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SOMMAIRE

VINČANSKA KOŠTANA INDUSTRIJA S NALAZIŠTA JAKOVO-KORMADIN

BONE INDUSTRY FROM THE VINČA CULTURE SITE OF JAKOVO-KORMADIN

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Tijekom nesustavnih istraživanja nalazišta Jakovo-Kormadin početkom 20. stoljeća otkrivena je velika količina nalaza vinčanske koštane industrije. Materijal predstavljen u ovome radu nalazi se u Arheološkome muzeju u Zagrebu i broji 566 predmeta izrađenih od različitih koštanih sirovina.

Provedena je tehno-tipološka analiza materijala. Posebno su razmotreni načini nabave koštanih sirovina, kao i njihov izbor za izradu pojedinih skupina predmeta. Upotreba artefakata ukazala je na raznovrsne djelatnosti koje su se odvijale unutar naselja ili u njegovoj blizini. Prema svim podacima, nalazi koštane industrije s lokaliteta Jakovo-Kormadin dobro se uklapaju u okvire vinčanske kulture i upotpunjuju dosadašanja saznanja o ovome segmentu ekonomije neolitičkih zajednica.

A large number of finds of bone industry ascribed to the Vinča Culture were discovered in the non-systematic excavations carried out at the Jakovo-Kormadin site at the beginning of the 20th century. The material presented in this paper is kept at the Archaeological Museum in Zagreb, and includes 566 finds made from various osseous raw materials.

The material was analysed technologically and typologically. Special attention was given to the modes of raw-material acquisition, as well as to the choice of material used in the production of specific groups of finds. The artefact usage indicates various activities that could have taken place within the settlement or its immediate vicinity. Based on all available data, finds of bone industry from Jakovo-Kormadin fit into the well-known framework of the Vinča Culture, and add to current knowledge on this segment of the economy within Neolithic communities.

Ključne riječi:
koštana industrija, vinčanska kultura, Jakovo-Kormadin, tehno-tipologija, raspolaganje sirovinama, upotreba alatki

Key words:
bone industry, Vinča Culture, Jakovo-Kormadin, technology, typology, raw-material management, tool usage

Uvod

Početkom 20. stoljeća provedena su prva nesustavna iskopavanja na nalazištu Jakovo-Kormadin.[1] Tijekom istraživanja prikupljena je velika količina nalaza neolitičke koštane industrije koji se danas čuvaju u zbirci Arheološkog muzeja u Zagrebu. No sačuvane skice i bilješke, koje su jedini podaci o tim istraživanjima, ne sadrže relevantne podatke o stratigrafiji niti o kontekstu nalaza.[2]

Lokalitet je istraživan i sredinom prošloga stoljeća, kada su na nalazištu otkrivena tri stambena horizonta vinčanske kulture.[3] Istraživanjem 2008. godine potvrđena je takva situacija[4] te je ustanovljeno kako je vinčanska kultura jedina prapovijesna kultura na ovome nalazištu.

Unatoč nedostatku konteksta, analizirani su predmeti pripisani vinčanskoj kulturi. Materijal iz zbirke tipološki je uspoređen s nalazima koštane industrije iz navedenih sustavnih istraživanja i s onima s ostalih nalazišta vinčanske kulture[5] te pokazuje visok stupanj sličnosti. Također, na većem su broju artefakata uočene tehnike obrade koštanih sirovina koje se mogu smatrati karakterističnima za vinčansku kulturu.[6] Zastupljenost različitih koštanih sirovina i načini njihova raspolaganja te upotreba alatki pokazali su da se koštana industrija Jakovo-Kormadin dobro uklapa u okvire vinčanske kulture iako pokazuje i neke posebnosti.

Ovaj rad pruža osnovne informacije o zbirci u pogledu tehno-tipologije, izbora i nabave koštanih sirovina te moguće upotrebe koštanih artefakata, što je i cilj ovoga rada. Ovdje prikazani rezultati analize mogu poslužiti za daljnji, detaljniji pristup materijalu.

Tipologija

Analizirani su predmeti tipološki razvrstani prema obliku i funkciji radnog dijela na osnovne tipove podijeljene u veće grupe predmeta. Osim primarnih tipova, izdvojeni su i podtipovi i varijante, ovisno o primijenjenim tehnikama izrade, upotrijebljenoj sirovini ili izboru skeletnog elementa.[7] Nalazi ove zbirke podijeljeni su u sedam osnovnih grupa (tab. 1; sl. 8), od kojih jedino nisu ustanovljeni nalazi koji pripadaju grupi neutilitarnih predmeta.

Introduction

The first non-systematic excavations of the Jakovo-Kormadin site were carried out at the beginning of the 20th century,[1] and yielded a large number of finds of Neolithic bone industry, which are currently kept at the Archaeological Museum in Zagreb. However, the preserved sketches and notes provide the only available information about the excavations, and do not contain relevant data about site stratigraphy or the context of the finds.[2]

The site was also excavated in the middle of the past century, when three habitational phases of the Vinča Culture were recorded.[3] In the 2008 excavations, the situation previously recorded was confirmed,[4] and the Vinča Culture was established as the only prehistoric culture present on the site.

Despite the lack of context, the finds analysed were ascribed to the Vinča Culture. The material from the collection was typologically compared with finds of bone industry recovered during the aforementioned systematic excavations, as well as to those from other sites of the Vinča Culture,[5] revealing a high degree of similarity. Additionally, a larger number of artefacts display processing techniques that can be considered characteristic of the Vinča Culture.[6] The presence of various osseous raw materials and the ways in which they were managed, as well as tool use, revealed that the bone industry of Jakovo-Kormadin fits into the framework of the Vinča Culture, although it also displays some particularities.

The main objective of this paper is to offer basic information about the collection analysed regarding techno-typology, selection and exploitation of osseous raw materials and the use of artefacts. The results of the analysis presented here can serve for further, more detailed analysis of the material.

Typology

The finds analysed were, on the basis of the shape and function of the working edge, typologically sorted into basic types that were further divided into larger groups of finds. Apart from the basic types, it was possible to discern subtypes and variants, depending on the production techniques applied, the choice of raw material, or the choice of skeletal elements.[7] The finds from this collection were divided into seven basic groups (Tab. 1; Fig. 8), noting that only non-utilitarian finds were not established.

1 Brunšmid 1902, 234–238; Šeper 1952, 25–28.
2 Šeper 1952, 25–30.
3 Jovanović, Glišnć 1960, 113.
4 Bulatović, Kapuran, Stružar 2010, 3.
5 Srejović, Jovanović 1958–59; Bačkalov 1979; Perišić 1984; Russell 1990; Vitezović 2010; Vitezović 2011b; Vitezović 2013a; Vitezović 2013d.
6 Vitezović 2010, 54; Vitezović 2016, 76.
7 Bačkalov 1979, 31 i dalje; Vitezović 2007, 61–64; 2011a, 67–68, 274; 2016, 84–85.

1 Brunšmid 1902, 234–238; Šeper 1952, 25–28.
2 Šeper 1952, 25–30.
3 Jovanović, Glišnć 1960, 113.
4 Bulatović, Kapuran, Stružar 2010, 3.
5 Srejović, Jovanović 1958–59; Bačkalov 1979; Perišić 1984; Russell 1990; Vitezović 2010; Vitezović 2011b; Vitezović 2013a; Vitezović 2013d.
6 Vitezović 2010, 54; Vitezović 2016, 76.
7 Bačkalov 1979, 31 ff; Vitezović 2007, 61–64; 2011a, 67–68, 274; 2016, 84–85.

SLIKA 1. Koštana šila izrađena od dugih kostiju i rebara (P-16807, P-16813; snimio I. Krajcar).

FIGURE 1. Bone awls made out of long bones and ribs (P-16807, P-16813; photo by I. Krajcar).

Zašiljeni predmeti (I). Zajednička je karakteristika ove grupe predmeta, koja uključuje oruđe i oružje, šiljasti radni vrh čija je osnovna namjena bušenje, odnosno probijanje materijala.[8] Ovo je najbrojnija grupa predmeta u analiziranoj zbirci u kojoj su zastupljeni svi tipovi koje obuhvaća (sl. 8). Nalazi rogova srndaća s minimalnom obradom na distalnom kraju također su uvršteni u ovu grupu predmeta, bez pobližeg svrstavanja u određeni tip.[9]

Šila (I 1) su najbrojniji tip alatki u zbirci i dijele se na više podtipova i varijanti (sl. 1). Ustanovljena su dva, brojčano podjednako zastupljena podtipa – šila izrađena od dugih (I 1A) i šila od plosnatih kostiju (I 1B).

Varijanta šila I 1A1u najvećem je broju izrađena od rascijepljenih metapodijalnih kostiju malih preživača, na čijoj je bazi očuvana distalna ili proksimalna epifiza (T. 1: 1, 9–10). Samo su tri nalaza izrađena od nerascijepljenih metapodijalnih kostiju (T. 1: 6), s očuvanom distalnom epifizom na bazi, i isto toliko od ulne manjeg sisavca. Druga varijanta šila od dugih kostiju (I 1A2) izrađena je od manjih segmenata dijafize, čija je baza uglavnom ravno odsječena i uglačana (T. 1: 5, 7–8).

Pointed tools (I). A common characteristic of this group of finds, which includes both tools and weapons, is a pointed working edge that was primarily used for drilling, that is, puncturing material.[8] This is the most numerous group of finds in the collection analysed, and includes all of the types ascribed to it (Fig. 8). Finds of roe-deer antlers with minimal processing at the distal end were also included in this group of finds, without additional ascription to specific type.[9]

Awls (I 1) are the most numerous find in the collection, and can be divided into several subtypes and variants (Fig. 1). Two numerically similar subtypes were defined: awls made out of long bones (I 1A), and awls made out of flat bones (I 1B).

Awls of the I 1A1 variant were mostly made from the split metapodial bones of small ruminants that have a preserved distal or proximal epiphysis at the base (Pl. 1: 1, 9–10). Only three finds were made from non-split metapodial bones (Pl. 1: 6) with a preserved distal epiphysis on the base, as were three finds made from the ulnas of smaller mammals. The second variant of awls made out of long bones (I 1A2) was actually made out of smaller segments of diaphyses, mostly with a straight cut and polished base (Pl. 1: 5, 7–8).

8 Vitezović 2007, 65.
9 Krištofić 2017, 36.

8 Vitezović 2007, 65.
9 Krištofić 2017, 36.

Šila od plosnatih kostiju (T. 1: 2–4) izrađuju se od rebara malih preživača. U zbirci je prisutna varijanta jednostranih šila (I 1B1). S obzirom na to da je dio materijala, koji pripada ovoj varijanti, djelomično fragmentiran, postoji mogućnost da su neki od tih nalaza mogli biti i dvostrana šila (I 1B2). No ta varijanta inače nije česta pojava, što je vjerojatno posljedica tehnički zahtjevnije izrade predmeta.[10] Manji dio nalaza podtipa I 1B izrađen je od nerascijepljenih rebara (T. 1: 4) na čijem je distalnom kraju šiljak oblikovan kosim zasijecanjem i struganjem.

Probojci (II 2) su alatke s jačim, masivnim šiljkom na distalnom dijelu, korištene za rad na otpornijim materijalima poput drva ili roga.[11] U zbirci su alatke ovog tipa izrađene od kostiju (T. 2: 1–6) te od parožaka jelenjih rogova (T. 6: 2) i od roga srndaća.[12] Slično kao i kod šila, za izradu su probojaca korištene duge kosti (uglavnom metapodijalne; T. 2: 4–6) ili samo njihovi fragmenti (T. 2: 2–3), čija veličina odgovara onoj goveda ili jelena. Probojci od plosnatih kostiju izrađeni su od nerascijepljenih rebara velikih preživača (T. 2: 1), kakvi su poznati i s ostalih nalazišta vinčanske kulture.[13]

Igle (I 3) su predmeti s vrlo oštrim i tankim, fino izrađenim šiljkom na distalnom kraju.[14] Primjerci iz zbirke poluprstenastog su presjeka, potpuno uglačane površine i širine do 5 mm (T. 1: 11). Ovakve su igle češće služile za tkanje i pletenje iako su mogle biti upotrebljavane i za šivanje tako da se vlakno provlači kroz već napravljenu perforaciju na materijalu.[15]

Nalazi svrdla iz zbirke (I 4) izrađeni su od metapodijalnih kostiju. Oba su primjerka vjerojatno prenamijenjena u svrdla nakon što je radni vrh istrošen, a prvobitno su služila kao šilo, odnosno probojac u slučaju većeg primjerka (T. 2: 7). Upotreba ovog tipa alatke ostavlja na distalnom kraju duboke linije i ureze koji su kružno raspoređeni oko šiljka, kakvi su ustanovljeni i na nalazima iz zbirke.[16]

Nalazi su oružja malobrojni, a uključuju udice, projektile i harpune. Udice (I 5) su oblikovane iz segmenta dijafize dugih kostiju. Središnji je dio valjkast s proširenjem na proksimalnom dijelu, a na zakrivljenom distalnom kraju oblikuje se šiljak (sl. 2). Udice su slabo zastupljene i na ostalim neolitičkim lokalitetima, što dovodi u pitanje njihovu namjenu. Moguće je da ovi predmeti nisu imali ulogu oružja, već su služili kao kuke za sušenje ribe.[17]

Nalazi projektila (I 6) izrađeni su od segmenata dijafize dugih kostiju većih sisavaca. Ovi predmeti valjkastog oblika, s jakim šiljkom na distalnom dijelu, služili su kao vrh koplja ili strijela.[18] S obzirom na to da su nalazi ove zbirke djelomično očuvani, nije moguće ustanoviti kojem podtipu pripadaju.

Awls made out of flat bones (Pl. 1: 2–4) were made from the ribs of small ruminants. The collection yielded a variant of one-sided awls (I 1B1). Given that some of the material ascribed to this variant is fragmented, it is possible that some of the finds could have been double-sided awls (I 1B2). However, that variant is not common, probably as the result of technically more complex production processes.[10] A smaller portion of the finds of subtype I 1B were made out of non-split ribs (Pl. 1: 4) with a point on the distal part that was shaped by slanted cutting and scraping.

Points (II 2) include tools with a stronger, massive point at the distal end, and were used to work on more resilient materials like wood or antler.[11] In the collection, this type of tool was made out of bones (Pl. 2: 1–6), but also out of red-deer tines (Pl. 6: 2) and roe-deer antlers.[12] As with the awls, the points were produced from long bones (mostly metapodial; Pl. 2: 4–6), or fragments of them (Pl. 2: 2–3), which match those of cattle or deer in size. Points made out of flat bones were made from the non-split ribs of large ruminants (Pl. 2: 1), the likes of which have also been discovered on other sites of the Vinča Culture.[13]

Needles (I 3) are finds with a very sharp, thin, finely-made point at the distal end.[14] The finds from the collection have a semi-circular cross-section and a completely polished surface, and measure up to 5 mm in width (Pl. 1: 11). This kind of needle was most often used for weaving and knitting, although it could have been used for sewing by driving the thread through a previously perforated hole in the material.[15]

Finds of borers (I 4) from the collection were made out of metapodial bones. Both of the finds were probably transformed into borers after their working edge was spent, and were originally used as awls, i.e. as a point in the case of the larger find (Pl. 2: 7). The usage of this tool type leaves deep lines and cuts at the distal end that are circularly distributed around the point, just like those established on the finds from this collection.[16]

Weapons are not very frequent, and include fishhooks, projectiles and harpoons. Fishhooks (I 5) were made out of segments of the diaphysis of long bones. Their central parts are cylindrical, are wider at the proximal end, and are shaped into a point at the curved distal end (Fig. 2). Fishhooks are poorly represented at other Neolithic sites as well, making their purpose questionable. It is possible that these objects did not play the role of weapons, but were used as hooks for drying fish.[17]

10 Vitezović 2007, 107.
11 Vitezović 2011a, 284.
12 Krištofić 2017, 35.
13 Perišić 1984, 35–36, T. 8: 64–66.
14 Vitezović 2011a, 288.
15 Vitezović 2007, 67; 2011a, 289.
16 Vitezović 2011a, 289.
17 Vitezović 2011a, 290.

10 Vitezović 2007, 107.
11 Vitezović 2011a, 284.
12 Krištofić 2017, 35.
13 Perišić 1984, 35–36, T. 8: 64–66.
14 Vitezović 2011a, 288.
15 Vitezović 2007, 67; 2011a, 289.
16 Vitezović 2011a, 289.
17 Vitezović 2011a, 290.

SLIKA 2. Nalazi koštanih udica iz zbirke (P-16808, P-16809, P-16810; snimio I. Krajcar).

FIGURE 2. Finds of bone fishhooks from the collection (P-16808, P-16809, P-16810; photo by I. Krajcar).

SLIKA 3. Jednoredni harpun (P-16812.2; snimio I. Krajcar).

FIGURE 3. Single-row harpoon (P-16812.2; photo by I. Krajcar).

U zbirci su prisutne dvije varijante harpuna (I 7) – konusni (T. 2: 8) i jednoredni harpuni (sl. 3), korišteni za ribolov ili lov na veće, kopnene životinje.[19] Kod obje su varijante formirani zupci ili jezičak, čija je svrha zadržati harpun u tijelu lovine.[20]

Predmeti za sječenje (II). Ova grupa obuhvaća dlijeta, klinove i sjekire izrađene od različitih dijelova jelenjih rogova i dugih kostiju. Oštar radni rub na distalnom kraju ovih predmeta služi za obradu otpornijih materijala (drvo, rog i kost), odnosno za rascjepljivanje ili sječenje sirovine.[21]

Dlijeta (II 1) i klinovi (II 2) izrađivani su od jelenjeg roga, kao i od dugih kostiju većih sisavaca. Kod dlijeta, izrađenih od jelenjeg roga, razlikuju se tri varijante: dlijeta izrađena od fragmenta korteksa roga, parožaka (T. 3: 4) i od stabla roga (T. 3: 1).[22] Dlijeta izrađena od fragmenta korteksa roga (T. 3: 3), i njima slični primjerci izrađeni od kosti (T. 3: 2), oblikom i dimenzijama podsjećaju na primjerke ovog tipa od glačanog kamena. Svi su nalazi klinova od roga izrađeni od parožaka (T. 3: 6).[23]

Ostali su primjerci dlijeta i klinova (T. 3: 5) izrađeni od uzdužno rascijepljenih metapodijalnih kostiju ili od segmenata dijafize. Gusto raspoređene tanke linije i uglačanost od upotrebe prekrivaju površinu blizu radnog ruba kod oba tipa predmeta, dok su kod dlijeta tragovi upotrebe prisutni i na rubovima presjeka.

Projectile points (I 6) were made out of segments of the diaphysis of long bones of larger mammals. These finds have a cylindrical shape with a strong point at the distal end, and were used as the heads of spears or arrows.[18] Given that the finds from this collection are partially preserved, it is not possible to ascribe them to a specific subtype.

The collection includes two variants of harpoons (I 7)– conical (Pl. 2: 8), and single-row harpoons (Fig. 3), used for fishing or hunting larger land animals.[19] Both variants have latches or points that were made in order to keep the harpoon in the body of the prey.[20]

Cutting tools (II). This group includes chisels, wedges and axes made out of various parts of red-deer antlers and long bones. The sharp working edge on the distal end of these finds was used to process more resilient materials (wood, antler and bone), that is, to split or cut raw materials.[21]

Chisels (II 1) and wedges (II 2) were made out of red-deer antlers, as well as out of the long bones of larger animals. Three variants were established for chisels made of red-deer antler: chisels made from antler cortex fragments, tines (Pl. 3: 4) and antler beam (Pl. 3: 1).[22] Chisels made from antler cortex fragments (Pl. 3: 3), and similar finds made of bone (Pl. 3: 2), resemble polished stone tools in shape and size. All finds of wedges were made from tines (Pl. 3: 6).[23]

18 Schibler *et al.* 2010, 250; Vitezović 2011a, 293.
19 Bačkalov 1979, 29; Krištofić 2017, 36.
20 Bačkalov 1979, 35.
21 Vitezović 2011a, 295–299.
22 Krištofić 2017, 37–38.
23 Krištofić 2017, 38.

18 Schibler *et al.* 2010, 250; Vitezović 2011a, 293.
19 Bačkalov 1979, 29; Krištofić 2017, 36.
20 Bačkalov 1979, 35.
21 Vitezović 2011a, 295–299.
22 Krištofić 2017, 37–38.
23 Krištofić 2017, 38.

Sjekire (II 3) su masivne alatke većih dimenzija. Primjerci iz zbirke izrađeni su isključivo od segmenata stabla jelenjeg roga (sl. 4). Bliže bazi alatke formirana je perforacija za nasad drške, promjera 2,5 – 3 cm, dok je na suprotnom kraju kosim zasijecanjem formirana radna površina. Ustanovljeno je više varijanti (T. 4: 1–2; sl. 4), ovisno o načinu izrade i segmentu stabla roga od kojeg su izrađene.[24]

The remaining finds of chisels and wedges (Pl. 3: 5) were made out of longitudinally split metapodial bones, or out of segments of diaphyses. The surface near the working edge, on both types of finds, displays densely-distributed thin lines and polishing from use, while chisels display additional traces of use on the edges of the cross-sections.

Axes (II 3) are massive larger tools. The finds from the collection were exclusively made out of segments of red-deer antler beams (Fig. 4). A perforation for hafting, measuring 2.5 – 3 cm in diameter, was placed closer to the base of the tool, while the opposite end includes a working surface shaped by slanted cuts. Several variants were defined (Pl. 4: 1–2; Fig. 4), depending on the mode of production and the segment of antler beam that was used.[24]

SLIKA 4. Varijanta sjekira (P-16859.6, P-16859.10, P-16859.13) koje su mogle služiti i kao motike (snimio I. Krajcar).

FIGURE 4. The variant of axes (P-16859.6, P-16859.10, P-16859.13) that could have been used as hoes (photo by I. Krajcar).

Predmeti za glačanje (III). Predmeti ove grupe zastupljeni su u vrlo malom broju (sl. 8), a služili su za obradu različitih organskih materijala glačanjem, poliranjem i struganjem.[25]

Samo jedan, djelomično očuvan nalaz spatule (III 1) izrađen je od rascijepljenog segmenta rebra (III 1B). Ostali primjerci većih su dimenzija, izrađeni od uzdužno rascijepljenog stabla roga (III 1C), a jedan je nalaz izrađen od koso odsječenog vrha paroška.[26]

U zbirci su ustanovljena četiri nalaza strugala (III 2) – jedno strugalo od cijelog rebra (III 2A) i tri primjerka koji pripadaju podtipu od zuba svinje (III 2B). Strugalo od rebra samo je djelomično očuvano (T. 4: 3). Radni je rub ovalan, unutrašnja površina reducirana te je spongiozno tkivo izloženo i većim dijelom istrošeno.

Polishing tools (III). The finds of this group are few in number (Fig. 8) and were used to process various organic materials by polishing, glazing and scraping.[25]

Only one polisher (III 1), partially preserved, was made out of a split rib segment (III 1B). The other finds are larger, made out of longitudinally split antler beams (III 1C), while one find was made out of a tine tip that was cut slantwise.[26]

A total of four scrapers (III 2) were recorded in the collection – one scraper made out of a whole rib (III 2A), and three finds that belong to the subtype made out of pig teeth (III 2B). The scraper made from a rib is only partially preserved (Pl. 4: 3) and has an oval working edge, and the inner surface is reduced to the point

24 Krištofić 2017, 39.
25 Vitezović 2007, 73–74.
26 Krištofić 2017, 40, sl. 6.
27 Maigrot 2003, 124–125.

24 Krištofić 2017, 39.
25 Vitezović 2007, 73–74.
26 Krištofić 2017, 40, Fig. 6.
27 Maigrot 2003, 124–125.

Dva su nalaza strugala od zuba svinje polumjesečastog oblika. Jedan je primjerak oblika izduženog trokuta, zaobljenih rubova, što je možda rezultat intenzivne i dugotrajne upotrebe (T. 4: 4). Kako su pokazali eksperimenti, guste, isprepletene linije od upotrebe, prisutne na radnoj površini i kod nalaza iz zbirke, rezultat su obrade otpornijih biljnih materijala.[27] Oba podtipa strugala karakteristična su za razdoblje starijeg i srednjeg neolitika i u vinčanskoj se kulturi javljaju vrlo rijetko,[28] što objašnjava njihovu slabu zastupljenost u zbirci.

Predmeti za udaranje (IV). Predmeti svrstani u ovu grupu korišteni su za obradu sirovine udarcima.[29] Svi su nalazi ove grupe izrađeni od jelenjih rogova.

where spongy tissue is exposed and mostly spent. Two of the scrapers made of pig teeth have a crescent shape. One is in the shape of an elongated triangle with rounded edges that might be the result of intensive and long-term use (Pl. 4: 4). As shown by experiments, the thick, intertwined lines from use, also present on the finds in this collection, are the result of processing more resilient plant materials.[27] Both subtypes of scraper are characteristic finds of the Early and Middle Neolithic, and appear in the Vinča Culture very rarely,[28] which explains their poor representation in this collection.

Striking tools (IV). The finds ascribed to this group were used to process raw material by striking.[29] All of the finds in this group were made out of red-deer antlers.

SLIKA 5. Udarači (P-16858.6, P-16858.22, P-16858.39) izrađeni od vrha parožaka jelenjih rogova (snimio I. Krajcar).

FIGURE 5. Strikers (P-16858.6, P-16858.22, P-16858.39) made from the tips of red-deer tines (photo by I. Krajcar).

Udarači (IV 1) su najbrojniji tip ove skupine predmeta (sl. 5), a korišteni su kod obrade otpornijih materijala, poput drva.[30] Svi su nalazi izrađeni od parožaka jelenjeg roga, na čijem se distalnom kraju nalazi manja kružna ili ovalna radna površina (T. 5: 1). Radni vrh alatke može biti i dodatno obrađen (T. 5: 2) kako bi spongiozno tkivo postalo izloženo te su takvi primjerci mogli služiti za mljevenje pigmenata ili pripremu hrane.[31]

Osim dva fragmentirana primjerka, na kojima je očuvana radna površina čekića (IV 3), veći broj predmeta pripada podtipu kombiniranih alatki – čekić-sjekira. Na jednome kraju alatke nalazi se ravna ili zaobljena radna površina čekića (T. 5: 3), koja može biti i prirodna baza roga kod jedne od varijanti (T. 6: 1; sl. 6). Na suprotnom kraju predmeta formirana je oštrica kakva se nalazi kod sjekira ili je oblikovan otvor za uglavljivanje alatke od nekog drugog materijala (manja kamena sjekira/dlijeto).

Strikers (IV 1) are the most numerous type of find in this group (Fig. 5), and were used to process more resilient material, such as wood.[30] All of the finds were made from red-deer tines, and have a smaller circular or oval working surface at the distal end (Pl. 5: 1). The working tip of the tool could also have been additionally processed (Pl. 5: 2) in order to expose the spongy tissue, and such finds could have been used to grind pigment or in food preparation.[31]

Apart from the two fragmented finds that have the preserved working surfaces of a hammer (IV 3), a large number of finds can be ascribed to the subtype of combined tools – hammer-axes. In such tools, one part has the straight or rounded working surface of a hammer (Pl. 5: 3), which could, in one variant, also be the natural base of the antler (Pl. 6: 1, Fig. 6). The opposite end of the find has a blade the like of which can be seen on axes, or a perforation for inserting a tool made from some other material (a smaller stone axe/chisel).

28 Vitezović 2011a, 303–304.
29 Vitezović 2011a, 308.
30 Vitezović 2007, 75.

28 Vitezović 2011a, 303–304.
29 Vitezović 2011a, 308.
30 Vitezović 2007, 75.

SLIKA 6. Čekić-sjekira (P-16815.2) izrađen od baze i stabla roga jelena (snimio I. Krajcar).

FIGURE 6. Hammer-axe (P-16815.2) made out of red-deer antler base and beam (photo by I. Krajcar).

Pijuci (IV 4) su mogli biti korišteni kao zemljoradnička ili rudarska alatka. Izrađuju se od većih, čeonih parožaka jelenjih rogova, koji imaju prirodnu zakrivljenost (T. 6: 3), a koja služi kako bi se dobio veći zamah prilikom udarca.[32]

Predmeti posebne namjene (V). U ovu su grupu uključeni pomoćni upotrebni predmeti bez aktivnoga radnog dijela.[33] Dva su nalaza određena kao drške (V 1), izrađene od jelenjeg roga.[34] Takvi su predmeti mogli biti korišteni samostalno ili dodatno uglavljeni u drvenu dršku kako bi apsorbirali šok od udarca.[35] Jedan neobrađeni, masivni komad jelenjeg roga, s tragovima upotrebe, određen je kao moguća radna površina (V 2). Ovakav je predmet služio kao neka vrsta podmetača ili nakovnja na kojem su se mogle obrađivati različite sirovine.[36]

Nalazi izrađeni od kosti obuhvaćaju recipijente (V 3) i koštane štapiće (V 5) te pomoćne alatke korištene za obradu tekstila. Jedan fragmentirani nalaz vjerojatno predstavlja dršku spatule-žlice, čije obje površine pokazuju izrazitu istrošenost od upotrebe. Takav je predmet mogao biti u intenzivnom kontaktu s biljnim materijalima ili kožom, a mogao je služiti i za nanošenje pigmenata.[37] Drugi nalaz predstavlja koštanu žlicu. Drška je pravokutnog oblika, ovalnog presjeka, a na prijelazu drške u recipijent nalaze se trokutasta izbočenja (sl. 7). Recipijent je konkavan s tragovima struganja na unutrašnjoj strani. Za ovaj tip predmeta navode se različite funkcije.[38] No zbog oblika recipijenta, koji

Picks (IV 4) could have been used as agricultural or mining tools. They were made out of larger frontal tines of red-deer antlers with a natural curvature (Pl. 6: 3), which were used in order to achieve a stronger swing while striking.[32]

Objects of special use (V). This group includes auxiliary utilitarian finds without an active working part.[33] Two finds were defined as hafts (V 1) made out of red-deer antler.[34] Such objects could have been used individually, or could have been additionally inserted into a wooden haft to absorb the shock of striking.[35] One massive, unprocessed piece of red-deer antler with traces of use was defined as a possible working surface (V 2). This kind of object was used as some kind of base or anvil that could have been used to process various raw materials.[36]

The finds made out of bone include recipients (V 3), bone rods (V 5) and auxiliary tools used to process textiles. One fragmented find can probably be defined as the haft of a polisher-spoon, and it has extensive traces of wear from use on both surfaces. Such an object could have been in direct contact with plant material or leather, and could also have been used for applying pigments.[37] The other find was defined as a bone spoon. The haft is rectangular with an oval cross-section, and the transition from the haft to the recipient has triangular protrusions (Fig. 7). The recipient is concave and displays traces of scraping on the inner surface. The function of this type of find is variously defined.[38]

31 Витезовић 2010, 49; Vitezović 2011a, 309.
32 Vitezović 2011a, 314.
33 Vitezović 2011a, 316.
34 Krištofić 2017, 44–45.
35 Schibler 2013, 348, 351, sl. 20: a.
36 Maigrot 2005, 124–125, sl. 9: 2; Vitezović 2007, 77.
37 Vitezović 2011a, 325.

31 Витезовић 2010, 49; Vitezović 2011a, 309.
32 Vitezović 2011a , 314.
33 Vitezović 2011a, 316.
34 Krištofić 2017, 44–45.
35 Schibler 2013, 348, 351, Fig. 20: a.
36 Maigrot 2005, 124–125, Fig. 9: 2; Vitezović 2007, 77.
37 Vitezović 2011a, 325.

SLIKA 7. Koštana žlica (P-16814; snimio I. Krajcar).

FIGURE 7. A bone spoon (P-16814; photo by I. Krajcar).

podsjeća na onaj prave žlice, nalaz iz zbirke mogao je služiti za pripremu ili konzumaciju hrane. Prema izboru sirovine i oblicima, dosad poznati primjerci ovoga tipa u vinčanskoj kulturi dosta se razlikuju.[39] Stoga, teško je tražiti preciznije analogije, što dodatno otežava i moguću interpretaciju funkcije predmeta.

Gusto raspoređene, fine linije, koje prekrivaju cijelu površinu koštanih štapića i drugih pomoćnih alatki, ukazuju na intenzivan kontakt s biljnim materijalima.[40] Oba tipa predmeta mogla su služiti kao neka vrsta vretena ili kalema u obradi tekstila.[41]

Ukrasni predmeti (VI). Ovoj grupi pripadaju različiti predmeti dekorativne funkcije.[42]

U zbirci su ustanovljena dva nalaza privjeska (VI 1) izrađena od kljove divlje svinje i fragmenta duge kosti. Privjesak od kosti (T. 7: 1) uglačan je do visokog sjaja s pravilnom kružnom perforacijom, izvedenom okomito na os privjeska. Ovaj je nalaz zanimljiv po tome što predstavlja imitaciju zuba divlje životinje koji dimenzijama i oblikom podsjeća na očnjak medvjeda. Drugi je primjerak izrađen od zuba divlje svinje, relativno pravokutnog oblika, s izvedenom perforacijom na jednom kraju predmeta (T. 7: 2).

Dva nalaza, izrađena od ljušture mekušaca, uvjetno su određeni kao perle (VI 2) iako su mogli biti i dio nekog drugoga ukrasnog predmeta, poput narukvice. Prema tragovima istrošenosti na ovim predmetima, može se zaključiti da su duže vrijeme bili u upotrebi pa su vjerojatno i više puta prepravljani, što dodatno otežava njihovu precizniju odredbu.

However, due to the shape of the recipient, which is similar to those of regular spoons, the find from this collection could have been used in food preparation or consumption. On the basis of the choice of raw material and their shapes, the finds of this type in the Vinča Culture differ greatly,[39] making it difficult to look for more precise analogies and provide possible interpretations of the function of these finds.

The densely-distributed fine lines covering the entire surfaces of bone rods and other auxiliary tools point to intensive contact with plant materials.[40] Both types of finds could have been used as some kind of spindle or spool in textile processing.[41]

Decorative objects (VI). This group includes various finds that have a decorative function.[42]

The collection contains two pendants (VI 1) made out of boar tusk and long bone fragment. The bone pendant (Pl. 7: 1) is highly polished, and has a circular perforation perpendicular to the axis of the pendant. This find is interesting, because it is an imitation of a wild animal tooth, and its dimensions and shape are similar to a bear's canine tooth. The second find was made out of a wild-boar tooth, is relatively rectangular in shape, and has a perforation at one end (Pl. 7: 2).

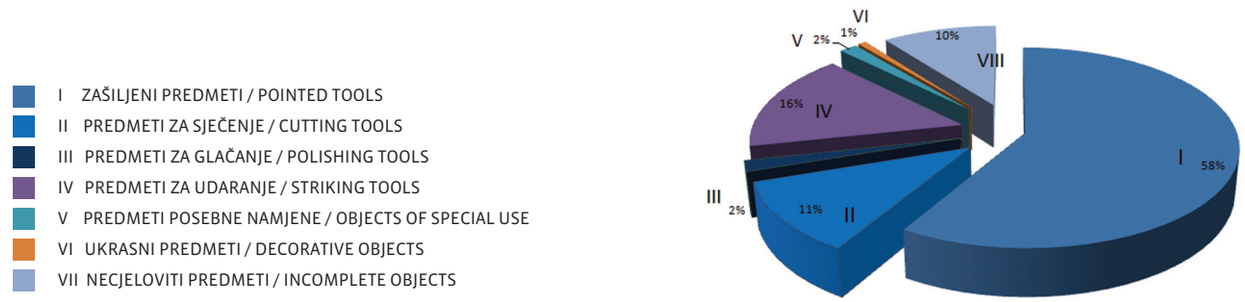
Two finds made out of mollusc shells were provisionally defined as beads (VI 2), although they could have been a part of some other decorative object, such as a bracelet. On the basis of the traces of use wear on these finds, it can be concluded that they were used for a long time and were, because of that, probably repaired several times, making a more precise determination even more difficult.

38 Vitezović 2007, 78; 2011a, 320–321.
39 Vitezović 2013d, 220–221.
40 Vitezović 2007, 79; 2011a, 327.
41 Vitezović 2011a, 327, 331.
42 Vitezović 2011a, 333.

38 Vitezović 2007, 78; 2011a, 320–321.
39 Vitezović 2013d, 220–221.
40 Vitezović 2007, 79; 2011a, 327.
41 Vitezović 2011a, 327, 331.
42 Vitezović 2011a, 333.

Necjeloviti predmeti (VIII). Grupa obuhvaća nalaze poluproizvoda i sirovine, odnosno otpadaka od proizvodnje. Također, ovdje su uvršteni i oštećeni predmeti – fragmentirane alatke. Riječ je o artefaktima, najčešće izrađenima od parožaka koje, zbog nedovoljne očuvanosti, nije bilo moguće svrstati u neku drugu grupu. Na nalazima sirovine i poluproizvoda (T. 7: 3–4), uglavnom onih od jelenjeg roga, očuvani su tragovi obrade sirovine pa je tako moguće rekonstruirati načine izrade artefakata.

Incomplete objects (VIII). This group includes half-products and raw materials, i.e. production waste. The group also includes damaged finds – fragmented tools. These artefacts were most often made out of tines, and could not be placed in the other groups due to an insufficient degree of preservation. The finds of raw materials and half-products (Pl. 7: 3–4), mostly those made out of red-deer antler, display traces of raw-material processing, making it possible to reconstruct the ways in which the artefacts were produced.



SLIKA 8. Prikaz zastupljenosti osnovnih grupa predmeta u analiziranoj zbirci (izradila V. Krištofić).

FIGURE 8. The percentages of basic groups of finds from the collection analysed (made by V. Krištofić).

ZAŠILJENI PREDMETI / POINTED TOOLS	5
Šila/Awls	204
Probojci/Points	95
Igle/Needles	15
Svrdla/Borers	2
Udice/Hooks	3
Projektili / Projectile points	3
Harpuni/Harpoons	4
UKUPNO/TOTAL	331
PREDMETI ZA SJEČENJE / CUTTING TOOLS	
Dlijeta/Chisels	22
Klinovi/Wedges	13
Sjekire/Axes	29
UKUPNO/TOTAL	64
PREDMETI ZA GLAČANJE / POLISHING TOOLS	
Spatule/Polishers	6
Strugala/Scrapers	4
UKUPNO/TOTAL	10
PREDMETI ZA UDARANJE / STRIKING TOOLS	
Udarači/Strikers	63
Čekići/Hammers	2
Čekići-sjekire/Hammer-axes	10
Pijuci/Picks	15
UKUPNO/TOTAL	90
PREDMETI POSEBNE NAMJENE / OBJECTS OF SPECIAL USE	2
Drške/Hafts	2
Radne površine/Working surfaces	1
Recipijenti/Recipients	2
Koštani štapići/Bone rods	2
UKUPNO/TOTAL	9
UKRASNI PREDMETI / DECORATIVE OBJECTS	
Privjesci/Pendants	2
Perle/Pearls	2
UKUPNO/TOTAL	4
NECJELOVITI PREDMETI / INCOMPLETE OBJECTS	
Fragmentirane alatke / Fragmented tools	13
Poluproizvodi / Half-products	11
Sirovina-otpaci od proizvodnje / Raw material-production waste	34
UKUPNO/TOTAL	58
SVEUKUPNO / GRAND TOTAL	566

TABLICA 1. Pregled zastupljenih tipova nalaza u zbirci, raspoređenih u osnovne grupe predmeta (izradila V. Krištofić).

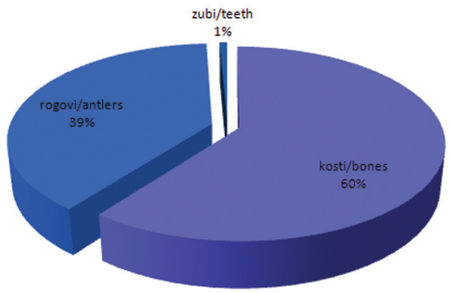
TABLE 1. An overview of the types established in the collection, distributed into the basic groups of finds (made by V. Krištofić).

Koštane sirovine – nabava i izbor

Za izradu artefakata na nalazištu Jakovo-Kormadin korištene su različite koštane sirovine koje uključuju kosti sisavaca, rogove jelena i srndaća, zube svinje i ljušture mekušaca (sl. 9).[43] Najveći je broj predmeta izrađen od dugih kostiju i rebara, dok se rog koristi u nešto manjoj mjeri iako je često upotrebljavana sirovina. Najmanje su zastupljeni zubi životinja, u ovome slučaju svinje, te ljušture mekušaca upotrebljavane za izradu nakita.

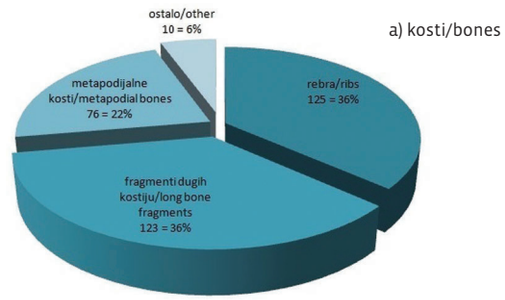
Osseous raw materials – selection and acquisition

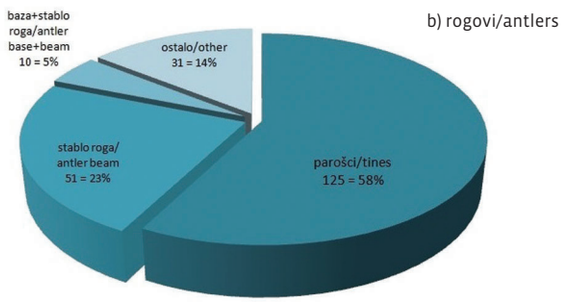
Various osseous raw materials were used for the production of the artefacts from Jakovo-Kormadin, including the bones of mammals, red- and roe-deer antlers, wild-boar teeth and mollusc shells (Fig. 9).[43] The largest portion of finds were made out of long bones and ribs, while antlers were used somewhat less, regardless of antler's being a frequently-used raw material. Animal teeth, in this case those of a pig, as well as mollusc shells used to make jewellery, are the least-represented raw materials.



SLIKA 9. Zastupljenost koštanih sirovina u analiziranoj zbirci (izradila V. Krištofić).

FIGURE 9. The percentages of osseous raw materials in the collection analysed (made by V. Krištofić).





SLIKA 10. Prikaz zastupljenosti elemenata dviju najčešće korištenih sirovina za izradu artefakata: a) kost, b) rog (izradila V. Krištofić).

FIGURE 10. The percentages of elements of the two most commonly-used raw materials: a) bone, b) antler (made by V. Krištofić).

Od kostiju su u najvećem broju zastupljene metapodijalne kosti i rebra (sl. 10: a), dok su se duge kosti, poput ulne, radijusa ili tibije, rijetko koristile. Iako manji dio možda potječe i od divljih životinja (pragovedo, jelen), moguće je pretpostaviti da su glavni izvor ove sirovine predstavljale domaće životinje uzgajane za prehranu, poput ovikaprida i domaćega goveda (tab. 2). Kost je, prema tomu, bila lako dostupna sirovina, pogotovo u slučaju kad je riječ o fragmentima dijafize dugih kostiju – kuhinjskim otpacima, dobivenim lomljenjem kako bi se došlo do koštane srži.[44] Rebra su, kao i metapodijalne kosti, vjerojatno bila pažljivo izdvajana u procesu komadanja ubijene životinje i na neki način skladištena za daljnju upotrebu.[45]

Bones include mostly metapodial bones and ribs (Fig. 10: a), while other bones like the ulna, the radius or the tibia were seldom used. Although a small portion might have come from wild animals (aurochs, red deer), it is possible to assume that the main source of this raw material was domestic animals grown for food, such as ovicaprids and cattle (Tab. 2). Bone was, therefore, an easily available raw material. This is especially true with respect to the fragments of long bones – kitchen waste, obtained by breaking in order to reach the bone marrow.[44] Ribs were, just like metapodial bones, probably carefully selected in the butchering process, and were somehow stored for future use.[45]

43 Samo su dva artefakta izrađena od školjaka: ljušture mekušaca stoga nisu prikazane u grafikonu s obzirom na to da su među koštanim sirovinama zastupljene s manje od 1 %.

44 Vitezović 2013c, 67.

45 Vitezović 2013c, 67; 2016, 66.

43 Only two artefacts are made out of shells; therefore, mollusc shells are not presented in the chart, due to the fact that they comprise less than 1 % of the entire assemblage.

44 Vitezović 2013c, 67.

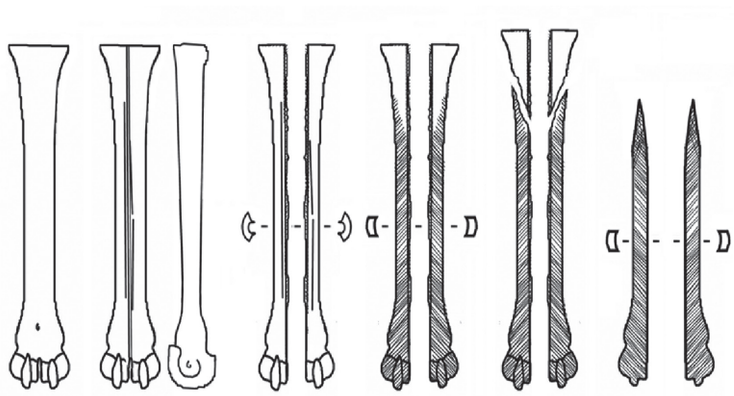
45 Vitezović 2013c, 67; 2016: 66.

Kao što je često slučaj na mnogim neolitičkim nalazištima, metapodijalne kosti i rebra ovikaprida najčešći su odabir za izradu zašiljenih predmeta, posebice šila. Upravo se na primjeru ovog tipa predmeta najbolje reflektira ujednačenost, ne samo u izboru sirovine već i u primjeni tehnika izrade i konačnoj formi predmeta.

Osim morfoloških odlika i adekvatnih dimenzija, razlog odabira ovih skeletnih elemenata njihove su tehnološke prednosti.[46] Metapodijalne kosti mogu se lako uzdužno rascijepiti na dva jednaka dijela, od kojih se daljnjom obradom mogu dobiti četiri alatke.[47] Šila od metapodijalnih kostiju vrlo su ujednačene forme, tanka i poluprstenastog presjeka (T. 1: 10–11), što je postignuto primjenom metode koja uključuje sječenje i potom abraziju (sl. 11), a koja je često korištena u vinčanskoj kulturi.[48] Slično tomu, od jednog segmenta rebra cijepanjem su dobivene dvije koštane pločice iz kojih su struganjem i glačanjem oblikovana šila.

As is often the case at numerous Neolithic sites, ovicaprid metapodial bones and ribs are the most common choice for the production of pointed tools, especially awls. It is precisely the example of this type that best reflects the uniformity of not only the raw-material selection, but also the application of production techniques and the final form of the object.

Apart from the morphological features and suitable dimensions, the reasons for selecting these skeletal elements lie in their technological advantages.[46] Metapodial bones can easily be split longitudinally into two equal parts that can then be processed into four tools.[47] Awls made out of metapodial bones display a uniform shape, are thin and have a semi-circular cross-section (Pl. 1: 10–11), all of which is achieved by applying a method that includes cutting and abrasion (Fig. 11), a method often used in the Vinča Culture.[48] Similarly, one rib segment was split into two bone plates that were scraped and polished into awls.



SLIKA 11. Metoda izrade šila od metapodijalnih kostiju primjenom sječenja i abrazije (Sidéra 2005, 86).

FIGURE 11. Method of producing awls from metapodial bones by cutting and abrasion (Sidéra 2005, 86).

Jedan od razloga izbora ove sirovine za izradu alatki svakako je i njezina dostupnost budući da potječe od životinja uzgajanih za prehranu. No analize faune pokazale su da je na vinčanskim nalazištima prevladavao uzgoj goveda.[49] Prema tomu, odabir metapodijalnih kostiju ovikaprida i rebara, koja možda potječu i od drugih životinja slične veličine, kulturološki je uvjetovan i predstavlja tradiciju u izboru skeletnih elemenata i životinjskih vrsta za izradu šila, čime je naglašena važnost aktivnosti za koje su bila korištena.[50]

One of the reasons for choosing this raw material is certainly its availability, as it comes from animals that were grown for food. However, faunal analyses have revealed that mostly cattle were bred on sites ascribed to the Vinča Culture.[49] Therefore, the selection of ovicaprid metapodial bones and ribs, which might also come from other animals of similar size, is culturally conditioned and represents a tradition in the choice of skeletal elements and species for awl production, highlighting the importance of the activity the tools were used for.[50]

46 Vitezović 2011a, 343–344.
47 Vitezović 2016, 65.
48 Sidéra 2005, 85–87; Vitezović 2016, 76.
49 Vitezović 2013c, 70.
50 Choyke 1998, 233.

46 Vitezović 2011a, 343–344.
47 Vitezović 2016, 65.
48 Sidéra 2005, 85–87; Vitezović 2016, 76.
49 Vitezović 2013c, 70.
50 Choyke 1998, 233.

Rog je, u odnosu na kost, zastupljen u nešto manjem postotku, ali njegov udio u sveukupnome materijalu (gotovo 40 %) ukazuje na značajnu upotrebu ove sirovine za izradu artefakata (sl. 9). Rog jelena, koji je češće korištena sirovina od roga srndaća,[51] mogao je biti pribavljen lovom i sakupljanjem odbačenih rogova. Među nalazima iz zbirke, na kojima je očuvana baza roga, rijetki su primjerci koji potječu od ulovljene životinje; alatke su u najvećem broju izrađene od odbačenih jelenjih rogova. Premda za nabavu ove sirovine lov nije bio nužan, sakupljanje odbačenih rogova također je morala biti dobro planirana aktivnost koja uključuje poznavanje vremena i mjesta na kojem su mogli biti sakupljeni.[52]

Određeni dijelovi roga – baza, stablo roga i parošci, odabirani su za izradu artefakata na takav način da njihov prirodni oblik najbolje odgovara funkciji predmeta, najčešće korištenih za udaranje i sječenje (sl. 10: b). Takav odabir pokazuje dobro poznavanje mehaničkih svojstava roga, poput fleksibilnosti zbog koje je manje nego kost podložan lomljenju, što ga čini pogodnim za poslove koji zahtijevaju upotrebu sile.[53] Zbog visokog udjela organskih tvari, rog bolje apsorbira šokove od udarca[54] pa je korišten u izradi drški i masivnijih alatki, čija je upotreba vezana uz obavljanje teških poslova i obradu otpornijih materijala (tab. 2).

Zubi divlje svinje, osim za izradu alatki (strugala), korišteni su i kao nakit. Ova je sirovina pribavljana izvan naselja, lovom ili nekom vrstom razmjene s manjih udaljenosti, moguće i kao gotov proizvod.[55]

Za izradu ukrasnih predmeta na lokalitetu Jakovo-Kormadin upotrebljavane su sve sirovine osim roga iako su takvi primjerci poznati s drugih vinčanskih nalazišta.[56] Nalazi od ljuštura mekušaca iz zbirke, uvjetno određeni kao perle, mogli su biti i dio nekog drugoga ukrasnog predmeta, poput narukvice. Na vinčanskim nalazištima za izradu narukvica korištene su školjke *Glycymeris* i *Spondylus*, no s obzirom na male dimenzije nalaza i fragmentiranost, nije moguće zaključiti o kojoj je vrsti riječ.[57] Sirovina je mogla biti pribavljena lokalno (fosilne školjke) ili razmjenom iz udaljenijih područja, a u tom je slučaju vrlo vjerojatno da su takvi predmeti nabavljeni kao gotovi proizvodi.[58]

Upotreba kosti za izradu nakita nije neuobičajena, no nalaz privjeska iz ove zbirke oblikom i dimenzijama imitira očnjak medvjeda, možda izrađen u nedostatku originalne sirovine. Površina svih ukrasnih predmeta iz zbirke naglašeno je uglačana, čime je istaknuta njihova zajednička karakteristika – bijela boja. Bijela je boja vjerojatno bila estetski privlačna iako nije isključeno mogu-

Antlers, in relation to bones, are somewhat less well represented, but their share in the total material (almost 40 %) points to significant use of this raw material in tool production (Fig. 9). Red-deer antler, a raw material used more frequently than roe-deer antler,[51] could have been acquired by hunting or by gathering shed antlers. The finds from this collection that have a preserved antler base show that antlers obtained from hunted animals are rare; tools were made mostly out of shed red-deer antlers. Although hunting was not necessary for the acquisition of this raw material, the gathering of shed antlers also had to be a well-planned activity that required knowledge of the time and place where they could be found.[52]

Certain parts of antlers – base, beam and tines – were selected for the production of tools in such a way that their natural shape best matched the function of the objects that were most commonly used for striking and cutting (Fig. 10: b). This selection reveals a great understanding of the mechanical properties of antler, such as flexibility, which makes it less susceptible to breaking than bone, which makes it suitable for work that requires the use of force.[53] Due to the high percentage of organic matter, antler can easily absorb striking shock,[54] so it was used to make hafts and massive tools the use of which is connected to performing heavy-duty tasks and processing more resilient materials (Tab. 2).

Wild-boar teeth were, apart from tool production (scrapers), also used as jewellery. This raw material was obtained outside the settlement, through hunting or some other kind of short-distance trade, possibly even as a finished product.[55]

At Jakovo-Kormadin, decorative objects were produced from all kinds of raw materials apart from antlers, although such finds were recovered at other sites of the Vinča Culture.[56] Finds of mollusc shells from the collection, provisionally defined as beads, could also have been parts of other decorative objects, such as bracelets. On sites of the Vinča Culture, bracelets were made out of *Glycymeris* and *Spondylus* shells. However, due to the small size and fragmentation, it is impossible to determine the species.[57] The raw material could have been obtained locally (fossilized shells), or through trade with more distant areas, in which case such finds were probably obtained as finished products.[58]

The use of bones for jewellery production is not unusual, but the pendant from this collection imitates a bear's canine tooth in shape and size, and was possibly made due to the lack of the

51 Krištofić 2017, 48–49.
52 Maigrot 2005, 122.
53 Vitezović 2016, 47–48.
54 Vitezović 2016, 48.
55 Vitezović 2011a, 348.
56 Russell 1990, 534; Vitezović 2013b, 12.
57 Dimitrijević, Tripković 2006, 238.
58 Dimitrijević, Tripković 2006, 239; Vitezović 2011a, 273.

51 Krištofić 2017, 48–49.
52 Maigrot 2005, 122.
53 Vitezović 2016, 47–48.
54 Vitezović 2016, 48.
55 Vitezović 2011a, 348.
56 Russell 1990, 534; Vitezović 2013b, 12.
57 Dimitrijević, Tripković 2006, 238.
58 Dimitrijević, Tripković 2006, 239; Vitezović 2011a, 273.

će simboličko značenje koje je pridavano ovoj boji, ali i porijeklu sirovine, kada je riječ o zubima lovljenih životinja i ljušturama mekušaca.[59]

original raw material. The surface of all decorative objects from this collection is significantly polished, thereby highlighting their common characteristic – the colour white. White was probably aesthetically attractive, although the option that the colour and the raw material had symbolic meaning cannot be excluded, especially with regard to mollusc shells and the teeth of animals that had to be hunted.[59]

KOŠTANE SIROVINE / OSSEOUS RAW MATERIALS	
KOST/BONE	ROG/ANTLER
duge kosti, rebra, fragmenti dugih kostiju / long bones, ribs, long bone fragments	rog: baza, stablo roga, parošci, fragmenti korteksa roga / antler: base, beam, tines, fragments of antler cortex
govedo, ovikapridi / cattle, ovicaprids	jelen, srndać / red deer, roe deer
domesticirane životinje korištene za prehranu / domesticated animals used for food	odbačeni rogovi – sakupljanje, lov / shed antlers – collecting, hunting
zašiljeni predmeti: šila, probojci, igle / pointed tools: awls, points, needles	alatke za sječenje i udaranje: sjekire, čekići, dlijeta / cutting and striking tools: axes, hammers, chisels
obrada biljnih materijala i kože, priprema hrane / plant fibres and hide processing, food preparation	obrada i eksploatacija drva, obrada roga, poljoprivreda / wood processing and exploitation, antler processing, agriculture
aktivnosti koje se odvijaju unutar naselja / activities taking place within the settlement	organizirane aktivnosti koje se odvijaju podalje od naselja ili u neposrednoj blizini / activities taking place away from the settlement or in its close vicinity

TABLICA 2. Usporedba dviju najčešće zastupljenih koštanih sirovina na nalazištu Jakovo-Kormadin (izradila V. Krištofić).

TABLE 2. Comparison of the two most commonly-used osseous raw materials at the site of Jakovo-Kormadin (made by V. Krištofić).

Tehnike izrade

Izrada artefakata počinje dijeljenjem sirovine na manje segmente, primjenjujući jednu ili kombinaciju nekoliko tehnika koje uključuju cijepanje, sječenje i lomljenje. Kao poluproizvodi za izradu alatki, mogli su poslužiti i otpaci od proizvodnje ili popravka drugih alatki,[60] kao i fragmenti koji predstavljaju kuhinjski otpad. Segmenti sirovine dalje se oblikuju u željeni proizvod formiranjem radne površine te prema potrebi dodavanjem određenih funkcionalnih odlika u završnoj obradi.[61]

Production techniques

Artefact production starts with dividing the raw material into smaller pieces by applying one or a combination of several techniques including chopping, cutting and breaking. Half-products used in tool production could have included waste from production or repair of other tools,[60] as well as fragments that were actually kitchen waste. The segments of raw material were further shaped into the desired product by forming the working surface and, when needed, adding certain functional traits during the final processing.[61]

59 Vitezović 2011a, 334; 2012, 223.

60 Vitezović 2011a, 263; Krištofić 2017, 34.

59 Vitezović 2011a, 334; 2012, 223.

60 Vitezović 2011a, 263; Krištofić 2017, 34.

Kod obrade roga prvo se odstranjuju parošci, pri čemu su mogle biti korištene različite tehnike.[62] Na parošcima je najčešće formiran žlijeb ljuštenjem tanjih traka materijala, što se može smatrati tehnikom karakterističnom za vinčansku kulturu,[63] nakon čega se mogu odlomiti savijanjem ili odcijepiti sjekirom. Prirodni je oblik parožaka pogodan za oblikovanje raznovrsnih alatki formiranjem radnog vrha ljuštenjem traka materijala ili cijepanjem.[64] Unutrašnjost parožaka, koji su služili kao drške i konusni harpuni, morala je biti izdubljena (sl. 12), a što se postiže pomoću kremene alatke uz primjenu nekoga abrazivnog sredstva.[65]

Veći komadi roga zahtijevaju kombinaciju nekoliko tehnika kako bi se razdijelili na manje segmente, pogodne za daljnju obradu.[66] Kako bi se došlo do spongioznog tkiva, kompaktni je sloj roga stanjen ljuštenjem manjih komada korteksa (T. 7: 4) i višestrukim zasijecanjem sjekirom. Rog se zatim na tome mjestu prelomi, odnosno odcjepljuje sjekirom (*cut-and-break-technique*).[67] Radna je površina alatki većih dimenzija oblikovana kosim zasijecanjem većeg komada stabla jelenjeg roga ili njegovih segmenata dobivenih uzdužnim cijepanjem.[68] Predmeti izrađeni od fragmenata

In antler processing, tine is the first thing removed by using various techniques.[62] Most commonly it is removed from the beam by forming a groove by peeling off thin strips of material, a technique that can be defined as characteristic of the Vinča Culture,[63] making it possible to break by flexion or cutting off with an axe. The natural shape of tine is suitable for shaping various tools by forming a working tip by peeling off strips of material, or by splitting.[64] The inside of tines used as hafts or conical harpoons must have been hollowed out (Fig. 12) by using a chipped stone tool and some abrasive compound.[65]

In order to split larger pieces of antler into smaller fragments suitable for further processing, a combination of several techniques is required.[66] In order to reach the spongy tissue, the compact layer of the antler had to be thinned by peeling off smaller pieces of the cortex (Pl. 7: 4) and repeatedly cutting with an axe. The antler could then be split, i.e. cut off with an axe (*cut-and-break technique*).[67] The working surface of larger tools was formed by slanted cuts made on a larger piece of red-deer antler beam, or segments of it obtained by longitudinal splitting.[68]

SLIKA 12. Detalj drške od paroška jelenjeg roga (P-16858.46), čija je unutrašnjost izdubljena kremenom alatkom uz pomoć abrazivnog sredstva (snimio I. Krajcar).

FIGURE 12. Detail of a haft made out of red-deer tine (P-16858.46) showing an inner surface that was hollowed out with the help of a chipped stone tool and an abrasive compound (photo by I. Krajcar).

SLIKA 13. Detalj udarača (P-16857.63) s tragovima isijecanja korteksa roga kremenom alatkom i dubljenja (snimio I. Krajcar).

FIGURE 13. Detail of a striker (P-16857.63) with traces of cutting out the antler cortex using a chipped tool and gouging (photo by I. Krajcar).

61 Vitezović 2016, 63.
62 Billamboz 1977, 100–101; Maigrot 2005, 122; Schibler 2013, 346.
63 Витезовић 2010, 54.
64 Vitezović 2016, 73.
65 Vitezović 2016, 71.
66 Vitezović 2011a, 269.
67 Vitezović 2016, 67.
68 Vitezović 2011a, 269.

61 Vitezović 2016, 63.
62 Billamboz 1977, 100–101; Maigrot 2005, 122; Schibler 2013, 346.
63 Витезовић 2010, 54.
64 Vitezović 2016, 73.
65 Vitezović 2016, 71.
66 Vitezović 2011a, 269.
67 Vitezović 2016, 67.
68 Vitezović 2011a, 269.

SLIKA 14. Tehnika uzdužnog žlijebljenja: a) produbljivanje žlijeba kremenom alatkom, b) rascjepljivanje kosti indirektnim udarcem (Vitezović 2016, 65; prema Camps-Fabrer, 1990).

FIGURE 14. The technique of longitudinal grooving: a) deepening the groove with a chipped stone tool, b) splitting the bone by indirect impact (Vitezović 2016, 65; after Camps-Fabrer, 1990).

korteksa roga dobiveni su usijecanjem dvaju paralelnih žljebova, nakon čega se klinom (*groove-and-splinter technique*) izdvoje pločice materijala iz kojih se oblikuju dlijeta manjih dimenzija i jedna od varijanti harpuna.[69]

Dodatna obrada ovih predmeta uključuje odbijanje manjih komada materijala te struganje i glačanje kako bi se odstranile prirodne neravnine roga ili kako bi se uklonila manja oštećenja.[70] Perforacije se izvode zasijecanjem korteksa roga kremenom alatkom da bi se došlo do spongioznog tkiva koje se potom izdubljuje (sl. 13).[71] Relativno su pravilnog, kružnog oblika i najčešće se formiraju na sjekirama i predmetima za udaranje.

Za izradu alatki od dugih kostiju, posebice metapodijalnih, korištena je tehnika uzdužnog žlijebljenja (sl. 14). Prirodni uzdužni žlijeb (*sulcus*) postupno se produbljuje kremenom alatkom dok se kost potpuno ne presječe ili rascijepi indirektnim udarcem.[72] Poluproizvodi za izradu alatki od nerascijepljenih dugih kostiju, poput nekih probojaca iz zbirke, mogli su biti dobiveni lomljenjem, odnosno primjenom direktnog udarca na kost.[73] Spomenuta *groove-and-splinter* tehnika može se primijeniti i na veće duge kosti kako bi se dobili segmenti za izradu projektila ili koštanih štapića.[74]

Za formiranje radnog vrha kod različitih tipova zašiljenih predmeta od dugih kostiju koristila se tehnika struganja i brušenja koja se primjenjuje i kod popravka alatki, dok se baza predmeta oblikuje kombinacijom sječenja i glačanja.[75]

The finds made out of fragments of antler cortex were obtained by cutting in two parallel grooves, followed by using a chisel to splinter sheets of material that were used to shape smaller chisels and one variant of harpoons (*groove-and-splinter technique*).[69]

The additional processing of these finds included the removal of smaller pieces of material and polishing done to remove the natural unevenness, or lesser damage, on the antler.[70] Perforations were made by cutting the antler cortex with a chipped stone tool to expose the spongy tissue, which could then be hollowed out (Fig. 13).[71] They are relatively regular – circular – and were made mostly on axes and striking tools.

Tools made out of long bones, especially metapodials, were produced by applying the technique of longitudinal grooving (Fig. 14). The natural longitudinal groove (*sulcus*) was gradually deepened with a chipped stone tool until the bone would be completely cut or split by indirect impact.[72] The half-products for the production of tools out of non-split long bones, such as some points from this collection, could have been obtained by breaking, i.e. by directly striking the bone.[73]

The aforementioned *groove-and-splinter* technique could also be applied to larger long bones in order to obtain segments for the production of projectiles or bone rods.[74]

The formation of the working point on various types of pointed objects made out of long bones required scraping and abrasion, which were also applied in tool repair, and the base of the objects was shaped by a combination of cutting and polishing.[75]

69 Billamboz 1977, 102; Vitezović 2016, 77.
70 Billamboz 1977, 102–103; Beldiman 2005, 38–39.
71 Beldiman 2005, 40; Витезовић 2010, 49, 55, sl. 12: a–b.
72 Vitezović 2016, 65.
73 Vitezović 2016, 64, sl. VII/1a.
74 Vitezović 2011a, 263.

69 Billamboz 1977, 102; Vitezović 2016, 77.
70 Billamboz 1977, 102–103; Beldiman 2005, 38–39.
71 Beldiman 2005, 40; Витезовић 2010, 49, 55, Fig. 12: a–b.
72 Vitezović 2016, 65.
73 Vitezović 2016, 64, Fig. VII/1a.
74 Vitezović 2011a, 263.

