted by archaeological evidence, it could be surmised that this type of coin emerged sometime in the Lt C2/D1 transition period, in other words, shortly after ca. 150 BCE. But, in comparison to other Tauriscan coin types, the pattern of production and deposition of Đurđevac coins is more complicated. While the eponymous coin hoard probably belongs to precisely this chronological horizon, there are clear indications of prolonged production and usage of Đurđevac coins. While this has been recognised in previous scholarship, a rather distinct class of Tauriscan coins has remained unrecognised until quite recently. This class could be adequately described as *coins produced in the Đurđevac tradition*.⁸³ Indeed, there seems to be ample archaeological evidence for a continuing, if intermittent, production of coins in the Đurđevac tradition during the Lt D period. Thus different chronological horizons can be recognised in the numismatic records of various sites (Kuzelin, Balina glavica, Donja Dolina, Donje Orešje-Graci, Bartolovec-Jalžabet, Gradina on Papuk, Sisak), which both allows and necessitates the foregoing conclusion.

The documented process of debasement and reduction in weight and size of Đurđevac tdrs enables discussion of Tauriscan coinage in developmental terms. As a closely parallel case, perhaps even another facet of this particular development, a metallurgical analysis of small silver coins found on the territory of present-day Slovenia, which included several Tauriscan coin types, detected a gradual debasement of these coins, attributing the process to inflationary

Na početku rada upozoreno je na određenu istovremenost numizmatičkih nalaza iz Đurđevca, Kozarevca, Baline glavice i Szalacske, koji pivotiraju oko aversnog kalupa TKN br. 71 i okolnih aversnih te pratećih reversnih kalupa (vidi Sl. 1). Uz ovdje predstavljenu interpretaciju inspiracija za nastanak mladeželjeznodobnih kovanica iz Donje Doline, zajedno s informacijama koje pružaju numizmatički nalazi s obližnjeg lokaliteta Mačkovac, može se predložiti da korpus kovanica iz Donje Doline izrađenih u đurđevačkoj tradiciji dijeli sličan vremenski okvir, utoliko što je sigurno kasniji od nastanka grupacije kovanica vezanih uz aversni kalup TKN br. 71 (kao heuristički termin), ali izgledno ne mnogo kasniji.⁸² Kovanice korištene kao model najvjerojatnije nisu bile korištene dugo vremena. Stoga, kako bi one mogle pružiti inspiraciju za nastanak korpusa kovanica iz Donje Doline, ove posljednje ne bi smjele biti izrađene puno kasnije od svojih modela. S tim na umu, razdoblje Lt D1 kao vrijeme nastanka taurišćanskih imitacija iz Donje Doline, čini se kao odgovarajući vremenski okvir za sve raspoložive dokaze.

ZAKLJUČAK

Uzimajući u obzir položaj đurđevačkih kovanica unutar kronologije taurišćanskog novca, koji nije u neskladu s informacijama dobivenim arheološkim istraživanjima, može se pretpostaviti da je ovaj tip kovanica nastao tijekom tranzicije LtC2/D1, odnosno, kratko nakon oko 150 pr. Kr. No, u odnosu na druge tipove taurišćanskih kovanica, obrazac proizvodnje i odlaganja kovanica tipa Đurđevac znatno je složeniji. Dok eponimna ostavna izgledno pripada upravo nevedenom vremenskom horizontu, postoje jasni dokazi za produljenu proizvodnju i upotrebu đurđevačkih kovanica. Ta je pojava prepoznata u prijašnjim raspravama, ali specifična klasa taurišćanskih kovanica o kojoj je riječ u ovom radu ostala je donedavno neprepoznatom. Ta grupa kovanica može se prikladno opisati kao kovanice izrađene u đurđevačkoj tradiciji.⁸³ Uistinu, čini se da postoje čvrsti arheološki dokazi za kontinuiranu, iako istovremeno isprekidanu, proizvodnju kovanica u đurđevačkoj tradiciji tijekom razdoblja Lt D. Tako je moguće prepoznati različite vremenske horizonte u numizmatičkim nalazima s različitih lokaliteta (Kuzelin, Balina glavica, Donja Dolina, Donje Orešje-Graci, Bartolovec-Jalžabet, Gradina na Papuku, Sisak), što dopušta i uvjetuje prethodni zaključak.

Dokumentirani proces devalvacije i redukcije u težini i veličini đurđevačkih tetradrahmi omogućava raspravu o taurišćanskim kovanicama u terminima njihove evolucije.

82 It is worth noting that the two above-mentioned late Đurđevac tdrs found in the archaeological excavations of the important regional centre of Segestica/Segesta/Siscia (Bilić 2018, 268–269 nos. 2–3; illustration no. 2 on p. 273 should be rotated 90° CW), one in a LIA context, the other in an Early Imperial setting, show a clear connection with TKN obv. die 71 and the accompanying reverse dies. The specimen found in an Early Imperial layer testifies to the longevity of use (in whichever way) of the coin produced in this particular tradition, not necessarily pointing to its production date.

83 Bilić 2022.

82 Vrijedi napomenuti da dvije prije spomenute kasne đurđevačke tetradrahme pronađene tijekom arheoloških iskopavanja u Segest(ici)/Sisciji, važnom regionalnom središtu (Bilić 2018, 268–269 br. 2–3; ilustracija br. 2 na str. 273 treba biti zarotirana 90° u smjeru kazaljke na satu), jedna u mladeželjeznodobnom kontekstu, druga u ranocarskom, pokazuju jasnu povezanost sa TKN av. kalupom br. 71 i pripadajućim reversnim kalupima. Primjerak pronađen u ranocarskom sloju svjedoči dugovječnosti upotrebe (na ovaj ili onaj način) kovanice izrađene u ovoj specifičnoj tradiciji, ali ne ukazuje nužno i na vrijeme njezinog kovanja.

83 Bilić 2022.

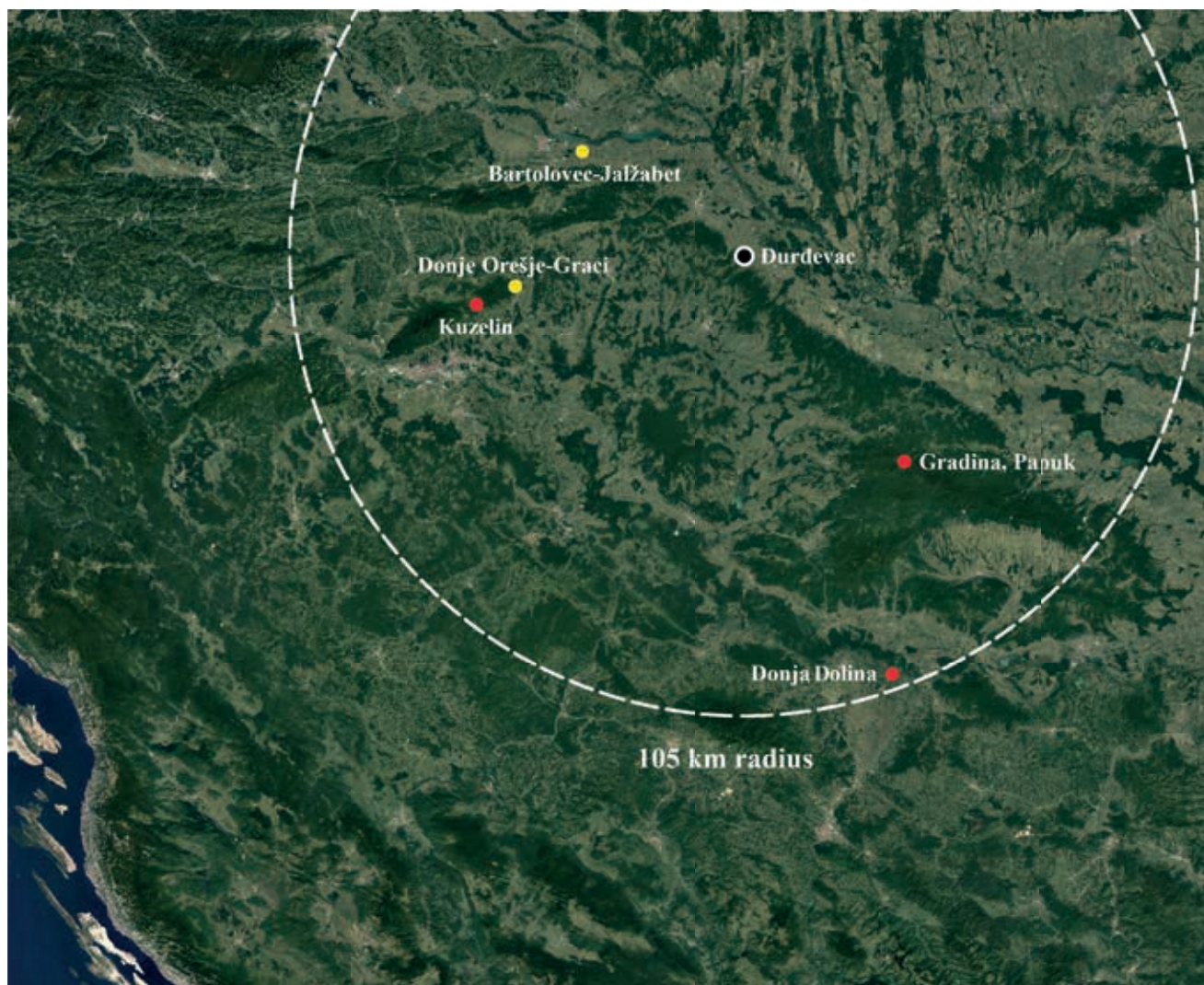


Fig. 4. Distribution of Durdevac tradition coin types (red: classified types; yellow: unclassified assemblages) Base map: Google Earth. Data SIO, NOAA, U.S. Navy, NGA, GEBCO. Image Landsat / Copernicus.

Sl. 4. Rasprostiranje tipova kovanica rađenih u đurđevačkoj tradiciji (crveno: izdvojeni tip; žuto: nalazi koji nisu izdvojeni u zasebne tipove). Osnova karte: Google Earth. Data SIO, NOAA, U.S. Navy, NGA, GEBCO. Image Landsat / Copernicus.

movements.⁸⁴ Analogies with similar situations suggest that the changes in coin production were the result of either pressure or influence of the Roman state and its expansionist policy, but the precise details of this process upon and within Tauriscan society remain unknown.⁸⁵ It should be emphasised, though, that the appearance of base metal (namely copper alloy or alloyed silver) coin types in the 'monetary system' of the Taurisci does not necessarily signify an emerging market economy and a monetised exchange of goods. These coins were apparently not issued in large quantities, and their presence in the only larger market centre of the region worthy of the name, Segestica,

Kao bliska paralela, možda čak i drugi aspekt istog procesa, metalurškom analizom malih srebrnih kovanica pronađenih na teritoriju moderne Slovenije, u koju je uključeno i nekoliko taurišćanskih tipova kovanica, utvrđena je postupna devalvacija tih kovanica, što je pripisano inflacijskim procesima.⁸⁴ Usporedbe sa sličnim situacijama sugeriraju da su promjene u proizvodnji kovanica bile rezultat pritiska ili utjecaja rimske države i njezine ekspanzionističke politike, ali detalji ovog procesa u taurišćanskim društvima nisu poznati.⁸⁵ Ipak, vrijedi istaknuti da pojava kovanica izrađenih od neplemenitih metala (točnije, legura bakra ili legura s manjim udjelom srebra) u "monetarnom sustavu" Tauriska ne sugerira odmah postojanje

⁸⁴ Šmit *et al.* 2020, 9–10/12.

⁸⁵ Howgego 1995, 113–115; see also Tapavički-Ilić 2005, 41–46 who studies the impact of the Roman monetary system upon the indigenous coinage of the neighbouring Scordisci, including its debasement and weight reduction.

⁸⁴ Šmit *et al.* 2020, 9–10/12.

⁸⁵ Howgego 1995, 113–115; vidi također Tapavički-Ilić 2005, 41–46, gdje se analizira utjecaj rimskog monetarnog sustava na lokalna kovanja susjednih Skordiska, uključujući procese devalvacije i redukcije u težini.

is extremely limited.⁸⁶ It is possible that the appearance of these 'base metal' coin types reflects a late stage in the process of local tribal ethnogeneses or the creation of ethno-political formations under the influence of the Roman state.⁸⁷ At the same time, a clear continuity with the earlier silver coin types exists in that the 'base metal' types were unmistakably their derivatives. Furthermore, the presence of certain quantities of silver in almost all of the dominantly base metal coins "suggests they were not struck as low-value coins, but should be seen as continuing the old [...] tradition".⁸⁸ Thus, a primarily non-economic explanation for the appearance of the 'base metal' coins produced in the Đurđevac tradition emerges, even though the precise stages of development of the Tauriscan political, or ethno-political, grouping – and thus their relationships with Tauriscan coinage – remain unknown.

In any case, the assemblage of coins from Donja Dolina studied in this paper must represent a reflection of this or some similar development. In addition, the local production of coins at the site reflects the adoption of a practice that was only recently introduced in the immediate neighbourhood. It can be presumed that the coinage spread throughout the region through peer-polity interactions (PPI) among and between neighbouring communities which, as testified by their material culture, shared many common traits, including socio-political structures.⁸⁹ Naturally, this is a speculative suggestion, but the hermeneutical potential of the model, together with its compatibility with the archaeological information – including that of the numismatic material – currently at our disposal, makes it a promising path for further research.

uspostavljanje tržišne ekonomije i monetariziranu razmjenu dobara. Te kovanice nisu bile proizvođene u velikim nakladama, a njihovo prisustvo u jedinom većem trgovišnom središtu u regiji, Segest(ici)i, skromnog je opsega.⁸⁶ Moguće je da pojava tih tipova kovanica od neplemenitih metala odražava kasniju fazu procesa lokalnih plemenskih etnogeneza ili formiranje etno-političkih jedinica pod utjecajem rimske države.⁸⁷ U isto vrijeme, postoji jasan kontinuitet s ranijim srebrnim tipovima kovanica u tome što su tipovi kovanica od neplemenitih metala njihovi izravni derivati. Nadalje, prisustvo određenog udjela srebra u gotovo svim primjercima kovanica dominantno izrađenih od neplemenitih metala "sugerira da one nisu izrađivane kao novac male vrijednosti, već ih treba promatrati kao nastavljache stare... tradicije".⁸⁸ Na taj način ističe se primarno ne-ekonomsko objašnjenje pojave kovanica od neplemenitih metala izrađenih u đurđevačkoj tradiciji, iako nam precizne faze razvitka taurišćanskih političkih, ili etno-političkih, grupiranja – te njihovih posljedica na taurišćanske kovanice – ostaju nepoznate.

U svakom slučaju, numizmatički nalazi s Donje Doline analizirani u ovom radu nužno su također odraz ovog ili nekog sličnog razvitka. Dodatno, lokalna izrada kovanica na ovom lokalitetu tako odražava preuzimanje prakse koja je tek nedavno bila uvedena u susjedna područja. Može se pretpostaviti da su se kovanice i njihova upotreba proširile regijom kroz interakcije među istorazinskim susjednim zajednicama koje su, kako tome svjedoči njihova materijalna kultura, dijelile mnoge zajedničke karakteristike, uključivo društveno-političke strukture.⁸⁹ Naravno, ovo je jedan spekulativan prijedlog, ali hermeneutički potencijal ovog modela, zajedno s njegovom kompatibilnošću s arheološkim – uključivo numizmatičkim – materijalom koji nam je trenutno na raspolaganju, čini ga obećavajućim putem za buduća istraživanja.

⁸⁶ Cf. Roymans, Aarts 2009, 20.

⁸⁷ Roymans, Aarts 2009, 20.

⁸⁸ Roymans, Aarts 2009, 20, with respect to the situation in the Lower Rhine region; cf. Wigg-Wolf 2011, 302, 311–312, who notices that this development is characteristic for peripheral regions of the 'Celtic' world. Popović 1987, 140–141 came to an identical conclusion with respect to the Scordiscan base metal coinage of phase C.

⁸⁹ For a fuller elaboration of this hypothesis, see Bilić forthcoming. For analogous use of the PPI model in explaining the spread of coinage within ancient Greece, see Renfrew 1986, 11; Howgego 1995, 16. For a suggestion that the LIA coinage spread following the same model, see Champion, Champion 1986, 68. On the PPI, see Renfrew 1986, esp. pp. 7–8. For an application of the PPI model to the communities of south-eastern Pannonia in the 2nd to 1st centuries BCE (traditionally, the area occupied by the Scordisci), see briefly Mihajlović 2019, 245.

⁸⁶ Cf. Roymans, Aarts 2009, 20.

⁸⁷ Roymans, Aarts 2009, 20.

⁸⁸ Roymans, Aarts 2009, 20, o situaciji u donjorajnskoj regiji; cf. Wigg-Wolf 2011, 302, 311–312, gdje se primjećuje da je ovakav tip razvitka karakterističan za periferna područja "keltskog" svijeta. Popović 1987, 140–141 je došao do identičnih zaključaka u kontekstu skordističkih kovanica od neplemenitih metala faze C.

⁸⁹ Za potpuniju raspravu o ovoj hipotezi vidi Bilić u tisku. Za analognu upotrebu modela istorazinske interakcije za objašnjenje širenja novca unutar antičke Grčke vidi Renfrew 1986, 11; Howgego 1995, 16. Za prijedlog da se mlade-željeznodobni novac širio prema istom modelu vidi Champion, Champion 1986, 68. O modelu istorazinske interakcije vidi Renfrew 1986, osobito str. 7–8. Za primjenu modela istorazinske interakcije na zajednice jugoistočne Panonije u 2. i 1. st. pr. Kr. (tradicionalno, područje koje su kontrolirali Skordisci), vidi kratko u Mihajlović 2019, 245.

KRATICE / ABBREVIATIONS

TKN – Göbl R. 1973, *Typologie und Chronologie der keltischen Münzprägung in Noricum*, Denkschriften der philosophisch-historischen Klasse 113, Veröffentlichungen der Kommission für Numismatik 2, Verlag der Österreichischen Akademie der Wissenschaften, Wien.

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Novi nalazi daorskog novca s područja Hercegovine i Crne Gore

New Finds of Daorsi Coins from Herzegovina and Montenegro

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U radu se objavljuju novi nalazi daorskog novca koji su nađeni na području ilirskog grada Daorso(...) u Ošanjićima kod Stoca, u okolici Gacka i Pljevalja. Riječ je o devet primjerka brončanog novca, čija su stilska, ikonografska i metrička obilježja gotovo identična s dosad poznatim nalazima. Na reversu dva primjerka se osim legende ΔΑΟΡΣΩΝ po prvi put javlja legenda ΔΑΟΕΡΣΩΝ. Nova varijanta novca ima posebno značenje za daljnje proučavanje daorske monetarne aktivnosti i ilirskih kovnica helenističkog razdoblja.

Ključne riječi: daorski novac, Ošanjići, Gacko, Pljevlja, ΔΑΟΡΣΩΝ, ΔΑΟΕΡΣΩΝ, Ilirija

This paper focuses on new discoveries of Daorsi coins found in the area of the Illyrian city of Daorso(...) in Ošanjići near Stolac, and in the vicinities of Gacko and Pljevlja. Specifically, these are nine specimens of bronze coins whose style, iconography and measurements are almost identical to those of previous finds. On the reverse of two specimens, in addition to the inscription ΔΑΟΡΣΩΝ, for the first time we also find the inscription ΔΑΟΕΡΣΩΝ. This new variant is of particular significance for the further study of Daorsi monetary activity and Illyrian coinage from the Hellenistic period.

Keywords: Daorsi coins, Ošanjići, Gacko, Pljevlja, ΔΑΟΡΣΩΝ, ΔΑΟΕΡΣΩΝ, Illyria

UVOD

Nedugo nakon što je objavljen rad o svim dotad poznatim primjercima daorskog novca, došlo se do novih saznanja o postojanju nekoliko daorskih kovanica nađenih u Hercegovini i Crnoj Gori. Pet primjeraka novca potječe s područja helenističkog ilirskog grada Daorso(...) u Ošanjićima kod Stoca, od kojih četiri spadaju u skupinu velike nominale, a jedna kovanica pripada tipu male nominale. Primjerci daorskog novca (kat. br. 1-5) su slijedom dužeg niza godina nađeni kao pojedinačni nalazi na prostoru akropole grada Daorso(...) u Ošanjićima i sada se nalaze u privatnom posjedu Željka Proleta u Stocu. Usporedo s tim, na položaju Kukanj, nedaleko od Pljevlja u Crnoj Gori, nađen je daorski novac velike nominale (kat. br. 6), koji je dospio u privatnu zbirku Saše Paškvan u Rijeci. Na gradini Jasenik kod Gacka nađeni su daorski novci velike nominale (kat. br. 7-9), koji se nalaze u privatnom posjedu Mladena Stojanovića u Foči.¹ U katalogu na završetku rada donosimo opis devet novih nalaza daorskih kovanica, što je prilično impozantan broj za ovu rijetku vrstu grčko-ilirskog novca. Dosad je bilo poznato svega 10 komada daorskog novca, a s primjercima iz kataloga ovog rada njihov broj se povećao na ukupno 19 primjeraka.² Daorski novci (kat. br. 1-9) imaju gotovo identična metrička i stilska obilježja, kao i dosad poznati primjerci iz numizmatičkih zbirka velikih muzeja u Beču, Berlinu, Splitu i Sarajevu. Na aversu daorskog novca prikazano je poprsje mladolikog muškarca bez brade u profilu nadesno, koji na glavi nosi kausiju kalotastog oblika s čvornatim ukrasima, a na reversu je stilizirani prikaz ilirskog lembe s legendom etnonima u jednom redu, grčkim alfabetom u genitivu plurala.³ Daorski novci su iskovanani na lijevanim kovnim pločicama, koje u presjeku imaju konični oblik s blago naglašenim rubovima, a na gotovo svim primjercima su vidljivi ostaci odsječenih izdanaka uljevnog kanala kalupa. Na tri primjerka daorskog novca (kat. br. 2, 3, 8) su vidljivi tragovi posrebrivanja i ostaci rastaljenog srebra, što otvara nova pitanja o daorskoj monetarnoj aktivnosti. Primjerci kovanica opisani u katalogu rada predstavljaju novi prilog poznavanju daorske monetarne proizvodnje, a ujedno obogaćuju spoznaje o optjecaju ilirskog novca tijekom helenističkog razdoblja. Riječ je o prvom novcu iskovanom na području današnje Hercegovine, stoga daorski novci imaju poseban značaj i važnost za bosanskohercegovačku numizmatiku. U numizmatičkoj zbirci Zemaljskog muzeja Bosne i Hercegovine u Sarajevu čuvaju se četiri daorske kovanice, što je ujedno najveći broj tog tipa

INTRODUCTION

In the immediate wake of the publishing of a paper on all known specimens of Daorsi coins, the author discovered new information about the existence of several more Daorsi coins found in Herzegovina and Montenegro. Five coins were found in the area of the Hellenistic Illyrian city of Daorso(...) in Ošanjići near Stolac, of which four were of high denomination and one of low denomination. Examples of Daorsi coins (Cat. no. 1-5) had been found over the course of many years as individual finds in the area of the acropolis of the city of Daorso(...) in Ošanjići, and are now held in a private collection by Željko Proleta in Stolac. In parallel, at the Kukanj site near Pljevlja in Montenegro, Daorsi coin of high denomination (Cat. no. 6) was found, and ended up in the private collection of Saša Paškvan in Rijeka. At the Jasenik site near Gacko, Daorsi coins of high denomination (Cat. no. 7-9) were found, and are held in the private collection of Mladen Stojanović in Foča.¹ The catalogue at the end of this paper includes descriptions of the nine new finds of Daorsi coins, which is a relatively significant number for this rare type of Greco-Illyrian coinage. To date, only 10 pieces of Daorsi coinage had ever been recorded, but with the specimens from the catalogue included in this paper, this number has now risen to a total of 19.² Daorsi coins (Cat. no. 1-9) have measurements and stylistic features almost identical to those of the hitherto known specimens from numismatic collections of large museums in Vienna, Berlin, Split and Sarajevo. The obverse of the Daorsi coins features the bust of a younger beardless man in right profile, wearing a calotte-shaped kausia hat adorned with tiny knotted decorations, while the reverse features a stylized depiction of an Illyrian ship with the ethnonym legend in one row, in the Greek alphabet and in the genitive plural.³ The Daorsi coins were minted on cast metal plates with a conical crosssection and slightly accentuated edges, and almost all specimens bear visible traces of the stems having been cut from the filler neck of the mould. Three specimens of Daorsi coins (Cat. no. 2, 3, 8) bear visible traces of silver coating and remnants of molten silver, which opens up new questions about Daorsi monetary activity. It is the first coin minted on the territory of today's Herzegovina, therefore Daorsi coins have a special significance and importance for Bosnian Herzegovinian numismatics. Four Daorsi coins are preserved in the numismatic collection of the National Museum of Bosnia and Herzegovina in Sarajevo, which is also the largest number of this type of coin in any museum fund in the world. As part

1 Zahvaljujem gospodi Željku Proleti, Saši Paškvanu i Mladenu Stojanoviću na ustupanju daorskog novca za potrebe ovog rada.

2 O starijim objavama nalaza daorskog novca vidi: Brunšmid 1898, 74–75; Basler 1971, 331–335; Marić 1976, 254–255; Marović 1976, 229–331; Kozličić 1981, 175; Dragičević 2016, 107–121, kat. br. 1–10.

3 O likovnim obilježjima daorskog novca vidi: Rendić Miočević 1973, 10–14; Marić 1976, 254–255; Marović 1976, 230; Cambi 2000, 23–24; Janssen 2007, 37–38, 43–45; Dragičević 2016, 112, a o maritimnim obilježjima stiliziranih prikaza ilirskih lembe vidi: Kozličić 1981, 164–175; Boršić, Džino, Radić Rossi 2021, 50–55.

1 The author expresses their gratitude to Željko Proleta, Saša Paškvan and Mladen Stojanović for providing access to the Daorsi coins for the purposes of writing this paper.

2 For older publications of finds of Daorsi coins, see: Brunšmid 1898, 74–75; Basler 1971, 331–335; Marić 1976, 254–255; Marović 1976, 229–331; Kozličić 1981, 175; Dragičević 2016, 107–121, Cat. no. 1–10.

3 For more on the images featured on Daorsi coins, see: Rendić Miočević 1973, 10–14; Marić 1976, 254–255; Marović 1976, 230; Cambi 2000, 23–24; Janssen 2007, 37–38, 43–45; Dragičević 2016, 112, and for more on maritime elements of stylized Illyrian ships, see: Kozličić 1981, 164–175; Boršić, Džino, Radić Rossi 2021, 50–55.

novca u nekom muzejskom fundusu na svijetu. U sklopu novog stalnog postava Zemaljskog muzeja izložene su među numizmatičkim eksponatima i dvije bolje očuvane daorske kovanice.

OBILJEŽJA NOVIH PRIMJERAKA DAORSKOG NOVCA

Na dva primjerka daorskog novca velike nominale (kat. br. 1, 2) po prvi put se javlja reversna legenda ΔΑΟΕΡΣΩΝ, tako da imamo drugu varijantu njihovog etnonima posvjedočenu na novcu. Oba primjerka imaju smeđe-crnu patinu i iskovan su istim reversnim kalupom. Unatoč oštećenjima nastalim od dugotrajnih korozijskih procesa na daorskom novcu (kat. br. 1) dobro su vidljivi detalji na aversnom i reversnom prikazu s legendom ΔΑΟΕΡΣΩΝ, kao i na drugom primjerku (kat. br. 2) koji je djelomično prekriven rastaljenom srebrenom slitinom. Primjerci daorskog novca velike i male nominale (kat. br. 2, 3) nađeni su zajedno na arealu akropole, a bili su spojeni rastaljenom masom srebrene slitine.⁴ Na približno istom mjestu je Milorad Milutinović iz Ošanjića tijekom 1974. i 1975. našao dva primjerka daorskog novca, koji se sada čuvaju u zbirci Zemaljskog muzeja BiH u Sarajevu.⁵ Zanimljivo je istaknuti kako je na jednom od njih vidljiva mala srebrena mrlja na aversu, koja je nanešena u tankom sloju na bradu glave muškarca s kausijom.⁶ Veći dio površine daorskog novca male nominale (kat. br. 3) prekriven je rastaljenom masom srebrene slitine, a iskovan je istim aversnim i reversnim kalupom kao i primjerci iz muzejskih zbirka u Beču i Berlinu, uključujući i pojedinačni nalaz iz Dabarskog polja u privatnom posjedu profesora Miroslava Palamete iz Stoca.⁷ Na primjerku novca (kat. br. 4) avers je prilično oštećen i slabo vidljiv, dok je reversni prikaz s legendom ΔΑΟΕΡΣΩΝ relativno dobro očuvan. Iskovan je s istim kalupom kao i jedan primjerak iz numizmatičke zbirke Zemaljskog muzeja Bosne i Hercegovine u Sarajevu.⁸ Znatno dio aversa i reversa primjerka novca (kat. br. 5) prekriven je rastaljenom masom bakrene slitine i tankim naslagama kamenca, no na osnovi vidljivih detalja i metričkih obilježja možemo ga sa sigurnošću atribuirati tipu daorskog novca velike nominale.⁹ Dobro očuvan primjerak novca (kat. br. 6) nađen je na položaju Kukanj nedaleko od Pljevalja u Crnoj Gori i to je zasad prostorno najudaljeniji nalaz daorskog novca od grada Daorso(...) u Ošanjićima kod Stoca. Primjerak daorskog novca iz Crne Gore ima zelenosmeđu patinu i dobro vidljive detalje na aversnom prikazu, no revers nije optimalno otkovan i

of the new permanent exhibition of the National Museum, two better-preserved Daorsi coins are on display among the numismatic exhibits.

CHARACTERISTICS OF NEW EXAMPLES OF DAORSI COINS

On two specimens of Daorsi coins of high denomination (Cat. no. 1, 2), for the first time we see the legend ΔΑΟΕΡΣΩΝ on the reverse, meaning that we now have evidence of another variant of the ethnonym on coins. Both specimens have a brownish-black patina, and were minted with the same reverse mould. Despite damage caused by long-term corrosive processes, the Daorsi coin (Cat. no. 1) retained clearly visible details on the obverse and the reverse side with the legend ΔΑΟΕΡΣΩΝ, which is also true of the second specimen (Cat. no. 2) that is partially covered by molten silver alloy. Specimens of Daorsi coins of high and low denomination (Cat. no. 2, 3) were found together within range of the acropolis, and were physically connected by molten silver alloy.⁴ It is at roughly the same site that, in 1974 and 1975, Milorad Milutinović from Ošanjići found two specimens of Daorsi coinage that are now kept in the collection of the National Museum of Bosnia and Herzegovina in Sarajevo.⁵ It is interesting to note that one of these has a visible small silver stain on the obverse, applied in a thin layer onto the chin of the male portrait wearing a kausia hat.⁶ The low-denomination Daorsi coin (Cat. no. 3) is mostly covered by molten silver alloy and was minted with the same obverse and reverse mould as the specimens in the museum collections in Vienna and Berlin, as well as the individual find from Dabarsko Polje held in the private collection of prof. Miroslav Palameta from Stolac.⁷ The obverse of specimen (Cat. no. 4) is quite worn and difficult to make out, while the reverse image with the legend ΔΑΟΕΡΣΩΝ has been relatively well preserved. It was minted using the same mould as one specimen from the numismatic collection of the National Museum of Bosnia and Herzegovina in Sarajevo.⁸ A significant portion of the obverse and reverse of the coin (Cat. no. 5) is covered by molten copper alloy and thin deposits of limescale, but, based on the visible details and measurements, we can conclude with certainty that it is a high-denomination Daorsi coin.⁹ A well-preserved coin specimen (Cat. no. 6) was found at the Kukanj site near Pljevalja in Montenegro, and is currently the most remote find of Daorsi coinage from the city of Daorso(...) in Ošanjići near Stolac. The Daorsi coin specimen from Montenegro has a greenish-brown patina and well defined details on

4 Mali tip daorskog novca bio je rubom kovne pločice okomito pričvršćen spojem rastaljene srebrene slitine na avers većeg tipa novca. Neposredno nakon otkrića, nalaznik je mehanički razdvojio dvije kovanice, pa je tako na aversu većeg daorskog novca (kat. br. 2) vidljiv trag prijeloma spoja.

5 Marić 1976, 254.

6 Marić 1976, 255, T. I, 1; Dragičević 2016, 119–120, kat. br. 6.

7 Dragičević 2016, 111, 120–121, kat. br. 10.

8 Marić 1976, 254–255, T. I, 2; Dragičević 2016, 119–120, kat. br. 5.

9 Iako su aversni i reversni prikaz djelomično vidljivi, na reversu se jasno uočava prikaz stiliziranog ilirskog lembe, kao i na primjerku novca kat. br. 4.

4 The edge of the smaller coin was perpendicularly attached by molten silver alloy to the obverse of the larger coin. Immediately after its discovery, the finder mechanically separated the two coins, so that the obverse of the larger Daorsi coin (Cat. no. 2) bears traces of where the bond was broken.