Rebra su obrađivana lomljenjem direktnim ili indirektnim udarcem i cijepanjem, nakon čega se takvi komadi mogu longitudinalno rascijepiti kako bi se dobile koštane pločice.[76] Pločice ili nerascijepljeni segmenti rebara oblikuju se struganjem i glačanjem u alatke – zašiljene predmete (šila i probojce) te strugala i spatule.[77]

Zubi (divlje) svinje obrađivani su primjenom direktnog ili indirektnog udarca. Tako su dobiveni manji komadi sirovine ili pravilne, izdužene pločice koje se oblikuju struganjem.[78] Perforacija pravilnog oblika, poput one na nalazu privjeska iz zbirke (T. 7: 2), izvodi se kružnim pokretom pomoću kremene alatke.[79]

Kao što je slučaj i na drugim neolitičkim nalazištima, proizvodi od ljuštura mekušaca iz zbirke vrlo su fragmentirani, što onemogućava rekonstrukciju načina izrade ovakvih predmeta.[80] Poluproizvodi od ove sirovine vjerojatno su dobiveni primjenom direktnog udarca ili lomljenjem te su potom glačani i perforirani.[81]

Upotreba koštanih artefakata[82]

Osim nalaza koji predstavljaju nakit, predmeti od kostiju, rogova i zuba služili su za obradu različitih organskih materijala, odnosno za izradu predmeta od takvih sirovina.[83] Pojedini tipovi predmeta, kao što su spatule i strugala, korišteni su i u obradi gline, dok su svrdla, uz pomoć abrazivnog sredstva, služila za bušenje kamena.[84]

Naglašena uglačanost većeg dijela predmeta i gusto raspoređene linije na distalnom kraju nalaza, poput šila, probojaca i igli, rezultat su upotrebe ovih predmeta u obradi kože i krzna (tab. 2).[85] Probojci i veća šila od rebara i dugih kostiju (T. 1: 1–2, 4; T. 2: 1–6) služila su za rasijecanje i probijanje materijala, a igle, manja šila i svrdla (T. 1: 3, 6, 8, 11; T. 2: 7) korištena su u završnim fazama izrade.[86]

Ribs were processed by breaking with a direct or indirect strike and splitting, making it possible to longitudinally split pieces obtained in this way in order to produce bone plates.[76] Plates and non-split rib fragments were formed into tools by scraping and polishing: pointed objects (awls and points), scrapers, and polishers.[77]

(Wild-) boar teeth were processed by applying a direct or indirect strike. Smaller pieces of raw material, or elongated plates, obtained in this way could be further processed by scraping.[78] Perforations with a regular shape, like the one on the find from this collection (Pl. 7: 2), were made by applying a circular motion using a chipped stone tool.[79]

As is the case at other Neolithic sites, products made out of mollusc shells from this collection are very fragmented, disabling the reconstruction of the production process.[80] The half-products made out of this kind of raw material were obtained by applying a direct strike or breaking, followed by polishing and perforating.[81]

Bone-tool usage[82]

Apart from finds of jewellery, finds made out of bone, antler and teeth were used to process various organic materials, that is, to produce items from such raw materials.[83] Specific types of finds, such as polishers and scrapers, were also used to process clay, while borers, with the help of abrasive substances, were used to perforate stone.[84]

The highly accented polish on a large portion of the finds and the densely distributed lines on the distal parts of finds such as awls, points and needles, are the result of using these tools in leather and hide processing (Tab. 2).[85] Points and larger awls made out of long bones (Pl. 1: 1–2, 4; Pl. 2: 1–6) were used to split and pierce material, and needles, smaller awls and borers (Pl. 1: 3, 6, 8, 11; Pl. 2: 7) were used in the final stages of processing.[86]

75 Vitezović 2016, 72–73.
76 Vitezović 2016, 66.
77 Vitezović 2011a, 266.
78 Maigrot 2003, 77–78; Vitezović 2016, 68–69.
79 Vitezović 2011a, 272.
80 Vitezović 2011a, 273.
81 Vitezović 2016, 69–70.
82 Ovdje predstavljeni tragovi upotrebe koštanih artefakata temelje se na makroskopskom pregledu materijala iz zbirke i podacima iz literature korištene u ovome radu. U vrijeme provedbe analize nisu postojali uvjeti za mikroskopsku analizu tragova upotrebe, a potrebno je uzeti u obzir i da je ovdje riječ o materijalu koji ne potječe s recentnih iskopavanja.
83 Vitezović 2007, 56–57.
84 Vitezović 2007, 68, 73.
85 Vitezović 2011a, 367.
86 Vitezović 2011a, 367.

75 Vitezović 2016, 72–73.
76 Vitezović 2016, 66.
77 Vitezović 2011a, 266.
78 Maigrot 2003, 77–78; Vitezović 2016, 68–69.
79 Vitezović 2011a, 272.
80 Vitezović 2011a, 273.
81 Vitezović 2016, 69–70.
82 Traces of use presented here result from the macroscopic examination of the material from this collection and the literature used in this paper. At the time the analysis was conducted, it was not possible to carry out microscopic analysis of the traces of use. It should also be noted that the material presented in this paper does not come from the recent excavations.
83 Vitezović 2007, 56–57.
84 Vitezović 2007, 68, 73.
85 Vitezović 2011a, 367.
86 Vitezović 2011a, 367.

U obradi organskih materijala korišteni su i predmeti za glačanje. Gotovo sve spatule iz zbirke izrađene su od jelenjeg roga na čijoj se radnoj površini i rubovima presjeka nalaze tragovi upotrebe poput uglačanosti i okomitih linija, koji ukazuju na obradu kože.[87] Podtip strugala od zuba svinje mogao je biti korišten u različite svrhe – za obradu otpornijih biljnih materijala i gline, pa čak i u pripremi hrane.[88]

Alatke od roga, koje podrazumijevaju predmete grupa za sječenje i udaranje, namijenjene su za obavljanje aktivnosti koje su se odvijale podalje od naselja ili u njegovoj neposrednoj blizini, a čija izvedba zahtijeva određeni stupanj planiranja i organizacije (tab. 2).[89] Njihova je upotreba također vezana uz obradu organskih materijala, ali onih otpornijih, najčešće drva.

Masivne alatke, kao što su sjekire i čekići-sjekire (T. 4: 1–2; T. 5: 3; T. 6: 1), služili su u nabavi ove sirovine (sječa stabala), ali i za obradu – cijepanje većih komada drva za ogrjev ili za izradu građevinskih elemenata za izgradnju objekata.[90] U daljoj obradi sirovine korištena su dlijeta, ona većih dimenzija (T. 3: 1) u oblikovanju građevinskih elemenata, i manja dlijeta i klinovi (T. 3: 2, 3, 5) za izradu različitih predmeta od drva.[91]

Jedna od varijanti sjekira (sl. 4) vjerojatno je korištena i kao poljoprivredna alatka – za kopanje, vađenje korijenja i plodova, čemu su mogli služiti i pijuci.[92] Pijuci su, osim toga, mogli biti korišteni i kao rudarske alatke.[93] Samo je dio nalaza izrađen od roga korišten u domaćinstvu, poput udarača s dodatno obrađenim distalnim krajem, primjerice, za pripremu hrane ili mljevenje pigmenata.[94]

Predmeti korišteni kao nakit posebna su kategorija artefakata s obzirom na to da je njihova jedina funkcija bila dekorativna. Ukrasni predmeti, poput privjesaka i perli iz zbirke, vjerojatno su služili i kao sredstvo izražavanja društvenog identiteta i statusa.[95] Budući da kod ove grupe predmeta forma nije nužno povezana s funkcijom, nije moguće točno reći na koji su način oni bili korišteni – kao osobni nakit, ukras pršiven na odjeći ili čak kao dekoracija ambijenta.[96] U svakom slučaju, zbog truda uloženog u njihovu izradu i nabavljanje sirovine te dugotrajne upotrebe, ovakvi su nalazi u vinčanskoj kulturi predstavljali cijenjene i luksuzne predmete.[97]

Polishing tools were also used in the processing of organic materials. Almost all polishers from this collection were made out of red-deer antlers, and display traces of use, such as polishing and vertical lines, on the working surface and the edges of the cross-section, indicating that the tools were used to process leather.[87] The subtype of scrapers made out of pig teeth could have been used for various tasks – processing more resilient plant materials or clay, and even in food preparation.[88]

Antler tools, including the group of cutting and striking tools, were used in activities that took place away from the settlement or somewhere in its vicinity, and which required a certain degree of planning and organization (Tab. 2).[89] Their use is also connected with the processing of more resilient organic material, most often wood.

Massive tools like axes and hammer-axes (Pl. 4: 1–2; Pl. 5: 3; Pl. 6: 1) were used in the acquisition of this raw material (woodcutting), and also for the processing of it: chopping larger pieces for firewood, or to produce construction elements for building certain structures.[90] The raw material was additionally processed with larger chisels (Pl. 3: 1) to shape the construction elements, as well as with smaller chisels and wedges (Pl. 3: 2–3, 5) to produce various wooden objects.[91]

One of the variants of axes (Fig. 4) was probably also used as an agricultural tool – for digging, extracting fruits and roots, activities that could also have been done with picks.[92] Picks could also have been used as mining tools.[93] Only a part of antler tools was used in the household, such as strikers with additional processing at the distal end that could have been used in, e.g., food preparation or pigment grinding.[94]

Objects used as jewellery make up a separate category of artefacts, as their only function was decorative. Decorative finds, like the pendants and beads from this collection, were probably also used to express social identity and status.[95] Since, in this group of finds, the form is not necessarily linked to the function, it is impossible to definitively determine how they were used – as personal jewellery, decorations on clothes, or decorations of certain spaces.[96] In any case, due to the effort it took to make them and acquire the raw materials, as well as their long-term use, such finds were valued and luxurious goods in the Vinča Culture.[97]

87 van Gijn 2005, 56.
88 Maigrot 2003, 124; Vitezović 2007, 74; Витезовић 2010, 48.
89 Maigrot 2005, 122–123, 125.
90 Maigrot 2005, 122; Vitezović 2011a, 369–370.
91 Vitezović 2011a, 269, 369.
92 Bačkalov 1979, 36; Vitezović 2007, 69; 2011a, 299.
93 Vitezović 2011a, 314–315.
94 Витезовић 2010, 49; Vitezović 2011a, 368.
95 Vitezović 2012, 215.
96 Vitezović 2011a, 333.
97 Vitezović 2013c, 71.

87 van Gijn 2005, 56.
88 Maigrot 2003, 124; Vitezović 2007, 74; Витезовић 2010, 48.
89 Maigrot 2005, 122–123, 125.
90 Maigrot 2005, 122; Vitezović 2011a, 369–370.
91 Vitezović 2011a, 269, 369.
92 Bačkalov 1979, 36; Vitezović 2007, 69; 2011a, 299.
93 Vitezović 2011a, 314–315.
94 Витезовић 2010, 49; Vitezović 2011a, 368.
95 Vitezović 2012, 215.
96 Vitezović 2011a, 333.
97 Vitezović 2013c, 71.

Zaključak

Koštana industrija na nalazištu Jakovo-Kormadin vrlo je standardizirana u smislu tehnika izrade i konačnih forma predmeta. Ujednačenost u izboru vrsta i skeletnih elemenata nije rezultat jednostavne dostupnosti sirovine ili slučajnog odabira, već ukazuje na kulturno uvjetovan izbor. Izrada koštanih artefakata na ovome nalazištu od početka je pažljivo planiran proces, tj. od trenutka pribavljanja sirovine pa sve do izrade finalnog proizvoda.

Kosti domaćih životinja dominantna su sirovina za izradu alatki, pogotovo zašiljenih predmeta, među kojima prevladavaju šila, najčešće izrađena od rebara i metapodijalnih kostiju ovikaprida. Rog jelena također je često korištena sirovina na nalazištu, uglavnom pribavljena sakupljanjem odbačenih rogova, a od koje su izrađivani predmeti za udaranje i sječenje. Skeletni elementi odabirani su na takav način da njihova mehanička svojstva u kombinaciji s formom predmeta najbolje odgovaraju zadatku kojem su namijenjeni.

Nalazi roga srndaća malobrojni su i jedini u zbirci predstavljaju oportunističke proizvode *ad hoc* izrade. Suprotno tomu, alatke od kostiju i rogova predstavljaju proizvodnu tradiciju (koncept proizvodnog kontinuuma),[98] za čiju se izradu biraju uvijek isti skeletni elementi, ili vrste, te se na taj način odražava i ekonomska važnost djelatnosti za koju su bile upotrebljavane.[99]

Vezano uz to, njihova je upotreba pokazala kako su obrada kože i krzna te biljnih materijala bile značajne djelatnosti na nalazištu, kao i obrada drva, pa i njegova eksploatacija. Uzimajući u obzir prisutnost radioničkog mjesta na lokalitetu,[100] zasad je moguće barem pretpostaviti kako je nalazište moglo biti lokalni proizvodni centar vinčanske kulture u slučaju izrade artefakata od roga, ujedno i specijalizirano za obavljanje djelatnosti za koje su ti predmeti bili upotrebljavani.[101]

Conclusion

The bone industry of Jakovo-Kormadin is highly standardized with respect to techniques and the final shapes of the tools. The uniformity in the selection of species and skeletal elements is not the result of the mere availability of resources or random selection, but instead points to culturally conditioned choices. The production of bone artefacts at the site was a carefully planned process from its very beginning, i.e. from the acquisition of raw materials, until the completion of the final product.

The bone of domestic animals is the dominant raw material used to make tools, especially pointed tools, mostly awls, commonly made out of ribs and ovicaprid metapodial bones. Red-deer antler is also a commonly-used raw material at the site in the production of striking and cutting tools, and it was acquired by gathering shed antlers. The raw material, i.e. skeletal elements, was chosen such that their mechanical properties, combined with tool shape, best matched the task that required the use of such a tool.

Finds made out of roe-deer antlers are rare, and the only ones recorded in this collection are actually opportunistic, *ad hoc*, products. On the other hand, bone and antler tools reflect a tradition of production (the concept of a production continuum),[98] and were always made out of the same skeletal elements or species, thereby reflecting the economic importance of the activities that required the use of such tools.[99]

In this regard, the use of these tools suggests that the processing of leather and hide, as well as plant materials, were significant activities at the site, as were the processing of wood and the exploitation of this raw material. At this moment, it could at least be assumed, considering the existence of a working area for antler-tool production at the site,[100] that Jakovo-Kormadin could have been the local production centre of the Vinča Culture, specializing in conducting activities which involved the use of these objects.[101]

98 Choyke, Schibler 2007, 57–58.

99 Choyke 1997, 65–66.

100 Витезовић 2010, 57; Na lokalitetu je 2008. godine otkrivena jama s otpacima od proizvodnje predmeta od roga jelena, što pretpostavlja postojanje radioničkog mjesta na samom nalazištu, a nalazi sirovine i poluproizvoda ustanovljeni su i u ovoj zbirci.

101 Vitezović 2013c, 68–69.

98 Choyke, Schibler 2007, 57–58.

99 Choyke 1997, 65–66.

100 Витезовић 2010, 57; In 2008, the site yielded a pit with antler tool production waste, suggesting the existence of a workshop on the site. Finds of raw material and half-products were also established within this collection.

101 Vitezović 2013c, 68–69.

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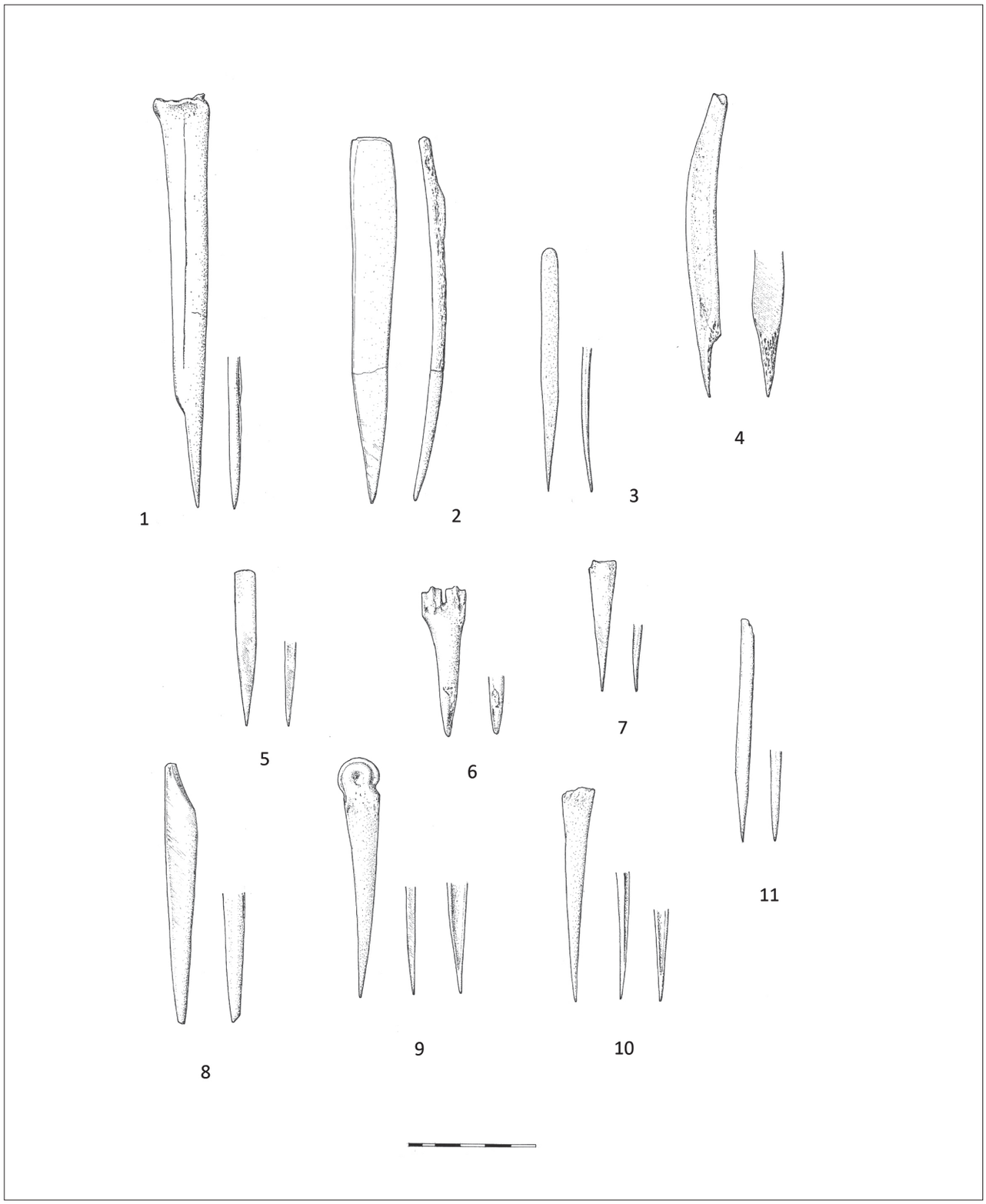

TABLA 1.
1–**10** — šila;
11 — igla;
(izradila M. Galić; obradila V. Krištofić).

PLATE 1.
1–**10** — awls;
11 — needle;
(made by M. Galić; adapted by V. Krištofić).

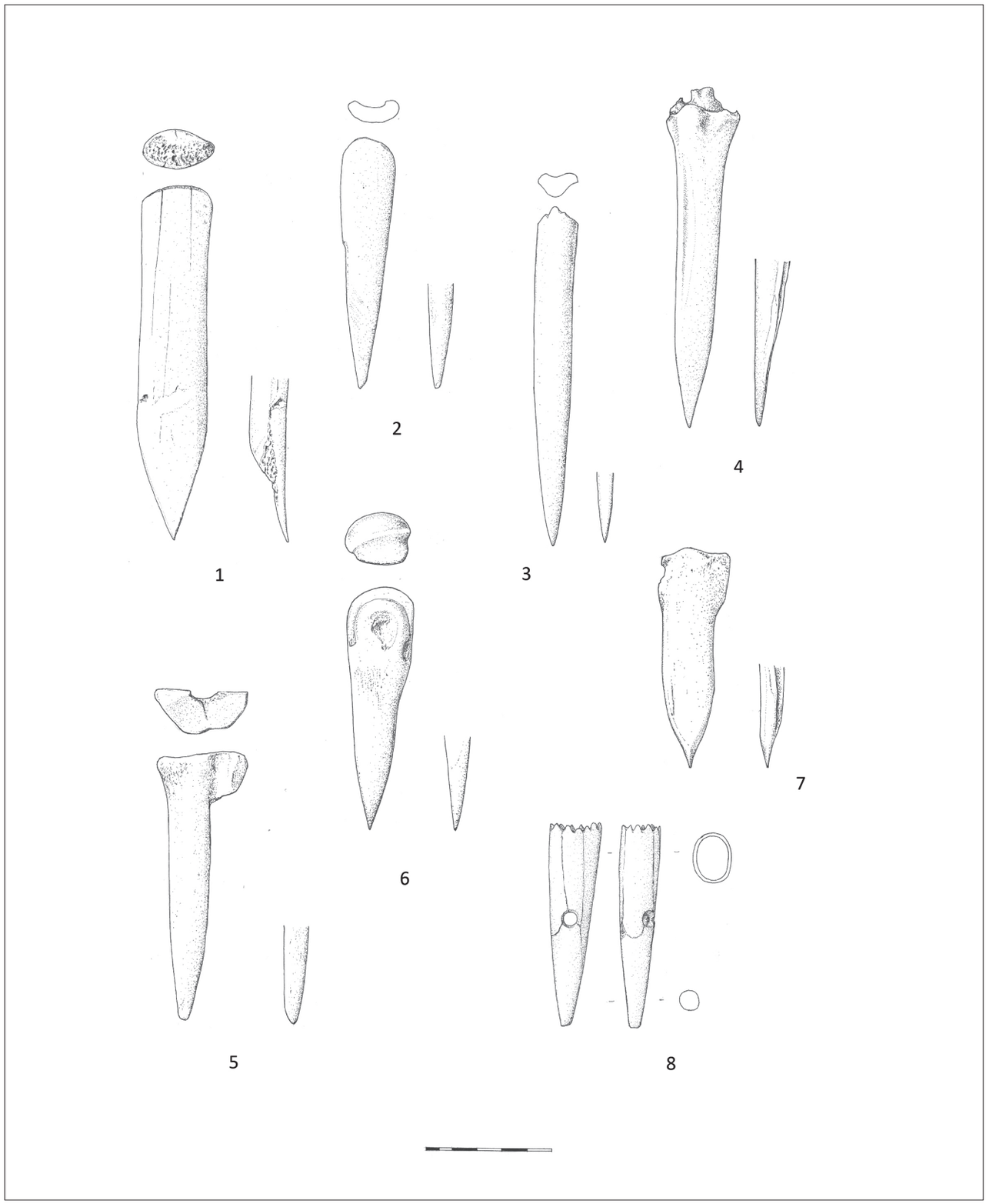

TABLA 2.
1–**6** — probojci;
7 — svrdlo;
8 — harpun;
(izradila M. Galić; obradila V. Krištofić).

PLATE 2.
1–**6** — points;
7 — borer;
8 — harpoon;
(made by M. Galić; adapted by V. Krištofić).

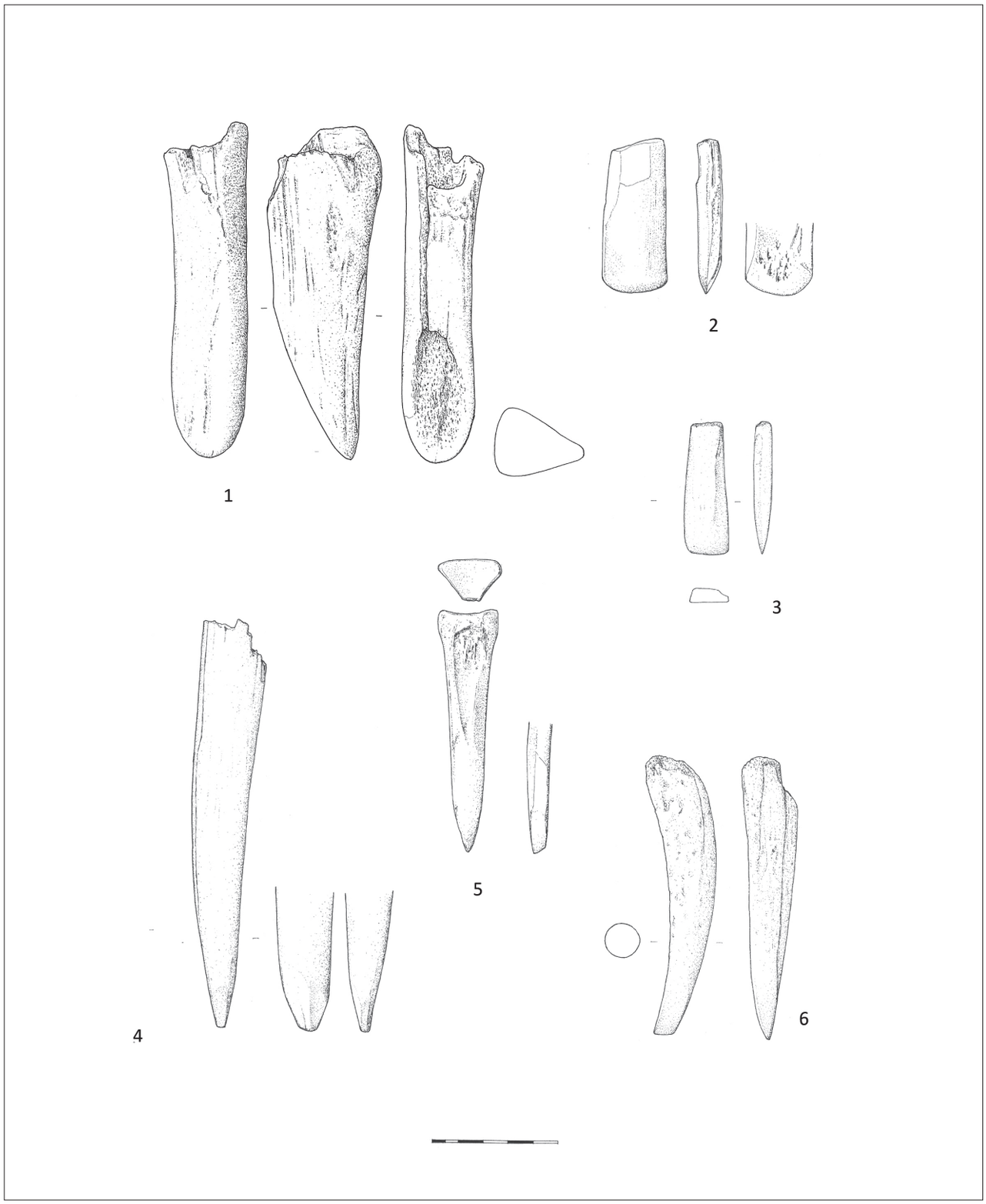

TABLA 3.
1–**4** — dlijeta;
5–**6** — klinovi;
(izradila M. Galić; obradila V. Krištofić).

PLATE 3.
1–**4** — chisels;
5–**6** — wedges;
(made by M. Galić; adapted by V. Krištofić).

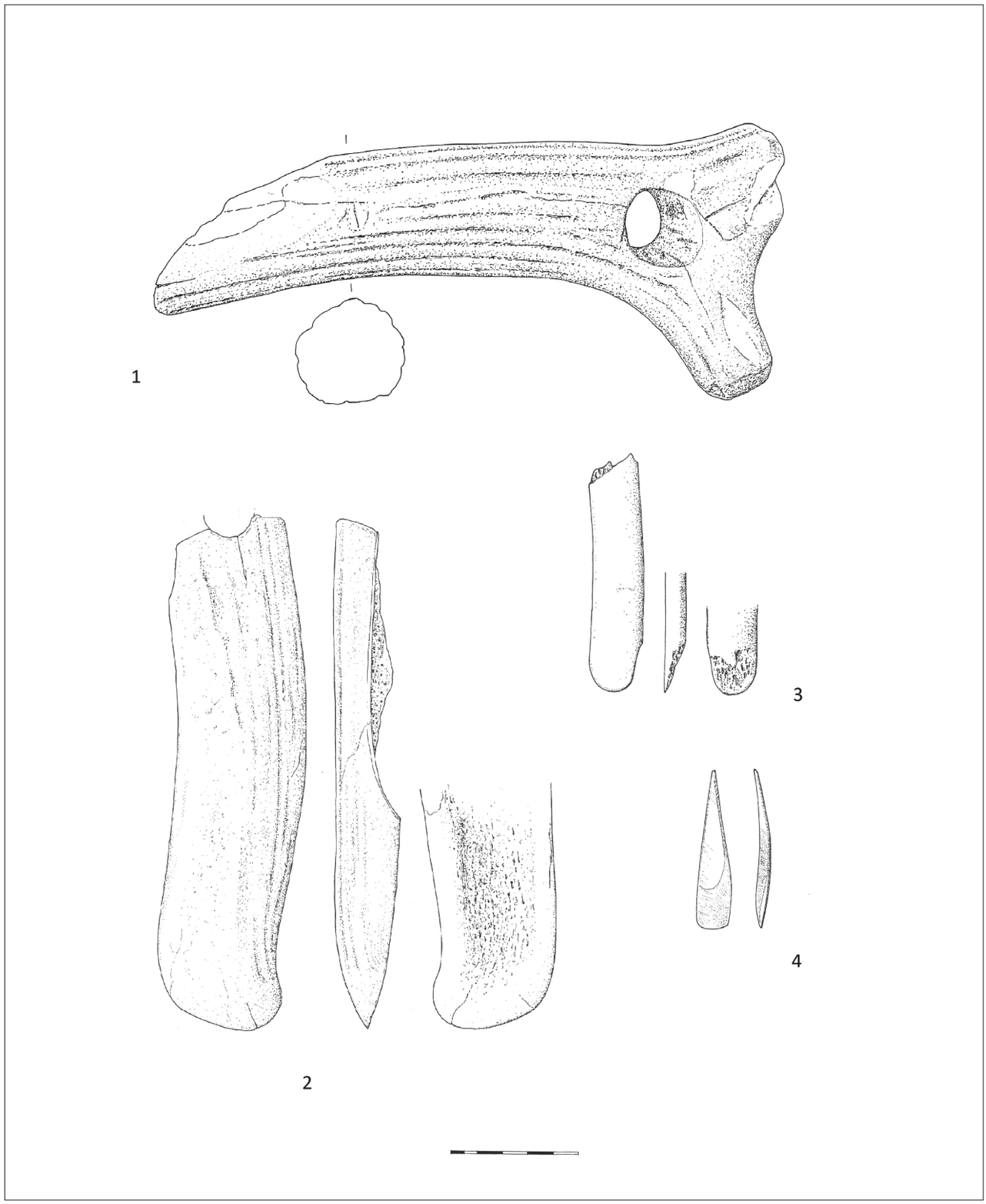

TABLA 4.
1–**2** — sjekire;
3–**4** — strugala;
(izradila M. Galić; obradila V. Krištofić).

PLATE 4.
1–**2** — axes;
3–**4** —scrapers;
(made by M. Galić; adapted by V. Krištofić).

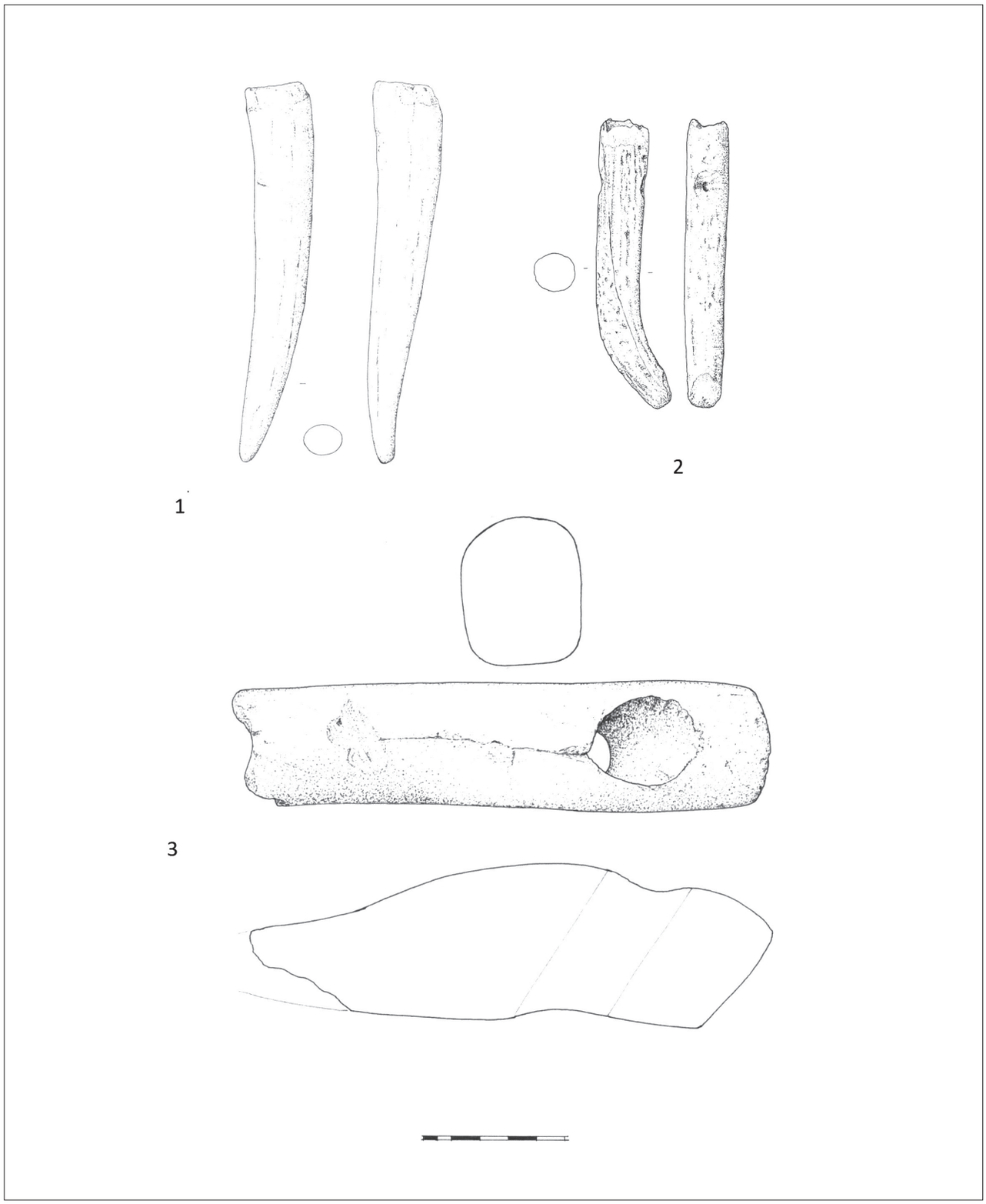

TABLA 5.
1–**2** — udarači;
3 — čekić-sjekira;
(izradila M. Galić; obradila V. Krištofić).

PLATE 5.
1–**2** — strikers;
3 — hammer-axes;
(made by M. Galić; adapted by V. Krištofić).

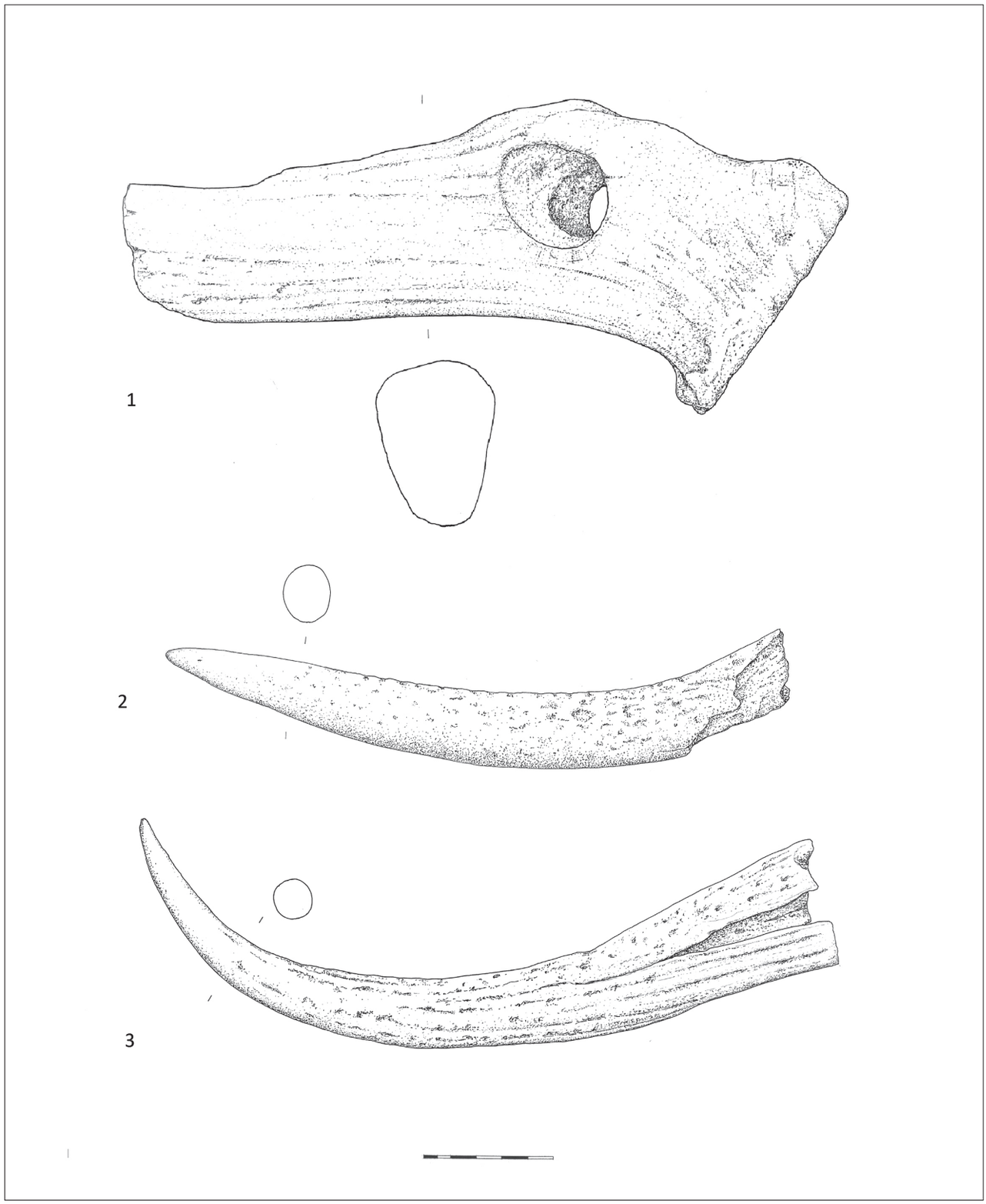

TABLA 6.
1 — čekić-sjekira;
2 — probojac;
3 — pijuk;
(izradila M. Galić; obradila V. Krištofić).

PLATE 6.
1 — hammer-axe;
2 — point;
3 — picks;
(made by M. Galić; adapted by V. Krištofić).

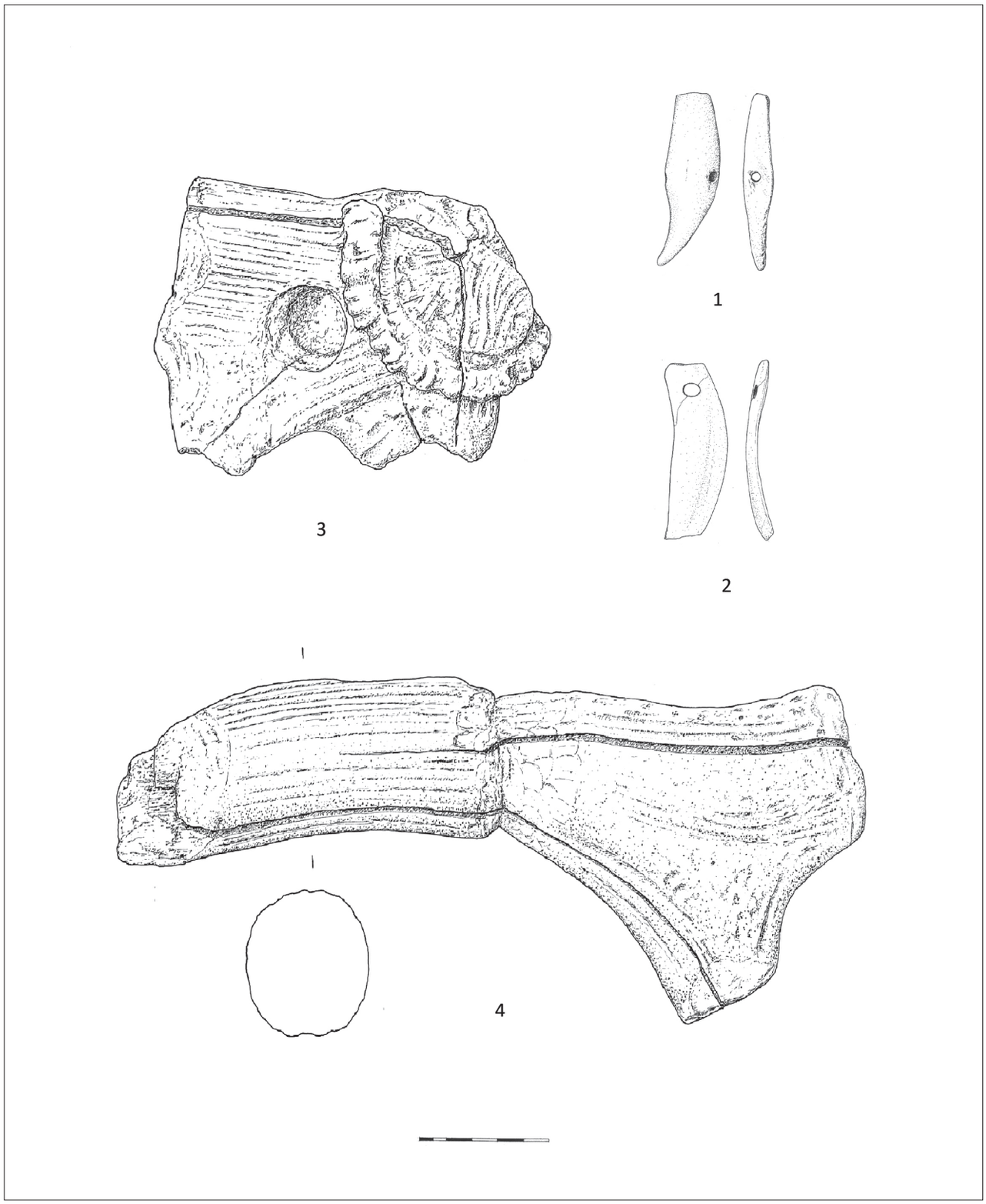

TABLA 7.
1–**2** — privjesci;
3 — poluproizvod;
4 — sirovina/poluproizvod;
(izradila M. Galić; obradila V. Krištofić).

PLATE 7.
1–**2** — pendants;
3 — half-product;
4 — raw material / half-product;
(made by M. Galić; adapted by V. Krištofić).

MOTIVI PLESA NA PRETPOVIJESNOJ KERAMICI IZ ISTOČNE HRVATSKE

DANCE MOTIFS ON PREHISTORIC POTTERY FROM EASTERN CROATIA

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Istraživanje plesa u arheološkom kontekstu u posljednjih je nekoliko desetljeća rezultiralo određivanjem nekoliko ključnih pokazatelja za identificiranje plesnih prikaza na arheološkome materijalu. Prije svega, to je položaj ekstremiteta antropomorfnih likova te određene forme i elementi vezani uz cjelokupnu kompoziciju prikaza, dok se među popratnim značajkama ističe naglašen prikaz prstiju na rukama.

Na temelju ovih odrednica, u ovome se radu analiziraju tri antropomorfna prikaza na pretpovijesnoj keramici s prostora Hrvatske – s nalazišta Franjevac, Vučedol i Novigrad na Savi – te se izlažu argumenti za njihovo uključenje u korpus arheoloških prikaza plesa.

In the last few decades, research on dance in the archaeological record has identified several key indicators for recognizing dance representations on the archaeological material, the most prominent being the positions of the body extremities of the anthropomorphic characters depicted, and certain forms and elements relating to the overall composition of the depiction. In addition, the portrayal of hands and fingers is a very common accompanying feature.

On the basis of these features, three anthropomorphic depictions found on prehistoric pottery from Croatia – from the sites of Franjevac, Vučedol and Novigrad on Sava – are analysed in this paper, and arguments for their inclusion in the corpus of archaeological depictions of dance are presented

Ključne riječi:
ples, antropomorfni prikazi, keramika, pretpovijest, Franjevac, Vučedol, Novigrad na Savi

Key words:
dance, anthropomorphic depictions, pottery, prehistory, Franjevac, Vučedol, Novigrad on Sava

Istraživanje plesa u arheološkom kontekstu u posljednjih je nekoliko desetljeća rezultiralo određivanjem nekoliko ključnih odrednica za identificiranje plesnih prikaza na arheološkome materijalu. Jedan od pokazatelja toga da je neki antropomorfni prikaz upravo prikaz plesača položaji su njegovih ekstremiteta – ruku i/ili nogu – koji ne odgovaraju prikazu ljudskog lika u statičnom stajaćem ili sjedećem položaju, ili pak u nekom drugom položaju koji bi se mogao protumačiti kao obavljanje neke radne aktivnosti,[1] već opisuju osebujan položaj koji zahtijeva veći tjelesni napor i koji bi bilo teško održavati dulje vrijeme, što ukazuje na izrazito dinamičnu i specifičnu aktivnost.[2] Drugi se izričiti pokazatelji (koji se, ako je riječ o dovoljno naturalističkim prikazima, često nadovezuju na odgovarajući izgled antropomorfnih likova) vezuju uz cjelokupnu kompoziciju prikaza, a riječ je o elementima kruga, smjera kretanja i ritma. Na temelju činjenice da se u pred-državnim društvima, poput pretpovijesnih, ples često provodi u krugu[3] te uz reference prikaza na kojima su antropomorfni likovi u krugu prikazani i u određenim položajima, izveden je zaključak da većina prikaza s više antropomorfnih likova, koji su na određeni način raspoređeni u formu kruga, najvjerojatnije prikazuje ples.[4] Na istim temeljima, na element kruga nadovezuju se i elementi ritma te smjera: uzastopni likovi raspoređeni u krug uvijek su jednako udaljeni jedni od drugih, što stvara vizualni ritam koji se može interpretirati i kao odraz plesnog ritma; a ako je prikaz dovoljno detaljan da je naznačen i smjer kretanja pojedinih likova, svi likovi u krugu u tome su pogledu uvijek prikazani uniformno (glave okrenute u istom smjeru, iskorak istom nogom i sl.).[5] Naposljetku, još jedna značajka koja se često javlja na prikazima plesa, a koju ovdje valja spomenuti, jest naglašeni prikaz prstiju na rukama. Ovo je posebno znakovito u okviru pretpovijesne umjetnosti koja, u odnosu na umjetnosti kasnijih razdoblja, ljudski lik prikazuje izrazito shematski i često zanemaruje detalje poput prstiju. Međutim, oni su ipak zabilježeni na određenom broju pretpovijesnih prikaza, i to velikim dijelom upravo na oni-

In the last few decades, research on dance in the archaeological record has identified several key indicators for recognizing dance representations on the archaeological material. One of the indicators which reveal a specific anthropomorphic depiction as one depicting a dancer is a positioning of the extremities – lower and/or upper limbs – that does not resemble a human figure in a motionless standing or sitting position, or in some other position that could be interpreted as the performance of some work activity,[1] but rather depicts a peculiar position which requires greater physical effort, and which would be difficult to sustain for any considerable amount of time, thus indicating a highly dynamic and specific activity.[2] Other indicators (which, if the depictions are naturalistic enough, often accompany the anthropomorphic characters' above mentioned features) are linked to the overall composition of the depiction, namely the elements of circle, direction of movement, and rhythm. On the basis of the fact that, in pre-state societies such as prehistoric ones, dancing very often takes place in a circle,[3] and regarding the analogies where the anthropomorphic characters in a circle are simultaneously represented in certain positions, it has been concluded that most depictions with multiple anthropomorphic figures that are in any way arranged in a circular manner most likely represent a dance.[4] Following the same criteria, the element of the circle is reinforced by elements of rhythm and direction. Consecutive figures arranged in a circle are always equidistant one from another, which creates a visual rhythm that can be interpreted as a reflection of the dance rhythm. Also, if the depiction is sufficiently detailed to indicate the direction of movement of each character, in that view all the figures within the circle are always depicted in the same manner (heads facing in the same direction, stepping out with the same foot, etc.).[5] Finally, another common feature of dance representations is the depiction of fingers. This is particularly significant in the context of prehistoric art which, in comparison to the art of later periods,

1 Npr. zabilježeni su pretpovijesni prikazi ljudskih likova u specifičnim položajima, čija je detaljna ikonografska analiza pokazala da ih je uputnije interpretirati kao prikaze lova te prikaze vezane uz borbu (Garfinkel 2003, 60; Frachetti 2008, 138).

2 Garfinkel 2003, 19, 28, 31, 33–34.

3 Krug je najčešća prostorna organizacija plesa koja je vidljiva na arheološkim nalazima, a pregled dosadašnjih izvora ukazuje na mogućnost da je ples u krugu činio najvažniji dio religioznih obreda na Bliskom istoku i jugoistoku Europe od 8. do 4. tisućljeća pr. Kr. (Garfinkel 2003, 88–89) U krugu se svi jednako kreću i jednako su udaljeni od središta i međusobno, što stvara osjećaj jedinstva i odražava stanje zajednica u kojima nije bilo izrazite društvene stratifikacije (isto svojstvo pokazuju i kružni plesovi suvremenih seoskih zajednica (Maletić 1986, 14, 197)). Usto, krug je prostor u kojem se izvodi ritual te je većina kružnih plesova povezana s magijskim i društvenim aktivnostima, a često su i odraz kozmoloških kretanja koja uglavnom imaju cikličku formu, kao što su izmjena godišnjih doba, mjesečevih mijena, vremena sjetve i žetve itd. (Garfinkel 2003, 41–42, 87; 2010, 212; Soar 2010, 151).

4 Najčešći način raspoređivanja antropomorfnih likova u krug na arheološkim artefaktima je uzduž oboda nekog okruglog ili cilindričnog predmeta, poput posude ili npr. stupa, a rjeđi su prikazi na ravnoj plohi poput zida, poda, kamene ploče i sl. (Garfinkel 2003, 19).

5 Garfinkel 2003, 19.

1 For example, iconographic analysis of certain prehistoric artefacts has suggested that the displayed representations of human characters in specific body positions were more likely to indicate hunting and battle-related activities (Garfinkel 2003, 60; Frachetti 2008, 138).

2 Garfinkel 2003, 19, 28, 31, 33–34.

3 The circle is the basic spatial organization of dancing identified on archaeological artefacts, and the overview of the materials researched so far indicates the possibility that dancing in circles constituted the most important part of religious ceremonies in the ancient Near East and southeast Europe between the eighth and fourth millennia BC (Garfinkel 2003, 88–89). All participants within the circle move equally, and are on equal terms in relation to the centre of the circle as well as to each other, which creates a sense of unity, and reflects the state of communities where there was no prominent social stratification. (The same feature can be observed in the circular dances of contemporary village communities.) Moreover, the circle is the space in which the ritual is performed, and most circular dances are associated with magic and social activities, and often reflect cosmological movements which mostly have a cyclical form, such as the changing of seasons, lunar phases, sowing and harvest periods, etc. (Garfinkel 2003, 41–42, 87; 2010, 212; Soar 2010, 151).

4 The most common method of arranging anthropomorphic figures in a circle on archaeological artefacts is along the circumference of a round or cylindrical object such as a vessel or a column, while depictions on a flat surface such as a wall, floor or stone plate are less common (Garfinkel 2003, 19).

5 Garfinkel 2003, 19.

ma koji su interpretirani kao prikazi plesa, što je najvjerojatnije odraz činjenice da su pokreti šakama i prstima važna komponenta u mnogim plesovima od najdavnijih vremena.[6]

U knjizi „Dancing at the Dawn of Agriculture" Yosef Garfinkel donosi pregled položaja ruku i nogu s antropomorfnih prikaza zabilježenih na keramičkim posudama sa 170-ak neolitičkih i eneolitičkih nalazišta s područja Bliskog istoka, jugoistočne Europe i sjeverne Afrike,[7] a likove plesača, osim na prepoznatljivim antropomorfnim prikazima, prepoznaje i u mnogo apstraktnijim, geometriziranim oblicima, što obrazlaže nizom postojećih „međuoblika" koji, prema likovnoj analizi, predstavljaju sponu između figuralnih i geometrijskih motiva.[8]

Slijedeći navedene smjernice, u korpus arheoloških prikaza plesa mogu se uključiti i tri primjera s prostora Hrvatske koji, iako je riječ o objavljenome materijalu, do sada nisu bili interpretirani na taj način. U nastavku, svaki će od tri primjera biti zasebno analiziran. Analize će se temeljiti prvenstveno na vizualnim karakteristikama svakog od triju prikaza[9] te će biti utvrđeno u kolikoj mjeri oni predstavljaju analogije pretpovijesnim prikazima s područja Bliskog istoka i jugoistočne Europe,[10] koji su u dosadašnjim istraživanjima interpretirani kao prikazi plesa.

Ovakav pristup temelji se na spoznaji da je ples univerzalni fenomen svojstven vjerojatno svim ljudskim društvima,[11] čija je uloga u pretpovijesnim i ostalim tradicijskim zajednicama vjerojatno bila mnogo značajnija nego što je u modernim društvima.[12] Prostorna je sveprisutnost plesa jednako znakovita kao i njegovo djelovanje na ljudsku psihu pa je uvažena mogućnost da su za potencijalne likovne predstave plesa i na međusobno vrlo udadepicts the human figure in a rather schematic way, and very often leaves out details such as hands and fingers. However, they are nevertheless recorded on a number of prehistoric depictions, many of which are precisely interpreted as depictions of dance, which most likely represents a reflection of the fact that hand and finger movements have been an important component of many dances since ancient times.[6]

In the book "Dancing at the Dawn of Agriculture", Yosef Garfinkel brings an overview of the positions of lower and upper limbs of anthropomorphic figures recorded on ceramic vessels from 170 Neolithic and Eneolithic sites in the Near East, southeast Europe and North Africa,[7] while identifying dancing figures not only in recognizable anthropomorphic depictions, but also in much more abstract, geometric forms, which is explained by a series of recorded "interforms" that, as implied by art analysis, represent the bond between figural and geometric motifs.[8]

Following these guidelines, there are three examples from Croatia that can be included in the corpus of archaeological depictions of dance which, although published, have not so far been interpreted in such a way. Each of the three examples will be analysed separately, primarily on the basis of visual characteristics,[9] and with an evaluation of the extent of similarity to prehistoric depictions from the Near East and southeast Europe[10] which have been interpreted as depictions of dance by previous research.

This kind of approach is based on the knowledge that dance is a universal phenomenon, most likely inherent to all human societies,[11] and that its role in prehistoric and other traditional com-

6 „Ruka glumi, a gluma govori. (...) Zbog složenosti anatomske strukture ruke te zbog njezinih artikulacijskih sposobnosti, samo u pokretima prstiju leži bezbroj mogućnosti modifikacija forme i ponašanja. Zbog svojega komunikacijskoga potencijala, ruka je korištena ne samo teatralno: mnogi su, fascinirani potencijalom ruke, u više navrata pokušali stvoriti univerzalni jezik, razvivši artificijelnu kodifikaciju svakodnevnih pokreta." (Garfinkel 2003, 30, prema Barba, Savarese 1991, 130–131).

7 Garfinkel 2003.

8 Garfinkel 2003, 132.

9 Kao i u slučaju spomenutih analogija, vizualne karakteristike ovih prikaza predstavljaju optimalni predmet analize jer kontekst u kojemu su artefakti nađeni ne govori ništa pobliže o mogućoj temi prikaza na njima.

10 Iako se analogije pojedinim karakteristikama razmatranih prikaza mogu naći i u pretpovijesnim prikazima s još udaljenijih područja (Walsh 1988; Zao Fu 1992), razmatranje paralela u ovom je radu ograničeno na prostor s kojega potječe materijal na čijoj se analizi temelje rezultati referentnog, prethodno spomenutoga arheokoreološkog istraživanja (Garfinkel 2003).

11 Osim što su pokazala da pripadnici zajednica iz različitih dijelova svijeta, koji obavljaju iste ili slične dnevne aktivnosti te stoga izvode i iste ili slične pokrete, sukladno tomu često izvode i vrlo slične plesne pokrete (Maletić 1986, 167–168), etnografska su istraživanja zabilježila fenomen plesa kod tradicionalnih društava u svim dijelovima svijeta te je na temelju istih utvrđeno da su osnovni motivi za ples i njegova uloga u zajednici u svim društvima u određenoj mjeri jednaki (Marshall 1969, 357–358; Biesele 1978, 165–169; Katz 1982, 3, 34; Maletić 1986; Whitehouse 1995, 21–22). Kako se istraživanje nematerijalne kulture ljudskih zajednica iz davne prošlosti u određenoj mjeri nužno oslanja na etnografske podatke o suvremenim tradicionalnim zajednicama, zasada je logična pretpostavka da je i većina pretpovijesnih društava prema plesu gajila vrlo sličan odnos (Maletić 1986, 80–83).

12 Lange 1976, 90–91; Maletić 1986, 12, 14, 34, 41–42, 86; Garfinkel 2003, 67.

6 "The hand acts, and acting, speaks. (...) Due to the complexity of the hand's anatomical structure and of its articulation possibilities, there are, in the movements of the fingers alone, infinite possible modifications of form and behaviour. Due to its communicative qualities, the hand has been exploited not only theatrically: many people, fascinated by the hand's potential, have, at various times, attempted to create a universal language, developing an artificial codification of daily gestures." (Garfinkel 2003, 30, after Barba, Savarese, 1991, 130–131).

7 Garfinkel 2003.

8 Garfinkel 2003, 132.

9 As in the case of the abovementioned analogies, these depictions' visual characteristics are the optimal subject of analysis, because the archaeological context of the artefacts reveals nothing on the potential subjects of the depictions.

10 Even though some analogies to certain characteristics discussed in the paper can be found in prehistoric representations from even more distant areas (Walsh 1988; Zao Fu 1992), in this work the discussion of the analogies is limited to those that originated from the geographical area addressed in the abovementioned research (Garfinkel 2003).

11 In addition to showing that members of communities in different parts of the world who perform the same or similar daily activities, and therefore perform the same or similar movements, also often perform very similar dance movements (Maletić 1986, 167–168), ethnographic studies have recorded the dance phenomenon in traditional societies in all parts of the world. On the basis of these, it has been found that the basic motifs for dance and its role in the community in all societies are, to a certain extent, the same (Marshall 1969, 357–358; Biesele1978, 165–169; Katz 1982, 3, 34; Maletić, 1986; Whitehouse 1995, 21–22). Since the research of the intangible culture of human communities of the ancient past to a certain extent necessarily relies on ethnographic data on contemporary traditional communities, at the moment it is a justifiable assumption that most of the prehistoric societies had a very similar attitude towards dancing as well (Maletić 1986, 80–83).

ljenim područjima korištene u osnovi jedinstvene ikonografske tehnike i motivi – osobito u okvirima likovnih izričaja poput pretpovijesnih.

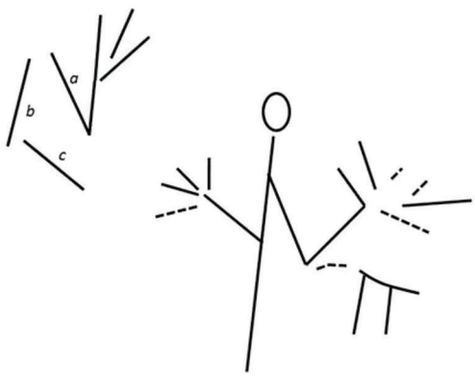
munities was most probably much more significant than it is in modern societies.[12] The spatial ubiquity of dance is as significant as the unique effect it has on the human psyche, and therefore we have considered the possibility that, even in very distant areas, very similar iconographic techniques and motifs were used to depict dance – particularly in the context of artistic expressions such as the prehistoric ones.

Antropomorfni prikaz s Franjevca

Tijekom zaštitnoga arheološkog istraživanja lokaliteta Franjevac pored Đakova 2007. godine, u kontekstu velikoga pretpovijesnog naselja kostolačke kulture, pronađen je ulomak keramičke posude na čijoj je površini urezan antropomorfni lik (sl. 1). Posuda je ornamentirana tehnikom ubadanja, a motivi su zonalno grupirani. Antropomorfni prikaz izveden je tehnikom brazdastog urezivanja. Stilski i geografski najbliže paralele ovom nalazu su prikaz na fragmentu posude vučedolske kulture s Vučedola (o kojemu

Anthropomorphic depiction from Franjevac

During the archaeological research of 2007 at the site of Franjevac, near Đakovo, in the context of a large prehistoric settlement of the Eneolithic Kostolac culture, a fragment of a ceramic vessel was found. The vessel was ornamented using a stabbing technique, with zonally grouped motifs, and it had anthropomorphic figures furrow-incised on its surface (Fig. 1). The closest analogies for this depiction, both geographically and stylistically, can be found in the depictions on a vessel fragment from Vučedol



SLIKA 1. Antropomorfni prikaz na ulomku keramičke posude, Franjevac (Balen 2011, 97, sl. 4.8; izradila I. Turčin).

FIGURE 1. Anthropomorphic depiction on a fragment of a ceramic vessel, Franjevac (Balen 2011, 97, Fig. 4.8; made by I. Turčin).

će biti riječi u nastavku) te prikaz na eneolitičkoj četvrtastoj posudi s nalazišta Szelevény u Mađarskoj.[13]

Na ulomku s Franjevca razaznaju se dva antropomorfna lika, od kojih je jedan vidljiv gotovo u potpunosti, dok je drugi očuvan djelomično.

Na cjelovito očuvanom prikazu ljudskog lika glava je prikazana krugom, a iz njega se okomito spušta os u kojoj su objedinjeni elementi vrata, trupa te jednog donjega ekstremiteta (noge). Pri dnu vratnog dijela osi, u dijagonalnom otklonu prema dolje, nalazi se još jedan element trupa. Iz njega se u horizontalnoj liniji

(discussed below), and on an Eneolithic rectangular vessel from Szelevény, Hungary.[13]

Two anthropomorphic figures can be discerned on the Franjevac fragment, one of which is preserved almost completely, while the other is preserved only partially.

The fully preserved depiction of a human figure shows the head represented by a circle placed on top of a vertical line, together creating a vertical axis which combines the elements of neck, torso and one of the lower extremities. Another element of the torso begins at the upper part of the vertical axis (in the

13 Balen 2011, 97; Horváth, Balen 2012, 10.

12 Lange 1976, 90–91; Maletić 1986, 12, 14, 34, 41–42, 86; Garfinkel 2003, 67.

13 Balen 2011, 97; Horváth, Balen 2012, 10.

nastavlja element drugog ekstremiteta (noge), s kojeg se okomito spuštaju dvije paralelne linije. Pri kraju osnovne osi i horizontalnog elementa donjeg ekstremiteta prikaz je oštećen lomom ulomka. S područja trupa pružaju se u dijagonalnim linijama prema gore s obje strane gornji ekstremiteti (ruke), koji završavaju zrakasto raspoređenim kratkim linijama (prsti). Na desnoj ruci nalaze se četiri linije, a na lijevoj je, zbog oštećenja, nešto teže odrediti njihov točan broj (najvjerojatnije pet ili šest).

Djelomično očuvan prikaz ljudskog lika nalazi se dijagonalno lijevo gore u odnosu na onaj cjeloviti, a čine ga tri osnovna elementa. Prvi (a) čini linija u obliku slova „V" nejednakih krakova: jedan je krak prekinut rubom ulomka, a drugi završava trima kratkim zrakasto raspoređenim linijama. Drugi je element (b) vertikalna linija na oba kraja prekinuta rubom ulomka, a treći (c) je linija koja u blagoj dijagonali prema dolje izlazi iz okomite linije.

S obzirom na opisane značajke, evidentno je da je cjelovito očuvani antropomorfni lik prikazan u izrazito dinamičnom stavu. U tome smislu, donji ekstremiteti interpretiraju se kao noge raširene u nekoj vrsti iskoraka – jedna je dio osi koja nosi svu težinu tijela i okomito je ispružena prema dolje, a druga je horizontalno podignuta iz svoga korijena u trupu. Gornji ekstremiteti mogu se protumačiti kao ruke dijagonalno podignute tako da tvore oblik slova „V", ili do lakta pripijene uz tijelo pa u toj točki podignute i raširene u V-formi.[14] Kratke, zrakasto raspoređene linije pri vrhu ruku mogu se protumačiti kao prsti, koji su u tom slučaju prikazani upadljivo raširenі na obje šake,[15] no postoji i mogućnost da je riječ o prikazu nekih predmeta koje antropomorfni lik drži u rukama (npr. snop grana ili cvijeća).[16] Element koji je možda najteže interpretirati svakako su dvije paralelne linije koje kao da vise s podignute noge, a mogle bi prikazivati dijelove ornamentike odore ili nakita.

Pri interpretaciji djelomično očuvanog lika neizbježna je usporedba s onim cjelovito očuvanim. S obzirom na visok stupanj sličnosti između elementa *a* i elemenata ruku na cjelovitom antropomorfnom liku, može se zaključiti da je i u ovom slučaju riječ o ruci, koja je savijena u laktu u obliku slova „V", s raširena tri prsta (interpretiraju li se kratke zrakaste linije na taj način). Element *b* je prema tomu najjednostavnije protumačiti kao trup, odnosno dio glavne osi tijela, dok se element *c* može interpretirati kao dio donjih ekstremiteta (raširena ili podignuta noga, ili barem jedan njezin dio).

presumed section of the neck), and is diagonally deflected downwards. The second lower extremity continues, from the element mentioned, in a horizontal line, with two perpendicular lines descending from it. The bottom part of the depiction is missing due to a fracture of the fragment in the lower part of the vertical axis, hiding information about the base of the vertical axis, as well as the horizontal element of the second lower extremity. Upper extremities (arms) extrude diagonally from the area of the trunk upwards on both sides, ending with short lines (fingers) arranged in a radial pattern. Four lines are visible on the right hand, while it is not possible to discern the exact number on the left one (most likely five or six).

The partially preserved human figure is placed on an upper-left diagonal in relation to the completely preserved one, and it consists of three basic elements. The first (a) is an uneven V-shaped line: one end is cut off by the edge of the fragment, and the other ends with three lines in a radial pattern. The second element (b) is a vertical line cut off at both ends by the edges of the fragment, and the third (c) is a line connecting to the second element in a downward diagonal path.

Given the features described, it is evident that the completely preserved anthropomorphic figure is depicted in an extremely dynamic posture. Accordingly, the lower extremities are interpreted as legs spread in some kind of astride: one forms part of the axis carrying the whole weight of the body, and is vertically stretched out downward, while the other is horizontally raised from its root in the trunk. The upper extremities can be interpreted as arms raised diagonally to form the shape of the letter V, or spread in a V-shaped form with elbows adhering to the torso.[14] The short, radially arranged lines at the top of the hands can be interpreted as fingers, which are in that case depicted as spread on both hands,[15] although there is also a possibility of those elements depicting certain objects held by the anthropomorphic figure (for example abunch of twigs or flowers).[16] The element that is perhaps the most difficult to interpret is certainly the two parallel lines that seem to hang down from the raised leg, and could represent certain parts of attire ornaments or jewellery.