5 Marić 1976, 254.

6 Marić 1976, 255, T. I, 1; Dragičević 2016, 119–120, Cat. no. 6.

7 Dragičević 2016, 111, 120–121, kat. br. 10.

8 Marić 1976, 254–255, T. I, 2; Dragičević 2016, 119–120, Cat. no. 5.

9 Although the obverse and reverse images are only partially visible, the reverse clearly shows a stylized Illyrian ship as with the coin specimen presented here (Cat. no. 4).

centriran, pa je reversna legenda ΔΑΟΡΣΩΝ djelomično vidljiva. Na gradini Jasenik kod Gacka nađeni su brojni primjerci grčko-ilirskog novca, a među njima i tri primjerka daorskog novca (kat. br. 7–9).¹⁰ Relativno dobro očuvan primjerak novca (kat. br. 7) ima karakterističnu tamnozelenu patinu, a iskovan je istim aversnim i reversnim kalupom kao i novac nađen u Crnoj Gori. Unatoč slabom stupnju očuvanosti nastalom uslijed dugotrajnih korozijskih procesa, kovanica (kat. br. 8) posebno svjedoči o postupcima posrebrivanja daorskog novca. Gotovo trećina površine aversa prekrivena je tankom srebrnom prevlakom, a iskovan je istim kalupom kao jedan primjerak iz Arheološkog muzeja u Splitu.¹¹ Veći dio reversa je posrebrjen, no zbog slabe očuvanosti nije ga moguće povezati s drugim reversnim kalupima. Primjerak novca (kat. br. 9) ima dobro očuvan avers i revers s karakterističnom zelenkastom patinom. Na reversu novca su jasno vidljivi detalji prikaza ilirskog lemba i legenda ΔΑΟΡΣΩΝ, a iskovan je istim reversnim kalupom kao kovanica (kat. br. 4) nađena u Ošanjićima. Poseban fenomen predstavlja dosad u antičkoj numizmatici nezabilježen slučaj izdavanja srebrenih emisija novca Daorsa, o čemu svjedoče prethodno spomenuti primjerci nađeni u gradu u Ošanjićima i na gradini Jasenik (kat. br. 2, 3 i 8). Na navedenim primjercima brončanog daorskog novca vidljivi su tragovi nanošenja tankog sloja srebrene slitine, dok revers slabo očuvanog primjerka s Jasenika najbolje svjedoči o postupku posrebrivanja. Iako su do sada bili poznati isključivo brončani daorski novci, novi posrebrjeni nalazi otvaraju cijeli niz pitanja o srebrenim emisijama i u kojoj mjeri su daorski kovničari posjedovali znanja i vještine o tehnikama posrebrivanja. Nažalost, u nedostatak rezultata spektrometrijskih metoda i analitičkih istraživanja posrebrjenih daorskih kovanica ne možemo izvoditi sigurne zaključke o strukturi i karakterizaciji njihove slitine. Zanimljivo je istaknuti kako su u ostavi kovačkog i zlatarskog alata iz Ošanjića među nakitom, figurinama i sirovinama nađena četiri smotuljka srebrene žice kvadratnog presjeka.¹² Nedavno je na obali rijeke Cetine nađen srebreni isejski novac, koji ima kovnu pločicu s blago zakošenim rubovima karakterističnim za isejske brončane primjerke. Osim toga, navedeni primjerak odlikuju srodna stilsko i tipološka svojstva s tipovima isejskog novca iskovanog u bronci.¹³ Vjerojatno su i Daorsi svojom emisijom srebrenog novca promicali suverenitet, kulturni identitet i ekonomsku moć, koja se zasnivala na obrtništvu i trgovačkom posredništvu između mediteranskog svijeta i autohtonih zajednica u unutrašnjosti.

the obverse, but the reverse was not optimally minted or centered, meaning that the reverse legend of ΔΑΟΡΣΩΝ is only partially visible. Numerous specimens of Greco-Illyrian coinage were found at the Jasenik site near Gacko, including three specimens of Daorsi coins (Cat. no. 7–9).¹⁰ A relatively well-preserved coin specimen (Cat. no. 7) has a characteristic dark green patina, and was minted with the same obverse and reverse moulds as the coin found in Montenegro. Despite significant degradation due to long-term corrosion processes, the second coin (Cat. no. 8) bears witness to the silver plating processes used on Daorsi coinage. Almost a third of the obverse side is covered by a thin silver layer, and the coin was minted with the same mould as the specimen kept in the Split Archaeological Museum.¹¹ Most of the reverse is silver plated, but due to its poor state of preservation, no links to other reverse moulds can be ascertained. The coin (cat. no. 9) has a well-preserved obverse and reverse with a characteristic greenish patina. On the reverse of the coin, the details of the Illyrian lemb and the legend ΔΑΟΡΣΩΝ are clearly visible, and it was minted using the same reverse mold as the coin (cat. no. 4) found in Ošanjići. A special phenomenon is the hitherto unrecorded case in ancient numismatics of the issue of Daorsi silver issues, as evidenced by the aforementioned examples found in the town of Ošanjići and at the Jasenik hillfort (cat. no. 2, 3 and 8). On the aforementioned examples of bronze Daorsi coins, traces of the application of a thin layer of silver alloy are visible, while the reverse of the poorly preserved example from Jasenik is the best evidence of the silvering process. Although until now only bronze Daorsi coins were known, the new silvered finds open up a whole series of questions about silver issues and in to what extent the Daorsi mints possessed knowledge and skills about silvering techniques. Unfortunately, due to the lack of results of spectrometric methods and analytical research of silver-plated Daorsi coins, we cannot draw certain conclusions about the structure and characterization of their alloy. It is interesting to point out that in the hoard of blacksmith's and goldsmith's tools from Ošanjići, among jewelry, figurines and raw materials, four coils of silver wire with a square section were found.¹² Recently, a silver Issaeian coin was found on the bank of the river Cetina, which has a mint plate with slightly beveled edges characteristic of Issaeian bronze specimens. In addition, the specified specimen is characterized by similar stylistic and typological features to the types of Issaeian coins minted in bronze.¹³ It is likely that the Daorsi also promoted sovereignty, cultural identity and economic power with their issue of silver coins, which was based on craftsmanship and commercial mediation between the Mediterranean world and indigenous communities in the interior.

¹⁰ Mandić 1985, 322.

¹¹ Marović 1976, 230; Bonačić Mandinić 2004, 106–107, kat. br. 201; Dragičević 2016, 120–121, kat. br. 8.

¹² Marić 1979, 28–29, br. 24–27. T. XXIV, 24–27.

¹³ Paškvanić, Visonà 2021, 137–138.

¹⁰ Mandić 1985, 322.

¹¹ Marović 1976, 230; Bonačić Mandinić 2004, 106–107, Cat. no. 201; Dragičević 2016, 120–121, Cat. no. 8.

¹² Marić 1979, 28–29, br. 24–27. T. XXIV, 24–27.

¹³ Paškvanić, Visonà 2021, 137–138.



Sl. 1. Rasprostranjenost nalazišta daorskog novca: 1. Starogradsko polje, Hvar 2. Naron 3. Ošanjici 4. Suzina 5. Jasenik, Gacko 6. Pljevlja

Fig. 1. Distribution of finds of Daorsi coinage: Starogradsko Polje, Hvar 2. Naron 3. Ošanjici 4. Suzina 5. Jasenik, Gacko 6. Pljevlja

NALAZIŠTA

Iako daorski novci opisani u katalogu nisu nađeni tijekom sustavnih arheoloških istraživanja, isti nam donose nove topografske podatke o nalazištima i ujedno proširuju spoznaje o monetarnoj aktivnosti ilirskih Daorsa. Dosad su bila poznata četiri nalazišta daorskog novca, koja su uglavnom koncentrirana u donjem porječju Neretve.¹⁴ Dva nova nalazišta su s područja duboko u zaleđu, tako da sad raspolažemo sa šest potvrđenih nalazišta daorskog novca. Brojnošću nalaza daorskog novca prednjači grad Daorso(...) u Ošanjićima, gdje je dosad nađeno ukupno 9 primjeraka. Pored toga, na tom nalazištu je dosad dokumentirano 70 primjeraka grčkog i grčko-ilirskog novca, koji su iskovan i u razdoblju od 4. do 1. stoljeća pr. Kr.¹⁵ Ukoliko dodamo pet novih primjeraka daorskog novca (kat. br. 1-5), ukupan broj grčkog i grčko-ilirskog novca s Ošanjića se time povećao na 75 primjeraka, što je impozantan broj. Gradina u Ošanjićima spada u skupinu najznačajnijih nalazišta toga tipa u donjem porječju Neretve; podignuto je u brončanom dobu, trajalo je u željeznom dobu, a tijekom helenističkog doba se transformiralo u kulturno, političko, vjersko i ekonomsko središte ilirskih Daorsa. Zahvaljujući rezultatima arheoloških iskopavanja dobili smo važne podatke o organizaciji i graditeljstvu naselja. Tijekom višegodišnjih arheoloških iskopavanja nađeni su mnogobrojni i raznovrsni predmeti, među kojima dominiraju nalazi iz helenističkog doba.¹⁶ Pojedinačni nalazi grčko-ilirskog novca zabilježeni su na sve tri naseobinske cjeline urbanog kompleksa u Ošanjićima, tj. na prostoru akropole

SITES

Although the Daorsi coins described in the catalogue were not found during systematic archaeological investigations, they provide us with new information about both their find sites and Daorsi monetary activity. Four find sites of Daorsi coins were known previously, mostly concentrated along the lower course of the Neretva.¹⁴ Two new find sites are in areas deep in the hinterlands, so we now have six confirmed find sites of Daorsi coinage. The city of Daorso(...) in Ošanjici has yielded the largest number of finds; nine specimens in total. In addition, this is also the site where 70 specimens of Greek and Greco-Illyrian coins minted in the period from the 4th to 1st centuries BC were found.¹⁵ If we add to these the five new specimens of Daorsi coinage (Cat. no. 1-5), the total number of Greek and Greco-Illyrian coins found in Ošanjici grows to 75 specimens in total, which is a significant number. The site in Ošanjici is among the most important find sites of this type in the area along the lower course of the Neretva. It was established in the Bronze Age, lasted through the Iron Age, and was transformed during the Hellenistic era into the urban centre of the Illyrian Daorsi. Thanks to the finds from archaeological excavations, we have gathered important information about the organization and construction of the settlement. Several years of archaeological excavations uncovered numerous and diverse artefacts, most of them dated to the Hellenistic era.¹⁶ Individual finds of Greco-Illyrian coinage were recorded in all three residential areas of the settlement complex in Ošanjici, i.e. in the area of the acropolis and residential terraces in the canyon of the Radimlja river, on the Banje plateau where numerous economic and

¹⁴ Marić 1996, 30; Kirigin 2004, 149; Dragičević 2016, 109–111.

¹⁵ Marić 1973b, 250–251; Dragičević 2022, 46–47.

¹⁶ Basler 1955, 79–94; Basler 1971, 331–336; Marić 1973a, 173–235; Marić 1977, 5–99; Marijanović 1984, 11–22; Marić 1997, 79–95; Marijan 2001, 7–29; Marijan 2005, 87–112; Marijan 2011, 177–187.

¹⁴ Marić 1996, 30; Kirigin 2004, 149; Dragičević 2016, 109–111.

¹⁵ Marić 1973b, 250–251; Dragičević 2022, 58–59.

¹⁶ Basler 1955, 79–94; Basler 1971, 331–336; Marić 1973a, 173–235; Marić 1977, 5–99; Marijanović 1984, 1122; Marić 1997, 79–95; Marijan 2001, 7–29; Marijan 2005, 87–112; Marijan 2011, 177–187.



Sl. 2. Gradinsko nalazište Jasenik kod Gacka (snimio: I. Dragičević)

Fig. 2. Hillfort site Jasenik near Gacko (photo by: I. Dragičević)

i naseobinskih terasa u kanjonu rijeke Radimlje, te na zaravni Banje gdje su dokumentirani brojni privredni i stambeni objekti planski podignuti u nekoliko pravilnih kvartova po načelima grčkog graditeljstva i urbanizacije. U istraženim privrednim i stambenim objektima naseobinske cjeline na zaravni Banje među arheološkim nalazima prevladavaju ulomci amfora i posuđa tipa Gnathia, kao i ostali keramički i metalni nalazi koji pružaju znakovit uvid u ondašnje ekonomske aktivnosti naselja.¹⁷ Značajno je istaknuti otkriće jedinstvene ostave kovačkog i zlatarskog alata i gotovih proizvoda, koja je sadržavala 245 raznovrsnih željeznih, brončanih, srebrenih i staklenih predmeta. Na osnovu analize alata, proizvoda i sirovina pohranjenih u ostavu može se klasificirati više obrtničkih djelatnosti, što potvrđuju istražene specijalizirane radionice i privredni objekti naseobinske cjeline na zaravni Banje.¹⁸ Imajući u vidu izuzetno razvijene obrtničke i trgovačke djelatnosti ilirskih Daorsa, možemo sa sigurnošću pretpostaviti da je u gradu Daorso(...) postojala kovnica novca nakon 168. pr. Kr., gdje je do sada nađeno devet primjeraka daorskog novca.

Važno je spomenuti gradinu Jasenik u istoimenom mjestu kod Gacka, gdje su među brojnim grčko-ilirskim novcem

residential buildings were documented, arranged regularly in several districts in line with Greek construction and urbanization principles. Prevalent among the archaeological finds from the excavated economic and residential buildings of the residential area on the Banje plateau are fragments of Gnathia-type pottery, as well as other ceramic and metal objects providing meaningful insight into the economic activities of the settlement.¹⁷ One discovery of note is that of a unique hoard of blacksmithing and goldsmithing tools and finished products, containing a total of 245 assorted iron, bronze, silver and glass objects. Based on an analysis of the tools, products and raw materials found in the hoard, a number of craft activities may be deduced, which have been further confirmed through the excavation of specialized workshops and economic buildings found in the residential area on the Banje plateau.¹⁸ Bearing in mind the highly developed craft and trade activities of the Illyrian Daorsi, we can assume with a high degree of certainty that there was a mint for producing coins in the city of Daorso(...) after 168 BC, where nine specimens of Daorsi coins have been found to date, representing the largest number of coins found at a single site compared to the remaining five known find-sites.

However, in this context, it is also important to note the Jasenik site near Gacko, where, among numerous specimens

¹⁷ Marijan 2011, 182–184.

¹⁸ Marić 1979, 23–113; Gebhard 1991, 2–11.

¹⁷ Marijan 2011, 182–184.

¹⁸ Marić 1979, 23–113; Gebhard 1991, 2–11.

nađena i tri daorska novca velike nominale. Nalazište je smješteno na visokoj kraškoj gredi (preko 1300 m/nv), koja se pruža u smjeru istok – zapad, a naseobinski prostor se nalazio na južnim terasama.¹⁹ Pored daorskog novca, na Jasniku su nađeni brončani i srebrni novci ilirskog kralja Baleja, autonomne emisije Skodre i drahme Dirahija iz predposljednje i posljednje faze kovanja.²⁰ Tijekom 1899. u obližnjem mjestu Berušica otkupljeno je 9 primjeraka novca ilirskog kralja Baleja, no nije isključena mogućnost da su navedeni novci nađeni na gradinskom nalazištu Jasenik.²¹ Berušica se nalazi otprilike jedan kilometar sjeveroistočno od gradine Jasenik u neposrednoj blizini granice s Crnom Gorom. Nalazi novca s Jasenika se u potpunosti uklapaju u monetarnu strukturu najstarijeg novčanog optjecaja u Hercegovini, a ujedno ukazuju na trgovačke veze s Daorsima i ostalim autohtonim zajednicama s hercegovačkog i crnogorskog područja odnosno ondašnje sjeverne Ilirije.

Na osnovu rasčlambe rimskih epigrafskih spomenika i istraživanja ilirskog imenskog korpusa možemo pretpostaviti kako su u planinskom dijelu Visoke Hercegovine oko gornjeg toka Neretve (Jablanica, Konjic, Glavatičevo i Gacko) i sjeverozapadnog dijela Crne Gore s područjem Pljevalja i Prijepolja živjeli autohtoni Narensi.²² Pojedini istraživači su smještali Melkumane na područje Gacka, no takve tvrdnje zasad nisu arheološki potvrđene. Gatačko polje je bilo značajno tranzitno područje kroz sva razdoblja, a ujedno je povezivalo južno primorje s planinskim područjem Podrinja.²³ Slaba arheološka istraženost gradinskih nalazišta Visoke Hercegovine predstavlja glavnu prepreku u valorizaciji postojećih podataka, kao i daljnog proučavanja tog područja. Analizirajući rasprostranjenost nalazišta daorskog novca možemo zaključiti kako se daorska morska, riječna i kopnena trgovina odvijala od Neretvanskog kanala i donjeg porječja Neretve, preko kanjona rijeke Bregave i ilirskog grada u Ošanjićima, prema Dabarskom polju, visoravnima Gacka i drugim središtima u dubokoj unutrašnjosti, poput nalazišta kod Pljevlja u Crnoj Gori.

UMJESTO ZAKLJUČKA

Tijekom protopovijesnog i helenističkog razdoblja, područje Donje Neretve je imalo posebno istaknut značaj u procesima stvaranja kulturnih kontakata s mediteranskim svijetom.²⁴ Interakcije Grka i autohtonog stanovništva Donje Neretve pokrenule su niz inovacijskih strujanja i društvenih promjena, koje se ogledaju u prihvaćanju novih tehnologija, novca i novčane privrede. Znakovit primjer intenzivnijeg

of Greco-Illyrian coinage, three Daorsi coins of high denomination were found. This find-site is located on a high karst ledge (over 1300 meters above sea level), and with an east-west orientation, with the residential area situated on its southern terraces.¹⁹ In addition to Daorsi coins, bronze and silver coins of the Illyrian king Ballaios were also found, as well as those autonomous coins from Scodra and Dyrrhachium drachmas from the penultimate and final minting phases.²⁰ During 1899, 9 coins of the Illyrian King Ballaios were bought in the nearby village of Berušica, but the possibility that these coins were found at the hillfort of Jasenik is not excluded.²¹ Berušica is located approximately one kilometer northeast of the Jasenik hillfort, in the immediate vicinity of the border with Montenegro. The coins found at the Jasenik site fully conform to the monetary structure of the oldest circulation of coinage in Herzegovina, but also testify to trading links with the Daorsi and with other Illyrian communities in the area of Herzegovina and Montenegro, or what was then northern Illyria. Based on the analysis of Roman epigraphic monuments and the research of the Illyrian name corpus, we can assume that the autochthonous Narensi lived in the mountainous part of so called higher Herzegovina area around the upper reaches of the Neretva (Jablanica, Konjic, Glavatičevo and Gacko) and the northwestern part of Montenegro with the area of Pljevlja and Prijepolje.²² Some researchers placed the Melkumans in the Gacko area, but such claims have not yet been confirmed archaeologically. Gatačko polje was an important transit area throughout all periods, and at the same time it connected the southern coast with the mountainous area of Podrinje. Insufficient archaeological research of the hillfort sites of the so called Higher Herzegovina region represents the main obstacle in the valorization of existing data, as well as further study of the area.²³ By analysing the distribution of Daorsi coins finds, we can conclude that Daorsi maritime, riverine and inland trade stretched from the Neretva Channel and the lower course of the Neretva River, through the canyon of the Bregava canyon and the Illyrian city in Ošanjići, and towards Dabarsko Polje, the plateaus around, Gacko and other centres further inland, such as the find site near Pljevlja in Montenegro.

INSTEAD OF A CONCLUSION

During the prehistoric and Hellenistic periods, the area of the Lower Neretva had a particularly prominent significance in the processes of creating cultural contacts with the Mediterranean world.²⁴ The interactions between the Greeks and the autochthonous population of the Lower Neretva initiated a series of innovation currents and social changes, which are reflected in the acceptance of new technologies, money

19 Mandić 1985, 322.

20 Prema usmenoj informaciji gosp. Stojanovića daorski novci nađeni su na južnom platou ispod akropole gradinskog nalazišta Jasenik, a dosad je na samom lokalitetu zabilježeno preko 100 primjeraka pojedinačnih nalaza brončanog novca ilirskog kralja Baleja, koji mahom pripadaju tzv. barbariziranim tipovima.

21 Kraljević 1978, 156; Dragičević 2022, 38.

22 Atanacković Salčić 1990, 8–12.

23 Bojanovski 1988, 108–109.

24 Zaninović 2003, 277; Marijan 2011a, 26.

19 Mandić 1985, 322.

20 According to the oral information of Mr. Stojanović Daorsi coins were found on the southern plateau below the acropolis of the Jasenik hillfort site, and so far over 100 individual finds of bronze coins of the Illyrian king Ballaios have been recorded on the site itself, which mostly belong to the so-called barbarized types

21 Kraljević 1978, 156; Dragičević 2022, 38.

22 Atanacković Salčić 1990, 8–12.

23 Bojanovski 1988, 108–109.

24 Zaninović 2003, 277; Marijan 2011a, 26.

kulturnog transfera u donjem porječju Neretve zastupljen je u materijalnoj i duhovnoj kulturi Daorsa, usvajanjem graditeljstva, primjeni grčkog pisma, kovanju vlastitog novca, te u izradi nakita i minijaturene plastike s prikazima grčkih bogova i božanstava.

U novije vrijeme dokumentirani su novi pojedinačni nalazi grčko-ilirskog i daorskog novca s brojnih nalazišta donjeg porječja Neretve, koji ukazuju na znatno intenzivniji optjecaj novca tijekom kasnog helenističkog razdoblja, nego što se prije pretpostavljalo.²⁵ Ilirske kovnice nisu mogle lako konkurirati moćnim ekonomskim i trgovačkim središtima na južnom Jadranu, gradovima Dirahiju i Apoloniji, koji su u kontinuitetu od 4. do sredine 1. st. pr. Kr. kovali srebreni novac u brojnim emisijama. Grad Dirahij (Δυρράχιον) je imao najproduktivniju kovnicu srebrenog novca na istočnoj jadranskoj obali, a dirahijske drahme su intenzivno cirkulirale tijekom 2. i 1. st. pr. Kr. diljem Balkana što potvrđuju mnogobrojni pojedinačni nalazi i ostave.²⁶ Nakon Dirahija slijedi kovnica grada Apolonije (Ἀπολλωνία) sa znatno manjim brojem srebrenih emisija i manjom zastupljenosti od dirahijskog novca. Na prostoru ilirskog grada u Ošanjićima do sada je nađeno pet pojedinačnih nalaza srebrenog novca s prikazom Herakla na aversu i Pegaza na reversu, kao i osam drahmi ranih emisija iskovanih u Dirahiju, te jedna raritetna dragma Apolonije iz rane faze kovanja, što je dosad najveći broj pojedinačnih nalaza ranih emisija na jednom nalazištu izvan današnje Albanije.²⁷ Sukladno širenju rimskih političkih interesa duž istočne jadranske obale i njezina zaleđa prema Podunavlju, usporedno se širio novčani optjecaj srebrenog novca iskovanog u kovnicama Dirahija i Apolonije, koji je tijekom 1. stoljeća pr. Kr. postao dominantno platežno sredstvo.²⁸

Stjecanjem nezavisnosti i suvereniteta započela je daorska monetarna aktivnost, koja nije bila dugotrajna, niti je imala mnogo emisija i tipova. Daorski novci nisu imali veću ulogu u širim jadranskim i sredozemnim trgovačkim relacijama, već su imali važnost i promidžbeni karakter na užem području gdje se odvijala njihova pomorska, riječna i kopnena trgovina. Unatoč tome, daorski novci se odlikuju po dobroj kvaliteti izrade s minucioznim aversnim i reversnim prikazima. Na reversima daorskog, labeatskog i skodranskog novca su prikazani stilizirani ilirski lembi, što svjedoči o važnosti autohtonog brodarstva i značaju pomorske trgovine.²⁹ Na dva primjerka daorskog novca (kat. br. 1, 2) javlja se nova varijanta reversne legende, što dodatno usložnjava problematiku rasčlambe daorskog etnonima i otvara rasprave oko izvornog naziva njihovog kulturnog, političkog i ekonomskog središta u Ošanjićima kod Stoca. Noviji nalazi obogaćuju

and the monetary economy. A significant example of a more intense cultural transfer in the lower Neretva basin is represented in the material and spiritual culture of the Daorsi, with the adoption of construction, the use of the Greek alphabet, the minting of their own coinage, and in the production of jewelry and miniature plastic with depictions of Greek gods and deities. In recent times, new individual finds have been documented of Greco-Illyrian and Daorsi coins from numerous sites in the lower Neretva river basin, which indicate a much more intensive coin circulation during the late Hellenistic period than previously assumed.²⁵

Other Illyrian coinage could not compete in terms of quality and quantity of emissions with the powerful economic and trading centres of the southern Adriatic, the cities of Dyrrhachium and Apollonia, where silver coins were minted in continuity from the 4th to mid-1st century BC. The city of Dyrrhachium (Δυρράχιον) had the most productive mint of silver coins on the eastern Adriatic coast, and the Dyrrhachium drachmas were intensively circulated throughout the Balkans in the 2nd and 1st centuries BC, as evidenced by numerous individual finds and hoards.²⁶ The Dyrrhachium mint is followed by that of the city of Apollonia (Ἀπολλωνία), with a considerably smaller number of silver issues and a smaller share of coins. To date, five individual finds of silver coins featuring Heracles on the obverse and Pegasus on the reverse have been discovered in the area of the Illyrian settlement in Ošanjići, as well as eight drachmas from earlier issues minted in Dyrrhachium, and a rare drachma originating from an early minting phase in Apollonia, making this the largest number of individual finds from early issues at a find site outside present-day Albania.²⁷ With the expansion of Roman political interest along the eastern Adriatic coast and inland toward the Danube basin, the circulation of silver coinage minted in Dyrrhachium and Apollonia also expanded, so that during the 1st century BC it became the dominant means of payment.²⁸ With independence and sovereignty came Daorsi monetary activity, which was not long-lasting, nor did it bear many issues and types. Daorsi coins did not play a major role in wider Adriatic and Mediterranean trade relations, but had an importance and promotional character in a narrower area where their sea, river and land trade took place. Nevertheless, Daorsi coins are of good quality with minutely detailed images on the obverse and reverse. The reverse sides of Daorsi, Labeate and Scodran coins featured stylized Illyrian ships, attesting to the importance of indigenous shipping and maritime trade.²⁹ Two specimens of Daorsi coins (Cat. no. 1, 2) feature a new variant of the reverse legend, further compounding the issue of analysing the Daorsi ethnonym and opening up discussions about the original name of their cultural, political and economic centre in Ošanjići near Stolica. The newer finds yield further insights about Daorsi monetary activity and the structure of the oldest circulation of coins

25 Dragičević 2016, 116–118; Dragičević 2022, 31–64.

26 Conovici 1986, 69–82; Meta 2015, 254–267.

27 Dragičević 2022, 34, 37–38, kat. br. 3–5, 13–21.

28 Popović 1987, 98, 99, 102–104; Šklegro 1999, 315–317.

29 Kozličić 1981, 164–180; Boršić, Džino, Radić Rossi 2021, 50–58, 170–176.

25 Dragičević 2016, 116–118; Dragičević 2022, 31–64.

26 Conovici 1986, 69–82; Meta 2015, 254–267.

27 Dragičević 2022, 49–50, Cat. no. 3–5, 13–21.

28 Popović 1987, 98, 99, 102–104; Šklegro 1999, 315–317.

29 Kozličić 1981, 164–180; Boršić, Džino, Radić Rossi 2021, 50–58, 170–176.

spoznaje o daorskoj monetarnoj aktivnosti i strukturi najstarijeg novčanog optjecaja u donjem porječju Neretve, a nova nalazišta ukazuju na daorske trgovačke aktivnosti i interakcije s autohtonim zajednicama nastanjenim na visoravnima duboke unutrašnjosti. Daorska ekonomska moć je ubrzano opadala krajem 2. st. pr. Kr., a u 1. st. pr. Kr. u dolini Neretve su prisutni italici doseljenici, koji su preuzeli vodeću ulogu u trgovačkom posredništvu i lokalnoj proizvodnji dobara. Uvriježeno je mišljenje, da je grad Daorso(...) razoren tijekom Rimskog građanskog rata između Cezara i Pompeja, no nedostatak arheoloških nalaza karakterističnih za 1. st. pr. Kr. navodi na pretpostavku kako se taj događaj zbio znatno ranije. S druge strane rijeke Neretve, Naronna se transformirala iz republikanskog vojnog i logističkog uporišta u antički grad sa statusom rimske kolonije u kojem je bilo sjedište Naronitanskog konventa. Ako usporedimo ta dva prostorno bliska grada u donjem porječju Neretve, onda je utvrđena urbana aglomeracija u Ošanjiciima najznačajniji predstavnik helenističkog razdoblja, a Naronna najvažniji antički grad s kontinuitetom od rimskog kasnorepublikanskog do kasnog antičkog doba. Na kraju, možemo zaključiti da su Daorsi promicatelji novčane trgovine u donjem porječju Neretve, a njihovi novci iskovan u najsjevernijoj ilirskoj kovnici svjedoče o prosperitetu i ekonomskoj moći do pojave italiskih doseljenika u 1. st. pr. Kr.

KATALOG DAORSKOG NOVCA

1. 19 mm, 4,34 g, 4h (T 1. 1)

Nalazište: Ošanjici, Stolac

Av. Glava muškarca s kausijom nadesno u točkastoj kružnici

Rv. Prikaz ilirskog lembe, ΔΑΟΕΣΩΝ u linearnoj kružnici

2. 19 mm, 5,31 g, 7h (T 1. 2)

Nalazište: Ošanjici, Stolac

Av. Glava muškarca s kausijom nadesno u točkastoj kružnici

Rv. Prikaz ilirskog lembe, ΔΑΟΕΣΩΝ u linearnoj kružnici

3. 14 mm, 2,62 g, 10h (T 1. 3)

Nalazište: Ošanjici, Stolac

Av. Glava muškarca s kausijom nadesno u točkastoj kružnici

Rv. Prikaz ilirskog lembe, [ΔΑΟ]ΠΣΩΝ u linearnoj kružnici

4. 17 mm, 4,91 g, 8h (T 1. 4)

Nalazište: Ošanjici, Stolac

Av. Glava muškarca s kausijom nadesno

Rv. Prikaz ilirskog lembe, ΔΑΟΠΣΩΝ u linearnoj kružnici

5. 18 mm, 5,01 g, 10h (T 1. 5)

Nalazište: Ošanjici, Stolac

Av. Glava muškarca s kausijom nadesno

Rv. Prikaz ilirskog lembe, [ΔΑΟΠΣΩΝ]

6. 17 mm, 5,30 g, 12h (T 1. 6)

Nalazište: Pljevlja, Crna Gora

Av. Glava muškarca s kausijom nadesno u točkastoj kružnici

Rv. Prikaz ilirskog lembe, [ΔΑΟΠΣΩΝ] u linearnoj kružnici

along the lower course of the Neretva, while the new find sites confirm Daorsi trade activities with indigenous mountain-dwelling communities deep inland. Daorsi economic power declined sharply at the end of the 2nd century BC, and in the 1st century BC the Neretva valley became home to Italic settlers who took the mantle in terms of trade mediation and local production of goods. The established opinion is that the city of Daorso(...) was destroyed during the Roman civil war between Caesar and Pompey, but the lack of archaeological finds characteristic of the 1st century BC potentially indicates that its destruction took place much earlier. On the other side of the Neretva, Naronna was transformed from a Republican military and logistical stronghold into an antique city with the status of a Roman colony, becoming the seat of the judicial conventus. If we compare these two cities situated close to each other in the lower course of the Neretva, then the fortified urban agglomeration in Ošanjici is the most significant representative of the Hellenistic age, while Naronna is the most important antique city with continuity from the late Roman Republic to Late Antiquity. Daorsi material and spiritual culture manifests strong Hellenistic influences through the adoption of Greek and Hellenistic construction, the use of the Greek alphabet, the minting of its own coinage, and the fashioning of jewellery and miniature sculptures depicting Greek gods and deities. Finally, we can conclude that the Daorsi were the originators and promoters of monetary trade along the lower course of the Neretva, and their coins, minted in the northernmost Illyrian mint, testify to their prosperity and might until the arrival of Italic settlers in the 1st century BC.

CATALOGUE OF DAORSI COINS

1. 19 mm, 4,34 g, 4h (PI 1. 1)

Find site: Ošanjici, Stolac

Obv. Male head wearing a kausia hat facing right, inside a dotted circle

Rev. Image of an Illyrian ship, ΔΑΟΕΣΩΝ, inside a linear circle

2. 19 mm, 5,31 g, 7h (PI 1. 2)

Find site: Ošanjici, Stolac

Obv. Male head wearing a kausia hat facing right, inside a dotted circle

Rev. Image of an Illyrian ship, ΔΑΟΕΣΩΝ, inside a linear circle

3. 14 mm, 2,62 g, 10h (PI 1. 3)

Find site: Ošanjici, Stolac

Obv. Male head wearing a kausia hat facing right, inside a dotted circle

Rev. Image of an Illyrian ship, [ΔΑΟ]ΠΣΩΝ, inside a linear circle

4. 17 mm, 4,91 g, 8h (PI 1. 4)

Find site: Ošanjici, Stolac

Obv. Male head wearing a kausia hat facing right

Rev. Image of an Illyrian ship, ΔΑΟΠΣΩΝ, inside a linear circle

5. 18 mm, 5,01 g, 10h (PI 1. 5)

Find site: Ošanjici, Stolac

Obv. Male head wearing a kausia hat facing right

Rev. Image of an Illyrian ship, [ΔΑΟΠΣΩΝ]

6. 16.7 mm, 5,30 g, 12h (PI 1. 6)

Find site: Pljevlja, Montenegro

Obv. Male head wearing a kausia hat facing right, inside a dotted circle

Rev. Image of an Illyrian ship, [ΔΑΟΠΣΩΝ], inside a linear circle

7. 16 mm, 4,27 g, 1h (T 1. 7)

Nalazište: Jasenik, Gacko

Av. Glava muškarca s kausijom nadesno

Rv. Prikaz ilirskog lembe, [ΔΑΟΡΣΩΝ]

8. 19 mm, 4,12 g, 7h (T 1. 8)

Nalazište: Jasenik, Gacko

Av. Glava muškarca s kausijom nadesno

Rv. Prikaz ilirskog lembe, ΔΑ[ΟΡΣΩΝ]

9. 17 mm, 5,18 g, 8h (T 1. 9)

Nalazište: Jasenik, Gacko

Av. Glava muškarca s kausijom nadesno

Rv. Prikaz ilirskog lembe, ΔΑΟΡΣΩΝ u linearnoj kružnici

7. 16 mm, 4,27 g, 1h (PI 1. 7)

Find site: Jasenik, Gacko

Obv. Male head wearing a kausia hat facing right

Rev. Image of an Illyrian ship, [ΔΑΟΡΣΩΝ]

8. 19 mm, 4,12 g, 7h (PI 1. 8)

Find site: Jasenik, Gacko

Obv. Male head wearing a kausia hat facing right

Rev. Image of an Illyrian ship, ΔΑ[ΟΡΣΩΝ]

9. 17 mm, 5,18 g, 8h (PI 1. 9)

Find site: Jasenik, Gacko

Obv. Male head wearing a kausia hat facing right

Rev. Image of an Illyrian ship, ΔΑΟΡΣΩΝ, inside a linear circle

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T. 1

Pl. 1



Ostaci ranokršćanske crkve na Groblju sv. Ive u Livnu

Remains of an Early Christian church at Groblje sv. Ive, Livno

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Lokalitet Groblje sv. Ive u Livnu višeslojno je sakralno-sepulkrualno nalazište na kojemu su vršena arheološka istraživanja 1991., 1993. i 1994. godine. Uz sporadične prapovijesne nalaze na lokalitetu su potvrđeni ostaci rimske nekropole, ostaci ranokršćanske crkve s presvođenim grobnicama, ranosrednjovjekovno, kasnosrednjovjekovno i novovjekovno groblje te ostaci franjevačkoga samostana sv. Ivana Krstitelja građenog u prvoj četvrtini 14. stoljeća. Lokalitet s različitim kulturnim slojevima velikim dijelom je uništen, ali zbog kompleksnosti nalazišta, najslabije su sačuvani ranokršćanski ostaci. Ranokršćanski sloj do sada nije stručno obrađen kao cjelina a uz slabo sačuvane ostatke arhitekture potvrđen je pokretnim nalazima kamenog inventara ranokršćanske crkve te ulomcima staklenog liturgijskog posuđa. Prema sačuvanim ostacima arhitekture djelomično se može definirati jugozapadni i južni dio crkve s narteksom, prednarteksom i prostorijom južnog aneksa te središnjeg naosa. Arhitektura svetišta prema istoku i sjeveroistoku lokaliteta u potpunosti je uništena.

Ključne riječi: Livno, Groblje sv. Ive, ranokršćanska crkva, kameni namještaj, stakleno liturgijsko posuđe.

Groblje svetog Ive (St. John's cemetery) in Livno is a multi-layered sacral and sepulchral site on which archaeological excavations were conducted in 1991, 1993 and 1994. Material evidence demonstrates the presence of a Roman necropolis, the remains of an Early Christian church with vaulted tombs, a cemetery in use from the Early Middle Ages to the Early Modern period, and the ruins of a Franciscan monastery of St. John the Baptist dating to the first quarter of the 14th century AD. Due to the complexity of the archaeological site in question, the earliest Christian artifacts were the least preserved. The Early Christian cultural layer has never been analysed in its entirety, and neither have the vast majority of poorly preserved architectural artefacts.

Based on the architectural elements unearthed, it is possible to partially define the south-western and southern portions of the church, including its narthex and pre-narthex, as well as the southern chambers belonging to the annex, and a central nave. The eastern and south-eastern architectural components have been completely obliterated.

Key words: Livno, Groblje sv. Ive, Early Christian churches, stone furnishings, glass liturgical vessels

UVOD

Groblje sv. Ive u Livnu kompleksan je lokalitet čija je slojevitost potvrđena pokretnim nalazima te ostacima arhitekture iz različitih kulturno-povijesnih razdoblja, od kasnog brončanog i starijeg željeznog doba, rimske antike i kasne antike, do ranog i kasnog srednjeg vijeka te novog vijeka.¹ Kroz sva navedena razdoblja odražava se kontinuitet kulturnog kroz sepulkralnu i još uvijek aktualnu sakralnu tradiciju. Na širem prostoru rimske nekropole u kasnijim razdobljima razvilo se sakralno-sepulkralno mjesto u duhu kršćanske tradicije.

Na temelju otkrivenih ostataka arhitekture utvrđeno je, s obzirom na konstrukcijska rješenja i tehnike zidanja, da je riječ o arhitekturi iz različitih građevinskih faza. Nažalost, veliki dio lokaliteta s različitim kulturnim slojevima je uništen. Sustavno je uništavan još od 1925. godine kada je na njivi Crkvena uz Groblje sv. Ive sagrađena prva zgrada Doma zdravlja, koja je nakon Drugoga svjetskog rata rekonstruirana i proširena. 1970-ih godina gradnjom novog paviljona bolnice neposredno uz današnji lokalitet te postavljanjem vodovodnog i kanalizacijskog sustava došlo je da najvećeg uništavanja svih kulturnih slojeva na Groblju sv. Ive.²

Predmet dosadašnjih stručnih radova vezanih uz rezultate istraživanja ovoga lokaliteta bili su kasnosrednjovjekovni samostan sv. Ivana Krstitelja i kasnosrednjovjekovno groblje,³ zatim ranosrednjovjekovni sloj s nalazima iz grobova,⁴ a u novije vrijeme objavljeni su i rimski nadgrobni spomenici.⁵ Osim manjeg broja ulomaka crkvenoga namještaja koji su kataloški objavljeni,⁶ arhitektura ranokršćanske crkve nije stručno obrađena te je nepoznata stručnoj javnosti. Kasnoantički sloj najslabije je sačuvan, što otežava rekonstrukciju ranokršćanske arhitekture u cjelosti. Spomenici s rimske nekropole sačuvani su kao spoliji u kasnijim razdobljima, dok su ostaci kasnosrednjovjekovnoga samostana sačuvani preslojavajući ranije slojeve pa tako i onaj ranokršćanski. Samim tim ranokršćanski sloj je slabo sačuvan i kada su u pitanju pokretni nalazi.

Cilj ovoga rada stručno je obraditi i objaviti sačuvane ostatke ranokršćanske arhitekture s nekropolom, uz pripadajuće pokretne nalaze, kako bi se u konačnici i ovaj lokalitet uvrstio u popis ranokršćanske arhitekture na području današnje Bosne i Hercegovine te općenito na području kasnoantičke provincije Dalmacije, što do sada nije bio slučaj. Uz ostatke ranokršćanske crkve s pripadajućim ulomcima crkvenoga namještaja, te dvije presvođene grobnice, među

INTRODUCTION

Groblje sv. Ive in Livno is a complex and multi-layered archaeological site upon which movable artefacts and architectural remains dated to numerous historical epochs, including the Late Bronze Age, Early Iron Age, Classical Antiquity, Late Antiquity, Early Middle Ages, Late Middle Ages, and Early Modern Era have been discovered to date.¹ Through all the mentioned periods, the continuity of the cult is reflected through the sepulchral and still current sacral tradition. In later periods, a sacral-sepulchral place developed in the spirit of the Christian tradition on the wider area of the Roman necropolis.

On the basis of the excavated architectural remains (predominantly the construction and bricklaying techniques), it has been conclusively determined that the appearance of this site was realized through multiple construction phases. A significant portion of the site – including a number of distinct cultural layers – has been lost, however: the systematic destruction of the site began in 1925, when the first clinical centre was built on the Crkvena meadow adjacent to the cemetery, with this building being completely reconstructed and enlarged shortly after World War II. The greatest damage, however, occurred during the 1970s, as the result of the implementation of a sewerage system as well as the construction of a new wing of the clinic directly adjacent to the site.²

The predominant focus of the literature pertaining to this site this site have been monastery of St. John the Baptist, belonging to the period of the Late Middle Ages,³ alongside the contemporaneous cemetery complex, as well as an Early Medieval cultural layer with its accompanying grave artefacts.⁴ In more recent times, grave monuments dating to the Roman period have been published.⁵ Apart from a select number of catalogued fragments of church furniture, the architecture itself has never been thoroughly examined, and is thus completely alien to the professional public.⁶ A profound level of disturbance within the cultural layer belonging to Late Antiquity further complicates any attempts at reconstruction of the site in its entirety. Roman monuments from the necropolis were used as spolia in later periods, while the remains of the late medieval monastery were preserved by layering on the earlier layers, including the Early Christian one. Therefore, the Early Christian layer is poorly preserved even when it comes to movable finds.

The aim of this study is to systematically examine and ultimately publish the preserved remains of Early Christian architecture, including the necropolis and its portable artefacts. Thus, it serves as an attempt to secure the site's inclusion within the list of Early Christian architecture in Bosnia and Herzegovina

1 Ovaj rad sukcesivan je nastavak do sada neobjavljenih rezultata istraživanja s lokaliteta Groblje sv. Ive u Livnu. Sustavno arheološko istraživanje provedeno je u nekoliko kampanja 1991., 1993. i 1994. godine. Voditelj iskopavanja bio je arheolog Tihomir Glavaš, u iskopavanjima su sudjelovali fra Bono Vrdoljak te od 1993. i arheolog Boško Marijan. Franjevačkom muzeju i galeriji Gorica-Livno dostavljena je cjelovita dokumentacija s iskopavanja, kako bi se lokalitet obradio kao jedna kulturno-povijesna cjelina.

2 Manderlo 2011, 129–131; Marić Baković 2017, 54, bilj. 6.

3 Glavaš 1994a, 105–111; Vrdoljak 1994, 115–125; 2003, 239–246; Marijan 1995, 120–126.

4 Petrinc et al. 1999, 89–90, kat. br. 238–247.

5 Marić Baković 2017, 53–92.

6 Petrinc et al. 1999, 78–80, kat. br. 183–189.

1 This is a continuation of previously unpublished research findings from Groblje sv. Ive in Livno. Several archaeological excavation campaigns were conducted in 1991, 1993 and 1994. The excavations were led by the archaeologist Tihomir Glavaš, and friar Bono Vrdoljak with the participation of archaeologist Boško Marijan from 1993. In order to allow treatment of the site as a singular cultural-historical entity, all documentation from the excavations has been deposited with the Franciscan Museum and Gallery Gorica – Livno.

2 Manderlo 2011, 129–131; Marić Baković 2017, 54, note. 6.

3 Glavaš 1994a, 105–111; Vrdoljak 1994, 115–125; 2003, 239–246; Marijan 1995, 120–126.

4 Petrinc et al. 1999, 89–90, cat. no. 238–247.

5 Marić Baković 2017, 53–92.

6 Petrinc et al. 1999, 78–80, cat. no. 183–189.

brojnim pokretnim nalazima ulomci su staklenog posuđa među kojima prepoznajemo predmete liturgijskog obilježja.

Gradnja ranokršćanske crkve u Livnu smještena je unutar povijesnih okolnosti te širenja kršćanstva na ovome području. Nakon propasti Zapadnoga Rimskog Carstva (476.) provinciju Dalmaciju 482. godine osvaja germanski zapovjednik Odoakar, a poslije njegova svrgavanja i smrti 493. godine Dalmacija ulazi u sastav Istočnogotskoga Kraljevstva pod Teodorikom. Godine 535. provincija Dalmacija, uključujući i Livanjsko polje, ulazi u sastav Istočnoga Rimskog Carstva, podložna ravenskomu egzarhatu. Ovo razdoblje na Livanjskome polju odrazilo se gradnjom ili obnovom crkvenih objekata. Pretpostavlja se da je intenzivna gradnja bazilika u 6. stoljeću u skladu s justinijanskom rekonkvistom i pojačanom sistematski organiziranom kristijanizacijom provincije Dalmacije a osobito njene unutrašnjosti.⁷ U drugoj polovini 6. stoljeća nove seobe stanovništva iz isturenih provincija, ponajviše iz Panonije, uzrokovane tek pridošlim Avarima, odrazile su se i na ove krajeve.⁸

KRŠĆANSTVO NA PODRUČJU LIVANJSKOGA POLJA U OKVIRIMA ONODOBNE PROVINCIJE DALMACIJE

Prve vijesti o kršćanstvu na području Delmata sežu između 257. i 259. godine, kada je sv. Venancija biskupa smrt zatekla *apud Dalmatas* za vrijeme progona kršćana od rimskoga cara Valerijana.⁹ Prve podatke o počecima kršćanstva na području Livanjskoga polja imamo u 5. stoljeću i to vjerojatno u drugoj polovini, kada se podižu prve crkve. Arheološka istraživanja na području Livanjskoga polja i Buškoga blata vršena su na lokalitetima Bare u Prisoju,¹⁰ Rešetarica u Podgradini,¹¹ Podvornice u Lištanim,¹² te Groblje sv. Ive u Livnu.¹³ Sondažnim istraživanjima na lokalitetu Crkvina u Potočanim¹⁴ također su potvrđeni ostaci ranokršćanskog objekta. Sveobuhvatnošću slučajnih nalaza, toponima te konfiguracije terena, ranokršćanske crkve pretpostavljene su još u Suhači na Štitić njivi, u Lipi na Crkvini i pod Kneževom Gradinom te u Donjim Rujanima također na Crkvini.¹⁵ Na temelju ranije iskrčenih zidova postoje indicije da su se ostaci ranokršćanske arhitekture mogli nalaziti na lokalitetu Crkvina u Podgradini, te na Crkvini u Bastasima, ali za sada bez pravih arheoloških potvrda. U pravilu kod svih navedenih lokaliteta postoje nalazišta iz starijega doba rimske antike.

Livanjsko polje bilo je pod neposrednom upravom salonitanske nadbiskupije do 533. godine kada su na crkvenome saboru održanom u Saloni u opsegu salonitanske

and likewise on the territory of the province of Dalmatia from Late Antiquity, which has not been the case to date. Amongst the remains of the Early Christian church with its respective church furniture fragments and two vaulted tombs have been found fragments of glass vessels; some of these have been interpreted as belonging to liturgical vessels.

The construction of the church in Livno occurred during the expansion of Christianity into this territory. A Germanic general by the name of Odoacer conquered Dalmatia after the collapse of the Western Roman Empire (476). After Odoacer's fall and ultimate death in 493 AD, Dalmatia became a part of the Eastern Roman Empire under the rule of Theodoric. In the year 535, the province of Dalmatia, including the Livanjsko polje area, became a part of the Eastern Roman Empire and a subject of the Exarchate of Ravenna. During this period, the history of Livanjsko polje is characterized by the intensive construction and reconstruction of churches. It is speculated that the period of intensive construction of basilicas in the 6th century was in direct relation to the systematic and organizational expansion of Christianity in the Province of Dalmatia and especially its heartland.⁷ During the second half of the 6th century, a new wave of populations that migrated from neighbouring provinces, predominantly Pannonia, having been expelled through Avar invasions, made their mark on this territory.⁸

CHRISTIANITY UPON LIVANJSKO POLJE WITHIN THE FRAMEWORK OF THE PREVIOUSLY EXISTING PROVINCE OF DALMATIA.

The first news about Christianity in the area of Delmati date back to between 257 and 259, when St. Bishop Venantius died *apud Dalmatas* during the persecution of Christians by the Roman emperor Valerian.⁹ In the second half of the 5th century, further evidence of the presence of Christianity can be seen through the first constructions of dedicated church buildings. Archaeological excavations in the Livanjsko polje and Buško blato areas have been conducted at sites such as Bare in Prisoje,¹⁰ Rešetarica in Podgradina,¹¹ Podvornice in Lištani,¹² and Groblje sv. Ive in Livno.¹³ Trench excavations the site of Crkvina in Potočani¹⁴ have revealed the presence of archaeological remains connected to a building dating to the Early Christian period. When also considering the evidence provided by accidental finds, toponyms and topography, Early Christian churches may hypothetically be present at Suhača on Štitić meadow, Lipa on Crkvina, under Kneževa Gradina, as well as at Donji Rujani, in Crkvina.¹⁵ Possible indications of the presence of Early Christian architecture also exist below the previously excavated church walls at the site of Crkvina in Podgradina, and likewise at Crkvina in Bastasi. However, for the time being, there are no conclusive archaeological confirmations of these. A common occurrence at all the

7 Chevalier 1995, 185; Marin 1998, 29.

8 Periša 2009, 238–240.

9 Škegro 2002, 21–27; Periša 2009, 226.

10 Bojanovski 1968, 162–165, T. LVI:1.

11 Vrdoljak 1988, 119–194.

12 Marić 2006a, 25–40; 2006b, 92–104; Marić *et al.* 2008, 259–288.

13 Glavaš 1994a, 105–111; Vrdoljak 1994, 115–125; Marijan 1995, 120–126.

14 Marić 2009, 25–26.

15 Marić 2009, 26–28.

7 Chevalier 1995, 185; Marin 1998, 29.

8 Periša 2009, 238–240.

9 Škegro 2002, 21–27; Periša 2009, 226.

10 Bojanovski 1968, 162–165, Pl. LVI:1.

11 Vrdoljak 1988, 119–194.

12 Marić 2006a, 25–40; 2006b, 92–104; Marić *et al.* 2008, 259–288.

13 Glavaš 1994a, 105–111; Vrdoljak 1994, 115–125; Marijan 1995, 120–126.

14 Marić 2009, 25–26.

15 Marić 2009, 26–28.

nadbiskupije utemeljene tri nove biskupije sa sjedištima u Sarsenteru, Mukuru i Ludrumu. Jurisdikciji biskupa u Ludrumu dodijeljene su crkve u Magnotiku, Ekvitinu, Salvijatiku i Sarzijatiku.¹⁶ Dok se Sarzijatik nesigurno smješta na područje je zapadne Bosne (dolina donjeg Unca i gornje Une),¹⁷ Magnotik, koji se identificira s municipijem Magnum, smješta se na drniško područje, na lokalitet Balina Glavica, također Ekvitin se poistovjećuje s kolonijom Ekvum (Aequum) na Sinjskome polju, a Salvijatik s municipijem Salvijem (Salvium) na Glamočkome polju. Razvidno obuhvaćenim teritorijem te povezanošću magistralnim cestama¹⁸ uže je područje Livanjskoga polja vjerojatno pripadalo biskupiji sa sjedištem u Ludrumu i to bez obzira jesu li Livanjsko i Glamočko polje u rimsko doba predstavljali jedinstveno administrativno područje s municipalnim središtem Salvijem ili se na samomu području Livanjskoga polja nalazilo posebno municipalno središte. Naime, pitanje rimskog municipalnog središta na Livanjskome polju još uvijek se nameće kao moguća pretpostavka, izuzev istočne polovice Buškoga blata na jugoistočnom dijelu Livanjskoga polja koje je po svemu sudeći ulazilo u sastav delminijskog municipija. Problem ubiciranja Ludruma još uvijek nije riješen. Iako je u historiografiji prevladavajuće mišljenje prema kojemu Ludrum treba tražiti u Biskupiji kraj Knina ili na sinjskome području,¹⁹ kao moguće područje njegova lociranja navodi se i šire područje Livna s Buškim blatom.²⁰ Tomu u prilog trebalo bi ići otkrivanje ili ubiciranje više ranokršćanskih bazilika na livanjskome području, a riječ je o relativno neistraženom prostoru, što ukazuje na dobru crkvenu organiziranost među relativno brojnim kršćanskim stanovništvom. Naziv Ludrum označava mješinu,²¹ najčešće od jareće kože koja je služila za držanje tekućine i namirnica, što automatski vežemo uz način privređivanja na livanjskome području, ali ne isključuje ni ostala područja moguće ubicacije Ludruma. Ludrumska biskupija, suočena s problemima, kao i mnoga biskupijska sjedišta u provinciji Dalmaciji krajem 6. i početkom 7. stoljeća,²² nije "preživjela" kasnu antiku, odnosno nema joj više spomena. To, kao i činjenica da Ludrum nikada više nije spomenut niti zabilježen ni u jednom od poznatih antičkih itinerara, niti je sačuvan u toponimiji, ne ide u prilog sigurnom ubiciranju središta biskupije.

previously mentioned archaeological sites is the presence of archaeological evidence dating back to the late Roman period.

Livanjsko polje was under the control of the neighbouring administration of Salona archdiocese until 533, when three new dioceses with centres in Sarsenterum, Muccurum and Ludrum were formed by the Church convocation in Salona. The jurisdiction belonging to the bishop in Ludrum consisted of a series of churches in Magnoticum, Equitinum, Saluiaticum, and Sarsiatium.¹⁶ While Sarsiatium is precariously located in the area of western Bosnia (the valley of the lower Unac and the upper Una river)¹⁷ and Magnoticum, which is defined by the municipality of Magnum, was situated in the area of Drniš, specifically at the site of Balina Glavica. Equitinum is equated with the colony of *Aequum* on Sinjsko polje. Saluiaticum is associated with *Salvium* on Glamočko polje. With the obviously divided territories and Roman roads that aided in connectivity,¹⁸ the narrow area of Livanjsko polje probably belonged to the diocese centred in Ludrum, regardless of whether Livanjsko polje and Glamočko polje in Classical Antiquity represented a single administrative area with the municipal centre Salvi, or whether there was a separate municipal centre in the area of Livanjsko polje itself. There is also a possibility that Livanjsko polje itself was at one time a municipal centre. In fact, the question of the existence of a Roman municipal seat on Livanjsko polje is still considered a speculation, except, of course, for the eastern half of Buško blato, which occupies the south-eastern part of Livanjsko polje, and, by all accounts, once belonged to the administrative area of Delminia. The problem of locating Ludrum itself, however, remains unresolved. Even though historical opinions suggest that Ludrum should be searched for on the territory belonging to the Knin diocese or the area around Sinj,¹⁹ a further possible location considered is the wider territory of Livno along with Buško Blato.²⁰ This should be supported by the discovery of several Early Christian basilicas in Livanjsko polje area, and this is a relatively unexplored area, which indicates a good church organization among the relatively numerous Christian population. The name *Ludrum* means a *pouch*,²¹ usually made of goat skin which served as a container for liquids and foodstuffs, which immediately draws a parallel with the agricultural practices of the Livno area. This, however, does not exclude other possibilities for determining the exact location of Ludrum. During the end of the 6th and the beginning of the 7th century,²² the diocese of Ludrum, like many diocese centres across the province of Dalmatia, faced a multitude of problems, and thus did not 'survive' the late Roman period. This, as well as the fact that Ludrum was never again mentioned or recorded in any of the known ancient itineraries, nor was it preserved in toponymy, does not support the exact determination of the centre of the diocese.

16 Dodig, Škegro 2008, 19.

17 Škegro 2007, 11–14, 23.

18 Magistralna cesta Salona-Servitium između Ekvuma i Salvija prolazila je Livanjskim poljem (Bojanovski 1970, 503–522).

19 Wilkes 1969, 432; Gabričević 1984, 102; Bojanovski 1988, 251–252.

20 Škegro 2007, 16–17.

21 Marević 2000.

22 Osim provale Slavena i Avara u unutrašnjost provincije Dalmacije, uzrok problemima su bili i sporovi unutar salonitanske nadbiskupije, o čemu svjedoče pisma pape Grgura (590–604.), (Bulić 1984, 403–469).

16 Dodig, Škegro 2008, 19.

17 Škegro 2007, 11–14, 23.

18 The main road Salona-Servitium between Equitinum and Salvium passed through Livanjsko polje (Bojanovski 1970, 503–522).

19 Wilkes 1969, 432; Gabričević 1984, 102; Bojanovski 1988, 251–252.

20 Škegro 2007, 16–17.

21 Marević 2000.

22 In addition to the Slavic and Avar invasions into the interior of the Dalmatian province, disputes within the Salonitan archdiocese also contributed to the problems, as evidenced by the letters of Pope Gregory I (590–604) (Bulić 1984, 403–453).



Sl. 1. Groblje sv. Ive u Livnu (snimio: Z. Alajbeg)

Fig. 1. Groblje sv. Ive in Livno (photograph: Z. Alajbeg)

OSTACI RANOKRŠĆANSKE ARHITEKTURE NA GROBLJU SV. IVE

Uz ostatke franjevačkoga samostana iz 14. stoljeća na lokalitetu su otkriveni ostaci ranijeg objekta ranokršćanske crkve koja se u odnosu na arhitekturu samostana nalazila na nešto nižoj razini, jugoistočno od samostana, neposredno uz korito rijeke Bistrice (sl.1).²³ Znatan dio lokaliteta s ranokršćanskim objektom i starijim kulturnim slojevima uništen je izgradnjom kameno-betonske ograde i postavljanjem vodovodnog i kanalizacijskog sustava koji je presjekao ostatke crkve. I prije toga ranokršćanska arhitektura je djelomično preslojena srednjovjekovnom arhitekturom i grobovima, te većim brojem recentnih grobova. Kameno-betonska ograda groblja prema rijeci za potrebe istraživanja je srušena. Uslijed navedenog arhitektura ranokršćanske crkve je slabo sačuvana, uglavnom u zidovima temelja koji se tehnikom zidanja i strukturom žbuke izdvajaju od ostataka kasnosrednjovjekovnoga samostana. Sporadično su sačuvani ostaci podnice od vapnene žbuke koja se veže uz arhitekturu bazilike. Unatoč tek djelomičnoj sačuvanosti arhitekture, više elemenata išlo je u prilog identifikaciji objekta kao ranokršćanske crkve, prvenstveno ulomci ograde svetišta, stakleno liturgijsko posuđe te dvije presvođene grobnice, kakve se redovito javljaju uz ranokršćansku arhitekturu.

EARLY CHRISTIAN ARCHITECTURAL REMAINS AT GROBLJE SV. IVE

Beside the remains of a Franciscan monastery dating to the 14th century stood the remains of a much earlier Early Christian church, which was located on a slightly lower level, southeast of the monastery, on the bank of the Bistrica river (Fig. 1).²³ A large part of the site itself, assumed to have contained Early Christian objects and older cultural layers, was destroyed by the construction of a stone-concrete fence as well as sewerage and irrigation systems that cut through the church remains. Even before this, the layers containing Early Christian architecture were partially overlaid by medieval architecture and burials, as well as a larger number of more recent burials. In order to facilitate excavations, the stone-concrete fence of the cemetery near the river was demolished. The architecture itself was poorly preserved, and primarily consisted of wall foundations that differed in structure from those of the medieval monastery due to their specific masonry techniques and plaster structure. The remains of a floor – connected to the architecture of the basilica – composed of lime plaster was found in a sporadically preserved state. Despite the only partial preservation, many elements aided in the overall identification of the structure as an Early Christian basilica, including the fragmented remains belonging to the sanctuary demarcation, glass liturgical vessels, two vaulted tombs, and other features regularly found in the context of Early Christian architecture.

23 Marijan 1995, 121.

23 Marijan 1995, 121.

Pretpostavljene su dvije faze gradnje s obzirom na nado-gradnje prema ulazu, gdje su ispred pročelja crkve ukopane dvije zidane presvođene grobnice od kojih je grobnica br. 2 ispred ulaza imala nepravilni pravokutni *pozzeto*. Crkva je bila orijentirana prema jugoistoku. Odstupanje od uobičajene orijentacije istok-zapad vjerojatno je bilo uvjetovano prirodnim tokom rijeke Bistrice uz koju je podignut ranokršćanski kompleks.

Prema sačuvanim ostacima arhitekture djelomično se može definirati jugozapadni i južni dio crkve s nartekсом, naosom i južnim aneksom (sl. 2). Ispred nartekса sačuvan je manji kvadratni prostor s bočno položenim ulazom sa sjeverozapadne strane koji se veže na pročelje nartekса. Zid nartekса u pročelju prekinut je prema sjeveru, ali pretpostavljamo da se nartekс protezao čitavom širinom crkve. Uz manje fragmente zida u unutrašnjosti nartekса te južni perimetralni zid djelomično je definiran prostor nartekса koji je mogao biti dvodijelni, eventualno trodijelni, ovisno o sjevernim aneksima koji nisu sačuvani. Prostor naosa djelomično možemo definirati ostacima zidova koji su jako fragmentirani. Vjerojatno je to bio gotovo kvadratni naos manjih dimenzija. Podnica od vapnene žbuke djelomično je sačuvana u jugoistočnom dijelu naosa prema pretpostavljenom svetištu, nastavljajući se i u prostoriji južnog aneksa.²⁴ Prostorija južnog aneksa od koje je sačuvan dio južnog perimetralnog zida koji malim fragmentom zida skreće prema svetištu, te dio sjevernog zida prema naosu, izvučena je u odnosu na nartekс. Arhitektura svetišta prema istoku i sjeveroistoku lokaliteta u potpunosti je uništena kanalizacijskim sustavom te koritom rijeke Bistrice.²⁵ Eventualni sjeverni aneksi također nisu sačuvani, pretpostavljamo ih na temelju fragmenta zida koji se od sačuvanoga zida nartekса nastavlja prema sjeveru. U postojećoj situaciji teško je nagađati da li je u sklopu crkve bila krstionica.

Crkva je građena od lomljenog lokalnog kamena, zid se uz upotrebu žbuke dizao nizanjem nepravilnih redova kamena na oba njegova lica, a jezgra između ispunjavala se sitnim kamenom utopljenim u žbuku. Takva tradicija zidanja dugo se zadržala u ovim krajevima, razlika je mogla biti jedino u kvaliteti zidanja. Podloga je bila sedrasta, a osim u svodne dijelove, sporadično se sedra ugrađivala i u neke zidove. U odnosu na arhitekturu srednjovjekovnoga samostana čiji su zidovi bili u lošem stanju, što je, pretpostavljamo, posljedica intenzivnoga gorenja, ranokršćanska arhitektura na lokalitetu se izdvajala nešto jače i solidnije građenim zidovima.

It has been determined that two construction phases are evident in the renovations of the entrance area; two brick-vaulted tombs were constructed in front of the entrance of the church, with tomb no. 2 – situated directly in front of the entrance with an irregular rectangular *pozzeto* feature. The church was oriented toward the south-east; this deviation from the customary east-west orientation most likely resulted from obstacles posed by the course of the Bistrica River.

The south-western and southern elements of the church, including the narthex, nave and southern annex, can be partially described on the basis of the architectural remains (fig. 2). A smaller square space in front of the narthex has been preserved, with a side entrance from the north-western side that connects to the front of the narthex. The northern portion of the front narthex wall is not preserved, but it has been interpreted that the narthex ran the entire width of the basilica. The space of the narthex was furthermore partially defined through the identification of small wall fragments both in its interior and along the southern perimeter wall; these show that it would have been divided into two – or possibly three – parts, depending on the northern annexes, which were not preserved. The highly fragmented wall remnants can also partially delineate the space of the nave. It was most likely a near-square nave with modest dimensions. The lime plaster floor has been partially preserved in the south-eastern portion of the nave, in the area close to where the presumed sanctuary lay, and continues into the room of the southern annex.²⁴ The southern annex room was extended in relation to the narthex; a portion of the southern perimeter wall toward the sanctuary and a portion of the northern wall towards the nave have been preserved. The sewerage system and the course of the Bistrica have completely obliterated the architecture of the sanctuary to the east and northeast of the site.²⁵ The probable northern annexes have also not survived; their presence and layout has been assumed on the basis of a portion of wall that extends north from the preserved wall of the narthex. It is not possible to determine the presence of a baptistery from the state of preservation.

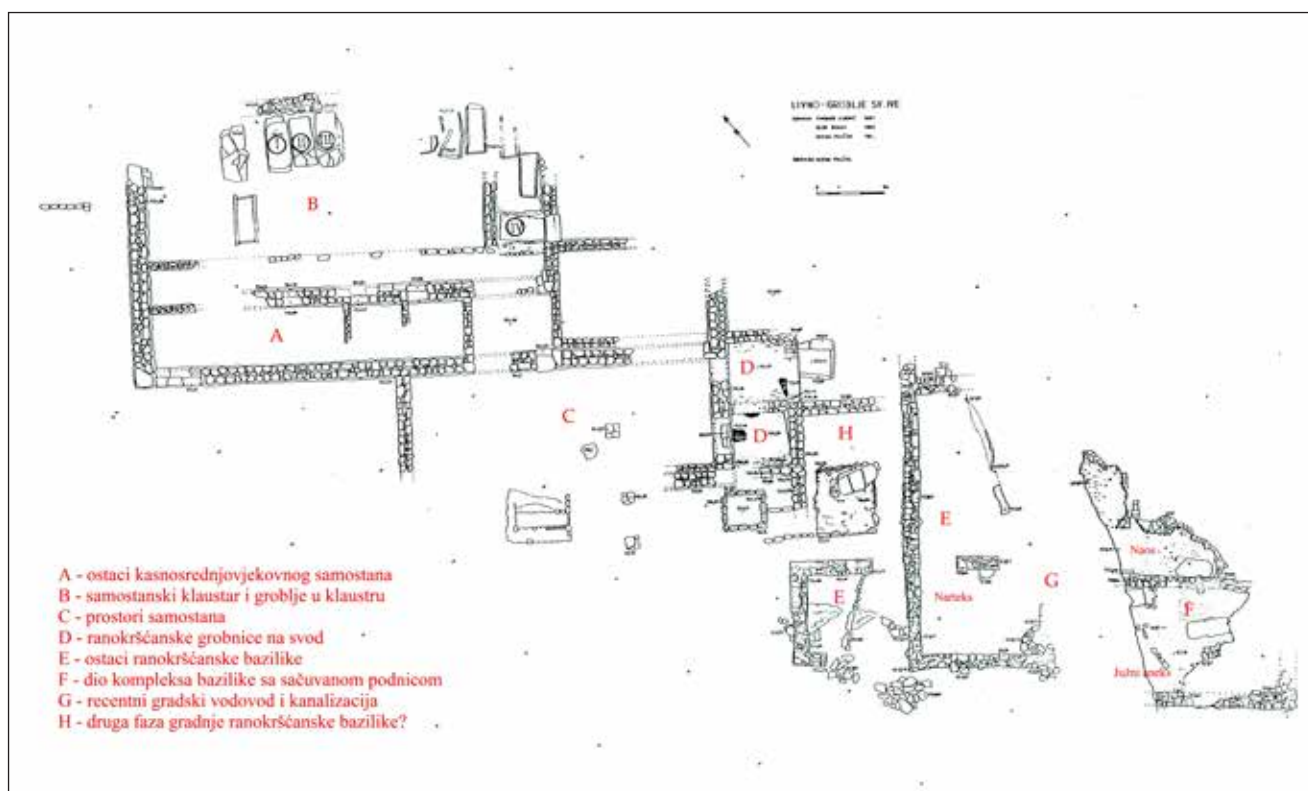
The church was constructed from irregularly broken local stone; the wall was constructed with the aid of plaster by lining up irregular rows of stones on both faces, with the core between being filled with an aggregate-plaster mixture. The presence of such a technique of wall construction in this area has been documented over an extended period of time, with the only difference being the quality of the masonry. The foundations were of tufa, and, in addition to being the material from which the vaulted areas were created, this stone was also randomly inserted into some walls. In comparison to the

24 Ostaci podnice sačuvani su i iza pretpostavljenoga perimetralnog južnog zida, ali na nešto nižoj razini, odnosno fragment s vanjske strane zida je za oko 30 cm na nižoj razini od podnice sa sjeverne unutrašnje strane zida. Navedeno stanje otvara pitanje eventualne arhitekture izvan pretpostavljenih granica istražene crkvene građevine. Na temelju toga došlo se do pretpostavke da se u ovom dijelu nalazio raniji rimski objekt koji je bio ili osnova za ranokršćansku baziliku ili je preslojen ranokršćanskom arhitekturom.

25 Kanalizacijska cijev ukopana je na 2 m dubine u pravcu sjever-jug. Također, prilikom regulacije toka Bistrice postavljene su podzide s obje strane rijeke, teren je nasut i niveliran te je tim dijelom prolazio put između ograde groblja i rijeke.

24 The remaining portion of floor on the outside of the predicted southern perimeter wall lies approximately 30 centimetres lower than the floor on the northern inner side. The stated situation raises the question of possible architecture outside the assumed boundaries of the investigated church building. Based on this, it was assumed that in this part there was an earlier Roman building that was either the basis for an early Christian basilica or was layered with Early Christian architecture.

25 The sewerage pipe is oriented north-south, and lies at a depth of 2 metres. During an attempt to regulate the flow of the Bistrica, retaining walls were built on both banks of the river, the ground was levelled, and a road was constructed along the area running between the cemetery fence and the river.



Sl. 2. Situacijski plan na Groblju sv. Ive u Livnu (crtež: M. Palčok)

Fig. 2 Situational map of Groblje sv. Ive in Livno (drawing: M. Palčok)

Iz analize sačuvanih ostataka arhitekture možemo zaključiti da je u pročelju nartekse bila manja prostorija u koju se ulazilo bočno sa sjeverozapadne strane. Narteks se protezao širinom crkve, podijeljen u dva, eventualno tri dijela. Naos je bio manja kvadratna prostorija. Oblik apsida nije nam poznat. Na temelju proporcija te usporedbom s onodobnom crkvenom arhitekturom na livanjskome i susjednim područjima možemo pretpostaviti da je apsida bila polukružnog oblika, ali naravno ne možemo isključiti ni druge mogućnosti. Južno od naosa bila je prslonjena prostorija južnog aneksa koja je bila djelomično izvučena u odnosu na narteks. Brojni ulomci sedre, koji su prema obliku izvađeni iz nekog svoda, ukazuju na svođenje određenog prostora, pretpostavljamo apsidalnog. Sjeverni aneksi nisu sačuvani, ali ih pretpostavljamo na temelju fragmenta zida koji se od sačuvanoga zida nartekse nastavlja prema sjeveru. Nažalost, tlocrt crkve u cijelosti nam nikada neće biti poznat. Bez sumnje je i ova ranokršćanska građevina bila dizajnirana za svoj kontekst i lokaciju, ali u ovom slučaju je i sama lokacija izgubila svoj izvorni kontekst.

Unutrašnjost ranokršćanske crkve bila je opremljena kamenim namještajem. Na lokalitetu su pronađeni ulomci kamenih stupova različitih dimenzija i profilacija, kapiteli, imposti, dijelovi pluteja i pilastara ograde svetišta reljefno ukrašeni stiliziranim biljnim motivima u duhu ranokršćanske umjetnosti. Također arhitekturi crkve pripadaju ulomci obrađenoga kamena i sedre. Tijekom iskopavanja na prostoru

medieval monastery's construction, whose walls were in bad condition, which we assume is the result of intense burning, the Early Christian architecture on the site stood out as having somewhat stronger and more solidly constructed walls.

We can assume from the preserved architectural elements that there was a smaller room in front of the narthex that was entered from the north-western side. The narthex ran the entire width of the church, divided into two, possibly three, sections, while nave was a more intimate square space.