While trying to interpret the partially preserved figure, it is inevitable to compare it with the fully preserved one. Given the great degree of similarity between element *a* and the arm elements on the complete anthropomorphic figure, it can be concluded that it also represents an upper limb, which is, in that case, bent in a "V" form at the elbow, with three fingers spread (if the short radial lines should be interpreted in that manner). Element *b* is

14 Zbog usporedbe s brojnim primjerima obaju položaja ruku na pretpovijesnim antropomorfnim prikazima, ovdje vjerojatnijom djeluje druga opcija: ruke pripijene uz tijelo pa savijene u laktu. Naime, na prikazima u kojima su ruke nedvosmisleno samo raširene dijagonalno uvis, one su podignute iznad glave, a na prikazu cjelovitog lika iz Franjevca to nije slučaj.

15 Kao što je već navedeno, upravo upadljiv prikaz prstiju na šaci još je jedan čest element u prikazima plesa.

16 Poznato je nekoliko paralela ovakvim motivima (antropomorfni likovi interpretirani kao plesači koji u rukama drže grane) među pretpovijesnim prikazima plesa, poput primjera iz Tepe Gawre u Iranu (Garfinkel 2003, 176).

14 Due to the comparison with many examples of both arm positions on prehistoric anthropomorphic depictions, the second option seems to be more likely here: upper arms held close to the body and bent at the elbows. This is because, in those depictions in which the arms are unambiguously widespread diagonally upwards, they are raised above the head, and that is not the case with the complete figure from Franjevac.

15 As already mentioned, the obvious depiction of fingers is another common element of representations of dance.

16 There are several parallels to such motifs (anthropomorphic figures interpreted as dancers holding branches) among prehistoric depictions of dance, such as the example from Tepe Gawra in Iran (Garfinkel 2003, 176).

a b c d

SLIKA 2. Prikazi plesača s položajem ruku u V-formi, jugoistočna Europa i Bliski istok (obradila I. Turčin):
a. Khazineh (Garfinkel 2003, 165, sl. 9.5: a; prema Gautier, Lampre 1905, sl. 254);
b. Tal-i Jari A (Garfinkel 2003, 187, sl. 9.24: e; prema Egami, Masuda, Gotoh 1977, T. 3: 5);
c. Kolešovice (Garfinkel 2003, 213, sl. 10.9: c; prema Müller-Karpe 1968, T. 196: A);
d. Tepe Giyan (Garfinkel 2003, 113, sl. 7.3: b; prema Herzfeld 1933, sl. 25).

FIGURE 2. Depictions of dancers with upper limbs positioned in "V" form, southeast Europe and Near East (adapted by I. Turčin):
a. Khazineh (Garfinkel 2003, 165, Fig. 9.5: a; after Gautier, Lampre 1905, Fig. 254);
b. Tal-i Jari A (Garfinkel 2003, 187, Fig. 9.24: e; after Egami, Masuda, Gotoh 1977, Pl. 3: 5);
c. Kolešovice (Garfinkel 2003, 213, Fig. 10.9: c; after Müller-Karpe 1968, Pl. 196: A);
d. Tepe Giyan (Garfinkel 2003, 113, Fig. 7.3: b; after Herzfeld 1933, Fig. 25).

Paralele ovakvom prikazom nalaze se među mnogim neolitičkim i eneolitičkim primjerima s područja jugoistočne Europe i Bliskog istoka koji se interpretiraju kao prikazi plesača. Primjerice, osebujan položaj ruke savijene u laktu u V-formi (sl. 2) nalazi se na više ulomaka neolitičke slikane keramike s područja Mezopotamije i Irana (Tell Halaf, Tell Sabi Abyad, Samarra, Tepe Sabz, Khazineh, Ismailabad, Kozagaran, Tal-i-Jari-A, Tal-i-Bakun-A, Tal-i-Gap), kao i na keramičkom pečatu iz Tepe Giyana.[17] Isti motiv, izveden tehnikom urezivanja, postoji i na keramičkim nalazima iz Kolešovica i Strelica u Češkoj,[18] koji se pripisuju kasnoneolitičkoj lenđelskoj kulturi. U spomenutoj klasifikaciji položaja ekstremiteta u prikazima plesa, koju predstavlja Y. Garfinkel, ovaj je položaj ruku naveden kao tip G i riječ je o drugom najčešćem položaju ruku identificiranom na istraženoj građi.[19]

Na većini spomenutih nalaza (Samarra, Tepe Sabz, Khazineh, Ismailabad, Kozagaran, Tal-i-Jari-A, Tal-i-Bakun-A, Tal-i-Gap, Kolešovice) na navedeni položaj ruku nadovezuje se još jedna česta popratna značajka plesnih prikaza koja se nalazi i na prikazu iz Franjevca, a riječ je o naglašenom prikazu prstiju (sl. 2: b–c). Navedenim primjerima može se pribrojati i veći broj nalaza s prikazima prstiju uparenih s drugačijim položajima ruku (sl. 3–4; sl. 5: a, c; sl. 6: c), primjerice, reljefni prikazi izvedeni tehnikom apliciranja na neolitičkoj keramici iz Ein el Jarbe u Izraelu[20] te Kuruçay Höyüka i Haçilara u Turskoj,[21] oslikani zidni prikaz (također neolitički) iz Kalavasos Tente[22] na Cipru, ali i nalazi bliži ovom podneblju: reljefni prikazi na neolitičkoj keramici iz Rumunjske, Mađar-

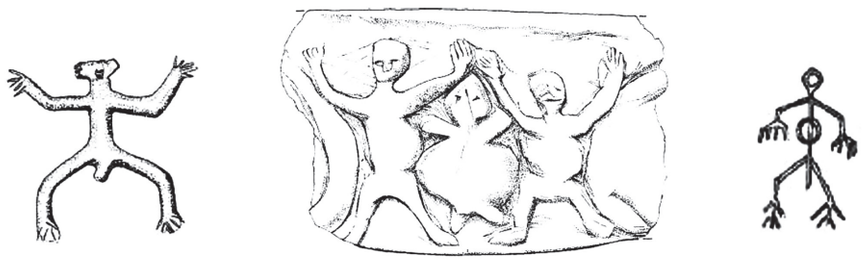
therefore simplest to interpret as the trunk or a part of the main axis of the body, while element c can be interpreted as a part of the lower extremities (spread or raised leg, or at least one of its parts).

Analogies for this depiction can be found among many Neolithic and Eneolithic examples in the areas of southeast Europe and the Near East which are interpreted as representations of dancers. For example, the peculiar position of the arm bent at the elbow in "V" form (Fig. 2) can be found on several fragments of Neolithic painted pottery from the areas of Mesopotamia and Iran (Tell Halaf, Tell Sabi Abyad, Samarra, Tepe Sabz, Khazineh, Ismailabad, Kozagaran, Tal-i Jari A, Tal-i Bakun A, Tal-i Gap), as well as on a ceramic seal from Tepe Giyan.[17] The same motif made using the incision and puncturing techniques was also found on ceramic finds from Kolešovice and Strelice in the Czech Republic,[18] which are attributed to the Late Neolithic Lengyel culture. In the aforementioned classification of the positions of extremities on dance depictions introduced by Y. Garfinkel, this arm position is referred to as type G, and it is the second-most common arm position identified within the material examined.[19]

The majority of the abovementioned finds (Samarra, Tepe Sabz, Khazineh, Ismailabad, Kozagaran, Tal-i Jari A, Tal-i Bakun A, Tal-i Gap, Kolešovice) show this arm position complemented by depictions of fingers, which is yet another common accompanying feature of dance depictions, also found on the Franjevac ex-

17 Garfinkel 2003, 127–128, 164, 169, 178, 186–187, 195, 197, 274; na većini nalaza prikazano je više likova s istim položajem ruke.
18 Garfinkel 2003, 208, 213, 230.
19 Garfinkel 2003, 32–33.
20 Garfinkel 2003, 157.
21 Garfinkel 2003, 122.
22 Garfinkel 2003, 122.

17 Garfinkel 2003, 127–128, 164, 169, 178, 186–187, 195, 197, 274; most of the finds had more figures depicted with the same arm position.
18 Garfinkel 2003, 208, 213, 230.
19 Garfinkel 2003, 32–33.



a b c

SLIKA 3. Prikazi plesača s naglašenim prikazom prstiju uz razne položaje ruku, jugoistočna Europa i Bliski istok (obradila I. Turčin):
a. Ein el Jarba (Garfinkel 2003, 157, sl. 8.29: b; prema Kaplan 1969, sl. 7: 1 a–b);
b. Nevali Çori (Garfinkel 2003, 113, sl. 7.3: a; prema Hauptmann 1993, sl. 27);
c. Nova Ves (Garfinkel 2003, 213, sl. 10.9: b; prema Müller-Karpe 1968, T. 200: E2).

FIGURE 3. Depictions of dancers with accentuated finger depictions, with different positions of the upper limbs, southeast Europe and Near East (adapted by I. Turčin):
a. Ein el Jarba (Garfinkel 2003, 157, Fig. 8.29: b; after Kaplan 1969, Fig. 7: 1 a–b);
b. Nevali Çori (Garfinkel 2003, 113; Fig. 7.3: a; after Hauptmann 1993, Fig. 27);
c. Nova Ves (Garfinkel 2003, 213, Fig. 10.9: b; after Müller-Karpe 1968, Pl. 200: E2).

ske i Hrvatske (Turdaş, Villánykövesd, Sarvaš)[23] te prikazi izvedeni tehnikom urezivanja na kasnoneolitičkoj keramici iz Nove Vesi u Češkoj[24] (lenđelska kultura) i eneolitičkoj keramici iz Vučedola[25] u Hrvatskoj (vučedolska kultura).

Na fragmentu posude s Franjevca, cjelovito očuvani i djelomično očuvani lik nisu u istoj ravnini (sl. 1). Zbog velike fragmentarnosti prikaza, na potonjemu je posebno teško vjerodostojno interpretirati elemente trupa i noge. Može se ustvrditi samo da glavna os tijela fragmentarnog lika stoji u blagom otklonu u odnosu na os cjelovitoga te da element noge tu izlazi ravno iz osnovne osi. Naznake drugih elemenata, koji bi bili povezani s njim (poput dviju paralelnih linija visećih s noge cjelovitog lika), nisu vidljive. Najcjelovitiji element fragmentarnog lika je ruka, koja se nalazi u blagom otklonu od trupa, za razliku od ruku cjelovitog lika.

U konačnici, dva su izričita pokazatelja da je na ovome fragmentu vjerojatno riječ o prikazu plesa. Prvi je izrazito slikovit, dinamičan položaj tijela, koji je lako uočljiv na cjelovitom liku, dok se na fragmentarnom naslućuje. Drugi je činjenica da su na ulomku raspoznatljiva dva antropomorfna lika u vrlo sličnom stavu, što ukazuje na vjerojatnost da ih je na cijeloj posudi bilo i više, a to predstavlja još jednu čestu karakteristiku pretpovijesnih prikaza plesa: višebrojni slični ili identični likovi koji su na neki način (npr. duž opsega tijela posude) raspoređeni u formu kruga. Kad se ovome pribroji još i naglašeni prikaz šaka/prstiju na rukama, kao česta popratna značajka pretpovijesnih plesnih prikaza, rezultat je skup značajki na temelju kojih se antropomorfni likovi prikazani na ulomku keramičke posude s lokaliteta Franjevac mogu interpretirati kao plesači.

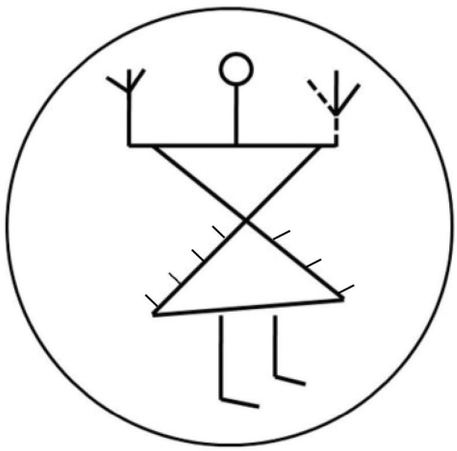
ample (Fig. 2: b–c). A number of finds with depictions of fingers paired with different arm positions must be mentioned as well (Fig. 3–4, Fig. 5: a, c; Fig. 6: c). Examples include applied relief representations on the Neolithic pottery from Ein el Jarba, in Israel,[20] and Kuruçay Höyük and Haçilar, in Turkey,[21] a painted wall depiction (also Neolithic) from Kalavasos Tenta,[22] on Cyprus, but also finds closer to these regions: relief depictions on Neolithic pottery from Romania, Hungary and Croatia (Turdaş, Villánykövesd, Sarvaš),[23] and engraved depictions on Late Neolithic and Eneolithic pottery from Nova Ves in the Czech Republic[24] (Lengyel culture) and Vučedol[25] in Croatia (Vučedol culture).

On the vessel fragment from Franjevac, the fully preserved and partially preserved figures are not in the same plane (Fig. 1). It is particularly difficult to interpret the elements of trunk and lower limb on the latter due to the fragment's being heavily damaged, therefore concealing the whole scene. It can only be stated that the main body axis of the fragmentary figure stands in a slight deflection in relation to the axis of the complete one, and that the element of the lower limb stretches out directly from its base axis. There are no visible traces of other elements that could be associated with it, such as the two parallel lines hanging from the leg of the complete figure. The most complete element of the fragmentary figure is the arm, which is positioned slightly deflected from the trunk, unlike the arm of the complete figure.

Ultimately, there are two explicit indicators that this fragment most likely bears a dance depiction. The first is the extremely picturesque, dynamic body posture, which is easily perceivable

23 Garfinkel 2003, 241, 215.
24 Garfinkel 2003, 213.
25 Durman 2000, 160.

20 Garfinkel 2003, 157.
21 Garfinkel 2003, 122.
22 Garfinkel 2003, 122.
23 Garfinkel 2003, 215, 241.
24 Garfinkel 2003, 213.
25 Durman 2000, 160.



SLIKA 4. Antropomorfni prikaz na dnu keramičke posude, Vučedol (Durman 2000, 80; izradila I. Turčin).

FIGURE 4. Anthropomorphic depiction on the bottom of a ceramic vessel, Vučedol (Durman 2000, 80; made by I. Turčin).

Antropomorfni prikaz s Vučedola

Na nalazištu Vučedol pokraj Vukovara, 1894. godine pronađen je ulomak dna keramičke posude na kojemu je s vanjske strane urezan antropomorfni prikaz (sl. 4). Nalaz pripada kontekstu kasnobakrenodobne vučedolske kulture i vrlo je dobro poznat u regionalnim istraživačkim krugovima,[26] no dosad još nije bio interpretiran u kontekstu plesa. Kao što je prethodno spomenuto, vremenski i zemljopisno najbliže paralele zasad predstavljaju prikazi iz Franjevca i Szelevényja.[27]

Na ulomku je prikazan jedinstveni antropomorfni lik, izveden tehnikom brazdastog urezivanja. Iako posuda nije očuvana u cijelosti, fragment dna (promjera 6,5 cm) i prikaz na njemu očuvani su u potpunosti. Ostatak je posude ornamentiran prepoznatljivim simbolima vučedolske kulture. Ovaj nalaz uglavnom se interpretira kao „dno posude“, međutim, treba uvažiti i tezu da je ta posuda mogla imati, na primjer, funkciju poklopca, u slučaju čega bi dekorativna funkcija prikaza na vanjskoj strani okrugle plohe bila smislenija.[28]

Antropomorfni lik proporcionalno ispunjava većinu plohe nasred koje je urezan, a smješten je unutar urezanoga kruga koji slijedi rub dna posude. Trup je izveden u tzv. formi klepsidre ili

Anthropomorphic depiction from Vučedol

In the year 1894, at the site of Vučedol, near Vukovar, the bottom of a ceramic vessel with an incised depiction of an anthropomorphic figure was found (Fig. 4). The find dates to the late-Eneolithic Vučedol culture,[26] and is well known in regional research circles, but has so far not yet been interpreted in the context of dance. As mentioned previously, its closest temporal and geographical analogies are the depictions from Franjevac and Szelevény.[27]

A unique anthropomorphic figure is depicted on the fragment, made with the furrow incising technique. Although the vessel is not fully preserved, the fragment of the bottom (6.5 cm in diameter) and the depiction on it are preserved in their entirety. The

26 Hofiller 1933, 12, T. 9: 7; Dimitrijević, Težak-Gregl, Majnarić-Pandžić 1998, 150; Durman 2000, 78; Horváth, Balen 2012, 10.

27 Horváth, Balen 2012, 10.

28 Durman 2000, 82.

26 Hofiller 1933, 12, Pl. 9:7; Dimitrijević, Težak-Gregl, Majnarić-Pandžić 1998, 150; Durman 2000, 78; Horváth, Balen 2012, 10.

27 Horváth, Balen 2012, 10.

dvostruke sjekire.[29] Glava, vrat i ekstremiteti izvedeni su jednolinijski: glava je mali krug (ili točnije, velika točka) iz kojeg se okomito spušta duga linija vrata, u istoj okomici sa središnjom osi klepsidre, odnosno trupa. Gornja horizontalna linija klepsidre ne čini samo granicu trupa, već i dio gornjih ekstremiteta. S obje je strane nešto dulja od uglova same klepsidre i s oba njezina kraja pod pravim kutom prema gore izlazi po jedna okomita linija koja završava otprilike u ravnini sa spojem glave i vrata. Na vrhu obje okomite linije zrakasto su raspoređene po tri kratke linije. Ovakva kompozicija gornjih ekstremiteta predstavlja ruke horizontalno podignute na razini ramena i pravokutno savijene u laktu prema gore, s raširenim prstima. Donji ekstremiteti – noge – prikazani su kao dvije paralelne okomite linije koje se spuštaju iz donje horizontalne linije ruba klepsidre i na koje se na donjem kraju nastavljaju dvije kratke dijagonalne linije, odnosno stopala. Na bočnim krakovima donjeg trokuta klepsidre mogu se primijetiti kratke, poprijeko položene paralelne linije – otprilike četiri s lijeve i tri s desne strane. Slabije uočljivi slični elementi mjestimice su donekle zamjetljivi i na gornjoj polovici klepsidre te na linijama ruku. Međutim, s obzirom na činjenicu da je te linije moguće jasnije uočiti tek na uvećanim fotografijama prikaza, čije su realne dimenzije prilično male, vrlo je teško odrediti predstavljaju li one neki određeni element na prikazu (npr. dijelove nošnje) ili su samo posljedica procesa i tehnike urezivanja linija namijenjenih ispunjavanju inkrustacijom.

rest of the vessel is ornamented with symbols characteristic of the Vučedol culture. This find is usually interpreted as the "bottom of the vessel", but it should be borne in mind that the pot may have had, for example, the function of a lid, in which case the decorative function of the depiction on the outer side of the round plane would make more sense.[28]

The anthropomorphic figure proportionally fills most of the plane in the middle of which it is incised, and is positioned within the engraved circle that follows the edge of the base of the vessel. The trunk is depicted in the so-called hourglass form.[29] The head, the neck and the extremities are depicted with single lines: the head is a small circle (or more accurately, a large dot) from which the long line of the neck comes down vertically, following the same vertical line which makes the central axis of the hourglass, that is the trunk. The upper horizontal line of the hourglass does not only constitute the borderline of the trunk, but also helps form the upper extremities. It is extended by two short horizontal lines protruding out of the borders of the hourglass on both sides, continued by short vertical lines streaming upwards, ending approximately in the same plane as the joint between the neck and the head. Those vertical lines end with three short, radially arranged lines. Such composition of the upper extremities represents arms raised horizontally at shoulder level and bent rectangularly upward at the elbow, with widely spread fingers. The lower extremities – legs – are depicted as two parallel vertical lines descending from the lower horizontal borderline of the hourglass, with two short diagonal lines at their lower ends depicting the feet. Four perpendicular short lines on the left, and three short perpendicular lines on the right lateral arm of the lower triangle of the hourglass can be observed. Similar but less visible elements are arguably noticeable in some areas of the upper half of the hourglass, and on the lines of the arms.

a b c

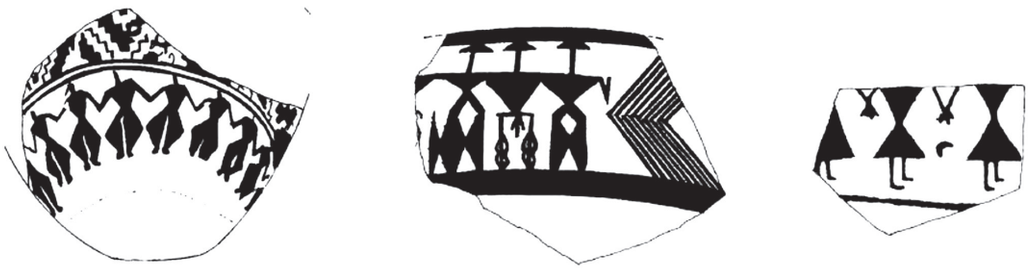
SLIKA 5. Prikazi plesača s rukama podignutima horizontalno na razini ramena, savijenima pod pravim kutom u laktu prema gore, jugoistočna Europa i Bliski istok (obradila I. Turčin):
a. Sarvaš (Garfinkel 2003, 214, sl. 10.10: c; prema Müller-Karpe 1968, T. 143: 1);
b. Dumeşti (Garfinkel 2003, 207, sl. 10.3: a; prema Maxim-Alaiba 1987, sl. 13);
c. Kurucay Höyük (Garfinkel 2003, 122, sl. 7.9: a; prema Duru 1980, sl. 44: 4).

FIGURE 5. Depictions of dancers with upper limbs raised horizontally at shoulder level, and bent from the elbow upwards at a right angle, southeast Europe and Near East (adapted by I. Turčin):
a. Sarvaš (Garfinkel 2003, 214, Fig. 10.10: c; after Müller-Karpe 1968, Pl. 143: 1);
b. Dumeşti (Garfinkel 2003, 207, Fig. 10.3: a; after Maxim-Alaiba 1987, Fig. 13);
c. Kuruçay Höyük (Garfinkel 2003, 122, Fig. 7.9: a; after Duru 1980, Fig. 44: 4).

29 Ovaj oblik nije rijetkost među pretpovijesnim niti među antropomorfnim prikazima općenito, ali spomenuti prikaz zasad je jedini primjer „antropomorfizirane" klepsidre unutar vučedolske kulture. Međutim, kao apstraktni motiv, ovaj je oblik česta pojava u ornamentici ove kulture te je vjerojatno riječ o simbolu koji je predstavljao neki važan aspekt u poimanju svijeta kod njezinih pripadnika (vidi Durman, 2000).

28 Durman 2000, 82.

29 This form is not rare among the prehistoric, nor among anthropomorphic depictions in general, but the aforementioned depiction is currently the only example of an "anthropomorphized" hourglass within the Vučedol culture. However, as an abstract motif, this form is a common occurrence in the ornamentation of this culture, and there is a possibility that this symbol represented an important aspect in their perception of the world (see Durman, 2000).



a b c

SLIKA 6. Prikazi plesača s ravnim paralelnim nogama, bliskoistočna slikana keramika (obradila I. Turčin):
a. Chiga Sabz (Garfinkel 2003, 182, sl. 9.19: a; prema Schmidt, Van Loon, Curvers 1989, T. 67: a),
b. Choga Mami (Garfinkel 2003, 176, sl. 9.15: b; prema Oates 1969, T. 31: b);
c. Regija Surab (Garfinkel 2003, 182, sl. 9.19: e; prema Dani 1988, sl. 11).

FIGURE 6. Depictions of dancers with straight parallel legs, Near Eastern painted pottery (adapted by I. Turčin):
a. Chiga Sabz (Garfinkel 2003, 182, Fig. 9.19: a; after Schmidt, Van Loon, Curvers 1989, Pl. 67: a);
b. Choga Mami (Garfinkel 2003, 176, Fig. 9.15: b; after Oates 1969, Pl. 31: b);
c. Surab region (Garfinkel 2003, 182, Fig. 9.19: e; after Dani 1988, Fig. 11).

Glavni argument za to da ovaj prikaz predstavlja plesača njegov je položaj ruku.[30] Ruke podignute horizontalno na razini ramena te pravokutno savijene u laktu prema gore – tip B u klasifikaciji Y. Garfinkela[31] – najčešći je položaj ruku identificiran na pretpovijesnim prikazima plesa s područja jugoistočne Europe i Bliskog istoka.[32] Nalazi se na više od 30 % primjera istražene građe, što ga čini daleko najbrojnijim položajem na prikazima koji su interpretirani kao plesni.[33] Identificiran je na prepoznatljivo antropomorfnim reljefnim prikazima (sl. 5) na neolitičkoj keramici iz Izraela (Ein El Jarba),[34] Turske (Kuruçay Höyük, Tülintepe, Norşuntepe),[35] Rumunjske (Gumelniţa, Dumeşti, Turdaş),[36] Srbije (Vinča)[37] i Hrvatske (Sarvaš),[38] ali i na izrazito shematiziranim reljefnim prikazima (sl. 9: a–c) koje su dosadašnja istraživanja također uključila u korpus prikaza plesača, poput prikaza na keramici s područja današnje Gruzije, Rumunjske, Bugarske i Mađarske (Arukhlo, Scinteia, Truşeşti, Gheläieşti, Tel Azmak, Boršod).[39] Osim ovih primjera, na kojima su prikazi izvedeni kao plastične aplikacije, postoje i slikani i urezani prikazi navedenog položaja. Pri-

However, considering the fact that these lines can be discerned more clearly only on enlarged photographs of what is, in reality, a rather small depiction, it is very difficult to determine whether they represent some particular element of the depiction (for example, parts of attire), or they are just a consequence of the incision and incrustation process and technique.

The main argument that speaks in favour of this depiction's representing a dancer is its arm position.[30] The position of arms raised horizontally at shoulder level and bent rectangularly upward at the elbow – type B in Y. Garfinkel's classification[31] – is the most common arm position identified on prehistoric depictions of dance from the area of southeast Europe and the Near East.[32] It can be found on more than 30% of the material researched, which makes it by far the most numerous arm position on depictions interpreted as representations of dance.[33] It has been identified on distinct anthropomorphic relief depictions (Fig. 5) on Neolithic pottery from Israel (Ein El Jarba),[34] Turkey (Kuruçay

30 Upravo zbog položaja ruku, vučedolski se lik još od pronalaska uvriježeno naziva „orantom" ili „adorantom", odnosno tumači se kao prikaz osobe koja „moli" ili „obožava". Međutim, mogućnost da je na ovom prikazu riječ o plesaču ne isključuje mogućnost da je istovremeno i riječ o „orantu", kao što ni aktivnost plesa ne isključuje ritualni aspekt. Naprotiv, dosadašnja etnološka istraživanja pokazala su da je upravo ples jedna od najvažnijih sastavnica brojnih rituala tradicionalnih društava te da je jedna od njegovih najčešćih funkcija u takvim zajednicama upravo komunikacija s nadnaravnim (Lange 1976, 67–68; Maletić 1986, 68; Garfinkel 2003, 59).

31 Garfinkel 2003, 32.

32 Međutim, nalazi ovog položaja nisu ograničeni samo na navedeno područje već su zabilježeni i u drugim dijelovima Europe i svijeta (Garfinkel 2003, 33).

33 Garfinkel 2003, 33.

34 Garfinkel 2003, 157.

35 Garfinkel 2003, 122, 158.

36 Garfinkel 2003, 207, 214.

37 Garfinkel 2003, 214.

38 Garfinkel 2003, 213–214.

39 Garfinkel 2003, 158, 215, 217.

30 Precisely on the basis of the position of the upper limbs, the Vučedol character has been called "orante" or "adorant", that is, it has been interpreted as a representation of a person who is "praying" or "worshipping". However, the possibility of its representing a dancer does not exclude the possibility of its also representing an "orant", as the dance activity does not exclude the ritual aspect. On the contrary, ethnological research so far has shown that dance is one of the most important components of many rituals of traditional societies, and that one of its most common functions in such communities is precisely communication with the supernatural (Lange 1976, 67–68; Maletić 1986, 68; Garfinkel 2003, 59).

31 Garfinkel 2003, 32.

32 However, the finds of characters in this position are not limited to the area mentioned, but have been recorded in other parts of Europe and the world as well (Garfinkel 2003, 33).

33 Garfinkel 2003, 33.

34 Garfinkel 2003, 157.

mjerice, prepoznatljiv je na slikanoj keramici halafijske kulture s nalazišta u Iraku (Tepe Gawra),[40] na oslikanoj eneolitičkoj keramičkoj posudi iz Jordana (Bab-edh-Dhra),[41] na oslikanom zidu iz neolitičkog sloja na Cipru (Kalavasos Tenta),[42] ali i na prikazima izvedenima tehnikom urezivanja – poput prikaza na cilindričnim eneolitičkim pečatima iz Irana (Choga Mish, Susa)[43] te na posudi iz pred-dinastijskih slojeva s nalazišta Naqada u Egiptu.[44] Kao dodatna analogija vučedolskom prikazu, i ovdje se na velikom broju spomenutih nalaza (Kuruçay Höyük, Kalavasos Tenta, Tepe Gawra, Tülintepe, Norşuntepe, Sarvaš, Turdaş, Naqada) na navedeni položaj ruku nadovezuje i prikaz prstiju.

Vučedolski prikaz implicira paralelno ispružene noge u stajaćem stavu. Prema klasifikaciji Y. Garfinkela, navedeni je položaj drugi po redu učestalosti i nalazi se na oko 15 % istražene građe (tip a),[45] iz čega slijedi da su brojni primjeri plesnih prikaza na kojima su noge plesača prikazane u ovom položaju.[46] Primjerice, na slikanoj keramici s bliskoistočnih nalazišta Samarra, Khazineh (sl. 2: a) i Chiga Sabz (sl. 6: a) skupine ljudskih likova prikazane su s ravnim, paralelnim nogama i simetrično raširenim stopalima,[47] a na jednoj posudi s nalazišta Tal-i Bakun A u istom je položaju prikazan samo jedan plesač.[48] Niz likova s nogama u istom položaju, ali bez naznačenih stopala, nalazi se i na jednom ulomku (sl. 6: b) s nalazišta Choga Mami.[49] Na nalazima iz Khazineha i Chiga Sabza likovi se drže za ruke i raspoređeni su u kolo, duž opsega tijela posude. Možda su najzanimljiviji eneolitički nalazi oslikanih ulomaka iz zapadnog Pakistana – nalazišta Mehrgarh i regija Surab,[50] na kojima je vidljiv niz plesača koji se drže za ruke, ravnih nogu, a tijelo im je također izvedeno u formi klepsidre. Dodatna paralela vučedolskom prikazu nalazi se na prikazu iz Suraba (sl.6: c), na kojem su također naglašena stopala okrenuta ulijevo, a cjelokupni je prikaz nogu izveden, kao i u slučaju vučedolskog lika, s naznakom perspektive (jedna je noga prikazana kraća). Jedina je razlika to što su na spomenutom prikazu stopala u odnosu na nogu položena pod pravim kutom, dok su u slučaju vučedolskog lika blago dijagonalna.[51] Paralele za ovakav prikaz nogu i stopala u određenoj se mjeri nalaze i na nalazima poput pečata iz Tepe Giyana (sl. 2: d) i Telul et Thalathata te kamene ploče iz Megdida

Höyük, Tülintepe, Norşuntepe),[35] Romania (Gumelniţa, Dumeşti, Turdaş),[36] Serbia (Vinča)[37] and Croatia (Sarvaš),[38] as well as on the very schematic relief depictions (Fig. 9: a–c) which have also been included in the published corpus of dance depictions, such as the depictions on pottery from the areas of contemporary Georgia, Romania, Bulgaria and Hungary (Arukhlo, Scinteia, Truşeşti, Ghelăieşti, Tel Azmak, Boršod).[39] In addition to these examples, where the depictions are made in applied relief, there are several examples of similar representations made in painting or incision techniques. For example, this position can be seen on the painted pottery of the Halafian culture from a site in Iraq (Tepe Gawra),[40] on a painted Eneolithic ceramic vessel from Jordan (Bab-edh-Dhra)[41] and on a painted wall from the Neolithic layer on Cyprus (Kalavasos Tenta),[42] as well as on depictions made in engraving techniques, such as depictions on cylindrical Eneolithic seals from Iran (Choga Mish, Susa)[43] and on a vessel from the pre-dynastic layers of the Naqada site in Egypt.[44] As an additional analogy to the Vučedol depiction, here too, on a large number of finds (Kuruçay Höyük, Kalavasos Tenta, Tepe Gawra, Tülintepe, Norşuntepe, Sarvaš, Turdaş, Naqada), the arm position described is paired with a representation of fingers.

The Vučedol depiction suggests straight parallel legs in a standing position. According to the classification of Y. Garfinkel, this position is the second-most frequent, as it is found on about 15% of the material researched (type a),[45] which points towards the fact that there are numerous examples of dance depictions in which the dancer's legs are shown in this position.[46] For example, on painted pottery from the sites of Samarra, Khazineh (Fig. 2: a), and Chiga Sabz (Fig. 6: a), in the Near East, groups of human figures – dancers – are depicted with straight parallel legs and symmetrically spread feet,[47] and on one bowl from theTal-i Bakun A site there is a single dancer depicted in the same position.[48] A line of figures with legs in the same position, but without the indicated feet, is found on a single fragment (Fig. 6: b) from the site of Choga Mami.[49] On the finds from Khazineh and Chiga Sabz, the figures are holding hands and are arranged in a circle circumferencing the body of the vessel. Perhaps the most inter-

40 Garfinkel 2003, 127.
41 Garfinkel 2003, 284.
42 Garfinkel 2003, 124.
43 Garfinkel 2003, 276, 279.
44 Garfinkel 2003, 244.
45 Garfinkel 2003, 33.
46 Prikazi koji su tako interpretirani zbog položaja gornjih ekstremiteta, prikaza kose ili određenih parafernalija te zbog brojnosti prikazanih likova i njihovog međuodnosa – primjerice, mnoštvo likova koji se drže za ruke, u kolu, oko posude (Chiga Sabz) ili četiri lika zrakasto raspoređena oko dna posude s kosom koja vijori (Samarra).
47 Garfinkel 2003, 128, 165, 185.
48 Garfinkel 2003, 195.
49 Garfinkel 2003, 154.
50 Garfinkel 2003, 182.
51 Ovakav prikaz nogu i stopala može se lako pripisati svijesti o perspektivi iako treba imati na umu da je u slučaju vučedolskog lika u tome – barem dijelom – možda odigralo ulogu i to što je antropomorfni prikaz trebalo estetski ravnomjerno smjestiti unutar linije kružnice.
52 Garfinkel 2003, 272, 274, 283.

35 Garfinkel 2003, 122, 158.
36 Garfinkel 2003, 207, 214.
37 Garfinkel 2003, 214.
38 Garfinkel 2003, 213–214.
39 Garfinkel 2003, 158, 215, 217.
40 Garfinkel 2003, 127.
41 Garfinkel 2003, 284.
42 Garfinkel 2003, 124.
43 Garfinkel 2003, 276, 279.
44 Garfinkel 2003, 244.
45 Garfinkel 2003, 33.
46 Depictions that are interpreted this way because of the position of the upper extremities, depictions of coiffure or certain paraphernalia, and because of the number of figures displayed and their interrelationships – for example, a multitude of figures holding hands in a circle around the bowl (Chiga Sabz) or four figures distributed radially around the bottom of a vessel with their hair in waves (Samarra).
47 Garfinkel 2003, 128, 165, 185.
48 Garfinkel 2003, 195.
49 Garfinkel 2003, 154.

(Izrael).[52] Na spomenuta tri prikaza položaj nogu nije posve ravan, već su one blago savijene u koljenu, no potkoljenice su prikazane paralelne i okomite, što u konačnici odgovara prikazu nogu na vučedolskom liku, kojemu gornji dio nogu zapravo prekriva „klepsidra". Vrijedi navesti još dva primjera – nalaz iz Gumelnițe i nalaz iz Turdaşa.[53] Oba prikaza stilski se u puno većoj mjeri razlikuju od vučedolskog prikaza nego što je to slučaj s prethodnim primjerima, no oba sadrže i kombinaciju ravnih, okomitih, paralelnih nogu i karakterističnog položaja ruku.

Međutim, vučedolski potencijalni plesač je sâm. Kao središnji lik, ispunjava posve definiranu plohu i ne postoje naznake da je negdje drugdje na posudi postojalo još sličnih likova.[54] No, iako su pretpovijesni prikazi „solo plesača" rjeđi u odnosu na prikaze više njih, oni nedvojbeno postoje: primjerice, prikazi iz Kalavasos Tente (Cipar), Vinče (Srbija), Nove Vesi (Češka) i Naqade (Egipat), kao i niz prikaza „plesača na brodu" (sl. 7) nacrtanih na stijenama na više nalazišta u Egiptu.[55] Tu je i niz prikaza[56] na kojima također nema naznaka drugih likova, ali za koje, zbog fragmentiranosti mjesta prikaza, to ipak nije moguće sa sigurnošću utvrditi.

esting ones are the Eneolithic painted fragments from western Pakistan – the sites of Mehrgarh and the Surab region,[50] both of which show a line of dancers holding hands, with straight legs and the body depicted in the hourglass form. An additional analogy to the Vučedol figure can be seen in the depiction from Surab (Fig. 6: c). As on the Vučedol representation, the feet on the Surab figure face left, with one leg being shorter than the other, which might suggest the portrayal of perspective. The only difference is that on the Surab depiction the feet are positioned perpendicular to the legs, while in the case of the Vučedol figure they are slightly diagonal.[51] Analogies to this kind of depiction of legs and feet can, to a certain extent, be found on finds such as seals from Tepe Giyan (Fig. 2: d) and Telul et Thalathat, and the stone slab from Megdid (Israel).[52] The figures on these three representations have their legs slightly bent at the knee instead of being entirely straight (as in previous cases). However, their lower parts are depicted parallel and vertical, which ultimately corresponds to the depiction of legs on the Vučedol figure, where the upper part of the legs is covered by the hourglass. Two more examples should be mentioned – a find from Gumelnița and a find from Turdaş.[53] Both depictions significantly differ in style from the Vučedol figure, unlike the previous examples, but both of them have the combination of straight, vertical, parallel legs and a characteristic arm position which is similar to the Vučedol example.

However, the presumed Vučedol dancer is alone. As a central figure, it fills a completely defined surface, and there are no indications that there were other figures placed somewhere else on the vessel.[54] Nevertheless, even though prehistoric depictions of single dancers are scarce compared to the depictions of multiple dancing figures, they undoubtedly exist: for example, depictions

SLIKA 7. Plesači na brodovima – crteži na stijenama, Egipat (obradila I. Turčin): a. Qena-Qoser (Garfinkel 2003, 264, sl. 11.24: h; prema Winkler 1938, sl. 36: 42); b. Wadi Gash (Garfinkel 2003, 264, sl. 11.24: i; prema Winkler 1938, sl. 35: 31).

FIGURE 7. Dancers on boats – rock drawings, Egypt (adapted by I. Turčin): a. Qena-Qoser (Garfinkel 2003, 264, Fig. 11.24: h; after Winkler 1938, Fig. 36: 42); b. Wadi Gash (Garfinkel 2003, 264, Fig. 11.24: i; after Winkler 1938, Fig. 35: 31).

53 Garfinkel 2003, 207, 214.

54 S obzirom na raspored postojećih ornamenata te na veličinu same posude, to je malo vjerojatno.

55 Garfinkel 2003, 264.

56 Npr. Köşk Höyük, Tepe Gawra, Gradešnica, Tel Evani (Garfinkel 2003, 118, 127, 213, 267).

50 Garfinkel 2003, 182.

51 This kind of depiction of legs and feet can easily be attributed to the understanding of perspective, although, in the case of the Vučedol figure, the limited space of the circle within which the figure is placed may have governed the need to shorten the leg.

52 Garfinkel 2003, 272, 274, 283.

53 Garfinkel 2003, 207, 214.

54 Considering the layout of existing ornaments and the size of the vessel, this is highly unlikely.

Zanimljivo je to što, iako nema drugih plesača koji bi ga mogli oformiti, ipak postoji određena poveznica s formom kruga – lik je smješten upravo u središte dna posude, koje je kružna ploha, u ovom slučaju još i naglašena urezanom kružnicom. Veza kruga i plesača (na pretpovijesnim prikazima plesa, ali i u suvremenim tradicionalnim zajednicama) katkad je takva da oni plešu unutar nekog kruga, ali najčešće su plesači dio kružnice. Oni se kreću po obodu kruga, dok je sredina kruga često namijenjena simbolu oko kojeg se odvija ples (poput vatre, ubijene životinje, žrtve, novovjenčanog para itd.),[57] a katkad je i taj središnji element plesač, ili više njih. Međutim, na temelju postojeće građe može se zaključiti da pojedinci, koji se u specifičnim prigodama postavljaju unutar (a osobito u središte) kruga, uvijek obnašaju jednu od dvije uloge: oni su ili predmet ili izvođač određenog rituala,[58] a mogu biti i oboje. U slučaju vučedolskog lika, s obzirom na njegov specifičan stav vjerojatnijom se čini druga opcija, tj. da je riječ o prikazu aktivnog izvođača[59] nekog rituala koji svoju funkciju obavlja u središtu nekoga kruga. Razmatranjem prirode toga kruga nameću se tri mogućnosti. Prva je da krug čine ostali članovi zajednice (statično raspoređeni ili u pokretu po liniji kružnice), dok je druga mogućnost da krug čine određeni predmeti, oblik arhitekture ili prostorna organizacija naselja (kružno raspoređene parafernalije, nastamba kružnog tlocrta ili središnja čistina u selu). Treća je mogućnost da krug oko sebe stvara izvođač rituala, i to vrtnjom.[60] Naravno, postoji i mogućnost kombinacija između dvoje ili svega od navedenoga.

Uslijed analize navedenih izvora i analogija te na temelju izvedenih argumenata, antropomorfni prikaz na dnu posude vučedolske kulture također se može interpretirati kao plesač.

from Kalavasos Tenta (Cyprus), Vinča (Serbia), Nova Ves (Czech Republic) and Naqada (Egypt), as well as a series of "dancers on boats" (Fig.7) on rock drawings at several sites in Egypt.[55] Besides these, there is a number of depictions[56] with no indications of associated dancing figures, although this remains uncertain due to the fragmentation of the finds.

Interestingly, although there are no other dancers that could form it, there is still a certain link with the form of a circle – the figure is placed in the centre of a circular plane, the base of a vessel, which is perhaps also echoed in the incised circle around the figure. The connection between the circle and the dancer (on prehistoric depictions of dance as well as in traditional contemporary communities) sometimes is such that they dance surrounded by some kind of a circle, but most commonly it is reflected in the dancers' circular formation. The dancers form a circle, the centre of which is often reserved for the symbol around which the dance takes place (such as a fire, killed animal, offering, altar, newly-wed couple, maypole etc.),[57] while sometimes that central element can also be a dancer, or several dancers. However, on the basis of the existing understandings, it can be concluded that individuals who are on specific occasions placed within the circle (and especially in the centre) can have two roles: they are either a subject or a performer of a certain ritual[58], and they may also be both. Considering the specific posture of the Vučedol figure, the second case seems more likely – that it is a depiction of an active performer[59] of a certain ritual who performs his role in the centre of some kind of circle. In consideration of the nature of this circle, three possibilities come to mind. The first one is that the circle is formed by other members of the community (either being static or moving around the central figure in the circle). The second possibility would suggest that the circle is formed either by certain objects, an architectural form or the spatial organization of the settlement (circularly arranged paraphernalia, a dwelling with a circular ground plan or a central plateau in the village). Lastly, the third possibility is that the circle is created by the performer of the ritual himself, through spinning.[60] Likewise, a combination of two or all three cases might also be feasible.

Following the analysis of the abovementioned sources and analogies, and on the basis of the arguments derived, the anthropomorphic depiction at the bottom of the vessel of the Vučedol culture can also be interpreted as a dancer.

57 Garfinkel 2003, 87; prema Lange 1976, 84.

58 Etnološka istraživanja pokazala su da su u ritualnim aktivnostima tradicionalnih društava govor, pjevanje i ples iznimno važne i gotovo neizostavne sastavnice (Turner 1984, 25; Bloch 1989, 21; Garfinkel 2003, 57).

59 Aktivni izvođač rituala u takvim zajednicama može biti, ili osoba koja inače obnaša posebnu funkciju unutar zajednice (određeni autoritet zadužen za izvođenje svih ili većine rituala), ili bilo koji član zajednice kojeg je u danom trenutku zapala dužnost da izvede određeni ritual.

60 Vrtnja je specifično kružno gibanje oko jedne osi koje stvara posebnu vrstu ugode, dovodi u stanje transa i postoji u plesnim ritualima brojnih zajednica diljem svijeta. Ne treba zanemariti vjerojatnost da je se određenim tehnikama katkad nastojalo predstaviti i na likovnim prikazima plesa.

55 Garfinkel 2003, 264.

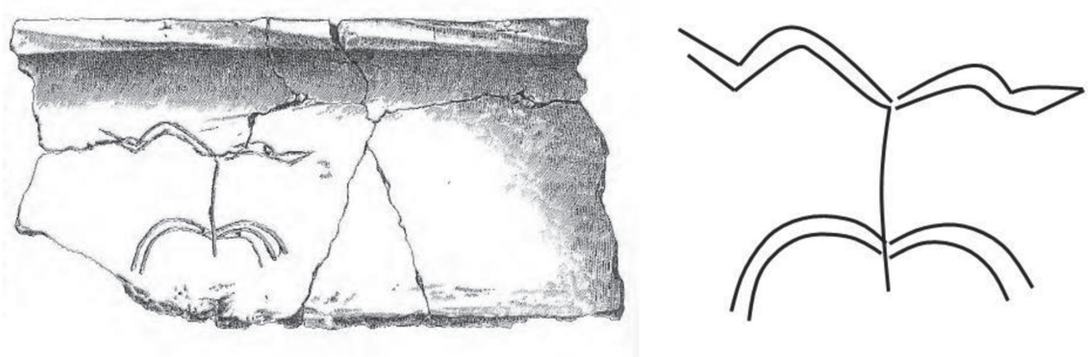
56 For example, Köşk Höyük, Tepe Gawra, Gradešnica, Tel Evani (Garfinkel 2003, 118, 127, 213, 267).

57 Garfinkel 2003, 87; after Lange 1976, 84.

58 Ethnological research has shown that speech, singing and dancing are extremely important and almost indispensable components of the ritual activities of traditional societies (Turner 1984, 25; Bloch 1989, 21; Garfinkel 2003, 57).

59 The active performer of a ritual can in this type of communities be either a person that usually holds a special function within the community (a person authorised for the performance of all or most of the rituals) or any community member that was charged with the performance of a certain ritual at a particular moment.

60 Spinning is a specific circular motion around an axis that creates a special kind of stimulus, leads to trance, and exists in the dances of numerous communities around the world. One should not neglect the probability that this motion was depicted using particular techniques on certain art representations.



SLIKA 8. Antropomorfni prikaz na ulomku keramičke posude, Novigrad na Savi (Dimitrijević, Težak-Gregl, Majnarić-Pandžić 1998, 209; izradila I. Turčin).

FIGURE 8. Anthropomorphic depiction on a fragment of a ceramic vessel, Novigrad on Sava. (Dimitrijević, Težak-Gregl, Majnarić-Pandžić 1998, 209; made by I. Turčin).

Antropomorfni prikaz iz Novigrada na Savi

Na nalazištu Novigrad kod Slavonskog Broda otkriven je keramički ulomak s jedinstvenim apstraktnim prikazom (sl. 8). Ulomak je dio velike posude za spremanje zaliha, datirane u kasno brončano doba. Lik prikazan na njemu nalazi se na vratu posude, odmah ispod otvora. Izveden je tehnikom urezivanja i bio je ispunjen bijelom inkrustacijom. U cijelosti je očuvan i u dosadašnjim publikacijama interpretiran je kao „antropomorfni prikaz".[61]

Prikaz se sastoji od devet linijskih elemenata. Jedan je element okomita ravna linija iz koje „izlazi" ostalih osam linija, simetrično raspoređenih po četiri sa svake strane okomice i grupiranih u dvije skupine – oko gornjeg i donjeg kraja okomice. Četiri gornje linije izvedene su valovito, ali u horizontalnoj ravnini, i počinju sasvim pri vrhu okomice, dok četiri donje iz okomice izlaze u zaobljenim lučnim linijama i počinju nešto iznad donjega kraja okomice. Prihvati li se interpretacija ovog prikaza kao antropomorfnog, može se zaključiti da ravna okomita linija predstavlja trup, valovite linije gornje ekstremitete, a višestruke lučne linije donje ekstremitete.

Određene paralele ovakvom prikazu većinom pripadaju razdoblju neolitika i prije svega se nalaze na području jugoistočne Europe, ali postoje i primjeri s područja Bliskog istoka.[62] Primjerice, na reljefnim prikazima s ulomaka keramičkih posuda kulture Cucuteni s rumunjskih nalazišta Scinteia, Truşeşti i Ghelăieşti te čeških Holašovica, kao i na urezanom prikazu s ulomka pripisanog Bükk kulturi iz mađarskog Boršoda, zamjetne su izrazite shematske sličnosti s likom iz Novigrada (sl. 9). Isto se može ustvrditi i za urezani prikaz na ulomku gipsane posude iz El Kowma u Siriji (1. pol. 7. tis. pr. Kr.) te za oslikani prikaz s keramičke posude iz iranskog Tepe Giyana (6. tis. pr. Kr.), a određene zajedničke crte

Anthropomorphic depiction from Novigrad on Sava

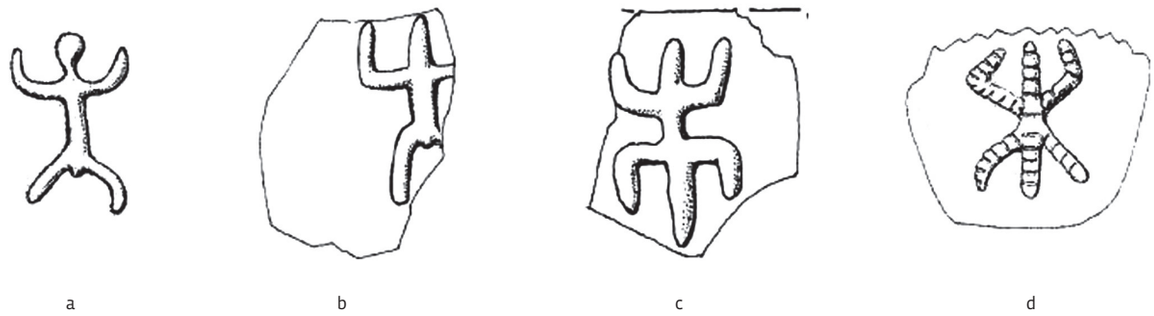
At the site of Novigrad, near Slavonski Brod, a pottery fragment with a unique abstract depiction (Fig. 8) was found. The fragment represents part of a large storage vessel dated to the late Bronze Age. The figure depicted on the fragment is positioned on the neck of the vessel, just below the rim. The depiction was made using the incision technique, with white incrustation filling the grooves. It has been completely preserved, and has been interpreted in former publications as an "anthropomorphic depiction".[61]

The depiction consists of nine linear elements. One element is a straight vertical line from which the other eight lines "emerge", symmetrically distributed to form four lines perpendicular to the basic line, protruding from both of its sides, arranged into two groups: around the upper end and the lower end of the perpendicular. The top four lines are formed in a wave-like manner, but in the horizontal plane, and they begin at the very tip of the perpendicular, while the four bottom ones come out of the perpendicular in the form of curved arched lines, and start somewhat above the lower end of the perpendicular. If the interpretation by which this depiction qualifies as an anthropomorphic one is accepted, it may be concluded that the straight vertical line represents the trunk, the wavy lines represent the upper extremities, and the multiple arched lines represent the lower extremities.

Certain analogies relating to this kind of depiction can be found mostly in the Neolithic period (6th to 5th millennia BC), primarily in southeast Europe, but there are also some examples from the Near East.[62] For example, relief depictions found on fragments of ceramic vessels belonging to the Cucuteni culture from the Ro-

61 Dimitrijević, Težak-Gregl, Majnarić-Pandžić 1998, 205, 209.
62 Milojčić 1960, 9; Garfinkel 2003,121, 188, 211, 225, 228, 231.

61 Dimitrijević, Težak-Gregl, Majnarić-Pandžić 1998, 209.
62 Milojčić 1960, 9; Garfinkel 2003, 121, 188, 211, 225, 228, 231.



SLIKA 9. Antropomorfni prikazi raznih stupnjeva apstrakcije – keramika, jugoistočna Europa i Bliski istok (obradila I. Turčin):
a. Tel Azmak (Garfinkel 2003, 217, sl. 10.13: e; prema Raduncheva 1973, sl. 64);
b. Arukhlo (Garfinkel 2003, 158, sl. 8.30: e; prema Chataigner 1995, T. 33: 13);
c. Truşeşti (Garfinkel 2003, 215, sl. 10.11: e; prema Nitu 1967, sl. 1: 1);
d. Holašovice (Garfinkel 2003, 215, sl. 10.11: c; prema Gimbutas 1982, sl. 144).

FIGURE 9. Anthropomorphic depictions with different levels of abstraction–pottery, southeast Europe and Near East (adapted by I. Turčin):
a. Tel Azmak (Garfinkel 2003, 217, Fig. 10.13: e; after Raduncheva 1973, Fig. 64);
b. Arukhlo (Garfinkel 2003, 158, Fig. 8.30: e; after Chataigner 1995, Pl. 33: 13);
c. Truşeşti (Garfinkel 2003, 215, Fig. 10.11: e; after Nitu 1967, Fig. 1: 1);
d. Holašovice (Garfinkel 2003, 215, Fig. 10.11: c; after Gimbutas 1982, Fig. 144).

mogu se uočiti i na oslikanom prikazu s ulomka keramičke posude protoseskloa kulture s nalazišta Argissa Magula u Tesaliji (poč. 6. tis. pr. Kr.). Ovaj se prikaz, kao i oba spomenuta bliskoistočna primjera, nalazi na ulomku otvora posude, upravo u neposrednoj blizini ruba, što predstavlja još jednu paralelu u odnosu na prikaz iz Novigrada.

S obzirom na visok stupanj apstrakcije svih navedenih prikaza, nužno je znati na čemu se temelji njihova interpretacija kao antropomorfnih likova. Odgovor na to daju prikazi poput onih s nalazišta Ein El Jarba, Arukhlo, Gomolava, Dumeşti, Tirpeşti, Turdaş, Nova Ves, Sarvaš i Villánykösved, koji svi predstavljaju likove shematski jednake prethodno spomenutim apstraktnim prikazima, ali s tom razlikom što je na njima istaknut i jasan prikaz nekog dijela ljudske fizionomije – uglavnom glave i/ili udova (sl. 9: a–b).

Sve spomenute paralele na temelju položaja svojih ekstremiteta interpretirane su kao prikazi plesača. Prije negoli se i prikaz iz Novigrada na temelju shematskih sličnosti interpretira na isti način, valja analizirati i razlike između njega i spomenutih analogija.

Većina su navedenih primjera prikazi na kojima su donji ekstremiteti rašireni horizontalno u stranu i zatim u koljenu savijeni okomito prema dolje, dok se gornji ekstremiteti nalaze u zrcalno jednakom položaju: simetrično nogama, ruke su savijene pod pravim kutom u laktu prema gore.[63] Manja su odstupanja vidljiva samo na nekoliko primjera u kojima je kut jednih, ili oba ekstremiteta, nešto veći ili manji od 90°[64] ili su ekstremiteti rašireni na

manian sites of Scinteia, Truşeşti and Ghelăieşti and the Czech site of Holašovice, as well as on the incised depiction from a Bükk culture pottery fragment from the Hungarian Borsod, show remarkable schematic similarities with the figure from Novigrad (Fig. 9). The same can be ascertained for the engraved depiction on a fragment of a plaster pot from El Kowm in Syria (first half of the 7th millennium BC), and for the depiction painted on a ceramic vessel from the Iranian Tepe Giyan (6th millennium BC), and certain similar features can also be distinguished on the painted depiction on a fragment of a Proto-Sesklo ceramic vessel from the Argissa Magula site in Thessaly (early 6th millennium BC). This depiction, as well as both of the abovementioned Near-Eastern examples, is located on a fragment of the vessel's rim, and it is positioned in immediate proximity to the rim, which represents yet another analogy for the depiction from Novigrad.

Considering that all the aforementioned depictions show a great degree of abstraction, it is necessary to know what their interpretation as anthropomorphic characters is based upon. The answer to this question is provided through depictions discovered at the sites of Ein El Jarba, Arukhlo, Gomolava, Dumeşti, Tirpeşti, Turdaş, Nova Ves, Sarvaš and Villánykösved, all of which represent figures schematically equal to the aforementioned abstract depictions, but with the difference of having at least one part of the human physiognomy – mostly head and/or limbs – depicted in an entirely recognizable way (Fig. 9: a–b).

On the basis of the positions of the extremities, all these analogies are interpreted as depictions of dancers. Before the Novigrad depiction is interpreted in the same way on the basis of schematic similarities, it is necessary to analyse its differences in comparison to the analogies mentioned.

The majority of those examples of analogies are depictions in which the lower extremities are spread horizontally to the side, and then bent vertically downwards at the knees, while the up-

63 Opisani položaj, tj. kombinacija položaja gornjih i donjih ekstremiteta, predstavlja najčešći položaj cijelog tijela među prikazima koji su interpretirani kao plesni te je identificiran na barem 27 % istraženog materijala s područja Bliskog istoka, sjeverne Afrike i jugoistočne Europe (Garfinkel 2003, 33).

64 Npr. Ein El Jarba – ruke pod većim kutom; Tepe Giyan – ruke pod većim, a noge pod nešto manjim kutom.

neki drugi način.[65] Usto, na svim prikazanim likovima raspoznatljiva su isključivo četiri ekstremiteta: dvije ruke i dvije noge, od kojih je svaki jasno predstavljen samo jednim elementom.

Na prikazu iz Novigrada donji ekstremiteti prikazani su raširenu zaobljenome luku, u položaju vrlo sličnom položajima nogu na prethodno spomenutim primjerima. Međutim, gornji su ekstremiteti prikazani valovito raširenu horizontalnoj ravnini, a svi su ekstremiteti izvedeni dvostrukim linijama, što s obzirom na cjelokupan stil prikaza stvara mjesto interpretaciji da ih je prikazano ukupno osam – četiri ruke i četiri noge.

Za valoviti prikaz gornjih ekstremiteta lika iz Novigrada može se reći da predstavlja singularitet ne samo među pretpovijesnim prikazima plesa nego i među pretpovijesnim antropomorfnim prikazima općenito.[66] Stoga, u izdvojenoj interpretaciji toga položaja može se samo pretpostaviti da je namjera mogla biti prikaz horizontalno raširenih ruku koje se na neki način pomiču, možda i samo unutar određenih granica vertikalne ravnine.

Drugi element koji prikaz iz Novigrada izdvaja od svih spomenutih paralela, a to je množina ekstremiteta ili po dva elementa za svaki pretpostavljeni ekstremitet, također predstavlja singularitet, i u kontekstu ove analize možda je najzanimljiviji. Simbolika takvog prikaza ekstremiteta može biti višeznačna. Jedna je mogućnost da je riječ o prikazu nekog bića s više ruku i nogu. Takvi prikazi nisu rijetkost u likovnim djelima kasnijih razdoblja te se ne može isključiti mogućnost da su postojali i u pretpovijesti.

Druga je mogućnost da su dvostruke linije samo tehnika kojom se nastojala postići plastičnost u prikazu udova. Međutim, nedostatak te interpretacije vidljiv je u jednolinijskom načinu na koji je izveden trup. Rijetki su primjeri u umjetnosti općenito u kojima su ravnopravni elementi prikaza izvedeni različitim tehnikama[67] i stoga ova činjenica ne isključuje u potpunosti navedenu mogućnost, ali je čini manje vjerojatnom.

Treća je mogućnost da je namjera bila prikazati pokret. S obzirom na dinamične položaje svih ekstremiteta (osobito „valovite" ruke) i općenitu shematsku sličnost s mnogim prikazima, koji su interpretirani upravo u tom kontekstu, teško je izbjeći pomisao da je riječ o prikazu plesača, dakle bića koje naglašeno čini kretnje svojim ekstremitetima. Usto, treba imati na umu i mogućnost da su se te kretnje možda nastojale dočarati ne samo dinamičnim položajem ekstremiteta već i njihovim tzv. umnoženim pri-

per extremities mirror the same position: symmetrical to the lower limbs, the upper limbs are bent upwards at the elbow at right angles.[63] Minor deviations are only visible on a few examples where the angle of one or both extremities is somewhat greater or smaller than 90 degrees,[64] or the extremities are spread in some other way.[65] Moreover, only four extremities are distinguished on all the depicted figures: two hands and two legs, each of which is clearly represented by only one element.

The depiction from Novigrad shows the lower extremities spread in a round arc, in a position very similar to the positions of the legs on the aforementioned examples. However, the upper extremities are depicted in a wave-like manner, widely spread in the horizontal plane, and all extremities are drawn with double lines, which, considering the overall style of the depiction, can be interpreted as if a total number of eight extremities are depicted: four upper limbs and four lower limbs.

It can be asserted that the wave-like manner in which the upper extremities are depicted represents a certain singularity among the prehistoric depictions of dance, as well as among prehistoric anthropomorphic representations in general.[66] Therefore, if this position should undergo separate interpretation, one may assume that the intention could have been to depict arms in motion, spread horizontally and moving perhaps only inside certain boundaries within the vertical plane.

The second element which sets apart the Novigrad depiction from the other analogies is the plurality of extremities, or two elements for each assumed extremity. This also represents a singularity and provides perhaps the most interesting element in the context of this analysis. The symbolism of such representation of extremities could include various meanings. One possibility is that it might represent a certain creature with multiple upper and lower limbs. Such depictions are not a rarity in the artworks of later periods, and one cannot rule out the possibility that they also existed in prehistoric times.

The second possibility is that the double lines represent a depiction technique used to achieve limb plasticity. However, the shortcoming of that interpretation is reflected in the unilinear manner in which the trunk is presented. There are rare examples of art in general which show equal elements of a depiction being presented in different manners,[67] so this fact does not entirely exclude the possibility under consideration, but it does make it less likely.

65 Npr. Holašovice – noge ravno dijagonalno raširene, ruke savijene prema glavnoj osi tijela pod kutom manjim od 90°; Arukhlo 1 – noge raširene i zaobljene; Arukhlo 2 – i noge i ruke raširene u ravnim dijagonalama; Nova Ves – ruke savijene u laktu prema dolje.

66 Primjerice, nijedan takav prikaz nije izričito zabilježen na opsežnoj građi obrađenoj u istraživanjima Y. Garfinkela, niti je naveden u njegovoj klasifikaciji položaja ruku.

67 Maletić 1986, 76.

63 The position described, i.e. the combination of positions of upper and lower extremities, represents the most common position of the entire body among the prehistoric dance depictions, identified within at least 27 % of the overall researched material deriving from the Near East, North Africa and southeast Europe (Garfinkel 2003, 33).

64 E.g. Ein El Jarba– arms positioned at a higher angle; Tepe Giyan– arms at a bit higher angle, and legs at a bit lower.

65 E.g. Holašovice– legs spread diagonally, arms bent towards the main body axis at an angle lower than 90 degrees; Arukhlo 1 – legs spread, arched; Arukhlo 2 – both legs and arms spread diagonally; Nova Ves– arms bent downwards at elbows.

66 For example, such depiction has never been explicitly recorded in the extensive material studied in Y. Garfinkel's research, nor was it specified in his classification of arm positions.

67 Maletić 1986, 76.

kazom: u istoj maniri u kojoj u suvremenom dobu čine uzastopne fotografije tijela u kretanju.

Na temelju spomenutih analogija ovaj izrazito apstraktni prikaz interpretira se kao antropomorfni, a uslijed takve interpretacije te s obzirom na prikazani položaj ekstremiteta, može se zaključiti da je i u ovom slučaju vrlo vjerojatno riječ o prikazu plesa.

Zaključak

Dosadašnja antropološka[68] istraživanja ukazuju na to da je u pretpovijesti ples imao iznimno važnu ulogu u životu pojedinca i društva te da je, za razliku od njegove uloge u većini suvremenih društava, u drevnim zajednicama ova aktivnost predstavljala jedno od glavnih sredstava socijalne i duhovne komunikacije.[69] Ovu tezu potkrepljuje i obilan korpus neolitičkih i eneolitičkih prikaza plesa s područja Bliskog istoka i jugoistočneEurope, na temelju kojeg je utvrđeno da plesni motiv predstavlja najzastupljeniji društveni motiv na likovnim prikazima sa spomenutog područja u razdoblju od 8. do 4. tis. pr. Kr., dok ga u razdoblju između 4. i 3. tis. pr. Kr. mjestimično istiskuju drugi motivi.[70]

Tri prikaza razmatrana u ovome radu prostorno se naslanjaju na područje jugoistočne Europe, no u odnosu na navedene paralele pripadaju nešto kasnijim razdobljima. Analizom njihovih vizualnih karakteristika utvrđeno je postojanje temelja za interpretaciju ovih triju primjera kao prikaza plesača, što otvara mogućnosti mnogo složenijim razmatranjima i interpretacijama takvih pretpovijesnih antropomorfnih prikaza.

Zahvale

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The third possibility is that the intention was to depict movement. Given the dynamic positions of all the extremities (especially the wave-like arms) and the general schematic resemblance to many depictions interpreted precisely in this context, it makes a valid hypothesis to assume that this is a representation of a dancer, that is a being that produces accentuated movement with its extremities. It should also be borne in mind that the attempt may have been to depict those movements not only through the dynamic position of the extremities, but also through their so-called multiple representation, in the same manner used nowadays with consecutive photographs of a moving body.

Based on the aforementioned analogies, this highly abstract representation is interpreted as anthropomorphic. Following such interpretation and in view of the displayed position of the extremities, it can be concluded that this depiction also very likely represents dance.

Conclusion

Anthropological[68] research conducted so far points towards the fact that dance in prehistory had an extremely important role in the life of an individual and society and that, unlike its role in modern societies, this activity was one of the main means of social and spiritual communication in ancient communities.[69] This thesis is supported by the vast corpus of Neolithic and Eneolithic depictions of dance from the Near East and southeast Europe, on the basis of which it has been established that the dance motif represents the most common social motif in the visual art of this area in the period from the 8th to the 4th millennium BC, while in the period between the 4th and 3rd millennia it was gradually replaced by other motifs.[70]

The three depictions discussed in this paper geographically relate to the area of southeast Europe, but belong to somewhat later periods in regard to the analogies mentioned. The analysis of their visual characteristics has established a basis for the interpretation of these three examples as depictions of dance, which in turn allows for more complex considerations, and interpretations of such prehistoric anthropomorphic representations.