The shape of the apse is unknown. It can be presumed that the apse was semicircular based on the proportions and a comparison with contemporaneous church architecture in Livno and the surrounding areas, but other possibilities and options cannot be ruled out. The southern annex chamber, situated to the south of the nave, was partially extended in relation to the narthex. Numerous fragments of travertine, which, based on their shape, were originally part of a vault, are suggestive of a specifically vaulted space, which we presume is the apsidal one. The northern annexes have not been preserved, but we infer their existence from a section of wall that extends northward from the intact narthex wall. Unfortunately, the floor plan of the church in its entirety will never be known to us. Without a doubt, this Early Christian structure was adapted to its context and location; however, in this case, the site is devoid of its original context.

The Early Christian church's interior was decorated with stone furnishings. Fragments of stone columns of different dimensions and profiles, capitals, imposts, parts of a rood screen

prednarteksa nađen je ulomak žbuke s crvenom bojom, ali na temelju toga teško je pretpostaviti kojem dijelu arhitekture je pripadao i koji od objekata je imao zidnu dekoraciju.

Za razliku od srednjovjekovnoga samostana čiji je patron sv. Ivan Krstitelj, patron ranokršćanske crkve u Livnu nije nam poznat. Ranokršćanska arhitektura djelomično se ispreplela s kasnijom arhitekturom kompleksa kasnosrednjovjekovnoga samostana koja se pružala sjeverozapadno od ostataka crkve. Razvidno je da su u vrijeme gradnje samostana bili vidljivi ili barem djelomično vidljivi ostaci ranijeg ranokršćanskog objekta. Istraživači su na ranokršćanskoj arhitekturi uočili dvije faze gradnje, što se odnosilo na nadogradnje prema ulazu,²⁶ gdje su smještene dvije zidane presvođene grobnice u čija su pročelja uzidani dijelovi rimskih kamenih osuarija.²⁷ Pojava presvođenih grobnica na ovim prostorima, gdje predstavljaju najčešći oblik sahranjivanja u odnosu na druge oblike kasnoantičkih grobnica, paralelna je s pojavom prvih crkvi. Zidane presvođene grobnice na livanjskome području istražene su još u Lištanim (Podvornice)²⁸ i Lipi.²⁹ Građene su od kamena s bačvastim svodom često zidanim od sedre, ispred ulaza u pravokutnu grobnu komoru imale su ograđeni prostor – *pozzeto*, a iznutra dvije zidane klupice koje su kao i cijela unutrašnjost bile ožbukane. Nalazile su se ispod podnica bazilika ili u njihovoj neposrednoj blizini, najčešće iza apsidalnog dijela ili u pročelju bazilika.

U odnosu na arhitekturu crkve na Groblju sv. Ive očito je kako su dvije grobnice ukopane ispred pročelja crkve. Obje grobnice se ističu gotovo monumentalnim razmjerima, zidane su od lomljenog kamena i sedre s vezivom od vapnene žbuke, imale su pravokutne presvođene komore u čijoj unutrašnjosti su bili ležaji za pokojnike. Unutrašnjost grobnica bila je dobro ožbukana uključujući ležaje i osuarij. Kod obje grobnice bačvasti svod je dobro, iako ne u cijelosti sačuvan. Ulazi u grobnice bili su sa sjeveroistočne strane, u smjeru pružanja crkvene arhitekture. Pročelje grobnice br. 1 zatvoreno je solidno građenim zidom koji na mjestu između dvije grobnice pod pravim kutom skreće prema narteksu. Zid pripada naknadnoj nadogradnji, svakako nakon zidanja grobnica. Grobnica br. 1 bila je nešto manja, imala je jedan ležaj za pokojnika i osuarij za odlaganje kostiju prekriven kamenim pločama. U samome pročelju grobnice bila je uzidana stranica rimskog kamenog osuarija. Grobnica br. 2 imala je ispred ulaza manji nepravilni pravokutni pretprostor u funkciji *pozzeta*. U unutrašnjosti je imala dva ležaja između kojih je osuarij u koji se silazilo dvjema stepenicama. U pročelja dviju grobnica uzidane su spolije iz ranijeg rimskog razdoblja a riječ je o dijelovima rimskih osuarija koje smo tipološki već ranije obradili u njihovom izvornom kontekstu.³⁰ Zanimljiv nam je način promišljanja majstora zidara,

and pilasters of the sanctuary fence carved in relief with stylized plant motifs in the style of Early Christian art were found on the site. Architectural components also included fragments of worked stone and travertine. A fragment of plaster with red paint was discovered in the area of the pre-narthex during excavations; however, it is difficult to determine the area to which it belonged, and also which of the spaces had wall decorations on the basis of this fragment alone.

Unlike the patron saint of the medieval monastery – St. John the Baptist – the patron saint of the Early Christian church in Livno remains unknown. The Early Christian construction was partly interwoven with the subsequent architecture of the late medieval monastery complex, which extended to the northwest of the remains of the church. It is evident that the ruins of an earlier Early Christian building were at least partially visible at the time of the monastery's construction. The researchers noticed two distinct phases of later work on the Early Christian architecture, both of which were associated with renovations in the area of the entrance,²⁶ where two brick vaulted tombs were positioned, the facades of which were created using recycled sections of Roman stone ossuaries.²⁷ The appearance of vaulted tombs in this area, where they are the most prevalent type of burial in Late Antiquity, parallels the appearance of the first churches. Vaulted brick tombs in the Livno area have also been investigated at Lištani (Podvornice)²⁸ and Lipa.²⁹ They were built of stone with a barrel vault often made of travertine, in front of the entrance to the rectangular burial chamber they had a fenced area – *pozzeto*, and inside there were two stone benches which, like the entire interiors, were plastered. They were typically located under the floors of basilicas or in their immediate vicinity, most often behind the apsidal part or embedded into the facade.

Regarding the architecture of these two tombs specifically, it is evident that they were intentionally situated in front of the church's facade. Both tombs stand out for their almost monumental proportions; they were constructed of crushed stone and travertine, with a lime plaster binding, and consisted of rectangular chambers with vaulted ceilings that contained beds for the deceased. The interiors of the tombs, including the chambers and ossuaries, were well plastered. The barrel vaults of both tombs are well – albeit incompletely – preserved. The tombs' entrances were located on their north-eastern sides, facing the basilica. The facade of Tomb 1 is closed by a solidly built wall that turns at right angles to the narthex at the point between the two tombs. This wall belongs to a later structure, and certainly post-dates the tombs. Tomb 1 was slightly smaller in size; it contained one bed for the deceased and an ossuary covered by stone slabs in which bones were to be disposed of. The side of a stone Roman ossuary was incorporated into the front of the tomb. Tomb 2 had a small irregular rectangular vestibule in front of the entrance, acting as a *pozzeto*, and inside were two beds, between which lay an ossuary

26 Marijan 1995, 122.

27 Istraživači su uočili nasjedanje zidova jugozapadnoga dijela bazilike na neko veće vatrište s vrlo crnim slojem u kojemu je nađeno više predmeta (dijelovi veriga, ulomci ravnog stakla i keramike), (Petřinec *et al.* 1999, 28).

28 Marić 2006b, 96–97.

29 Ljubić 1890, 3, 111; Zekan 2008, 21.

30 Marić Baković 2017, 53–92.

26 Marijan 1995, 122.

27 The researchers noticed that the walls of the south-western part of the basilica were resting on a larger hearth with a very black layer in which several objects were found (parts of chain, fragments of flat glass and ceramics) (Petřinec *et al.* 1999, 28).

28 Marić 2006b, 96–97.

29 Ljubić 1890, 3, 111; Zekan 2008, 21.

Sl. 3. Kasnoantička grobnica br. 2 s ugrađenim ulomcima rimskih osuarija (arhiv FMGG-a)

Fig. 3. Tomb no.2 from Late Antiquity with build-in fragments of a Roman ossuary (FMGG Archives)



iz kojeg se vidi da se kod oblikovanja pročelja grobnice povodio za estetskim vrijednostima starijih spomenika. Kod grobnice br. 2 zabat dvoslivna poklopca, s reljefnim prikazom dva nasuprotno postavljena delфина između kojih je amfora, uzidan je iznad ulaza u grobnicu kao stabilni konstruktivni element ali formalno u funkciji zabata (sl. 3). Donji otučeni dio poklopca, s udubljenjem za nalijeganje na sanduk osuarija, prenamijenjen je u vrata grobnice s naknadno fiksiranom željeznom alkom koja je služila za potezanje vratnica. Dijelovi sanduka osuarija imali su funkciju dovratnika ulaza u grobnicu, te je dio sanduka osuarija reljefno

accessed via two steps. Spolia from the earlier Roman period was used in the construction of the tombs' facades; these are fragments of Roman ossuaries that have already been discussed in typological terms regarding their original context.³⁰ It can be seen that, when creating the tomb's facade, the master mason's thought process involved drawing inspiration from the aesthetic principles of historic monuments. At tomb no. 2 pediment with a two-fluted lid, with a relief of two oppositely placed dolphins with an amphora between them, was built above the entrance to the tomb as a stable structural element,

³⁰ Marić Baković 2017, 53–92.

ukrašen arhitektonskim motivom vrata uzidan u pročelje iznad ulaza. Dio donjeg dijela poklopca osuarija s natpisom nađen je uzidan u pretprostor grobnice br. 2. Izgleda da je riječ o donjem dijelu poklopca osuarija čiji je gornji dio ugrađen u pročelje kao pseudozabat. Pretpostavljamo da je riječ o ulomcima najmanje dva do tri različita osuarija, koji su s namjerom lomljeni te ugrađivani na način da se vodilo računa o konstruktivno-dekorativnoj ulozi ubačenih ulomaka.³¹

Dvije ranokršćanske grobnice kasnije su provaljene i opljačkane. U obje grobnice nađeno je po desetak kostura a u grobnici br. 2 naknadno je kroz provaljeni svod izvršen ukop iz starohrvatskog razdoblja. Prema priloženim predmetima među kojima je keramička posuda, željezni nož i bodež, kresivo te okovi drvenog vjeda, radi se o grobu s paganskim značajkama pokapanja, s kraja 8. ili početka 9. stoljeća.³²

Svi ulomci rimskih osuarija nakon istraživanja i dokumentiranja izvađeni su kako bi se pohranili u tadašnju samostansku zbirku te su umjesto njih ugrađeni drugi komadi kamena. Grobnice su konzervirane, svodovi su sanirani, ulazi zatvoreni, te su tako prezentirane na lokalitetu.

Ugradnja rimskih nadgrobnih spomenika u ranokršćanske grobnice nije neuobičajena praksa i može se razumjeti iz posve praktičnih razloga. Napuštene zgrade i groblja iz ranijega razdoblja bili su crpilište građevnoga materijala za nove građevine, i to prema reguliranim procesima kojima se materijalom iz ruševina, napuštenih objekata ili prostora raspolagalo prema raznim namjenama.³³ Manje urbane sredine s Livanjskoga polja nisu bile izuzete od sličnih procesa te se uslijed temeljitih promjena društvenih i gospodarskih prilika također događaju transformacije u strukturi i oblikovanju postojećih naselja. Prema dosadašnjim rezultatima arheoloških istraživanja na području Livanjskoga polja ranokršćanske crkve s grobnicama podižu se na mjestima poganskih nekropola ili u njihovoj neposrednoj blizini, što je podrazumijevalo dostupnu kamenu građu. Mnogi nadgrobnici spomenici s rimskih nekropola koje su već ranije napuštene upotrijebljeni su kao građevni materijal u ranokršćanskoj arhitekturi.

Rimska nekropola s obredom incineracije, na kojoj su se pokapali pokojnici onodobnoga rimskog naselja u Livnu, a s koje su uzimani ulomci,³⁴ vjerojatno se nalazila negdje na prostoru od Groblja sv. Ive te dalje uzvodno uz Bistricu, gdje je današnja Prikorika, nekadašnja Firdusova bašta.³⁵ Pretpostavlja se da je crkva nastala na osnovama nekog starijeg rimskog objekta, također neki elementi ukazuju na moguće dogradnje na ranokršćanskoj crkvi a kasnije je došlo do preslojavanja s kasnosrednjovjekovnim samostanom. Sve to ukazuje na kompleksnost arhitektonskih ostataka. Unatoč slaboj sačuvanosti, ranokršćanska crkva se nekim

but formally in the function of a pediment (fig. 3). The lower, battered part of the lid, with a recess for resting on the ossuary box, was repurposed as a tomb door with a subsequently fixed iron ring that was used to pull the doorposts. Parts of the ossuary chest served as the doorposts for the tomb's entrance, and the part of the ossuary chest decorated with a motif of a door in relief was incorporated into the facade above the entrance. A portion of the lid of an ossuary bearing an inscription was discovered built into the vestibule of Tomb 2; this appears to be the lower portion of an ossuary capstone, with the upper portion incorporated into the facade as a faux gable. We presume that fragments of at least two to three distinct ossuaries were incorporated into the tombs (with these ossuaries having been intentionally repurposed), with the structural and aesthetic functions of the reused fragments having been taken into consideration during their inclusion.³¹

The two Early Christian tombs were later broken into and plundered. Ten skeletons were discovered in both tombs, and a burial dating to the Old Croatian period was also discovered in Tomb 2, with the interment having been performed through the breached vault. On the basis of the associated artefacts, which include a ceramic vessel, an iron knife and dagger, flint, and the fittings of a wooden pail, this burial dates to the late 8th or early 9th century, and bears the characteristics of pagan burial traditions.³²

After research and documentation, all fragments of Roman ossuaries were taken out to be stored in the monastery's collection at the time and other pieces of stone were installed instead. The tombs have been preserved, with the vaults restored, and the entrances sealed, and are presented in this condition at the site. Abandoned building and cemeteries from an earlier period were a source of building material for new buildings, according to regulated processes by which material from ruins, abandoned buildings or spaces was disposed of for various purposes.³³

The incorporation of Roman tombstones into Early Christian tombs is not an uncommon practice, and can be understood from a pragmatic point of view. Lesser settlements throughout Livanjsko polje were not immune to such processes, and, as a consequence of fundamental societal and economic changes, the structure and design of existing settlements also underwent major transformations. According to the findings of archaeological excavations in the Livanjsko polje region, Early Christian churches with burial sites were often constructed on the sites of preceding pagan necropolises, or at least in their immediate vicinity, which facilitated a supply of stone for construction. Many tombstones from abandoned Roman cemeteries were thus utilized as building material in the construction of Early Christian structures.

The Roman necropolis where the dead from the Roman settlement in Livno were buried – with the general mode of interment being cremation – from which fragments of funerary

31 Marić Baković 2017, 58, sl. 1.

32 Glavaš 1994b, 339; Marijan 1995, 124; Petrinc et al. 1999, 34, 89, kat. br. 238–241.

33 Kinney 1997, 122–124; Kušan Špalj 2017, 163–164.

34 Marić Baković 2017, 76–78.

35 Patsch 1906, 174–177; Sergejevski 1930, 159; Marić Baković 2017, 58.

31 Marić Baković 2017, 58, fig. 1.

32 Glavaš 1994b, 339; Marijan 1995, 124; Petrinc et al. 1999, 34, 89, cat. no. 238–241.

33 Kinney 1997, 122–124; Kušan Špalj 2017, 163–164.

elementima kao što su narteks s manjom prostorijom u pročelju, južni te vjerojatno i sjeverni aneksi, gotovo kvadratni naos te presvođene grobnice u pročelju uklapa u arhitekturu složenog tipa koji se razvio tijekom druge polovine 5. i u 6. stoljeću na unutrašnjem području provincije Dalmacije.³⁶

Položaj arhitekture ranokršćanske crkve svakako trebamo razmatrati u odnosu na antičko naselje. Razvidno je kako se rimsko naselje formiralo u blizini rijeke Bistrice i njenoga izvora. Pretpostavljamo da se rimska nekropola barem do početka 3. stoljeća nalazila izvan stambenoga prostora, da bi se s vremenom, transformacijom u strukturi naselja, stambeni prostor širio izvan zadanih okvira. O tomu svjedoči gradnja ranokršćanskoga kompleksa s ostacima crkve iznad ostataka rimske nekropole. Jasno je kako se u ovom dijelu razvijao važni dio antičkoga naselja. Kasnije je i kasno-srednjovjekovni samostan podignut izvan zidina utvrđenog srednjovjekovnoga grada uz desnu obalu rijeke Bistrice. Granice antičkoga naselja i kasnijeg srednjovjekovnog utvrđenoga grada nisu se nužno podudarale te antičko naselje treba tražiti u nizinskom dijelu uz rijeku Bistricu. Uz ranokršćanski kompleks vjerojatno je išao jedan od antičkih pravaca koji je povezivao pretpostavljeni rimski *Bariduum* (Livno) s ostalim naseljima na Livanjskome polju.³⁷ Vjerojatno je i u antičko doba rijeka Bistrica bila premošćena negdje u ovom dijelu gdje se i danas nalazi most.³⁸

Ranokršćanska crkva građena je uz korito rijeke Bistrice, ali situacija nije bila identična današnjoj situaciji na lokalitetu. Od vremena gradnje treba uzeti u obzir dugogodišnju bočnu eroziju kojom se riječno korito širilo. Također, dio korita Bistrice uz lokalitet s ostacima crkve krajem 1950-ih godina je uređivan i podzidan krečnim kamenom a znatan dio lokaliteta s ranokršćanskom arhitekturom je uništen izgradnjom kameno-betonske ograde i postavljanjem vodovodnog i kanalizacijskog sustava. Pri svim navedenim procesima došlo je do većeg uništavanja i krčenja ostataka ranokršćanske arhitekture.

Po završetku iskopavanja 1994. godine istraživanja na Groblju sv. Ive planirana su nastaviti se u slijedećoj kampanji, ali do toga nije došlo.

Današnje stanje na lokalitetu rezultat je konzervatorsko-restauratorskih radova koji su pod nadzorom Konzervatorskog odjela Državne uprave za kulturu i prirodnu baštinu u Splitu izvršeni 1996., te ponovno 1997. godine.³⁹ Pretpostavljamo da se tijekom konzerviranja ostataka ranokršćanske arhitekture imalo u vidu barem dvije građevinske faze, pri tome se odstupilo od izvornog oblika južnog aneksa, čime je očito došlo do pogrešne interpretacije tlocrta ranokršćanske crkve te je predviđen djelomično istureni južni

structures were taken for reuse³⁴ was likely located in the vicinity of Groblje sv. Ive, further upstream along the Bistrica, where today's Prikorika, formerly known as the Garden of Alibeg Firdus, is situated.³⁵ It is presumed that the church was constructed on the foundations of an ancient Roman structure, with some elements indicating potential additions to the Early Christian church, with a late medieval monastery built over this. This timeline demonstrates the complexity of the architectural remains. Despite its poor state of preservation, the Early Christian church with elements such as the narthex with a smaller room in the front, the southern and possibly also the northern annexes, the almost square nave, and the vaulted tombs in the façade, can be classified among the architectural edifices of a complex type that developed in the interior of the province of Dalmatia during the second half of the 5th and 6th centuries.³⁶

The Early Christian church's architecture should undoubtedly be evaluated in the context of the Roman settlement. It is clear that the Roman settlement was established in proximity to the source of the Bistrica. We think that the Roman necropolis was situated outside the settlement area at least until the beginning of the 3rd century, but, over time, the organization of the community changed and the settlement area expanded beyond its original boundaries. The construction of the Early Christian complex of which the remnants of a church survive over the remains of the Roman necropolis provide evidence of this, as this site would have been a focal point of the ancient settlement. Later, on the right bank of the Bistrica, a monastery was erected in the late medieval period beyond the walls of the fortified medieval town. The boundaries of the Roman settlement and subsequent medieval walled town did not necessarily coincide, and any attempt to locate the Roman settlement should be focused on the lowland area adjacent to the Bistrica. One of the Roman routes that connected the presumed Roman *Bariduum* (Livno) with other settlements across Livanjsko polje most likely passed beside the Early Christian complex.³⁷ The Bistrica was also most likely crossed somewhere around where the bridge is situated today during that time.³⁸

The Early Christian church was also constructed alongside the course of the Bistrica, although the topography at that time was not as it is today. Long-term lateral erosion in the time since the construction of the basilica, which has had the effect of widening the river bed, must be considered. In addition, in the late 1950s a section of the Bistrica's course, including the part adjacent to the remains of the church, was regulated, with a limestone wall installed. The construction of a stone-concrete fence and the installation of irrigation and sewerage systems both caused further significant damage to the area of the site that contained Early Christian architecture. During each of these interventions, a portion of the remains present on the site was lost.

36 Chevalier 1995, 66.

37 Marijan 1994, 38.

38 Na mjestu suvremenog mosta, koji je u današnjem obliku rekonstruiran 2012. godine, nekada se nalazio stari most iz 1931./32., kojemu je prethodio stariji tzv. turski most o kojemu nemamo puno podataka (Manderalo 2011, 143–145).

39 Stručnu pomoć u konzervatorsko-restauratorskim radovima pružio je arhitekt konzervator Ivo Vojnović.

34 Marić Baković 2017, 76–78.

35 Patsch 1906, 174–177; Sergejevski 1930, 159; Marić Baković 2017, 58.

36 Chevalier 1995, 66.

37 Marijan 1994, 38.

38 On the site of the modern bridge, which was rebuilt in its current form in 2012, there used to be an old bridge dating to 1931 or 1932. Before that stood the so-called 'Turkish bridge' about which little is known (Manderalo 2011, 143–145).



Sl. 4. Groblje sv. Ive u Livnu s konzerviranim ostacima ranokršćanske bazilike u prvom planu (snimio: Z. Alajbeg)

Fig. 4. Groblje sv. Ive in Livno with preserved remains of the Early Christian basilica in foreground (photograph: Z. Alajbeg)

aneks. Prostor uz samo korito Bistrice na kojemu je nekad bilo svetište tom je prigodom nasut i podzidan kako bi se napravila šetnica (sl. 4).

KAMENI INVENTAR RANOKRŠĆANSKE CRKVE

Unutrašnjost ranokršćanske crkve bila je opremljena kamenim namještajem. Na lokalitetu su pronađeni ulomci kamenih stupova različitih dimenzija i profilacija, kapiteli, imposti i dijelovi pluteja i pilastara ograde svetišta reljefno ukrašeni stiliziranim biljnim motivima u duhu ranokršćanske

Up on the ending of the 1994 excavation campaign at Groblje sv. Ive, it was anticipated that further investigations would take place in the future; however, such excavations never happened. The site's current condition is the consequence of conservation and restoration efforts overseen by the conservation department of the State Directorate for Culture and Natural Heritage in Split, undertaken in 1996 and again in 1997.³⁹ It is assumed that during the conservation of the remains belonging to the Early Christian cultural layer, at least two construction phases were considered, while the original shape of the southern annex was deviated from, leading to an incorrect interpretation of the Early Christian church's floor plan, with the partially protruding southern annex also having been overlooked. During these works, the area beside the Bistrica, where a shrine once stood, was filled in and levelled in order to create a walking area (fig. 4).

INVENTORY OF STONES FROM THE EARLY CHRISTIAN BASILICA

The interior of the Early Christian church was adorned with stone furnishings. Fragments of stone columns of various sizes and profiles, as well as capitals, impostes, and other components were discovered at the site. The balustrade and pilasters of the shrine enclosure were decorated in relief with stylized plant motifs, as is customary in Early Christian art. The church's architecture also included pieces of processed stone and travertine.

Considering the architecture of the Early Christian church in which the enclosure of the sanctuary was, fragments of church furniture are relatively rare on the site, which is implied by the complex archaeological stratigraphy. The remains of the Early Christian complex were destroyed by the medieval layers after the period of antiquity and by the layered sepulchral tradition.⁴⁰

The few pieces of the balustrade and pilasters of the sanctuary fence that were recovered are decorated in relief with plant motifs in the classic style of the Early Christian repertoire. These include motif of a beautifully shaped stylized lily (cat. no. 1, fig. 5), motifs of leaves in combination with a double-bar strip with tendril-shaped ending, and multi-lobed

³⁹ The architectural conservator Ivo Vojnović provided expert assistance in the conservation and restoration efforts.

⁴⁰ This cemetery was intermittently active until the Second World War.



Sl. 5. Ulomak pilastra crkvene ograde, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-9 (snimio: Z. Alajbeg)

Fig. 5. Fragment of a pilaster of a Church fence, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-9 (photograph: Z. Alajbeg)



Sl. 6. Ulomak pilastra crkvene ograde, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-68 (snimio: Z. Alajbeg)

Fig. 6. A fragment of a pilaster of a Church fence, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-68 (photograph: Z. Alajbeg)



Sl. 7. Ulomak reljefne ploče crkvene ograde, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-69 (snimio: Z. Alajbeg)

Fig. 7. A fragment of a relief panel of the Church fence, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-69 (photograph: Z. Alajbeg)

umjetnosti. Također arhitekturi crkve pripadaju ulomci obrađenoga kamena i sedre.

S obzirom na arhitekturu ranokršćanske crkve u kojoj je bila ograda svetišta, ulomci crkvenoga namještaja na lokalitetu relativno su rijetko zastupljeni, što se podrazumijeva složenom arheološkom stratigrafijom. Ostaci ranokršćanskoga kompleksa uništeni su srednjovjekovnim slojevima nakon razdoblja antike te slojevitom sepulkralnom tradicijom.⁴⁰ Malobrojni sačuvani ulomci pluteja i pilastara ograde svetišta reljefno su ukrašeni biljnim motivima klasičnog ranokršćanskog repertoara: motiv lijepo oblikovanoga stiliziranog ljiljana (kat. br. 1; sl. 5), motivi listova u kombinaciji s dvoprutom trakom, šesterolatične rozete s koncentričnom kružnicom po sredini obrubljene dvoprutom trakom sa završecima u obliku vitica, te višelatične stilizirane rozete s koncentričnom kružnicom po sredini obrubljene dvoprutim trakama koje završavaju u viticu (kat. 2-5; sl. 6, 7; T. 1: 1; T. 1: 2). Motivi šesterolatičnih i višelatičnih rozeta u različitim inačicama stilizacije karakteristični su za ukrašavanje pluteja u ranokršćanskim crkvama na livanjskome području (Rešetarica, Potočani).⁴¹

Od sačuvanih dijelova crkvenoga namještaja izdvajaju se dva gotovo identična kapitela. Na jednom od kapitela je glagoljski natpis (kat. 6; sl. 8), a drugi je oštećeniji i bez grafitu (kat. 7; sl. 9). Oba kapitela dio su ograde svetišta u interijeru

stylized rosettes with a concentric circle in the middle bordered with a double bar strips that end in a tendril (cat. no. 2-5; fig. 67; T. 1: 1; T. 1: 2). Motifs of six-lattic and multi-lattic rosettes in different versions of stylization are characteristic for pluteus decoration in Early Christian churches in the Livno area. (Rešetarica, Potočani).⁴¹

Two near-identical capitals stand out among the architectural elements discovered during excavations. One of these bears a later Glagolitic inscription (cat. no. 6, fig. 8), while the other is in a poorer condition and without an inscription (cat. no. 7, fig. 9). Both capitals have been interpreted as having been part of the enclosure of the sanctuary in the interior of the Early Christian church. The less well-preserved Capital 2 most likely abutted a wall, while Capital 1 probably stood on a pillar in the middle of the sanctuary fence. Originally, two volutes would have been carved in relief on each side of the capital, with a moulding above the volutes with a square protrusion in the middle, and above this the abacus. The later Glagolitic inscription on Capital 1 is positioned between the two volutes, and reads: ASE PI/SA LU/KA DI/AK/13/6/8.⁴² Above the text is carved a symbol that could be interpreted as a pentagram, similar to one found on the side of a Roman ossuary also found at this site.⁴³ Given the similarities to analogies from other Early Christian localities, there is no doubt that this capital is Early Christian in date.

⁴⁰ Groblje na ovome lokalitetu bilo je povremeno aktivno sve do Drugoga svjetskog rata.

⁴¹ Petrinc et al. 1999, 76–78, 81–82.

⁴¹ Petrinc et al. 1999, 76–78, 81–82.

⁴² Vrdoljak 2003, 241–242, fig. 4.

⁴³ Petrinc et al. 1999, 69, cat. no. 142; Marić Baković 2017, 89, Pl. 3:12.



Sl. 8. Kapitel stupa crkvene ograde, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-1 (snimio: Z. Alajbeg)

Fig. 8. Capital collum of the Church fence. Franciscan Museum and Gallery Gorica - Livno, Inv. No. FMGG-1 (photograph: Z. Alajbeg)



Sl. 9. Kapitel stupa crkvene ograde, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-2 (snimio: Z. Alajbeg)

Fig. 9. Capital collum of the Church fence. Franciscan Museum and Gallery Gorica - Livno, Inv. No. FMGG-2 (photograph: Z. Alajbeg)

crkve. Kapitel br. 2, koji je slabije sačuvan, vjerojatno je bio prislonjen uz zid, dok je kapitel br. 1 bio na stupiću u nekom središnjem dijelu ograde svetišta. Prvotno su na svakoj od ploha kapitela bile reljefno izvedene po dvije volute, iznad voluta je plastična traka s kvadratnim istakom po sredini te iznad ploča abaka. Na kapitelu br. 1 naknadno je između dvije volute urezan glagoljski natpis s numeracijom izraženom glagoljskim slovima: ASE PI/SA LU/KA DI/AK/13/6/8.⁴² Iznad natpisa urezan je simbol koji bi mogao predstavljati pentagram, sličan onomu koji je urezan na stranici rimskog osuarija nađenog na istom lokalitetu.⁴³ Nema sumnje u to da je riječ o ranokršćanskom kapitelu, na što ukazuju i analogije s drugih ranokršćanskih lokaliteta. Gotovo identičan je kapitel ranokršćanske ograde svetišta iz Crkvine u Galovcu kod Zadra,⁴⁴ dok na području Salone imamo više stilizirane oblike voluta na kapitelima.⁴⁵ Natpis na livanjskom kapitelu naknadno je urezan tijekom kasnoga srednjeg vijeka u vrijeme

The capital of the sanctuary enclosure from the Early Christian church in Galovac, near Zadar, is nearly identical,⁴⁴ while capitals discovered around the Salona (present-day Solin) area have more stylized volutes.⁴⁵ The etching of the inscription on the Livno capital has been dated to the period of existence of the Franciscan monastery in the late Middle Ages. During that time, the capital was reused for an unknown purpose, when the inscription was created.⁴⁶ A smaller capital fragment, bearing a plant motif in the form of a wide acanthus leaf and a rectangular abacus above this has also been preserved (cat. no. 8, Plate 1:3). Stylization with the reduction to the geometric form of the plant motif can be one of the characteristics of Early Christian art.

Fragments of three distinct impost blocks have been preserved. Two fragments belong to the front side of an impost, and feature incised Latin crosses with extended ends (cat. no. 9, Plate 1:4). Imposts with crosses carved into them have been

42 Vrdoljak 2003, 241–242, sl. 4.

43 Petrinc et al. 1999, 69, kat. br. 142; Marić Baković 2017, 89, T. 3:12.

44 Belošević 1997, 339.

45 Salona I 1994, pl. XXIII, XCVIII.

44 Belošević 1997, 339.

45 Salona I 1994, pl. XXIII, XCVIII.

46 According to historical records, a pupil named Luka served as a scribe at the Bosnian court in 1366 (Vrdoljak 2003, 244).

Sl. 10. Impost-kapitel,
 Franjevački muzej i
 galerija Gorica-Livno, inv.
 br. FMGG-26 (snimio: Z.
 Alajbeg)

*Fig. 10. Impost - capital,
 Franciscan Museum and
 Gallery Gorica-Livno, Inv.
 No. FMGG-26 (photograph:
 Z. Alajbeg)*



franjevačkoga samostana. Tada je kapitel u nama nepoznatoj funkciji poslužio kao podloga za urezani grafit.⁴⁶ Sačuvan je i manji ulomak kapitela s biljnim ukrasom u vidu širokog akantovog lista, te s pravokutnom pločom abaka (kat. 8; T. 1: 3). Stilizacija uz svođenje na geometrijski oblik biljnog motiva može biti jedno od obilježja ranokršćanske umjetnosti.

Sačuvani su ulomci tri različita imposta. Dva ulomka pripadaju čeonj strani imposta na koju je urezan latinski križ proširenih krajeva (kat. 9; T. 1: 4). Imposti s urezanim križevima zastupljeni su na livanjskome (Rešetarica)⁴⁷ i susjednom glamočkome području (Vrba),⁴⁸ i to vjerojatno pod utjecajem onih salonitanskih gdje su zastupljeni u velikom broju.⁴⁹ Ovakvi imposti dio su prozora sa stupcima pravokutnoga presjeka kompozitnog tipa na kojima su također urezani križevi proširenih krajeva a dokumentirani su na širokom prostoru priobalnog dijela rimske provincije Dalmacije te u njoj unutrašnjosti.⁵⁰ Pretpostavlja se da se ovaj tip prozorskih stupaca s urezanim križem razvio u salonitanskim radionicama, odakle se proširio na šire područje.⁵¹ Drugi impost

found elsewhere within the Livno region (Rešetarica)⁴⁷ and also the neighbouring Glamoč region (Vrba);⁴⁸ these are likely influenced by those from Salona, where they have been found in large numbers.⁴⁹ Such imposti often formed parts of windows with composite-type rectangular-cross-sectioned columns, on which crosses with extended ends are also carved; these have been documented across a wide area that includes both the coastal part of the Roman province of Dalmatia and in its interior.⁵⁰ It has been proposed that this style of window column with an incised cross originated in the workshops of Salona, from where it spread to other regions.⁵¹ The fragment of the second impost has a preserved profiled surface that is devoid of decoration, and is most likely the rear side of an impost (cat. no. 10, Pl. 1: 5a/b). The third is a monumental impost-capital, the front half of which has been preserved, while the back half has been destroyed (cat. no. 11, fig. 10). The central field of the front relief decoration contains three multi-lobed rosettes in which elongated petals with pointed extremities alternate with shorter petals, in such a way that the rosettes are symmetrically joined with no gap between them. A flat surface continues from above the central field around the sides. The front

46 Povijesni izvori spominju nekog dijaka Luku koji je 1366. godine bio pisar na bosanskom dvoru (Vrdoljak 2003, 244).

47 Vrdoljak 1988, 136, T. XII.

48 Bojanovski 1981, 211, T. 1:1, 2.

49 Salona I 1994, T. 15–17.

50 Kovačić 1993, 291–310; Vučić 2017, 519, karta 2.

51 Vučić 2017, 520.

47 Vrdoljak 1988, 136, Pl. XII.

48 Bojanovski 1981, 211, Pl. 1:1, 2.

49 Salona I 1994, Plates 15–17.

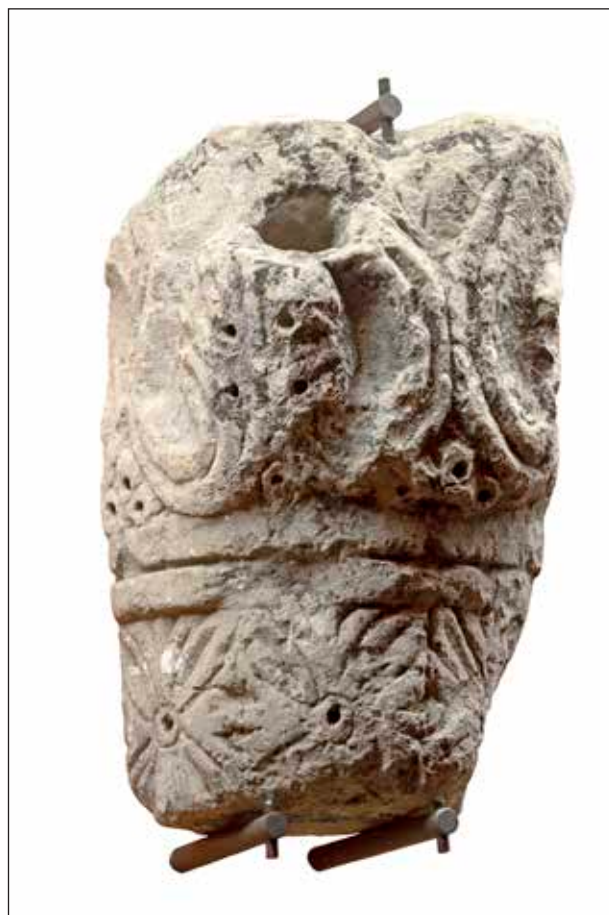
50 Kovačić 1993, 291–310; Vučić 2017, 519, plan. 2.

51 Vučić 2017, 520.



Sl. 11. Ulomak stupa, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-8 (snimio: Z. Alajbeg)

Fig. 11. Fragment of a column, Franciscan Museum and Gallery Gorica-Livno, Inv.No. FMGG-8 (photograph: Z. Alajbeg)



Sl. 12. Kapitel stupa, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-354 (snimio: Z. Alajbeg)

Fig. 12. The capital of the column, Franciscan Museum and Gallery Gorica-Livno, Inv.No. FMGG-354 (photograph: Z. Alajbeg)

ima sačuvanu profiliranu plohu bez ukrasa, vjerojatno se radi o stražnjoj strani nekog imposta (kat. 10; T. 1: 5a/b). Treći je dimenzijama monumentalan impost-kapitel od kojega je sačuvana čeona polovica dok je stražnja objijena (kat. 11; sl. 10). Reljefni ukras na čeonoj strani u središnjem polju sadrži tri višelatitčne rozete kod kojih se izdužene latice oštih krajeva izmjenjuju s kraćim laticama te se na taj način rozete simetrično spajaju ne ostavljajući prazninu između. Iznad središnjeg polja ravna je ploha koja se nastavlja na bočne stranice. S čeone strane ukrašena je s dvije koncentrične kružnice te relativno smisleno raspoređenim rupicama od svrdla. Kosina s čeone strane imposta podijeljena je u tri profilirane zaobljene trake koje su simetrične rozetama na središnjem polju. Na dvije duže bočne stranice nasumično su urezane koncentrične kružnice, motiv koji je identičan kružnicama s poklopaca i ploča osuarija iz ranijeg rimskog razdoblja na Groblju sv. Ive.⁵² Također s obje bočne strane uklesani su utori za prozorsku tranzenu. Na donjoj plohi imposta sačuvano je udubljenje za spoj sa stupom.

Istim motivom višelatitčnih rozeta koje se simetrično spajaju reljefno je ukrašen ulomak stupa od kojeg je sačuvana polovica (kat. 12; sl. 11). Po sredini ulomka bila je kružna profilacija. Gornja ploha je uglačana dok je donja objijena. Vjerojatno je samo gornja zona stupa bila ukrašena te je urezanom linijom bila odvojena od ostatka stupa.⁵³ Rekonstruirajući ulomak kao cjelinu, stup je u gornjoj zoni bio ukrašen sa sedam rozeta koje se međusobno spajaju. Svakako je riječ o istoj fazi unutrašnjeg opremanja crkve od kada je i impost. U arheološkoj zbirci FMGG-a nalazi se kapitel stupa za koji nemamo podatke o mjestu i okolnostima nalaza. Spomenik se nalazio u samostanskoj zbirci prije formiranja suvremenog FMGG-a. S obzirom na način ukrašavanja pretpostavljamo da je i ovaj kapitel s Groblja sv. Ive u Livnu. Ukrašena površina kapitela podijeljena je na dva dijela međusobno odijeljena s dva plastična rebra (kat. 13; sl. 12). Gornja, veća površina ukrašena je plastičnim zaobljenim rebrima, vjerojatno je riječ o oštećenim volutama između kojih su reljefno izvedene kuglice s rupom po sredini. Donja površina ukrašena je motivom višelatitčnih rozeta kakve smo već zabilježili na impostu i stupu s Groblja sv. Ive, kod kojih se izdužene latice oštih krajeva izmjenjuju s kraćim laticama te se na taj način rozete simetrično spajaju ne ostavljajući prazninu između.

Motiv višelatitčnih rozeta raširen je motiv u repertoaru ranokršćanske umjetnosti, ali način ispunjavanja površine imposta, stupa i kapitela na Groblju sv. Ive predstavlja poseban lokalni obrazac.

Na lokalitetu je nađeno petnaestak ulomaka stupova i stupića različitih dimenzija i profilacija, uglavnom neukrašene glatke površine ili s tragovima klesarske alatke. Uglavnom ne možemo odrediti kojem elementu unutrašnjeg opremanja crkve pripadaju, možemo tek na temelju

is decorated with two concentric circles and intentionally distributed drill holes. The slope on the front side of the impost is divided into three profiled rounded strips that are symmetrical to the rosettes in the central field. On the two longer sides are arbitrarily engraved concentric circles; a motif identical to that found on the lid and panels of an early Roman ossuary found at the site.⁵² Slots for the window sash are also carved into both sides. A recess for connecting the impost to a column has also been preserved on its lower surface.

A fragment of a column, of which only half remains, bears the same pattern of symmetrically joined multi-lobed rosettes in relief (cat. no. 12, fig. 11). A circular motif existed at the centre. The upper side is smooth, while the lower side is cut away. It is likely that only the upper portion of the column was decorated, with this being separated by an incised line.⁵³ A reconstruction of the fragment has revealed that the upper portion was covered with seven interlocking rosettes. This was certainly created during the same period of the church's history as the impost. A column capital of unknown provenance exists in the historical collection of the Franciscan Museum and Gallery Gorica (FMGG) in Livno, which was included in the collections of the monastery before the establishment of the museum. On the basis of its decoration, we believe that this capital also comes from the Groblje sv. Ive site. The decorated surface of the capital is divided into two parts, separated from one another by two moulded ribs (cat. no. 13, fig. 12). The upper, larger surface is decorated with rounded moulded ribs, which appear to be damaged volutes, the centres of which are embossed with balls with holes at the centre. The lower surface is decorated with the motif of multi-lobed rosettes, as seen on the impost and column from the Groblje sv. Ive site, in which elongated petals with sharp ends alternate with shorter petals, allowing the rosettes to be joined symmetrically without a gap in between. The motif of multi-lobed rosettes is widespread within the repertoire of Early Christian art, but its manifestation in such a way as to fill the entire surface of the impost, column, and capital represents a unique local pattern.

Approximately fifteen fragments of columns and pillars of various dimensions and profiles were discovered at the site, with the majority being undecorated smooth surfaces or bearing evidence of stonemasons' tools. In most cases, it is not possible to determine which part of the church's interior they belong to, and we can only make inferences on the basis of their dimensions. One fragment of a column with a portion of the capital survives; the column and capital are separated by a ribbed moulding, with the column's surface being smooth and undecorated (cat. no. 14, Plate 2:1). On the basis of the surviving remnants, the capital was decorated with plant motifs, most likely acanthus leaves, which are interconnected by tendrils at the bottom. Considering the column's dimensions (16 cm diameter), it most likely originates from the delineation of the sanctuary. Columns like this, where the capital is separated from the body of the column by a plastic rib and decorated with a relief motif of a more or less stylized acanthus, are

52 Marić Baković 2017, 70, sl. 9; T. 1:2; T. 2:7; T. 3:9.

53 Priložena je fotografija iz izložbenoga prostora gdje je ulomak zbog ravnine plohe izložen obrnuto.

52 Marić Baković 2017, 70, fig. 9, Pl. 1:2, 2:7, 3:9.

53 Attached is a photo from the exhibition area where the fragment is displayed upside down due to the flatness of the surface

dimenzija nagađati. Izdvaja se ulomak stupa s ostatkom kapitela koji je od tijela stupa, čija je površina glatka i neukrašena, odijeljen plastičnim rebrom (kat. 14; T. 2: 1). Kapitel je prema sačuvanim ostacima ukrašen biljnom dekoracijom i to vjerojatno motivom listova akanta koji su u dnu međusobno povezani viticama. S obzirom na dimenzije (promjer površine stupića 16 cm), radi se o stupiću ograde svetišta. Ovakvi stupići kod kojih je kapitel od tijela stupića odvojen plastičnim rebrom te ukrašen reljefnim motivom manje ili više stiliziranog akanta okvirno su datirani u 5. i 6. stoljeće te ih nalazimo na lokalitetima unutrašnjega područja provincije Dalmacije (Gradac u Lepenici, Mokro i Grčine kod Mostara, Gornji Vakuf – Uskoplje).⁵⁴ Jedan od stupića ima tordiranu površinu sa širokim rebrima (kat. 15; T. 2: 2), kod jednog su urezane tri linije koje idu oko tijela stupića (kat. 16; T. 2: 3), ovakvih ulomaka stupića s naizmjenično urezane po tri linije nađeno je u većem broju na Rešetarici (Buško jezero) iznad ostataka ranokršćanske crkve.⁵⁵ Nadalje, kod jednog ulomka sačuvan je dio s okomitim rebrima trokutastog presjeka koja se lepezasto šire, vjerojatno se radi o dijelu koji prelazi u kapitel (kat. 17; T. 2: 4). Ostali ulomci su neukrašeni, bez posebnih obilježja, možemo ih grupirati prema dimenzijama promjera te obradi površine, što se može vidjeti u katalogu ulomaka kamenog inventara (kat. 18-30; T. 2: 5-7; T. 3: 1-10). Na kraju ovoga slijeda ulomaka crkvenog inventara izdvajamo ulomak ploče s rubnom profilacijom (kat. 31; T. 3: 11). Ploča od vapnenca s tragovima klesarske alatke na čitavoj sačuvanoj površini mogla bi pripadati oltarskoj menzi. Nije isključeno da ploča oltarske menze bude od vapnenca, za što smo već imali primjere na Livanjskome i Glamočkom polju,⁵⁶ ono što ovu ploču izdvaja su tragovi nazubljene alatke na površini ploče.

Svi sačuvani ulomci crkvenoga namještaja rađeni su od lokalnog vapnenca. Na temelju i ovdje sačuvanih ulomaka može se reći kako je livanjsko područje tijekom kasne antike gravitiralo Saloni, pod čijom jurisdikcijom se Livanjsko polje nalazilo do prve polovine 6. stoljeća, kao radioničkom središtu, odakle su se širili utjecaji vezani uz unutrašnje opremanje ranokršćanskih crkava.

ULOMCI STAKLENOG LITURGIJSKOG POSUĐA I BRONČANI DRŽAČ

Pokretnom inventaru iz ranokršćanske crkve pripadaju ulomci staklenog liturgijskog posuđa s pripadajućim metalnim držačem. Na lokalitetu je nađen veliki broj ulomaka uglavnom neprepoznatljivog dijela staklenog posuđa, dosta usitnjenog i u jako lošem stanju. Većina ulomaka u nijansama je od blijedožute do tamnožute boje, te u nijansama blijedozelene boje, gotovo bezbojne. Staklo je uglavnom s

tentatively dated to the 5th and 6th centuries and are found on sites in the interior parts of the province Dalmatia (Gradac in Lepenica, Mokro and Grčine near Mostar, Gornji Vakuf – Uskoplje).⁵⁴ One of the pillars has a twisted surface with wide ribs (cat. no. 15, P.2:2), one has three lines engraved that go around the body of the pillar (cat. no. 16, P.2:3), such fragments of pillars with alternately engraved three lines each were found in large numbers on Rešetarica (Buško jezero) above the remains of an early Christian church).⁵⁵ Additionally, one fragment has been preserved where a portion bears vertical ribs with a triangular cross-section that spread like a fan; this is probably the portion of the column that connected to the capital (cat. no. 17, Pl. 2:4). The remainder of fragments are undecorated and lack any special characteristics or features; these are therefore categorized on the basis of their diameter measurements and profiling in the stone inventory catalogue (cat. no. 18-30, Pl. 2:5-7; Pl. 3:1-10). To conclude the presentation of these church inventory components we single out a fragment of a panel with an edge profile (cat. no. 31, Pl. 3:11). A limestone slab with preserved tool marks across the entirety of the portion of surface that has been preserved might be the altar stone. The notion that the altar stone would be made of limestone cannot be excluded, as examples of such are documented throughout Livanjsko polje and Glamočko polje;⁵⁶ nonetheless, what distinguishes this plate are the marks of toothed tools across the stone's surface.

All surviving fragments of church furniture were crafted from local limestone. On the basis of these fragments, it is possible to conclude that, during Late Antiquity, the Livno region gravitated towards Salona – under whose jurisdiction Livanjsko polje fell until the first half of the 6th century AD – as a workshop centre from which church interior decoration influences diffused in the Early Christian period.

FRAGMENTS OF LITURGICAL GLASSWARE AND A BRONZE HOLDER

The Early Christian church's mobile inventory contains fragments of glass liturgical vessels and their associated metal holders. The site yielded a significant number of fragments of mostly unidentifiable glassware, which were in an extremely fragmented state and poor condition. The majority of the fragments range from pale to dark yellow or are an almost monochromatic pale green. Much of the glass exhibits visible traces of thermal expansion, as well as traces of impurities and bubbles. The catalogue contains fragments of two vessels that could be reconstructed, in addition to 43 fragments of rims, handles and bases of various vessels. The fragments are representative of the typical repertoire dating from the late 4th century to the 6th century, when – compared to the earlier Roman period – the range of forms was considerably reduced. At

54 Basler 1972, 84; Škegro 1990, 140–141.

55 Vrdoljak 1988, 178, T. XIII.

56 U arheološkome postavu FMGG-a izložena je gotovo u cijelosti sačuvana vapnenačka ploča oltarske menze iz ranokršćanske crkve na Podvornicama u Lištanim te ploča iz Vrbe na Glamočkom polju (Bojanovski 1981, 211, T. 1: 3). Na Rešetarici su uz mramornu menzu nađeni i ulomci druge menze od vapnenca (Vrdoljak 1988, 140, T. XV: 3).

54 Basler 1972, 84; Škegro 1990, 140–141.

55 Vrdoljak 1988, 178, Pl. XIII.

56 In the archaeological exhibition of the FMGG, a nearly perfectly preserved limestone slab from the Early Christian church at Podvornice in Lištani and a slab from Vrba on Glamočko polje are on display (Bojanovski 1981, 211, Pl. 1:3). In addition to the marble altar table, fragments of another altar table made of limestone were discovered at Rešetarica (Vrdoljak 1988, 140, Pl. XV: 3).



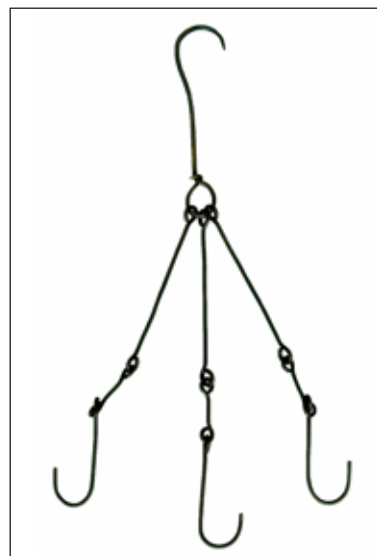
Sl. 13. Ulomci svjetiljke-zdjelice, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-94 (snimio: Z. Alajbeg)

Fig. 13. Fragments of a lamp-bowl, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-94 (photograph: Z. Alajbeg)



Sl. 14. Rekonstrukcija svjetiljke-zdjelice s metalnim držačem, Franjevački muzej i galerija Gorica-Livno, (snimio: Z. Alajbeg)

Fig. 14. Reconstruction of a lamp-bowl with metal holder, Franciscan Museum and Gallery Gorica-Livno (photograph: Z. Alajbeg)



Sl. 15. Držač svjetiljke, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-513 (snimio: Z. Alajbeg)

Fig. 15. Metal lamp holder, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-513 (photograph: Z. Alajbeg)

vidljivim tragovima razvlačenja smjese te s tragovima nečistoća i mjehurića. U katalogu su zastupljeni ulomci dviju posuda koje je bilo moguće rekonstruirati te četrdeset tri ulomka oboda, ručica i dna različitih posuda. Ulomci pripadaju tipičnom repertoaru od kraja 4. do 6. stoljeća, kada je u odnosu na ranije rimsko razdoblje repertoar oblika prilično reducirana. Na Groblju sv. Ive ulomci uglavnom pripadaju svjetiljkama i čašama. Na temelju ulomaka rekonstruirana su dva tipa posuda.

Prva je zdjelica s tri ručice za vješanje koja je služila kao svjetiljka u kojoj je gorio žižak plivajući u ulju (kat. 1; sl. 13; T. 4: 2). Ovakve zdjelice imale su zaobljen recipijent, konkavno udubljeno dno te tri ručice za vješanje. Staklo je žuto-zelene boje. Oštri pregib ručica omogućavao je prihvat metalnog držača u vidu lanaca za vješanje svjetiljke (sl. 14).⁵⁷ Osim u liturgijsku svrhu s vremenom su se svjetiljke zdjelice počele koristiti u javnim te privatnim prostorima. Ulomci ovakvih zdjelica čest su nalaz uz ranokršćanske crkve na području provincije Dalmacije od kraja 4. do 6. stoljeća, dok su na širem Mediteranu korištene do 8. stoljeća i dulje ovisno o određenom području.⁵⁸ U njima se kao gorivo koristio loj ili neko biljno ulje (maslinovo, orahovo ili čak ulje lavande) te fitilj od neke biljne niti kao što je lan, ali može biti i vuna ili konoplja.⁵⁹ Fitilj pridržavan metalnim držačem ili tronošcem uronio bi se u ulje koje pliva na vodi.⁶⁰ Na Groblju sv. Ive nađen je u cijelosti sačuvan brončani držač svjetiljke (kat. 2; sl. 15). Držač se sastojao od tri povijene kuke na koje se vežu

Groblje sv. Ive, most of the fragments have been identified as having belonged to lanterns and glasses.

It was possible to create reconstructions of two different types of vessels from the fragments. The first is a bowl with three hanging handles that acted as a light in which a wick floating in oil was burned (cat. no. 1, fig. 13; Pl. 4:2). These bowls had a rounded receptacle, a sunken concave base, and three hanging handles, with the glass being yellow-green in colour. The sharp bend of the handles made it possible to affix the bowl-lantern to a metal holder in the form of chains for hanging (fig. 14).⁵⁷ In addition to liturgical purposes, such bowl-lanterns became increasingly used in public and household settings over time. Fragments of such bowls are frequently found in the context of Early Christian churches in Dalmatia from the late 4th to 6th centuries, while in the wider Mediterranean they were used up until the 8th century, or possibly even later.⁵⁸ Tallow or plant oil (olive, walnut, or even lavender oil) was used to fuel them.⁵⁹ A wick – made of a plant-based thread, such as flax or hemp, or possibly also wool – supported by a metal holder or tripod would be immersed in oil floating on water.⁶⁰ A perfectly preserved bronze lamp holder was discovered at Groblje sv. Ive (cat. no. 2, fig. 15). The holder is made up of three bent hooks to which three elements that ensure the holder's flexibility are attached, with this all connected to a chain link, together with a hook for hanging. Funnel-shaped lamps with handles could also be hung from such a holder. This holder is one of very few preserved specimens. Similar holders were discovered at Crkvin, Galovac, and at Gata, near Omiš.⁶¹

57 Chevalier 1999, 195–198.

58 Lazar 2003, 200.

59 Lazar 2003, 200.

60 Chevalier 1999, 175.

57 Chevalier 1999, 195–198.

58 Lazar 2003, 200.

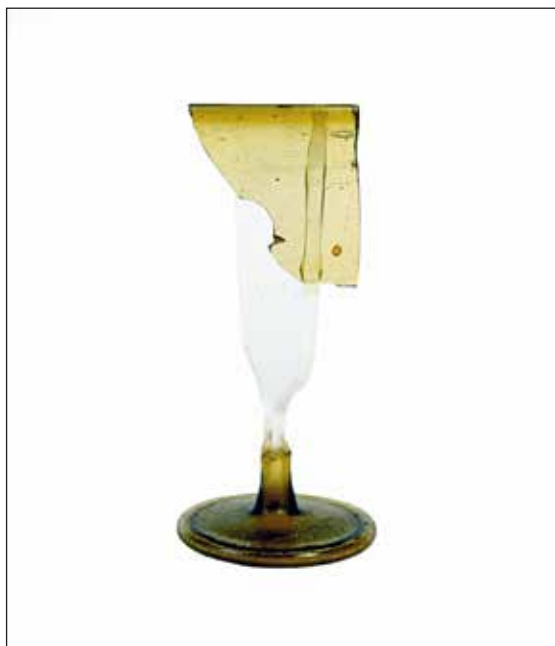
59 Lazar 2003, 200.

60 Chevalier 1999, 175.

61 Fadić 1994, 219; Petrinc et al. 1999, 31, 84, cat. no. 209.

Sl. 16. Ulomci konusne čaše na visokoj nozi, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-95 (snimio: Z. Alajbeg)

Fig. 16. Fragments of a conical cup on a high leg, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-95 (photograph: Z. Alajbeg)



Sl. 17. Rekonstrukcija konusne čaše na visokoj nozi, Franjevački muzej i galerija Gorica-Livno, (snimio: Z. Alajbeg)

Fig. 17. Reconstruction of a conical cup on a high leg, Franciscan Museum and Gallery Gorica-Livno (photograph: Z. Alajbeg)



tri elementa što osiguravaju fleksibilnost držača te na kraju jedne kuke za vješanje koja je s ostalim elementima povezana alkom. O njih su se mogle vješati i svjetiljke u obliku lijevka s ručicama. Ovaj držač pripada među rijetko sačuvane primjerke. Slični držači pronađeni su na Crkvini u Galovcu i u Gatima kraj Omiša.⁶¹

Druga vrsta posude je čaša na visokoj nozi koja se sastoji od konusnog ili zaobljenog recipijenta, šuplje cilindrične noge i kružne stope sa zaobljenim šupljim cjevastim rubom (kat. 3; sl. 16, 17; T. 4: 1). Staklo je žuto-zelene boje. S obzirom na način izrade, livanjski primjerci izrađivani su istodobnim puhanjem recipijenta i nožice tako da je šupljina cilindrične nožice podijeljena membranom u središtu.⁶² Ovakve čaše također su čest nalaz na ranokršćanskim lokalitetima uz sakralne objekte na prostoru provincije Dalmacije. Ovaj oblik posude mogao je služiti kao rasvjetno tijelo, zavjetni luminte kao kalež korišten u liturgiji.⁶³ Pripadaju sredozemnom tipu staklenog posuđa, izrazito popularnog kroz 4. i 5. stoljeće, ali sežu i do 8. stoljeća.⁶⁴

Zbog fragmentiranosti ulomaka teško je uvijek odrediti kojem tipu posude su pripadali. Ipak, od ulomaka koje smo izdvojili zastupljeni su konkavno udubljeni ulomci dna svjetiljki zdjelica (kat. 4-8; sl. 18: 1-5). Ulomci ručica (kat. 9-14; sl. 19: 1-6) također bi mogli pripadati ovom tipu svjetiljki ali i svjetilkama u obliku lijevka,⁶⁵ od kojih je na lokalitetu sačuvan i ulomak zaobljenog dna svjetiljke (kat. 15; sl. 20). Svjetiljke u obliku lijevka imale su široki recipijent te uski završetak zaobljenog dna te su se stavljale u brončane držače – svijetljake (polycandelon) koji su mogli biti visećeg ili stajaćeg tipa,⁶⁶ osim u slučaju kada su imale tri ručice, onda su se vješale kao

A second type of vessel is a glass on a tall leg: generally, this consists of a conical or rounded receptacle, a hollow cylindrical leg, and a circular base with a rounded hollow tubular rim (cat. no. 3, fig. 16,17; Pl. 4:1), with glass of a yellow-green colour. The moulded specimens were created by simultaneously blowing the receptacle and the foot in such a way that the chamber of the cylindrical foot is divided by a membrane in the centre.⁶² Such glasses are also a common find at Early Christian sites near sacral buildings throughout the province of Dalmatia. This type of vessel may have served as a lighting fixture, votive lamp, or as a liturgical chalice.⁶³ They belong to the Mediterranean glassware tradition, which peaked in popularity in the 4th and 5th centuries, but also continued to be used up until the 8th century.⁶⁴

Due to the high degree of fragmentation, it is not always possible to establish the type of vessel to which the glass fragments belonged. Nonetheless, among the identified fragments are concavely sunken fragments of the bottom of bowl-lanterns (cat. no. 4-8, fig. 18: 1-5). Handle fragments (cat. no. 9-14, fig. 19: 1-6) may also belong to this type of lamp, but also to funnel-shaped lamps,⁶⁵ a fragment of the rounded bottom of one of which was preserved at the site (cat. no. 15, fig. 20). Funnel-shaped lamps had a wide receptacle and a narrow end with a rounded base, and were set in bronze holders – candlesticks (polycandelon) – that could have been hanging or standing,⁶⁶ except in instances where they had three handles, in which case they were hung as bowl-lanterns. They originate from Palestine and date to between the 5th and 7th centuries, and are also found in Dalmatian late Roman sites.⁶⁷

61 Fadić 1994, 219; Petrinec *et al.* 1999, 31, 84, kat. br. 209.

62 Perović 2010, 46–47, sl. 7.

63 Chevalier 1999, 199.

64 Buljević 1994, 259; Marin 1998, 17; Petrinec *et al.* 1999, 83, kat. br. 207; Jukić Buča 2018, 63–64; Ožanić Roguljić 2018, 164.

65 Jukić Buča 2018, 67.

66 Chevalier 1999, 186–189.

62 Perović 2010, 46–47, fig. 7.

63 Chevalier 1999, 199.

64 Buljević 1994, 259; Marin 1998, 17; Petrinec *et al.* 1999, 83, kat. no. 207; Jukić Buča 2018, 63–64; Ožanić Roguljić 2018, 164.

65 Jukić Buča 2018, 67.

66 Chevalier 1999, 186–189.

67 Ožanić Roguljić 2018, 164.

Sl. 18. Ulomci konkavno udubljenih dna svjetiljki, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-203-204, 8787-8798 (snimila: M. Marić Baković)

Fig. 18. Fragments of concave bottoms of lamps, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-203-204, 8787-8798 (photograph: M. Marić Baković)



Sl. 19. Ulomci ručica svjetiljki, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-194, 196-199, 8790 (snimila: M. Marić Baković)

Fig. 19. Fragments of lamp holders, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-194, 196-199, 8790 (photograph: M. Marić Baković)

Sl. 20. Dno svjetiljke u obliku lijevka, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-202 (snimila: M. Marić Baković)

Fig. 20. Bottom of a lamp shaped like a funnel, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-202 (photograph: M. Marić Baković)



i svjetiljke zdjelice. Porijeklom su iz Palestine te datiraju od 5. do 7. stoljeća, također su zastupljene na dalmatinskim kasno-antičkim lokalitetima.⁶⁷

Ulomci blago zadebljanih oboda (kat. 16-32; sl. 21: 1-11, 22: 1-6), prstenasto zadebljanih te šupljih cjevastih oboda (kat. 33-39; sl. 23: 1-7) mogli bi također pripadati rubovima svjetiljki ili koničnih čaša na nozi.

Od konusnih čaša na visokoj nozi sačuvane su kružne stope na kojima se vide tragovi šuplje cilindrične noge (kat. 40; sl. 24). Dva ulomka koja pripadaju blago zaobljenom uskom dnu staklenih posuda mogu biti dio konusnih svjetiljki koje su se koristile i kao čaše, a ovisno o užoj tipologiji ili kontekstu nalazišta datiraju se od 4. do 6. stoljeća (kat. 41-42; sl. 25: 1,2).⁶⁸

Fragments of slightly thickened rims (cat. no. 16-32, figs. 21: 1-11, 22: 1-6), and ring-thickened and hollow tubular rims (cat. no. 33-39, fig. 23: 1-7) may also correspond to the edges of lamps or the leg portions of conical cups.

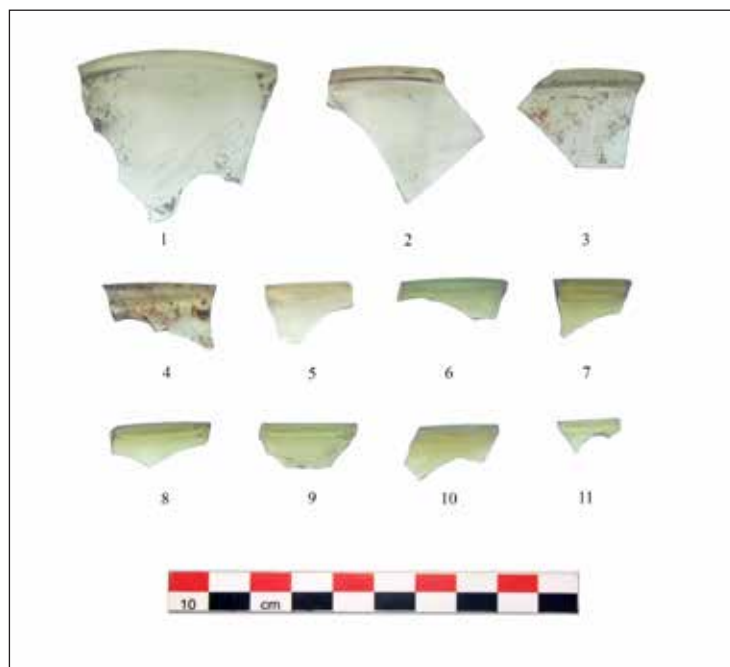
The circular feet of high-legged conical cups have been preserved, upon which the traces of the hollow cylindrical leg can be seen (cat. no. 40, fig. 24). Two fragments from the slightly rounded narrow bottom of the vessels of glass may be part of conical lamps that were also used as glasses, and, depending on the narrower typology or context of the site, may date from the 4th to 6th century, (cat. no. 41, 42, fig. 25:1,2).⁶⁸ The markedly narrow bottom might hint at their role as lamps.⁶⁹ Additionally, two pieces of a thin concave base that might be part of a conical

⁶⁷ Ožanić Roguljić 2018, 164.

⁶⁸ Buljević 1994, 259, 262; Chevalier 1999, 190; Lazar 2003, 197, sl. 52.

⁶⁸ Buljević 1994, 259, 262; Chevalier 1999, 190; Lazar 2003, 197, fig. 52.

⁶⁹ Jukić Buča 2018, 69.



Sl. 21. Ulomci blago zadebljanih oboda svjetiljki, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-209, 8791-8800 (snimila: M. Marić Baković)

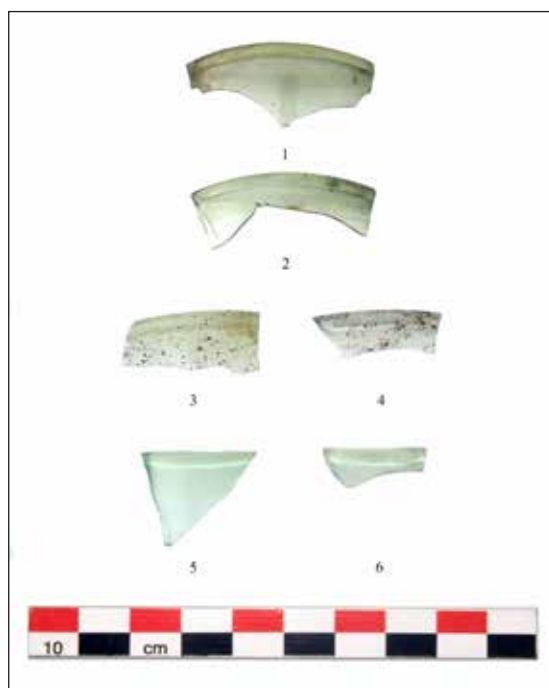
Fig. 21. Fragments of slightly thickened lamp rims, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG- 209, 8791-8800 (photograph: M. Marić Baković)

Sl. 22. Ulomci blago zadebljanih oboda svjetiljki, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-206-207, 8801-8804 (snimila: M. Marić Baković)

Fig. 22. Fragments of slightly thickened lamp rims, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG- 206-207, 8801-8804 (photograph: M. Marić Baković)

Sl. 23. Ulomci cjevastih oboda svjetiljki, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-205, 214, 8805-8809 (snimila: M. Marić Baković)

Fig. 23. Fragments of tubular lamp rims, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-205, 214, 8805-8809 (photograph: M. Marić Baković)



Izrazito suženo dno moglo je ukazivati na njihovu funkciju svjetiljki.⁶⁹ Također dva ulomka pripadaju uskom konkavnom dnu koje može biti dio konusne čaše ili svjetiljke, a u upotrebi su od 4. stoljeća (kat. 43-44; sl. 26: 1,2).⁷⁰ Sačuvana su dva ulomka profiliranih oboda, prozirni bez boje, za koje ne znamo kojem tipu posuda su točno pripadali, mogli su pripadati tipu posuda kaleža na visokoj nozi (kat. 45-46; sl. 27: 1,2).

Iako su se navedeni tipovi posuda koristili i u nesakralne svrhe te su nalaženi u objektima javne te privatne namjene, s obzirom na karakter nalazišta ulomcima s Groblja sv. Ive u

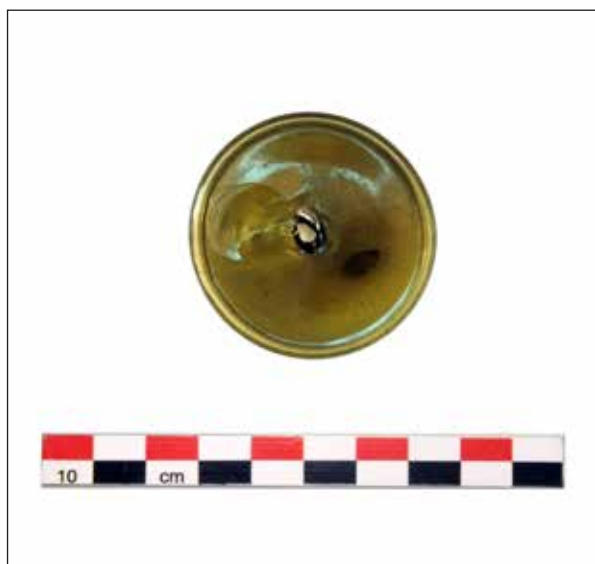
cal cup or lamp of a type in use from the 4th century (cat. no. 43, 44, fig. 26:1,2).⁷⁰ Two translucent, colourless fragments of contoured rims have been preserved, for which the type of vessel to which they belonged is unknown; these may have come from a high-legged chalice vessel (cat. no. 45, 46, fig. 27:1,2).

Although the described vessel types were also used for non-sacral purposes and have been found in the context of public and private buildings, given the character of the site at Groblje sv. Ive, it is possible to attach a liturgical attribute to them, and to connect them to the liturgy and the lighting of the church space. Along with glass vessel fragments, fragments

⁶⁹ Jukić Buča 2018, 69.