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68 Pojam „antropološka“ ovdje se navodi kao krovni termin za sociološka, lingvistička, etnološka, arheološka, koreološka, etnokoreološka i arheokoreološka istraživanja.

69 Isto je vidljivo i kod današnjih plemenskih zajednica na sličnim stupnjevima razvijenosti (Maletić 1986, 14).

70 Garfinkel 2003, 269.

68 The term “anthropological” is used here as the “umbrella term” for sociological, linguistic, ethnological, archaeological, choreological, ethno-choreological and archaeo-choreological research.

69 This is also evident in today’s tribal communities at similar degrees of development (Maletić 1986, 14).

70 Garfinkel 2003, 269.

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THE BOOK OF THE AMDUAT ON PAPYRUS ZAGREB E-605

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The paper deals with an ancient Egyptian text from the Archaeological Museum in Zagreb *collection. It provides the hieroglyphic text, with its transliteration and translation, of Papyrus Zagreb E-605. The papyrus fragment contains hours 10–12 from the Amduat, dated to the 21st or 22nd Dynasty, during the Third Intermediate Period. The text describes renewal of life in the natural cycle of the Sun at the end of the adventures of the joint nocturnal journey of the god Re and a human soul.*

Key words:
Amduat, Papyrus Zagreb E-605, Sun-boat, underworld, hidden chamber, iconography, Duat, image, soul, night hours

Amduat is a name used for a specific form of the Egyptian *Book of the Netherworld,*[1] which was the most complex composition of eschatological texts during the New Kingdom (1550–1069 BC). The earliest attestations of the *Amduat* (meaning "What is in the Netherworld") appeared in the decoration of 18th dynasty royal tombs. The text was also named the *Book of the Hidden Chamber* and is closely connected with the development of the architecture[2] of the royal tombs in the Valley of the Kings. The earliest examples of the text are known from the burials of Tuthmosis I and Hatshepsut, while the first complete versions were found in the tombs of the Pharaoh Tuthmosis III and his vizier Useramun. Eighteenth-dynasty examples were written on the walls of the burial chambers. During the second half of the 21st Dynasty the book was accepted by the Theban priesthood, and from the Third Intermediate Period on it become a common element of the funerary customs of the elite. At the same time, versions of the *Amduat* reach the coffins[3] and papyri as well. The book was used until the Ptolemaic period. The main concern of the *Book of the Hidden Chamber* is the regeneration of a human soul supported by the Sun god, or even his own parallel renewal. The regeneration in the treatise flows through twelve sections until the soul of the dead person is revived on the horizon at the moment of the sunrise. Various obstacles and demonic creatures[4] try to stop the sun boat, so the journey becomes a drama. Iconographic representations of different levels of Duat, of the gods dwelling there, and also of the destiny of the human souls, provide numerous data about the ancient Egyptian concept of the afterlife and ethics. The *Amduat* itself represents a further step towards the more profound esoteric concepts of Egyptian eschatology. As such, the *Amduat* is diametrically opposed to the

1 Wente 1892; Budge 1905; Hornung 1999; 2007.
2 Roehrig 2007; Richter 2008.
3 Duarte 2017, 137–144.
4 Apophis, the great enemy of the Sun.

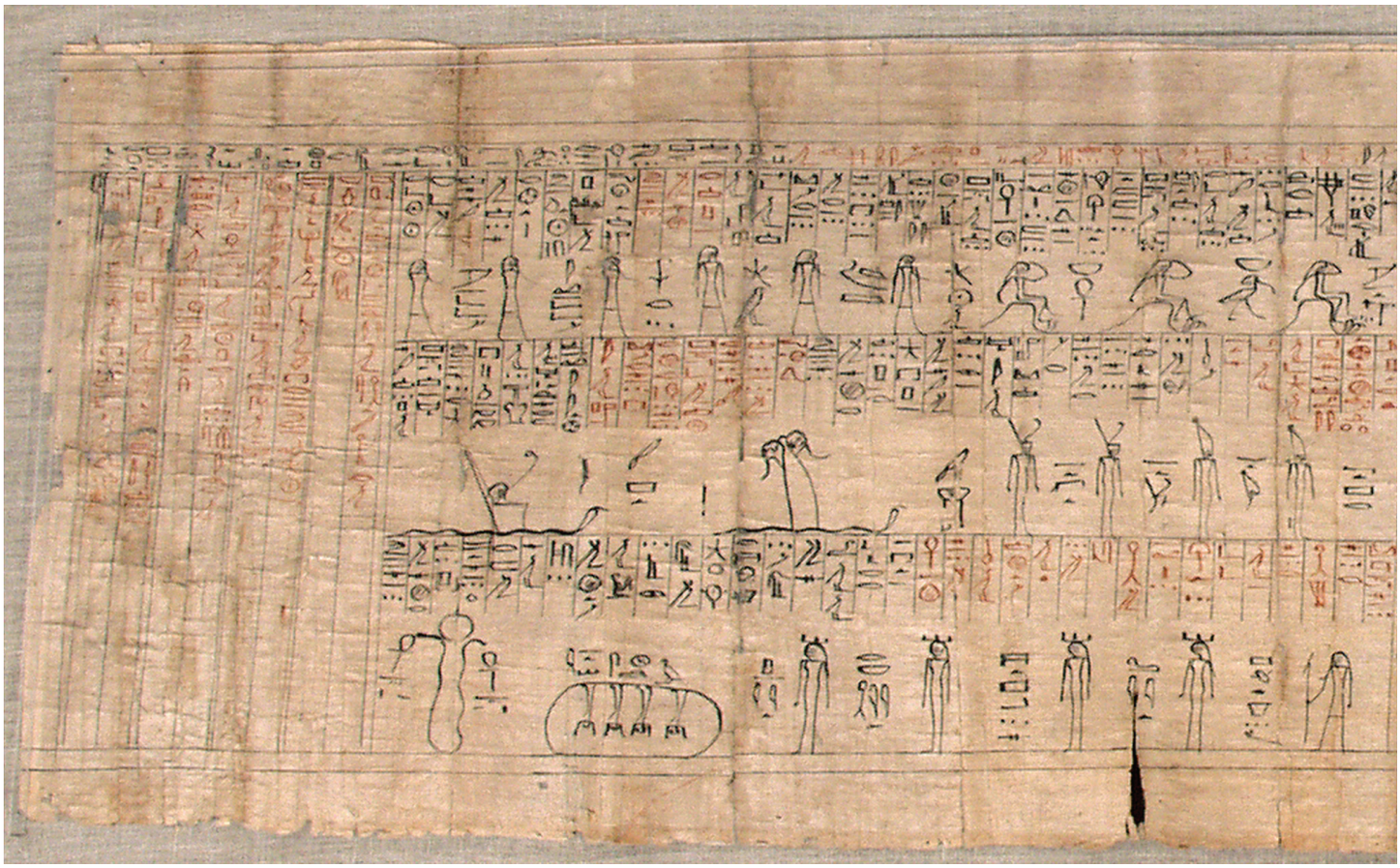


FIGURE 1. Papyrus Zagreb E-605 (photo by I. Krajcar).

rather popular beliefs widespread in the *Book of the Dead*, presenting an authentic dualistic myth of the passage. The Sun and a soul are destined to travel through different reality-layers of the hidden world and to face degradation in primaeval darkness and resurrection at the end of the path. The *Amduat* is also based on unity with the Sun. The soul travels on the barque of Re. It could be said that the deceased unites with universal light. That could be assumed as a restoration of the primordial ideas of the solar religion based on the Old Kingdom cult of the Sun.

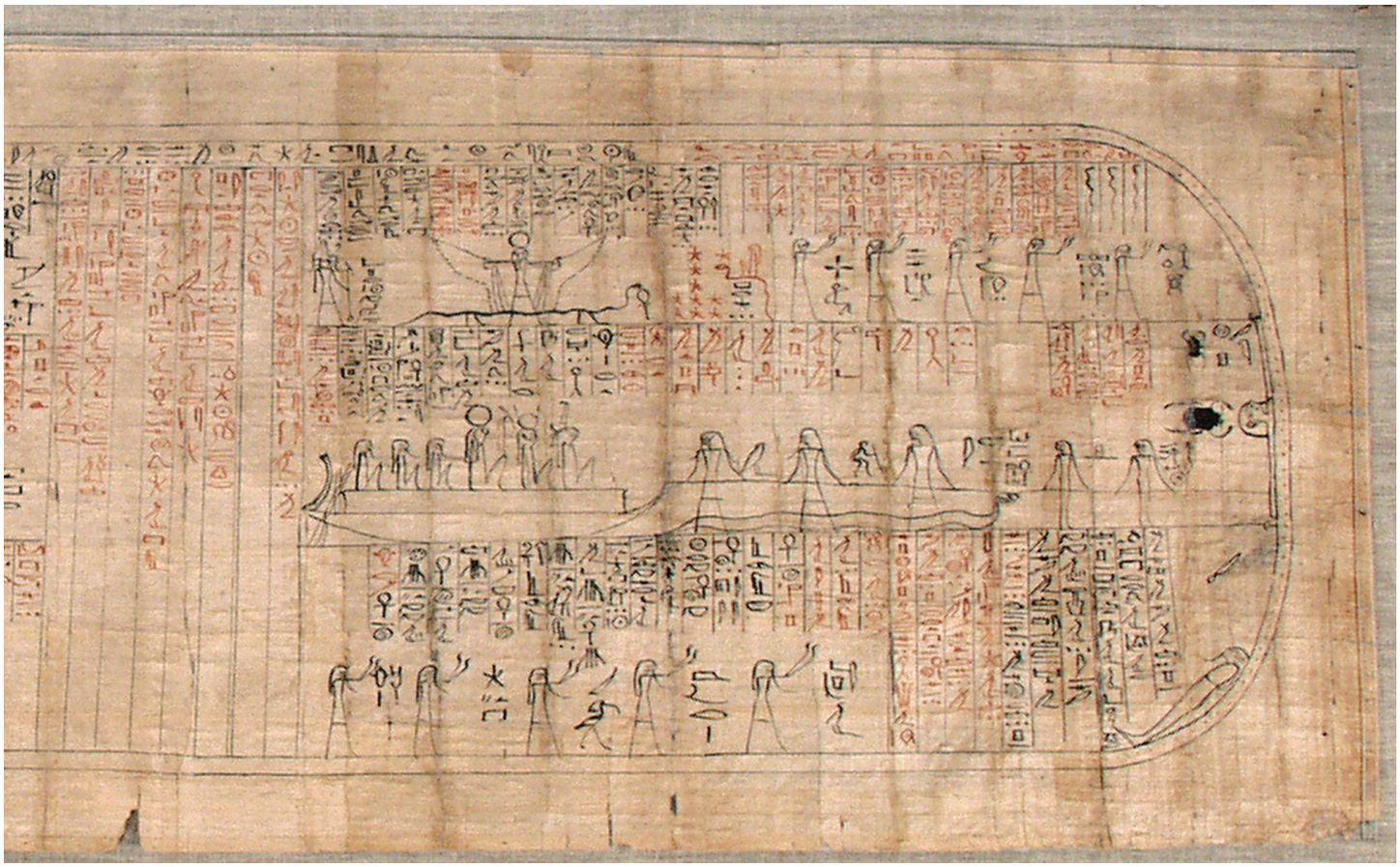
Description

The Ancient Egyptian collection of the Archaeological Museum in Zagreb owns an extensive fragment of the *Amduat*: three chapters of the text, known as the 10th, 11th and 12th hours of the night. The papyrus originally belonged to Franz Koller's collection. The collection[5] was acquired by the Museum in the 19th century, and the fragment was recorded in the inventory book as inv. no. 605 (*Papyrus Zagreb E-605*[6]). It seems that part of the text has been lost. The missing part of the papyrus may contain several more '*Amduat* hours' and even the name of the owner himself. It is also possible that the papyrus was never finished, due to the fact that some sections in the lower register, below the text arranged in columns and written in red ink, are left empty.

On the left-hand side of the preserved papyrus fragment, currently on show as part of the Museum's permanent exhibition (149.5cm x 43.5cm), eight columns of the text, written in red ink, present the 10th hour of the *Amduat*. Within the main part of the papyrus, vignettes and texts are arranged in three registers which symbolise the three realms: sky, earth and underworld. At the very end of the fragment, at the right, there is a fragmentary preserved ellipsoid form – part of a cartouche on which a mummy lies – where the end of the soul's journey through the 12 night

5 The main part of the Egyptian collection in the Museum was purchased from the Franz Koller inheritance in Prague. The collection of 1934 artefacts was brought to Zagreb in April 1868. A more detailed history of the collection can be found in: Ljubić 1889, 1; Monnet Saleh 1970, 5; Mirnik, Uranić 1999, 197–208; Tomorad 2003, 19–27; Uranić 2005, 5–6; Mirnik 2007, 16–22; Tomorad 2016, 327–329.

6 Published in: Monnet Saleh 1970, 165, cat. no. 883; Uranić 2007, 196, cat. no. 444.



hours is depicted and symbolised with the Sun in the form of a scarab elevating in the morning sky. The cartouche line seems to represent the sky. The text is placed in horizontal and vertical squares. The papyrus was mentioned by A. Niwinski[7] and dated[8] to 21st or 22nd Dynasty. If correct, this may mean that Papyrus Zagreb E-605 preserves one of the earlier versions of the *Amduat* on papyrus.

Contents of the papyrus

The fragment describes renewal of life in the natural cycle of the Sun at the end of the adventures of the joint nocturnal journey of the god Re and a human soul. The text consists of the so-called 10th, 11th and 12th 'night hours' of the book. The text is written from the left towards the right side of the papyrus, where the representation of the dawn and resurrection are symbolised by the scarab. The central motif of these three chapters (hours) is the image of the deceased and its magical role in successfully passing through the levels of Duat with the help of the gods. According to the text, the image was placed in the "hidden chamber." Through magic, rituals and utterances, the image of the deceased becomes able to unite with Re on his own journey to the horizon. Magical means, which implies knowledge of the names of the gods, are required of the soul. The horizontal text placed on the uppermost part of the papyrus states: "[If] their names are known [he shall] travel and pass through Duat [and he shall] not be turned back from flying up before Re."

The vignettes on *Papyrus Zagreb E-605* are arranged within three registers which are, as already mentioned, separated text fragments. Two blocks consisting of three registers are separated by squares of text, arranged in columns. The arrangement of iconographic and textual elements creates a 'visual impression' of six autonomous fields. On the left side of the papyrus surface, in the

7 Niwinski 1989, 376.

8 J. Monnet Saleh (Monnet Saleh 1970, 165, cat. no. 883) dated the papyrus to the New Kingdom, which is too early for the Amduat to appear on the medium of papyri.

upper register, nine anthropomorphic gods (facing East, standing or walking, three of them riding double-headed snakes) are shown. In front of each of the figures, the god's name is written. The central register displays four goddesses, two of them wearing a white crown and the other two a red one. They are followed by the hieroglyph of Amenti, the double-headed god, and a red crown. The lower register presents two snakes, each of them named as *ꜥnḫ(w) tꜣ(wy)* – "those who live in (Two) land(s)" – lifting up the sun disc. The scene described above, in many other examples, presents the images of two seated goddesses wearing the crowns of Upper and Lower Egypt and flanking the snakes facing each other. The scene is followed by the *ka*-souls hanging upside down in the oval realm[9] with the text *ỉnt sḏw*, "the valley of those (who are) upside down". The scene seems to represent a separate hell-like cavern (of fire pits) for souls who have been punished and detained. In other versions of the *Amduat* there are usually representations of drowned people, next to those hanging upside down, in the 10th hour. Also in other versions, around the hanging people, red points are depicted,[10] alluding to fire. In the *Amduat* there frequently appears "a pit of fire", or "a pit full of corpses." Thus, it is also possible to render the word *ỉnt* as "pit." On the right there are four goddesses with a *ḫswt* or *smyt* sign for the desert or necropolis, and a god with a *wꜣs* stick. All five of them are facing left (to the West – the direction opposite to the sun's movement in Duat). There is not much doubt about the nature of the gods in this place. Their names *Pzyt* (The One Who Turns Upside Down), *Rkḫyt* (The Fiery One), *Ḥrśꜥw.s* (The One Who Cuts) and *Sꜣyt* (unclear meaning) indicate their function of threat and torture. The scene is followed by the inscription *ỉnt sḏw*, "the valley of those turned upside down." This scene is also mentioned as part of the punishment in Hornung's article[11] on hell-like ideas in the *Amduat,* and it may be connected with the Egyptian belief according to which people who were killed by crocodiles or drowned in the Nile are not destined for eternal life. This was a consequence of the fact that their bodies were missing and could not be mummified.

Final phase of regeneration

On the right-hand side of the papyrus, the last two hours of the night, when the last preparations for sunrise are taking place, are presented. The creator god Atum is in the upper register spreading the wings of a big snake, standing on his back. The snake is holding an *ankh* in its mouth. Behind Atum's back is a two-headed god named *ꜥpr ḥrk ḏt tꜣ* with the crowns of Upper and Lower Egypt and *wꜣs* stick. Atum holds the wings of the snake and faces another god sitting on another snake facing in the opposite direction. The figure on the snake back is elevated above the stars – nine of them, and all depicted in red. Within the same register, far to the right, five gods are shown as worshiping the scarab of the rising sun. The two snakes in the eleventh division – one standing on four legs and one elevating above the stars – could be one and the same. They, as well as the two-headed god on the left, symbolise the duality of the movement of time. Usually, in this part of the *Amduat*, Atum is represented with two *wḏꜣt* eyes above. The winged snake is an instrument of the god Atum, being enabled to annihilate time. Of the winged snake (which is male), named "He who takes away the hours", as well as of the other (female) snake, it is said that "he (or she) swallows his (or her) images again." The two eyes (not represented in the Zagreb Papyrus) are symbols of the Sun and the Moon. The two eyes meet in Duat on two bars (for example on texts of hypocephalus). So the two snakes seem to be the two directions of the passage of time. The picture of the two snakes and the two-headed god being in the upper register means rather the esoteric meaning of the main event shown in the middle register of the twelfth hour.

In the central register three male and two female gods are represented as pulling the sun-boat, together with a big snake. In front of them the Sun is rising up as the Khepri-scarab towards a double line with a human head of Nut at the exit from Duat. Above the scarab there is also a description "the beauty of the Sun's eye." In the main picture of the twelfth hour, Re is sitting on the boat preceded by Maat and Hathor, followed by three more human figures. These figures which are sitting behind Re could be gods. However, it is also possible that these are images of the deceased, i.e. of his *ka* and himself. If so, this would be the only place which shows the image of the dead person. Unlike the various versions of the *Book of the Dead*, generally speaking in the *Amduat* the deceased person – the owner of the text – is not named or represented.

Re is being completely renewed and ready to rise in the sky. In this hour the central motif is the picture of the great snake. The Sun-boat is pulled by his followers through the snake's body and so finally renewed. The boat carrying Maat, Hathor, Re and three more figures, enters the snake at his tail and comes out from his mouth. Hornung has an interesting theory[12] of that idea being "inversion of time necessary for general rejuvenation." Indeed, not only time, but also various chthonic forces, frequently take the shape of a snake in Egyptian eschatology. While in the original version of the *Amduat* there were twelve human figures pulling, in *Papyrus Zagreb E-605* there are five of them (three male and two female). Above the snake the Horus (the young man) and *ṯnỉ* – a man with a walking stick (the old man) – are shown. Above the head of the snake the text reads: *kꜣ n dỉ ꜥnḫ nṯrw* – "*ka* which gave life to the gods". This passage of the sun barque through the great snake is the central motif of the papyrus as a whole. It is, in fact, a parallel mythic image to the snake-headed barque carrying the eye of the Sun in other Third Intermediate Period *Book of the Dead* compositions.[13]

9 In Budge 1905, 253 translated as "the pit of fire."

10 For example see: Kunst voor de eeuwigheid, Catalogue, National Museea voor Kunst en Geschiedenis, Brussel, 1966.

11 Hornung 1994.

12 Hornung 2007, 368.

13 See: Liptay 2006, 13–14.

The mummy itself is represented on the borderline of Duat below. Above the mummy there is the word *sšm* for the "image" or "statue". The image is the central motif in this part of the text. These ideas are connected with Egyptian beliefs on the revival of statues by invoking the spirit of the human or god in it. The text explains where it has to be placed in the tomb so the soul can join the Sun in transcending the sky and being born. The image has a vital role in survival of the soul. In the top margin of the papyrus text is stated: "If such image which is depicted (in) the eastern chamber of the West side (of Duat) ... (he shall) travel and pass through Duat (and he shall) not be turned back from flying up before Re". So it seems that the "image" was partly the statue for the *ka*, and it also had to be represented in a funeral chamber. In the last register down there are five more gods giving praise to the Sun god. The oval end of the Duat also alludes to the meaning of everything represented as being in the cartouche-shaped "hidden chamber" in the exact shape of 18th dynasty burial chambers.[14]

In the lower register, in the same place, five more gods are greeting the rebirth of the Sun; this, with the five in the upper register (mentioned above), makes the whole scene symmetrical. In the original version of the *Amduat* twenty-two deities appear in the lower register, ten of them with arms raised in adoration of the Sun and the corpse or image which is also a symbol of Osiris. Five of these ten are shown in the Zagreb papyrus. They are *iʿbw* "He who donates", *tmɜ Rʿ* "He with brave mouth", *ʿbw ɜḫw* "He who praises the *akhu* sprits", *dwɜty* "He of the netherworld", *sḫmw ib* "He of the powerful heart."

Transliteration and translation of the text

The text is organised from left to right in several small fragments, and it is written in the retrograde way (although the signs face left, the text of the vertical rows flows from right to the left) which is the usual cryptography of the *Book of the Hidden Chamber*. Also, the name of Horus is written only with the *ḥrỉ* sign, with no determinative used. In this manner the meaning of the text gains more of an esoteric character. Most of the text is placed in the large squares which form, one alongside another, the broad lines between the vignettes. The beginning of the text is placed on the uppermost part of the papyrus. Additionally, there are two long horizontal texts in eight rows in red ink dividing the whole picture into separate parts. Below these two texts there is an empty space. The 11th hour fragments spread across the left side of the papyrus while, after the second red horizontal text, we find the fragments from the 12th hour.

krr.t štɜt n gs dwɜ.t ʿpy nṯr ʿɜ ḥr sšm prt m ḏw

(From) the hidden chamber on the side of Duat the great god traverses (his) image coming out on the horizon.

ḳrr.t ny.t štɜt ỉmnty ḥtpt ʿpr Rʿ

(This is) the secret chamber of Amenti (where) Khepri is united with sullen[16] Re

knỉ ɜḫ.w rs n ḥr sšm štɜ n ỉgr.t

(and) with *akhu* spirits and with the face of the image (which is) in the tomb.

HORIZONTAL TEXT, TOP LEFT

(ỉ)w ỉr nn mỉ sšm nty m sš.w ḥr ỉɜb.w ʿ.t n gs dwɜ.t

If such image which is depicted (in) the eastern chamber of the West side (of Duat)

ỉw rḫt m rn.w=sn m ḫns dwɜ.t n sḏɜ.s nn ḫn.f sḥr ḫr Rʿ

(If) their names[17] are known (he shall) travel and pass[18] through Duat (and he shall) not be turned back from flying up[19] before Re.

ELEVENTH AND TENTH HOURS[20] (8 COLUMNS ON THE LEFT)

1. *ḥtp ỉn ḫm nṯr pn ʿɜ m ḳrr.t ḫt wḏ mdw=f*

The majesty of this great God is in the circle (and) he uttered commands

2. *nṯr.w ỉmy.w s rn n sbɜ n ʿḳ.w nṯr.w*

(to the) gods who are in it. The name of the door through which the gods enter

3. *ʿɜ.w ḥr.f* 4. *ʿɜ rn n dwɜ.t nỉw.t Mw-md.t ʿɜ ḫpr ms ỉr.w*

the great gods before (him), the name of the gates to the City in Duat (is) Mu-medet the great, (where)- Khepera is born

5. *grḥ n sšm.t-nṯr pw ʿɜ r wɜỉ*

(In) darkness the image of this great god is to arrive

6. *mw kɜ.w ḏb.w rn n wnw.t*

"Pieces of flesh on the top of water" is the secret name of the hour

7. *štɜ nt nỉw.t ṯnd.tw ḥst bsɜ.*

... the city .... is (where) you smash

8. *k ib.w ḫft.w n Rʿ*

... the hearts of the enemies of Re

14 There is the notion that the oval shape of the cavern of Sokar is equivalent to the whole space of the netherworld. Mostly it is held that the so-called "hidden chamber" applies to the oval funerary chamber from the tomb of Tutmosis III. So the netherworld and Sokar's cavern and the burial chambers in 18th dynasty tombs can be equivalents for the same idea of the "hidden chamber" (Hornung 1999, 37).

15 The house determinative of *ḳrrt* is rounded, alluding to the cartouche-like shaped burial chambers appearing in 18th dynasty tombs. Some authors translate this expression as "a circle." This sign was explained as "the black hole" by Hornung 1994.

16 This translation is found in all dictionaries (Hannig 1995, 884, "verdrossen"; Faulkner 1988, 286, "sullen"), and it can be assumed as a mythological idea of the sun which is "obscured" in the Netherworld after it sets. The expression gives a human mood to describe the state of the fallen Sun god.

17 The names of gods.

18 If not a mistake, it shows the third person feminine in this place.

19 Follows from the *sḥr* with determinative of the sky. In other versions, "becoming a companion of Re", or "making himself a companion of Re".

ELEVENTH HOUR (15 COLUMNS IN THE UPPER REGISTER)

1. *n wnn.f m sḫr wbn pn* 2. *ḥr.f n Rʿ*

He is like light. He is like Re.

3. *ỉw.ty.f r s=.* 4. *f nt dwꜣ.t* 5. *wnn.f m sḫr*

He does not leave his place in Duat. He is like

6. *pn ḏwỉ. nṯr pn r. f* 7. *pr sšm.w ny ỉtmw m* 8. *ṯmw m*

this: (When) this god calls him Atum, he comes back forth

9. *ỉꜣt.* 10. *f ʿmḥr=(f) sšmw* 11. *ʿnḫ. f m šw.wt mt.yw* 12. *ḥꜣt=f tp.w*

his back and swallow (his) image. He lives on his shadow his corpse and head

13. *ḏt=s ḏs wnn.* 14. *s m ḫrỉ.t šdỉ wnw.t* 15. *ỉrr.t. s wḏ ʿnḫ.w*

Her own body is upon "He who takes away the doors". What she does is command the living

ELEVENTH HOUR (8 ROWS IN THE MIDDLE REGISTER)

1. *Rʿ rʿ-* 2. *nb* 3. *ʿm. s sš* 4. *m=s* 5. *r nỉw.t* 6. *wnw.t*

(of) Re every day. She swallows her image in this place. It is the eleventh hour,

7. *pw wʿ.t m* 8. *ḫt nṯr ʿꜣ*

one of those who follow the great god.

ELEVENTH HOUR (26 COLUMNS IN THE MIDDLE REGISTER)

1. *wnn. sn* 2. *m sḫr* 3. *pn* 4. *ỉw nṯr pn* 5. *ʿꜣ* 6. *ḏw.f r sn*

They are like this: When this great god calls them

7. *m rnw.* 8. *=sn pr.w. n.* 9. *ỉ ỉmn.w* 10. *hꜣy.* 11. *n. ỉ*

by their names: Come to me, the hidden ones. Shine for me

12. *štꜣ.w* 13. *ʿ ʿnḫ* 14. *n bꜣ.w=ṯn* 15. *sḫn=sn* 16. *ḫr šw.wt*

(with) the secret arm. Life to (ba-souls),[21] that they alight upon the shadows

17. *nt. ṯn* 18. *sš.w* 19. *ỉmn.t* 20. *rd.w*

You are those who reveal[22] what was hidden and place

21. *sšm.w* 22. *r bw.f* 23. *ḏsr* 24. *ṯꜣw. n.* 25. *ṯn tpỉ rꜣ. ỉ* 26. *ʿnḫw*

the image in (its) forbidden place. To you belong the breath of the living (?)

ELEVENTH HOUR (MIDDLE REGISTER ON THE LEFT IN 14 COLUMNS)

1. *sšmw* 2. *pw štꜣ n Ḥrw* 3. *wnn. sn r sbꜣ* 4. *ny kk.w* 5. *smꜣ.w*

These are images concealed by Horus. They are at the second gate of unified darkness.

6. *wꜣ.t ḏsr.t* 7. *Sꜣy.t* 8. *ỉw nṯr pn* 9. *ḏw. f r. sn pr*

on the forbidden paths of Sais, when this god calls to them

10. *ḫr tp.w=sn* 11. *štꜣ.w ʿmḥr. sn* 12. *sšm.w=* 13. *sn* 14. *m-ḫt*

(and) then their secret heads appear after they swallow their images again.

ELEVENTH HOUR (20 COLUMNS IN THE MIDDLE REGISTER ON THE LEFT)

1. *wnn. sn* 2. *m sḫr* 3. *pn* 4. *r bꜣ pn* 5. *m sšm.w*

They are like this at this gate: As this ba-soul in images

6. *ỉr n Ḥrw* 7. *ỉw* 8. *nṯr pn ḏw. f* 9. *r.* 10. *sn m* 11. *rn.w=sn*

made by Horus. This god, he calls them by their names

12. *sḳr.sn* 13. *m sḏm.* 14. *f.* 15. *nt* 16. *sꜣꜣ.w*

and they breathe when they hear his voice. They are those who guard

17. *sbꜣ r Sꜣy.t* 19. *ỉwty rḫ.f . n mꜣꜣ* 20. *n ptr*

the gate of Sais which is unknown, unseen (and) unperceived.

ELEVENTH HOUR (LOWER REGISTER IN 34 COLUMNS)

1. *wnn. sn* 2. *m sḫr* 3. *pn* 4. *sn* 5. *r ṯmsw m sšm* 6. (det.) 7. *m ḫft.w*

They are like this: They are those who make a bloody punishment among the enemies

8. (det.) 9. *Wsir* 10. *m* 11. *dwꜣ.t* 12. *ḥry wḥꜣ.wt* 13. *f* 14. *m*

of Osiris in Duat. "The one over his kettles" is

15. *sꜣꜣ.w* 16. *ḳrr.t* 17. (det.) 18. *ʿnḫ.* 19. *sn* 20. *ḥrw* 21. *ḫft.w*

the guardian of the cavern. They live on the voice of his enemies.

22. (*tyw* det.) 23. *m* 24. *sbḥ* 26. *bꜣ.w* 27.*w* (det.) 28. *šw.wt* 29. *dd.w* 30. *n*

On the scream of the ba-souls and shadows, whom they throw

31. *sn r* 32-33. *ḥꜣd.w=sn r ḥꜣdw=sn*[23]

into their pits.

ELEVENTH HOUR (8 COLUMNS IN THE MIDDLE REGISTER)

1. *ḥtp ỉn ḥm ny nṯr pn ʿꜣ m ḳrr.t tn wḏ. (f)*

Resting by the majesty of this great god in this cavern. He

2. *md.w n nṯr.w ỉmỉ.w.s rn ny sbꜣ ny*

gives order to the gods who are in it. The name of the gate

3. *nỉw.t tn ʿḳ.w nṯr pn ʿꜣ ḥr. f sḫn dwꜣ.ty*

of this city which the great god enters is "the resting place of those in Duat".

4. *rn ny nỉw.t tn rꜣ n ḳrr.t*

The name of that place is "mouth of the cavern

5. *ỉpt ḫꜣw.wt rn ny wnw.t tn*

which examines the corpses". The name of this hour

6. *grḥ sšm.t nṯr (pn)*

of the night which guides this god

7. *sbꜣy.t nb.t wỉꜣ ḫsf.t sbỉ m*

is "the starry mistress of the barque". (Who) repels the enemy

8. *pr. f*

(when) he comes forth.

20 The text starts with the Eleventh hour, then turns to the Tenth hour in two short rows, and goes back to the Eleventh again.

21 Unclear text. *ṯzw* is written where there used to be *bꜣ*.

22 In the text *štꜣ* "the secret" is written.

23 "Into the pits" is written twice.

TWELFTH HOUR (24 COLUMNS IN THE MIDDLE REGISTER)

1. *wnn. sn m sḫr pn* 2. *nt.sn šsp.w nfr.t*

They are like this: They are those who grasp the tow rope

3. *ny Rᶜ pr m* 4. *imɜḫ=f ᶜnḫ nṯr.w nt sn*

of the boat of Re when he comes out of the spine of the living god.

5. *sṯɜ.w nṯr pn* 6. *ᶜɜ m* 7. *sšm* 8. *sw r* 9. *wɜ.wt*

They are those who tow this great god on his ways

10. (det.) 11. *ḥr.t* 12. *nt.sn ỉrr.w* 13. *ḫpr.t* 14. *m p.t* 15. *m ṯɜw*

(of the) high. They are those who cause what happened in the sky, in wind

16. (*w*) 17. *m* 18. *ḥtpw* 19. *m* 20. *ḏᶜ* 21. (det.) 22. *m* 23-24. *ḥwỉ.t*

in calmness, in storm, in rain.

TWELFTH HOUR (4 COLUMNS IN THE MIDDLE REGISTER, RIGHT)

1. *wḏt.* (*sn*) *m ᶜnḫ.w* 2. *ỉrr.t* 3. *wỉɜ* 4. *m p.t*

What (they) command to the living is what the great barque performs in the sky.

TWELFTH HOUR (28 COLUMNS IN THE LOWER REGISTER)

1. *ḥr. f ᶜnḫ* 2. *sp ḫnty kkw.*(*f*)[24] 3. *ᶜnḫ ᶜɜ* 4. *ḫnty kkw*

... upon (by) him. Live, live, foremost of his darkness!

5. *nb- ᶜnḫ* 6. *ḥḳɜ Wsir* 7. *ḫnty- ỉmnty.w* 8. *mᶜ ḫnty -*(*ᶜnḫ*)[25]

Live, the lord Osiris the ruler of Westerners, and live foremost

9. *dwɜ.t ṯɜw Rᶜ* 10. *n fnd=k srkw* 11. *ḫpr.* 12. *k ᶜnḫ=k*

the breath of Re belongs to your nose. Your life comes into existence.

13. *ᶜnḫw ỉhy* (*n*)[26] 14. *Wsir nb* 15. *ᶜnḫ nṯr.w pw* 16. *ỉmy.w* (*ḫt*)[27]

Live, hail to (you) Osiris the lord of life. These are gods who are behind

17. *Wsir* 18. *ḫpr.w ḫr.f* 19. *sp tpy wnn.sn ḥɜ*

Osiris. Who emerge with him at the beginning of time. They are around

20. *sšmw pn* (*ḳ*)[28]*rr.t* (*štɜ*) *tn ᶜnḫ. sn*

the secret chamber. They live

21. *m ᶜnḫt. f ỉm srk.sn* 22. *mdw nṯr pn* (*m*) *dwɜ.wt*

on what it[29] lives on. They breathe through the words of this god, and through prayers

23. *sn ḏs sn wnn.sn m sḫr pn*

of their own. He is like this:

24. *m sšmw pn n ỉmn Ḥrw m* 25. *kkw smɜw ỉn sšmw*

As is this mysterious image of Horus (in the) unified darkness

26. *pn n štɜ Šw ḫr*

which Shu supports below

27. *Nw.t prr ɜgb wr* 28. *m tɜ m sšmw pn*

Nut, that the great flood (may) go from the earth, from this image.

TWELFTH HOUR (12 COLUMNS IN UPPER REGISTER)

1. *ỉrrt. sn* 2. *pw m* 3. *dwɜt* 4. *nṯr pn ᶜɜ*

What they do in Duat is praising the great god

5. *ᶜḥᶜ. sn* 6. *r nỉw.t spỉw.* 7. *sn nṯr ᶜɜ*

They stand at this place. They are counted among their great god

8. (*m*)*kft.yw*[30] *hnw. n. Rᶜ* 9. *m-ḫt f m ḥtp* (*m*) *pt* (*m*) *ḫᶜ. f*

The turquoise ones give acclamation to Re when he arrives in the sky, he appears

10. *m ỉr.ty ḥnmm.t* 11. *ḥtp ḫr nn ny nṯr.w* 12. *m ḳrr. t=sn*

24 The suffix pronoun, 3rd pers. sing. is omitted.

25 *ᶜnḫ* is probably missing.

26 Preposition missing

27 It should probably be: "those who follow" (or "behind") Osiris *ỉmyw ḫt Wsir*

28 Missing *ḳ* at the beginning.

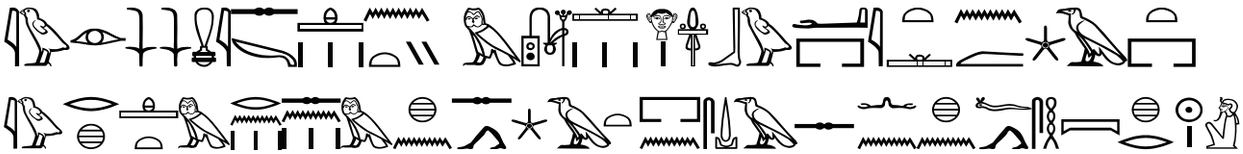
29 The image.

30 The word is missing "*m*" and "*f*" signs.

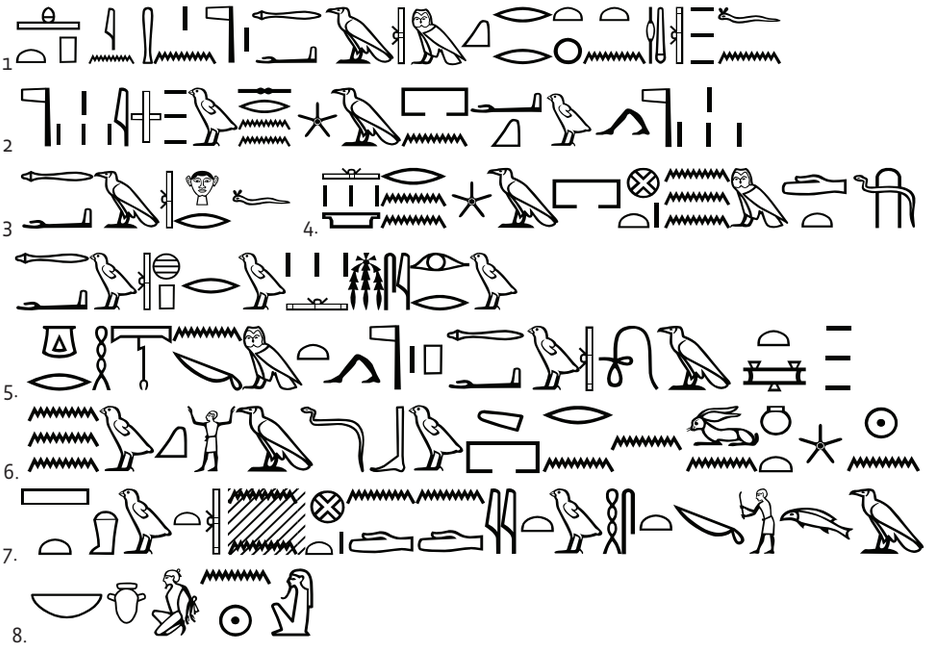
HIEROGLYPHIC TEXT

HORIZONTAL TEXT, TOP RIGHT

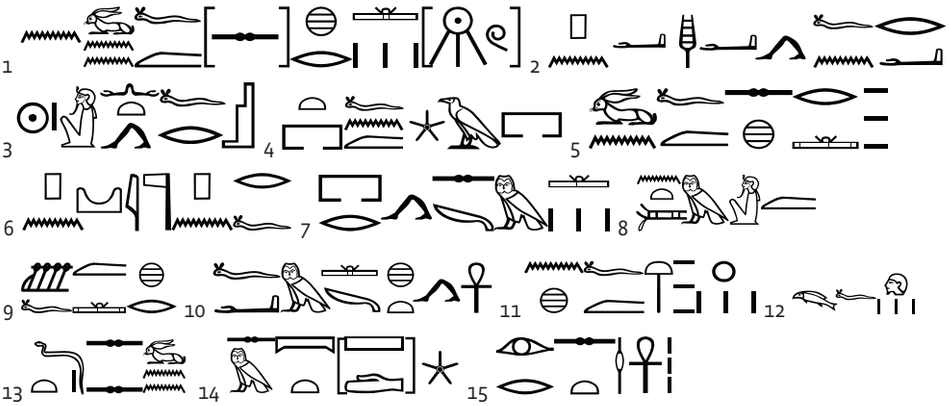
HORIZONTAL TEXT, TOP LEFT



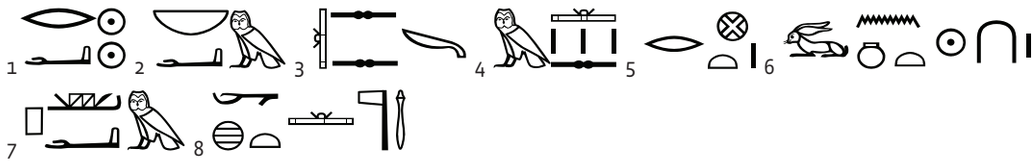
ELEVENTH AND TENTH HOURS (8 COLUMNS ON THE LEFT)



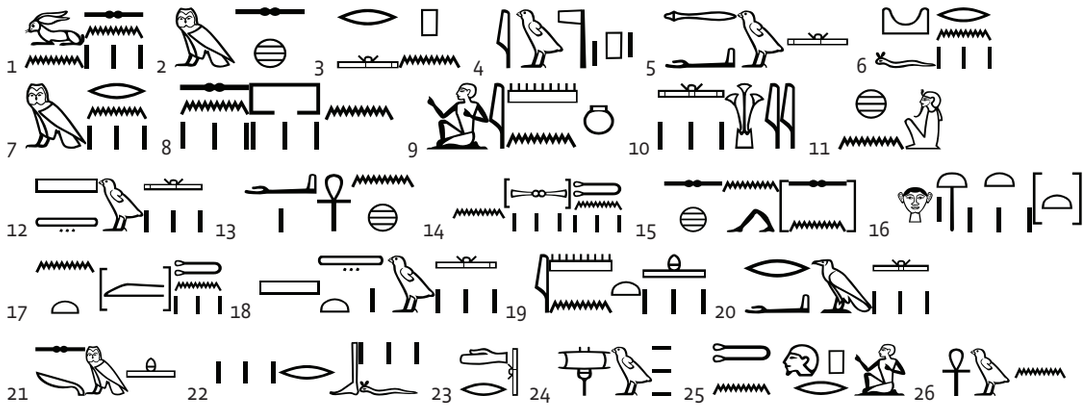
ELEVENTH HOUR (15 COLUMNS IN THE UPPER REGISTER)



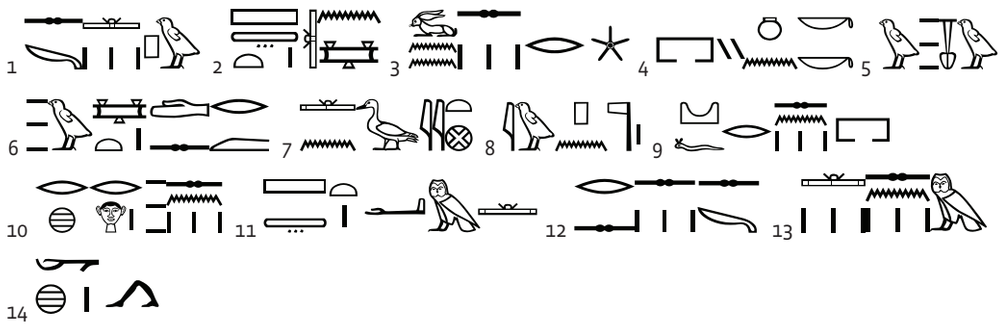
ELEVENTH HOUR (8 ROWS IN THE MIDDLE REGISTER)



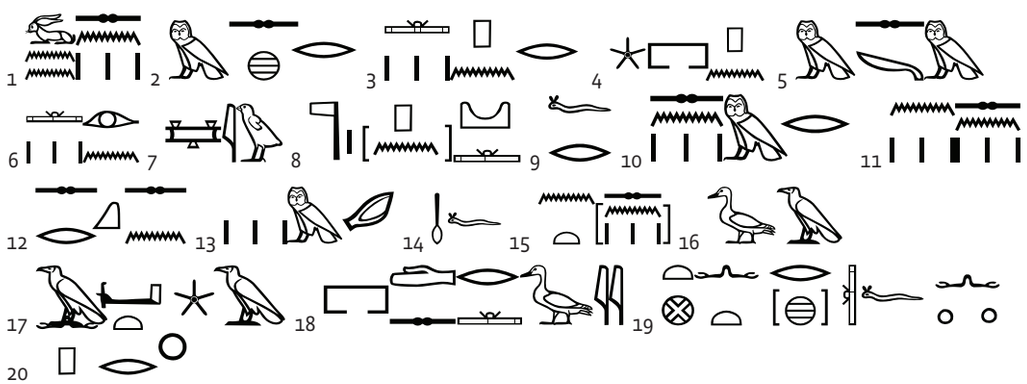
ELEVENTH HOUR (26 COLUMNS IN THE MIDDLE REGISTER)



ELEVENT HOUR (MIDDLE REGISTER ON THE LEFT IN 14 COLUMNS)



ELEVENTH HOUR (20 COLUMNS IN THE MIDDLE REGISTER ON THE LEFT)



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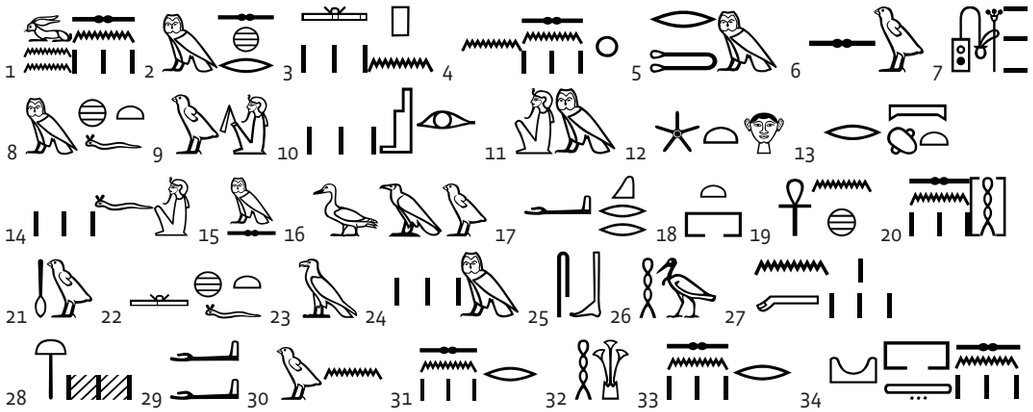
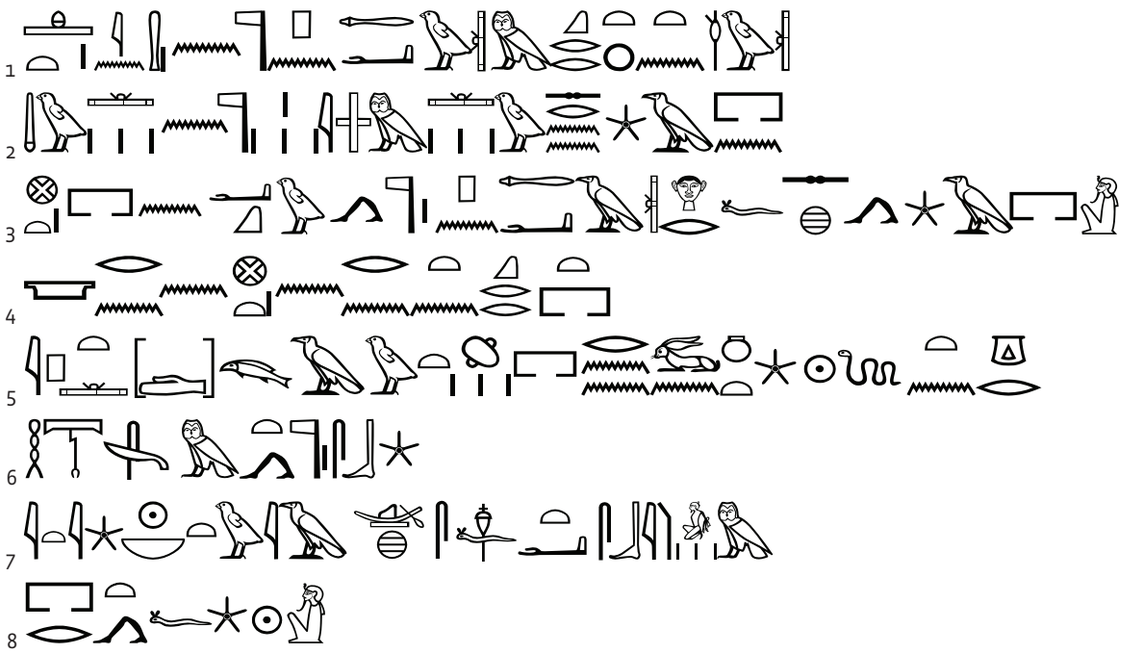
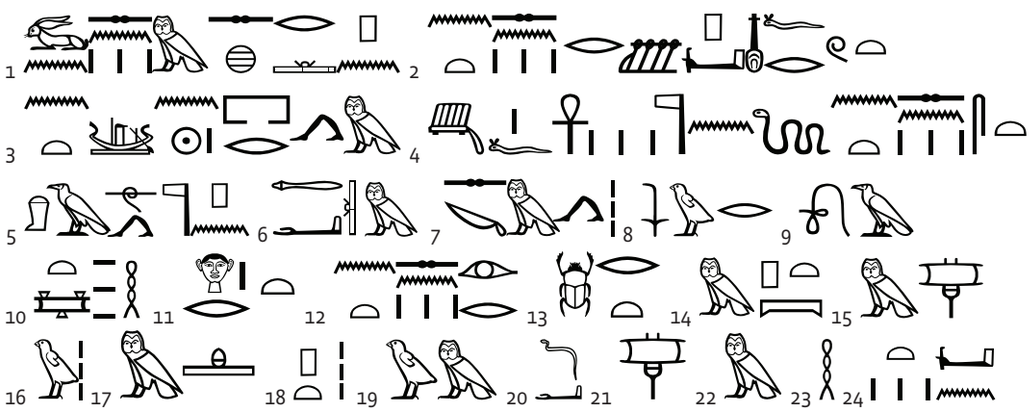


ELEVENTH HOUR (8 COLUMNS IN THE MIDDLE REGISTER)

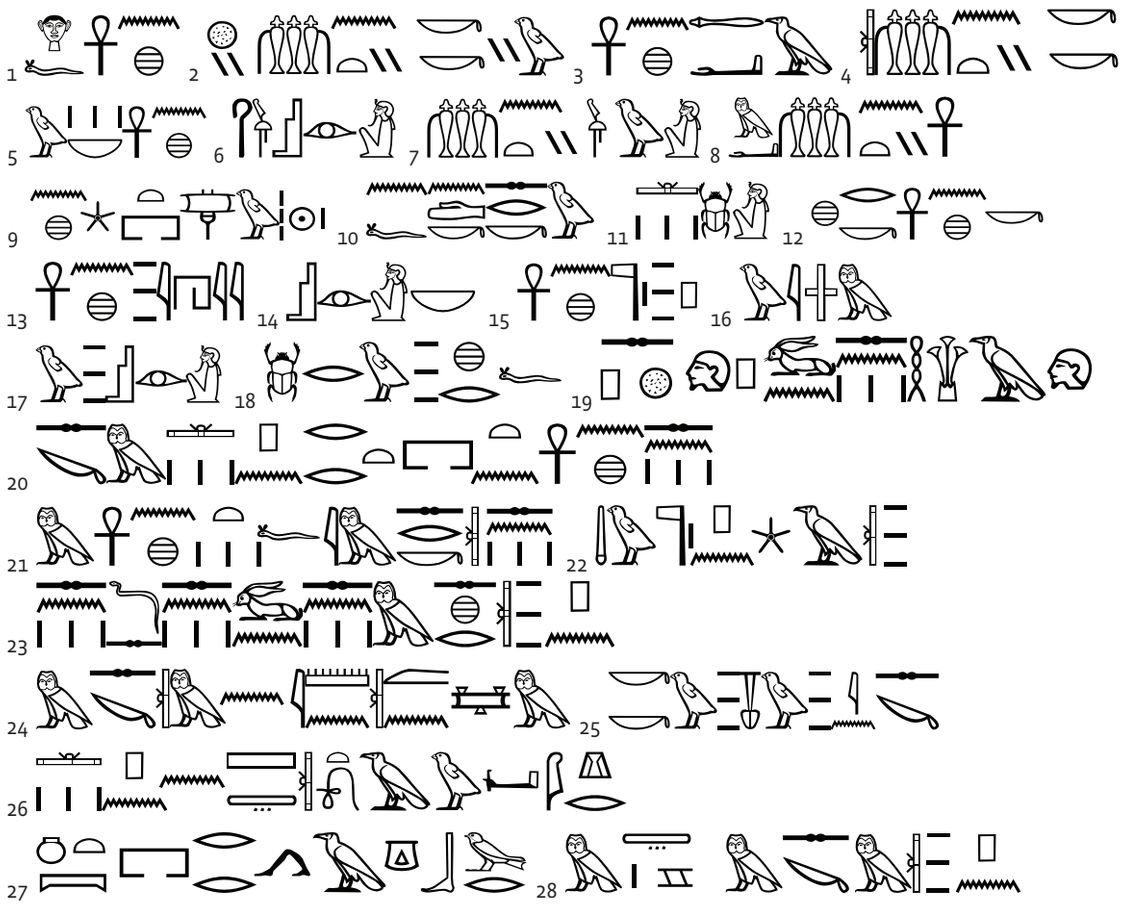


TWELFTH HOUR (24 COLUMNS IN THE MIDDLE REGISTER)



TWELFTH HOUR (4 COLUMNS IN THE MIDDLE REGISTER, RIGHT)

TWELFTH HOUR (LOWER REGISTER IN 28 COLUMNS)



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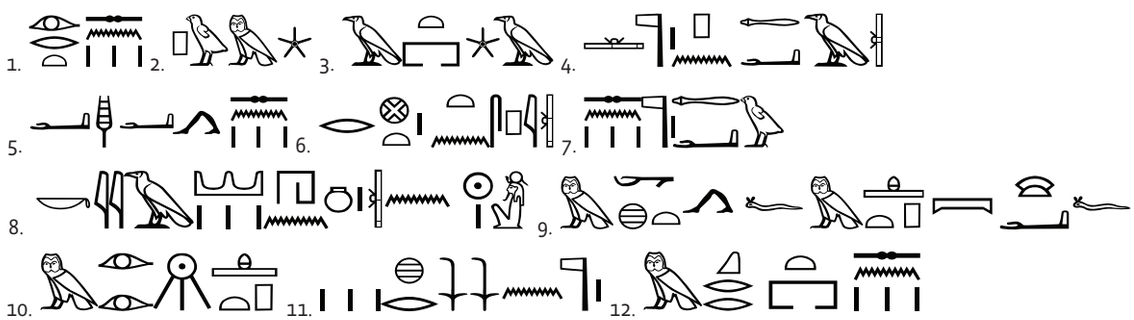

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ISKOPAVANJA I GEOFIZIČKA PROSPEKCIJA ŽELJEZNODOBNOG I RIMSKOG NALAZIŠTA NA POZICIJI SISAK-POGORELAC (2012.-2017.)

EXCAVATIONS AND GEOPHYSICAL PROSPECTION OF THE IRON AGE AND ROMAN-PERIOD SITE AT SISAK-POGORELAC POSITION (2012-2017)

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Kao rezultat recentnih iskopavanja i geofizičke magnetske prospekcije, provedenih na poziciji Sisak–Pogorelac u razdoblju između 2012. i 2017. godine, dobiveni su novi uvidi o povijesnom razvoju željeznodobnog i rimskog naselja na prostoru današnjega grada Siska. Taj razvoj uključuje kompleksnu dijakronijsku naseobinsku aktivnost sa strukturama različitih orijentacija i tlocrta. Također, na lokalitetu su zabilježene i pogrebne aktivnosti iz kasnoantičkog razdoblja. Sinteza probnog iskopavanja i geofizičke prospekcije omogućila je stvaranje slike o korištenju sjeveroistočnog dijela Pogorelca u starijem i mlađem željeznom dobu (8.(?)/6.– 1. st. pr. Kr.) te rimskom razdoblju. Naime, u sjeverozapadnom dijelu istraženog područja željeznodobno je naselje djelomično prekriveno rimskim naseobinskim slojevima iz 2. i 3. stoljeća te kasnoantičkim grobljem datiranim od kraja 3. do prve polovice 5. stoljeća. Nadalje, u središnjem je dijelu područja pregledanog u geofizičkoj prospekciji zabilježena moguća građevinska aktivnost s tragovima rimskodobnih kuća u nizu, dok su u južnom dijelu zabilježene raštrkane naseobinske strukture. Nažalost, zbog nedostatka iskopavanja, precizno datiranje navedenih kuća u nizu te raštrkanih struktura na jugu za sada ostaje nepoznato.

As a result of recent excavations and geophysical magnetic prospecting at the Sisak-Pogorelac position, conducted in the period between 2012 and 2017, important new insights into the history of the Iron Age and Roman settlement in present-day Sisak can be gained. It features a complex diachronic settlement activity with buildings with different orientations and layouts. Burial activity from the Late Roman period has also been detected at the site. The synthesis of trenching and prospection has given us a picture of utilization of the north-eastern part of the Pogorelac 'peninsula' from the period of the Early and Late Iron Age (8^{th}(?)/6^{th}– 1^{st} century BC) and also the Roman period. In the north-western part of the area researched, the Iron Age settlement is partially superimposed with the remains of a 2^{nd} – 3^{rd} century Roman layer with remains of wooden architecture and a Late Roman cemetery, dated to a period from the end of the 3^{rd} century AD to the first half of the 5^{th}. Furthermore, in the central part of the area surveyed, a building activity with strip houses from the Roman period is possible, while in the southern part a scattered settlement can be recognized. Due to a lack of excavation, exact dates for the strip houses in the central area and the scattered structures in the south for now remain unknown.

Ključne riječi:
Sisak, Segestika, Siscija, iskopavanja, geofizički pregled, željeznodobno naselje, rimske naseobinske strukture, kasnoantičko groblje

Key words:
Sisak, Segestica, Siscia, excavations, geophysical survey, Iron Age settlement, Roman-period settlement structures, Late Roman cemetery

Uvod

S obzirom na izniman položaj na ušću rijeke Kupe u Savu, Sisak predstavlja ključnu poziciju za istraživanje društvenih i kulturnih procesa koji su se odvijali na prostoru južne Panonije od kasnoga brončanog doba do ranoga srednjeg vijeka (sl. 1). Iako su se u posljednjih dvadesetak godina arheološka istraživanja u Sisku znatno intenzivirala, fokus je primarno ostao na ostacima antičke Siscije na lijevoj obali rijeke Kupe, uz prisustvo slojeva mlađeželeznodobnog naselja zabilježenih na nekoliko pozicija (Povijesni arhiv, Dunavski Lloyd, Željeznički kolodvor itd.). S ciljem boljeg razumijevanja kompleksne dinamike naseljavanja prostora na desnoj obali rijeke Kupe, koji nosi toponim Pogorelac, a na kojemu su više od stotinu godina poznati ostaci naselja iz željeznog doba, kao i periferni dio rimskog naselja koje se nalazilo izvan gradskih zidina, od 2012. godine Arheološki muzej u Zagrebu sa suradnicima provodi intenzivna arheološka iskopavanja i geofizička snimanja.[1]

Introduction

Given its exceptional position on the mouth of the River Kupa into the Sava, Sisak is a key site for research into the social and cultural processes that proceed in the territory of southern Pannonia from the Late Bronze Age to the early Middle Ages (Fig. 1). Even though archaeological excavations have intensified considerably in Sisak, the focus has remained primarily on the remains of Roman period Siscia on the left bank of the Kupa River, with the presence of the remains of a Late Iron Age settlement recorded at several points (Povijesni arhiv, Dunavski Lloyd, Railway station, etc.). With the aim of better understanding the complex dynamics of human habitation on the right bank of the Kupa, which bears the toponym Pogorelac, at which the remains of an Iron Age settlement have been known for well over a century, as well as the periphery of the Roman settlement situated outside of the city's walls, since 2012 the Archaeological Museum in Zagreb and partner institutions have been conducting intensive archaeological excavations and geophysical prospection.[1]

Geofizička prospekcija provedena 2012.–2013. na poziciji Sisak-Pogorelac (S. Groh)

Kao dio istraživačke suradnje između Austrijskoga arheološkog instituta (Odjel za srednjoeuropsku arheologiju, S. Groh) i Arheološkog muzeja u Zagrebu, tijekom 2012. i 2013. godine na poziciji Sisak–Pogorelac provedena je geofizička prospekcija korištenjem magnetometra, a istražena je površina od 7,97 ha. Cilj je prospekcije bio prikupljanje novih podataka o razvoju naselja i izgradnji struktura, uključujući moguće tragove rimskoga vojnog logora na poluotoku Pogorelac oko kojeg teče rijeka Kupa. Zasad su na sjeveroistočnom dijelu Pogorelca pronađeni ostaci željeznodobnog naselja koje se smatra jednim od najvažnijih naselja iz tog razdoblja u južnoj Panoniji.[2] Osim toga, 1985. godine u koritu Kupe na istočnom dijelu Pogorelca (položaj Kovnica) pronađeni su rimskodobni piloti (vjerojatno od gospodarskih objekata) te ostaci broda.[3]

The geophysical prospection of 2012–2013 in Sisak-Pogorelac position (S. Groh)

As part of a research collaboration between the Austrian Archaeological Institute (Department of Central European Archaeology, S. Groh) and the Archaeological Museum in Zagreb, geophysical prospecting using magnetics was conducted at the position of Sisak–Pogorelac in the years 2012 and 2013 over a surface of 7.97 ha. The aim of the prospection was to gather new data about the settlement's development and building structures, including possible traces of the Roman military camp on the Pogorelac peninsula, round which the River Kupa flows. So far, in northeastern Pogorelac remains of the Iron Age settlement have been found, which is seen as one of the most important settlements of this period in southern Pannonia.[2] In addition, in the Kupa riverbed, in the eastern part of Pogorelac (the position called "Kovnica", or "the Mint"), Roman pile dwellings (probably industrial facilities) and a barge had been excavated in 1985.[3]

1 Glavni je nositelj istraživanja Arheološki muzej u Zagrebu, a suradnici na projektu su Gradski muzej Sisak, Austrijski arheološki institut (*Österreichisches Archäologisches Institut*) i Konzervatorski odjel Ministarstva kulture RH u Sisku. Također, određene spoznaje o arheološkoj slici Pogorelca rezultat su zaštitnih iskopavanja koje je provodila arheološka tvrtka Arheolog d.o.o. Sredstva za provedbu istraživanja primarno je osiguralo Ministarstvo kulture RH, a dodatna sredstva omogućili su Ministarstvo znanosti i obrazovanja RH i Sisačko-moslavačka županija. Također, određena su sredstva osigurale navedene institucije koje su sudjelovale u istraživanju.

2 Lolić 2003, 110; Drnić, Miletić Čakširan 2014, 148–151.

3 Wiewegh 2001; Gaspari, Erič, Šmalcelj 2006.

1 The lead research institution is the Archaeological Museum in Zagreb, while its partners in the project are the Sisak City Museum, the Austrian Archaeological Institute (Österreichisches Archäologisches Institut) and the Conservation Department of the Croatian Ministry of Culture in Sisak. Furthermore, some knowledge of the archaeological picture of Pogorelac was gained as a result of rescue excavations conducted by the archaeological company Arheolog d.o.o. The funding to carry out this research was primarily provided by the Croatian Ministry of Culture, while additional funding was secured by the Croatian Science Foundation within the framework of the project entitled "Cultural, Economic, Monetary and Social Transformations in the Light of the Archaeological Heritage of the Central Danubian Basin between 279 BC and 582 BC" (1549, project leader Tomislav Bilić, Ph.D.) and Sisak-Moslavina County. Some funding was additionally secured by the aforementioned institutions which participated in the research.

2 Lolić 2003, 110; Drnić, Miletić Čakširan 2014, 148–151.

3 Wiewegh 2001; Gaspari, Erič, Šmalcelj 2006.

SLIKA 1. Smještaj Segestike/Siscije.

FIGURE 1. Position of Segestica/Siscia.

SLIKA 2. Pregledana područja 1 – 10.

FIGURE 2. Surveyed areas 1–10.

Interpretacija geofizičkih istraživanja iz 2012.–2013.

Mjerenjima je obuhvaćeno šest lokacija na sjeveroistočnom dijelu poluotoka Pogorelac (zone 1 – 6) te četiri lokacije na njegovu središnjem i zapadnom dijelu (zone 7 – 10) (sl. 2–3). Geofizička prospekcija odvijala se u dvije kampanje (od 13. do 15. studenoga 2012. i od 14. do 17. svibnja 2013. godine), a provodili su je A. Gorbach, D. Hagmann, A. Langendorf, V. Lindinger i A. Steininge, koristeći uređaj *dual Geoscan-Fluxgate-gradiometer-system* (FM 256 Dual, rezolucija: 0,1 nT, veličina mreža: 20 × 40 m, udaljenost: 0,5 m, interval uzorkovanja: 0,125 m). Podaci su obrađeni koristeći Geoplot 3.0 softver te su zatim uvedeni u geografski informacijski sustav (ArcMap 10.2).

The interpretation of the geophysical survey of 2012–2013

Measurements extended to six locations at the northeast edge of the Pogorelac peninsula (areas 1–6) and four locations at its central and western parts (areas 7–10) (Fig. 2–3). The geophysical prospections were conducted in two campaigns (13th–15th November 2012 and 14th – 17th May 2013) by A. Gorbach, D. Hagmann, A. Langendorf, V. Lindinger, and A. Steininge with a dual Geoscan Fluxgate gradiometer system (FM 256 Dual, resolution: 0.1 nT, grid size: 20 × 40 m, traverse distance: 0.5 m, sample interval: 0.125 m). The data were processed with the Geoplot 3.0 software and imported into a geographic information system (ArcMap 10.2).

SLIKA 3. Geofizička magnetska prospekcija.

FIGURE 3. Geophysical prospecting with magnetics.

Nalazi iz preglednih zona 1 – 6

Pregledne zone 1 – 6, smještene na sjeveroistočnom dijelu poluotoka Pogorelac, pružile su nove važne podatke o povijesti željeznodobnog i rimskog naselja (*Segestika* i *Siscija*) (sl. 4–7).[4] Istraživane zone nalaze se izravno uz rijeku Kupu i obiteljske kuće na uskim i dugačkim parcelama. Pregledi su napravljeni upravo u vrtovima i livadama zapadno od tih kuća (Obala Ruđera Boškovića) te istočno od Ulice Josipa Jurja Strossmayera i Avenije V. Janića Cape. Odabir preglednih zona ovisio je o trenutnom stanju vegetacije koju je na mnogim položajima bilo potrebno ukloniti prije provođenja prospekcije.[5]

The findings from surveyed areas 1–6

Surveyed areas 1–6, situated in the north-eastern part of the Pogorelac peninsula, yielded important new information on the settlement history of the Iron Age and Roman settlements (*Segestica* and *Siscia*) (Fig. 4–7).[4] The areas surveyed were situated directly on the River Kupa close to located installations with family houses on strip plots. It was in the gardens and meadows west of these houses (Obala Ruđera Boškovića) and east of Ulica Josipa Jurja Strossmayera (Strossmayer Street) and Aleja V. Janić Capo (Janić Avenue) that the survey took place. The selection of the areas surveyed depended on the current state of vegetation, which had to be clear-cut from many areas before the prospection.[5]

4 Zona 1: parc. 13/5; zona 2: parc. 15/2; zona 3: parc. 15/1, 15/3, 15/6, 17/1, 17/3, 19/1, 22, 25, 28/1–3, 31/2, 34, 37, 40, 43; zona 4: parc. 49/2, 55/1; zona 5: parc. 90/1, 90/3–4; zona 6: parc. 90/5.

5 Zahvaljujem hrvatskim partnerima J. Balen i I. Drniću koji su preuzeli zaduženja oko autoriziranja prospekcije te financirali krčenje vegetacije na mjernim zonama. Velik su dio logistike obavili kolege iz Konzervatorskog odjela Ministarstva kulture Republike Hrvatske u Sisku (I. Miletić Čakširan) i Gradskog muzeja Sisak (R. Škrgulja).

4 Area 1: Plot 13/5; Area 2: Plot 15/2; Area 3: Plot 15/1, 15/3, 15/6, 17/1, 17/3, 19/1, 22, 25, 28/1–3, 31/2, 34, 37, 40, 43; Area 4: Plot 49/2, 55/1; Area 5: Plot 90/1, 90/3–4; Area 6: Plot 90/5.

5 My thanks go to my Croatian partners J. Balen and I. Drnić, who undertook the authorizations for the prospection and financed the clear-cut of the measuring areas. A great deal of logistical work had been done by colleagues from the Conservation Department in Sisak of the Ministry of Culture of the Republic of Croatia (I. Miletić Čakširan) and Sisak City Museum (R. Škrgulja).

SLIKA 4. Pregledano područje na sjeveroistočnom dijelu Pogorelca.

FIGURE 4. Area surveyed in the north-eastern part of Pogorelac.

U istraženoj zoni 1, posebno na njezinu sjevernom dijelu, bilo je moguće uočiti velike anomalije prouzročene recentnim preslojavanjem.[6] Na sjevernom je dijelu zone 3 u iskopavanjima definirano kasnoantičko groblje, dok se istočni dio zone 3 preklapa

At surveyed area 1, especially in its western part, it was possible to detect strong anomalies caused by recent deposits.[6] In the northern part of area 3, a Late Roman burial ground was documented in excavations, while the eastern part of area 3

6 Zaštitna istraživanja, provedena na istočnoj strani Avenije V. Janića Cape, potvrdila su činjenicu da bi jake magnetske anomalije na zapadnom dijelu zone 1 mogle biti posljedica odlaganja velike količine građevinskog otpada koji je odbacivan tijekom gradnje mosta.

6 Rescue excavation conducted at the eastern side of Aleja V. Janića Cape (Janić Avenue) confirmed that strong magnetic anomalies in the western part of area 1 could be a result of the large quantity of scrap metal discarded during the construction of the bridge.

SLIKA 5. Zabilježene i interpretirane strukture na sjeveroistočnom dijelu Pogorelca.

FIGURE 5. Structures recorded and interpreted in the north-eastern part of Pogorelac.

s magnetskim anomalijama kakve su zabilježene sjeveroistočno od zone 3, što bi moglo ukazivati na to da su se drvene strukture, kakve su zabilježene u Sondama 1 i 2, mogle protezati u istočni dio zone 1.

Sjeverni dio sveukupnoga istraživanog područja, gdje su mjerne zone 2 i 3, pokazuje najveću gustoću struktura, a sveukupno je moguće razlikovati strukture s pet različitih orijentacija.

corresponds in magnetic anomalies to the north-east of area 3. This may indicate that wooden structures, verified through excavations in Trenches 1 and 2, extend into the eastern part of area 1.

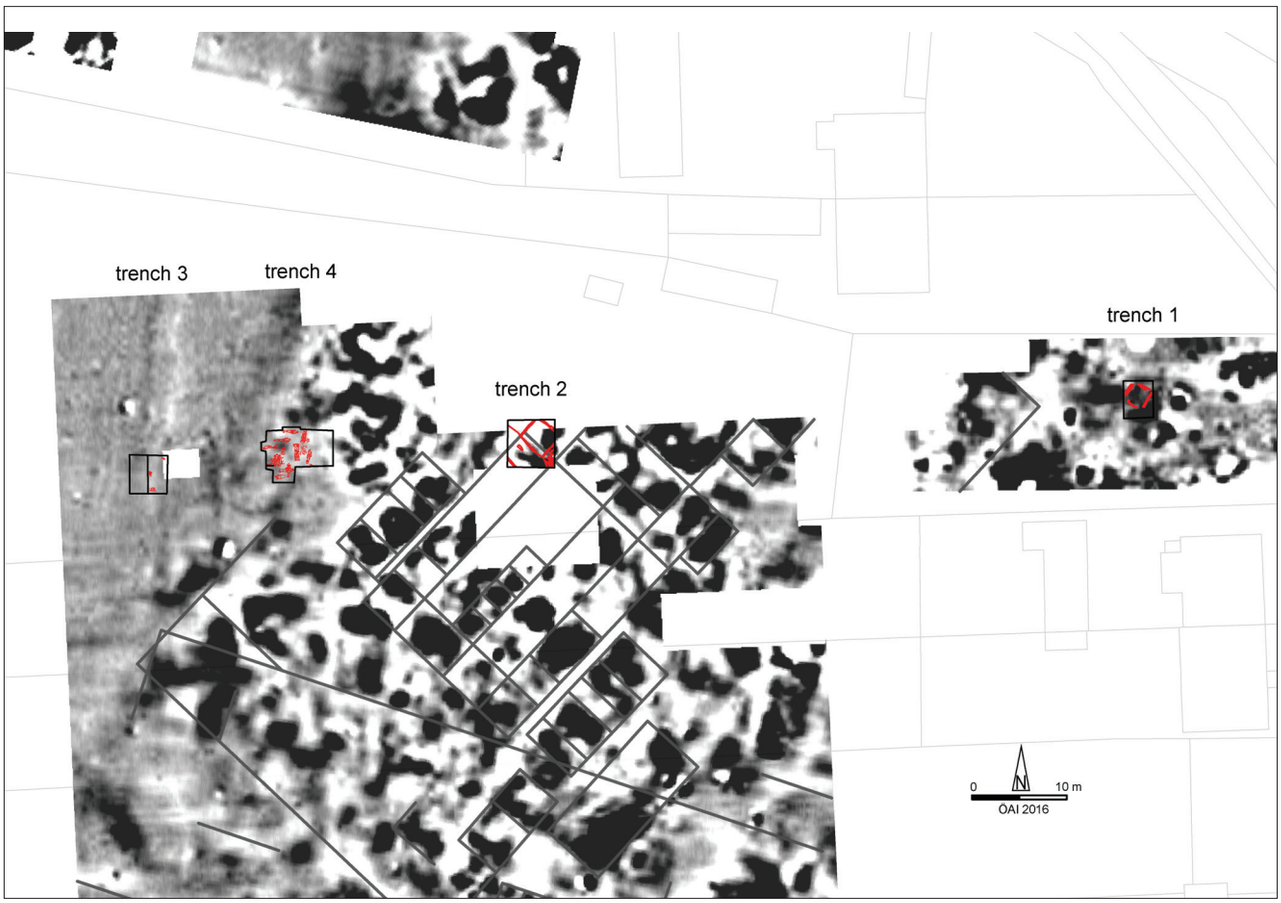
The northern part of the total area prospected, with measuring areas 2 and 3, has the highest density of structures. Altogether, structures with five different orientations can be distinguished.

SLIKA 6. Zabilježene i interpretirane strukture na sjeveroistočnom dijelu Pogorelca (strukture 1 – 11).

FIGURE 6. Structures recorded and interpreted in the north-eastern part of Pogorelac (Structures 1–11).

Na sjevernom je dijelu otkrivena Struktura 1, pravokutni kompleks veličine otprilike 55 x 85 m (4675 m²), orijentacije 47° prema sjeveroistoku, i sastavljen od niza prostorija kvadratnog i pravokutnog oblika. Ovu zonu karakteriziraju snažne termomagnetske anomalije koje ukazuju na postojanje drvene arhitekture i posljedice požara.

In the north, Structure 1 was located, a rectangular complex approximately 55 x 85 m (4675 m²) in size, with an orientation of 47° to the north-east, composed of a number of square and rectangular rooms. This area is characterized by very strong thermoremanent magnetic anomalies, suggesting wooden buildings and the effects of fire.



SLIKA 7. Rezultati geomagnetskog pregleda u kombinaciji s rezultatima iskopavanja u zonama 1 – 2.

FIGURE 7. Geomagnetic survey results combined with the results of excavations in areas 1–2.

Iskopavanjima u Sondi 2 otkrivene su dvije faze stariježeljeznodobnih građevina, čija je drvena konstrukcija bila uništena požarom, a geofizički je pregled ove zone dao potpunu sliku svih izmjerenih anomalija. Prepoznate strukture mogu biti, ostatci naselja s drvenim građevinama razmještenim unutar pravokutne mreže, ili mogu biti dijelom velike građevine pravokutnog tlocrta s mnogobrojnim manjim prostorijama. Na temelju prepoznatih struktura teško je odrediti funkciju ovih građevina, tip građevine ili tip naselja. Ipak, Struktura 1 izgledno se preklapa sa Strukturom 2 koja se nalazi nešto južnije i orijentacijom prati tok rijeke Kupe. Rezultati iskopavanja i prospekcije dokazuju izostanak rupa od stupova, a pretpostavlja se postojanje konstrukcija s drvenim okvirima. Veličina, oblikovanje i struktura nalaza analogne su onima s brončanodobnog i željeznodobnog naselja Tribuna u Ljubljani.[7]

U preglednoj zoni 2, gdje se nalazi Sonda 1, mjerenja su pokazala jake termomagnetske anomalije. Pokretni materijal, uglavnom ulomci keramičkih posuda, prikupljen u istraživanjima, svjedoči

The excavation in Trench 2 yielded bi-phase Early Iron Age buildings in timber construction technique that had been destroyed by fire. The geophysical survey in this area represents a total image of all anomalies measured. The structures recognized could be either remains of the settlement with wooden buildings organized within a rectangular grid or a large building, rectangular in plan, with numerous smaller rooms. The function of these buildings, building type, or type of settlement, is difficult to define on the basis of recognizable structures. However, Structure 1 is likely to overlap Structure 2, situated further south, and relates in its orientation to the bend of the Kupa River. Excavations and prospection results testify to an absence of post buildings, and wood-frame construction is assumed. The size, design and structure of the findings have an analogy in the Bronze and Iron Age settlement of Tribuna in Ljubljana.[7]

In surveyed area 2, where Trench 1 is situated, the measurements showed strong thermoremanent magnetized anomalies. Movable material, mostly pottery sherds, collected in the excavations

7 Vojaković 2014.

7 Vojaković 2014.

o kompleksnom razvoju naselja kroz više faza, uključujući drvene građevine – *Objekti 1-3* koji imaju istu orijentaciju kao i objekti iz Sonde 2.[8] Drvena je konstrukcija sa zemljanim podom datirana kombinacijom tipologije fine keramike i AMS datiranja u mlađu fazu starijega željeznog doba. Ipak, zanimljivo je da obje istražene strukture u Sondama 1 i 2 imaju istu orijentaciju kao i velika Struktura 1, definirana geofizičkim pregledom 1 (sl. 7).

Na sjevernom dijelu zone 3, unutar i izvan Strukture 1, u istraživanjima su pronađeni kasnoantički kosturni ukopi (Sonde 2 i 4). Pojedinačne grobove nije moguće prepoznati u rezultatima geomagnetskog pregleda jer su u zoni primijećene samo difuzne anomalije.

Središnji i južni dio pregledne zone 3 obuhvaćaju otprilike 76 × 138 m (10 350 m²) velikog kompleksa – Struktura 2. Orijentacija ovih građevina odstupa 108° od sjevera prema sjeveroistoku. Čini se da je Struktura 2 (rimska?) na sjevernom dijelu koso postavljena iznad Strukture 1 (starije željezno doba), što može biti prouzročeno snažnim anomalijama koje pokazuju geofizički podaci u Strukturi 1. Građevine prate tok rijeke Kupe na istočnoj obali poluotoka Pogorelac. Područje, na kojem je konstrukcija, podijeljeno je u parcele prosječne širine između 11 i 15 m te do 76 m dužine. Parcele su uglavnom izduženoga pravokutnog oblika. Nalazi u Strukturi 2 pokazuju relativno visok stupanj termomagnetizma, koji je ipak znatno niži od onog u Strukturi 1 – to bi također mogle biti drvene građevine s kamenim temeljima. Budući da niti materijal prikupljen na površini niti rezultati istraživanja još nisu dostupni, datacija ovih građevina i dalje je nejasna. Tlocrt građevina podsjeća na rimskodobne kuće u nizu, kakve su česte u sjevernim provincijama, ali i u Panoniji.[9] Ipak, nije moguće isključiti mogućnost da je riječ o skladištima poput onog kakvo je istraženo i zabilježeno tijekom geofizičke prospekcije u Nauportu – Vrhnici.[10]

Na južnom je dijelu zone 3 zabilježen još jedan kompleks sa znatno manjim termomagnetiznom – Struktura 3. Ova velika struktura, dimenzija 25 × 86 m (2150 m²), ima otklon 90° od sjevera, kakav imaju moderne kuće u blizini rijeke Kupe, ali i tlocrt rimske Siscije,[11] a koji su usmjereni prema istoku. Dvije parcele, širine 9 i 13 m, na jugu su omeđene trakom širine 3 m (cesta?). Prema rezultatima pregleda, Struktura 3 nimalo se ne preklapa sa Strukturom 2 i, iako ih se može interpretirati kao kuće u nizu, njihova je datacija nejasna.

Nešto južnije zabilježene su Strukture 4 – 11. Izuzev Strukture 7, sve imaju istu orijentaciju s otklonom od 60° od sjevera prema sjeveroistoku. Za razliku od sjevernog dijela pregledanog područja, na južnom dijelu nisu uočeni tragovi razvoja većih razmjera, osim nekoliko razbacanih građevina različitih veličina. Teško

testifies to a complex multi-phase settlement development, including a timber buildings – *Structures 1-3* – with the same orientation as structures in Trench 2.[8] Combining typology of the fine pottery with AMS dating, the timber constructions with clay floors are dated to the later phase of the Early Iron Age. However, it is striking that both structures excavated in Trenches 1 and 2 have the same orientation as the overall geophysically-defined Structure 1 (Fig. 7).

In the northern part of area 3, inside and outside Structure 1, excavations yielded late Roman skeletal burials (Trenches 2 and 4). Individual graves cannot be recognized as such in the results of geomagnetic surveying: the area has only diffuse anomalies.

The middle and southern part of surveyed area 3 is occupied by a complex approximately 76 × 138 m (10 350 m²) in size – Structure 2. The orientation of these buildings differs by 108° from the north to the northeast. It seems that Structure 2 (Roman?) is superposed obliquely in the north with Structure 1 (Early Iron Age), which could be caused by the high anomalies of the geophysical data in Structure 1. The buildings follow the course of the River Kupa on the east bank of the Pogorelac peninsula. The construction area is parcelled with plots averaging between 11 and 15 m wide and up to 76 m in length. The parcels are mainly divided into longitudinal rectangular spaces. The thermoremanent magnetization of the findings in Structure 2 is relatively high, but significantly lower than in Structure 1; it should likewise be wooden buildings that may have had stone foundations. Since neither material from surface surveys nor excavation results are yet available, the dating of these buildings remains uncertain. The layout of the buildings is reminiscent of Roman-period terraced houses, frequently encountered in the northern provinces, as well as in Pannonia.[9] However, warehouses are not to be ruled out, like, for example, that which had been excavated and recorded during geophysical prospection in Nauportus–Vrhnika.[10]

In the southern part of area 3 a further building complex, with significantly lower thermoremanent magnetization of the findings, was recorded – Structure 3. This large structure, measuring 25 × 86 m (2150 m²), has a demarcation of 90° from the north, making it, like the modern houses near the River Kupa and the layout of Roman Siscia,[11] aligned exactly to the east. Two plots, 9 and 13 m wide, are bordered to the south by a strip (road?) 3m wide. According to the surveying results, Structure 3 has no overlap with Structure 2. The layout is similar to the layout of the buildings observed in Structure 2 and, while they may be interpreted as terraced houses, their dating is uncertain.

Further south, Structures 4–11 have been documented. Except for Structure 7, all have the same orientation, namely 60° from north to northeast. In contrast to the northern part of the area

8 Termin „struktura" u tekstu je korišten za pojave zabilježene geofizičkim pregledom, kao i za istražene ostatke željeznodobnih građevina. Kako bi ih bilo moguće razlikovati u engleskom tekstu drugi pojam je pisan u kurzivu (*Struktura*).

9 Ditmar-Trauth 1995, Bd. 2, 193–206 (Carnuntum, Budapest).

10 Mušić, Horvat 2007, 254, sl. 36.

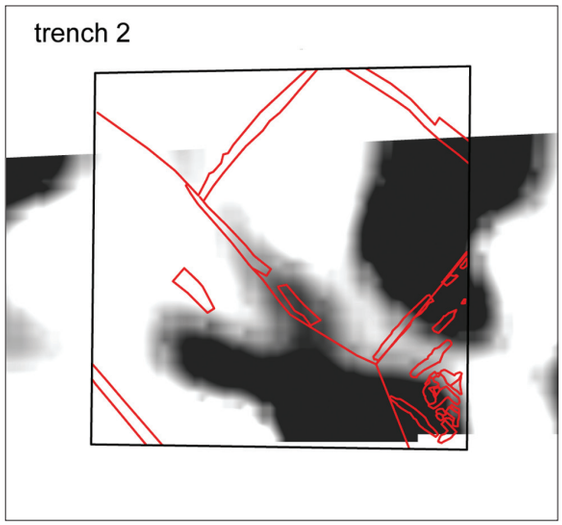
11 Lolić 2014.

8 The term 'structure' is used in the text for the features recorded in geophysical survey, and also for the excavated remains of the Iron Age buildings. In order to make the distinction, the second term is written in italics (Structure).

9 Ditmar-Trauth 1995, Bd. 2, 193–206 (Carnuntum, Budapest).

10 Mušić, Horvat 2007, 254, Abb. 36.

11 Lolić 2014.



SLIKA 8. Ostatci struktura istraženih u Sondama 1 i 2 u kombinaciji s rezultatima geomagnetskog pregleda.

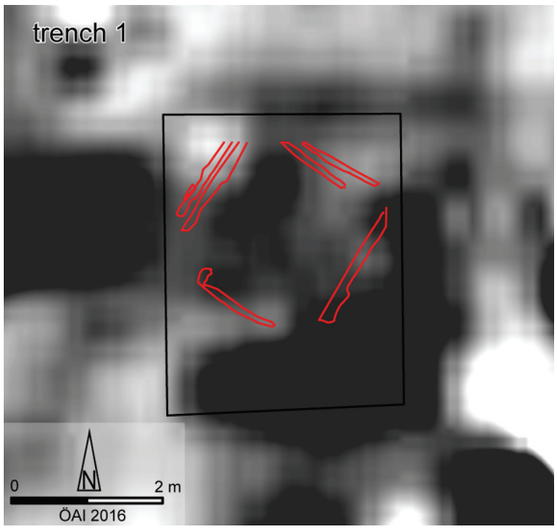


FIGURE 8. Remains of the structures excavated in Trenches 1 and 2 combined with the results of geomagnetic survey.

je odrediti tlocrt ovih građevina jer su unutrašnje strukture teško prepoznatljive, ali izgledno je očekivati da njihova orijentacija prati otprilike 6 m široku prometnicu – Struktura 4. Prometnica je definirana 6 m širokom magnetskom anomalijom koja ima istu orijentaciju kao i Strukture 4 – 9. Podaci ukazuju da se radi o šljunčanoj cesti.

Samo Struktura 7, dimenzija 11 × 36 m (396 m^2), odstupa od sjevera prema zapadu za 17° i preklapa se sa Strukturom 6, odnosno građevinama s otklonom od 60°. Struktura 6, dimenzija 15 × 23 m (345 m^2), pokazuje jedva vidljivu unutarnju podjelu na najmanje tri prostorije, poput Strukture 5, koja se sastoji od tri pravokutne prostorije, s jednom jasno definiranom prostorijom na sjeverozapadnom dijelu, dimenzija 14 x 18 m (252 m^2). Na sjeverozapadnom su dijelu zone 4 identificirane mnogobrojne anomalije koje je moguće interpretirati kao peći. Oko 15 izduženih ovalnih struktura nalaze se s vanjske strane izvan građevine, a dimenzije im variraju od 1 do 2 m. Visina jakosti magnetskog polja (izražena u nanoteslima; nT) definira strukturu kao peć (30 – 120 nT). Strukture zabilježene iza Strukture 5 pokazuju jakost magnetskog polja između 35 i 80 nT, a dokazi dozvoljavaju da se Strukturu 5 interpretira kao proizvodnu. Oblik i distribucija peći ukazuju na to da se vjerojatno radi o metalurškim, a ne keramičarskim pećima. U usporedbi sa susjednim Strukturama 6 – 8, ovo je jedina građevina na čiju funkciju upućuju prikupljeni podatci. Distribucija struktura s visokom snagom magnetskog polja nastavlja se na istočnoj strani ceste (Struktura 4), bez dokaza o postojanju drugih građevina.

prospected, no large-scale development has been detected in the southern part, except for a few scattered buildings of various sizes. The layout of these buildings cannot easily be defined, with the inner structures hardly recognizable, but their orientation is expected to follow a roadway approximately six metres wide – Structure 4. The roadway is determined by an elongated magnetic anomaly, six metres wide, having the same orientation as Structures 4–9. Data indicate that it is a gravelled road.

Only Structure 7, measuring 11 × 36 m (396 m^2), deviates by 17° from north to west and overlaps Structure 6 – buildings with a 60° orientation. Structure 6, measuring 15 × 23 m (345 m^2), has a barely visible internal division into at least three rooms, like Structure 5, which is composed of three rectangular rooms, with one clearly defined room in the north-western part, measuring 14 x 18 m (252 m^2). In the south-western part of area 4, numerous anomalies have been identified that are likely to be interpreted as ovens. There are up to 15 of these longitudinal-oval features, situated outside in the back yard of the building, their dimensions ranging from 1–2 m. The height of the magnetic field strength (measured in nanotesla (nT)) defines the structures as ovens (from 30–120 nT). The features in the back yard of structure 5 have magnetic field strengths between 35 and 80 nT. The evidence could allow the interpretation of Structure 5 as a production site. The shape and distribution pattern of the furnaces indicate production that is metallurgic rather than of pottery. Compared to the adjacent Structures 6–8, this is the only building for which we could have evidence of a function. The distribution of features with high magnetic field strengths continues on the east side of the road (Structure 4) without any evidence of further buildings.

Struktura 8, dimenzija 13 × 25 m (325 m²), sastoji se od tri pravokutne prostorije, a (drveni?) temelji ove građevine slabo su vidljivi. Struktura 9, dimenzija 22 × 32 m (704 m²), sastoji se od užega sjevernog dijela, koji nalikuje hodniku, te četiri pregradna zida na jugu. U ovom je slučaju, kao i u slučaju većine građevina iste orijentacije, moguće očekivati drvenu konstrukciju. Nema indikacija za postojanje žbukanih podova, a nije bilo ni tragova požara (izgoreni slojevi poput onih u Strukturama 1 i 2). Na najjužnijem dijelu pregledne zone 6 zabilježene su dvije strukture – kružna Struktura 10, otprilike 14 m u promjeru, i dvodijelna Struktura 11, dimenzija 11 × 13 m (143 m²). Struktura 10 vjerojatno se preklapa sa Strukturom 11. Pitanje je treba li se ove dvije strukture interpretirati kao grobnice, odnosno tumul, ostaje otvoreno.

Structure 8, measuring 13 × 25 m (325 m²), consists of three rectangular spaces; the (wooden?) foundations of this building are only faintly discernible. Structure 9, measuring 22 × 32 m (704 m²), is composed of a narrower, corridor-like northern part, articulated by four partition walls in the southern part. We should expect here, just as with the majority of buildings with this orientation, a timber construction. There are no indications of mortar floors, and traces of fire (burned layers such as in Structures 1 and 2) could not be detected. In the southernmost part of surveyed area 6, two structures were recorded: the circular Structure 10, approximately 14 m in diameter, and the two-part Structure 11, measuring 11 × 13 m (143 m²). Structure 10 probably overlaps Structure 11. It is a matter of discussion whether these two structures are to be interpreted as a tombs and a burial mound.

SLIKA 9. Pregledana područja (7 - 10) u središnjem i jugoistočnom dijelu Pogorelca.

FIGURE 9. Areas surveyed (7-10) in the central and south-eastern part of Pogorelac.

Pitanje datacije Struktura 4 – 11 potpuno je otvoreno i, začuđujuće, njihova se orijentacija razlikuje od one Struktura 2 i 3. Ove zadnje treba interpretirati kao kuće, dok Strukture 4 – 11, pak, treba smatrati raspršenim naseljem s mogućim grobljem na jugu. Ovakav razvoj može se povezati s kasnoantičkom nekropolom koja je pronađena u preglednim zonama 1 i 3.

Pregledne zone 7 – 10

Podaci dobiveni magnetskim mjerenjem u zonama 7 – 10 ne pokazuju abnormalnosti, izuzev nekoliko jama, dimenzija 0,5 – 1 m, koje bi mogle biti antropogenog karaktera. Na temelju uzorka distribucije jama moguće je isključiti bilo kakvo pravilno / sustavno korištenje struktura na stupovima u ovom području. Također, nisu pronađeni ni tragovi rimskodobnoga vojnog logora, obrambenih jaraka ili pak unutrašnjih prostorija (sl. 8).

The dating of Structures 4–11 is completely open, and, strikingly, their layouts differ from Structures 2 and 3. The latter are to be interpreted as strip houses, while Structures 4–11, on the other hand, are to be seen as scattered settlements, perhaps with a graveyard to the south. This development might be related to the late Roman burial ground, situated in surveyed areas 1 and 3.

Surveyed areas 7–10

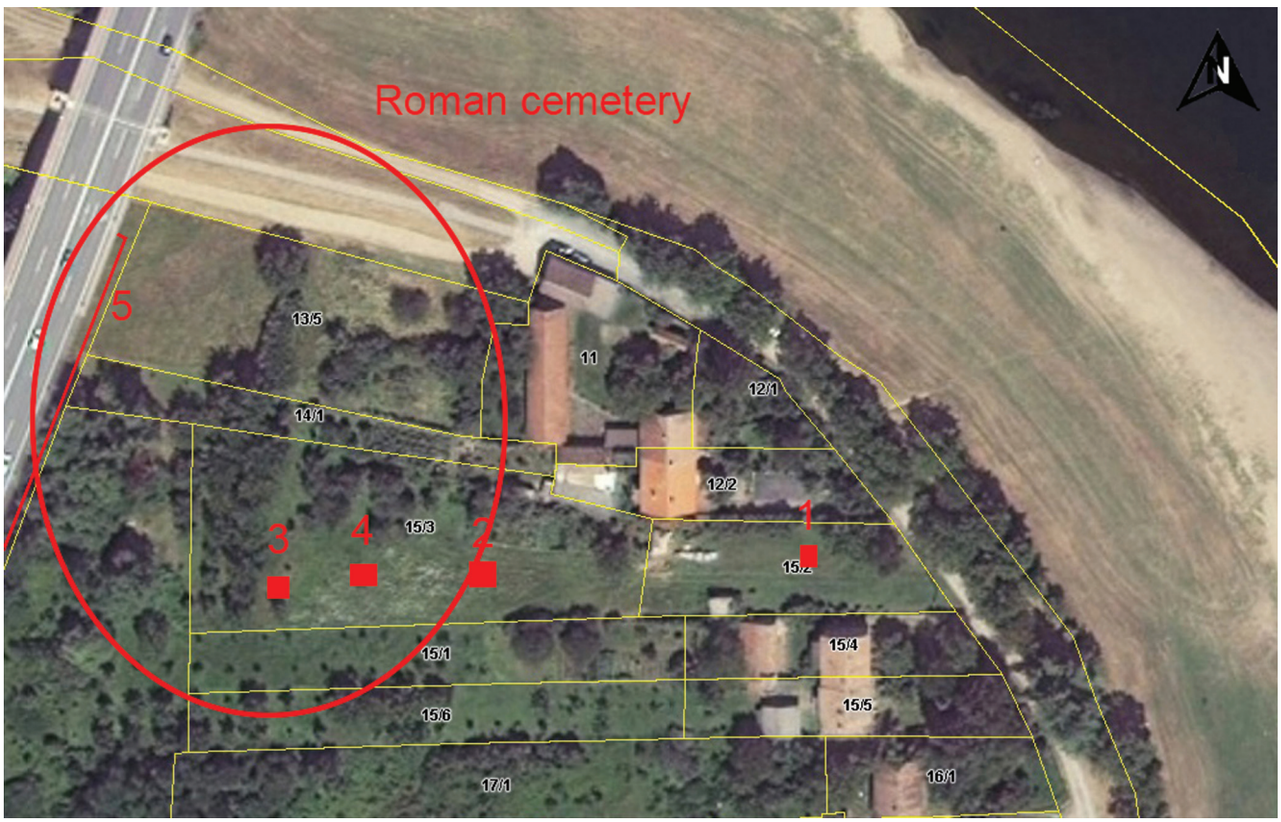
The data of magnetic measurements in areas 7–10 shows no abnormalities, except for some pits, 0.5–1 metre in size, which may be of anthropogenic construction. Based on the distribution pattern of the pits it is possible to rule out any regular/systematic use of post structures in this area. No traces of a Roman-period military camp, its trenches or even internal buildings could be recognized (Fig. 8).

Iskopavanja Arheološkog muzeja u Zagrebu na poziciji Sisak–Pogorelac (2012.–2017.) (I. Drnić)

Iskopavanja na poziciji Sisak–Pogorelac počela su u ljeto 2012. godine otvaranjem Sonde 1 s ciljem utvrđivanja stratigrafske situacije na ovom dijelu lokaliteta. Do kraja 2017. godine, kada je završena prva faza istraživanja na Pogorelcu, istražene su četiri

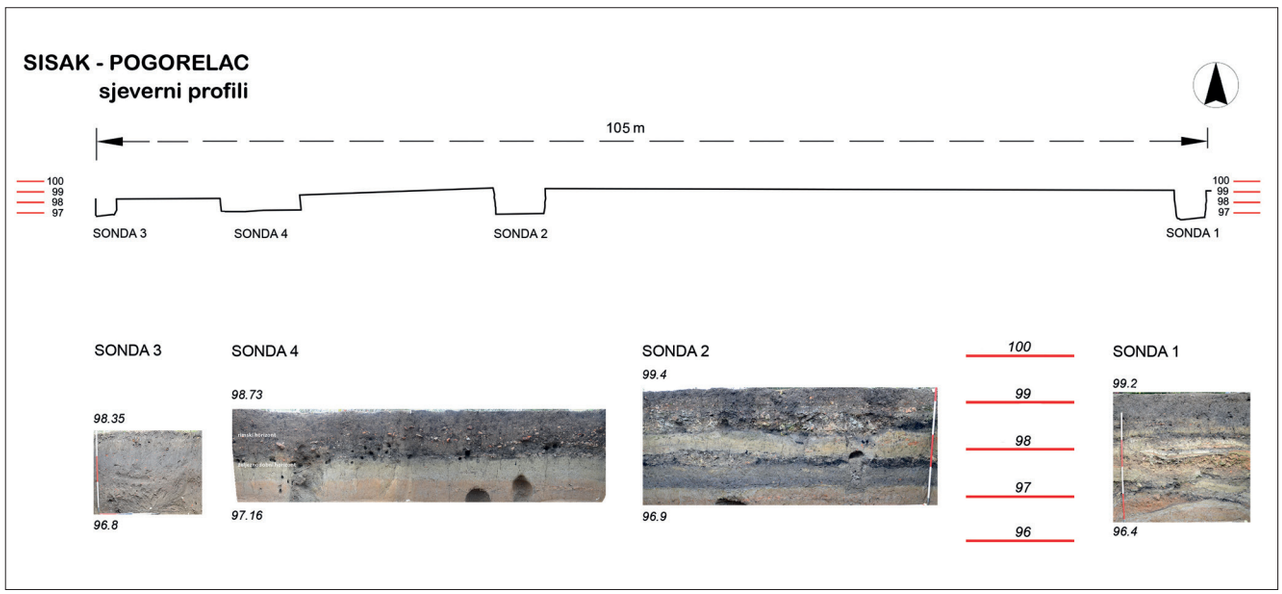
Excavations by the Archaeological Museum in Zagreb at the Sisak–Pogorelac site (2012–2017) (I. Drnić)

Excavations at the Sisak-Pogorelac position commenced in the summer of 2012, when Trench 1 was opened with the objective of ascertaining the stratigraphic situation at this part of the site. By the end of 2017, when the first phase of research at Pogorelac



SLIKA 10. 1. Položaj istraženih Sondi 1 – 4 na sjeveroistočnom dijelu pozicije Pogorelac (kat. č. 15/2 i 15/3); 5. Zaštitno iskopavanje provedeno 2013. i 2014. godine (Arheolog d.o.o) ©Google Maps.

FIGURE. 10. 1. Position of excavated Trenches 1-4 in the north-eastern section of the Pogorelac position (cad. plots 15/2 and 15/3); 5. Rescue excavations conducted in 2013 and 2014 (Arheolog d.o.o) ©Google Maps.



SLIKA 10. 2. Presjek kroz istraženi dio lokaliteta s prikazom sjevernih profila u Sondama 1–4 (izradili I. Drnić, M. Mađerić).

FIGURE 10. 2. Cross-section of the excavated section of the site with depiction of northern profiles in Trenches 1–4 (made by I. Drnić, M. Mađerić).

sonde na kat. č. 15/2 i 15/3 (kat. općina Novi Sisak) u kojima su zabilježene strukture iz tri vremenska razdoblja: naseobinski slojevi iz željeznog doba (8.(?) 6. – 1. st. pr. Kr.) i rimskog razdoblja (2. – 3. st.) te groblje iz razdoblja kasne antike (4. i prva polovina 5. st.) (sl. 10 : 1 –2). U nastavku rada bit će analizirana i interpretirana stratigrafija i kontekstualni podaci za sva tri razdoblja u kojima je na različite načine korišten ovaj prostor.

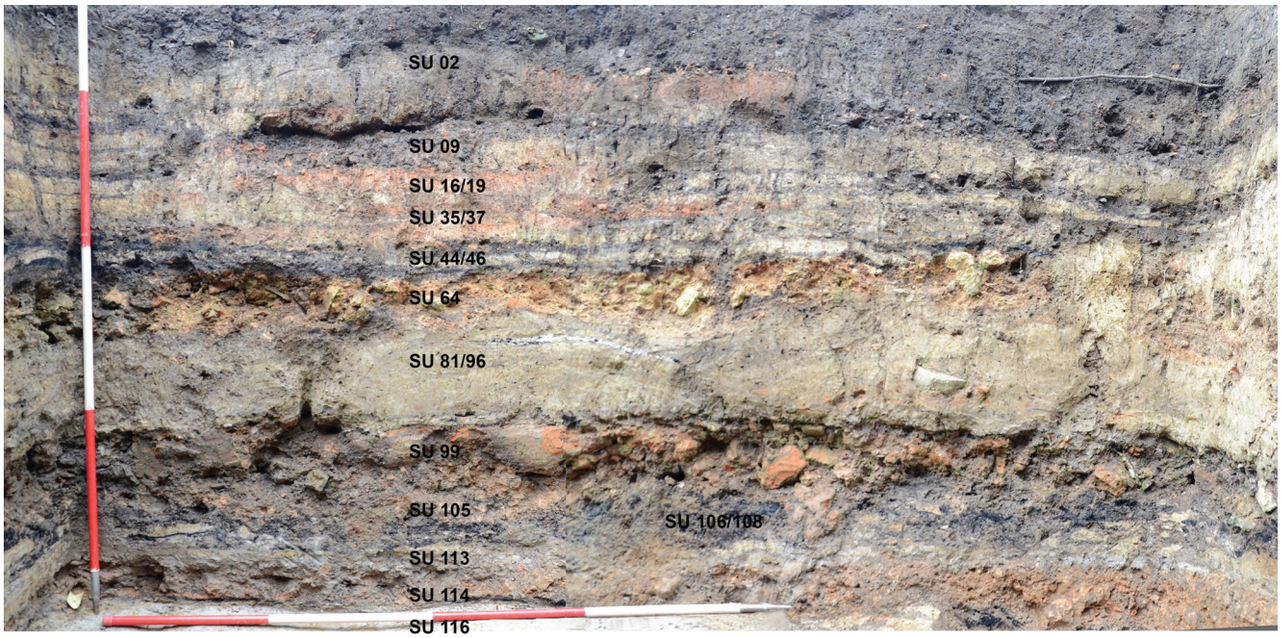
Sonda 1

Gotovo 3 m debeli kulturni slojevi u Sondi 1, dimenzija 3 x 4 m, koje pokretni materijal te rezultati radiokarbonskih analiza datiraju u razdoblje starijeg i mlađega željeznog doba, (8. (?)/ 6. - 1. st. pr. Kr.), istraživani su u četiri arheološke kampanje (2012. – 2015.) (sl. 11 i 12). Najstariji antropogeni sloj (SJ 119) u Sondi 1, koji se sastoji od tankoga sivog sloja s tragovima gorenog drveta, zabilježen je na apsolutnoj dubini od 96,15 m.n.v., a definiran je kao naseobinski *horizont 0*. Neposredno iznad njega istražen je sloj žute gline s intenzivnim tragovima gorenja (SJ 116), uključujući ostatke spaljenog drveta (SJ 117) (sl. 13: 1) iznad kojega se nalazio sloj kućnog lijepa, ukazujući na postojanje nadzemne strukture sa zemljanim podom orijentacije sjeveroistok – jugozapad (*Objekt 1*) i drvenim zidovima premazanim kućnim lijepom (sl. 13: 2). Sivi sloj (SJ 114) s dosta gorenog drveta, nešto keramičkih ulomaka i životinjskih kostiju, zabilježen u jugoistočnom uglu Sonde 1, predstavlja prostor izvan *Objekta 1.* Rezultat radiokarbonske analize, provedene na koštanom uzorku iz SJ 116, dao je uslijed fenomena „halštatskog koljena“ relativno širok datum između 745. i 400. god. pr. Kr. (745-400 cal BC) s vjerojatnošću od 68%

was completed, four trenches had been excavated on cadastral plots 15/2 and 15/3 (Novi Sisak cadastral municipality) in which structures from three chronological periods were registered: settlement layers from the Iron Age (8(?) 6th-1st centuries BC) and the Roman era (2nd-3rd centuries AD) and the Late Roman cemetery, dated to the period from the end of the 3rd to the first half of the 5th century (Fig. 10: 1-2). In the remainder of this work, the stratigraphy and contextual data for all three periods in which this area was differently used will be analysed and interpreted.

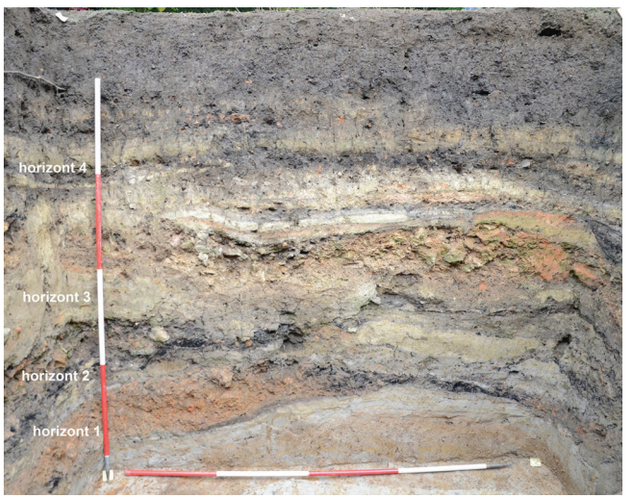
Trench 1

The almost three-meter thick cultural layers in Trench 1 (dim. 3 x 4 m), which based on the movable materials and radiocarbon results have been dated to the Early and Late Iron Age (8(?)/6th-1st centuries BC), were examined in four archaeological campaigns (2012-2015) (Fig. 11-12). The oldest anthropogenic layer (SU 119) in Trench 1, which consists of a thin grey layer containing traces of burned wood, was recorded at an absolute depth of 96.15 m asl., and it has been defined as settlement *horizont 0*. Above it there is a sterile ochre-yellow layer. This is followed by a layer of yellow clay with intense traces of burning (SU 116), including the remains of charred wood (SU 117) (Fig. 13: 1), above which there was a layer of daub, indicating the existence of an above-ground structure with an earthen floor having NE-SW orientation (*Structure 1*) and wooden walls coated with daub (Fig. 13: 2). The grey layer (SU 114) with a considerable quantity of burnt wood, some potsherds and animal bones, recorded in the south-eastern corner of Trench 1, was an area outside of *Structure 1*. The results of radiocarbon analysis conducted on the bone sample from SU 116 yielded, as a consequence of the “Hallstatt plateau,” a relatively



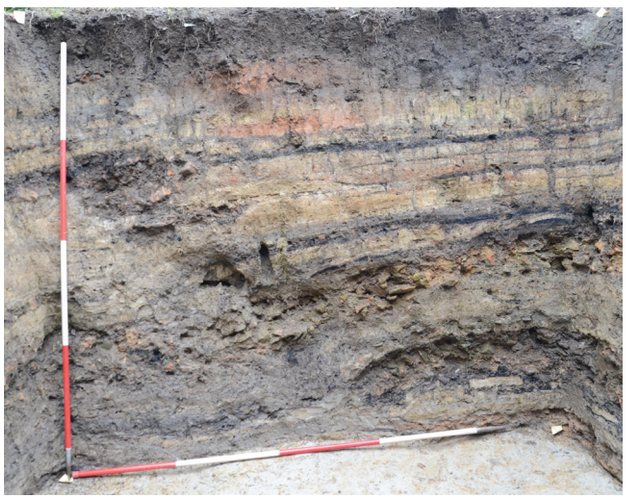
SLIKA 11. Zapadni profil u Sondi 1 (snimio I. Drnić).

FIGURE 11. Western profile in Trench 1 (photo by I. Drnić).



SLIKA 12. 1. Sjeverni profil u Sondi 1 (snimio I. Drnić).

FIGURE 12. 1. Northern profile in Trench 1 (photo by I. Drnić).



SLIKA 12. 2. Južni profil u Sondi 1 (snimio I. Drnić).

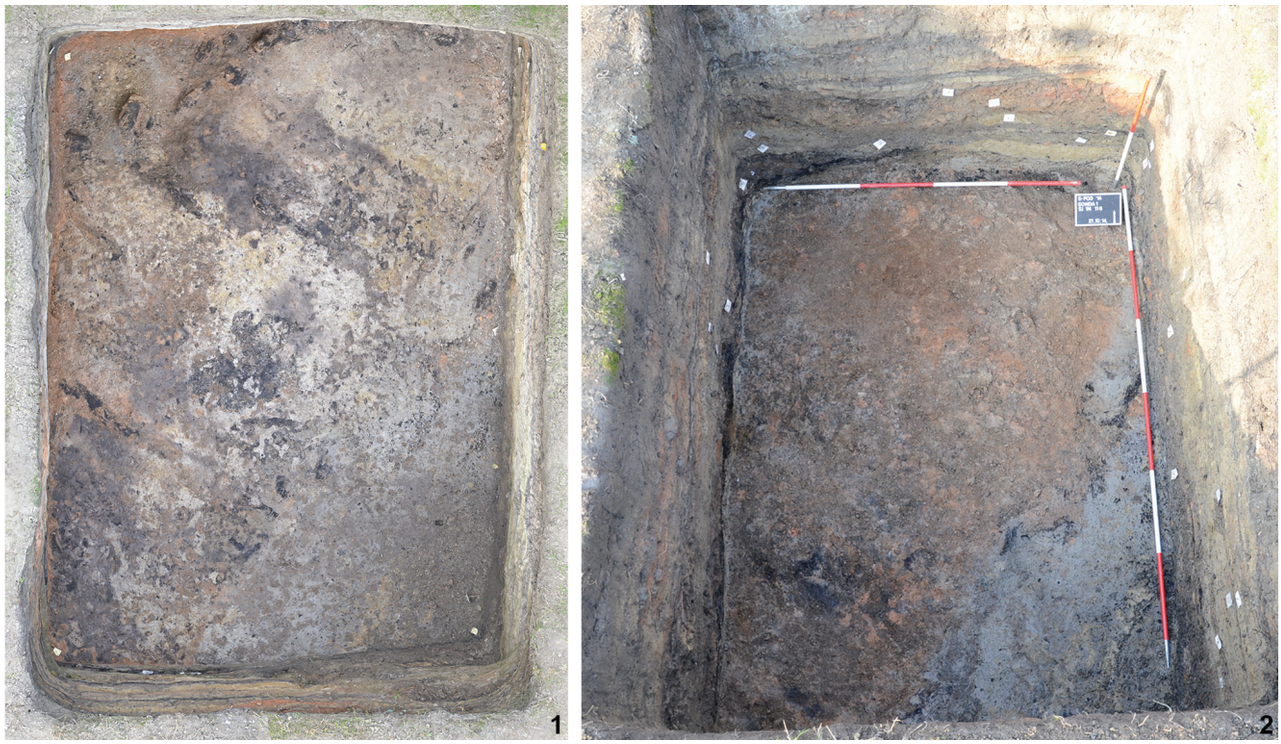
FIGURE 12. 2. Southern profile in Trench 1 (photo by I. Drnić).

za razdoblje između 540. i 410. (540-410 cal BC) (Beta-435082),[12] ukazujući na formiranje naseljavanja na ovom dijelu lokaliteta u razdoblju starijega željeznog doba, vjerojatno u mlađem dijelu, odnosno kasnohalštatskom razdoblju (sl. 16). U opisanom je naseobinskom horizontu prikupljen manji broj ulomaka keramičkih posuda, uglavnom grublje izrade, koji nisu prikladni za preciznije datiranje, ali i ulomak kvalitetno izrađene zdjele crne,

broad date between 745 and 400 BC (745-400 cal BC) with a 68% probability of the period between 540 and 410 (540-410 cal BC) (Beta-435082),[12] indicating the formation of a settlement at this part of the site in the Early Iron Age, probably in its later phase, i.e., the late Hallstatt period (Fig. 16). A small number of potsherds, mainly mainly coarse ware not conducive to more precise dating, were gathered in this settlement horizon thus described, but

12 cal BC 745 – 400: cal BC 745 to 685, cal BC 665 to 645, cal BC 550 to 400 (95% Probability), cal BC 540 to 410 (68% probability).

12 cal BC 745 – 400: cal BC 745 to 685, cal BC 665 to 645, cal BC 550 to 400 (95% Probability), cal BC 540 to 410 (68% probability).



SLIKA 13. 1. Ostaci podnice *Objekta 1*; b) urušenje *Objekta 1* (snimio I. Drnić).

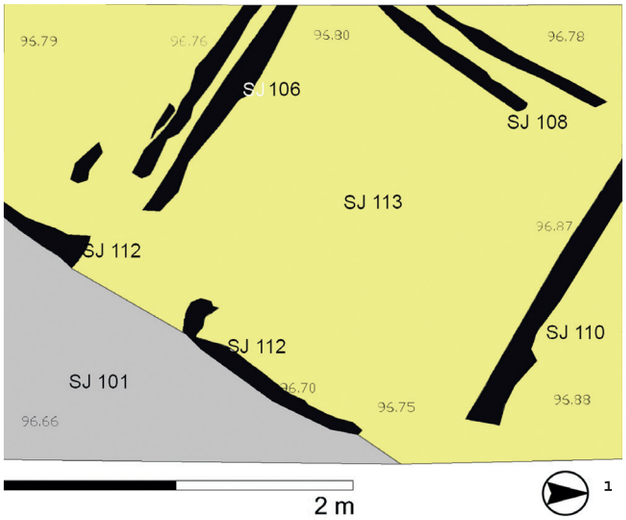
FIGURE 13. 2. Remains of floor in *Structure 1*; b) rubble in *Structure 1* (photo by I. Drnić).

uglačane površine, ukrašene plitkim žlijebljenjem i ubadanjem (T. 1: 2) te ulomak zdjele uvučenog, fasetiranog ruba (T. 1: 3) koji bi, zajedno s oštećenom brončanom tuljastom sjekirom (T. 1: 7), mogao ukazivati na nešto stariju dataciju prvoga naseobinskog horizonta (Ha C - D1). Osim navedenih nalaza, u ovome su horizontu zabilježeni u potpunosti sačuvan kameni brus cilindričnog oblika s perforacijom na jednom kraju (T. 1: 10), ulomak pokretnog ognjišta (T. 1: 4) te željezno šilo pravokutnog presjeka (T. 1: 6).

Iznad naseobinskog sloja 1 u Sondi 1 nalazio se djelomično istraženi mlađi objekt iste orijentacije kao i onaj stariji (sjeveroistok – jugozapad) (*Objekt 2*). Sastojao se od 30 do 40 cm debelog sloja urušenja (SJ 99) s velikom količinom kućnog lijepa, keramičkih ulomaka te ulomaka keramičkih ploča ukrašenih plastičnim, geometrijski izvedenim ukrasom koje su bile postavljene na zidove u unutrašnjosti objekta (T. 3). Ispod opisanog urušenja nalazio se sloj gorene zemlje s dosta spaljenog drveta i većim komadima zapečene zemlje crvene boje (SJ 105) te ostacima dviju paralelnih spaljenih greda, orijentacije sjeverozapad – jugoistok (SJ 106) (sl. 14: 3). Uz sjeverni i istočni rub opisane strukture nalazilo se nekoliko komada kamena. Na podu *Objekta 2*, među brojnim keramičkim ulomcima, pronađen je gotovo u cijelosti sačuvan lonac koji je u potpunosti bio ispunjen arheobotaničkim ostacima. Provedena je analiza pokazala da većinu prikupljenog uzorka čine spaljene sjemenke prosa (engl. *foxtail millet*, *Setaria italica [L.]*

also a piece of a more finely crafted bowl with a black burnished surface, decorated with shallow grooves and stabbing (Pl. 1: 2) and a fragment of a bowl with everted, faceted rim (Pl. 1: 3) which, together with the damaged bronze socketed axe (Pl. 1: 7), may indicate a somewhat earlier dating of the first settlement horizon (Ha C-D1). Besides these finds, also recorded in this horizon are an entirely preserved cylindrical whetstone with a perforation on one end (Pl. 1: 10), a fragment of a movable hearth (Pl. 1: 4) and an iron awl with rectangular cross-section (Pl. 1: 6).

There was a partially excavated later structure with the same orientation as the earlier one (NE-SW) (*Structure* 2) above the settlement *horizon 1* in Trench 1. It consisted of a 30-40 cm thick layer of rubble (SU 99) containing a high quantity of daub, potsherds and a fragments of ceramic tiles adorned with sculpted, geometrically rendered decorations which were installed on the walls in the structure's interior (Pl. 3). Below the aforementioned rubble, there was a layer of charred soil with a considerable quantity of burned wood and many pieces of fired red earth (SU 105) and the remains of two parallel burned beams with a NW-SE orientation (SU 106) (Fig. 14: 3). Several pieces of stone were situated along the northern and eastern edge of this structure. Among the many potsherds on the floor of *Structure 2*, an almost entirely preserved pot filled with archaeobotanical remains was found. The completed analysis showed that the large majority of the



SLIKA 14. 1-2. Ostaci podnice i drvene arhitekture *Objekta 2*; 3. urušenje *Objekta 2* (snimio I. Drnić, izradio M. Mađerić).

FIGURE 14. 1-2. Remains of floor and wooden architecture of *Structure 2*; 3. rubble of the wall construction of *Structure 2* (photo by I. Drnić, made by M. Mađerić).

P. Beauv.).[13] U jugoistočnom je kutu sonde registriran tamnosivi sloj s dosta spaljenog drveta, keramike i životinjskih kostiju, koji predstavlja prostor izvan *Objekta 2* (SJ 101), dok se iznad njega nalazio veći komad spaljenog drveta (dio grede?) (SJ 100).[14] Uklanjanjem sloja urušenja (SJ 105), postalo je jasno da je gotovo cijela površina sonde, osim već spomenutoga jugoistočnog ugla, bila prekrivena slojem nabijene žute i djelomično crveno zapečene zemlje (SJ 113), koja predstavlja pod nadzemnog objekta (*Objekt 2*), a koji je, zbog dimenzija sonde, samo djelomično istražen. Na podu od nabijene zemlje nalazili su se ostaci spaljene drvene arhitekture (SJ 106, 108, 110, 112) (sl. 14: 1-2). Grede, sačuvane u visini

gathered samples consist of burned foxtail millet seeds (*Setaria italica [L.] P. Beauv.*).[13] A dark-grey layer with a considerable quantity of burned wood, pottery and animal bones was registered in the south-eastern corner of the trench, which constitutes the area outside of *Structure 2* (SU 101), while above it there was a large piece of burned wood (part of a beam?) (SU 100).[14] After removal of the rubble layer, (SU 105), it became clear that virtually the entire surface of the trench, besides the already mentioned south-eastern corner, was covered with a layer of packed yellow and partly red fired soil (SU 113), which constituted the floor of the above-ground structure (*Structure 2*), and which due to the

13 Reed, Drnić 2016.

14 Analiza drveta pokazala je da se radi o hrastu (*Quercus sect. Quercus*). Nažalost, pokušaj provođenja dendrokronološke analize bio je neuspješan zbog nedovoljnog broja godova. Analize je provela Katherine Seufer s Cornell Tree-Ring Laboratory.

13 Reed, Drnić 2016.

14 Analysis of the wood has shown that it is oak (*Quercus sect. Quercus*). Unfortunately, an attempt at dendrological analysis was unsuccessful due to an insufficient number of rings. The analysis was conducted by Katherine Seufer at the Cornell Tree-Ring Laboratory.

od 5 do 10 cm, bile su organizirane u obliku pravokutne strukture, orijentacije sjeveroistok – jugozapad. Nekoliko konstrukcijskih elemenata, registriranih prilikom istraživanja *Objekta 2,* ukazuje na to da je građevina vjerojatno bila podignuta u tehnici *postpad construction* s vodoravnim temeljnim gredama na koje su bile postavljene okomite osnovice zidne konstrukcije.[15] Naime, u iskopavanju nisu zabilježeni ostaci rupa od stupova koji bi činili okomitu osnovu zidne konstrukcije. Također, zabilježeno je i nekoliko većih komada kamena, koji su mogli biti korišteni za temeljenje objekta, što je čest slučaj kod ovog tipa drvene arhitekture. Isti je način gradnje zabilježen na nekoliko slovenskih kasnobrončanodobnih i ranoželjeznodobnih lokaliteta, primjerice u mlađoj fazi naselja na Pošteli u Štajerskoj (kraj stupnja Ha C1 i Ha D),[16] Kučar u Beloj Krajini (Ha D),[17] kao i u petoj naseobinskoj fazi naselja Tribuna u Ljubljani, datiranoj u razdoblje između 550. i 410. god. pr. Kr. (550-410 cal BC).[18] S ciljem apsolutnog datiranja opisanoga naseobinskog horizonta, na jednome koštanom uzorku iz sloja urušenja (SJ 105) te jednom iz prostora izvan Objekta 2 (SJ 101) provedene su radiokarbonske analize. Rezultat analize na prvom uzorku (SJ 105, Beta-435081) datira *Objekt 2* u razdoblje između 370. i 180. god. pr. Kr.,[19] dok drugi rezultat (SJ 101, R_Date 2265, 15) smješta drugi naseobinski horizont između 394. i 234. god. pr. Kr. (sl. 16).[20] Uzevši u obzir da su u njemu zabilježeni i ulomci karakteristične fine, redukcijski pečene keramike, crne, glačane površine (T. 4: 8–13, T. 5: 7–9), u nekoliko slučajeva ukrašene karakterističnim naboranim ukrasom (T. 4: 8, T. 5: 9) (o kojemu će više biti rečeno u nastavku teksta!), koju analogije sa slovenskog, ali i zapadnobalkanskog te južnopanonskog prostora datiraju u kasnohalštatsko razdoblje, smatramo da se datacija *Objekta 2* i drugoga naseobinskog horizonta može preciznije definirati u razdoblje 4. st. pr. Kr.

U drugome je naseobinskom horizontu prikupljena velika količina ulomaka keramičkih posuda. Iz kronološke perspektive važno je naglasiti da među njima nema ulomaka posuda izrađenih na lončarskom kolu, kao niti onih s dodatkom grafita u glinenoj smjesi, koji se na prostoru južne Panonije vežu uz pojavu latenske kulture, a koje, doduše u relativno malom broju, nalazimo u mlađim naseobinskim slojevima u Sondi 1 (*horizont 4*) kao i mlađeželjeznodobnim slojevima naselja na lijevoj obali rijeke Kupe.[21] Većinu prikupljenoga keramičkog materijala čine ulomci posuda grublje izrade (lonci, zdjele, peke) (T. 4: 1-7, T. 5: 1-6) uz spomenute nalaze fine keramike crne, glačane površine (rijetko oker i smeđe) koja tipološki obuhvaća samo zdjele, i to primjerke sa

dimensions of the trench has only been partially examined. Remains of wooden architecture (SU 106, 108, 110, 112) were on the packed-earth floor (Fig. 14: 1-2). Beams, preserved to a hight of 5-10 cm, were organized in the form of a rectangular structure with a NE-SW orientation. Several construction elements registered during the excavations of *Structure 2* indicate that the building was probably erected using the post and pad construction technique with horizontal foundation beams onto which the vertical frames of the wall construction were installed.[15] The remains of holes from the posts that would have composed the foundation for the wall construction were not found during the digs. Furthermore, several larger pieces of stone were registered which may have used for the structure's foundation, which is often the case for this type of wooden architecture. The same construction method was recorded at several Slovenian Late Bronze Age and Early Iron Age sites, for example in the more recent phase of the settlements at Poštela in Styria (end of phases Ha C1 and Ha D),[16] Kučar in Bela Krajina (Ha D),[17] and in the fifth settlement phase of the Tribuna settlement in Ljubljana, dated to the period between 550 and 410 BC (550-410 cal BC).[18] With the aim of absolute dating of the above-described settlement horizon, radiocarbon analysis was conducted on a bone sample from the rubble layer (SU 105) and one from the area outside of *Structure 2* (SU 101). The results of analysis on the first sample (SU 105, Beta-435081) dated *Structure 2* to the period between 370 and 180 BC,[19] while the other result (SU 101, R_Date 2265, 15) placed the second settlement horizon between 394 and 234 BC (Fig. 16).[20] Taking into consideration that it also contained several pieces of typical fine, reduction-fired pottery with black burnished surfaces (Pl. 4: 8-13, Pl. 5: 7-9), in several cases adorned with characteristic embossed decoration (Pl. 4: 8, Pl. 5: 9) about which more will be said below, and which, based on analogies from Slovenian, but also Western Balkan and South Pannonian territory, date to the late Hallstatt period, we believe that the dating of *Structure 2* and the second settlement horizon may be more precisely set in the 4th century BC.

A large quantity of potsherds was gathered in the second settlement horizon, and from the chronological perspective it is vital to stress that among them there are no fragments of vessels made on a potter's wheel, nor those with graphite temper in the clay mixture, which is linked to the appearance of the La Tène culture in the territory of southern Pannonia, and which, in a relatively small number to be sure, we found in the later settlement layers in Trench 1 (*horizon 4*) and in the late Iron Age layers on the left

15 Prvotna interpretacija građevinske tehnike, korištene u izgradnji Objekta 2, išla je u smjeru gradnje vodoravnim slaganjem balvana i križnim vezanjem u uglovima strukture (engl. *corner timbering*), ali su istraživanja u Sondi 2 ukazala na to da se vjerojatnije radi o prethodno navedenoj tehnici. Istraženi ostaci željeznodobne drvene arhitekture s Pogorelca bit će detaljnije analizirani u zasebnom poglavlju.

16 Teržan 1990, 31.

17 Dular, Ciglenečki, Dular 1995, 63–69.

18 Vojakovič 2014, 409-411.

19 Cal BC 370-180 (95 % probability): cal BC 355 to 275 i cal BC 255-200 (68 % probability) pri čemu je, na osnovi stratigrafskih odnosa, izgledniji prvi interval između 355. i 275. god. pr. Kr.

20 Cal BC 395-234 (95.4 % probability): cal BC 394-356 (64.7 % probability), cal BC 286-234 (30.7 % probability) pri čemu je, na osnovi stratigrafskih odnosa izgledniji prvi interval između 394. i 356. god. pr. Kr.

15 The initial interpretation of the construction technique used to build Structure 2 went in the direction of corner timbering, but excavations in Trench 2 showed that it was more likely a case of the aforementioned technique. The examined remains of Iron Age wooden architecture in Pogorelac will be analysed in greater detail in a separate chapter.

16 Teržan 1990, 31.

17 Dular, Ciglenečki, Dular 1995, 63–69.

18 Vojakovič 2014, 409–411.

19 Cal BC 370-180 (95 % probability): cal BC 355-275 and cal BC 255-200 (68 % probability) wherein, based on the stratigraphic relations, the first interval between 355 and 275 BC is more likely.

20 Cal BC 395-234 (95.4 % probability): cal BC 394-356 (64.7 % probability), cal BC 286-234 (30.7 % probability) wherein, based on the stratigraphic relations, the first interval between 394 and 356 BC is more likely.

zaobljenim tijelom i izvučenim rubom koji kod pojedinih komada više izgleda kao kratak, ljevkasto oblikovani vrat. Također, ovoj skupini pripadaju primjerci zaobljenog ili bikoničnog trbuha i cilindričnog / stožastog vrata s izvučenim rubom, za koje tipološki i tehnološki bliske analogije nalazimo na prostoru dolenjske halštatske skupine, i to uglavnom u stupnju zmijolike fibule, te certoškom i negovskom stupnju (6. – 4. st. pr. Kr.),[22] ali i na širem prostoru Donjeg Pokuplja (Turska kosa, Klinac, Kiringrad)[23] kojem geografski i kulturološki pripada i željeznodobno naselje u Sisku. Sličan je keramički materijal zabilježen i istočno na lokalitetima Donja Dolina i Sanski most, koji pripadaju istoimenoj željeznodobnoj kulturnoj skupini, a svjedoči o povezanosti krajeva uz gornji i srednji tok rijeke Save i Kupe u razdoblju 6. – 4. st. pr. Kr. Ova se željeznodobna kulturna skupina odražava u postojanju specifičnoga keramičkog stila zastupljenog u materijalnoj kulturi različitih željeznodobnih zajednica.[24] Ukras je na ovom tipu keramičkih posuda razmjerno uniformiran, a sastoji se od trokuta te vodoravnih, okomitih i kosih linija, često organiziranih u skupine koje mogu biti obrubljene točkama. Dominantne su tehnike, kojima se izvodi opisani ukras, urezivanje, žlijebljenje i ubadanje, a važan nalaz iz kronološke perspektive čine dva ulomka iz SJ 101 i 105 sa spomenutim naboranim ukrasom (T. 4: 8, T. 5: 9). U analizi dolenjske halštatske skupine J. Dular pojavu ovoga specifičnog ukrasa smješta u stupanj zmijolike fibule, odnosno prvu polovicu 6. st. pr. Kr.[25] Nešto kasnije B. Teržan je predložila raniju dataciju u stupanj Stična 2 (druga polovica 7. st. pr. Kr.),[26] koje se u objavi keramičke građe s Vinjeg vrha kod Stične drži i L. Grahek.[27] U recentnoj analizi grobnih cjelina, što sadrže posude ukrašene naboranim ukrasom, D. Božič zaključuje da bi se pojavu predmetne keramike trebalo smjestiti ne ranije od certoškog stupnja, odnosno u kraj 6. te u prvu polovicu 5. st. pr. Kr.[28] Osobnim uvidom u sve navedene grobne cjeline sklon sam se prikloniti inicijalnoj dataciji J. Dulara, prema kojoj se ovaj ukras pojavljuje od stupnja zmijolike fibule iako najveći procvat doživljava upravo u certoškom stupnju s kontinuitetom u negovski stupanj. Ukratko, riječ je o karakterističnoj kasnohalštatskoj pojavi zabilježenoj u zapadnom dijelu Karpatske kotline, uključujući periferna područja južne Panonije i zapadnog Balkana!