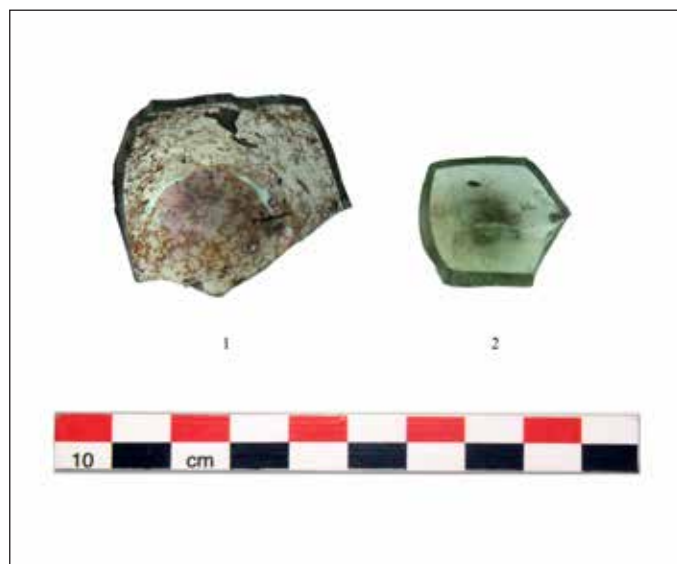
⁷⁰ Lazar 2003, 117.

⁷⁰ Lazar 2003, 117.



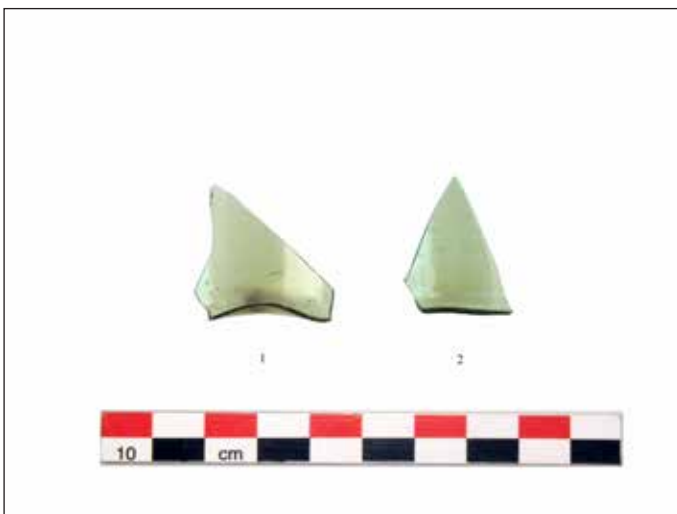
Sl. 24. Stopa čaše na visokoj nozi, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-200 (snimila: M. Marić Baković)

Fig. 24. Cup foot, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-200 (photograph: M. Marić Baković)



Sl. 25. Ulomci zaobljenog dna konusne čaše-svjetiljke, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-8810-8811 (snimila: M. Marić Baković)

Fig. 25 Fragments of a rounded bottom of a conical cup-lamp, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-8810-8811 (photograph: M. Marić Baković)

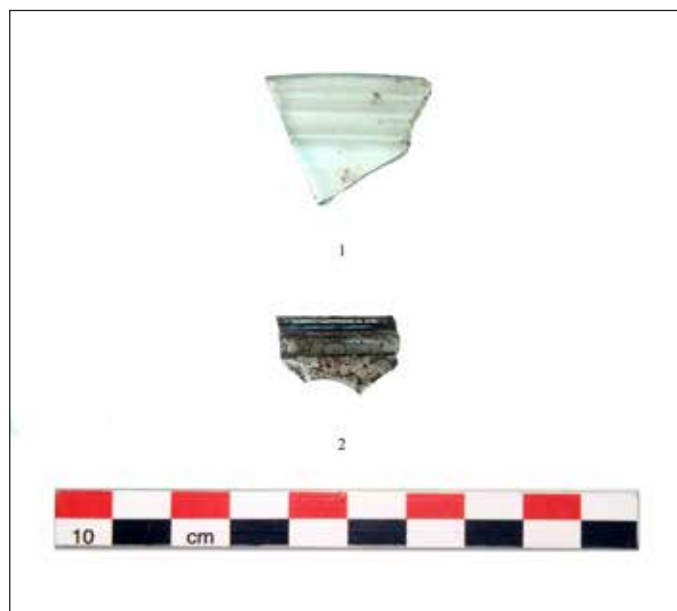


Sl. 26. Ulomci konkavnog dna konusne čaše-svjetiljke, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-8812-8813 (snimila: M. Marić Baković)

Fig. 26. Fragments of a concave bottom of a conical cup-lamp, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-8812-8813 (photograph: M. Marić Baković)

Sl. 27. Ulomci profiliranih oboda posude, Franjevački muzej i galerija Gorica-Livno, inv. br. FMGG-210, 8814 (snimila: M. Marić Baković)

Fig. 27 Fragments of profiled vessel rims, Franciscan Museum and Gallery Gorica-Livno, Inv. No. FMGG-210, 8814 (photograph: M. Marić Baković)



Livnu pridajemo liturgijsko obilježje te ih vežemo uz liturgiju i rasvjetljavanje crkvenoga prostora. Osim ulomaka staklenih posuda na lokalitetu su nađeni ulomci ravnog stakla žuto-zelene boje, dosta su fragmentirani, ali izdvaja se nekoliko većih komada sa sačuvanim zaobljenim rubovima. Iako su nađeni ulomci bez konteksta, pretpostavljamo da je riječ o ulomcima prozorskog stakla.

Na lokalitetu je primjetna odsutnost ulomaka keramičko-ga posuđa kasnoantičkog obilježja, kao i metalnih predmeta. Metalne dijelove s arhitekture sigurno je bilo teško odvojiti od onih kasnijih koji su se koristili kod gradnje kasnosrednjovjekovnoga samostana a među rijetkim dijelovima nošnje nađenim na lokalitetu je brončana pojasna kopča tipa Sucidava, koju karakterizira zaobljeni okov s probijem u obliku djeteline i polumjeseca stvarajući dojam antropomorfne maske apotropejskog značenja, dok se sama djetelina u vidu križa smatra kršćanskim simbolom. Kopče tipa Sucidava pripadaju provincijalnomu ranobizantskom stvaralaštvu. Također se javljaju u grobljima na redove iz 2. polovine 6. stoljeća, koji pripadaju romaniziranom starosjedilačkom stanovništvu. Kopča s Groblja sv. Ive najvjerojatnije je nalaz iz groba dislociranog kasnijim ukopima.⁷¹

ZAKLJUČAK

Kasna antika na višeslojnome nalazištu Groblje sv. Ive u Livnu potvrđena je ostacima ranokršćanske crkve, dvjema presvođenim grobnicama, ulomcima kamenog inventara iz unutrašnjosti crkve te ulomcima staklenog liturgijskog posuđa. Crkva nepoznatoga titulara građena je tijekom druge polovine 5. ili u 6. stoljeću, kada se grade i druge ranokršćanske crkve na Livanjskome polju.

Znatna dio lokaliteta s ranokršćanskim ostacima uništen je srednjovjekovnim i recentnim slojevima. Iz analize sačuvanih ostataka arhitekture možemo zaključiti da je u pročelju nartekse bila manja prostorija u koju se ulazilo bočno sa sjeverozapadne strane. Narteks se protezao širinom crkve, podijeljen u dva, eventualno tri dijela. Naos je bio manja kvadratna prostorija. Južno od naosa bila je prislonjena prostorija južnog aneksa koja je bila djelomično izvučena u odnosu na narteks. Arhitektura svetišta prema istoku i sjeveroistoku lokaliteta u potpunosti je uništena. Brojni ulomci sedre, koji su prema obliku izvađeni iz nekog svoda, ukazuju na svođenje određenoga prostora, pretpostavljamo apsidalnog. Sjeverni aneksi nisu sačuvani, ali pretpostavljamo da ih je bilo na temelju malog fragmenta zida koji se od sačuvanoga zida nartekse nastavlja prema sjeveru. Unatoč slaboj sačuvanosti arhitekture, ranokršćanska crkva se uklapa u arhitekturu složenog tipa koji se razvio tijekom druge polovine 5. i u 6. stoljeću na unutrašnjem području provincije Dalmacije. Istraživači su na ranokršćanskoj arhitekturi uočili dvije faze gradnje, što se odnosilo na nadogradnje prema ulazu, gdje su ispred pročelja crkve ukopane dvije zidane presvođene grobnice. U pročelja dviju grobnica uzidane su spolije iz ranijeg rimskog razdoblja. Korišteni su dijelovi kamenih osuarija koji su uzimani s napuštene rimske nekropole. Kod njihova ponovnog korištenja

of yellow-green flat glass were discovered at the site. While generally relatively fragmented, several larger pieces with preserved rounded edges stand out. Although these fragments were discovered devoid of context, it is believed that they are fragments of window glass.

There is a conspicuous absence of metal artefacts and ceramic shreds from the late Roman period across the site. It must have been difficult to separate the metal parts from the architecture from the later ones that were used in the construction of the late medieval monastery, and among the rare parts of the costume found on the site is a bronze belt buckle of the Sucidava type this type is characterized by a rounded fitting with a hole in the shape of a clover and a crescent moon. The combination of these two motifs gives the buckle the appearance of an anthropomorphic mask, with an apotropaic intention, while the clover itself acts as the focal point of the buckle. Sucidava buckles are an example of early provincial Byzantine craftsmanship, and appear in organized cemeteries belonging to the Romanized native population from the second half of the 6th century onward: the buckle at Groblje sv. Ive is most likely a find dislocated from its original context by later burials.⁷¹

CONCLUSION

The remnants of an Early Christian church, two vaulted graves, fragments of stone from the church interior's inventory, and fragments of glass liturgical objects all confirm the presence of a cultural layer dating to the Late Antiquity period at the multi-layered Groblje sv. Ive site in Livno. The church – whose patron saint remains unknown – was erected in the second half of the 5th or the 6th century, approximately contemporaneous to other Early Christian structures across Livanjsko polje.

A significant portion of the site's Early Christian remains were destroyed by medieval and recent layers and activities. We may assume from the remaining architectural elements that a smaller room existed in front of the narthex, which was entered laterally from the north-western side. The narthex ran the entire width of the church, split into two, or possibly three, sections. The nave was a more intimate square space. The southern annex chamber, to the south of the nave, was partially extended in relation to the narthex. The sanctuary's architecture to the east and northeast of the site has been completely lost. Numerous travertine fragments, which, based on their shape, are derived from a vault, indicate the reduction of a specific space, which we assume is the apsidal one. The northern annexes have not been preserved, but their existence is inferred based on a short portion of wall that extends northward from the intact narthex wall. Despite its poor preservation, the architecture of the Early Christian church can be categorized as belonging to the complex type that emerged in the Dalmatian interior during the second half of the 5th and the 6th centuries. The researchers identified two phases of construction in the Early Christian structure, both of which were connected to renovations in the area of the entrance, where two brick vaulted graves were dug in front of the church's façade. Parts of stone ossuaries taken from an abandoned Roman necropolis were

71 Petrinc et al. 1999, 84, kat. br. 210.

71 Petrinc et al. 1999, 84, cat. no. 210.

zanimljiv nam je način promišljanja majstora zidara iz kojeg se vidi da se kod oblikovanja pročelja grobnice povodio za estetskim vrijednostima starijih spomenika.

Očito je ranokršćanski kompleks podignut na ostacima rimske nekropole na kojoj su se pokapali pokojnici onodobnoga rimskog naselja koje se vjerojatno formiralo u blizini rijeke Bistrice. Pretpostavljamo da se rimska nekropola barem do početka 3. stoljeća nalazila izvan stambenog prostora da bi se s vremenom, transformacijom u strukturi naselja, stambeni prostor širio izvan zadanih okvira.

Unutrašnjost ranokršćanske crkve bila je opremljena kamenim namještajem čiji su ostaci na lokalitetu relativno rijetko zastupljeni, što se podrazumijeva složenom arheološkom stratigrafijom. Sačuvani su ulomci kamenih stupova različitih dimenzija i profilacija, kapiteli, imposti i dijelovi pluteja i pilastara ograde svetišta reljefno ukrašeni stiliziranim biljnim motivima u duhu ranokršćanske umjetnosti. Sukladno načinu reljefnog ukrašavanja jasno je da su neki dijelovi namještaja pripadali istoj fazi opremanja crkve.

Pokretnom inventaru iz ranokršćanske crkve pripadaju ulomci staklenog liturgijskog posuđa s pripadajućim metalnim držačem. Ulomci oboda, ručica, recipijenta i dna različitih posuda pripadaju tipičnom repertoaru od kraja 4. do 6. stoljeća. Na temelju ulomaka rekonstruirana su dva tipa posuda: svjetiljka-zdjelica s tri ručice za vješanje te konusna čaša na visokoj nozi. Od ostaloga posuđa zastupljeni su ulomci svjetiljki u obliku lijevka, ulomci konusnih svjetiljki ili čaša zaobljenog ili konkavnog dna. Na lokalitetu je nađen u cijelosti sačuvan metalni držač za vješanja staklenih svjetiljki. Iako su se navedeni tipovi posuda koristili i u nesakralne svrhe te su nalaženi u objektima javne te privatne namjene, s obzirom na karakter nalazišta ulomcima s Groblja sv. Ive u Livnu pridajemo liturgijsko obilježje te ih vezemo uz liturgiju i rasvjetljavanje crkvenoga prostora.

Pretpostavljamo da je ranokršćanska crkva Groblju sv. Ive stradala na samom kraju 6. ili početkom 7. stoljeća. Ludrumska biskupija, u okvirima koje se, pretpostavljamo, nalazilo Livno, suočena s problemima kao i mnoga biskupijska sjedišta u provinciji Dalmaciji krajem 6. i početkom 7. stoljeća, nije "preživjela" kasnu antiku, odnosno nema joj više spomena u povijesnim izvorima.

Lokalitet Groblje sv. Ive u Livnu kompleksno je arheološko nalazište s utvrđenom pojavom antičkog, ranokršćanskog i srednjovjekovnog kontinuiteta. Ostatke ranokršćanske arhitekture preslojili su ranosrednjovjekovni grobovi te franjevački samostan iz 14. stoljeća. Najcjelovitiji građevinski sklop na Groblju sv. Ive predstavljaju ostaci samostanskoga kompleksa građenog u prvoj četvrtini 14. stoljeća, s redovničkim ćelijama, blagovaonicom, gospodarskim objektima, klaustrom te samostanskim grobljem u klaustu. Samostanskom kompleksu pripadao je i zvonik sačuvan u temeljima četverokuta dimenzija 2,80 x 2,90 m.⁷² Uobičajeno je bilo da se franjevački samostani utemeljuju u neposrednoj blizini gradskih naselja i varoši, pa tako i samostan u Livnu. Kao mjesto gradnje izabrano je mjesto izvan zidina utvrđenoga grada, uz korito rijeke

used in their construction. Of interest is the fact that, from the way in which they were re-used, we can see that the master mason's thought process in constructing the tombs' exteriors was influenced by the aesthetic values of the structures from which the elements were taken.

The Early Christian complex appears to have been erected on the remnants of a Roman necropolis where the dead of the Roman settlement of the time were buried, with this necropolis most likely having been established beside the Bistrica. We assume that the Roman necropolis was situated outside the residential area at least until the beginning of the 3rd century, but that, over time, the residential area expanded beyond its original boundaries as the settlement's organization changed.

The interior of the Early Christian church was equipped with stone furniture, limited remnants of which survive at the site, with this compounded by the complex archaeological stratigraphy. Fragments of stone columns of various dimensions and profiles, capitals, impostes, and pieces of the rood screen and pilasters of the sanctuary fence were decorated in relief with stylized plant motifs in the style of Early Christian art. It is obvious from the approach to the relief ornamentation that several stone fragments belong to items originating from a single phase of the church's decoration.

The Early Christian church's movable inventory includes fragments of glass ritual vessels, along with corresponding metal holders. Fragments of rims, handles, receptacles and bottoms of various vessels belong to the typical repertoire from the end of the 4th to the 6th century. Based on the fragments, it was possible to reconstruct two types of vessels: a bowl-lantern with three hanging handles, and a conical glass set on a tall leg. Other vessel types of which fragments were found include funnel-shaped lamps, and conical lamps or cups with rounded or concave bottoms. A perfectly preserved metal holder for hanging glass lamps was also discovered at the site. Although the mentioned vessel types were also used for non-sacral purposes and have been found in the context of both public and private buildings, given the character of the site at Groblje sv. Ive in Livno, it is possible to attach a liturgical attribute to them, and to connect them to the liturgy and the lighting of the church space.

We believe that use of the Early Christian church at Groblje sv. Ive ceased at the end of the 6th or beginning of the 7th century. The Diocese of Ludrum, to which we assume the area of Livno belonged, faced problems similar to many bishopric seats in the province of Dalmatia, and did not 'survive' the Late Antiquity period, no longer being mentioned in historical sources after this time.

The site at Groblje sv. Ive in Livno is a complex archaeological site with an extended history hinting at Roman-Early Christian-Medieval continuity. The ruins of Early Christian structures were mixed with early medieval burials and a Franciscan monastery dating to the 14th century. The remains of a monastery complex erected in the first quarter of the 14th century, including monks' cells, a dining room, utility buildings, a cloister, and a monastery cemetery in the cloister, are the most intact architectural ensemble at the site. The monastic complex also included a bell tower, whose rectangular foundations were preserved,

72 Godine 1944. na lokalitet je pala avionska bomba čija je eksplozija oštetila sjeverozapadni dio lokaliteta, pri tome su stradali ostaci samostana i groblje.

Bistrice, s već postojećom kršćanskom tradicijom sakralno-sepulkralnoga. Iz ostataka arhitekture očito je kako su u vrijeme gradnje samostana ostaci ranokršćanske crkve bili vidljivi, ali nema naznaka da je crkva bila u funkciji u kontinuitetu i tijekom srednjeg vijeka. Eventualni ostaci srednjovjekovne crkve mogli su se nalaziti na njivi Crkvina, sjeverno od istraživana dijela lokaliteta, ali to će nam ostati nepoznanica zbog gradnje bolničkog objekta 1925. godine.

KATALOG KAMENIH SPOMENIKA

1. Ulomak pilastra ograde svetišta (sl. 5)

Sačuvan je dio narebrene rubne letve te ukrasno polje s reljefno izvedenim motivom ljljana. S bočne strane sačuvan je plitki utor.

Dimenzije: 14,5 x 18 cm, debljina: 11 cm

Inv. br. FMGG-9

Literatura: Neobjavljeno

2. Ulomak pilastra ograde svetišta (sl. 6)

Sačuvan je dio narebrene rubne letve te ukrasno polje s reljefno izvedenim rozetama ukrašenim zrakastim linijama s koncentričnom kružnicom po sredini koje obrubljuje dvopruta traka koja završava u viticu. Jedna od sačuvanih bočnih stranica je ravna s tragovima klesarske alatke.

Dimenzije: 13 x 18 cm, debljina: 7,5 cm

Inv. br. FMGG-68

Literatura: Petrinc *et al.* 1999, 79, kat. br. 187.

3. Ulomak reljefne ploče ograde svetišta (sl. 7)

Sačuvan je dio rubne letve s ravnom trakom i narebrenim plastičnim rebrom, te ukrasno polje s reljefno izvedenom šesterolatičnom rozetom s koncentričnom kružnicom po sredini, obrubljeno dvoprutom trakom sa završetkom u obliku vitice. Jedna od sačuvanih stranica je ravna s tragovima klesarske alatke.

Dimenzije: 10 x 14 cm, debljina: 13,5 cm

Inv. br. FMGG-69

Literatura: Petrinc *et al.* 1999, 80, kat. br. 189.

4. Ulomak reljefne ploče ograde svetišta (T. 1:1)

Ulomak je dosta izlisan. Sačuvan je dio narebrene rubne letve te dio ukrasnoga polja s ostacima vjerojatno izlisan dvoprute trake.

Dimenzije: 20 x 22 cm, debljina: 10 cm

Inv. br. FMGG-55

Literatura: Neobjavljeno

5. Ulomak reljefne ploče ograde svetišta (T. 1:2)

Sačuvan je dio ukrasnoga polja s reljefno izvedenom dvoprutom trakom koja obrubljuje biljni reljefni motiv.

Dimenzije: 12 x 20 cm, debljina: 10 cm

Inv. br. FMGG-25

Literatura: Petrinc *et al.* 1999, 79, kat. br. 188.

with dimensions of 2.80 x 2.90 m.⁷² Franciscan monasteries were frequently established in the vicinity of urban populations and cities, as was the case with the monastery in Livno. A site was chosen beyond the walls of the walled city, alongside the Bistrice, with an existing heritage of Christian sacral-sepulchral architecture. From the remains of the architecture, it is obvious that at the time the monastery was built, the remains of the Early Christian church were visible, but there are no indications that the church was in continuous operation up until the Middle Ages. It is possible that remains of a medieval church are situated upon the Crkvina meadow, to the north of the investigated area, but this will never be established for certain due to the construction of a hospital facility at the location in 1925.

INVENTORY OF STONE MONUMENTS

1. Fragment of a sanctuary fence pilaster (fig. 5)

A portion of the ribbed edge moulding and a decorative field featuring a relief fleur-de-lys motif have been preserved. A shallow groove on the side has also been preserved.

Dimensions: 14.5 x 18.0 cm, thickness 11.0 cm

Inv. no.: FMGG-9

Literature: Unpublished

2. Fragment of the sanctuary fence's pilaster (fig. 6)

A portion of the ribbed border moulding and a decorative field with rosettes in relief embellished with radial lines and a concentric circle with a double-bar strip terminating in a tendril have been preserved. One of the preserved sides is flat, with traces of a stonemason's tool.

Dimensions: 13.0 x 18.0 cm, thickness 7.5 cm

Inv. no.: FMGG-68

Literature: Petrinc *et al.* 1999, 79, cat. no. 187.

3. Fragment of a relief panel of the sanctuary fence (fig. 7)

A part of the border moulding with a straight band and ribbed moulded indentation has been preserved, as well as a decorative field with a six-lobed rosette in relief with a concentric circle in the middle, bordered by a double band with a tendril-like terminus. One of the preserved sides is flat, and bears traces of a stonemason's tool.

Dimensions: 10.0 x 14.0 cm, thickness 13.5 cm

Inv. no.: FMGG-69

Literature: Petrinc *et al.* 1999, 80, cat. no. 189.

4. Fragment of a relief panel of the sanctuary fence (Pl. 1:1)

The piece has a significant amount of wear. A part of the ribbed edge moulding and a part of the decorative field with the remains of a probably worn double-bar strip have been preserved.

Dimensions: 20.0 x 22.0 cm, thickness 10.0 cm

Inv. no.: FMGG-55

Literature: Unpublished

5. Fragment of a relief panel of the sanctuary fence (Pl. 1:2)

A part of the decorated area, consisting of a double-barred band bordering a plant motif in relief has been preserved.

Dimensions: 12.0 x 20.0 cm, thickness 10.0 cm

Inv. no.: FMGG-25

Literature: Petrinc *et al.* 1999, 79, cat. no. 188.

⁷² In 1944, and airplane bomb fell on the site, the explosion damaged the northwestern parts of the site, destroying the remains of the monastery and the cemetery

6. Kapitel stupa ograde svetišta (sl. 8)

Sačuvane su dvije plohe kapitela reljefno ukrašene s dvije nasuprotno postavljene volute. Iznad voluta je plastična traka s kvadratnim istakom po sredini te iznad ploča abakusa. Na jednoj od ploha kapitela naknadno je između dvije volute urezan glagoljski natpis s numeracijom izraženom glagoljskim slovima: ASE PI/SA LU/KA DI/AK/13/6/8. Iznad natpisa urezan je simbol koji bi mogao predstavljati pentagram.

Dimenzije: 14 x 18,5 cm, debljina: 8 cm

Inv. br. FMGG-1

Literatura: Petrinc *et al.* 1999, 78, kat. br. 183; Vrdoljak 2003, 241–242, sl. 4.

7. Kapitel stupa ograde svetišta (sl. 9)

Sačuvane su dvije plohe kapitela reljefno ukrašene s dvije nasuprotno postavljene volute koje su slabo sačuvane. Iznad voluta je plastična traka s kvadratnim istakom po sredini te iznad djelomično sačuvana ploča abaka. U donjem dijelu sačuvan je fragment stupića.

Dimenzije: 12 x 26 cm, debljina: 11,5 cm

Inv. br. FMGG-2

Literatura: Neobjavljeno

8. Ulomak kapitela (T. 1:3)

Sačuvan je ulomak kapitela s biljnim ukrasom u vidu širokog akantovog lista te s pravokutnom pločom abaka.

Dimenzije: 8 x 8,5 cm, debljina: 7 cm

Inv. br. FMGG-39

Literatura: Neobjavljeno

9. Ulomci imposta (T. 1:4)

Sačuvana su dva ulomka čeonice strane imposta na koju je urezan latinski križ proširenih krajeva. Na čitavoj površini se vide tragovi nazubljene alatke.

Dimenzije: a) 13 x 16,5 cm, debljina: 13 cm

b) 10,5 x 14 cm, debljina: 5 cm

Inv. br. FMGG-59 a/b

Literatura: Neobjavljeno

10. Ulomak imposta (T. 1:5a/b)

Sačuvana je profilirana ploha bez ukrasa, vjerojatno se radi o stražnjoj strani nekog imposta. Na jednoj od bočnih strana je plitko plastično rebro, dok je s druge strane, koja je objijena, sačuvano plastično rebro koje se savija. Djelomično je sačuvana donja uža strana imposta dok je gornja šira objijena.

Dimenzije: 11,6 x 15,5 cm, debljina: 13 cm

Inv. br. FMGG-88

Literatura: Neobjavljeno

11. Impost-kapitel (sl. 10)

Sačuvana je čeonica polovica imposta dok je stražnja objijena. Reljefni ukras na čeonici strani u središnjem polju sadrži tri višelaćne rozete kod kojih se izdužene latice oštih krajeva izmjenjuju s kraćim laticama te se na taj način rozete simetrično spajaju ne ostavljajući prazninu između. Iznad središnjeg polja ravna je ploha koja se nastavlja na bočne stranice. S čeonice strane ukrašena je s dvije koncentrične kružnice te relativno smisljeno raspoređenim rupicama od svrdla. Kosina s čeonice strane imposta podijeljena je u tri profilirane zaobljene

6. Capital of a pillar of the sanctuary fence (fig. 8)

Two faces of the capital are decorated with reliefs, and two opposite volutes have been preserved. Above the volute is a moulded band with a rectangular projection in the middle and the abacus above this. One of the faces of said structure has an engraving that consists of Glagolitic letters. The inscribed letters are: ASE PI/SA LU/KA DI/AK/13/6/8. A pentagram-like symbol is etched above the inscription.

Dimensions: 14.0 x 18.5 cm, thickness 8.0 cm

Inv. No.: FMGG-1

Literature: Petrinc *et al.* 1999, 78, cat. no. 183; Vrdoljak 2003, 241–242, fig. 4.

7. Capital of a pillar of the sanctuary fence (fig. 9)

Two sides of the capital have been preserved, which are carved in relief with volutes arranged opposite one another. A moulded band with a rectangular projection in the middle is situated above the volute, and above this sits a partially preserved abacus. A fragment of the column has been preserved at the bottom.

Dimensions: 12.0 x 26.0 cm, thickness 11.5 cm

Inv. no.: FMGG-2

Literature: Unpublished

8. Fragment of a capital (Pl. 1:3)

A portion of the capital has been preserved, with plant ornamentation in the shape of a broad acanthus leaf and a rectangular abacus above this.

Dimensions: 8.0x8.5 cm, thickness 7.0 cm

Inv. no.: FMGG-39

Literature: Unpublished

9. Fragments of an impost (Pl. 1:4)

Two portions of the impost's front side have been preserved, each bearing an incised Latin cross with expanded ends. The entire surface bears markings resulting from processing with a toothed tool.

Dimensions: a) 13.0 x 16.5 cm, thickness 13.0 cm

b) 10.5 x 14.0 cm, thickness 5.0 cm

Inv. no.: FMGG-59 a/b

Literature: Unpublished

10. Fragment of an impost (Pl. 1:5a/b)

A profiled surface without decorations has been preserved, it is probably the side of an impost. On one of the sides there is a shallow plastic rib, while on the other side, which has been peeled off, the bendable plastic rib has been preserved. The lower, narrow side of the impost is partially preserved, while the upper, wider side is damaged

Dimensions: 11.6 x 15.5 cm, thickness 13.0 cm

Inv. no.: FMGG-88

Literature: Unpublished

11. Impost-capital (fig. 10)

The impost's front half has been preserved, but the rear half has been cut away. The relief decoration on the front features three multi-lobed rosettes in the middle field, in which elongated petals with sharp edges alternate with shorter petals, allowing the rosettes to join symmetrically without a gap. A flat surface extends to the sides above the central field. On the front side, it is decorated with two concentric circles and relatively meaningfully arranged drill holes. The slope on the front side of the impost is split into three profiled rounded bands that are

trake koje su simetrične rozetama na središnjem polju. Na dvije duže bočne stranice nasumično su urezane koncentrične kružnice. Također s obje bočne strane uklesani su utori za prozorsku tranzenu. Na donjoj plohi imposta sačuvano je udubljenje za spoj sa stupom.

Dimenzije: 43 x 30 cm, debljina: 17,5 cm

Inv. br. FMGG-26

Literatura: Petrinec *et al.* 1999, 79, kat. br. 186.

12. Ulomak stupa (sl. 11)

Sačuvan je ulomak stupa, od kojeg je sačuvana polovica. Ulomak je ukrašen motivom višelatičnih rozeta koje se simetrično spajaju. Po sredini ulomka bila je kružna profilacija od koje je sačuvan dio. Gornja ploha je ugrađena dok je donja objijena. Vjerojatno je samo gornja zona stupa bila ukrašena te je urezanim linijom bila odvojena od ostatka stupa.

Dimenzije: 20 x 8 cm, debljina: 10,5 cm

Inv. br. FMGG-8

Literatura: Petrinec *et al.* 1999, 79, kat. br. 184.

13. Kapitel stupa, Groblje sv. Ive? (sl. 12)

Ukrašena površina kapitela podijeljena je na dva dijela međusobno odijeljena s dva plastična rebra. Gornja, veća površina ukrašena je plastičnim zaobljenim rebrima. Reljefni ukras je oštećen, ali vjerojatno se radi o volutama čiji završeci nisu sačuvani. Između voluta reljefno su izvedene kuglice s rupom po sredini. Donja površina ukrašena je reljefno izvedenim višelatičnim rozetama kod kojih se izdužene latice oštih krajeva izmjenjuju s kraćim laticama te se na taj način rozete simetrično spajaju ne ostavljajući prazninu između.

Dimenzije: 32 x 20 cm, debljina: 16 cm

Inv. br. FMGG-354

Literatura: Neobjavljeno

14. Ulomak stupa s ostatkom kapitela (T. 2:1)

Sačuvan je ulomak stupa s ostatkom kapitela koji je od tijela stupa, čija je površina glatka i neukrašena, odijeljen plastičnim rebrom. Kapitel je prema sačuvanim ostacima ukrašen biljnom dekoracijom.

Dimenzije: v. 24 cm, d 16 cm

Inv. br. FMGG-12

Literatura: Neobjavljeno

15. Ulomak stupa (T. 2:2)

Ulomak stupića ima tordiranu površinu sa širokim rebrima.

Dimenzije: v. 11 cm, d 8 cm

Inv. br. FMGG-30

Literatura: Neobjavljeno

16. Ulomak stupa (T. 2:3)

Na sačuvanom ulomku urezane su tri linije koje idu oko tijela stupića.

Dimenzije: h. 13,3 cm, d 10 cm

Inv. br. FMGG-14

Literatura: Neobjavljeno

17. Ulomak stupa (T. 2:4)

Sačuvan je dio stupa s okomitim rebrima trokutastog presjeka koja se lepezasto šire, vjerojatno se radi o dijelu koji prelazi u kapitel.

symmetrical to the rosettes in the central field. Concentric circles are randomly incised across the two longer sides. There are also carved slots for the window sash on both sides. A recess for connection with the column has been preserved on the lower surface of the impost.

Dimensions: 43.0 x 30.0 cm, thickness 17.5 cm

Inv. no.: FMGG-26

Literature: Petrinec *et al.* (1999), 79, cat. no. 186.

12. Column fragment (fig. 11)

A fragment of the column has been preserved, half of which has been preserved. The fragment is decorated with a motif of multi-latic rosettes that are symmetrically connected. There was a circular profile in the middle of the fragment, part of which has been preserved. The upper surface is polished, while the lower one is damaged. Probably only the upper zone of the column was decorated and was separated from the rest of the column by an incised line

Dimensions: 20.0 x 8.0 cm, thickness 10.5 cm

Inv. no.: FMGG-8

Literature: Petrinec *et al.* 1999, 79, cat. no. 184.

13. Column capital, Groblje sv. Ive (?) (fig. 12)

The capital's decorative surface is divided into two halves separated by two moulded ribs. The upper, larger, surface is decorated with rounded ribbed moulding. The relief ornamentation is damaged, but most likely depicts volutes, the ends of which have been lost. Between the volutes are embossed balls with holes in the centre. The lower surface is decorated with multi-lobed rosettes in relief, where longer petals with sharp edges alternate with shorter petals, allowing the rosettes to be joined symmetrically without a gap.

Dimensions: 32.0 x 20.0 cm, thickness 16.0 cm

Inv. no.: FMGG-354

Literature: Unpublished

14. Column fragment and remains of a capital (Pl. 2:1)

A piece of the column has been preserved together with the remains of its capital, which is separated from the body of the column by a ribbed moulding, the surface of which is smooth and undecorated. On the basis of the preserved remains, the capital was decorated with plant motifs.

Dimensions: h = 24.0 cm, Ø = 16.0 cm

Inv. no.: FMGG-12

Literature: Unpublished

15. Column fragment (Pl. 2:2)

The pillar fragment has a twisted surface with wide ribs.

Dimensions: h = 11.0 cm, Ø = 8.0 cm

Inv. no.: FMGG-30

Literature: Unpublished

16. Column fragment (Pl. 2:3)

Three lines engraved around the column's body can be seen on the fragment that has been preserved.

Dimensions: h = 13.3 cm, Ø = 10.0 cm

Inv. no.: FMGG-14

Literature: Unpublished

17. Column fragment (Pl. 2:4)

A piece of the column with vertical ribs of a triangular cross-section that spread like a fan has been preserved; this is most likely the part that transitions into the capital.

Dimensions: 17.3 x 10.5 cm, Ø = 13.0 cm

Dimenzije: 17,3 x 10,5 cm, d 13 cm

Inv. br. FMGG-11

Literatura: Neobjavljeno

18. Ulomak stupa (T. 2:5)

Sačuvan je ulomak stupa u presjeku. Površina stupa je glatka, neukrašena.

Dimenzije: v. 5 cm, d 15 cm

Inv. br. FMGG-60

Literatura: Neobjavljeno

19. Ulomak stupa (T. 2:6)

Sačuvan je ulomak stupa glatke neukrašene površine.

Dimenzije: v. 37 cm, d 30 cm

Inv. br. FMGG-37

Literatura: Neobjavljeno

20. Ulomak stupa (T. 2:7)

Sačuvan je ulomak stupa u presjeku. Površina stupa je glatka, neukrašena.