Osim ulomaka keramičkih posuda u sloju urušenja zidne konstrukcije *Objekta 2* (SJ 99), pronađeni su i masivni plosnati keramički ulomci izrađeni od grube glinene smjese s primjesom organskog materijala, ukrašeni geometrijskim motivima izvedenim u dubokom reljefu (T. 3). Ovako je izvedeni ukras poznat s nekoliko vrsta predmeta iz razdoblja starijega željeznog doba: predmeti vezani uz ognjište – pokretna ognjišta i prekladi,[29] pred-

bank of the River Kupa.[21] Most of the gathered potsherds consist of fragments of coarsely crafted vessels (pots, bowls, baking lids) (Pl. 4: 1-7, Pl. 5: 1-6), together with the aforementioned finds of fine ware with black, burnished surfaces (more rarely ochre and brown) which typologically encompass only bowls – specifically examples with rounded bodies and everted rims that, on individual pieces, more resemble a short, funnel-shaped neck. This group also includes examples with rounded or biconical bellies and cylindrical/conical necks with everted rims that are typologically and technologically similar to analogies found in the area of the Dolenjska Hallstatt group, generally in the Serpentine fibula phase and the Certosa and Negova phases (6th-4th cent. BC),[22] but also in the wider territory of the Lower Kupa Valley (Turska kosa, Klinac, Kiringrad)[23] which geographically and culturally corresponds to the Iron Age settlement in Sisak. Similar pottery was also recorded farther east at the Donja Dolina and Sanski most sites, which belong to the eponymous Iron Age cultural group, and testify to the links between areas along the upper and middle courses of the Sava and Kupa during the period from the 6th to 4th centuries BC, which is reflected in the existence of a specific pottery style present in the material culture of different Iron Age communities.[24] The decoration on this type of ceramic vessel is relatively uniform, and consists of triangles and horizontal, vertical and skewed lines, often organized into groups that may be bordered by dots. The dominant techniques used to render these descriptions were incisions, shallow grooving and stabbing, and from the chronological standpoint an important find consists of two fragments from SU 101 and 105 with the aforementioned embossed decoration (Pl. 4: 8, Pl. 5: 9). In an analysis of the Dolenjska Hallstatt group, J. Dular placed the appearance of this specific decoration into the Serpentine fibula phase, i.e., the first half of the 6th century BC.[25] Somewhat later, B. Teržan proposed an earlier dating to the Stična 2 phase (latter half of 7th cent. BC),[26] which was upheld by L. Grahek in a publication of the pottery from the Cvinger settlement at Stična.[27] In a recent analysis of grave units containing vessels with the embossed decoration, D. Božič concluded that the appearance of this pottery should be placed no earlier than the Certosa phase, i.e., the end of the 6th and first half of the 5th century BC.[28] After a personal inspection of all of these graves, I prefer J. Dular's initial dating, according to which this decoration appeared in the Serpentine fibula phase, even though it experienced its greatest bloom precisely in the Certosa phase and continued into the Negova phase. This is, in summation, a typical late Hallstatt phenomenon which has been recorded in the western part of the Carpathian Basin, including southern Pannonia and the western Balkans!

21 Drnić, Miletić Čakširan 2014.

22 Dular 1982, skodele tipa 5 i 6, ročate sklede tipa 1, 64-68.

23 Majnarić-Pandžić 1986; Balen-Letunić 1987; Čučković 2012.

24 Fiala 1899, Fig. 12, 23, 58, 60, 63, 69, 82-83; Truhelka 1904, Fig 23, T. 25-26; Dular 1982, 143-144, Sl. 27.

25 Dular 1982, 85.

26 Teržan 1990, 68, f.n. 215; Teržan 1994, 122; Teržan 2008, 283.

27 Grahek 2016, 213–214.

28 Božič 2016.

29 Grahek 2016, 182-183, Sl. 52.

21 Drnić, Miletić Čakširan 2014.

22 Dular 1982, bowls types 5 and 6, handled bowl type 1, 64–68.

23 Majnarić-Pandžić 1986; Balen-Letunić 1987; Čučković 2012.

24 Fiala 1899, Fig. 12, 23, 58, 60, 63, 69, 82-83; Truhelka 1904, Fig 23, P. 25-26; Dular 1982, 143-144, Fig. 27.

25 Dular 1982, 85.

26 Teržan 1990, 68, f.n. 215; Teržan 1994, 123; Teržan 2008, 283.

27 Grahek 2016, 213–214.

28 Božič 2016.

meti vezani uz kult – žrtvenici[30] i dekorativne ploče koje su služile za ukrašavanje zidova kuća.[31] Oblik sisačkih primjeraka, kao i kontekst nalaza u urušenju zidne konstrukcije, pri čemu su ukrašene strane gotovo uvijek bile okrenute prema podu, ukazuju da se u ovome slučaju ipak radi o dekorativnim pločama, slično brojnim primjercima pronađenima na lokalitetu Most na Soči. Ipak, jedan ulomak s malom cilindričnom nogom (T. 3: 4) ukazuje na moguće postojanje i predmeta koji je mogao imati i kultnu funkciju. Nažalost, nisu pronađeni kronološki osjetljiviji predmeti, izrađeni od metala ili stakla, koji bi dodatno potvrdili prethodno postavljenu precizniju dataciju drugoga naseobinskog horizonta.

Treća naseobinska faza sastoji se od debelog sloja žuto-zelene gline (SJ 81 i 96), iste orijentacije kao i *Objekt 2*, koji također predstavlja ostatke poda trećeg objekta u Sondi 1, iako kod *Objekta 3*, za razliku od prethodno opisanih struktura, nisu zabilježeni ostaci spaljene drvene arhitekture. Također, istraživanje je pokazalo da je ovaj pod imao dvije faze! U starijoj fazi (SJ 96), u sjevernom je dijelu objekta istraženo ovalno ognjište, promjera 60 cm (SJ 97), koje se sastoji od nekoliko centimetara debelog sloja zapečene, ispucane zemlje. Istočno od ognjišta, u naboju poda, nalazio se veći kamen i fino izrađena zdjela zaobljenog tijela te izvučenog ruba (T. 6: 1) (sl. 15: 1–2). U mlađoj fazi objekta (SJ 81), u obnovljenom su podu prvi put u Sondi 1 zabilježene rupe od stupova (sl. 15: 3–4). Naime, u sjevernom dijelu objekta nalazile su se četiri, a u središnjem i jugozapadnom dijelu po jedna rupa, od kojih su SJ 86, 92 i 94 mogli činiti ukope za stupove što su činili osnovu zidne, odnosno krovne konstrukcije. Kod ovog tipa gradnje prostor između nosivih stupova ispunjava se prepletom od šiblja koji se premazuje kućnim lijepom. Upravo masivni sloj urušenja s velikom količinom kućnog lijepa i gorenog drveta, istražen iznad i oko poda objekta (SJ 64), debljine 20 – 30 cm, predstavlja ostatke zidne konstrukcije *Objekta 3* koji je uništen u požaru. Činjenica da je objekt građen drugačijom tehnikom u odnosu na onu kod *Objekata 1* i *2*, vjerojatno objašnjava nedostatak spaljenih horizontalno postavljenih greda zabilježenih u starijim naseobinskim fazama. U jugozapadnom dijelu sonde, na mlađoj fazi poda, nalazila se veća koncentracija keramičkih ulomaka koji pripadaju jednoj većoj keramičkoj posudi, vjerojatno korištenoj za čuvanje zaliha, i nekoliko manjih (SJ 82) (Sl. 15: 3). Zanimljivo je da je u slučaju *Objekta 3* došlo do obnove koja je registrirana u dvije faze poda, bez destrukcije u starijoj fazi (*horizont 3a*) koja je zabilježena kod starijih objekata u Sondi 1.

U navedenom sloju urušenja (SJ 64) nalazila se veća količina ulomaka keramičkih posuda od kojih su neki u potpunosti deformirani uslijed izlaganja visokoj temperaturi, što predstavlja dodatnu potvrdu da je mlađa faza *Objekta 3*, kao uostalom i dva starija objekta u Sondi 1, uništen u požaru. Većinu prikupljene keramičke građe čine ulomci grubljeg posuđa izrađenog rukom, ali se prvi put javljaju i ulomci posuda izrađenih na lončarskom kolu (T. 6: 6-10), kao i tipični latenski oblik lonca sa zadebljalim rubom i tijelom ukrašenim okomito postavljenim češljastim ukrasom, uz dodatak grafita u glinenu smjesu (T. 6: 5). Naime, pojava novih oblika i tehnologija jasno ukazuje na određene promjene

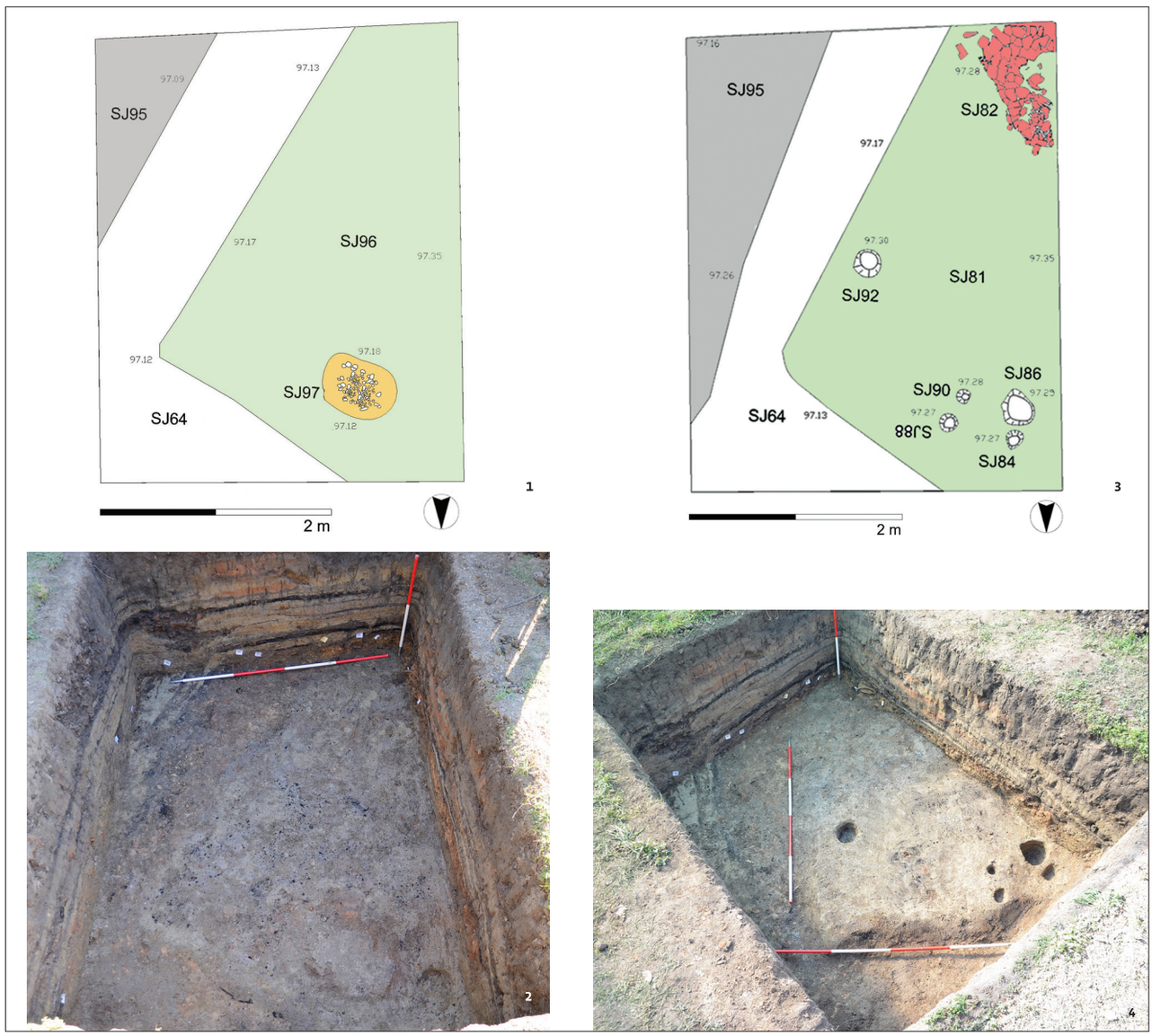
Besides fragments of ceramic vessels, also found in the rubble layer of the wall construction in *Structure 2* (SU 99) were massive flat ceramic pieces made of a coarse clay mixture tempered with organic materials and decorated with geometric motifs rendered in deep relief (Pl. 3). The decoration rendered in this manner is known on several items from the Early Iron Age: items tied to the hearth - movable hearth and andiron,[29] items associated with cult – altars,[30] and decorative tiles used to line the walls of houses.[31] The shape of the Sisak examples and the context of their discovery in the rubble of a wall structure, wherein the decorated sides were always facing the floor, indicate that in this case they are indeed decorative tiles, similar to numerous examples found at the Most na Soči site. Even so, one fragment with a small foot having a circular cross-section indicates the possible existence of an item which may have also had a cult function (Pl. 3: 4). Unfortunately, chronologically sensitive items made of metal or glass, which would further confirm the previous dating of the second settlement horizon to the 4th century BC were not found in the excavations.

The third settlement phase consists of a thick layer of yellow-green clay (SU 81 and 96) with the same orientation as *Structure 2*, which also constitutes the remains of the floor of the third structure in Trench 1, although in *Structure 3*, as opposed to the previously described structures, the remains of burned wooden architecture were not recorded. Excavations have additionally shown that this floor had two phases! In the earlier phase (SU 96), an oval hearth with a diameter of 60 cm (SU 97) was examined in the northern part of the structure; it consists of a several centimetre thick layer of fired, cracked earth. East of the hearth, a large finely wrought stone bowl with a rounded body and everted rim (Pl. 6: 1) (Fig. 15: 1-2) was found in a section of the packed earth floor. In the structure's later phase (SU 81), post-holes were recorded for the first time in the restored floor in Trench 1 (Fig. 15: 3-4). Namely, in the northern section of the structure there were four holes, and one each in the central and south-western sections, of which SU 86, 92 and 94 may have been holes for posts that served as the foundation for the wall and roof construction. In this building technique, the spaces between the load-bearing posts were filled with wattle that was coated with daub. This is in fact the massive rubble layer with a high quantity of daub and charred wood examined above and around the structure's floor (SU 64) with a thickness of 20-30 cm, which constitutes the remains of the wall construction of *Structure 3* that was destroyed in a fire. The fact that the structure was built using a different technique, in comparison to one used for *Structures 1* and *2*, probably explains the absence of the burned horizontally set beams recorded in the earlier settlement phases. In the south-western part of the trench, in the later phase of the floor, there was a high concentration of potsherds which belonged to single large ceramic vessel, probably used to store supplies, and several smaller ones (SU 82) (Fig. 15: 3). It is interesting that in the case of *Structure 3* there was renovation works, which were registered in two phases of the floor, without destruction of the earlier phase (*horizon 3a*) which was recorded in the earlier structures in Trench 1.

29 Grahek 2016, 182-183, Fig. 52.

30 Molnár, Farkas 2010; Kerman 2014.

31 Svoljšak, Dular 2016.



SLIKA 15. 1-2. Ostaci podnice *Objekta 3a* s ovalnim ognjištem; 3-4. Ostaci podnice *Objekta 3b* s rupama za stupove i ulomcima keramičkih posuda (snimio I. Drnić, nacrt izradio M. Mađerić).

FIGURE 15. 1-2. Remains of the floor of *Structure 3a* with oval hearth; 3-4. Remains of the floor of *Structure 3b* with post-holes and potsherds (photo by I. Drnić, layout made by M. Mađerić).

u keramografiji sisačke željeznodobne zajednice koje se na prostoru jugoistočnih Alpa i južne Panonije povezuju s pojavom latenske kulture u posljednjoj trećini 4. st. pr. Kr. S druge strane, u kontekstu starije faze objekta (SJ 96) zabilježeni su ulomci fine kasnohalštatske keramike, uključujući jedan ulomak s karakterističnim naboranim ukrasom (T. 6: 4), što ukazuje na činjenicu da se treća naseobinska faza u Sondi 1 može datirati u prijelaz starijeg u mlađe željezno doba, odnosno drugu polovicu 4. i početak 3. st. pr. Kr.

Nakon treće naseobinske faze, struktura slojeva u Sondi 1 znatno se mijenja, što vjerojatno odražava promjene u strukturi naselja, korištenju prostora, načinu gradnje itd. iako je površina Sonde 1 od 12 m² premalena za donošenje nekih jasnijih zaključaka. Mlađe naseobinske slojeve debljine jednog metra, koji su

In the aforementioned rubble layer (SU 64), there was a high quantity of potsherds, of which some are entirely deformed due to exposure to high temperatures, which serves as additional proof that in the earlier phase of *Structure 3*, indeed like the two earlier structures in Trench 1, was destroyed in a fire. Most of the gathered potsherds consist of fragments of coarse hand-made vessels, although fragments of vessels made on a potter's wheel also appear for the first time (Pl. 6: 6-10), as does a typical La Tène pot with a thickened rim and a body adorned with a vertically rendered comb-like decoration, with graphite temper in the clay (Pl. 6: 5). The appearance of new shapes and technologies clearly indicate certain changes in the ceramography of the Sisak Iron

Age community, which are linked to the emergence of the La Tène culture in the territory of the south-eastern Alps and south-

definirani kao *horizont 4*, nije moguće detaljnije interpretirati, kao što je slučaj sa starijim naseobinskim fazama u kojima su jasno izdvojeni stambeni objekti. Najmlađi naseobinski horizont sastoji se od niza tankih slojeva koji se međusobno izmjenjuju – žute gline i tamnosivih i smeđih slojeva s tragovima gorenog drveta, keramičkim materijalom i životinjskim kostima (SJ 02 - 63). Također, zabilježeno je i nekoliko ukopanih jama te okruglih / ovalnih ognjišta s nekoliko sukcesivnih faza (primjerice, ognjište uz zapadni profil sonde (SJ 16, 19, 35, 37 – sl. 11) te ognjište uz južni profil (SJ 3, 15, 28). Gotovo identična stratigrafska slika zabilježena je na poziciji Povijesni arhiv na lijevoj obali rijeke Kupe, gdje su ispod slojeva rimske Siscije iz razdoblja 1. do 5. st. istraženi gotovo dva metra debeli naseobinski slojevi iz mlađega željeznog doba,[32] što je vremenski okvir u koji se može smjestiti *horizont 4* istražen u Sondi 1 na Pogorelcu. Također, keramički je materijal iz *horizonta 4* identičan onome s Povijesnog arhiva s predominacijom ručno izrađene keramike (T. 7) i manjim brojem keramičih ulomaka posuda izrađenih na brzorotirajućem lončarskom (T. 8) kolu te lonaca s primjesom grafita u glinenoj smjesi (T. 7: 7). Jedina je zabilježena promjena u keramičkom materijalu u najmlađim slojevima četvrtog naseobinskog horizonta (SJ 09, 02) (uključujući humusni sloj u kojemu je prikupljen velik broj keramičkih ulomaka, vjerojatno iz uništenih mlađeželjeznodobnih kulturnih slojeva), povećan je broj ulomaka posuda izrađenih na lončarskom kolu. Ipak, važno je naglasiti da postotak ulomaka posuda izrađenih na kolu u ukupnom broju ne prelazi 10 %, što je podatak koji, kada se usporedi s keramografskom slikom s pojedinih južnopanonskih lokaliteta dominantne latenske materijalne kulture, zasigurno nosi i određene kulturne informacije o stanovnicima sisačkoga mlađeželjeznodobnog naselja. Preciznije rečeno, smatramo da relativno mali postotak ulomaka posuda izrađenih na lončarskom kolu odražava činjenicu da je materijalna kultura segestanske zajednice, u ovome slučaju keramografija kao znatan segment, samo djelomično latenizirana, a dominantan način izrade keramičkog posuđa, kao i repertoar oblika, temelje se na autohtonoj panonskoj / lokalnoj tradiciji, kao i na lokalnim interpretacijama latenskih oblika. Spomenuto povećanje broja keramičkih ulomaka posuda izrađenih na kolu, zabilježeno u najmlađim kulturnim slojevima (SJ 01, 02, 04, 09) u Sondi 1, moglo bi ukazivati na nešto snažniji latenizacijski impuls u razdoblju kasnog latena.

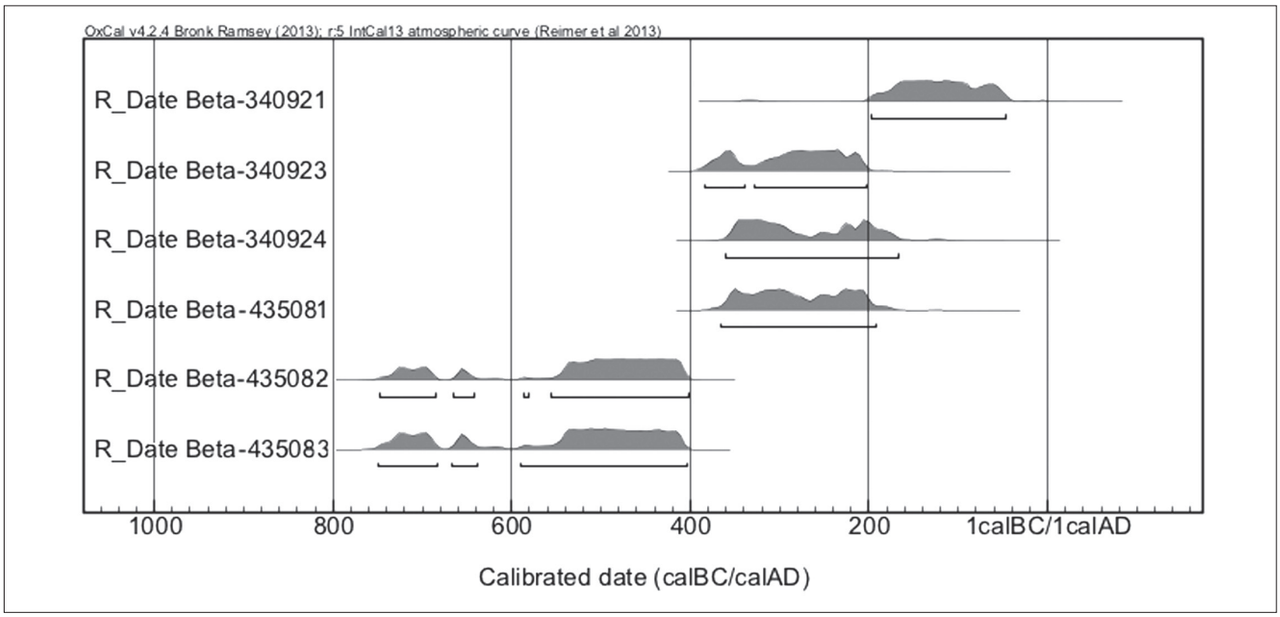
Četvrti naseobinski horizont u Sondi 1 apsolutno je datiran s ukupno tri radiokarbonska datuma (Sl. 16). Analiza provedena na koštanom uzorku iz SJ 44 dala je datum između 360. i 170. god. pr. Kr. (Beta-340924: cal BC 360-270, 260-170), analiza spaljenog drveta iz SJ 41 potvrdila je vremenski period između 390. i 200. pr. Kr. (Beta-340923: cal BC 390-200), dok datum dobiven analizom koštanog uzorka iz najmlađeg sloja SJ 09 obuhvaća razdoblje od 200. do 40. god. pr. Kr. (Beta-340921: cal BC 200-40). Analizom koštanog uzorka iz SJ 02, dobiven je datum između 440. i 600. god., ukazujući na djelomičnu kontaminaciju najmlađega kulturnog sloja, iako je i u samom iskopavanju bilo teško odrediti razgraničenje između humusa i prvoga intaktnoga kulturnog sloja. Ipak, važno je naglasiti da među prikupljenim materijalom u SJ 01 i SJ 02 nema

ern Pannonia in the final third of the 4th century BC. On the other hand, within the context of the structure's earlier phase (SU 96), fragments of fine late Hallstatt pottery, including one fragment with the typical embossed decoration (Pl. 6: 4), were recorded, which points to the fact that the third settlement horizon in Trench 1 can be dated to the the transition from the earlier to the later Iron Age , i.e., the latter half of the 4th and beginning of the 3rd century BC.

After the third settlement horizon, the composition of the layers in Trench 1 changes considerably, which probably reflects changes in the structure of the settlement, the use of space and building techniques, even though the surface of Trench 1, covering 12 m², is too small to draw any more detailed conclusions. The later settlement layers with a thickness of one meter, defined as *horizon 4*, cannot be interpreted in greater detail, as is the case with the earlier settlement phases in which the residential structures are clearly distinguished. The youngest settlement horizon consists of a series of thin layers which alternate: yellow clay and dark grey and brown layers with traces of burned wood, potsherds and animal bones (SU 02-63). Additionally, several pits and round/oval hearths were found with several successive phases (for example, the hearth along the western profile of the trench (SU 16, 19, 35, 37 – Fig. 11) and the hearth along the southern profile (SU 3, 15, 28). A virtually identical stratigraphic picture was recorded at the Povijesni arhiv position on the left bank of the Kupa River, where – below the layers of Roman Siscia from the 1st to 5th centuries, almost two-meter thick settlement layers from the Late Iron Age were excavated,[32] which is the chronological frame into which settlement *horizon 4* excavated in Trench 1 at Pogorelac may be placed. Furthermore, the ceramic materials from *horizon 4* are identical to those from Povijesni arhiv, with a predominance of hand-made pottery (Pl. 7) and a smaller number of potsherds made on a fast potter's wheel (Pl. 8) and pots with graphite temper in the clay (Pl. 7: 7). The sole recorded change in the pottery in the youngest layers of the fourth settlement horizon (SU 09, 04, 02), including the humus layer (SU 01), in which a high number of potsherds from the devastated Late Iron Age cultural layers were gathered, is the increased number of fragments of pottery made on a potter's wheel. Even so, it is noteworthy that the percentage of vessel fragments made on a wheel does not exceed 10% of the total number, which is a fact that, when compared to the ceramographic picture at some southern Pannonian sites with a dominant La Tène material culture, certainly also conveys specific cultural information on the inhabitants of this late Iron Age settlement in Sisak. More precisely, we believe that the relatively small percentage of vessel fragments made on a potter's wheel reflect the fact that the material cultural of the Segestan community, in this case the ceramography as its significant segment, had only been partially "Latènized," while the dominant vessel-making technique as well as the repertoire of forms were based on the indigenous Pannonian/local tradition and on local interpretations of La Tène forms. The aforementioned increase in the number of wheel-made ceramic vessel fragments, recorded in the youngest cultural layers (SU 01, 02, 04,

32 Drnić, Miletić Čakširan 2014, 155-161, sl. 2, 4-5.

32 Drnić, Miletić Čakširan 2014, 155-161, Fig. 2, 4-5.



SLIKA 16. Radiokarbonski datumi s uzoraka iz Sondi 1 i 2 na poziciji Sisak–Pogorelac (OxCal).

FIGURE 16. Radiocarbon dates with samples from Trenches 1 and 2 at the Sisak–Pogorelac site (OxCal).

keramičkih ulomaka koji bi ukazivali na određenu aktivnost na ovoj poziciji u razdoblju kasne antike ili ranoga srednjeg vijeka. Važno je istaknuti da u Sondi 1 nisu zabilježeni ni najraniji rimski slojevi s prijelaza stare u novu eru (od ranoga srednjeaugustovskog do tiberijevskog razdoblja), a koji su registrirani na lijevoj obali rijeke Kupe, iznad mlađeželjeznodobnih kulturnih slojeva, na pozicijama Povijesni arhiv, Dunavski Lloyd, Frankopanska b.b. i Željeznički kolodvor.[33] Nalazi prikupljeni u tim slojevima, primjerice, fino stolno posuđe (tera sigilata), datirano u srednje i kasnoaugustovsko razdoblje, kao i pojedini predmeti, koji se jasno mogu dovesti u vezu s vojskom (tzv. *militaria*: klinovi šatora, oružje, dijelovi oklopa itd.) te ostaci drvene arhitekture, ukazuju na postojanje rimskoga vojnog logora na lijevoj obali rijeke Kupe, ispod ostataka kasnijega civilnog naselja (*Colonia Flavia Siscia*).

Analizom stratigrafskih podataka, prikupljenoga arheološkog materijala te apsolutnih datuma u Sondi 1, definirano je pet horizonata naseljavanja željeznodobnog naselja na desnoj obali rijeke Kupe. Najstariji horizont zabilježen je kao tanki sloj paljevine bez mogućnosti detaljnije interpretacije. Horizonti 1 i 2 kronološki pripadaju razdoblju starijega željeznog doba, i to vjerojatno mlađem dijelu, odnosno kasnohalštatskom razdoblju, s trajanjem od 6. do druge polovice 4. st. pr. Kr, iako bi nekoliko nalaza iz *horizonta 1* moglo ukazivati i na nešto stariju dataciju u Ha C - D1 stupnjeve (brončana sjekira, zdjela s uvučenim i fasetiranim rubom (T. 1: 3, 7). Ako su predstavljeni stratigrafski podaci dobro interpretirani, treći horizont, s dvije podfaze (obnova pod-

09) in Trench 1, may point to a somewhat more potent La Tène impact in the late La Tène period from the latter half of the 2nd and into the 1st century BC.

The fourth settlement horizon in Trench 1 has been absolutely dated with a total of three radiocarbon dates. The analysis conducted on a bone sample from SU 44 yielded a date between 360 and 170 BC (Beta-340924: cal BC 360-270, 260-170), the analysis of burned wood from SU 41 confirmed a chronological period between 390 and 200 BC (Beta-340923: cal BC 390-200), while the date obtained from analysis of a bone sample from the youngest layer, SU 09, encompassed the period from 200 to 40 BC (Beta-340921: cal BC 200-40). An analysis of the bone sample from SU 02 yielded a date between 440 and 600 AD, indicating the partial contamination of the most recent cultural layer, even though during the actual excavations it was rather difficult to ascertain the boundary between the humus and the first intact cultural layer. Even so, it is important to stress that among the gathered materials in SU 01 and SU 02 there were no potsherds that would have indicated any specific activity at this position in Late Antiquity or the early Middle Ages. It is additionally noteworthy that not even the earliest Roman layers from the turn of the Common Era (from the early/mid-Augustan to the Tiberian period) were registered in Trench 1, but which were registered on the left bank of the Kupa above the Late Iron Age cultural layers at the Povijesni arhiv, Dunavski Lloyd, Frankopanska b.b., Ulica braće Radić 33 and Railway station positions.[33] The finds gathered in these

33 Baćani *et al.* 2012; Drnić, Miletić Čakširan 2014; Drnić 2015; Jerončić, Paro, Mesarić 2018, (u pripremi); Miletić Čakširan 2018, (u pripremi); Škrgulja 2018, (u pripremi).

SLIKA 17. Sjeverni profil u Sondi 2 (snimio I. Drnić).

FIGURE 17. Northern profile in Trench 2 (photo by I. Drnić).

nice *Objekta 3*), stajao bi na prijelazu starijeg u mlađe željezno doba (druga polovica 4. početak 3. st. pr. Kr.), a četvrti horizont može se šire datirati u razdoblje mlađega željeznog doba koje na prostoru južne Panonije traje od posljednje trećine 4. pa sve do kraja 1. st. pr. Kr., kada je ovaj prostor uključen u okvire rimske države. Stratigrafski nije bilo moguće detaljnije interpretirati slojeve koji su definirani kao *horizont 4*, iako apsolutni datumi ukazuju na kontinuirano korištenje prostora od kraja 4. / početka 3. pa do druge polovice 1. st. pr. Kr. (stariji datumi: SJ 44: 360. i 170. pr. Kr.; SJ 41: 390. i 200. pr. Kr.; mlađi datum: SJ 09: 200. do 40. god. pr. Kr.) (sl. 16).

Sonda 2

Sonda 2, dimenzija 5 x 5 m, postavljena je 60 m zapadno od Sonde 1. Prvi je antropogeni sloj (SJ 287) zabilježen na dubini od 96,9 m n. v. (sl. 17). U ovom je tankome sloju pronađeno samo nekoliko ulomaka keramičkih posuda, kućnog lijepa i životinjskih kostiju, kao i manja količina spaljenog drveta, a definiran je kao naseobinski *horizont 0*. Radiokarbonska analiza, provedena na koštanom uzorku iz SJ 287, dala je relativno širok datum između 750. i 410. god. pr. Kr.[34] koji u korelaciji s datumom iz naseobinskog *horizonta 1* u Sondi 1 (SJ 116, Beta-435082) ukazuje na vjerojatnost da je željeznodobno naselje na navedenim pozicijama formirano u istom vremenskom razdoblju. Iznad SJ 287 nalazio se sterilni sloj žute gline, bez nalaza (SJ 286), ukazujući na određenu prirodnu aktivnost, možda fluvijalnog karaktera, koja je prouzročila prekrivanje prvoga naseobinskog sloja.[35]

layers, for example the fine tableware (*terra sigillata*) dated to the mid- and late Augustan period, as well as individual items that may clearly be connected to the army (so-called *militaria*: tent pegs, weapons, elements of armour, etc.) and the remains of wooden architecture indicate the existence of a Roman military camp on the left bank of the Kupa, below the subsequent civilian settlement (*Colonia Flavia Siscia*).

Based on an analysis of stratigraphic data, the gathered archaeological materials and the absolute dates, five settlement horizons of the Iron Age settlement on the right bank of the River Kupa have been defined in Trench 1. The earliest horizon (0) was registered as a thin layer with traces of burning without the possibility of any more detailed interpretation. *Horizons 1* and *2* chronologically belong to the early Iron Age, probably its later part, i.e., the late Hallstatt period, with a duration from the 6th to the latter half of the 4th century BC, even though several finds from *horizon 1*, such as a bronze axe and a fragment of a bowl with an everted and faceted rim, may indicate earlier dating to phase Ha C - D1. If the presented stratigraphic data have been soundly interpreted, the third horizon, with two subsidiary phases (renovation of the floor in *Structure 3*), would be at the transition from the earlier into the later Iron Age (latter half of 4th and beginning of 3rd cent. BC), while the fourth horizon may be broadly dated to the period of the Late Iron Age which in the territory of southern Pannonia lasted from the final quarter of the 4th until the end of the 1st century BC, when this area was incorporated into the Roman state. It was not stratigraphically possible

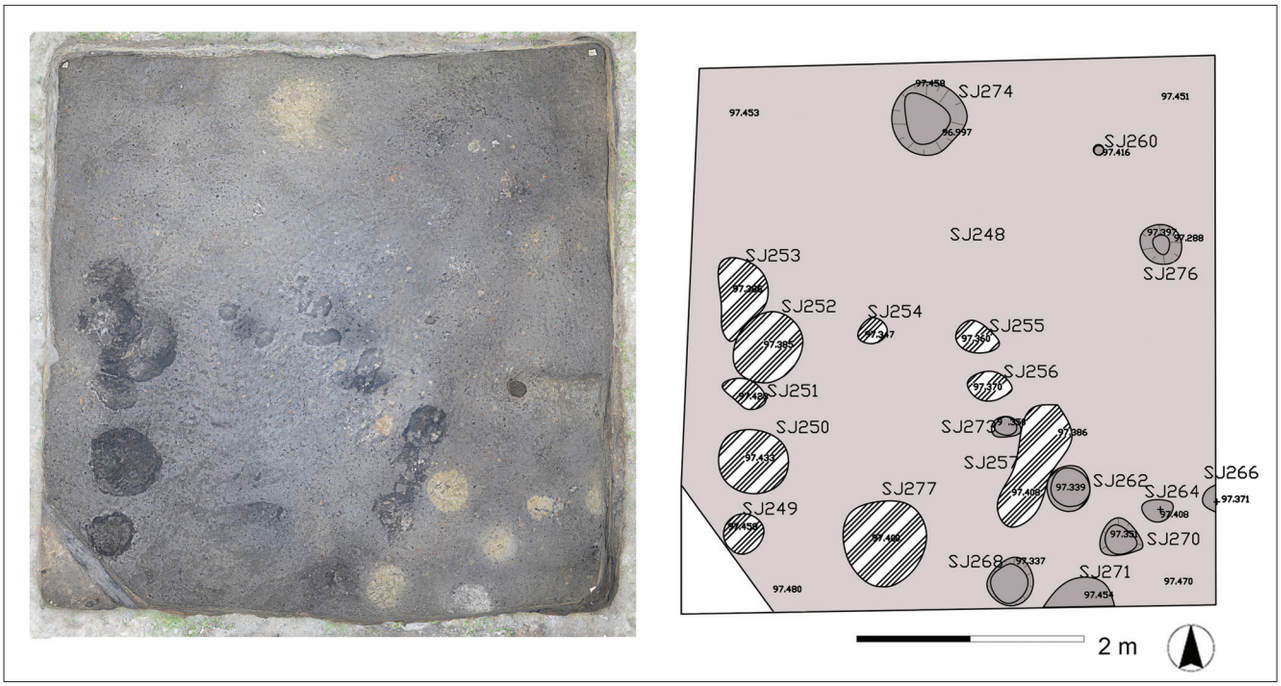
34 Uzorak Beta-435083: cal BC 730 to 690, cal BC 660 to 650, cal BC 540 to 410 (68 % probability). Posljednji je interval identičan najmlađem intervalu s datuma dobivenog na uzorku iz najstarijega kulturnog sloja SJ 117 iz Sonde 1.

35 Ista situacija zabilježena je u Sondama 1 i 4 u kojima se iznad definiranog naseobinskog horizonta o nalazio sterilni sloj oker-žutog tla.

33 Baćani *et al.* 2012; Leleković 2012, Drnić, Miletić Čakširan 2014; Drnić 2015; Jerončić, Paro, Mesarić 2018, (forthcoming); Miletić Čakširan 2018, (forthcoming); Škrgulja 2018, (forthcoming).

SLIKA 18. 1-2 Ostaci objekta s ukopima stupova i ognjištem u naseobinskom *horizontu 1a* (snimio I. Drnić; nacrt izradio M. Mađerić).

FIGURE 18. 1-2 Remains of a structure with post-holes and hearth in settlement *horizon 1a* (photo by I. Drnić; drawing made by M. Mađerić).



SLIKA 18. 3-4 Situacija u naseobinskom *horizontu 1b* (snimio I. Drnić; nacrt izradio M. Mađerić).

FIGURE 18. 3-4 Situation in settlement *horizon 1b* (photo by I. Drnić; drawing made by M. Mađerić).

Iznad navedenoga sterilnog sloja istraženi su kulturni slojevi debljine gotovo dva metra s nekoliko naseobinskih faza koje pokretni nalazi datiraju isključivo u starije željezno doba, za razliku od Sonde 1, u kojoj su istraženi više od metra debeli kulturni slojevi iz razdoblja mlađega željeznog doba. Također, za razliku od Sonde 1, u kojoj su u prvom naseobinskom horizontu definirani ostaci nadzemnog objekta s podnicom od nabijene zemlje to more precisely interpret the layers defined as *horizon 4*, even though the absolute dates indicate the continuous use of the area from the end of the 4th/beginning of the 3rd to the latter half of the 1st century BC (earlier dates: SU 44: 360 and 170 BC; SU 41: 390 and 200 BC; later dates: SU 09: 200 to 40 BC) (Fig. 16).

i vjerojatnim ostacima drvene arhitekture (*Objekt 1*), iznad sterilnog sloja u Sondi 2 istražen je naseobinski horizont drugačije strukture s ukopima stupova i ostacima ognjišta, definiran kao *horizont 1*. U navedenom su sterilnom sloju zabilježeni ostaci triju ukopa od stupova (SJ 281, 283 i 285) koji su se nalazili oko ovalnog vatrišta (SJ 279), potvrđujući postojanje određene nadzemne konstrukcije s okomito postavljenim stupovima kao strukturnom osnovom (Sl. 18: 1–2). Iznad ostataka opisane konstrukcije nalazio se tamnosivi sloj (SJ 248) s velikom količinom keramičkog materijala i životinjskih kostiju u kojemu je registrirano nekoliko većih i manjih okruglih / ovalnih stratigrafskih jedinica s intenzivnim tragovima gorenja, kao i nekoliko rupa za stupove zapunjenih žutim i sivo-žutim sedimentom u istočnom dijelu sonde (sl. 18: 3-4). Iako je teško ponuditi jasnu interpretaciju opisane situacije, prije svega zbog relativno malih dimenzija sonde, nedvojbeno se može pretpostaviti postojanje još jednog, mlađega naseobinskog horizonta sa strukturama koje su građene u tehnici okomitih stupova, a koja prethodi mlađoj fazi s objektima identičnima onima iz Sonde 1 s podovima od nabijene zemlje i ostacima drvene arhitekture koja će biti opisana u nastavku teksta.

Kao što je vidljivo iz opisa stratigrafskih odnosa, opisani horizont može se dodatno podijeliti na stariju i mlađu fazu (*horizont 1a i 1b*) koje su opisane u prethodnom paragrafu. Ipak, za razliku od prilično jasne stratigrafske slike, među prikupljenim materijalom iz ovog horizonta, koji uglavnom potječe iz tri glavne stratigrafske jedinice SJ 248, 234 i SJ 229, nisu zabilježeni stariji elementi u odnosu na keramički materijal sljedećih dviju naseobinskih faza istraženih u Sondi 2. Primjerice, uz kronološki relativno neosjetljivu grubu keramiku i peke (T. 9: 8-9; T. 10: 1-2; T. 11: 1), ulomci fine, u prethodnom poglavlju opisane halštatske keramike (T. 9: 1-7; T. 10: 2-5), pojavljuju se podjednako u svim naseobinskim horizontima u Sondi 2, a nisu pronađeni metalni nalazi koji bi pomogli detaljnijem kronološkom pozicioniranju pojednih faza. Od posebnih je nalaza u SJ 248 pronađeno sedam jednostavnih okruglih staklenih perli, izrađenih od kobaltno-plavog stakla koje se, na osnovu analogija iz grobova iz Dolenjske, mogu samo široko datirati u razdoblje cijelog trajanja dolenjske halštatske skupine (8. - 4. st. pr. Kr.) (T. 9: 10).[36]

Iznad naseobinske faze, definirane kao *horizont 1,* na visini od 97,50 do 97,70 m.n.v., u sjevernom i središnjem dijelu sonde istraženi su relativno slabo sačuvani ostaci poda od žute nabijene gline (SJ 235-236), iznad kojega se na većem dijelu sjevernog i istočnog dijela sonde nalazio masivan sloj spaljene drvene arhitekture (SJ 225a) koja se s dosta vjerojatnosti može interpetirati kao ostatak urušene zidne konstrukcije kuće građene u prethodno opisanoj *postpad construction* tehnici (sl. 19: 1-2). Naime, struktura i specifičan položaj drvenih ostataka uključivao je deblje grede okruglog presjeka, orijentacije sjeveroistok – jugozapad, te na njih okomito položene tanje daske kojima je popunjavan

Trench 2

Trench 2, with dimensions of 5 x 5 meters, was opened 60 meters west of Trench 1. The first anthropogenic layer (SU 287) was registered at a depth of 96,9 m a.s.l. (Fig. 17). Only several fragments of ceramic vessels, daub and animal bones, as well as a small quantity of burned wood, were found in this thin layer, and it has been defined as settlement *horizon 0.* Radiocarbon analysis conducted on a bone sample from SU 287 yielded a relatively broad date between 750 and 410 BC,[34] which, in correlation with the date from settlement horizon 1 in Trench 1 (SU 116, Beta-435082), indicates the probability that the Iron Age settlement at these positions was formed in the same period. Above SU 287 there was a sterile layer of yellow clay without finds (SU 286), indicating some natural activity, possibly of fluvial character, which led to the covering of the earliest settlement layer.[35]

Cultural layers almost two meters thick above the aforementioned sterile layer were excavated, which had several settlement phases and which were dated based on the movable finds to exclusively the Early Iron Age, as opposed to Trench 1, in which cultural layers over a meter in thickness from the Late Iron Age were excavated. Additionally, as opposed to Trench 1, in which the remains of an above-ground structure with a packed earth floor and the probable remains of architecture (*Structure 1*) have been defined, a settlement horizon with a different composition was excavated above the sterile layer in Trench 2, containing post-holes and the remains of a hearth, and defined as *horizon 1.* The remains of three post-holes (SU 281, 283 and 285) were registered in this sterile layer, which were situated around an oval fireplace (SU 279), confirming the existence of some kind of above-ground construction with vertically placed posts as the structural foundation (Fig. 18: 1-2). A dark-grey layer (SU 248) was found above the remains of this construction, with a high quantity of ceramic materials and animal bones, in which several large and small round/oval stratigraphic units were registered with intense traces of burning, as well as several post-holes filled with a yellow and grey-yellow sediment in the eastern section of the trench (Fig. 18: 3-4). Even though it is difficult to offer a clear interpretation of the situation so described, primarily due to the relatively small dimensions of the trench, one may unequivocally hypothesize the existence of another, later settlement horizon with structures built in the vertical-post technique that preceded the later phase with structures identical to those from Trench 1 with packed-earth floors and the remains of wooden architecture that will be described below.

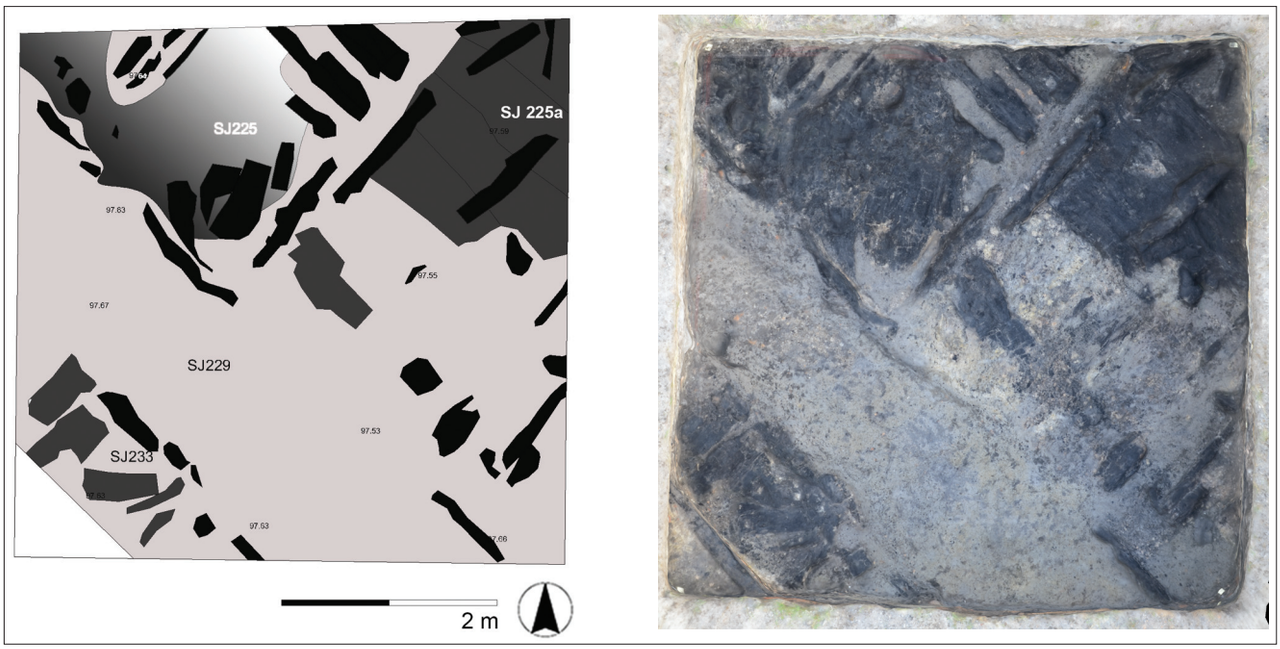
As apparent from the description of the stratigraphic relationships, the above-described horizon can be separated into an earlier and later phase (*horizon 1a* and *1b*) which were described in the preceding paragraph. Even so, as opposed to the rather clear stratigraphic picture, among the materials gathered from

36 S. Gabrovec navodi da se sitne plave perle nalaze već u grobovima Podzemelj stupnja (Gabrovec 1987, 41, sl. 1: 18), a na lokalitetima kao što su Stična, Magdalenska gora ili Novo Mesto nalazimo ih u grobovima svih razvojnih faza dolenjske halštatske skupine.

37 Dular 2008.

34 Sample Beta-435083: cal BC 730 to 690, cal BC 660 to 650 , cal BC 540 to 410 (68% probability). The final interval is identical to the youngest interval with the date obtained on a sample from the oldest cultural layer SU 117 from Trench 1.

35 The same situation was registered in Trenches 1 and 4, in which a sterile layer of ochre-yellow soil was found above the defined settlement horizon 0.



SLIKA 19. 1-2 Ostaci spaljene drvene arhitekture *Objekata 4* i *5* (snimio I. Drnić; nacrt izradio M. Mađerić).

FIGURE 19. 1-2. Remains of burned wooden architecture of *Structures 4* and *5* (photo by I. Drnić; drawing made by M. Mađerić).

prostor između okomitih osnovica (Sl. 32: 2).[37] Iznad spaljenih drvenih ostataka arhitekture nalazio se debeli sloj s velikom količinom kućnog lijepa i gorenog drveta (SJ 225 i 227) koji predstavlja urušenje zidne konstrukcije opisane strukture definirane kao *Objekt 4*, a koja je uništena u požaru. I u jugozapadnom uglu Sonde 2 istraženi su ostaci spaljene drvene građe (SJ 233) iznad koje se nalazio tridesetak centimetara debeo sloj urušenja s kućnim lijepom (SJ 231), potvrđujući da je riječ o još jednoj, samo manjim dijelom istraženoj strukturi – *Objektu 5* (sl. 19-20). Između zidnih urušenja i spaljenih ostataka drvene arhitekture *Objekata 4* i *5* nalazio se prazan prostor, što potvrđuje postojanje dvaju objekata između kojih se nalazio prolaz, odnosno komunikacija unutar naselja, orijentacije sjeverozapad – jugoistok. Kao što je vidljivo iz opisa, u ovoj naseobinskoj fazi (*horizontu 2*) u Sondi 2, nisu zabilježeni tragovi rupa od stupova, što jasno ukazuje na promjenu tehnike gradnje s one koja se koristila stupovima zabijenim u zemlju kao zidnom osnovom u odnosu na tehniku s vodoravno slaganim temeljnim gredama i zidnom konstrukcijom od okomitih greda i vodoravnih dasaka. Slična je situacija zabilježena na već spomenutom štajerskom nalazištu Poštela, gdje je navedeni prijelaz zabilježen krajem stupnja Ha C1, kada se počinju graditi nastambe s vodoravno položenim trupcima, položenim na kamene temelje izrađene u tehnici suhozida.[38] Ista je tehnika s kamenim temeljima zabilježena i na drugim željeznodobnim naseljima, primjerice u Mostu na Soči.[39]

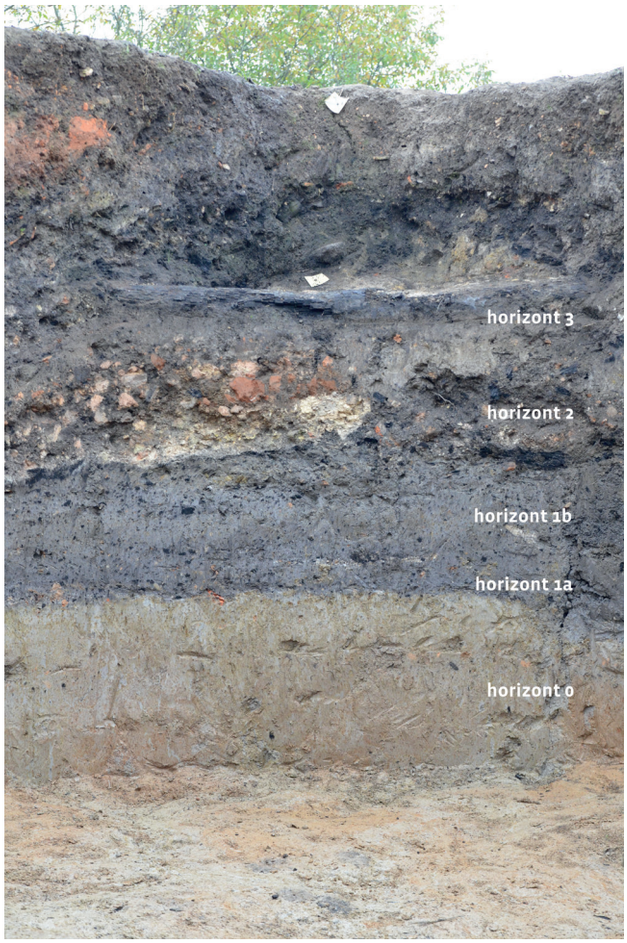
this horizon, which generally came from the three principal stratigraphic units SU 248, 234, and SU 229, no earlier elements were registered in relation to the pottery from the following two settlement phases excavated in Trench 2. For example, together with the chronologically insensitive coarse pottery and baking lids (Pl. 9: 1-7, Pl. 10: 2-5), fragments of the fine Hallstatt pottery described in the preceding chapter (Pl. 9: 1-7, Pl. 10: 2-5) appear uniformly in all settlement horizons in Trench 2, while the metal finds that could help to chronologically pinpoint individual phases in greater detail were not found. Among the special finds in SU 248, seven simple round cobalt-blue glass beads were discovered, which based on analogies from graves in Dolenjska may be broadly dated to the entire duration of the Dolenjska Hallstatt group (8th-4th cent. BC) (Pl. 9: 10).[36]

Relatively poorly preserved remains of a packed yellow clay floor (SU 235-236) were excavated above the settlement phase defined as *horizon 1*, at an elevation of 97.5-97.7 m asl., in the northern and central section of the trench. A massive layer of burned wooden architecture (SU 225a) is above it over the majority of the northern and eastern part of the trench, and it may be interpreted with considerable certainty as the remains of the collapsed wall of a house built in the previously described post and pad construction technique (Fig. 19: 1-2). This is because the structure and the specific position of the wooden remains at sev-

38 Teržan 1990, 31. B. Teržan navodi da su građevine građene vodoravno položenim trupcima iako se na osnovu dostupnih podataka ne može isključiti i *postpad construction* tehnika.

39 Svoljšak, Dular 2016.

36 S. Gabrovec stated that tiny glass beads had been found in graves of the Podzemelj phase (Gabrovec 1987, 41, Fig. 1: 18), while at sites such as Stična, Magdalenska gora or Novo mesto they can be found in graves of all phases of the Dolenjska Hallstatt group.



SLIKA 20. Presjek jugoistočnog ugla u Sondi 2 s ostacima urušenja *Objekta 5* i spaljenom drvenom arhitekturom *Objekta 7* (snimio I. Drnić).

FIGURE 20. Cross-section of the south-eastern corner in Trench 2 with remains of rubble of *Structure 5* and the burned foundation beam of *Structure 7* (photo by I. Drnić).

Nakon opisanoga naseobinskog horizonta, slijedi mlađa faza s ostacima dviju struktura – *Objektima 6* i *7* koji su građeni istom tehnikom, točno na ostacima starijih *Objekata 4* i *5,* potvrđujući da su graditelji i u mlađoj fazi poštovali prethodno ustanovljenu naseobinsku logiku s nastambama postavljenim u smjeru sjeveroistok – jugozapad i odvojenim jasno definiranim komunikacijama (sl. 21: 1-2). Naime, kombinirajući rezultate geofizičkih istraživanja na ovoj poziciji (sl. 6-7, 9), čini se izvjesnim da je željeznodobno naselje na Pogorelcu u svojoj kasnohalštatskoj fazi imalo pravilan raster na površini od minimalno 2,5 - 3 ha, što ga uistinu čini jedinstvenim primjerom u Donjem Pokuplju, a uz Donju Dolinu vjerojatno i na prostoru cijele južne Panonije.

Spomenuti *Objekt 6*, izgrađen na ruševinama starijeg *Objekta 4*, čine dobro sačuvani ostaci poda od žute nabijene zemlje, debljine 20 – 30 cm (SJ 215), na kojem su se nalazili ostaci spaljene drvene arhitekture u obliku greda orijentacije sjeveroistok – jugozapad i sjeverozapad – jugoistok (SJ 217, 218 i 220). *Objekt 6* nije u potpunosti istražen jer je djelomično ulazio pod sjeverni i istočni

eral points included thicker beams with round cross-section, a NE-SW orientation, and thin boards vertically set on them, filling the spaces between the vertical foundations (Fig. 32: 2).[37] Above the burned wooden architectural remains, there was a thick layer with a high quantity of daub and charred wood (SU 225 and 227) which is the rubble of the wall construction of the above-defined *Structure 4* that had been destroyed in a fire. The remains of burned wooden materials (SU 233) were also excavated in the south-western corner of Trench 2, and above it there was a roughly 30 cm thick layer of rubble containing daub (SU 231), confirming that this was another structure only excavated in small part – *Structure 5* (Fig. 19-20). There was an empty space between the wall rubble and burned remains of wooden architecture of *Structures 4* and *5* which was a passage between them a communication route inside the settlement with a NW-SE orientation. As apparent from the description, in this settlement phase (*horizon 2*) in Trench 2, no traces of post-holes were registered, which clearly indicates a change in building techniques from those using posts driven into the ground as the foundation for walls toward horizontally installed foundation beams and wall construction consisting of vertical stakes and horizontal boards. A similar situation was registered at the already mentioned Poštela site in Styria, where this transition was registered at the end of phase Ha C1, when dwellings began to be built with horizontally placed trunks, set on stone foundations made by the stacked-stone technique.[38] The same technique with stone foundations was also registered at other Iron Age settlements, for example in Most na Soči.[39]

This settlement horizon was followed by a later phase with the remains of two structures – *Structures 6* and *7*, which were built using the same technique, more accurately on the remains of the earlier *Structures 4* and *5*, confirming that the builders in the later *horizon 3* adhered to the previously established settlement pattern with dwellings placed in the NE-SW direction and separated by clearly defined communication passages (Fig. 21: 1-2). By combining the results of geophysical prospecting at this site (Fig. 6-7, 9), it would appear certain that the Iron Age settlement at Pogorelac during its late Hallstatt phase had a standardized grid over a surface of at least 2.5-3 ha, which truly made it a unique example in the Lower Kupa River Valley, and, together with Donja Dolina, perhaps throughout the territory of southern Pannonia.

The aforementioned *Structure 6*, built on the ruins of the earlier *Structure 4*, consists of well-preserved remains of a yellow packed-earth floor, with a thickness of 20-30 cm (SU 215) on which there were remains of burned wooden architecture in the form of beams with a NE-SW and NW-SE orientation (SU 217, 218 and 220). *Structure 6* has not been entirely excavated, because it partially ran under the northern and eastern profile of Trench 2, and research funds at that point did not, unfortunately, allow for its further expansion. In the south-eastern corner of the trench,

37 Dular 2008.

38 Teržan 1990, 31. B. Teržan stated that the buildings were built on horizontally laid logs, even though based on available data the post and pad construction technique cannot be excluded.

39 Svoljšak, Dular 2016.

profil Sonde 2, a istraživačka sredstva u tom trenutku, nažalost, nisu dopuštala dodatno proširenje. U jugoistočnom je uglu sonde istražena veća koncentracija spaljenih drvenih ostataka s tri paralelne grede te komadima kućnog lijepa *in situ* (SJ 221 – 223, 226), što bi moglo ukazivati da se radi o dijelu zidne konstrukcije *Objekta 6.* Uz južnu je stranu objekta istražen preostali dio masivne spaljene grede (SJ 220) koji je činio temeljnu gredu zidne konstrukcije koja je bila položena izravno na zemlju (Sl. 32: 1-2), kao u slučaju *kuće 2* s lokaliteta Kučar.[40] U središnjem dijelu poda nalazio se plići kanal, ispunjen sivom zapunom (SJ 224), u kojemu se mogla nalaziti poprečna greda što je mogla nositi stup krovne konstrukcije, ali i zid koje bi dijelio objekt na dvije prostorije. Naime, u zapuni je kanala zabilježena znatna količina spaljenog drveta. Zanimljiva je i činjenica što je u jugozapadnom uglu *Objekta 6* gotovo u potpunosti nedostajala žuta nabijena zemlja koja je činila pod nastambe, a što bi moglo upućivati na poziciju vrata zbog čega je na tom dijelu pod bio istrošen. Na ostacima je poda i drvene arhitekture istražen masivan sloj urušenja s velikom količinom spaljenog drveta i kućnog lijepa koji su činili zidnu konstrukciju objekta (SJ 204, 212 i 213), među kojima su i veliki komadi s otiscima plosnato tesanih greda, ali i balvana okruglog presjeka, dodatno potvrđujući iznesenu tezu o načinu gradnje s okomitim gredama i vodoravnim tesanim daskama (sl. 31).

Kao i u slučaju starijega naseobinskog horizonta, u jugozapadnom je uglu sonde registriran manji dio strukture s podom od žute nabijene zemlje (SJ 207) i ostacima spaljene grede, orijentacije sjeverozapad – jugoistok (SJ 208), koja je definirana kao *Objekt 7* (sl. 21: 1–2). S vanjske se strane spaljene grede nalazilo desetak piramidalnih utega, poredanih u pravilnu liniju, vjerojatno čineći ostatke okomitoga tkalačkog stana koji je mogao biti naslonjen na vanjski zid *Objekta 7* (sl. 22, sl. 32: 4). Uz ovaj, doista zanimljiv *in situ* nalaz dijela tkalačkog stana, o intenzivnoj proizvodnji tekstila na lokalitetu svjedoče deseci pronađenih alatki, kao što su već spomenuti piramidalni utezi, ali i pršljenci vretena te kalemovi za namatanje izpredenih niti, izrađeni od pečene zemlje, a koje su korištene u različitim fazama ove, čini se za segestansku zajednicu prilično važne gospodarske aktivnosti. Slični su ostaci tkalačkog stana zabilježeni i na lokalitetu Turska kosa,[41] kao i nizu drugih željeznodobnih lokaliteta na prostoru zapadne Panonije i istočnih Alpa.[42] Iznad istraženog dijela *Objekta 7* također se nalazio sloj s tragovima spaljenog drveta i kućnim lijepom kao ostacima zidne konstrukcije (SJ 203). Između opisanih nastambi (*Objekata 6* i *7*), koje u Sondi 2 čine naseobinski *horizont 3*, nalazio se metar i pol širok, prazan prostor koji je u potpunosti poštovao orijentaciju starije naseobinske komunikacije.

Nekoliko struktura istraženih u Sondi 2 ukazuje na postojanje još jednog, najmlađega naseobinskog horizonta na ovom dijelu lokaliteta (*horizont 4*). Naime, odmah nakon uklanjanja humusa, definirana je 1,5 – 2 metra široka traka, orijentacije sjeverozapad – jugoistok, koja se sastojala od crvenkastoga pjeskovitog tla (SJ 206) za koju se daljnjim iskopavanjem ispostavilo da predstavlja

a high concentration of burned wooden remains with three parallel beams and pieces of daub were excavated *in situ* (SU 221-223, 226), which may indicate that this is a part of the wall construction of *Structure 6*. Along the southern side of the structure, the remaining portion of a massive burned beam (SU 220) was excavated; it served as the foundation beam for the wall construction, which was set directly into the ground (Fig. 32: 1-2), as in the case of *house 2* at the Kučar site.[40] There was a shallow channel with grey fill (SJ 224) in the middle section of the floor, in which there may have been a cross-beam that could have borne the roof construction, but also a possible wall that could have divided the structure into two rooms. A considerable quantity of burned wood was registered in the fill in the channel. An interesting fact is that yellow packed earth was almost entirely absent in the south-western corner of *Structure 6*, although it otherwise formed the floors in dwellings, so this may indicate the position of a door, which is why the floor would have been worn away in this section. Atop the remains of the floor and wooden architecture, a massive layer of rubble was excavated, containing a high quantity of burned wood and daub which formed the wall construction of the structure (SU 204, 212 and 213). Among the debris there were large pieces of flatly cut beams, as well as logs with round cross-section, additionally confirming the hypothesis on a wall construction technique involving vertical beams and horizontally set dressed boards (Fig. 31).

As in the case of the earlier settlement horizon, in the south-western corner of the trench a small part of a structure was registered with a floor made of yellow packed earth (SU 207) and the remains of a burned beam, with NW-SE orientation (SU 208), which was defined as *Structure 7* (Fig. 21: 1-2). On the external side of the burned beam, there were roughly ten pyramidal weights placed in a straight line, probably the remains of a vertical weaving loom that may have rested against the outer wall of *Structure 7* (Fig. 22, Fig. 32: 4). Besides this, truly fascinating, *in situ* find of parts of a loom, dozens of tools were found, like the aforementioned pyramidal weights, which further testify to the intense production of textiles at the site, such as spindle whorls and spools for coiling woven threads made of fired clay, which were used in various phases of this economic activity – which appears to have been rather vital to this Segestan community. Similar remains of a loom were registered at the Turska kosa site,[41] and in a series of other Iron Age sites in western Pannonia and the eastern Alps.[42] A layer with traces of burned wood and daub, the remains of a wall construction (SU 203), were also found above the excavated part of *Structure 7*. Between the dwellings so described (*Structures 6* and *7*), which form settlement *horizon 3* in Trench 2, there was a meter and a half wide empty space which entirely adhered to the orientation of the earlier settlement communication route.

40 Dular, Ciglenečki, Dular 1995, 39-45, 65, Sl. 38.

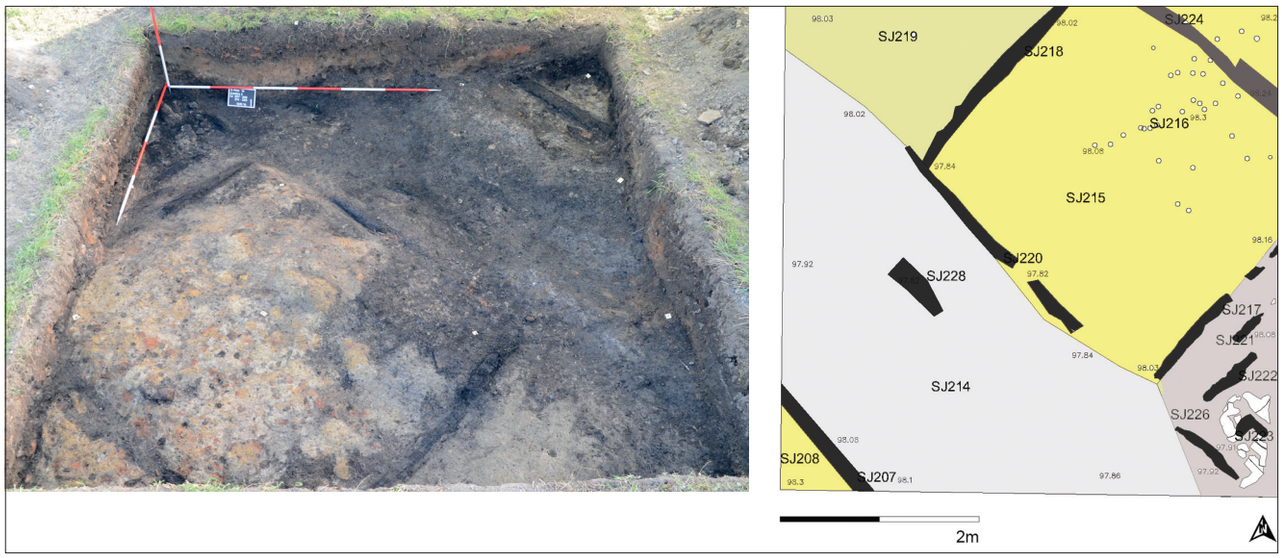
41 Čučković 2009, 24, Fig. 17.

42 Teržan 1996; Belanová, Čambal, Stegmann-Rajtár 2007.

40 Dular, Ciglenečki, Dular 1995, 39–45, 65, Fig. 38.

41 Čučković 2009, 24, Fig. 17.

42 Teržan 1996; Belanová, Čambal, Stegmann-Rajtár 2007.



SLIKA 21. 1-2. Ostaci podnica i drvene arhitekture *Objekata 6* i *7* (snimio I. Drnić, nacrt izradio M. Mađerić).

FIGURE 21. 1-2. Remains of floor and wooden architecture of *Structures 6* and *7* (photo by I. Drnić; drawing made by M. Mađerić).

zapunu prostora između dviju ruševina *Objekata 6* i *7*, odnosno svojevrsnu nivelaciju terena. Uz južni profil sonde, iznad opisane pjeskovite zapune, definirana je veća nakupina kućnog lijepa (SJ 202) (sl. 23: 1–2). Također, uz istočni je profil definiran kontekst SJ 205 kojemu pripadaju nalazi triju posuda, zdjele i dvaju lonaca koji su se nalazili uz manje ovalno ognjište od zapečene zemlje (sl. 23: 3) (T. 12). Nadalje, u humusnom i predhumusnom sloju (SJ 01, 201) prikupljena je iznimno velika količina ulomaka keramičkih posuda, ukazujući na postojanje uništenih kulturnih slojeva (T. 13: 2-9). Materijal je tipološki identičan onomu iz starijih naseobinskih faza u Sondi 2, uključujući prethodno opisanu finu kasnohalštatsku keramiku (T. 13: 2-3, 9), čak i dijelove pokretnih ognjišta (T. 13: 8), uz iznimku triju ulomaka posuda izrađenih na lončarskom kolu (T. 13: 4-5), kao i dvaju ulomaka latenskih lonaca zadebljalog ruba s češljastim ukrasom (T. 13: 6-7), iako, njihovo prisustvo, uzevši u obzir nesiguran konekst nalaza, ne može biti nedvojbena potvrda postojanja mlađeželjeznodobnog kulturnog sloja. Naime, važno je još jedanput naglasiti da u Sondi 2 nije zabilježen intaktni naseobinski horizont mlađega željeznog doba kao u slučaju opisanih slojeva iz Sonde 1, što uz njihov nedostatak u Sondi 4 – a što će biti detaljnije opisano u nastavku teksta – ukazuje na određenu promjenu u dinamici naseljavanja na sjeveroistočnom dijelu pozicije Pogorelac koja se odrazila u smanjenju površine naselja u početnoj fazi mlađega željeznog doba, kao i u promjeni stratigrafske slike s drugačijim uslojavanjem kulturnih slojeva (navedeno u prethodnom poglavlju!).

Također, u središnjem su dijelu Sonde 2 otkriveni i ostaci kosturnoga groba orijentacije istok – zapad (glava prema istoku), koji je bio ukopan u SJ 204, bez jasno definirane rake, od kojega su sačuvane samo kosti donjih ekstremiteta (T. 16). Antropološka je analiza pokazala da posmrtni ostaci pripadaju djetetu u dobi između 10 i 12 godina.[43] Od grobnih su priloga zabilježena četi-

Several structures excavated in Trench 2 indicate the existence of another, youngest, settlement horizon in this part of the site (*horizon 4*). Immediately after the removal of the humus, a 1.5-2 meter wide band with NW-SE orientation was defined, consisting of reddish sandy soil (SU 206) which after further digging was ascertained as the fill for the space between two ruins, *Structures 6* and *7*, i.e., some manner of ground levelling. Alongside the southern profile of the trench, above the sandy filler material, a large accumulation of daub (SU 202) was defined (Fig. 23: 1-2). Moreover, along the eastern profile, context SU 205 was defined, to which three vessels, a bowl and two pots, belong. They were found next to a small oval hearth made of fired earth (Fig. 23: 3) (Pl. 12). Furthermore, in the humus and pre-humus layer (SU 01, 201), an exceptionally high quantity of potsherds was gathered, indicating the existence of destroyed cultural layers (Pl. 13: 2-9). The materials are typologically identical to those from the earlier settlement phases in Trench 2, including the previously described fine late Hallstatt pottery (Pl. 13: 2-3, 9), even pieces of portable ovens (Pl. 13: 8) and two fragments of La Tène pots with thickened rims and comb-like decorations (Pl. 13: 6-7) and three sherds of wheel-thrown pottery, although their presence, taking into account the uncertain discovery context, cannot serve as an unambiguous confirmation of the existence of a Late Iron Age cultural layer. Namely, it is important to once more stress that no intact later Iron Age settlement horizon was found in Trench 2, as in the case of the above-described layers in Trench 1. This, together with the absence of the same in Trench 4 (which will be described in greater detail below), indicates a certain change in the settlement dynamics in the north-eastern section of the Pogorelac site, which was reflected in the reduction of the settlement's surface area in the initial phase of the Late Iron Age and the change in the stratigraphic picture with a different layering of cultural layers as stated in the preceding chapter.

SLIKA 22. Piramidalni utezi kao ostatak okomitog tkalačkog stana (snimio I. Drnić).

FIGURE 22. Pyramidal weights as the remains of the vertical loom (photo by I. Drnić).

ri komada novca (T. 16: 2-5), stakleni balzamarij (T. 16: 1), srebrna karičica (T. 16: 6) te perla od tirkiznog stakla (T. 16: 7), smješteni ispod stopala pokojnika te jedan komad novca ispod zdjelice (T. 16: 8). Analiza novca, provedena nakon čišćenja predmeta, pokazala je da se radi o brončanim antoninijanima, kovanim u vrijeme careva Galijena i Klaudija II., s tim da najmlađi novac u grobu predstavlja posthumno kovani antoninijan Klaudija II. iz 270 / 271. god., što grob smješta u posljednju četvrtinu 3. ili vjerojatnije u početak 4. st.[44] Nedaleko od antropoloških ostataka pronađena je i cijela zdjela koja predstavlja imitaciju tere sigilate s crvenim premazom (imitacija oblika Dragendorff 37) kao jedini rimski nalaz u sondi uz prethodno navedne priloge (T. 16: 9). Takve imitacije izrađivane su u radionicama u Sisciji u razdoblju od 2. do početka 4. st. pa je i ova posuda vjerojatno predstavljala prilog u opisanom grobu.

Kao zaključak u opisu stratigrafske slike u Sondi 2, može se sumirati da se analizom stratigrafskih odnosa, prikupljenog materijala i apsolutnih datuma svi kulturni slojevi, debljine 1,8 m i definirani kroz naseobinske *horizonte 0 – 4*, mogu datirati isključivo u razdoblje starijega željeznog doba, bez postojanja mlađeželje-znodobnog horizonta naseljavanja. Tanki sloj s ulomcima kućnog lijepa i manjem brojem ulomaka keramičkih posuda, prekriven sterilnim slojem, definiran je kao *horizont 0*. Slijedi naseobinska faza s tragovima rupa za stupove i ognjištima *(horizont 1a i b*) nakon kojih slijede dvije naseobinske faze s objektima građenim

Additionally, in the central part of Trench 2, the remains of a skeletal grave with east-west orientation (head pointed eastward) were also discovered; it was dug into the rubble of *Structure 6* (SU 204) without a clearly defined grave pit, in which only the bones of the lower extremities have been preserved (Pl. 16). Anthropological analysis has shown that the corporeal remains belonged to a child aged 10 to 12.[43] The grave goods included four coins (Pl. 16: 2-5), a glass balsamarium (Pl. 16: 1), a silver ring (Pl. 16: 6) and a bead made of tourquoise-coloured glass (Pl. 16: 7), situated under the foot of the deceased, as well as one coin below the pelvis (Pl. 16: 8). An analysis of the coins showed that they are bronze antoninianii minted during the reigns of Emperors Gallienus and Claudius II, although the most recent coin in the grave is a posthumously minted antoninianius of Claudius II from 270/271, which places the grave in the final quarter of the 3rd or, more likely, at the beginning of the 4th century.[44] An intact bowl was found not far from the anthropological remains; it is an imitation *terra sigillata* with red gloss (imitation of Dragendorff 37 type) and the sole Roman-period find in the trench together with the previously mentioned grave goods (Pl. 16: 9). Such imitations were made in workshops in Siscia from the 2nd to the beginning of the 4th century, so this one was also probably a good in the above-described grave.

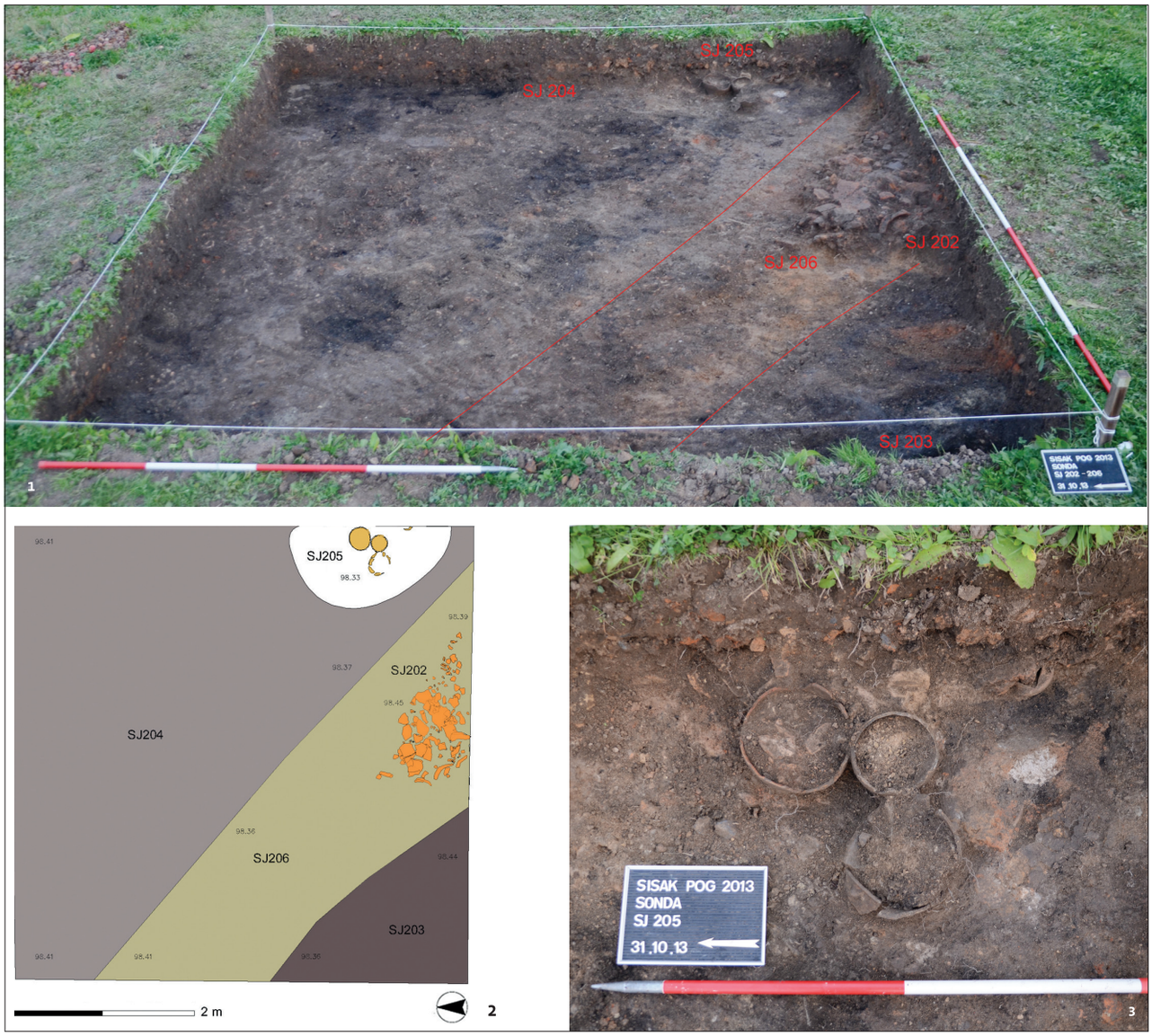
A summary conclusion to the description of the stratigraphic picture in Trench 2 may be that, based on an analysis of the stratigraphic relations, gathered materials and absolute dates of all cultural layers, the thickness of 1.8 meters defined through settlement *horizons 0-4*, may be dated exclusively to the period of the Early Iron Age, without the existence of an intact Late Iron Age settlement horizon. The thin layer with pieces of daub and a small number of potsherds, covered with a layer of sterile soil, has been defined as *horizon 0.* This is followed by two phases with the remains of post-holes and hearths (*horizons 1a* and *b*) and then two settlement phases with structures built in the post and pad technique and packed-earth floors (*horizons 2* and *3*). A levelling of the terrain by filling in the space between the ruins of *Structures 6* and *7*, a part of the rubble containing daub in the southern section of the trench and a hearth next to which three vessels were found *in situ* have been registered as the youngest settlement horizon (*horizon 4*). Several fragments of ceramic vessels made on a potter's wheel from the humus level probably constitute an inclusion at this part of the site, even though it is possible that the destroyed cultural layers, as part of the most recent settlement horizon in Trench 2 are contemporaneous with the later part of *horizon 3* in Trench 1, in which vessels made on a wheel appeared for the first time. The above-described grave 1 is, so far, the westernmost known find

43 Antropološku analizu na svim iskopanim kosturima iz kasnoantičkoga groblja s Pogorelca provela je dr. sc. Željka Bedić iz Antropološkog centra HAZU-a.

44 PN 110, T. 13: 2 (Galijen, RIC 180), PN 106, T. 13: 3 (Klaudije II., RIC 265/266), PN 111, T. 13: 4 (Klaudije II., RIC 104), PN 109, T. 13: 5 (Galijen, RIC 283), PN 112, T. 112 (Galijen, RIC 180). Datacija najmlađeg novca: 1. rana 270. – 271. (Sylviane Estiot, Jérome Mairat, Roman Imperial Coinage AD 268-276 (online) (http://www.ric.mom.fr), 2. 2. ½ 270. (Robert Göbl, Moneta Imperii Romani 47, Die Münzprägung des Kaisers Aurelianus: (270 - 275), 1995.) Novac je analizirao Miroslav Nađ iz AMZ-a.

43 The anthropological analysis of all excavated skeletons from the Late Roman cemetery at Pogorelac was conducted by Željka Bedić, Ph.D. from the Anthropology Centre of the Croatian Academy of Arts and Science.

44 PN 110, P. 13: 2 (Gallienus, RIC 180), PN 106, P. 13: 3 (Claudius II, RIC 265/266), PN 111, P. 13: 4 (Claudius II, RIC 104), PN 109, P. 13: 5 (Gallienus, RIC 283), PN 112, P. 112 (Gallienus, RIC 180). Dating of most recent coin: 1. early 270-271 (Sylviane Estiot, Jérome Mairat, Roman Imperial Coinage AD 268-276 (online) (http://www.ric.mom.fr), 2. 2. ½ 270. (Robert Göbl, Moneta Imperii Romani 47, Die Münzprägung des Kaisers Aurelianus: (270-275), 1995). The coins were analysed by Miroslav Nađ from the Archaeological Museum in Zagreb.



SLIKA 23. 1-2. Ostaci najmlađih željeznodobnih struktura u Sondi 2 (*horizont 4*); 3. Keramičke posude uz ostatke ognjišta (SJ 205) (snimio I. Drnić; nacrt izradio M. Mađerić).

FIGURE 23. 1-2. Remains of the most recent Iron Age structures in Trench 2 (*horizon 4*); 3. Ceramic vessels with remains of a hearth (SU 205) (photo by I. Drnić; drawing made by M. Mađerić).

od vodoravno položenih greda, prekrivenih kućnim lijepom i podovima od nabijene zemlje (*horizonti 2 i 3*). Kao dio najmlađega naseobinskog horizonta (*horizont 4*), zabilježena je nivelacija terena nasipavanjem prostora između ruševina *Objekata 6* i *7*, dio urušenja u južnom dijelu sonde te ognjište uz koje su se nalazile tri *in situ* položene posude. Nekoliko keramičkih ulomaka posuda izrađenih na lončarskom kolu iz humusnog sloja vjerojatno predstavljaju inkluziju na ovom dijelu lokaliteta iako je moguće da su uništeni kulturni slojevi, kao dio najmlađega naseobinskog horizonta u Sondi 2, istovremeni s mlađim dijelom *horizonta 3* u Sondi 1, u kojemu se prvi put pojavljuju keramičko posuđe izrađeno na kolu. Navedeni grob (grob 1) za sada predstavlja najzapadniji poznati nalaz u kontekstu kasnoantičkoga groblja o kojemu će više biti rečeno u nastavku teksta.

in the context of the Late Roman cemetery in the north-eastern section of Pogorelac, about which more will be said in the continuation of this text.

Sonda 3

S ciljem definiranja zapadne granice željeznodobnog naselja, na udaljenosti od 35 m zapadno od Sonde 2, otvorena je Sonda 3, dimenzija 4 x 4 m (sl. 10, Sl. 24: 1). Nakon iskopavanja humusnog sloja (SJ 01), debljine 30 cm, u kojemu nisu zabilježeni ulomci pretpovijesnih keramičkih ulomaka, površina je sonde smanjena na 8 m². Zdravica u Sondi 3, registrirana na 96,87 m. n. v., sastojala se od žutoga pjeskovitog tla nakon čega je slijedio 1,3 m debeo sloj (SJ 301) s arheološkim materijalom koji potječe iz rimskog razdoblja (ulomci keramičkih posuda, građevinski materijal – tegule, imbreksi, šesterokutne pločice te životinjske kosti) (sl. 24: 2). Također, u sondi su zabilježena i dva kosturna ukopa koji pripadaju kasnoantičkom groblju s istraženim grobovima u Sondama 2 i 4, kao i u zaštitnom istraživanju trase vodovoda uz aveniju V. Janića Cape te ispod Mosta Gromova, smještenom 70 m zapadno od Sonde 3. Grob 3 (sl. 24: 3), orijentacije jug – sjever, nalazio se uz zapadni profil sonde, a bio je ukopan u opisani nasipani sloj bez ostataka grobne arhitekture. Donji dio kostura nedostaje, a antropološke su analize pokazale da se radi o muškarcu, u dobi između 30 i 35 godina. Uz kostur nisu zabilježeni grobni prilozi. Grob 2, orijentacije jugoistok – sjeverozapad, istražen je samo u manjem dijelu (lijeva nadlaktica, rebra, lijeva ključna kost). Grob je bio ukopan u sterilni sloj žute pjeskovite gline, također bez tragova grobne arhitekture. Kao i u slučaju groba 3, ni ovdje nisu pronađeni grobni prilozi.

Istraživanje u Sondi 3 potvrdilo je nepostojanje naseobinskih tragova iz predrimskog razdoblja, čime je jasno definirana zapadna granica željeznodobnog naselja. Keramički materijal iz rimskog sloja potvrđuje naseljavanje ovoga prostora u 2. i 3. st., o čemu će nešto više biti riječi u interpretaciji stratigrafije u Sondi 4.

Sonda 4

S obzirom na to da u istraživanju Sonde 3, kao uostalom i spomenutom zaštitnom istraživanju uz aveniju V. Janića Cape, nisu zabilježeni ostaci naselja iz željeznog doba, 2014. godine je na prostoru između Sondi 2 i 3 započeto istraživanje Sonde 4, dimenzija 2 x 4 m, kako bi se detaljnije definirao rubni dio naselja. U narednim je kampanjama površina sonde proširena u smjeru zapada s ukupnom površinom od 35 m² (sl. 10: 1-2). Istraženi kulturni slojevi potječu iz tri različita vremenska razdoblja: naseobinski ostaci iz starijega željeznog doba nakon kojih slijede naseobinski horizont iz rimskog razdoblja, datiran prikupljenim materijalom u 2. i 3. st., i naposlijetku kosturni grobovi kasnoantičkoga groblja 4. i prve polovice 5. st. (sl. 29).

Željeznodoni je horizont u Sondi 4 po strukturi sličan *horizontima 0* i *1* u Sondi 2 (SJ 287). U najstarijem su kulturnom sloju zabilježeni skromni ostaci vjerojatno dvaju nadzemnih objekata. Prvi, odnosno *Objekt 8,* nalazio se u sjeveroistočnom uglu sonde, a sastojao se od sloja manjih komada kućnog lijepa (SJ 539) koji su uz istočni profil oštećeni kasnijim ukopima stupova. U južnom i središnjem dijelu sonde zabilježeni su nešto konkretniji ostaci strukture definirane kao *Objekt 9* u obliku nepravilno

Trench 3

With the objective of defining the western boundary of the Iron Age settlement, Trench 3, with dimensions of 4 x 4 meters (Fig. 10, Fig. 24: 1), was opened at a distance of 35 meters west of Trench 2. After the removal of the 30 cm thick humus layer (SU 01) in which no prehistoric potsherds were registered, the surface of the trench was reduced to 8 m². The sterile material in Trench 3, registered at an elevation of 96.87 m. asl., consisted of yellow sandy soil, followed by a 1.3 m thick layer (SU 301) with archaeological materials from the Roman period (potsherds, construction materials – tegulae, imbrices, hexagonal tiles and animal bones) (Fig. 24: 2). Also found in the trench were two skeletal burials that belong to the Late Roman cemetery together with the graves excavated in Trenches 2 and 4 and in the rescue excavation in the water pipeline section next to Aleja V. Janic Capo and below the Bridge of the Gromovi brigade, situated 70 meters west of Trench 3. Grave 3 (Fig. 24: 3), with south-north orientation, was adjacent to the western profile of the trench, and was buried in the above-described filler layer without remains of tomb architecture. The lower part of the skeleton is missing, and the anthropological remains show that it was a man between the ages of 30 and 35. Grave goods were not registered with the skeleton. Grave 2, with SE-NW orientation, was excavated only to a lesser extent (left upper arm, part of the ribs, left clavicle). The grave was dug into the sterile layer of yellow sandy clay, also without traces of tomb architecture. As in the case of grave 3, no grave goods were found here, either.

Excavations in Trench 3 have confirmed the absence of settlement traces from the pre-Roman period, thereby clearly defining the western boundary of the Iron Age settlement. The ceramic materials from the Roman layer confirm the settlement of this area in the 2nd and 3rd centuries, about which more shall be stated in the interpretation of the stratigraphy in Trench 4.

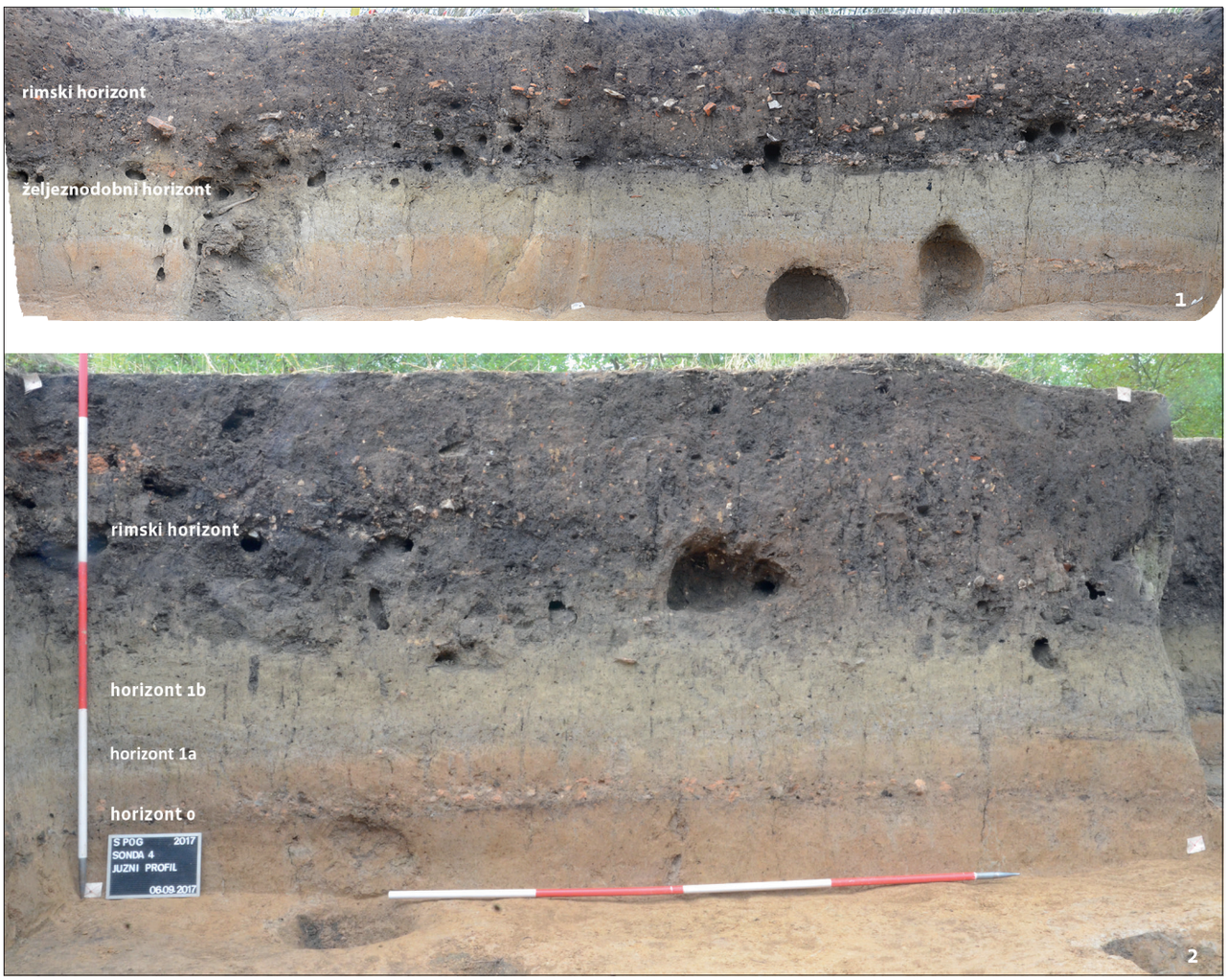
Trench 4

Given that no remains of an Iron age settlement were registered during excavations in Trench 3, like, indeed, the aforementioned rescue excavations next to Aleja V. Janić Capo, in 2014 the excavation of Trench 4 began in the space between Trenches 2 and 3, with dimensions of 2 x 4 m, in order to define the settlement's periphery in greater detail. In subsequent campaigns, the trench was expanded in the westerly direction, covering a total surface of 35 m² (Fig. 10: 1-2). The examined cultural layers date to three different chronological periods: settlement remains from the Early Iron Age, followed by a Roman period settlement horizon, dated on the basis of gathered materials to the 2nd and 3rd centuries, and finally skeletal graves in a Late Roman cemetery from the 4th and first half of the 5th centuries (Fig. 29).

The Iron Age horizon in Trench 4 is, based on its structure, the most similar to the *horizons 0* and *1* in Trench 2. The modest remains of probably two above-ground structures were registered in the oldest cultural layer. The first, i.e., *Structure 8*, was situated in the north-eastern corner of the trench, and it consisted of a thin layer of small pieces of daub (SU 539) which were damaged along the eastern profile due to the digging of post-holes. In the

SLIKA 24. 1. Sonda 3; 2. Sjeverni profil u Sondi 3; 3. grob 2 u Sondi 3 (snimio I. Drnić).

FIGURE 24. 1. Trench 3; 2. Northern profile in Trench 3; 3. grave 2 in Trench 3 (photo by I. Drnić).



SLIKA 25. 1. Sjeverni profil u Sondi 4; 2. Južni profil u Sondi 4 (snimio I. Drnić).

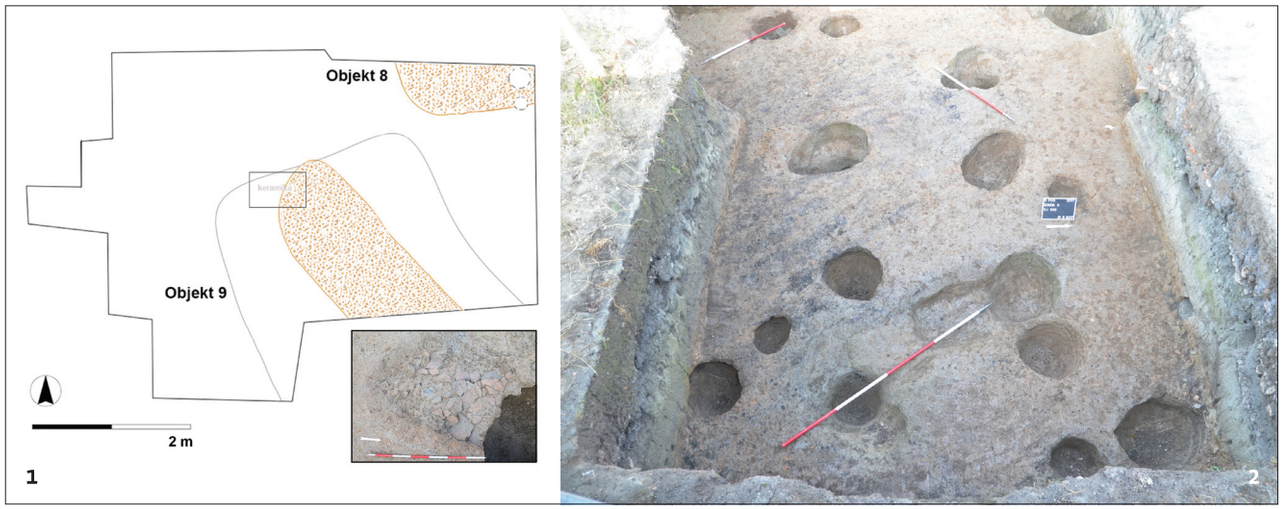
FIGURE 25. 1. Northern profile in Trench 4; 2. Southern profile in Trench 4 (photo by I. Drnić).

pravokutnog sloja kućnog lijepa te velike količine karboniziranih sjemenki koje su se neobično nalazile u obliku pravilnih traka u smjeru sjeverozapad – jugoistok, što je vjerojatno bila orijentacija objekta (SJ 537-538) (sl. 26: 1-2).[45] Također, pri iskopavanju u sjevernom dijelu *Objekta 9* zabilježena je veća koncentracija keramičkih ulomaka, dok su sporadični nalazi pronađeni na cijeloj površini objekta, od kojih je dio deformiran uslijed izlaganja visokoj temperaturi. Obradom prikupljenih ulomaka i njihovom rekonstrukcijom utvrđeno je da pripadaju trima većim posudama (loncima) korištenima za skladištenje namirnica, vjerojatno spomenutih sjemenki. Prikupljeni podaci (postojanje veće količine kućnog lijepa, keramičke posude s tragovima izlaganja visokoj temperaturi i velika količina karboniziranih sjemenki) nedvosmisleno potvrđuju postojanje nastambe u najstarijem horizontu naseljavanja koja je uništena u požaru. Iznad opisanih objekata, koje možemo pripisati tzv. naseobinskom *horizontu 0*, nalazio

southern and central sections of the trench, somewhat more specific structural remains were registered and defined as *Structure 9*, in the shape of an irregular rectangular layer of daub and a high quantity of carbonized seeds that were unusually situated in the form of regular bands in a NW-SE direction, which was probably the structure's orientation (SU 537-538) (Fig. 26: 1-2).[45] Moreover, during digs in the northern section of *Structure 9*, a high concentration of potsherds was registered, while sporadic pieces were found over the structure's entire surface, of which some were deformed as a result of exposure to high temperatures. Analysis of the gathered shards and their reconstruction has ascertained that they belong to three larger vessels (pots) used to store food, probably the aforementioned seeds. The gathered data (the existence of a high quantity of daub, ceramic vessels with traces of exposure to high temperatures and a high quantity of carbonized seeds) confirm the existence of a dwelling in the oldest settle-

45 Preliminarna analiza sjemenki, koju provodi K. Reed, pokazala je da se radi o bobu (*Vicia faba*).

45 Preliminary analysis of the seeds conducted by K. Reed showed that they were broad beans (*Vicia faba*).

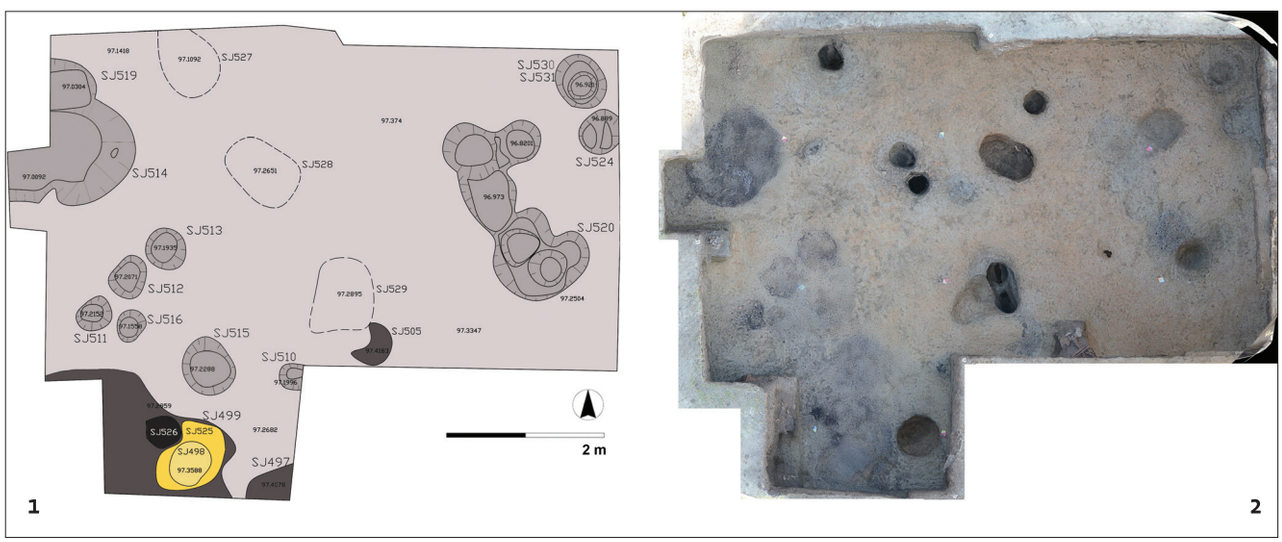


SLIKA 26. 1-2. Ostaci *Objekata 8* i *9* u najstarijem željeznodobnom *horizontu 0* u Sondi 4 (snimio I. Drnić; nacrt izradio M. Mađerić).

FIGURE 26. 1-2. Remains of *Structures 8* and *9* in the earliest Iron Age *horizon 0* in Trench 4 (photo by I. Drnić; drawing made by M. Mađerić).

se sterilan sloj oker-crvene boje (SJ 534), što je iz stratigrafske perspektive istovjetno situaciji u Sondi 2 sa stratigrafskim jedinicama SJ 286 i 287. Prisustvo trobridog brončanog vrha strelice (T. 14: 7), s jasnim analogijama u brojnim grobovima Dolenjske halštatske skupine, datira ovaj naseobinski horizont u kasnohalštatsko razdoblje.

ment horizon which was destroyed in a fire. Above the described structures, which may be ascribed to settlement *horizon 0* in Trench 4, there was a sterile ochre-red layer (SU 534) which from the stratigraphic perspective was contemporaneous with the situation in Trench 2 with stratigraphic units SU 286 and 287. The presence of three winged arrowhead (Pl. 14: 7), with clear analogies in numerous graves of Dolenjska Hallstatt group, dates this settlement horizon to Late Hallstat period.

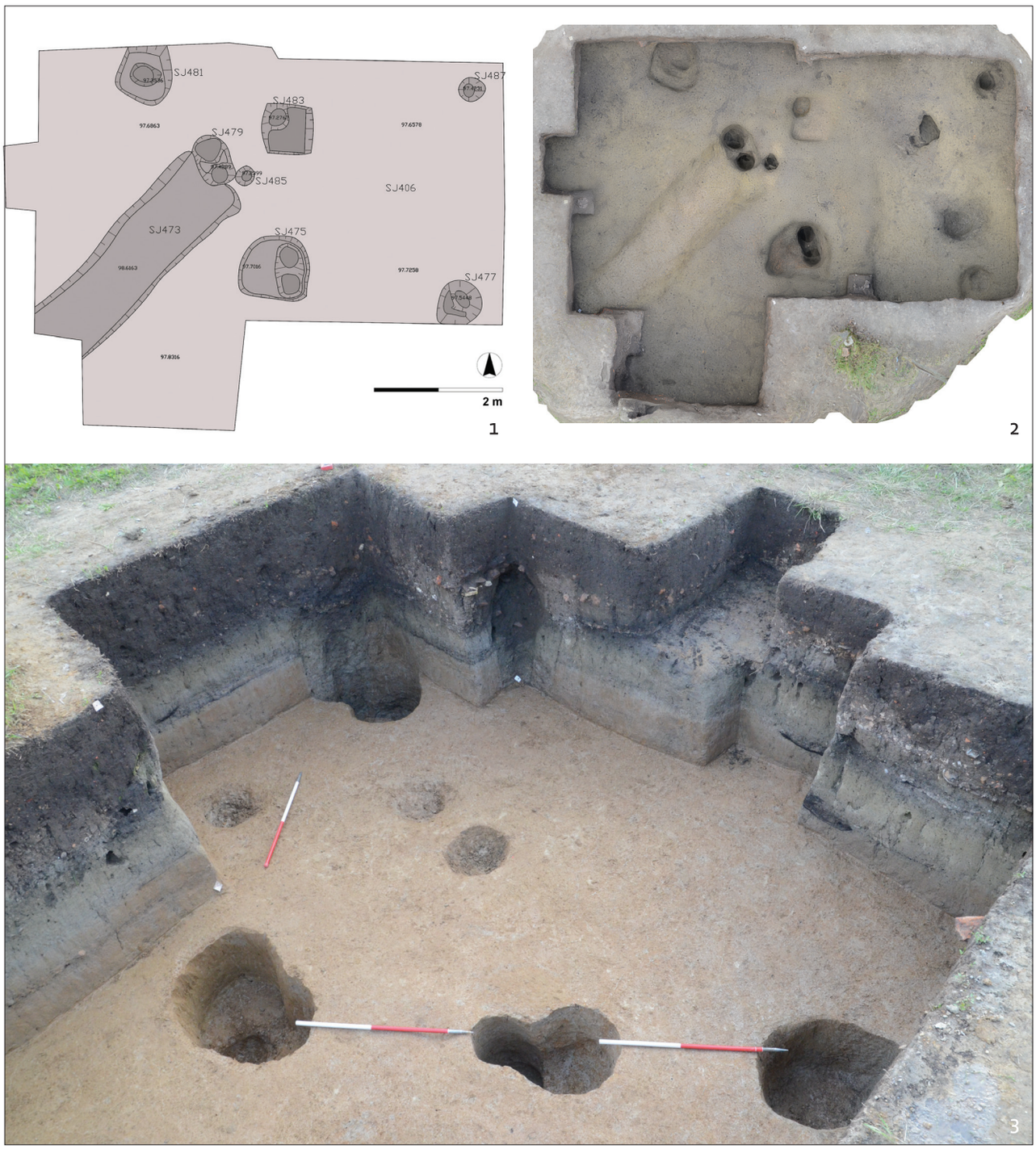


SLIKA 27. 1-2. Naseobinski *horizont 1a* u Sondi 4 (snimio I. Drnić; nacrt izradio M. Mađerić).

FIGURE 27. 1-2. Settlement *horizon 1a* in Trench 4 (photo by I. Drnić; drawing made by M. Mađerić).

Slijedili su slojevi po strukturi vrlo slični onima iz Sonde 2 koji su definirani kao naseobinski *horizont 1a* (sl. 27: 1-2). U jugozapadnom dijelu sonde nalazilo se ovalno ognjište s dvije faze (SJ 498, 533) koje se nalazilo na naboju od žute gline (SJ 525). Oko ognjišta nalazio se tamnosivi sloj s dosta gara koji je vjerojatno nastao

This was followed by layers that were compositionally quite similar to those in Trench 2, which were defined as settlement *horizon 1a* (Fig. 28: 1-2). In the south-western section of the trench there was an oval hearth with two phases (SU 498, 533) that was situated on a layer of packed yellow clay (SU 525). There was a



SLIKA 28. 1-2. Ostaci rimskih struktura ukopanih u željeznodobni naseobinski *horizont 1b*; 3. ostatci dubokih ukopa za stupove rimskog objekta (snimio I. Drnić; nacrt izradio M. Mađerić).

FIGURE 28. 1-2. Remains of Roman structures embedded in the Iron Age settlement *horizon 1b*; 3. Deep post-holes of the Roman structure (photo by I. Drnić; drawing made by M. Mađerić).

učestalim uklanjanjem izgorenoga goriva s ognjišta (SJ 499). Sjeverno od vatrišta registrirano je pet okruglih / ovalnih, u SJ 534 plitko ukopanih ukopa ispunjenih zapečenom zemljom i velikom količinom gara (SJ 501/503, 508/509), identičnog izgleda i struktu-

dark-grey layer with considerable soot around the hearth, which was probably created by the frequent removal of burned fuel from the hearth (SU 499). North of the firing place, five round/oval in SU 534, shallowly dug holes filled with fired earth and a high

re kao i prethodno opisane strukture iz naseobinskog *horizonta 1b* u Sondi 2, a koji je prethodio objektima sa zemljanim podovima i ostacima drvene arhitekture. U ovome je kontekstu istražena i jama ovalnog obrisa (SJ 504/514), dimenzija 1 x 1,3 m, koja je u potpunosti bila ispunjena gorenim materijalom (gar, pepeo, zapečena zemlja), dok su u presjeku zapune jasno vidljivi tragovi barem triju faza gorenja. Sjeverno od opisane jame nalazio se manji ovalni ukop zapunjen sivo-zelenom zapunom s tragovima gara (SJ 518/519). U istočnom je dijelu sonde istražen izduženi, nepravilni ukop čiju je namjenu teško definirati (SJ 517/520), a samom jugoistočnom uglu i dva ukopa od stupova (SJ 521/522 i 523/524), od kojih je prvi imao dvije zapune, svijetlosivu većeg promjera unutar koje se nalazila manja zapuna tamnosive boje koja predstavlja donji dio ukopa prethodno istraženog stupa (SJ 487), vidljivog u mlađim slojevima SJ 494/406.

Iznad opisanih struktura nalazio se kompaktan sloj SJ 494, koji sa slojevima što se nalaze iznad njega (SJ 406 i SJ 405) čini *horizont 1b* u Sondi 4 (sl. 25), s velikom količinom životinjskih kostiju i keramičkih ulomaka, uključujući finu halštatsku keramiku glačane površine s nekoliko ulomaka ukrašenih naboranim ukrasom koji, kao što je prethodno navedeno, jasno datiraju sloj u kasnohalštatsko razdoblje (T. 14: 1-6). U ovome su sloju registrirana i djelomično istražena dva vatrišta: u sjevernom dijelu sonde SJ 495 s crveno zapečenom zemljom i crnim, spaljenim materijalom te SJ 497 u južnom dijelu. Slijedili su 20 – 30 cm debeo sivo-zeleni sloj (SJ 406), po strukturi vrlo sličan slojevima SJ 248, 234 i 229 iz Sonde 2, te tamnosivi sloj rahlog tla SJ 405. Oba su sloja pokrivala cijelu površinu Sonde 4 i bila su iznimno bogata pokretnim nalazima, osobito životinjskim kostima, a keramički je materijal istovjetan onome iz kasnohalštatskih slojeva u Sondama 1 i 2. U sjeveroistočnom uglu sonde nalazi se ukop stupa (SJ 476-477) koji se može pripisati određenom objektu iz željeznodobne faze naseljavanja. Posljednji kulturni sloj, koji pripada periferiji stariježeljeznodobnog naselja, sloj je s velikom količinom kućnog lijepa i mjestimično zabilježenoga spaljenog drveta, registriran gotovo na cijeloj površini Sonde 4 (SJ 402a = 438 = 465 = 470) iako je dobrim dijelom uništen mlađim ukopima rimskoga naseobinskog sloja, kao i kasnijim grobnim ukopima.

Tragovi građevinske aktivnosti iz rimskog razdoblja sastoje se od plitkog kanala kosih stranica (SJ 472/473), orijentacije jugozapad – sjeveroistok te više dubokih ukopa za stupove (sl. 28: 1-2) ukopanih u SJ 406. Zapunu kanala činilo je pjeskovito tlo, a osim keramičkih ulomaka, u njoj se nalazilo i dosta ulomaka tegula (opeka) i nešto kamena. Opisani kanal završava ovalnim ukopom s dvjema vrlo dubokim rupama od stupova (SJ 478 i 479), na koje se u pravoj liniji u smjeru jugoistoka nadovezuju još jedan ukop, također s dvjema okruglim rupama za stupove (SJ 474/475), te još jedan u smjeru sjeverozapada (SJ 481/482). U liniji kanala nalazio se plitki pravokutni ukop s okruglom rupom od stupa u sjeverozapadnom uglu (SJ 482/483). Također, u jugozapadnom je uglu sonde istražen ovalni ukop stupa čiji se presjek jasno vidi u južnom profilu, potvrđujući koliko je duboko bio ukopan, počevši od rimske razine naseljavanja kroz sve željeznodobne slojeve i duboko u geološku podlogu (sl. 28: 3). Identična je situacija zabilježena i u slučaju ukopa SJ 527 čiji se presjek jasno ocrtava u sjevernom profilu (sl. 25: 1). Navedeni ukopi stupova i pliće ukopani kanal vjerojatno čine ostatke rimskodobnog objekta, pravokut-

quantity of soot (SU 501/503, 508/509) were registered, identical in appearance and features to the previously described composition in settlement *horizon 1b* in Trench 2, which preceded the structures with earthen floors and the remains of wooden architecture. A pit with oval contours (SU 504/514) and dimensions of 1 x 1.3 m was also excavated in this context; it was entirely filled with burned materials (soot, ash, fired earth), while traces of at least three phases of burning are clearly visible in the cross-section of the fill. North of the described pit, there was a smaller oval hole filled with grey-green material with traces of soot (SU 518/519). In the eastern part of the trench, an oblong, irregular hole whose purpose is difficult to ascertain was excavated (SU 517/520), while in the south-eastern corner two post-holes were excavated (SU 521/522 and 523/524), of which the first had two different filler: light grey with larger diameter inside which the smaller dark-grey fill was found; it was the lower section of the hole for the previously excavated post (SU 487), visible in the later layers SU 494/406.

Above the structures so described there was a compact layer, SU 494, which with the layers above it (SU 406 and SU 405) form *horizon 1b* in Trench 4 (Fig. 25), containing a high quantity of animal bones and potsherds, including fine Hallstatt pottery with burnished surfaces and several adorned with embossed decorations which, as stated above, clearly date it to the late Hallstatt period (Pl. 14: 1-6). In this layer, two fire-places were also partially excavated: in the northern part of the trench, SU 495 with red fired earth and black, charred materials, and SU 497 in the southern part. This is followed by a 20-30 cm thick grey-green layer (SU 406) very similar in composition to layers SU 248, 234 and 229 from Trench 2 and the dark-grey layer of friable soil, SU 405. Both layers covered part of the surface of Trench 4 and they were exceptionally rich in movable finds, particularly animal bones, while the ceramics are identical to those from the late Hallstatt layers in Trenches 1 and 2. In the north-eastern corner of the trench, there is a post-hole, SU 476-477, which may be attributed to a specific structure from the Iron Age phase of habitation. The final cultural layer that belongs to the periphery of the Early Iron Age settlement is one with a high quantity of daub and partially registered burned wood, registered over virtually the entire surface of Trench 4 (SU 402a = 438 = 465 = 470), even though it was partially destroyed by more recent diggings of the Roman settlement layer and later grave pits.

Traces of construction activities from the Roman period consist of a shallow ditch with diagonal sides (SU 472/473), with SW-NE orientation and several deep post-holes (Fig. 28: 1-2) dug into SU 406. The ditch was filled with sandy soil, and besides potsherds, it also contained numerous fragments of tegulae (brick) and some stones. The described ditch ends in an oval pit with two very deep post-holes (SU 478 and 479) to which another pit is connected in a straight line in the south-easterly direction, also with two round post-holes (SU 474/475) and one more in the north-westerly direction (SU 481/482). A shallow rectangular pit with a round post-hole in the north-west corner (SU 482/483) was situated along the same line as the ditch. Additionally, an oval pit, of which the cross-section can clearly be seen in the southern profile, was excavated in the south-western corner of the trench, confirming how deeply it had been dug, beginning from the Ro-

nog tlocrta. Dubina opisanih rupa ukazuje na potrebu kvalitetnog temeljenja stupova građevine koji su činili zidnu osnovu, što bi moglo ukazivati na njene znatne dimenzije, a čija se namjena na sadašnjem stupnju istraženosti ne može preciznije definirati. Ostaci drvene arhitekture iz rimskog razdoblja zabilježeni su i na drugim pozicijama izvan gradskih zidina Siscije. Osim struktura definiranih geofizičkom prospekcijom na Pogorelcu, ostaci spaljene drvene arhitekture u obliku ukopa stupova i otisaka greda i dasaka, uz prisustvo željeznih čavala i klinova te ulomaka kućnog ljepa i tegula, istraženi su prilikom zaštitnih iskopavanja provedenih 2013. godine u Zagrebačkoj ulici, na zapadnom ulazu u Sisak.[46]

Iznad sloja s kućnim lijepom (SJ 402a = 438 = 465 = 470) slijedio je tanji prijelazni sloj s miješanim željeznodobnim i rimskim materijalom SJ 402, a iznad njega rimskodobni sloj s keramičkim materijalom 2. i 3. st. (SJ 401), čija se debljina povećava od istoka sonde, gdje iznosi 20 – 30 cm, do 50 – 60 cm u zapadnom profilu (Sl. 25: 1-2). Kao što je navedeno u prethodnom poglavlju, taj sloj (SJ 301) u Sondi 3, smještenoj 10 m zapadno od Sonde 4, doseže debljinu od čak 1,3 m. S druge strane, on nije zabilježen istočno u Sondi 2, kao ni u istraživanjima na trasi vodovoda uz Aveniju V. Janića Cape, pa mu se dužina može procijeniti na 50 – 60 m. U humusnom je sloju Sonde 4 zabilježen isključivo rimskodobni materijal, uključujući ulomak izrazito profilirane fibule i brončane narukvice rastavljenih krajeva, za razliku od Sondi 1 i 2, gdje nema tragova naseljavanja iz antičkog razdoblja.

Detaljna analiza rimskodobnoga keramičkog materijala tek predstoji, a za potrebe datacije naseobinskog sloja izdvojeno je nekoliko dijagnostičkih komada kao što je ulomak srednjogalske tere sigilate s motivom jelena, koji predstavlja tip Dragendorff 37, proizveden u radionici Lezoux u vrijeme vladanja careva Trajana i Hadrijana (T. 15: 1).[47] Slijedi ulomak posude tipa Dragendorff 33 iz radionice Rheinzabern, datiran u 2. polovicu 2. i 1. polovicu 3. st. (T. 15: 2).[48] Također, iz istog razdoblja potječe i zdjela ukrašena kotačićem (oblik identičan tipu Dragendorff 37) koja pripada skupini panonske glazirane keramike (njem. *Pannonische Glanztonware*) (T. 15: 3).[49] U isto vremensko razdoblje možemo smjestiti i keramičku lampicu lokalne proizvodnje s pečatom VIBIANI (T. 15: 4).[50] Ovome horizontu naseljavanja pripada i Vespazijanov as kovan 71. godine (T. 15: 5).[51]

man level of settlement through all Iron Age layers and deeply into the geological foundation (Fig. 28: 3). An identical situation was also registered in the case of pit SU 527, of which the cross-section is clearly outlined in the northern profile (Fig. 25: 1). These post-holes and the shallowly-dug ditch are probably the remains of a Roman period structure with a rectangular ground-plan. The depth of the holes indicate the need for high-quality grounding of the structure's posts, which formed the foundation for the wall, possibly indicating rather sizeable dimensions. At the current extent of excavations, its purpose cannot be more precisely defined. The remains of wooden architecture from the Roman era were also registered at other sites outside of Siscia's city walls. Besides the structures defined by geophysical prospecting at Pogorelac, the remains of burned wooden architecture in the form of post-holes and impressions of beams and boards, with the presence of iron nails and pegs and fragments of daub and tegulae, were examined during rescue excavations conducted in Zagrebačka ulica (street), at Sisak's western entrance, in 2013.[46]

The layer with daub (SJ 402a = 438 = 465 = 470) was followed above by a thin transitional layer containing mixed Iron Age and Roman-period materials, SU 402, while above it is a Roman-period layer containing pottery dated to the 2nd and 3rd centuries (SU 401); its thickness increases from the eastern part of the trench, where it is 20-30 cm, to 50-60 cm in the western profile. As stated in the preceding chapter, this layer (SU 301) in Trench 3, situated 10 meters west of Trench 4, reaches a thickness of 1.3 meters. On the other side, it was not registered east in Trench 2, nor in excavations in the water pipeline section along Aleja V. Janic Capo, so its length may be estimated at 50-60 meters. Exclusively Roman-period material was registered in the humus layer in Trench 4, including the fragment of an strongly profiled fibula and a bronze bracelet with separated ends, as opposed to Trenches 1 and 2, where there are no traces of settlement from Roman period.

A detailed analysis of Roman-period pottery still awaits, but for the needs of dating the settlement layer, several diagnostic pieces were set aside, such as the fragment of a Central Gaulish *terra sigillata* with a deer motif, which is the Dragendorff 37 type, made in the workshop in Lezoux during the reign of Emperors Trajan and Hadrian (Pl. 15: 1).[47] This is followed by a Dragendorff 33 vessel from the Rheinzabern workshop, dated to the latter half of the 2nd and first half of the 3rd century (Pl. 15: 2).[48] Additionally, a bowl decorated with small wheel (the shape is identical to Dragendorff 37) also originates from this same period and belongs to the same group of Pannonian glazed ware (Ger. *Pannonische Glanztonware*) (Pl. 15: 3).[49] The same period can be ascribed to the locally produced ceramic lamp with VIBIANI stamp (Pl. 15: 4).[50] An as of Vespasian minted in 71 AD also belongs to this settlement horizon (Pl. 15: 5).[51]

46 Koprivnjak, Miletić 2014.

47 Oswald 1964, 112, Pl. LXX, 1704 A.

48 Dragendorff 1895; Oswald, Pryce 1920, 189-191, Plate LI; Ruprechtsberger 1980, 99-100; Garbsch 1982, ő3; Brulet, Vilvorder, Delage 2010, 175-179, 188, 190.

49 Alarm-Stern 2009; Ožanić Roguljić 2016.

50 Brando, Sebastiani 2016, 139.

51 RIC 2/1, 305.

46 Koprivnjak, Miletić 2014.

47 Oswald 1964, 112, Pl. LXX, 1704 A.

48 Dragendorff 1895; Oswald, Pryce 1920, 189-191, Plate LI; Ruprechtsberger 1980, 99-100; Garbsch 1982, ő3; Brulet, Vilvorder, Delage 2010, 175-179, 188, 190.

49 Alarm-Stern 2009; Ožanić Roguljić 2016.

50 Brando, Sebastiani 2016, 139.

51 RIC 2/1, 305.

Ukratko, u Sondi 4 istraženi su kulturni slojevi iz starijega željeznog doba, u kojima je prikupljen keramički materijal istovjetan onome iz svih naseobinskih horizonata Sonde 2 te *horizontima 1, 2* i *3a* u Sondi 1, koji pripada razdoblju starijega željeznog doba. Za razliku od navedenih horizonata u Sondama 1 i 2, u kojima su istraženi dijelovi objekata s jasno definiranim ostacima arhitekture, uključujući zemljane podnice sa spaljenim drvenim temeljima i urušenjima zidnih konstrukcija, u Sondi 4 nisu registrirane slične strukture, što ukazuje na to da je ovdje istraživan periferni dio naselja. Ovu tvrdnju potvrđuju i rezultati geofizičkih istraživanja koji jasno ukazuju na nedostatak sličnih struktura na ovom dijelu lokaliteta (sl. 7). Ipak, u najstarijem naseobinskom horizontu, koji je vjerojatno istovremen s *horizontom 0* u Sondama 1 i 2, zabilježeni su ostaci dvaju objekata o čemu svjedoče nakupine kućnog lijepa, ali i ostaci karboniziranih sjemenki koje su vjerojatno bile pohranjene u keramičkim posudama, pronađenim u kontekstu *Objekta 9*. Prema strukturi, stariježeljeznodobni slojevi (SJ 494, SJ 406 i SJ 405) iz Sonde 4 slični su onima iz *horizonta 1* Sonde 2 s velikom količinom keramičkog materijala i životinjskih kostiju te vatrištima i rupama za stupove koje mogu ukazivati na postojanje nadzemnih građevina s okomitim stupovima kao zidnom osnovom čije tlocrte, uslijed nedovoljnih informacija, nije bilo moguće rekonstruirati. U Sondi 4, kao uostalom ni u Sondi 2, nije zabilježen naseobinski horizont iz mlađega željeznog doba, potvrđujući prethodno izrečenu tezu da je naselje iz razdoblja od kraja 4. do 1. st. pr. Kr. na Pogorelcu površinom bilo znatno manje od stariježeljeznodobnog i da je funkcioniralo bliže rijeci Kupi, barem njezinu današnjem toku, kao i na lijevoj obali rijeke.

Slijedi rimskodobni naseobinski sloj s ukopima stupova i kanalom koji upućuju na postojanje objekta pravokutnog tlocrta, čiju su zidnu osnovu činili duboko ukopani drveni stupovi. U rimskim su slojevima prikupljeni ostaci građevinskog materijala, uglavnom ulomaka tegula, te velika količina životinjskih kostiju i keramičkih ulomaka, koji datiraju naseljavanje na ovome položaju u 2. i 3. stoljeću.

Groblje

Najmlađu arheološku fazu korištenja prostora na istraženom dijelu Pogorelca predstavljaju ostaci kasnoantičkoga groblja rimske Siscije. Njeno postojanje potvrđeno je trima kosturnim ukopima pronađenim tijekom istraživanja u Sondama 2 i 3, s dvadest grobova u Sondi 4 te šezdeset i pet grobova, istraženih prilikom zaštitnih iskopavanja spojnog kolektora sustava odvodnje naselja Zeleni Brijeg s kolektorom Lađarska, koje je provela tvrtka Arheolog d.o.o. 2013. i 2014. godine, pedesetak metara zapadno od pozicije Sonde 4 (paralelno s avenijom V. Janića Cape).[52] Zanimljivo je što u istraživanju iz 2014. godine, u istočnom dijelu Sonde 4, nije zabilježen ni jedan grob osim nekoliko dislociranih ljudskih kostiju, dok su iskopavanja u razdoblju 2015. – 2017. iznjedrila čak dvadeset kosturnih ukopa (grobovi 4 - 23) (sl. 29).

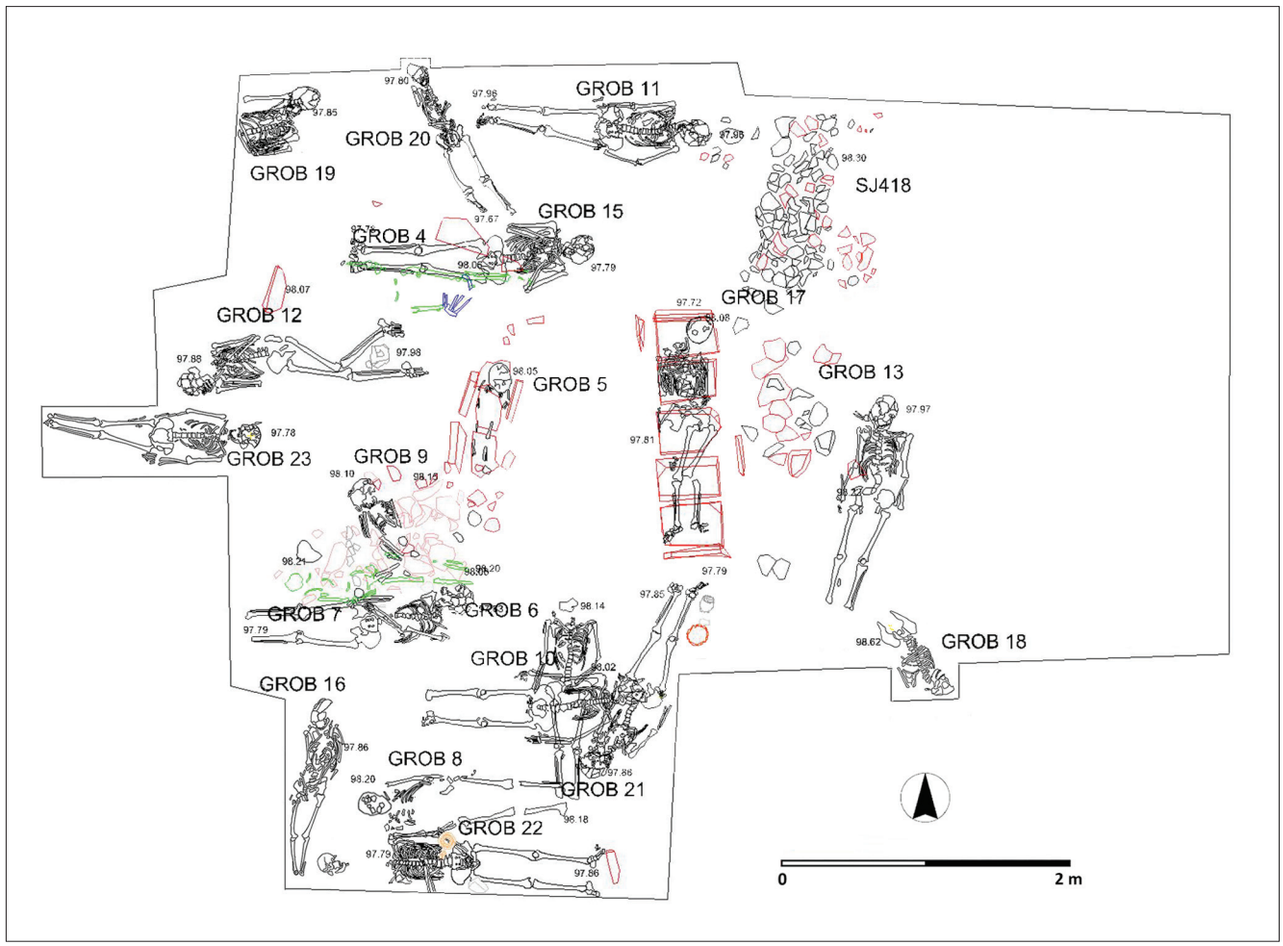
In summary, cultural layers from the Early Iron Age were excavated in Trench 4 in which ceramic materials were gathered that are contemporaneous with those from the settlement horizons in Trench 2 and *horizons 1, 2* and *3a* in Trench 1, which belong to the Early Iron Age. As opposed to the aforementioned horizons in Trenches 1 and 2, in which parts of structures were excavated with clearly defined architectural remains, including the earthen floors with burned wooden foundations and collapsed wall structures, in Trench 4 no similar structures were registered, indicating that the peripheral part of the settlement was excavated here. This assertion is further confirmed by the results of geophysical research which clearly indicates the absence of similar structures in this part of the site (Fig. 7). Nonetheless, in the oldest settlement horizon, which was probably contemporaneous with *horizon 0* in Trenches 1 and 2, the remains of two structures were registered, to which the accumulations of daub, as well as the remains of carbonized seeds – probably held in the ceramic vessels found in the context of *Structure 9* – testify. Based on their composition, the Early Iron Age layers (SU 494, SU 406 and SU 405) from Trench 4 are similar to those from *horizon 1* of Trench 2 with a high quantity of pottery and animal bones and fire-places and post-holes which may indicate the existence of above-ground structures with vertical posts as the base of the walls, for which the floor-plan could not be reconstructed due to insufficient information. In Trench 4, as in Trench 2, no settlement horizons from the Late Iron Age were registered, confirming the previously stated hypothesis that the settlement from the end of the 4rd to 1st centuries BC at Pogorelac was considerably smaller than the Early Iron Age one and that it was situated closer to the Kupa, at least its current course, and on this river's left bank.

This is followed by the Roman-period settlement layer with post-holes and a ditch that indicates the existence of a structure with rectangular floor plan, with the base of the walls consisting of intered wooden posts. Remains of construction material, mainly tegula fragments, and a high quantity of animal bones and pot-sherds, were gathered in the Roman-period layers, dating settlement at this site to the 2nd and 3rd centuries.

Cemetery

The remains of the Late Roman cemetery of Siscia constitutes the youngest archaeological phase of use in the excavated part of Pogorelac. Its existence was confirmed by three skeletal graves found during excavations in Trenches 2 and 3, twenty graves in Trench 4, and sixty five graves examined during a rescue excavation of the collector for the Zeleni Brijeg settlement's drainage system connected to the Lađarska collector, which was conducted by the company Arheolog d.o.o. in 2013 and 2014, roughly fifty meters west of Trench 4 (parallel to V. Janić Capo Avenue).[52] Interestingly, during excavations in 2014 in the eastern section of Trench 4, not a single grave was registered, with the exception of several scattered human bones, while during research in 2015-2017 as many as twenty skeletal burials turned up (graves 4-23) (Fig. 29).

52 Nakić 2014.



SLIKA 29. Nacrt istraženog dijela kasnoantičkoga groblja u Sondi 4 (nacrt izradili M. Mađerić, I. Drnić).

FIGURE 29. Map of the excavated part of the Late Roman cemetery in Trench 4 (drawing made by M. Mađerić, I. Drnić).