Dimenzije: h. 9 cm, d 15 cm

Inv. br. FMGG-13

Literatura: Neobjavljeno

21. Ulomak stupa (T. 3:1)

Sačuvan je ulomak stupa. Ulomak je obijen, na površini se vide tragovi klesarske alatke.

Dimenzije: h. 14 cm, d 15 cm

Inv. br. FMGG-31

Literatura: Neobjavljeno

22. Ulomak stupa (T. 3:2)

Ulomak je jako obijen, na površini se vide tragovi klesarske alatke.

Dimenzije: h. 7,5 cm, d 21 cm

Inv. br. FMGG-38

Literatura: Neobjavljeno

23. Ulomak stupa (T. 3:3)

Ulomak stupa je obijen, na površini se vide tragovi klesarske alatke.

Dimenzije: 23 x 30 cm, debljina: 21 cm

Inv. br. FMGG-36

Literatura: Neobjavljeno

24. Ulomak stupa (T. 3:4)

Sačuvan je ulomak stupa. Ulomak je obijen, na površini se vide tragovi klesarske alatke.

Dimenzije: h. 11 cm, d 17 cm

Inv. br. FMGG-32

Literatura: Neobjavljeno

25. Ulomak stupa (T. 3:5)

Ulomak je jako obijen, na površini se vide tragovi klesarske alatke.

Dimenzije: h. 13 cm, d 12,5 cm

Inv. br. FMGG-82

Literatura: Neobjavljeno

Inv. no.: FMGG-11

Literature: Unpublished

18. Column fragment (Pl. 2:5)

A complete cross-section of the column has been preserved. The column's surface is smooth and undecorated.

Dimensions: h = 5.0 cm, Ø = 15.0 cm

Inv. no.: FMGG-60

Literature: Unpublished

19. Column fragment (Pl. 2:6)

A fragment of a column with an undecorated, flat surface has been preserved.

Dimensions: h = 37.0 cm, Ø = 30.0 cm

Inv. no.: FMGG-37

Literature: Unpublished

20. Column fragment (Pl. 2:7)

A cross-section fragment of the column has been preserved. The surface of the column is smooth, undecorated

Dimensions: h = 9.0 cm, Ø = 15.0 cm

Inv. no.: FMGG-13

Literature: Unpublished

21. Column fragment (Pl. 3:1)

A fragment of the column has been preserved. The fragment is chipped, but the surface can be seen to bear the marks of a mason's tools.

Dimensions: h = 14.0 cm, Ø = 15.0 cm

Inv. no.: FMGG-31

Literature: Unpublished

22. Column fragment (Pl. 3:2)

This fragment is heavily damaged, but the surface can be seen to bear the marks of a mason's tools.

Dimensions: h = 7.5 cm, Ø = 21.0 cm

Inv. no.: FMGG-38

Literature: Unpublished

23. Column fragment (Pl. 3:3)

The fragment is chipped, but the surface can be seen to bear the marks of a mason's tools.

Dimensions: 23.0 x 30.0 cm, thickness 21.0 cm

Inv. no.: FMGG-36

Literature: Unpublished

24. Column fragment (Pl. 3:4)

The fragment is chipped, but the surface can be seen to bear the marks of a mason's tools.

Dimensions: h = 11.0 cm, Ø = 17.0 cm

Inv. no.: FMGG-32

Literature: Unpublished

25. Column fragment (Pl. 3:5)

The fragment is heavily damaged, but the surface can be seen to bear the marks of a mason's tools.

Dimensions: h = 13.0 cm, Ø = 12.5 cm

Inv. no.: FMGG-82

Literature: Unpublished

26. Column fragment (Pl. 3:6)

A fragment of a column with an undecorated surface has been preserved, in one place there is a circular depression.

26. Ulomak stupa (T. 3:6)

Sačuvan je ulomak stupa neukrašene površine, na jednom mjestu je kružno udubljenje.

Dimenzije: h. 17,5 cm, d 10 cm

Inv. br. FMGG-28

Literatura: Neobjavljeno

27. Ulomak stupa (T. 3:7)

Sačuvan je ulomak stupa. Ulomak je obijen, na površini se vide tragovi klesarske alatke.

Dimenzije: h. 19 cm, d 17 cm

Inv. br. FMGG-34

Literatura: Neobjavljeno

28. Ulomak stupa (T. 3:8)

Sačuvan je manji obijeni dio stupića na čijoj površini se vide tragovi klesarske alatke.

Dimenzije: 9,5 x 6,6 cm, debljina: 4,8 cm

Inv. br. FMGG-33

Literatura: Neobjavljeno

29. Ulomak stupa (T. 3:9)

Ulomak je jako obijen, na površini se vide tragovi klesarske alatke.

Dimenzije: h. 18 cm, d 13 cm

Inv. br. FMGG-99

Literatura: Neobjavljeno

30. Ulomak stupa (T. 3:10)

Sačuvan je ulomak stupa. Ulomak je obijen, na površini se vide tragovi klesarske alatke te ostaci građevinske žbuke, što znači da je ulomak naknadno bio uzidan.

Dimenzije: 15, 2 x 15 cm, debljina: 8,5 cm

Inv. br. FMGG-35

Literatura: Neobjavljeno

31. Ulomak oltarske menze? (T. 3:11)

Sačuvan je ulomak ploče s rubnim letvama i konkavnom profilacijom. Ploča od vapnenca s tragovima klesarske alatke na čitavoj sačuvanoj površini mogla bi pripadati oltarskoj menzi.

Dimenzije: 22, 2 x 10, 5 cm, debljina: 10 cm

Inv. br. FMGG-52

Literatura: Neobjavljeno

KATALOG ULOMAKA STAKLENOG LITURGIJSKOG POSUĐA I BRONČANOG DRŽAČA

1. Svjetiljka-zdjelica (sl. 13, T. 4:2)

Dio svjetiljke je spojen od nekoliko ulomaka. Ima konkavno udubljeno dno izaobljen recipijent. Obod je blago zadebljan. Sačuvana je jedna ručica za vješanje. Žućkasto-zelene je boje.

Dimenzije: dno 4 x 3, 4 cm, ulomak recipijenta: 7 x 4 cm

Inv. br. FMGG-94

Literatura: Petrinec *et al.* 1999, 83, kat. br. 208

2. Držak svjetiljke (sl. 14,15)

Držak se sastoji od savijene kuke i na nju pričvršćenih triju višedijelnih elemenata, o koje se vješao recipijent svjetiljke.

Dimenzije: h. 21, 5 cm, m. 17, 47 gr. materijal: bronca

Dimensions: h = 17.5 cm, Ø = 10.0 cm

Inv. no.: FMGG-28

Literature: Unpublished

27. Column fragment (Pl. 3:7)

The fragment is chipped, but the surface can be seen to bear the marks of a mason's tools.

Dimensions: h = 19.0 cm, Ø = 17.0 cm

Inv. no.: FMGG-34

Literature: Unpublished

28. Column fragment (Pl. 3:8)

The small fragment is lightly damaged, but the surface can be seen to bear the marks of a mason's tools.

Dimensions: 9.5 x 6.6 cm, thickness 4.8 cm

Inv. no.: FMGG-33

Literature: Unpublished

29. Column fragment (Pl. 3:9)

The fragment is heavily damaged, but the surface can be seen to bear the marks of a mason's tools.

Dimensions: h = 18.0 cm, Ø = 13.0 cm

Inv. no.: FMGG-99

Literature: Unpublished

30. Column fragment (Pl. 3:10)

The fragment is chipped, but the surface can be seen to bear the marks of a mason's tools and also mortar, indicating that it was subsequently built into a wall.

Dimensions: 15.2 x 15.0 cm, thickness 8.5 cm

Inv. no.: FMGG-35

Literature: Unpublished

31. Piece of the altar table (?) (Pl. 3:11)

A fragment of a limestone slab with concave profiling and edge slats has been preserved. Traces of the mason's tools are visible across the entire surface. This slab may have belonged to the altar table.

Dimensions: 22.2 x 10.5 cm, thickness 10.0 cm

Inv. no.: FMGG-52

Literature: Unpublished

CATALOGUE OF GLASS LITURGICAL VESSEL FRAGMENTS AND BRONZE HOLDERS

1. Bowl-lantern (fig. 13, Pl. 4:2)

Part of the lantern has been reconstructed from several fragments. It has a concave base and a rounded receptacle. The rim is slightly thickened. One dangling handle has been preserved. It is yellowish-green in colour.

Dimensions: base = 4.0 x 3.4 cm; receptacle fragment = 7.0 x 4.0 cm

Inv. no.: FMGG-94

Literature: Petrinec *et al.* 1999, 83, cat. no. 208

2. Lamp holder (Figs. 14,15)

The lamp is suspended from the holder, consists of a bent hook and three multi-part elements attached to it.

Dimensions: h = 21.5 cm, weight = 17.47g; material: bronze

Inv. no.: FMGG-513

Literature: Petrinec *et al.* 1999, 84, cat. no. 209

Inv. br. FMGG-513

Literatura: Petrinec *et al.* 1999, 84, kat. br. 209

3. Konusna čaša na visokoj nozi (sl. 16, T.4:1)

Sačuvan je dio konusnog recipijenta s obodom blago zadebljanog ruba. Sačuvana je i kružna stopa sa zaobljenim šupljim cjevastim rubom s ostatkom cilindrične noge. Staklo je žućkasto-zelene boje.

Dimenzije: noga sa stopom 4,7 x 2 cm, ulomak recipijenta 3,6 x 3,2 cm

Inv. br. FMGG-95

Literatura: Petrinec *et al.* 1999, 83, kat. br. 207

4. Dno svjetiljke (sl. 18:1)

Sačuvan je ulomak konkavno udubljenog dna svjetiljke. Staklo je žućkasto s puno onečišćenja.

Dimenzije: 5,2 x 3 cm

Inv. br. FMGG-8787

Literatura: Neobjavljeno

5. Dno svjetiljke (sl. 18:2)

Sačuvan je ulomak konkavno udubljenog dna svjetiljke. Staklo je blijedožute boje s tragovima razvlačenja smjese.

Dimenzije: 4,4 x 3,7 cm

Inv. br. FMGG-8788

Literatura: Neobjavljeno

6. Dno svjetiljke (sl. 18:3)

Sačuvan je ulomak konkavno udubljenog dna svjetiljke koji je šiljasto istaknut prema unutrašnjosti. Staklo je blijedožute boje s tragovima razvlačenja smjese.

Dimenzije: 2,4 x 1,7 cm

Inv. br. FMGG-8789

Literatura: Neobjavljeno

7. Dno svjetiljke (sl. 18:4)

Sačuvan je ulomak konkavno udubljenog dna svjetiljke. Staklo je žuto-zelene boje s tragovima razvlačenja smjese.

Dimenzije: 5,5 x 4,5 cm

Inv. br. FMGG-203

Literatura: Neobjavljeno

8. Dno svjetiljke (sl. 18:5)

Sačuvan je ulomak konkavno udubljenog dna svjetiljke. Staklo je blijedožute boje s tragovima razvlačenja smjese.

Dimenzije: 5,2 x 5,4 cm

Inv. br. FMGG-204

Literatura: Neobjavljeno

9. Ručica svjetiljke (sl. 19:1)

U cijelosti sačuvana ručica – aplikacija staklene posude u funkciji viseće svjetiljke, izrađena od žuto-zelenog stakla prožetog mjehurićima zraka i s tragovima razvlačenja smjese.

Dimenzije: 1,8 x 3,1 cm

Inv. br. FMGG-196

Literatura: Neobjavljeno

3. Conical cup on a tall leg (fig. 16, Pl. 4:1)

A part of the conical receptacle with a slightly thickened rim has been preserved. A circular foot with a rounded hollow tubular edge and the remainder of another cylindrical foot has also been preserved. The glass is yellowish-green in colour.

Dimensions: receptacle fragment = 3.6 x 3.2 cm;

limb with foot = 4.7 x 2.0 cm

Inv. no.: FMGG-95

Literature: Petrinec *et al.* 1999, 83, cat. no. 207

4. Lamp base (fig. 18:1)

A portion of the lamp's concave base has been preserved. The glass is yellow with many impurities.

Dimensions: 5.2 x 3.0 cm

Inv. no.: FMGG-8787

Literature: Unpublished

5. Lamp base (fig. 18:2)

A portion of the lamp's concave base has been preserved. The glass is of a pale yellow hue, with evidence of stretching marks from the manufacturing process.

Dimensions: 4.4 x 3.7 cm

Inv. no.: FMGG-8788

Literature: Unpublished

6. Lamp base (fig. 18:3)

A portion of the concave, inward-pointing base has been preserved. The glass is of a pale yellow hue, with evidence of stretching marks from the manufacturing process.

Dimensions: 2.4 x 1.7 cm

Inv. no.: FMGG-8789

Literature: Unpublished

7. Lamp base (fig. 18:4)

A portion of the lamp's concave base has been preserved. The glass is yellow-green, with evidence of stretching marks from the manufacturing process.

Dimensions: 5.5 x 4.5 cm

Inv. no.: FMGG-203

Literature: Unpublished

8. Lamp base (fig. 18:5)

A portion of the lamp's concave base has been preserved. The glass is of a pale yellow hue, with evidence of stretching marks from the manufacturing process.

Dimensions: 5.2 x 5.4 cm

Inv. no.: FMGG-204

Literature: Unpublished

9. Lamp handle (fig. 19:1)

The fully preserved handle – application of a glass container in the function of a hanging lamp, made of yellow-green glass permeated with air bubbles and with traces of stretching of the mixture.

Dimensions: 1.8 x 3.1 cm

Inv. no.: FMGG-196

Literature: Unpublished

10. Lamp handle (fig. 19:2)

The intact handle adapted a glass receptacle into a suspended lamp. The glass is yellow-green with air bubbles present and evidence of stretching marks from the manufacturing process.

10. Ručica svjetiljke (sl. 19:2)

U cijelosti sačuvana ručica – aplikacija staklene posude u funkciji viseće svjetiljke, izrađena od žuto-zelenog stakla prožetog mjehurićima zraka i s tragovima razvlačenja smjese.

Dimenzije: 1, 5 x 3, 9 cm

Inv. br. FMGG-194

Literatura: Neobjavljeno

11. Ručica svjetiljke (sl. 19:3)

Djelomično je sačuvana ručica – aplikacija staklene posude u funkciji viseće svjetiljke, izrađena od blijedozelenog stakla prožetog mjehurićima zraka i s tragovima razvlačenja smjese.

Dimenzije: 3, 8 x 1, 6 cm

Inv. br. FMGG-198

Literatura: Neobjavljeno

12. Ručica svjetiljke (sl. 19:4)

Djelomično je sačuvana ručica – aplikacija staklene posude u funkciji viseće svjetiljke, izrađena od žućkastog stakla s tragovima onečišćenja i razvlačenja smjese.

Dimenzije: 2, 2 x 1, 5 cm

Inv. br. FMGG-8790

Literatura: Neobjavljeno

13. Ručica svjetiljke (sl. 19:5)

Djelomično je sačuvana ručica – aplikacija staklene posude u funkciji viseće svjetiljke, izrađena od blijedozelenog stakla prožetog mjehurićima zraka i s tragovima razvlačenja smjese.

Dimenzije: 3, 5 x 1, 6 cm

Inv. br. FMGG-199

Literatura: Neobjavljeno

14. Ručica svjetiljke (sl. 19:6)

Djelomično je sačuvana ručica – aplikacija staklene posude u funkciji viseće svjetiljke, izrađena od tamnožutog stakla s tragovima onečišćenja i razvlačenja smjese.

Dimenzije: 3, 3 x 1, 6 cm

Inv. br. FMGG-197

Literatura: Neobjavljeno

15. Dno svjetiljke u obliku lijevka (sl. 20)

Sačuvan je ulomak donjeg dijela svjetiljke u obliku lijevka, izrađen od prozirnog stakla s tragovima onečišćenja i irizacije.

Dimenzije: h. 3, 6 cm, d 1, 5 cm

Inv. br. FMGG-202

Literatura: Neobjavljeno

16. Ulomak oboda posude (sl. 21:1)

Sačuvan je ulomak blago zadebljanog oboda te zaobljenog recipijenta posude. Staklo je blijedožute boje s tragovima razvlačenja smjese.

Dimenzije: 4, 6 x 4 cm

Inv. br. FMGG-8791

Literatura: Neobjavljeno

17. Ulomak oboda posude (sl. 21:2)

Sačuvan je ulomak blago zadebljanog oboda te zaobljenog recipijenta posude. Staklo je blijedožute boje s tragovima razvlačenja smjese.

Dimenzije: 4 x 3, 3 cm

Dimensions: 1.5 x 3.9 cm

Inv. no.: FMGG-194

Literature: Unpublished

11. Lamp handle (fig. 19:3)

The partially preserved handle adapted a glass receptacle into a suspended lamp. The glass is pale green with air bubbles present and evidence of stretching marks from the manufacturing process.

Dimensions: 3.8 x 1.6 cm

Inv. no.: FMGG-198

Literature: Unpublished

12. Lamp handle (fig. 19:4)

The partially preserved handle adapted a glass receptacle into a suspended lamp. The glass is yellowish with many inclusions, and evidence of stretching marks from the manufacturing process.

Dimensions: 2.2 x 1.5 cm

Inv. no.: FMGG-8790

Literature: Unpublished

13. Lamp handle (fig. 19:5)

The partially preserved handle adapted a glass receptacle into a suspended lamp. The glass is pale green with air bubbles present and evidence of stretching marks from the manufacturing process.

Dimensions: 3.5 x 1.6 cm

Inv. no.: FMGG-199

Literature: Unpublished

14. Lamp handle (fig. 19:6)

The partially preserved handle adapted a glass receptacle into a suspended lamp. The glass is dark yellow with many inclusions, and evidence of stretching marks from the manufacturing process.

Dimensions: 3.3 x 1.6 cm

Inv. no.: FMGG-197

Literature: Unpublished

15. Funnel-shaped lamp base (fig. 20).

A fragment of the lower portion of the lamp in the shape of a funnel has been preserved. It is made of transparent glass with inclusions and evident iridescence.

Dimensions: h = 3.6 cm, Ø = 1.5 cm

Inv. no.: FMGG-202

Literature: Unpublished

16. Vessel rim fragment (fig. 21:1)

A fragment of the slightly thickened rim and rounded receptacle of the vessel has been preserved. The glass is pale yellow in colour, with evidence of stretching marks from the manufacturing process.

Dimensions: 4.6 x 4.0 cm

Inv. no.: FMGG-8791

Literature: Unpublished

17. Vessel rim fragment (fig. 21:2)

A fragment of the slightly thickened rim and rounded receptacle of the vessel has been preserved. The glass is pale yellow in colour, with evidence of stretching marks from the manufacturing process.

Dimensions: 4.0 x 3.3 cm

Inv. no.: FMGG-8792

Inv. br. FMGG-8792

Literatura: Neobjavljeno

18. Ulomak oboda posude (sl. 21:3)

Sačuvan je ulomak blago zadebljanog oboda te zaobljenog recipijenta posude. Staklo je blijedožute boje s tragovima onečišćenja i razvlačenja smjese.

Dimenzije: 3 x 2, 5 cm

Inv. br. FMGG-8793

Literatura: Neobjavljeno

19. Ulomak oboda posude (sl. 21:4)

Sačuvan je ulomak blago zadebljanog oboda posude. Staklo je blijedožute boje s tragovima razvlačenja smjese.

Dimenzije: 2, 7 x 1, 5 cm

Inv. br. FMGG-8794

Literatura: Neobjavljeno

20. Ulomak oboda posude (sl. 21:5)

Sačuvan je ulomak blago zadebljanog oboda posude. Staklo je blijedožute boje.

Dimenzije: 2 x 1, 5 cm

Inv. br. FMGG-8795

Literatura: Neobjavljeno

21. Ulomak oboda posude (sl. 21:6)

Sačuvan je ulomak blago zadebljanog oboda posude. Staklo je žuto-zelene boje s tragovima razvlačenja smjese.

Dimenzije: 2, 7 x 1 cm

Inv. br. FMGG-8796

Literatura: Neobjavljeno

22. Ulomak oboda posude (sl. 21:7)

Sačuvan je ulomak blago zadebljanog oboda posude. Staklo je žuto-zelene boje.

Dimenzije: 1, 8 x 1, 3 cm

Inv. br. FMGG-209

Literatura: Neobjavljeno

23. Ulomak oboda posude (sl. 21:8)

Sačuvan je ulomak blago zadebljanog oboda posude. Staklo je žuto-zelene boje.

Dimenzije: 2, 3 x 1 cm

Inv. br. FMGG-8797

Literatura: Neobjavljeno

24. Ulomak oboda posude (sl. 21:9)

Sačuvan je ulomak blago zadebljanog oboda posude. Staklo je žuto-zelene boje.

Dimenzije: 2, 4 x 1 cm

Inv. br. FMGG-8798

Literatura: Neobjavljeno

25. Ulomak oboda posude (sl. 21:10)

Sačuvan je ulomak blago zadebljanog oboda posude. Staklo je žuto-zelene boje.

Dimenzije: 2 x 1, 3 cm

Inv. br. FMGG-8799

Literatura: Neobjavljeno

Literatura: Unpublished

18. Vessel rim fragment (fig. 21:3)

A fragment of the slightly thickened rim and rounded receptacle of the vessel has been preserved. The glass is pale yellow in colour, with inclusions and evidence of stretching marks from the manufacturing process.

Dimensions: 3.0 x 2.5 cm

Inv. no.: FMGG-8793

Literature: Unpublished

19. Vessel rim fragment (fig. 21:4)

A fragment of the vessel's slightly thickened rim has been preserved. The glass is a pale yellow hue, with evidence of stretching marks from the manufacturing process.

Dimensions: 2.7 x 1.5 cm

Inv. no.: FMGG-8794

Literature: Unpublished

20. Vessel rim fragment (fig. 21:5)

A fragment of the vessel's slightly thickened rim has been preserved. The glass is yellowish-white in colour.

Dimensions: 2.0 x 1.5 cm

Inv. no.: FMGG-8795

Literature: Unpublished

21. Vessel rim fragment (fig. 21:6)

A fragment of the vessel's slightly thickened rim has been preserved. The glass is yellow-green in colour, with evidence of stretching marks from the manufacturing process.

Dimensions: 2.7 x 1.0 cm

Inv. no.: FMGG-8796

Literature: Unpublished

22. Vessel rim fragment (fig. 21:7)

A fragment of the vessel's slightly thickened rim has been preserved. The glass is green-yellow in colour.

Dimensions: 1.8 x 1.3 cm

Inv. no.: FMGG-209

Literature: Unpublished

23. Vessel rim fragment (fig. 21:8)

A fragment of the vessel's slightly thickened rim has been preserved. The glass is green-yellow in colour.

Dimensions: 2.3 x 1.0 cm

Inv. no.: FMGG-8797

Literature: Unpublished

24. Vessel rim fragment (fig. 21:9)

A fragment of the vessel's slightly thickened rim has been preserved. The glass is green-yellow in colour.

Dimensions: 2.4 x 1.0 cm

Inv. no.: FMGG-8798

Literature: Unpublished

25. Vessel rim fragment (fig. 21:10)

A fragment of the vessel's slightly thickened rim has been preserved. The glass is green-yellow in colour.

Dimensions: 2.0 x 1.3 cm

Inv. no.: FMGG-8799

Literature: Unpublished

26. Vessel rim fragment (fig. 21:11)

A fragment of the vessel's slightly thickened rim has been preserved. The glass is green-yellow in colour.

26. Ulomak oboda posude (sl. 21:11)

Sačuvan je ulomak blago zadebljanog oboda posude. Staklo je žuto-zelene boje.

Dimenzije: 1, 4 x 0, 8 cm

Inv. br. FMGG-8800

Literatura: Neobjavljeno

27. Ulomak oboda posude (sl. 22:1)

Sačuvan je ulomak blago zadebljanog oboda te zaobljenog recipijenta posude. Staklo je blijedožute boje s tragovima razvlačenja smjese.

Dimenzije: 4 x 1, 7 cm

Inv. br. FMGG-207

Literatura: Neobjavljeno

28. Ulomak oboda posude (sl. 22:2)

Sačuvan je ulomak blago zadebljanog oboda posude. Staklo je blijedožute boje s tragovima razvlačenja smjese.

Dimenzije: 5 x 1, 4 cm

Inv. br. FMGG-206

Literatura: Neobjavljeno

29. Ulomak oboda posude (sl. 22:3)

Sačuvan je ulomak blago zadebljanog oboda posude. Staklo je blijedožute boje s tragovima irizacije i razvlačenja smjese.

Dimenzije: 2, 7 x 1, 3 cm

Inv. br. FMGG-8801

Literatura: Neobjavljeno

30. Ulomak oboda posude (sl. 22:4)

Sačuvan je ulomak blago zadebljanog oboda posude. Staklo je blijedožute boje s tragovima onečišćenja i razvlačenja smjese.

Dimenzije: 2, 5 x 1 cm

Inv. br. FMGG-8802

Literatura: Neobjavljeno

31. Ulomak oboda posude (sl. 22:5)

Sačuvan je ulomak blago zadebljanog oboda posude. Staklo je prozirno, zelenkaste boje.

Dimenzije: 2, 4 x 1, 9 cm

Inv. br. FMGG-8803

Literatura: Neobjavljeno

32. Ulomak oboda posude (sl. 22:6)

Sačuvan je ulomak blago zadebljanog oboda posude. Staklo je prozirno, bez boje, prožeto mjehurićima zraka.

Dimenzije: 2, 3 x 0, 7 cm

Inv. br. FMGG-8804

Literatura: Neobjavljeno

33. Ulomak oboda posude (sl. 23:1)

Sačuvan je ulomak šupljeg cjevastog oboda posude. Na obođu je sačuvan ostatak ručice za vješanje. Staklo je žućkasto, gotovo bez boje, prožeto mjehurićima zraka.

Dimenzije: 3, 5 x 1, 9 cm

Inv. br. FMGG-214

Literatura: Neobjavljeno

Dimensions: 1.4 x 0.8 cm

Inv. no: FMGG-8800

Literature: Unpublished

27. Vessel rim fragment (fig. 22:1)

A piece of the vessel's slightly thickened rim and rounded receptacle has been preserved. The glass is pale yellow in colour, with evidence of stretching marks from the manufacturing process.

Dimensions: 4.0 x 1.7 cm

Inv. no.: FMGG-207

Literature: Unpublished

28. Vessel rim fragment (fig. 22:2)

A fragment of the vessel's slightly thickened rim has been preserved. The glass is pale yellow in colour, with inclusions and evidence of stretching marks from the manufacturing process.

Dimensions: 5.0 x 1.4 cm

Inv. no.: FMGG-206

Literature: Unpublished

29. Vessel rim fragment (Figure 22:3)

A fragment of the vessel's slightly thickened rim has been preserved. The glass is pale yellow in colour, with faint iridescence and evidence of stretching marks from the manufacturing process.

Dimensions: 2.7 x 1.3 cm

Inv. no.: FMGG-8801

Literature: Unpublished

30. Vessel rim fragment (fig. 22:4)

A fragment of the vessel's slightly thickened rim has been preserved. The glass is pale yellow in colour, with inclusions and evidence of stretching marks from the manufacturing process.

Dimensions: 2.5 x 1.0 cm

Inv. no.: FMGG-8802

Literature: Unpublished

31. Vessel rim fragment (fig. 22:5)

A fragment of the vessel's slightly thickened rim has been preserved. The glass is transparent with a greenish hue.

Dimensions: 2.4 x 1.9 cm

Inv. no.: FMGG-8803

Literature: Unpublished

32. Vessel rim fragment (fig. 22:6)

A fragment of the vessel's slightly thickened rim has been preserved. The glass is transparent and colourless, and air bubbles are present throughout.

Dimensions: 2.3 x 0.7 cm

Inv. no.: FMGG-8804

Literature: Unpublished

33. Vessel rim fragment (fig. 23:1)

A fragment of the hollow tubular rim of the vessel has been preserved. The remnants of a hanging handle have also been preserved. The glass is yellowish, almost colourless, and air bubbles are present throughout.

Dimensions: 3.5 x 1.9 cm

Inv. no.: FMGG-214

Literature: Unpublished

34. Vessel rim fragment (fig. 23:2)

A fragment of the hollow tubular rim of the vessel has been preserved. The remnants of a hanging handle have also been

34. Ulomak oboda posude (sl. 23:2)

Sačuvan je ulomak šupljeg cjevastog oboda posude. Na obo-
du je sačuvan ostatak ručice za vješanje. Staklo je gotovo bez
boje, prožeto mjehurićima zraka i s tragovima irizacije.

Dimenzije: 3, 5 x 0, 5 cm

Inv. br. FMGG-8805

Literatura: Neobjavljeno

35. Ulomak oboda posude (sl. 23:3)

Sačuvan je ulomak prstenasto zadebljanog oboda posude.
Staklo je zelenkasto, gotovo bez boje, prožeto mjehurićima
zraka i s tragovima razvlačenja smjese.

Dimenzije: 4, 6 x 1, 4 cm

Inv. br. FMGG-8806

Literatura: Neobjavljeno

36. Ulomak oboda posude (sl. 23:4)

Sačuvan je ulomak šupljeg cjevastog oboda posude. Staklo
je zelenkasto, gotovo bez boje, prožeto mjehurićima zraka i s
tragovima razvlačenja smjese.

Dimenzije: 3, 5 x 1, 6 cm

Inv. br. FMGG-8807

Literatura: Neobjavljeno

37. Ulomak oboda posude (sl. 23:5)

Sačuvan je ulomak šupljeg cjevastog oboda posude. Staklo
je zelenkasto, gotovo bez boje, prožeto mjehurićima zraka i s
tragovima razvlačenja smjese.

Dimenzije: 2 x 0, 5 cm

Inv. br. FMGG-8808

Literatura: Neobjavljeno

38. Ulomak oboda posude (sl. 23:6)

Sačuvan je ulomak šupljeg cjevastog oboda posude. Staklo je
zelenkasto, gotovo bez boje, s tragovima razvlačenja smjese.

Dimenzije: 2, 5 x 2 cm

Inv. br. FMGG-205

Literatura: Neobjavljeno

39. Ulomak oboda posude (sl. 23:7)

Sačuvan je ulomak šupljeg cjevastog oboda posude. Staklo
je zelenkasto, gotovo bez boje, prožeto mjehurićima zraka i s
tragovima razvlačenja smjese.

Dimenzije: 3 x 1, 7 cm

Inv. br. FMGG-8809

Literatura: Neobjavljeno

40. Stopa čaše na visokoj nozi (sl. 24)

Gotovo u cijelosti sačuvana ravna stopa s istaknutim zaoblje-
nim prošupljenim rubom i šupljinom od cilindrične noge. Sta-
klo je maslinastozelene boje.

Dimenzije: d 4, 5 cm

Inv. br. FMGG-200

Literatura: Neobjavljeno

41. Ulomak dna konusne čaše-svjetiljke (sl. 25:1)

Ulomak blago zaobljenog uskog dna i konusne stijenke po-
sude koji može biti dio konusne svjetiljke koje su se koristile i
kao čaše. Staklo je žućkaste boje s dosta onečišćenja i trago-
vima irizacije.

preserved. The glass is almost colourless, air bubbles are present
throughout, and it bears evident iridescence.

Dimensions: 3.5 x 0.5 cm

Inv. no.: FMGG-8805

Literature: Unpublished

35. Vessel rim fragment (fig. 23:3)

A fragment of the vessel's annularly thickened rim has been pre-
served. The glass is greenish, nearly colourless, with air bubbles
throughout and evidence of stretching marks from the manu-
facturing process.

Dimensions: 4.6 x 1.4 cm

Inv. no.: FMGG-8806

Literature: Unpublished

36. Vessel rim fragment (fig. 23:4)

A fragment of the vessel's hollow tubular rim has been pre-
served. The glass is greenish, nearly colourless, and permeat-
ed with air pockets and evidence of stretching marks from the
manufacturing process.

Dimensions: 3.5 x 1.6 cm

Inv. no.: FMGG-8807

Literature: Unpublished

37. Vessel rim fragment (fig. 23:5)

A portion of the vessel's cylindrical tubular rim has been pre-
served. The glass is greenish, nearly colourless, with air bubbles
throughout and evidence of stretching marks from the manu-
facturing process.

Dimensions: 2.0 x 0.5 cm

Inv. no.: FMGG-8808

Literature: Unpublished

38. Vessel rim fragment (fig. 23:6)

A portion of the vessel's hollow tubular rim has been preserved.
The glass is greenish, almost colourless, with evidence of
stretching marks from the manufacturing process.

Dimensions: 2.5 x 2.0 cm

Inv. no.: FMGG-205

Literature: Unpublished

39. Vessel rim fragment (Figure 23:7)

A portion of the vessel's hollow tubular rim has been pre-
served. The glass is greenish, nearly colourless, with air bubbles
throughout and evidence of stretching marks from the manu-
facturing process.

Dimensions: 3.0 x 1.7 cm

Inv. no.: FMGG-8809

Literature: Unpublished

40. Base of a glass with an extended leg (fig. 24)

An almost completely preserved flat foot with prominent
rounded hollowed-out edges by the cavity of the cylindrical
foot. The glass is olive green.

Dimensions: Ø = 4.5 cm

Inv. no.: FMGG-200

Literature: Unpublished

41. Fragment of the base of a conical cup-lantern (fig. 25:1)

A fragment of a vessel with a slightly convex narrow bottom
and conical wall, possibly from a lamp that may have also been
used as a cup. The glass is yellowish with a high proportion of
inclusions and evident iridescence.

Dimensions: 3.0 x 3.0 cm, Ø = 2.0 cm

Dimenzije: 3 x 3 cm, d 2 cm

Inv. br. FMGG-8810

Literatura: Neobjavljeno

42. Ulomak dna konusne čaše-svjetiljke (sl. 25:2)

Ulomak blago zaobljenog uskog dna konusne posude. Staklo je zadebljano, zelene boje s tragovima razvlačenja smjese.

Dimenzije: 2 x 2 cm, d 1, 5 cm

Inv. br. FMGG-8811

Literatura: Neobjavljeno

43. Ulomak dna konusne čaše-svjetiljke (sl. 26:1)

Ulomak uskog konkavnog dna koje može biti dio konusne čaše ili svjetiljke. Staklo je blijedožute boje.

Dimenzije: 2, 5 x 2, 5 cm

Inv. br. FMGG-8812

Literatura: Neobjavljeno

44. Ulomak dna konusne čaše-svjetiljke (sl. 26:2)

Ulomak uskog konkavnog dna koje može biti dio konusne čaše ili svjetiljke. Staklo je blijedožute boje.

Dimenzije: 1, 9 x 2, 5 cm

Inv. br. FMGG-8813

Literatura: Neobjavljeno

45. Ulomak oboda posude (sl. 27:1)

Sačuvan je ulomak rebrasto profiliranog oboda posude. Staklo je prozirno, bez boje.

Dimenzije: 2, 8 x 2, 2 cm

Inv. br. FMGG-8814

Literatura: Neobjavljeno

46. Ulomak oboda posude (sl. 27:2)

Sačuvan je ulomak šupljeg cjevastog i profiliranog oboda posude. Staklo je prozirno, bez boje, s tragovima onečišćenja.

Dimenzije: 2 x 1, 3 cm

Inv. br. FMGG-210

Literatura: Neobjavljeno

Inv. no.: FMGG-8810

Literature: Unpublished

42. Fragment of the base of a conical cup-lantern (fig. 25:2)

A fragment of the narrow, slightly convex base of a conical vessel. The glass is thickened, green in colour, and exhibits evidence of stretching marks from the manufacturing process.

Dimensions: 2.0 x 2.0 cm, Ø = 1.5 cm

Inv. no.: FMGG-8811

Literature: Unpublished

43. Fragment of the base of a conical cup-lantern (fig. 26:1)

A fragment of a narrow concave bottom, possibly from a conical cup or lantern. The glass is yellowish-white in colour.

Dimensions: 2.5 x 2.5 cm

Inv. no.: FMGG-8812

Literature: Unpublished

44. Fragment of the base of a conical cup-lantern (fig. 26:2)

A fragment of a narrow concave bottom, possibly from a conical cup or lantern. The glass is yellowish-white in colour.

Dimensions: 1.9 x 2.5 cm

Inv. no.: FMGG-8813

Literature: Unpublished

45. Vessel rim fragment (fig. 27:1)

A piece of the vessel's ribbed rim has been preserved. The glass is colourless and transparent.

Dimensions: 2.8 x 2.2 cm

Inv. no.: FMGG-8814

Literature: Unpublished

46. Vessel rim fragment (fig. 27:2)

A fragment of the hollow tubular and profiled rim of the vessel has been preserved. The glass is transparent and colourless, with visible inclusions.

Dimensions: 2.0 x 1.3 cm

Inv. no.: FMGG-210

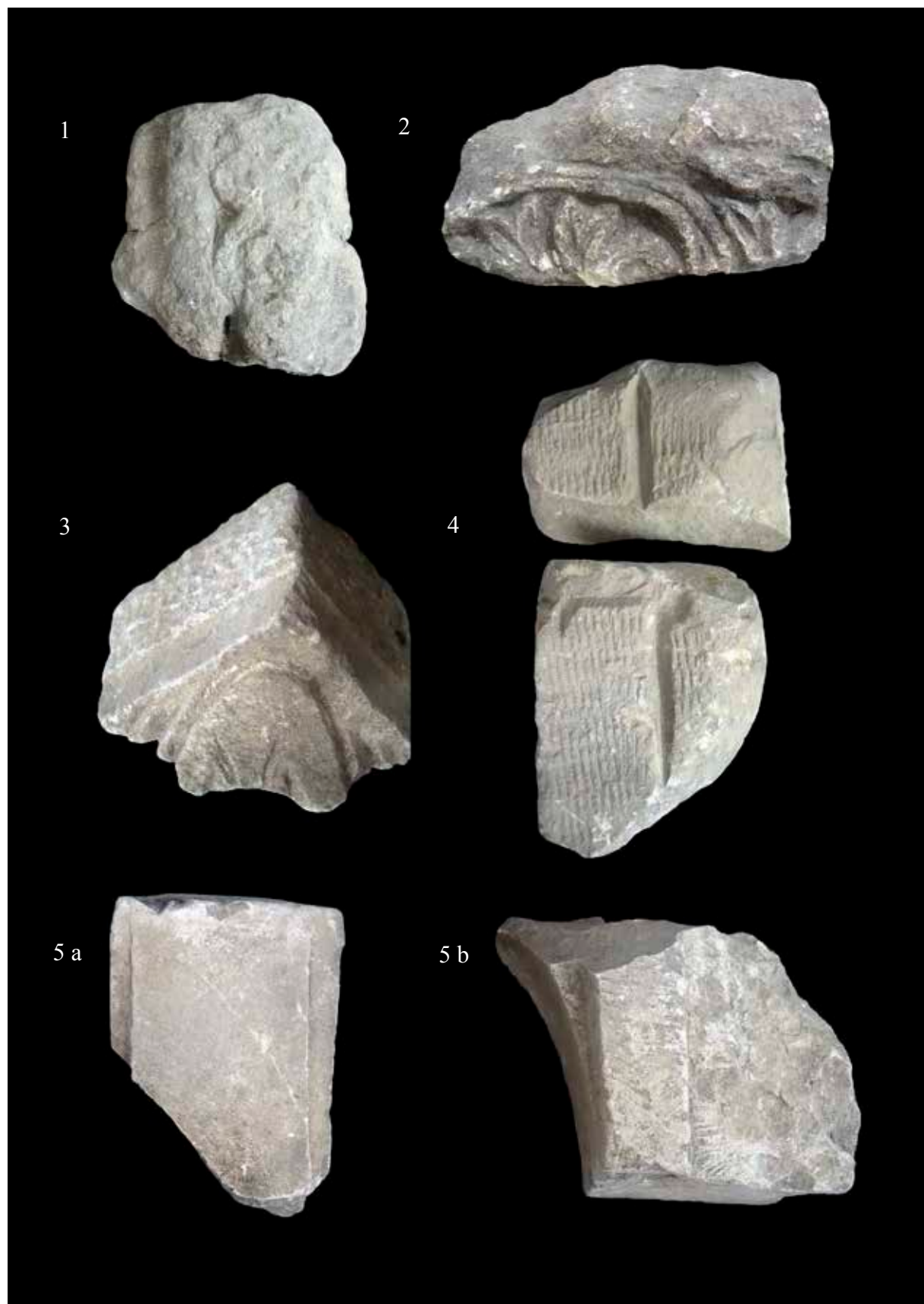
Literature: Unpublished

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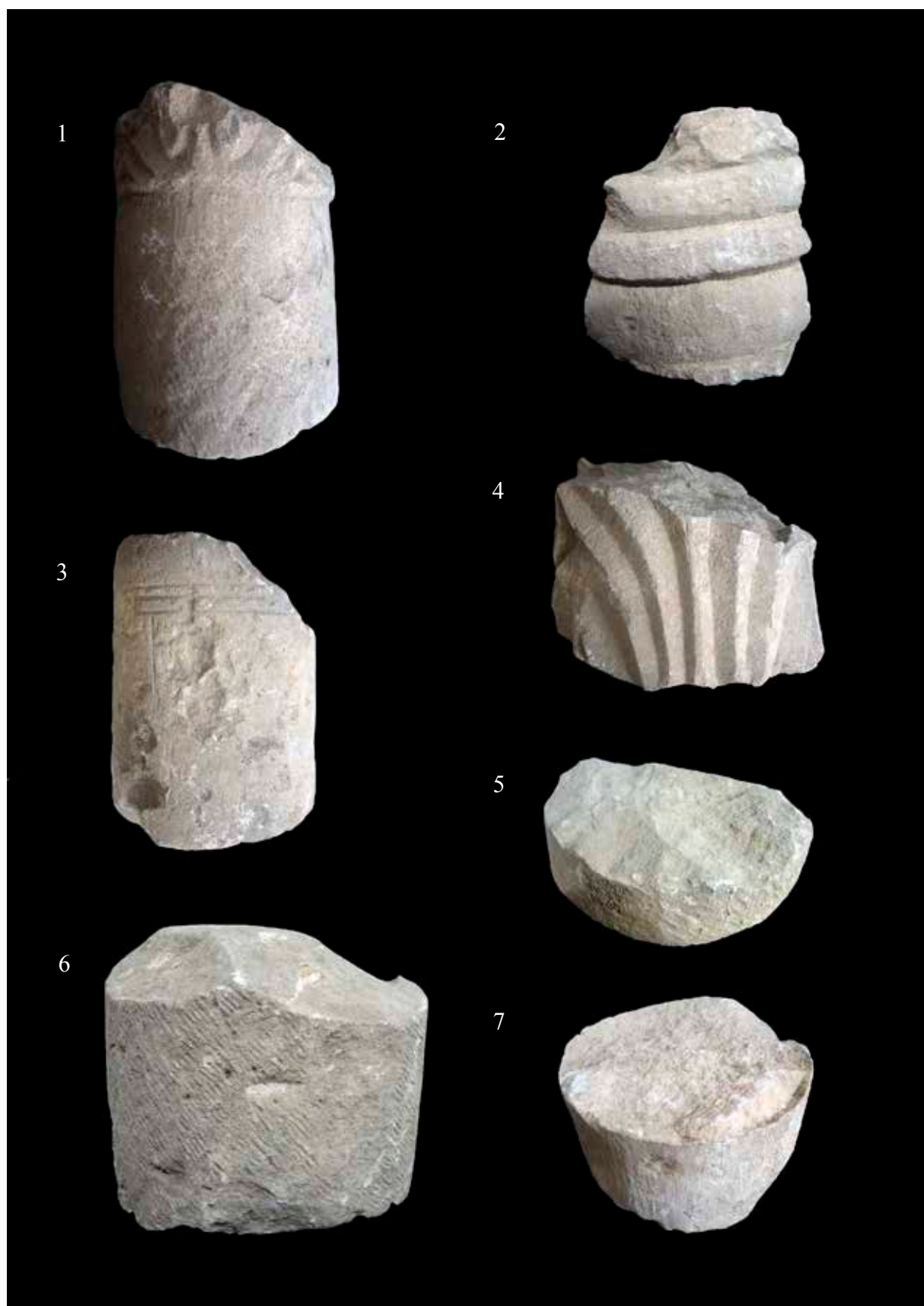
T. 1

Pl. 1



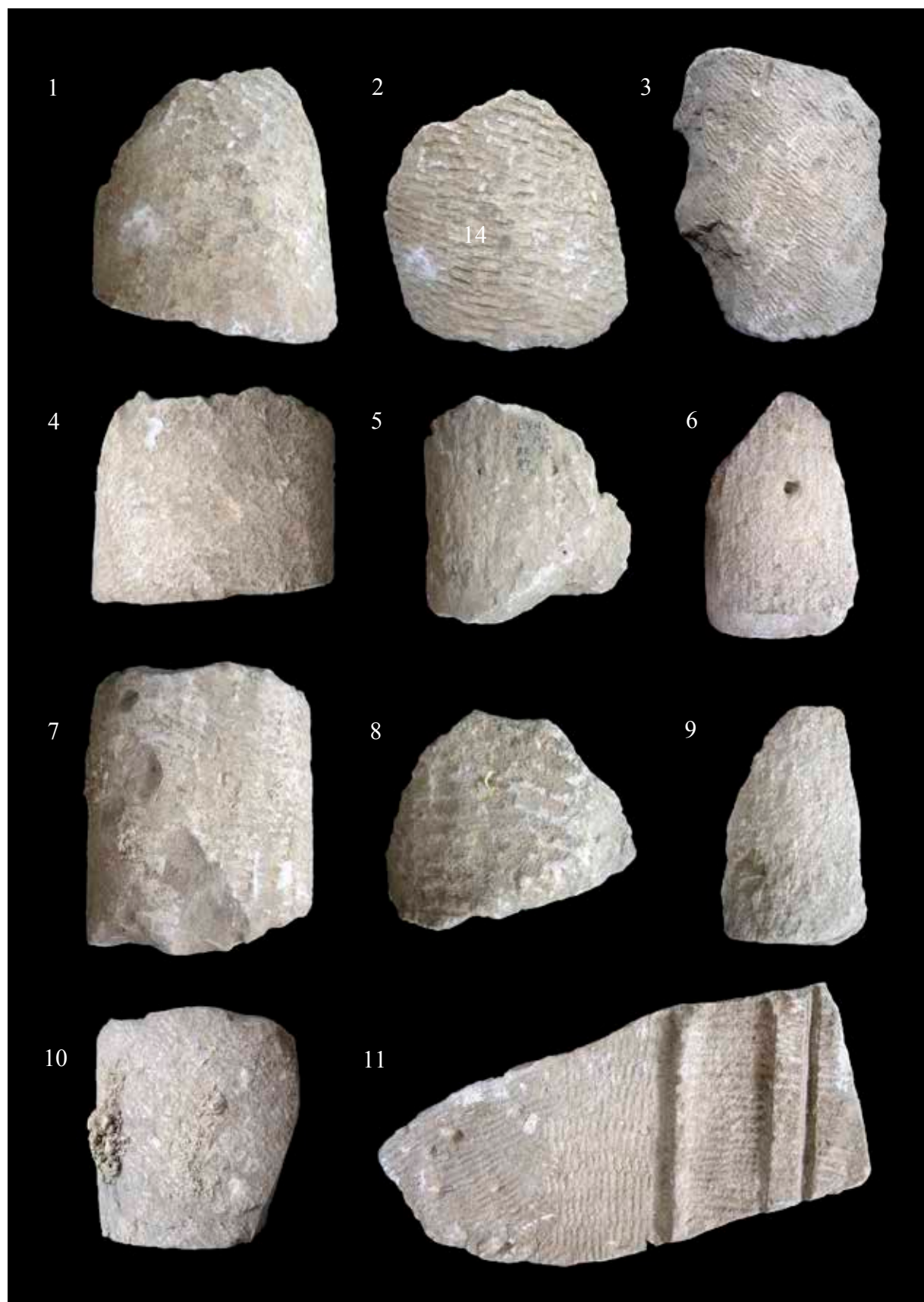
T. 2

Pl. 2



T. 3

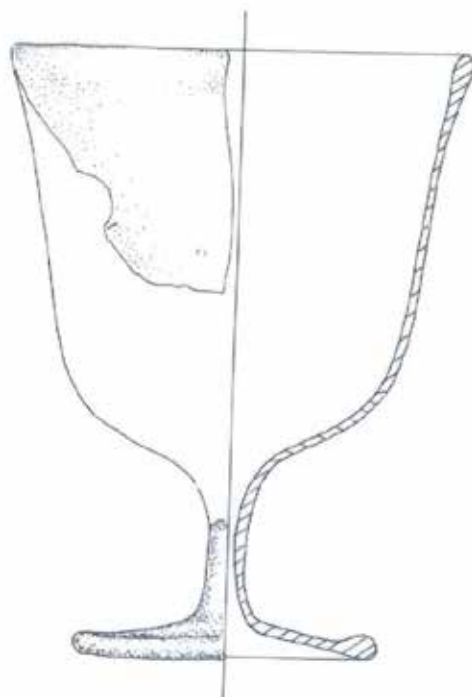
Pl. 3



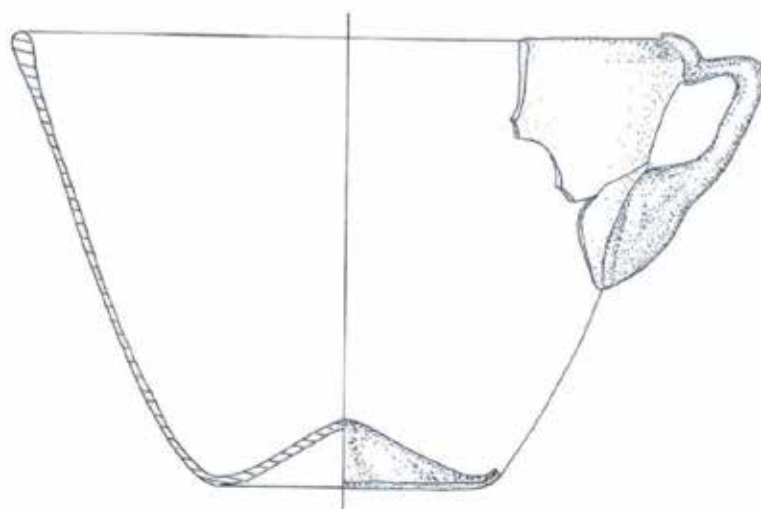
T. 4

Pl. 4

1



2



In memoriam: Branko Belić (1930–2018)

In memoriam Branko Belić (1930–2018)



Branko Belić (1930–2018)
(Arhiv Muzeja Doboja / Doboja Museum Archive)

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Na izmaku 2018. godine napustio nas je jedan od najdugovječnijih arheologa Branko Belić. Umro je u rodnom selu Novom Miloševu u svom Banatu, tiho i povučeno, kako je živio posljednjih decenija. No, arheologija ga neće pamтити kao tihog i povučenog, već kao marljivog i svestranog arheologa koji je zadužio mnoge generacije sadašnjih i budućih arheologa.

Rođen je 1930. godine u Novom Miloševu kod Kikinde u Banatu. Po završenim diplomskim studijama na Filozofskom fakultetu u Beogradu

One of our longest-lived archaeologists, Branko Belić, died at the turn of 2018 in his native village of Novo Miloševo, in Banat, departing quietly and discreetly, as he had lived during his last decades. Archaeology will remember him not as quiet and retiring, but as a painstaking archaeologist, an all-rounder, to whom several generations of present and future archaeologists are and will be indebted.

He was born in Novo Miloševo near Kikinda, in Banat, in 1930. In 1958, after completing his undergraduate studies at the Faculty of the Humanities in

zapošljava se 1958. godine kao kustos arheolog u novo-osnovanom Muzeju u Doboju, u kojem će i provesti najduži dio svoje istraživačke karijere. Njegovim dolaskom počinju prva sistematska rekognosciranja sjeverne Bosne i arheološka iskopavanja na poznatim, ali u najvećem broju novootkrivenim lokalitetima. Od 1959. do 1960. godine rukovodilac je istraživanja rimskog vojnog logora na Usori kod Doboja, čija će daljna istraživanja preuzeti Zemaljski muzej Bosne i Hercegovine u Sarajevu. U arheologiji je bio svestran i bavio se arheologijom različitih perioda, kako je to bila praksa u malim gradskim muzejima. Istraživao je paleolitske lokalitete Danilovića i Grabovca Brdo u Podnovlju kod Doboja, neolitske lokalitete Bregovi nad Bakarama kod Bosanskog Broda, Lanište u Klakaru, Kulište u Kruškovom Polju kod Šamca i Tuk u Zavidovićima. Na Gradini u Visu kod Modrana istraživao je 1964. godine višeslojno eneolitsko naselje sa bogatim kulturnim horizontima lasinjske, kostolačke i vučedolske kulture. Eneolitsko naselje kostolačke i vučedolske kulture istraživao je i prilikom zaštitnih arheoloških iskopavanja na Doboru kod Modriče 1978. godine. Ali, prije svega, Branko Belić bio je posvećen istraživanju kasnog bronzanog doba sjeverne Bosne. Njegovi lični arheološki afiniteti i ljubav bili su posvećeni rješavanju problematike naseljavanja, kulturne dinamike i pogrebnih rituala kasnog bronzanog doba sjeverne Bosne. Do danas istražio je najveći broj kasnobronzodobnih nekropola sa spaljenim pokojnicima grupe Barice – Gređani. Iскопavao je nekropole: Bare u Grabovici i Greda u Podnovlju kod Doboja, Vučići i Šaš bare u Pelagićevo kod Gradačca, Bare u Liplju kod Teslića, Mala Gradina u Kulašima, Krčevine u Maloj Brusnici kod Bosanskog Broda i Brešćici u Vranjaku kod Modriče. Ova istraživanja rezultirala su odbranjenom magistarskom disertacijom pod nazivom „Prahistorijske nekropole sa paljevinama u severnoj Bosni“ odbranjene 1986. godine na Filozofskom fakultetu u Beogradu pod mentorstvom akademika prof. dr Dragoslava Srejića. Takođe, istraživao je i brojna bronzanodobna naselja: Vrela i Sredelj kod Bosanskog Broda, Dobor kod Modriče i Doboj – Centar. Učestvovao je u projektu Zemaljskog muzeja Bosne i Hercegovine pod vođstvom akademika Borivoja Čovića „Bronzano doba sjeverne Bosne“, gdje je vršio iskopavanja na lokalitetu Topolovaca bregovi kod Odžaka. Sakupio je jednu od najvećih kolekcija ostava kasnog bronzanog doba sjeverne Bosne uključujući ostave iz Paležnice, Cvrtkovaca, Majdana Ridžala i Kućišta iz Močile. U toku duge karijere bio je, između ostalog, kratko zaposlen u Muzeju istočne Bosne u Tuzli u periodu između 1961. i 1962. godine, Muzeju Vojvodine 1970–1974. godine, gdje je bio rukovodilac iskopavanja na eponimnom lokalitetu Gomolava u kampanji 1969–1971. godine, a stručni saradnik 1972–1973. godine. Sistematizaciju svojih terenskih istraživanja u sjevernoj Bosni publikovao je u vidu leksikografskih crtica u Arheološkom leksikonu Bosne i Hercegovine iz 1988. godine. Publikovao je više od 200

Belgrade, he was engaged as archaeologist-curator in the newly-established Doboj Museum, where he would work for the greater part of his career as a researcher. The first systematic survey of northern Bosnia began with his arrival at the Museum, along with archaeological excavations at known and, above all, newly-discovered sites. In 1959-60 he led the excavations at the Roman military camp at Usora near Doboj, which were continued by the National Museum of Bosnia and Herzegovina in Sarajevo. He was an all-rounder, involved in the archaeology of different periods, as was the practice in small local museums. He excavated the Palaeolithic sites of Danilovića and Grabovca Brdo in Podnovlje near Doboj, the Neolithic sites of Bregovi nad Bakarama near Bosanski Brod, Lanište in Klakar, Kulište in Kruškovo polje near Šamac, and Tuk in Zavidovići. In 1964 he excavated the multilayer Eneolithic settlements at Gradina in Vis near Modrani, with its rich Lasinja, Kostolac and Vučedol cultural horizons. He also studied the Eneolithic settlements of the Kostolac and Vučedol cultures during preventive archaeological excavations at Dobor near Modriča in 1978. However, Branko Belić's principal affinity and love was for the Late Bronze Age in northern Bosnia. He was committed to resolving the question of settlements, cultural dynamics and funerary rituals of the Late Bronze Age in that part of the country, and holds the record to date for having excavated the largest number of the Late Bronze Age necropolises with cremated remains of the Barice-Gređani group: the necropolises of Bare in Grabovica and Greda in Podnovlje near Doboj, Vučići and Šaš Bara in Pelagićevo near Gradačac, Bare in Liplje near Teslić, Mala Gradina in Kulaši near Doboj, Krčevine in Mala Brusnica near Bosanski Brod and Brešćici in Vranjak near Modriča. These excavations led to his defending his master's dissertation, "Prehistoric necropolises with cremations in northern Bosnia," at the Faculty of the Humanities in Belgrade in 1986, under the mentorship of Academician Professor Dr Dragoslav Srejić. He also excavated several Bronze Age settlements: Gradina in Vrela and Sredelj in Brusnica Mala near Bosanski Brod, Dobor in Jakeš near Modriča and Doboj-Centar. He took part in the National Museum of Bosnia and Herzegovina's "Bronze Age of northern Bosnia" project led by Academician Borivoj Čović, where he conducted excavations at Topolovaca bregovi near Odžak. He assembled one of the largest collections of Late Bronze Age hoards in northern Bosnia, including those from Paležnica, Cvrtkovci, Majdan Ridžali and Kućište from Močila.

During his long career he worked for a short while (1961-1962) at the Museum of Eastern Bosnia in Tuzla, at the Vojvodina Museum from 1970 to 1974, where he led the excavations at the eponymous site of Gomolava in the 1969 to 1971 campaigns, and as a professional associate in 1972-1973. He published a systematised account of his field work in northern Bosnia in the form of lexicographic sketches in the 1988 Archaeological Lexicon of Bosnia and Herzegovina, and published more than 200 lexicographic sketches from the municipalities of Doboj, Prnjavor, Bosanski Brod,

leksikografskih crtica za područja opština: Doboj, Prnjavor, Bosanski Brod, Derventa, Šamac, Modriča, Gradačac, Tešanj, Teslić, Zavidovići, Žepče, Maglaj, Odžak. Mnoge generacije sadašnjih i budućih arheologa biće zahvalne i ponosne na istraživački rad Branka Belića jer je omogućio novim generacijama arheologa publikovanje i prezentaciju brojne arheološke građe koju je sakupio, konzervirao i deponovao u arheološku zbirku Muzeja u Doboju. Branko Belić nije uspio da publikuje svoja najveća arheološka dostignuća; u tome ga je spriječio rat u Bosni i Hercegovini i prerano penzionisanje 1992. godine.

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Many generations of present and future archaeologists will be grateful to Branko Belić and take pride in his investigative work, which has enabled new generations of archaeologists to publish and present the mass of archaeological material that he assembled, conserved and deposited in the archaeological collection of the Doboj Museum. The outbreak of war in Bosnia and Herzegovina in 1992 prevented him from publishing his greatest archaeological achievements, and he took early retirement that same year.

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Where several works by the same author are included, list chronologically grouped by author:

Fiala 1897, 283–284; Truhelka 1902, 264–265; 1904, 92; Raunig 1968, 93; Čović 1987, 272–273.

B) CITING ILLUSTRATIONS ETC. IN THE TEXT:

Illustrations etc. (figures, maps, tables, plates, catalogue entries etc.) are to be indicated in the text in brackets, as follows

(fig. 1), (map 1), (Pl. 1), (cat. no. 1).

If one or more detail in a given figure etc. is shown:

(fig. 6: 1), (map 3: 2), (Pl. 1: 1, 3–7).

If referring to several objects in several figures etc:

(Pl. 2: 3, 5, 7–10; Pl. 4: 8–10, 13).

6. Bibliography

The list of bibliography and sources is unique for a bilingual text. In the bibliography, avoid abbreviating titles and names of journals. The title (and subtitle) of the book or the name of the journal should be written in italics. The original names of the places of publication should be stated, for example, "Wien" and not "Vienna". The specified pages in the book or magazine are connected with the line "4–34". In the list of literature, along with books and articles that have a DOI number, it is necessary to indicate the same. The author's last name, except for the initial letter, is written in small letters, and the last name is followed by the initial of the first name. Literature is listed in alphabetical order, several works by the same author are listed chronologically; list several works of the same author published in the same year as follows:

Čović, B. 1983a

Čović, B. 1983b

EXAMPLES:

Books

One author

Sijarić, M. 2014, *Hladno oružje iz Bosne i Hercegovine u arheologiji razvijenog i kasnog srednjeg vijeka / Cold-steel Weapons from Bosnia and Herzegovina in the Archaeology of the High and Late Medieval Periods*, Zemaljski muzej Bosne i Hercegovine, Univerzitet u Sarajevu, Sarajevo.

Marijan, B. 2010, *Crtice iz prapovijesti Slavonije (brončano doba)*, Sveučilište Josipa Jurja Strossmayera Osijek, Filozofski fakultet Osijek, Osijek.

Dva ili više autora

Benac, A., Čović, B. 1956, *Glasinac 1 – Bronzono doba / Glasinac 1 – Bronzezeit*, Katalog prehistorijske zbirke Zemaljskog muzeja u Sarajevu, sveska 1, Zemaljski muzej u Sarajevu, Sarajevo.

Hofmann, R., Kujundžić-Vejzagić, Z., Müller, J., Rassmann, K., Müller-Scheessel, N. 2009, Rekonstrukcija procesa naseljavanja u kasnom neolitu na prostoru centralne Bosne, *Glasnik Zemaljskog muzeja Bosne i Hercegovine u Sarajevu, Arheologija, n. s., 50/51*, Sarajevo (2008/2009), 11–178.

Ukoliko je knjiga objavljena dvojezično navode se obje inačice naslova razdvojene kosom crtom:

Čović, B. 1991, *Pod kod Bugojna. Naselje bronzanog i željeznog doba u centralnoj Bosni, Sveska 1: Rano bronzano doba / Pod bei Bugojno. Eine Siedlung der Bronze-und Eisenzeit in Zentralbosnien, Heft 1: Die Frühbronzezeit*, Zemaljski muzej Bosne i Hercegovine, Sarajevo.

Poglavlje u knjizi s više autora: koristiti riječ “in” ili “u”. Kod uredničkih izdanja (monografija, zbornici simpozija, katalozi izložbi i sl.) iza imena urednika treba staviti (ed.), a iza više urednika (eds.)

Čović, B. 1987, Grupa Donja Dolina – Sanski Most, in: A. Benac, S. Gabrovec (eds.), *Praistorija jugoslavenskih zemalja V – Željezno doba*, Akademija nauka i umjetnosti Bosne i Hercegovine, Centar za balkanološka ispitivanja, Sarajevo, 232–286.

Članci u časopisu:

Fiala, F. 1892, Rezultati prehistoričkog ispitivanja na Glasincu u ljeto 1892., *Glasnik Zemaljskog muzeja u Bosni i Hercegovini, IV/4*, Sarajevo, 389–444.

Truhelka, Č. 1902, Zwei prähistorische Funde aus Gorica (Bezirk Ljubuški), *Wissenschaftliche Mittheilungen aus Bosnien und der Hercegovina, Band VIII*, Wien, 3–47.

Čović, B. 1965, Uvod u stratigrafiju i hronologiju praistorijskih gradina u Bosni, *Glasnik Zemaljskog muzeja Bosne i Hercegovine u Sarajevu, Arheologija, n.s., god. XX*, Sarajevo, 27–145.

Paškvalin, V. 2008, Kamenjača, Breza kod Sarajeva, *Godišnjak, knj. XXXVII*, Centar za balkanološka ispitivanja, knj. 35, Akademija nauka i umjetnosti Bosne i Hercegovine, Sarajevo, 101–179.

Ako je članak u istome časopisu objavljen dvojezično, navode se obje inačice naslova razdvojene kosom crtom:

Sijarić, M. 2006, Nadgrobne ploče tri bosanska kralja / Tombstones of three Bosnian kings, *Prilozi Instituta za arheologiju, Vol. 23, No. 1*, Zagreb, 229–256.

Marijan, B. 2010, *Crtice iz prapovijesti Slavonije (brončano doba)*, Sveučilište Josipa Jurja Strossmayera Osijek, Filozofski fakultet Osijek, Osijek.

Two or multiple authors

Benac, A., Čović, B. 1956, *Glasinac 1 – Bronzono doba / Glasinac 1 – Bronzezeit*, Katalog prehistorijske zbirke Zemaljskog muzeja u Sarajevu, sveska 1, Zemaljski muzej u Sarajevu, Sarajevo.

Hofmann, R., Kujundžić-Vejzagić, Z., Müller, J., Rassmann, K., Müller-Scheessel, N. 2009, Rekonstrukcija procesa naseljavanja u kasnom neolitu na prostoru centralne Bosne, *Glasnik Zemaljskog muzeja Bosne i Hercegovine u Sarajevu, Arheologija, n. s., 50/51*, Sarajevo (2008/2009), 11–178.

In the case of books published bilingually, both versions of the title are written, separated by a forward slash:

Čović, B. 1991, *Pod kod Bugojna. Naselje bronzanog i željeznog doba u centralnoj Bosni, Sveska 1: Rano bronzano doba / Pod bei Bugojno. Eine Siedlung der Bronze-und Eisenzeit in Zentralbosnien, Heft 1: Die Frühbronzezeit*, Zemaljski muzej Bosne i Hercegovine, Sarajevo.

Chapters in books with several contributors: use the word “in” or “u”. In the case of books with an overall editor (monographs, proceedings of symposia, exhibition catalogues etc.), the word (ed.) should follow the editor’s name – using (eds.) if there is more than one editor.

Čović, B. 1987, Grupa Donja Dolina – Sanski Most, in: A. Benac, S. Gabrovec (eds.), *Praistorija jugoslavenskih zemalja V – Željezno doba*, Akademija nauka i umjetnosti Bosne i Hercegovine, Centar za balkanološka ispitivanja, Sarajevo, 232–286.

Journal articles:

Fiala, F. 1892, Rezultati prehistoričkog ispitivanja na Glasincu u ljeto 1892., *Glasnik Zemaljskog muzeja u Bosni i Hercegovini, IV/4*, Sarajevo, 389–444.

Truhelka, Č. 1902, Zwei prähistorische Funde aus Gorica (Bezirk Ljubuški), *Wissenschaftliche Mittheilungen aus Bosnien und der Hercegovina, Band VIII*, Wien, 3–47.

Čović, B. 1965, Uvod u stratigrafiju i hronologiju praistorijskih gradina u Bosni, *Glasnik Zemaljskog muzeja Bosne i Hercegovine u Sarajevu, Arheologija, n.s., god. XX*, Sarajevo, 27–145.

Paškvalin, V. 2008, Kamenjača, Breza kod Sarajeva, *Godišnjak, knj. XXXVII*, Centar za balkanološka ispitivanja, knj. 35, Akademija nauka i umjetnosti Bosne i Hercegovine, Sarajevo, 101–179.

In the case of articles published bilingually in a given periodical, both versions will be written, separated by a forward slash:

Sijarić, M. 2006, Nadgrobne ploče tri bosanska kralja / Tombstones of three Bosnian kings, *Prilozi Instituta za arheologiju, Vol. 23, No. 1*, Zagreb, 229–256.

If the year number of the periodical does not coincide

Ako se godište časopisa ne podudara s godinom objave:

Čović, B. 2011, Bronzano doba sjeverne Bosne u svjetlu novih istraživanja/Bronze Age northern Bosnia in the light of new research, *Glasnik Zemaljskog muzeja Bosne i Hercegovine u Sarajevu, Arheologija, n.s.*, 52, Sarajevo (2010), 277–286.

Članak u zborniku sa znanstvenoga skupa:

Raunig, B. 1983, Neki manji i neobjavljeni nalazi bronzanog doba zapadne Bosne, in: B. Govedarica (ed.), *Arheološka problematika zapadne Bosne, Zbornik, knj. I*, Arheološko društvo Bosne i Hercegovine, Sarajevo, 71–78. 7.

Navođenje elektronskih izdanja:

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Busuladžić, A. 2021, Antiče kopče iz muzejskih zbirki u Bosni i Hercegovini (izbor nalaza). [online] Dostupno na: https://www.academia.edu/92317172/Anti%C4%8Dke_kop%C4%8De_iz_muzejskih_zbirki_u_Bosni_i_Hercegovini [25.5.2022.]

7. **Navođenje priloga:**

Kad je prilog preuzet iz objavljene literature, mora se citirati njegova bibliografska jedinica:

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Čović, B. 2011, Bronzano doba sjeverne Bosne u svjetlu novih istraživanja/Bronze Age northern Bosnia in the light of new research, *Glasnik Zemaljskog muzeja Bosne i Hercegovine u Sarajevu, Arheologija, n.s.*, 52, Sarajevo (2010), 277–286.

Articles in the proceedings of symposia:

Raunig, B. 1983, Neki manji i neobjavljeni nalazi bronzanog doba zapadne Bosne, in: B. Govedarica (ed.), *Arheološka problematika zapadne Bosne, Zbornik, knj. I*, Arheološko društvo Bosne i Hercegovine, Sarajevo, 71–78. 7.

Referencing digital editions:

Mesihović, S. 2011, Antiqvi homines Bosnae [e-knjiga] Sarajevo: Filozofski fakultet. Dostupno na: https://ebooks.ff.unsa.ba/index.php/ebooks_ffunsa/catalog/book/3 [25.5.2022.]

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Glasnik Zemaljskog muzeja u Bosni i Hercegovini (XLV/1933 – XLVI/1934), Sveska za historiju i etnografiju

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Glasnik Zemaljskog muzeja Kraljevine Jugoslavije (LI/1939), Prva sveska (za historiju i etnografiju)

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Glasnik Državnog muzeja u Sarajevu, n.s. Društvene nauke (I/1946)

Glasnik Zemaljskog muzeja u Sarajevu, n.s. Društvene nauke (II/1947)

Glasnik Zemaljskog muzeja u Sarajevu, n.s. (III/1948 – VIII/1953)

Glasnik Zemaljskog muzeja u Sarajevu, Arheologija, n.s. (IX/1954 – XX/1965)

Glasnik Zemaljskog muzeja Bosne i Hercegovine u Sarajevu, Arheologija, n.s. (XXI-XXII/1966-1967 do danas)



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