Navedeni grobovi pripadaju zapadnom groblju antičke Siscije, nedavno definiranom u literaturi iako su pojedini slučajni nalazi iz druge polovice 20. stoljeća ukazivali na njezino postojanje.[53] Groblje se formiralo na sjeveroistočnom dijelu Pogorelca uz prometnicu koja je vjerojatno spajala most na Kupi uz gradske zidine s mostom koji se nalazio na ušću Odre u Kupu. Prilozi i dijelovi nošnje iz dosad istraženih grobova, kao i pogrebni ritus (isključivo kosturno pokapanje), datiraju ovo groblje u kasnoantičko razdoblje, od kraja 3. do prve polovice 5. stoljeća.[54]

Većina grobova nije imala grobne konstrukcije, a sporadični nalazi željeznih čavala ukazuju na ukope u drvenim sanducima. Grobne konstrukcije u obliku grobnice, izgrađene od tegula, zabilježene su kod grobova 5 i 17. U slučaju groba 4 i 22 korištena je jedna ili nekoliko tegula, položenih uz glavu, noge i bočne stranice za označavanje groba. Grobovi su imali različite orijentacije i često se nalaze jedan preko drugoga, ali oštećenje starijega

These graves belong to the western necropolis of Roman-period Siscia, recently defined in the literature even though individual chance finds from the latter half of the 20th century pointed to its existence.[53] The necropolis was formed in the north-eastern section of Pogorelac next to the road which probably connected the bridge on the Kupa River, situated next to the western city wall, to the bridge at the mouth of the Odra River into the Kupa. The goods and elements of costume from the thus far examined grave goods and the burial rites (exclusively skeletal interments) date this necropolis to Late Antiquity, from the end of the 3rd to the first half of the 5th century.[54]

Most of the excavated graves did not have construction elements, while the sporadic finds of iron nails indicate burials in wooden coffins. Graves constructed like tombs made of tegulae were registered at graves 5 and 17. In the case of graves 4 and 22, one or several tegulae were used, laid next to the head, feet and lat-

53 Baćani, Tomaš Barišić 2018, 194-210.
54 Baćani, Tomaš Barišić 2018, 211-231.

53 Baćani, Tomaš Barišić 2018, 194–210.
54 Baćani, Tomaš Barišić 2018, 211-231.

groba mlađim ukopom zabilježeno je samo u slučaju groba 13, koji je uništio donje ekstremitete kostura iz groba 18 te groba 20, kod kojega je ukop groba 15 uništio kosti stopala. Vrlo zanimljiv ukop predstavlja grob 9, orijentacije sjeverozapad – jugoistok, u kojemu je kostur juvenilne osobe u dobi od 11 do 12 godina, u zgrčenom položaju položen na desni bok na prostirku od ulomaka keramičkih posuda. Također, u iskopavanju je zabilježena i suhozidna konstrukcija (SJ 418) orijentacije sjever – jug, građena od nepravilnog kamenja i ulomaka tegula. Iako se njezina funkcija ne može sa sigurnošću utvrditi, jedna od mogućih interpretacija, uzevši u obzir arheološki kontekst, definirala bi suhozidnu konstrukciju kao dio temelja ograde grobne parcele, koje su potvrđene na brojnim rimskim grobljima, uključujući jugoistočno groblje Siscije. Svi su grobovi bili ukopani u prethodno opisani rimski naseobinski sloj, s tim da su najdublji ukopi djelomično ušli i u stariježeljenodobne slojeve.

U četrnaest su grobova zabilježeni dijelovi nošnje pokojnika i grobni prilozi karakteristični za kasnoantička groblja u Panoniji 4. i prve polovice 5. st. U svrhu datacije ovoga dijela kasnoantičkog, zapadnoga groblja rimske Siscije, analiziran je materijal iz nekoliko grobova.

U grobu 5 bilo je pokopano dijete u dobi od 1,5 do 2 godine. Grobna je kostrukcija bila izgrađena od tegula, a kostur je u predjelu prsa i nogu bio prekriven s nekoliko ploča od bijelog pješčenjaka (T. 17). Uz desnu su se ruku nalazila dva ulomka narebrene željezne narukvice četvrtastog presjeka (T. 17: 1). Radi se o karakterističnom elementu ženske nošnje 4. i prve polovice 5. st. koji nalazimo na brojnim grobljima u Panoniji. Primjerice, na Štrbincima su pronađene u grobovima 19 (ukrašena perlama od bakrene slitine), 62 (okrugli presjek, neukrašena), 116 (narebrena s perlama od bakrene slitine), 121 (narebrena) i 131 (narebrena).[55] Uz lijevu ruku nalazio se ulomak glatke koštane narukvice trakastog presjeka, s jednom zakovicom od bakrene slitine (T. 17: 2). Kao i slučaju željeznih narukvica, radi se o tipičnom predmetu kasnoantičkog razdoblja s velikim brojem poznatih primjerka, uključujući Zmajevac[56] i Štrbince. U interpretaciji ovih predmeta B. Migotti navodi da u 4. st. na prostoru Panonije dolazi do procvata proizvodnje koštanih predmeta, što se posljedično odrazilo na broj narukvica u tadašnjim grobljima, pri čemu se pretpostavlja postojanje niza lokalnih radionica.[57] U pravilu su nošene na lijevoj ruci, a nalazimo ih isključivo u grobovima žena i djevojčica. Oko lubanje pokojnika iz groba 5 pronađeno je šest sitnih valjkastih perli izrađenih od plavog (4 kom.) i bijelog (2 kom.) stakla (T. 17: 3-5). Slične su se perle nalazile i u grobovima 6 (4 kom.), 10 (9 kom.) i 13 (3 kom.) iz Sonde 4, što je zanimljivo, s vrlo malim brojem primjeraka. Za usporedbu, u nizu štrbinačkih grobova (19, 45, 87, 95 i dr.), datiranih u 4. i prvu polovicu 5. st., nalazimo ogrlice koje su sastavljene od znatno većeg broja perli, uključujući primjerke morfološki identične navedenim sisačkim perlama.[58] Između

eral side to mark the grave. The graves had differing orientations and were often next to each other, but the damage to an earlier grave due to a subsequent burial was registered only in the case of grave 13, which destroyed the lower extremities of the skeleton from grave 18, and grave 20, which had the bones of the feet destroyed by the digging of grave 15. A very interesting burial is grave 9, with NW-SE orientation, containing the skeleton of a juvenile, aged 11-12, curled on the right side and lying on a mat of potsherds. Furthermore, during excavations a stacked stone structure (SU 418) made of irregular stones and tegula fragments, with north-south orientation, was also registered. Even though its function cannot be ascertained with any certainty, one of the possible interpretations, taking into consideration the archaeological context, would define the stacked stone construction as a part of the foundations of the grave plot's fence, which have been confirmed at numerous Roman cemeteries, including the south-east necropolis of Siscia. All of the graves were dug into the previously described Roman settlement layer, although the deepest burials partially entered the Iron Age layers as well.

In fourteen graves, elements of costume of the deceased and grave goods typical of Late Roman cemeteries in Pannonia in the 4th and first half of the 5th century were registered. The material from several graves was analysed for the purpose of dating this section of the Late Roman western necropolis of Siscia.

For example, in grave 5, a child aged 1.5-2 years was buried. The grave construction was made of tegulae, while the skeleton was covered with several white sandstone tiles at the chest and legs (Pl. 17). Next to the right arm there were two fragments of ribbed iron bracelets with rectangular cross-section (Pl. 17: 1). This was a typical element of women's costume of the 4th and first half of the 5th century which has been found in numerous cemeteries in Pannonia. They were found, for example, at Štrbinci, in graves 19 (decorated with copper-alloy beads), 62 (round cross-section, unadorned), 116 (ribbed with copper-alloy beads), 121 (ribbed) and 131 (ribbed).[55] Next to the left arm, there was a fragment of a smooth bone bracelet with linear cross-section, and with a rivet made of copper alloy (Pl. 17: 2). As in the case of iron bracelets, this is a typical Late Roman item with a high number of known examples, including Zmajevac[56] and Štrbinci. In the interpretation of these items, B. Migotti stated that there was a boom in the production of bone items in the territory of Pannonia in the 4th century, which was consequently reflected in the number of bracelets in contemporaneous cemeteries, wherein the existence of a series of local workshops has been hypothesized.[57] They were worn on the left arm as a rule, and they have been found exclusively in the graves of woman and girls. Six tiny cylindrical beads made of blue (4 pcs.) and white (2 pcs.) glass (Pl. 17: 3-5) were found around the skull in grave 5. Similar beads were found in graves 6 (4 pcs.), 10 (9 pcs.) and 13 (3 pcs.) from Trench 4,

55 Migotti, Perinić 2011, 113-114, T. 13: sl. 2; Migotti 2007, 167, T. 8: sl. 2; Migotti, Leleković 2013, 236, 239, 248, T. 1: 5, T. 3: 6, T. 25: 1, T. 9: 5.

56 Filipović 2010, grob 90 (kat. br. 84), grob 157 (kat. br. 119-121).

57 Migotti, Perinić 2001, 159; Migotti 2004, 187; Migotti, Leleković 2013, 231.

58 Migotti, Perinić 2001, 114, T. 13: Sl. 5; Migotti 2004, 168-171, T. 14: 10: Migotti 2009, 131, 137, T. 19: Sl.3, T. 23: 3 i dr.

52 Nakić 2014.

55 Migotti, Perinić 2011, 113-114, Pl. 13: Fig. 2; Migotti 2007, 167, Pl. 8: Fig. 2; Migotti, Leleković 2013, 236, 239, 248, Pl. 1: 5, Pl. 3: 6, Pl. 25: 1, Pl. 9: 5.

56 Filipović 2010, grave 90 (cat. no. 84), grave 157 (cat. no. 119-121).

57 Migotti, Perinić 2001, 159; Migotti 2004, 187; Migotti, Leleković 2013, 231.

tegula nalazio se štapić trakastog presjeka, dužine 1,8 cm, koji bi na osnovu analogija iz groba 17, koje su pronađene uz lijevu i desnu stranu pokojničine lubanje, mogao predstavljati dio naušnice (T. 17: 6).

U spomenutom grobu 9 na rukama pokojnika nalazile su se dvije narukvice izrađene od bakrene slitine (T. 18: 2-3), a uz lijevu stranu lubanje željezni klin. Prva narukvica, pronađena na desnoj ruci, ima obruč okruglog presjeka i otvorene, raskovane krajeve uz čije se rubove nalaze urezane linije. Također, na jednom dijelu narukvice nalazi se ukras od osam kratkih urezanih linija. Slične su narukvice pronađene u grobovima 45, 87, 105, 113, 125 i 157 na Štrbincima, a datirane su u 4. i prvu polovicu 5. st.[59] Druga narukvica, trakastog presjeka, otvorenih krajeva, ukrašena je nizom utisnutih motiva točke i kose crte. Ulomci narukvica trakastog presjeka, ukrašenih različitim motivima (klepsidra, krug s točkom), zabilježeni su u štrbinačkim grobovima 74 i 84, dok primjerak trakastog presjeka iz groba 106 ima mehanizam za zakapčanje, sastavljen od perforacije na jednom kraju i kukice na drugom.[60] Datacija je ovih predmeta identična prethodno opisanim narukvicama s raskovanim krajevima.

U grobu 13, bez tragova grobne arhitekture, bila je pokopana ženska osoba u dobi između 35 i 45 godina, sa šupljom narukvicom rastavljenih krajeva od bakrene slitine na desnoj (T. 19: 1) i ulomcima koštane narukvice na lijevoj podlaktici (T. 19: 2). Gotovo je identična šuplja narukvica pronađena na lijevoj ruci pokojnice iz groba 113 iz Štrbinaca i datirana je u prvu polovicu 5. st.[61] Ulomci neukrašene koštane narukvice ovalnog su presjeka i spajani su zakovicama od bakrene slitine. Uz lijevu stranu lubanje nalazila su se dva ulomka naušnice, izrađena od žice bakrene slitine, a između rebara i tri cilindrične perle od zelenog stakla. Četvrta, koštana perla bačvastog oblika, pronađena je uz lubanju prilikom pranja koštanog materijala. Veći je broj koštanih perli zabilježen, primjerice, u grobu 60 iz Zmajevca u kojemu je bilo pokopano dijete u dobi od 4 do 5 godina.[62]

Za dataciju istraženog dijela groblja važna je i skupina grobova otkrivenih u južnom dijelu sonde u kojoj se nalaze četiri kosturna ukopa, položena jedan iznad drugoga, bez ijednog oštećenja starijih grobova mlađim ukopima (sl. 29). Naime, kao prilozi u najstarijem grobu 21, u kojemu je bila pokopana žena u dobi između 40 i 45 godina, nalazile su se dvije keramičke posude (zdjela i vrč) (T. 21: 5-6) i stakleni balzamarij (T. 21: 4), položeni uz lijevu nogu, a dijelovima nošnje pripada deset bikoničnih perli od plavog (9 kom.) i zelenog (1 kom.) stakla (T. 20: 3), pronađenih s donje strane lubanje. Također, na zdjelici su pokojnice pronađena dva novca: AE3 cara Konstansa, kovan između 348. i 350. godine u Solunu (T. 20: 1), te AE2 cara Decencija, kovan 351. god. u Akvileji (T. 20: 2), koji

interestingly with a very small number of examples. By way of comparison, the Štrbinci graves (19, 45, 87, 95 and others), dated to the 4th and first half of the 5th century, contained necklaces made of a considerably high number of beads, including examples morphologically identical to the aforementioned beads in Sisak.[58] A small rod with linear cross-section, 1.8 cm long, was found between the tegulae, which based on analogies from grave 17, found to the left and right of the skull of the deceased, may have been earring (Pl. 17: 6).

In the aforementioned grave 9, two copper-alloy bracelets were found on the arms of the deceased (Pl. 18: 2-3), and on the left side of the skull an iron peg. The first bracelet, found on the right arm, had a hoop with round cross-section and open, hammered ends with lines engraved on the edges. Additionally, one part of the bracelet features a decoration of eight short engraved lines. Similar bracelets were found in graves 45, 87, 105, 113, 125 and 157 at Štrbinci, and dated to the 4th and first half of the 5th century.[59] Another bracelet, with linear cross-section, has open ends decorated with a series of impressed dot and skewed-line motifs. Pieces of bracelets with linear cross-section and decorated with various motifs (clepsydrae, circles with dots) were registered in Štrbinci graves 74 and 84, while an example with linear cross-section from grave 106 had a clasping mechanism composed of perforations on one end and small hooks on the other.[60] The dating of these items is identical to that of the previously described bracelets with hammered ends.

A woman, between 35 and 45 years of age, was interred in grave 13, without traces of grave architecture, with a hollow copper-alloy bracelet having separated ends on her right forearm (Pl. 19: 1) and pieces of a bone bracelet on her left forearm (Pl. 19: 2). A virtually identical hollow bracelet was found on the left arm of a deceased woman in grave 113 at Štrbinci and dated to the first half of the 5th century.[61] The fragments of unadorned bone bracelets have an oval cross-section and are connected by copper alloy rivets. Along the left side of the skull, there were two fragments of earring made of copper alloy, and between the ribs there were also three cylindrical beads made of green glass. The fourth, bone bead with a barrel shape was found next to the skull when the osteological materials were being washed. A high number of bone beads were registered, for example, in grave 60 from Zmajevac, in which a child aged 4-5 was buried.[62]

A group of graves discovered in the southern part of a trench in which there were four skeletal burials laid one next to the other without any damages to earlier graves by subsequent burials is also important to date the excavated part of the cemetery (Fig. 29). The goods in the oldest grave 21, in which a woman 40 to 45

59 Migotti 2004, 166, T. 13; Migotti 2009, 133, 144, T. 19: Sl. 8, T. 30: Sl. 4, T. 35: Sl. 1; Migotti, Leleković 2013, 244, T. 5: Sl. 6-7; Migotti, Leleković 2017, T. 6: Sl. 2-3.

60 Migotti, Perinić 2001, 107, T. 4: sl. 4; Migotti 2009, 123,129, 145, sl. 11: 7, T. 16: sl. 6, T. 31: sl. 6.

61 Migotti 2009, 149, T. 34: sl. 5.

62 Filipović 2010, grob 60 (kat. br. 15).

63 Na planu groblja označeni su zelenom bojom!

58 Migotti, Perinić 2001, 114, Pl. 13: Fig. 5; Migotti 2004, 168-171, Pl. 14: 10: Migotti 2009, 131, 137, Pl. 19: Fig. 3, Pl. 23: 3 and others.

59 Migotti 2004, 166, Pl. 13; Migotti 2009, 133, 144, Pl. 19: Fig. 8, Pl. 30: Fig. 4, Pl. 35: Fig. 1; Migotti, Leleković 2013, 244, Pl. 5: Fig. 6-7; Migotti, Leleković 2017, Pl. 6: Fig. 2-3.

60 Migotti, Perinić 2001, 107, Pl. 4: Fig. 4; Migotti 2009, 123,129, 145, Fig. 11: 7, Pl. 16: Fig. 6, Pl. 31: Fig. 6.

61 Migotti 2009, 149, Pl. 34: Fig. 5.

62 Filipović 2010, grave 60 (cat. no. 15).

predmetni grob datiraju u sredinu, odnosno vjerojatnije u drugu polovicu 4. st. Iznad glave pokojnice nalazila se veća željezna spojnica koja je vjerojatno bila dio lijesa, na što upućuju sačuavni ostatci drveta (T. 21: 7). Posljedično, ostala tri groba, koji se nalaze iznad opisanoga groba 21, a to su redom grobovi 10, 6 i 8, uzevši u obzir vrijeme potrebno za razgradnju tijela i drvenog lijesa, ukopana su u posljednjoj četvrtini 4. te početkom, odnosno u prvoj polovici 5. st. Pritom najmlađi grob 8 ima istu orijentaciju zapad – istok, kao i najpliće ukopani i najslabije očuvani grobovi 4 i 7 (sl. 29).[63]

U istraživanju rimskoga naseobinskog sloja, u koji su bili ukopani opisani grobovi, pronađeno je nekoliko numizmatičkih nalaza koji zasigurno pripadaju kasnoantičkoj fazi korištenja ovoga prostora dok je imao funkciju groblja, a u zemlju su mogli dospjeti slučajno ili kao dio pogrebnog rituala. Riječ je o antoninijanu cara Aurelijana, kovanom između 271. i 274. u Sisciji (T. 15: 7),[64] AE3 cara Valensa, kovanom između 364. i 367. godine u Akvileji (T. 15: 8)[65] te AE3 careva Valentinijana I. ili Teodozija I., kovanom između 364. i 395. (T. 15: 9).

Arhitektura željeznodobnih nastambi

Na osnovu podataka prikupljenih u istraživanju od 2012. do 2017. godine mogu se pretpostaviti dva (možda i tri!) tipa drvene gradnje na istraženom dijelu željeznodobnog naselja na Pogorelcu. Prvi tip predstavlja gradnja s okomitim, u zemlju zabijenim stupovima koji su činili zidnu osnovu objekta. Postojanje objekata građenih ovom tehnikom potvrđuju ukopi za stupove zabilježeni u naseobinskom *horizontu 1* iz starijega željeznog doba u Sondi 2 te na periferiji naselja u Sondi 4. Zbog relativno male istražene površine u obje sonde, navedene stupove nije bilo moguće povezati u sigurne cjeline koje bi tvorile tlocrte pojedinih građevina. Nešto je jasnija situacija zabilježena u *horizontu 1a* u Sondi 2, gdje su u sterilan sloj žute gline bile ukopane tri rupe od stupova, polukružno postavljene oko ovalnog ognjišta, promjera 60 cm. Također, rupe za stupove zabilježene su u mlađoj fazi *Objekta 3* u Sondi 1, kod kojega su se u obnovljenom podu od žuto-zelene gline nalazili ukopi za stupove (sl. 15: 3-4). Naime, u sjevernom dijelu objekta nalazila su se četiri, a u središnjem i jugozapadnom dijelu po jedan ukop od kojih su SJ 86, 92 i 94 mogli činiti ukope za stupove što su činili osnovu zidne, odnosno krovne konstrukcije. Kod ovog tipa gradnje prostor između nosivih stupova ispunjava se prepletom od šiblja koji se premazuje kućnim lijepom, a koji je potvrđen masivnim slojem urušenja koji je u potpunosti pre-

years of age was buried, included two ceramic vessels (a bowl and jug) (Pl. 21: 5-6) and a glass balsamarium (Pl. 21: 4), laid next to the left leg, while the elements of costume included ten biconical beads made of blue (9 pcs.) and green (1 pc.) glass (Pl. 20: 3), found on the lower side of the skull. Furthermore, two coins were found next to the deceased woman's pelvis: AE3 of Emperor Constans, minted between 348 and 350 in Thessalonica (Pl. 20: 1), and AE2 of Emperor Decentius, minted in Aquileia in 351 (Pl. 20: 2), which date the grave to the mid-, or more likely the latter half of the 4th century. Above the deceased woman's head there was a large clamp which was probably part of a coffin indicated by remains of the wood. Consequently, the remaining three graves, which are above this grave 21, graves 10, 6 and 8, taking into account the time necessary for the decomposition of bodies and wooden coffins, were dug in the final quarter of the 4th century, or in the first half of the 5th century. The most recent grave 8 has the same west-east orientation as the shallowest and most poorly preserved graves 4 and 7 (Fig. 29).[63]

In the excavation of the Roman settlement layer, in which the aforementioned graves had been dug, several numismatic finds were discovered which belong to the Late Roman phase of use of this area when it had a functioning cemetery, and they may have ended up in the ground either by chance or as a part of burial rites. These are an antoninianus of Emperor Aurelian, minted in Siscia between 271 and 274 (Pl. 15: 7),[64] an AE3 of Emperor Valens, minted in Aquileia between 364 and 367 (Pl. 15: 8)[65] and an AE3 of Valentinian I or Theodosius I, minted between 364 and 395 (Pl. 15: 9).

The architecture of Iron Age dwellings

Based on the data gathered during excavations conducted from 2012 to 2017, the existence of two (and possibly three!) types of ancient construction may be assumed in the excavated section of the Iron Age settlement at Pogorelac. The first type constitutes construction with vertical posts driven into the ground which formed the basis of the walls. The existence of buildings constructed by this technique have been confirmed by post-holes that were registered in settlement *horizon 1* from the Early Iron Age in Trench 2 and in the settlement's periphery in Trench 4. Due to the relatively small excavated surfaces, in both trenches these posts could not be linked to any certain whole unit that could have formed the layouts of individual buildings. A somewhat clearer situation was recorded in *horizon 1a* in Trench 2, where three post-holes were dug into the sterile, yellow clay layer in a semi-circle around an oval hearth with a diameter of 60 cm. Additionally, post-holes were registered in the later phase of *Structure 3* in Trench 1, in which the post-holes were dug in the restored yellow-green clay floor (Fig. 15: 3-4). Namely, in the northern section of the structure there were four holes, and one each in the central and south-western sections, of which SU 86, 92 and 94 may have been post-holes that formed the basis for the wall and also roof construction. In this type of construction,

64 RIC 5/1, 284, br. 174.

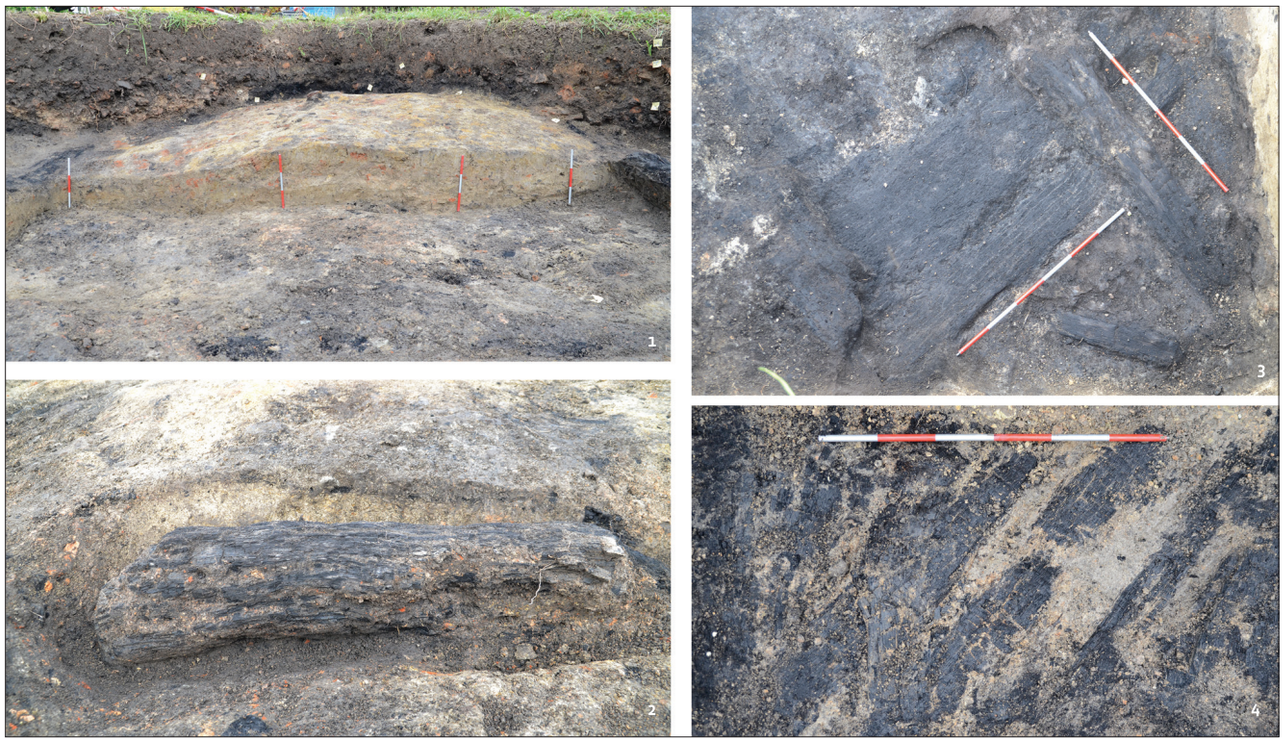
65 RIC 9, 95, 9b(xa).

66 Npr. nastambe 1 i 6 (1. naseobinska faza), 1a-b i 10 (2. faza), 17 (4. faza) itd.

63 They are indicated in green on the map of the cemetery!

64 RIC 5/1, 284, no. 174.

65 RIC 9, 95, no. 9b(xa).



SLIKA 30. 1. Presjek poda *Objekta 6* u Sondi 2; 2. Ostaci temeljne grede *Objekta 6* u Sondi 2; 3-4. Ostaci zidne konstrukcije *Objekta 4* u Sondi 2 (snimio I. Drnić).

FIGURE 30. 1. Cross-section of the floor in *Structure 6* in Trench 2; 2. Remains of the foundation beam of *Structure 6* in Trench 2; 3-4. Remains of wall construction of *Structure 4* in Trench 2 (photo by I. Drnić).

krio ostatke poda (SJ 64) (sl. 11-12). Slično konstrukcijsko rješenje s podovima od nabijene zemlje i okomitim stupovima zabijenima u tlo zabilježeno je na nizu objekata na ljubljanskoj Tribuni, u svim kasnobrončanodobnim i stariježeljeznodobnim fazama naselja od kojih je 5. faza, datirana u certoški i negovski stupanj doljenjske halštatske skupine, više-manje istovremena s 2. i 3. naseobinskim horizontom u Sondi 1, *horizontima 1-3* u Sondi 2 i *horizontima 0* i *1* u Sondi 4.[66]

Drugi, iz tehničke perspektive napredniji tip, predstavlja gradnja s horizontalno postavljenim temeljnim gredama na koje se postavljaju okomiti stupovi kao konstrukcijska osnova zidne plohe (slo. *sohasta gradnja*, njem. *Ständerbau*, engl. *postpad construction*).[67] Vodoravne temeljne grede mogu biti postavljene na kamene temelje izrađene u suhozidnoj tehnici, koji su zabilježeni na nizu jugoistočnoalpskih lokaliteta, od Mosta na Soči,[68] preko ljubljanske Tribune,[69] do Kučara u Beloj Krajini[70] i Poštele u Štajerskoj,[71] a koji su služili kao izolacija od vlage, što je posljedično

the spaces between the load-bearing posts was filled with interwoven branches (wattle) that were coated with daub, which was confirmed in the massive layer of rubble that entirely covered the remains of the floor (SU 64) (Fig. 11-12). A similar construction solution with packed-earth floors and vertical posts driven into the ground was recorded in a series of structures at the Tribuna site in Ljubljana in all Late Bronze Age and Early Iron Age phases of the settlement, of which the fifth phase, dated to the Certosa and Negova phases of the Dolenjska Hallstatt group, is more or less contemporaneous with the second and third settlement horizons in Trench 1, *horizons 1-3* in Trench 2, and *horizons 0-1* in Trench 4.[66]

The second, technically more advanced type is post and pad construction, involving horizontally laid foundation beams on which vertical posts are set as the construction basis for the wall surfaces (Slo. *sohasta gradnja*, Ger. *Ständerbau*).[67] The horizontal foundation beams may be placed on a stone foundation made in

(Vojakovič 2013, 37-38, 44-45, 79-81, 183-185, 193, sl. 15, 20, S. 38-39, 100-102, 107, sažetak: 300-302).

67 Dular 2008, 340, Sl. 4-5a; Vojakovič 2013, 303-304, sl. 155.

68 Svoljšak, Dular 2016.

69 Vojakovič 2013, 303-304, sl. 155.

70 Dular, Ciglenečki, Dular 1995, 33-38.

71 Teržan 1990, 31.

66 E.g. dwellings 1 and 6 (first settlement phase), 1a-b and 10 (second phase), 17 (fourth phase), etc. (Vojakovič 2013, 37–38, 44–45, 79–81, 183–185, 193, Fig. 15, 20, S. 38–39, 100–102, 107, summary: 300-302).

67 Dular 2008, 340, Fig. 4-5a; Vojakovič 2013, 303–304, Fig. 155.

SLIKA 31. Komadi kućnog lijepa iz urušenja Strukture 6 (snimio I. Drnić).

FIGURE 31. Pieces of house daub from wall construction of Structure 6 (photo by I. Drnić).

utjecalo na sporije propadanje drveta i produženi vijek nastambe. Također, zabilježeni su i primjeri gdje su građevine postavljene izravno na tlo, što utječe na brže propadanje drvene građe, kao što je slučaj s kućom B na lokalitetu Kučar, ali i sisačkim objektima.[72] Nažalost, zbog malih dimenzija sondi na Pogorelcu, ni jedan stambeni objekt nije u cijelosti istražen, stoga se interpretacija, kao i pokušaj rekonstrukcije, temelji na nepotpunim podacima. Ipak, registrirani konstrukcijski elementi dopuštaju određene zaključke o načinu gradnje. Na osnovu sačuvanih podnica i elemenata drvene građe te ostataka kućnog lijepa zaključujemo da je u slučaju *Objekata 2* u Sondi 1 te *Objekata 4 - 6* u Sondi 2 vjerojatno korištena *postpad construction,* što će biti eleborirano u nastavku teksta. Kod *Objekta 1* i ne raspolažemo s dovoljno podataka za detaljniju interpretaciju pa u obzir dolaze dva tipa gradnje: građevinska tehnika *postpad construction* i tzv. blokovska gradnja (njem. *Blockbau*, engl. *corner timbering, baulk wall construction*) kod koje se zidovi grade vodoravnim polaganjem balvana / greda koje se na uglovima objekta vežu križnom vezom.[73] Također, u slučaju starije faze *Objekta 3* nisu zabilježeni ukopi od stupova pa možemo pretpostaviti jednu od dvije navedene gradnje. Važno je istaknuti da opisane graditeljske tehnike nisu međusobno isključive pa, primjerice u slučaju naselja na Tribuni, imamo primjere kombinirane gradnje s tragovima horizontalnih temeljnih gredi, suhozidnih temelja i ukopa za stupove koji su mogli nositi krovnu konstrukciju.[74]

the dry stone stone technique, which have been registered at a series of south-eastern Alpine sites, from Most na Soči,[68] through Ljubljana's Tribuna,[69] to Kučar in Bela Krajina[70] and Poštela in Styria,[71] which served as insulation from moisture, consequently ensuring the slower decay of the lumber and a longer-life for the dwelling. Moreover, examples have been registered in which the structures were set directly on the ground, which led to the more rapid deterioration of the lumber, as was the case in *house B* at the Kučar site, but also *Structures 4-6* from Sisak.[72] Unfortunately, due to the small dimensions of the trench at Pogorelac, not a single residential structure has been entirely excavated, so interpretations and any attempts at reconstruction are based on incomplete data. Even so, the registered construction elements allow for certain conclusions on the construction technique. Based on the preserved floors and wooden construction elements, as well as remains of daub, we have concluded that the post and pad technique was used in the cases of *Structure 2* in Trench 1 and *Structures 4-6* in Trench 2, which will be elaborated below. We do have not at our disposal sufficient data for *Structure 1* to make a detailed interpretation, so two types of construction may be considered: post and pad and so-called corner timbering (also baulk wall construction, Germ. *Blockbau*), wherein the walls were built by laying logs horizontally and connecting them at the corners with cross-ties.[73] Additionally, in the case of the earlier phase of *Structure 3*, no post-holes were registered, so we may assume

72 Dular, Ciglenečki, Dular 1995, 39-45.
73 Dular 2008, 341, sl. 2B-C
74 Vojakovič 2013, 304-305.

68 Svoljšak, Dular 2016.
69 Vojakovič 2013, 303-304, Fig. 155.
70 Dular, Ciglenečki, Dular 1995, 33–38.
71 Teržan 1990, 31.
72 Dular, Ciglenečki, Dular 1995, 39–45.
73 Dular 2008, 341, Fig. 2B-C

Objekte građene u *postpad construction* tehnici s Pogorelca karakteriziraju sljedeći konstrukcijski elementi:

1. Podovi od žute nabijene gline, koja je funkcionirala kao izolator, zabilježeni su u *Objektima 1 – 7*. Debljina je podova varirala od nekoliko centimetara kod *Objekta 4* do 20 do 30 cm u slučaju *Objekta 6* (sl. 30: 1). Isto je konstrukcijsko rješenje zabilježeno na nekoliko objekata na ljubljanskoj Tribuni, gdje se za izradu podova glina koristi u kombinaciji s lomljenim kamenom i oblucima.[75]

2. Ostaci spaljene drvene građe u obliku horizontalno položenih balvana / greda zabilježeni su u slučaju *Objekata 2* te *Objekata 4 – 7*. U kontekstu su *Objekta 1* zabilježeni ostaci spaljenog drveta, ali su malobrojni i teško ih je jasnije definirati u konstrukcijskom smislu. Kod *Objekta 3* nisu zabilježeni ostaci drvene arhitekture, ali se to možda može objasniti drugačijim tipom gradnje, s okomitim stupovima, čiji su tragovi zabilježeni u mlađoj fazi poda.

Činjenica da je kod svih navedenih objekata zabilježen samo jedan red spaljenih greda, navela nas je na razmišljanje da su istraženi sisački kasnohalštatski objekti građeni tehnikom s vodoravno postavljenim temeljnim gredama na koje su bili postavljeni okomiti stupovi kao osnova zidne konstrukcije (sl. 32). Dobar primjer tomu su dio masivnog balvana kružnog presjeka (SJ 220), istraženog u južnom dijelu *Objekta 6,* koji se nalazio tik uz nabijeni pod (sl. 30: 2), te balvan uz zapadni rub istog objekta (SJ 218), kao i dobro očuvan, ali samo u manjem dijelu istražen balvan uz sjeveroistočni rub *Objekta 7* (SJ 207). Kod ovoga tipa drvene gradnje zidne plohe popunjavaju se daskama ili oblicama koje se uglavljuju u okomite stupove nakon čega se zid može premazati i kućnim lijepom (sl. 32: 2-3).[76] Upravo je takva struktura zabilježena u slučaju *Objekta 4,* gdje su u sloju s velikom količinom spaljenog drveta u sjeveroistočnom uglu sonde definirani ostaci dvaju balvana kružnog presjeka, orijentacije sjeveroistok – jugozapad, ispod kojih su se nalazile tanje daske, okomite na balvane, orijentacije sjeverozapad – jugoistok (sl. 30: 2; sl. 32: 2). Cijeli sloj sa spaljenim drvetom bio je prekriven debelim slojem kućnog lijepa, a ispod spaljenog drveta nalazi se tanji sloj žute, nabijene zemlje koji je vjerojatno činio podnicu objekta. Zapadno od opisane situacije nalazila se velika količina spaljenog drveta u kojoj je bilo teško raspoznati konkretne konstrukcijske elemente, ali smo ih ipak definirali na nekoliko pozicija (Sl. 19):

1. ostaci grede uz južni rub građevine, orijentacije sjeverozapad - jugoistok (temeljna greda) (sl. 19: 1-2);

2. na nju paralelna greda uz sjeverni profil (vjerojatno okomiti stup zidne konstrukcije) (sl. 19: 1-2);

3. ostaci triju dasaka uz sjeverni profil, koje su okomite na smjer navedenih gredi, a koje su mogle činiti dio zidne konstrukcije objekta (identično opisanoj situaciji u istočnom dijelu sonde) (sl. 30: 4);

4. ostaci dasaka u središnjem dijelu sonde orijentacije sjever – jug (sl. 19: 1-2).

one of these two construction methods. It is vital to stress that these construction techniques were not mutually exclusive, so, for example, in the case of the settlement at Tribuna, there are examples of combined construction with traces of horizontal foundation beams, stacked stone foundations and post-holes for which may have borne the roof construction.[74]

Structures built using the post and pad technique in Pogorelac are characterized by the following construction elements:

1. Floors made of yellow packed clay, which served as insulation, registered in *Structures 1-7*. The thickness of the floors varied from several centimetres in *Structure 4* to 20-30 cm in the case of *Structure 6* (Fig. 30: 1). The same construction solution was recorded in several structures at Tribuna in Ljubljana, where clay was used in combination with broken stones and pebbles to make the floors.[75]

2. Remains of burned lumber in the form of horizontally laid logs/ beams as registered in the case of *Structure 2* and *Structures 4-7*. In the context of *Structure 1*, the remains of burned wood were registered, but they were scant and it was difficult to more clearly define them in the architectural sense. Wooden architectural remains were not registered in *Structure 3*, but this may perhaps be explained by a different construction technique with vertical posts, traces of which were registered in the later phase of the floor.

The fact that in all of the aforementioned structures only one row of burned beams was registered has prompted us to speculate that the excavated late Hallstatt structures in Sisak were built using the post and pad technique (Fig. 32). A good example of this is the part of a massive log with circular cross-section (SU 220) excavated in the southern part of *Structure 6*, which was situated immediately adjacent to the packed floor (Fig. 30: 2), and the log along the western edge of the same structure (SU 218), and also a well-preserved log, albeit only excavated in small part, in the north-eastern edge of *Structure 7* (SU 207). In this type of wooden construction, the wall surfaces are covered with boards or slats that are secured onto vertical stakes, after which they were coated with daub (Fig. 32: 2-3).[76] Precisely this composition was registered in the case of *Structure 4*, where the remains of two logs with circular cross-section and a NE-SW orientation were defined in the layer with a high quantity of burned wood in the north-eastern corner of the trench, below which there were thin boards, vertical on the logs, with a NW-SE orientation (Fig. 30: 2; Fig. 32: 2). The entire layer with burned wood was covered with a thick layer of daub, and below the burned wood there was a thin layer yellow packed earth which was probably the structure's floor. West of the situation so described was a high quantity of burned wood in which it was difficult to discern any specific construction elements, but they were nonetheless defined at several positions (Fig. 19):

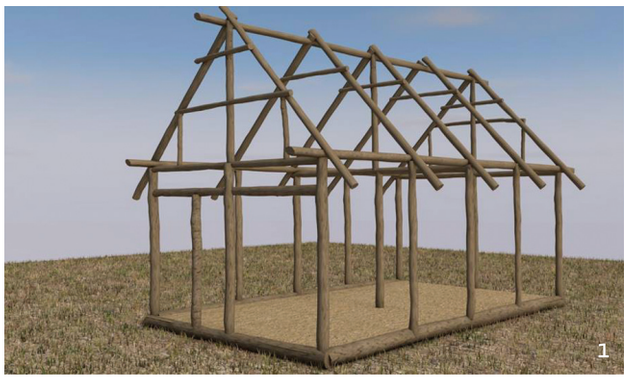
75 Vojaković 2013, primjerice objekt br. 8: 91-94, općenito: 300, sl. 150.

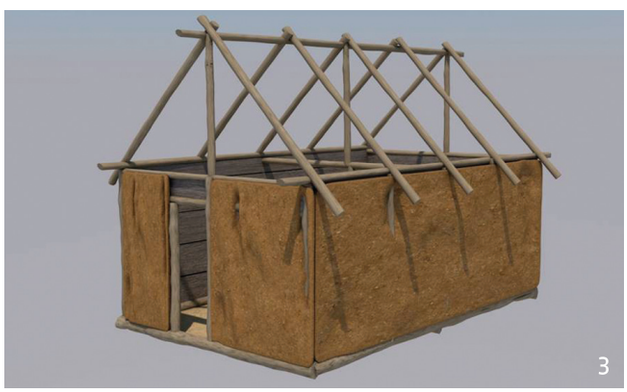
76 Dular 2008, 340, sl. 4-5A.

74 Vojaković 2013, 304-305; Vojaković 2014.

75 Vojaković 2013, for example, structure no. 8: 91-94, in general: 300, Fig. 150.

76 Dular 2008, 340, Fig. 4-5A.





SLIKA 32. 1-4. Idealna rekonstrukcija kuće iz kasnohalštatske faze naselja na Pogorelcu (izradio M. Mađerić).

FIGURE 32. 1-4. Ideal reconstruction of the house from the late Hallstatt phase of the settlement at Pogorelac (made by M. Mađerić).

S obzirom na orijentaciju, opisani spaljeni drveni konstrukcijski elementi u središnjem i sjeverozapadnom dijelu sonde vjerojatno predstavljaju ostatke drugog (zapadnog?) zida *Objekta 4*. Ako smo dobro interpretirali ovu situaciju, opisani balvani su činili okomite stupove zidne konstrukcije, a tanje su daske bile pričvršćene na njih s unutrašnje strane objekta, dok je vanjska strana zidova bila premazana kućnim lijepom. Nakon što je objekt bio zahvaćen požarom, zidna se konstrukcija urušila, pri čemu su daske završile ispod greda, na podu od nabijene zemlje, a sve je prekriveno spaljenim kućnim lijepom.

Dodatnu potvrdu *postpad construction* gradnje nalazimo u kontekstu *Objekta 6,* u jugoistočnom dijelu Sonde 2. Naime, uz južnu stranu *Objekta 6* zabilježeni su ostaci nekoliko paralelnih, užih

1. remains of foundation beams set along the southern edge of the building, with NW-SE orientation (Fig. 19: 1-2);

2. a parallel beam along the northern profile (probably a vertical post from the wall construction) (Fig. 19: 1-2);

3. remains of three boards along the northern profile of Trench 2 that are vertical to the direction of the aforementioned beams, and which may have formed a part of the structure's wall construction (identical to the situation described in the eastern section of the trench) (Fig. 30: 4);

4. the remains of boards in the central part of the trench with north-south orientation (Fig. 19: 1-2).

Given the orientation of the burned wooden construction elements in the central and north-western sections of the trench, they probably constituted the remains of another (western?) wall on *Structure 4*. If this situation has been correctly interpreted, the above-described logs were the vertical posts of the wall construction, while the thin boards were fastened to them from the inside, and the external side of the walls were coated with daub. After the structure caught on fire, the wall collapsed, so that the boards ended up below the beams, on the packed-earth floor, and everything was covered by burned daub.

Additional confirmation of the post and pad technique can be found in the context of *Structure 6*, in the south-eastern corner of Trench 2. Namely, along the southern side of *Structure 6*, the remains of several parallel, narrow boards were registered with pieces of daub next to them *in situ* (Fig. 21: 1-2). A massive vertical wooden beam was perpendicular to them (SU 223), level with the aforementioned foundation beam (SU 220), which may have formed the vertical corner post to which these boards were fastened, and coated with daub on the outside (SU 221 and 222). If this structure has been properly interpreted, this part of the wall construction of *Structure 6* fell outward as a result of a fire.

Due to the small excavated surface in Trench 1, the remains of wooden architecture at *Structure 2* are more difficult to interpret, but in the context of the above-described building technique, it is possible that the wooden elements, which form a sort of rectangular frame, constituted a part of the wall or foundation construction (Fig. 14: 1-2). Furthermore, in case of *Structure 5* from Trench 2, which has only been excavated in small part, the thin remains of boards with NW-SE orientation were recorded, while there were meagre vertically laid remains of a beam on

dasaka uz koje su se nalazili i komadi *in situ* kućnog lijepa (sl. 21: 1-2). Okomito na njih nalazila se masivnija drvena greda (SJ 223), u ravnini sa spomenutom temeljnom gredom (SJ 220), koja je mogla činiti kutni okomiti stup na koji su bile pričvršćene navedene daske koje su s vanjske strane bile premazane kućnim lijepom (SJ 221 i 222). Ako je ova struktura dobro interpretirana, ovaj dio zidne konstrukcije *Objekta 6* uslijed požara se srušio prema van.

Zbog male istražene površine u Sondi 1, ostatke drvene arhitekture kod *Objekta 2* teže je interpretirati, ali u kontekstu opisane gradnje moguće je da drveni elementi, koji čine svojevrstan pravokutan okvir, predstavljaju dio zidne ili temeljne konstrukcije (sl. 14: 1-2). Također, u slučaju *Objekta 5* iz Sonde 2, koji je istražen u vrlo malom dijelu, zabilježeni su tanki ostaci dasaka orijentacije sjeverozapad – jugoistok, dok su se s njihove vanjske strane nalazili skromni, okomito položeni ostaci grede koja je mogla činiti okomitu osnovicu zida na koji su navedene daske bile pričvršćene.

Analize drveta korištenog u gradnji objekata provedene su samo na nekoliko prikupljenih uzoraka, a glavnina posla tek predstoji. U Sondi 1 analiziran je uzorak spaljene drvene grede koja se nalazila uz *Objekt 2,* a ustanovljeno je da se radi o hrastu (*Quercus sect. Quercus*). Preliminarne analize dvaju uzoraka spaljenog drveta iz Objekta 2, provedene na Gozdarskom inštitutu Slovenije, potvrdile su dvije vrste – već spomenuti hrast, ali i smreku, ukazujući na uporabu različitog drveta u gradnji.[77] Primjerice, na nalazištu Tribuna provedene su analize drvene građe na većem broju uzoraka u svim naseobinskim fazama naselja koje su uz sporadičnu pojavu bukve (*Fagus*), javora (*Acer*) i johe (*Alnus*) potvrdile predominaciju uporabe hrasta (*Quercus*) u gradnji nastambi.[78]

3. Nekoliko je puta navedeno da su drveni zidovi nastambi premazivani smjesom blata i organskog materijala, što je potvrđeno masivnim slojevima zidnih urušenja s velikom količinom kućnog lijepa kod svih opisanih objekata istraženih na Pogorelcu, a koji su nastali uslijed uništenja nastambi u požaru. Među njima su pronađeni i komadi s otisnutim tragovima drvene građe, korištene za izgradnju zidnih konstrukcija. Primjerice, tragovi na komadima kućnog lijepa iz SJ 212 i 213, a koje predstavljaju urušenje zida *Objekta 6*, ukazuju na uporabu okruglih balvana / oblica, ali i tesanih greda / dasaka (sl. 31), što je zabilježeno i u ostacima istovremene kasnohalštatske *kuće 2* s lokaliteta Kučar.[79] Pravokutni otisci u kućnom lijepu u zidnom urušenju *Objekta 6* potvrđuju uporabu dasaka kojima su ispunjavane zidne plohe između okomitih stupova, što je dodatna potvrda za uporabu *postpad construction* tehnike u izgradnji objekta.

4. Elementi krovne konstrukcije iznimno su rijetko sačuvani u arheološkim kontekstima, a ista je situacija i u slučaju sisačkoga željeznodobnog naselja. Ipak, koristeći pojedine etnografske primjere, moguće je ponuditi određena konstrukcijska rješenja za pretpovijesnu drvenu arhitekturu. Primjerice, prema rekon-

their external side which may have formed the vertical base of the walls onto which the boards were fastened.

An analysis of the wood used to build the structure was conducted on only a few gathered samples, while most of the work has yet to be done. In Trench 1, a sample of a wooden beam situated next *Structure 2* was analysed, wherein it was ascertained that it was made of oak (*Quercus sect. Quercus*). Preliminary analysis of two samples of burned wood from *Structure 2* confirmed two varieties, the already mentioned oak, but also spruce, indicating the use of different types of wood in construction.[77] For example, at the Tribuna site, the wood materials were analysed in a high number of samples in all settlement phases which, besides the sporadic appearance of beech (*Fagus*), maple (*Acer*) and alder (*Alnus*), confirmed the predominance of the use of oak (*Quercus*) to build dwellings.[78]

3. Several times it has been noted that the wooden walls of dwellings were coated with a mixture of mud and organic materials, which has been confirmed in the massive layers of wall rubble with a high quantity of daub at all of the above-described structures excavated at Pogorelac, which emerged as a result of the destruction of the dwellings in fires. Among them pieces of impressed traces of wooden materials used to build the wall construction were also found. For example, traces on pieces of daub from SU 212 and 213, which constitute the rubble of the wall of *Structure 6*, indicate the use of round logs/slats, but also cut beams/boards (Fig. 31), which was also registered in the remains of the contemporaneous late Hallstatt *house 2* from the Kučar site.[79] Rectangular remains in the daub in the wall rubble of *Structure 6* confirm the use of boards used to fill the wall surfaces between the vertical posts, which further confirms the use of the post and pad technique to build structures.

4. Elements of the roof construction were only exceptionally preserved in archaeological contexts, and the same situation pertained to the case of the Iron Age settlement in Sisak. Even so, by using individual ethnographic examples, it is possible to offer a certain reconstruction of the solutions for prehistoric wooden architecture. For example, according to the reconstruction done by J. Dular in the case of the post and pad technique, the roof structure, i.e., the ridge beam, was set on vertical posts that were situated at the shorter sides of the structure, and may have been additionally supported by posts installed in the structure's interior.[80] An alternative technique may have also been the so-called scissor roof construction, in which the roof is based on two or more pairs of crossed beams fixed to the wall construction.[81] As to the materials used to cover roofs, ethnographic examples indicate several possibilities for the Sisak Iron Age dwellings, and taking into account the climate and geographic milieu, the use of wooden boards or shingles, or straw, should probably be assumed (Fig. 32: 4).

77 Preliminarna analiza je provedena u Gozdarskom inštitutu Slovenije na čemu zahvaljujem kolegi dr. Tomislavu Levaniču.

78 Vojakovič 2013, 293–294, Tab. 89.

79 Dular, Ciglenečki, Dular 1995, 40, sl. 17.

77 The preliminary analysis was conducted at the Slovenian Forestry Institute, for which I would like to thank Tomislav Levanič, Ph.D.

78 Vojakovič 2013, 293–294, Pl. 89.

79 Dular, Ciglenečki, Dular 1995, 40, Fig. 17.

80 Dular 2008, Fig. 4, 5A.

strukciji J. Dulara, u slučaju *postpad* tehnike krovna konstrukcija, odnosno sljemenska greda, postavljena je na vertikalne stupove koji se nalaze na kraćim stranama građevine, a može biti dodatno poduprta stupovima smještenim u unutrašnjosti objekta.[80] Alternativna tehnika mogla bi biti tzv. škarasta krovna konstrukcija kod koje se krov temelji na dva ili više parova križno postavljenih i na zidnu konstrukciju fiksiranih greda.[81] Što se tiče materijala za pokrivanje krovova, etnografski primjeri ukazuju na nekoliko mogućnosti, pri čemu za sisačke željeznodobne nastambe, uzevši u obzir podneblje i geografsko okruženje, vjerojatno treba pretpostaviti uporabu drvenih dasaka ili šindre, odnosno slame (sl. 32: 4).

Zaključak

Rezultati magnetske prospekcije na položaju Sisak–Pogorelac mogu se smatrati uspješnima. Različite razvojne strukture zabilježene su u geofizičkim mjerenjima, na relativno maloj površini od 8 ha. Ovu kompleksnu dijakronijsku naseobinsku aktivnost na ograničenom prostoru karakteriziraju različite orijentacije struktura i njihovih tlocrta te preklapanja. Različite jačine termomagnetskih anomalija ključ su za razumijevanje korištenih konstrukcijskih tehnika koje uglavnom uključuju drvene strukture te veće trake slojeva urušenja u Strukturama 1 i 2. U južnom dijelu istražene površine Strukture 1 - 3 korištene su u jednoj fazi ili su samo djelomično uništene u požaru. Ipak, bez potvrde podataka iz geofizičkog pregleda sondiranjem ili analizom površinskih nalaza, ove strukture ne mogu se preciznije datirati. Zbog gustoće struktura i njihova preklapanja te relativno male pregledane površine, određeni podaci, kao što je kasnoantično groblje u sjevernom dijelu, nisu prepoznati u magnetometarskom mjerenju. Iskopavanja su pružila podatke za datiranje višefazne Strukture 1 u starije i mlađe željezno doba. Također, iz geofizičkih je prikaza vidljivo da strukture istražene u Sondama 1 i 2 imaju istu orijentaciju. Građevine unutar Struktura 2 i 3, uz znatan oprez, mogle bi se interpretirati kao rimskodobne kuće u nizu, dok bi one iz Struktura 4 - 6 te 8 - 11 mogle predstavljati raštrkane kasnoantičke objekte s mogućnošću postojanja groblja u južnom dijelu. Ipak, bez postojanja nalaza i provedenih iskopavanja jednako se može pretpostaviti da predstavljaju postrimske, srednjovjekovne ili recentne naseobinske ostatke na Pogorelcu. Pregledne zone 7 - 10, smještene na jugozapadu Pogorelca, nisu pružile indikacije o postojanju rimskoga vojnog logora niti nekih drugih kompleksnijih građevina koje bi upućivale na intenzivniju antropogenu aktivnost na lokalitetu.

Recentna iskopavanja, koja se provode u razdoblju od 2012. do 2017. godine, u kombinaciji s prethodno opisanim geofizičkim pregledom, proširila su postojeća, relativno skromna znanja o željeznodobnom naselju na poziciji Sisak–Pogorelac. Zabilježeni su različiti horizonti naseljavanja, kao i kronološki različita uporaba prostora unutar naselja, a definirani su i načini gradnje nastambi i djelomično njihova organizacija. Udruživanje ovih podataka s rezultatima zaštitnih arheoloških iskopavanja, provedenih na lijevoj obali rijeke Kupe,[82] dovelo je do pojašnjenja

Conclusion

The results of geophysical magnetic prospection at Sisak–Pogorelac may be evaluated as successful. Various development structures could be recognized from geophysical measurements of a relatively small area of 8 hectares. This complex diachronic settlement activity in a confined space is characterized by various orientations, overlays (superimpositions) and layouts. The divergent strengths of thermoremanent magnetic anomalies are clues to the construction techniques used, which include mostly wooden structures and large strips of debris layers in Structures 1 and 2. In the southern part of the area researched, Structures 1-3 were either used in one single phase or were only partially destroyed by fire. Without verification of the survey data with trenching and/or surveys with analysis of surface finds, these structures cannot be dated. Due to dense development, superimposition of structures and the relatively small area surveyed, some evidence, such as the late Roman burial ground in the north, was not recognized in the magnetic data. The excavations gave the first indication for the dating of the multi-phase Structure 1 to the period of the Early and Late Iron Age. It is visible in the geophysical images that both findings in Trench 1, as well as those in Trench 2, have the same orientation. The buildings in Structures 2 and 3 can, with all due caution, be interpreted as Roman-period strip houses, and those of Structures 4-6 and 8-11 might be Late Roman scattered structures with a possible burial ground in the south. Without finds and excavations they may equally be assumed to represent the remains of a post-Roman/mediaeval/modern settlement in the area of Pogorelac. Surveyed areas 7-10, situated in the southwest of the peninsula, gave no indication of a Roman-period military camp or any other complex building which would imply intense anthropogenic activity at the site.

Recent excavations, conducted in the period between 2012 and 2017, combined with the results of geophysical survey described above, have expanded our current, relatively modest, knowledge of the Iron Age settlement at the position of Sisak–Pogorelac. Different settlement horizons and changing use of space within the settlement have been determined, and the architecture of the buildings, and partly their organization, has also been defined. Through combining these results with those from the rescue excavations on the left bank of the River Kupa,[82] spatial and temporal dynamics of the Iron Age settlement in the present-day city of Sisak have begun to emerge.

Chronologically the earliest settlement layers, from the Early Iron Age, were recorded in Trenches 1, 2 and 4. Excavations in Trench 3 showed no traces from this period, thus defining the western boundary of the settlement. If this data is combined with the results of the excavation of 1992, when remains of wooden architecture were found in the bed of the River Kupa at the position called Keltsko (situated fifty metres northwest of

80 Dular 2008, sl. 4, 5A.

81 Črešnar 2007, 331-332; Dular 2008, 340.

82 Baćani *et al.* 2012, 89–96; Tomaš Barišić 2012; Drnić, Miletić Čakširan 2014; Drnić 2015; Jeroničić, Paro, Kristović 2018, (u pripremi); Škrgulja 2018, (u pripremi).

81 Črešnar 2007, 331–332; Dular 2008, 340.

82 Baćani *et al.* 2012, 89-96; Tomaš Barišić 2012; Drnić, Miletić Čakširan 2014; Drnić 2015; Jeroničić, Paro, Kristović 2018, (forthcoming); Škrgulja 2018, (forthcoming).

prostorne i vremenske dinamike željeznodobnog naselja na prostoru današnjeg Siska.

Kronološki najstariji naseobinski slojevi iz starijega željeznog doba zabilježeni su u Sondama 1, 2 i 4. U iskopavanju Sonde 3 nisu zabilježeni tragovi naseljavanja iz ovoga razdoblja, čime je definirana zapadna granica željeznodobnog naselja. Kada se ovim podacima pridruže rezultati iskopavanja iz 1992. godine, u kojima su u koritu rijeke Kupe na poziciji Keltsko zabilježeni ostaci drvene arhitekture (smješteni 50-ak m sjeverozapadno od Sonde 1),[83] zajedno s materijalom iz kasnoga brončanog te starijega i mlađega željeznog doba, može se zaključiti da se stariježeljeznodobno naselje prostiralo u dužini od oko 200 metara u smjeru istok – zapad. Sjevernu je granicu naselja vjerojatno definirao meandar rijeke Kupe, dok južna granica za sada ostaje nedefinirana. Ipak, Struktura 1, definirana u geofizičkom pregledu (sl. 6-7), koja se poklapa u orijentaciji s istraženim stariježeljeznodobnim drvenim nastambama, završava na parcelama 17/2 i 17/3, 60-ak m južno od Sonde 2. To bi mogla biti južna granica naselja, na osnovu čega se pretpostavlja da se naselje prostiralo 150–200 m u smjeru sjever – jug, ali bez dodatnih iskopavanja u sjevernom i južnom dijelu ova tvrdnja ostaje nepotvrđena. Nadalje, iskopavanja u Sondama 1 i 2, kombinirana s rezultatima geofizičkih mjerenja, ukazuju na to da je naselje na Pogorelcu, ili barem njegov dio, u kasnohalštatskoj fazi (6. – 4. st. pr. Kr.) imao dobro organiziranu unutrašnju strukturu s nastambama organiziranim u pravokutnu mrežu. Slična naseobinska organizacija zabilježena je i na nekim drugim kasnobrončanodobnim i stariježeljeznodobnim naseljima u regiji, primjerice na poziciji Tribuna u Ljubljani.[84]

Zabilježeno je nekoliko uzastopnih stariježeljeznodobnih faza s *horizontom 0,* zabilježenim u Sondama 1, 2 i 4, i s određenom mogućnošću datacije *horizonta 1* u Sondi 1 u stariju fazu starijega željeznog doba (Ha C - D1). No preciznije datiranje još nije moguće zbog nedostatka nalaza koji bi se mogli uže datirati te širokog raspona apsolutnih datuma. Naseobinski *horizonti 1* i *2* pripadaju kasnohalštatskom razdoblju (Ha D2-3), dok *horizont 3*, zabilježen u Sondi 1, potječe s kraja starijeg željeznog doba i prijelazne faze u mlađe željezno doba.

Prisustvo mlađeželjeznodobnih slojeva u Sondi 1, drugačijih depozicijskih karakteristika u odnosu na stariježeljeznodobne, kao i njihov izostanak u ostalim sondama smještenim zapadno od Sonde 1 (sl. 10), ukazuje na mogućnost da se naselje opsegom smanjilo te je u razdoblju od kraja 4. st., odnosno početka 3. st. pr. Kr. pa sve do druge polovice 1. st. pr. Kr. funkcioniralo bliže rijeci Kupi. U isto vrijeme, ili nešto kasnije, naselje se formira i na lijevoj obali rijeke Kupe, gdje do sada nisu zabilježeni tragovi naseljavanja iz starijega željeznog doba. Na osnovu sadašnje razi-

Trench 1),[83] together with archaeological material from the Late Bronze and Early and Late Iron Ages, it can be concluded that the Early Iron Age settlement stretched in an east-west direction over a distance of around 200 metres. The northern boundary of the settlement was probably defined by the meander of the River Kupa, while the southern boundary remains undefined for now. Still, Structure 1, defined in the geophysical survey (Fig. 6–7), which matches, in orientation, the excavated Early Iron Age wooden buildings, stops at land parcels 17/2 and 17/3, some 60 metres south of Trench 2. That could be the southern boundary of the prehistoric settlement, with a total length in the north-south direction of 150–200 metres. So the area of the Early Iron Age settlement at Pogorelac could be roughly estimated at 3–4 ha, but without additional excavations in the northern and southern areas this claim remains untested. Furthermore, excavations in Trenches 1 and 2, combined with the results of the geophysical survey, suggest that the settlement at Pogorelac, at least in part, had well-organized internal structure, with dwellings organized in a rectangular grid, in its late Hallstatt phase (6th–4th century BC). Similar settlement organization has been defined for some other Late Bronze and Early Iron Age settlements in the region: for instance, at the position of Tribuna in Ljubljana.[84]

Several consecutive Early Iron Age settlement phases have been registered in the excavations, with *horizons 0* in Trenches 1, 2 and 4 and *horizon 1* of Trench 1 possibly dated to earlier Hallstatt (Ha C–D1), although clear dating is still not possible due to the lack of more datable finds and broad absolute dates. Settlement *horizons 1* and *2* belong to the Late Hallstatt period (Ha D2–3) while *horizon 3*, registered in Trench 1 stands at the end of the Early Iron Age and at transition to the Late Iron Age period.

The presence of the Late Iron Age layers in Trench 1, with different deposition character in comparison to Early Iron Age ones, and their absence in the other trenches, which are located west of it (Fig. 10), indicate the possibility that the settlement was reduced in size and existed closer to the River Kupa in the period between the end of the 4th / beginning of 3rd and 1st centuries BC. At the same time, or slightly later, a settlement also existed on the left bank of the River Kupa, where, until now, no traces from the Early Iron Age period have been recorded. According to the present state of research, including complete absence of early Roman material in excavated Trenches 1–4, it seems that the settlement on the right bank of the river, in the north-eastern part of Pogorelac, ceased to exist at the end of the 1st century BC, coinciding with the historically recorded episode of the Roman conquest of the Iron Age settlement, known as Segesta/Segestica, in 35 BC, and the establishment of the military stronghold.[85] On the other hand, at the positions of Dunavski Lloyd, Sisak–Railway station, Ulica Braće Radića 32 (32 Radić Street), and Povijesni

83 Ovi ostatci drveta datirani su dendrokronološki i AMS metodom u 2.–1. stoljeće pr. Kr. (Durman 1992, 120; Pearson *et al.* 2014), iako postoje naznake i za neke ranije datume (Seufer, Griggs, Manning 2014). Najstariji nalazi keramičkih posuda i metalnih predmeta, pronađeni u iskopavanju iz 1992. god., potječu iz Ha B stupnja odnosno 10. – 9. stoljeća pr. Kr., ukazujući na poziciju jezgru iz koje se širilo buduće željeznodobnog naselje koje je egzistiralo do kraja 1. st. pr. Kr.

84 Vojakovič 2013; Vojakovič 2014.

83 These wooden remains have been dated with dendrochronology and AMS radiocarbon dating to the 2nd-1st c. BC (Durman 1992, 120; Pearson *et al.* 2014), although there are certain indications of some earlier dates (Seufer, Griggs, Manning 2014). The earliest pottery and metal objects from the 1992 excavation can be dated to the Ha B period, or 10th-9th c. BC, thus indicating the position of the core of the future Iron Age settlement that existed until the end of the 1st century BC (Burkowsky 2004).

84 Vojakovič 2013; Vojakovič 2014.

85 *App.* III., 22-24; *D.C.*, 49.37.

ne istraženosti, koje uključuje i potpun nedostatak ranorimskog materijala u Sondama 1 – 4, čini se da je mlađeželjeznodobno naselje na desnoj obali rijeke Kupe, na sjeveroistočnom dijelu pozicije Pogorelac, prestalo funkcionirati krajem 1. st. pr. Kr., što se poklapa s povijesno zabilježenim događajem rimskog osvajanja naselja, poznatog iz izvora pod nazivom Segest(ik)a, i osnivanja vojnog uporišta 35. god. pr. Kr.[85] S druge strane, na pozicijama Dunavski Lloyd, Željeznički kolodvor, Ulica braće Radić 32 i Povijesni arhiv, smještenima na lijevoj obali rijeke Kupe, zabilježen je naseobinski horizont dužine veće od 350 m, koji se pruža u smjeru istok – zapad prema Savi, sa slojevima koje pokretni nalazi (fina keramika, fibule itd.) datiraju u augustovsko i tiberijevsko razdoblje. Ovaj horizont sadrži i ostatke drvene arhitekture ili tragove koji ukazuju na uporabu drvenih struktura.[86] Stratigrafski, oni izravno prekrivaju posljednji naseobinski horizont mlađeželjeznodobnog naselja na ovome prostoru, jasno ukazujući na kontinuitet naseljavanja prostora na prijelazu tisućljeća (ali ne i kontinuitet mlađeželjeznodobnog naselja!). Naime, s obzirom na činjenicu da su u navedenim slojevima pronađene veće količine fine rimske keramike (pehari tipa *Aco*, čaše tipa *Sarius*, aretinska tera sigilata),[87] rane amfore,[88] nalazi rimske vojne opreme – klinovi šatora, oružje, dijelovi oklopa,[89] moguće je pretpostaviti da se ovdje nalazio rimski vojni logor, iako će odnos željeznodobnog naselja i najranijih vojnih instalacija biti detaljnije razjašnjen analizom nekoliko istraživanja na lijevoj obali rijeke Kupe, osobito onoga s pozicije Željezničkog kolodvora.[90]

Nadalje, rimskodobni naseobinski sloj s ostacima koji ukazuju na postojanje drvene arhitekture, preliminarno datiran prikupljenim materijalom (ulomci keramičkih posuda, metalni nalazi, lampica te novac) u 2. i 3. st., zabilježen je na Pogorelcu u Sondama 3 i 4. Važno je naglasiti da navedeni sloj nije zabilježen u Sondama 1 i 2, niti u zaštitnom iskopavanju provedenom 2013. i 2014. godine u kanalu paralelnom s Avenijom V. Janića Cape, zapadno od istražene površine (sl. 10: 1). Njegova dužina u smjeru istok – zapad ugrubo se može procijeniti na 50-ak m. Zanimljivo, ove strukture nisu zabilježene u geofizičkom pregledu provedenom 2012. i 2013. godine (sl. 6-7).

Posljednju fazu korištenja istraženog prostora na Pogorelcu čine ostaci kasnoantičkoga groblja, istraženog u Sondama 2 – 4, s ukupno 23 kosturna groba ukopana u rimske i željeznodobne naseobinske slojeve i datirana od kraja 3. do početka 5. st. Zajedno sa 65 zabilježenih grobova iz prethodno spomenutoga zaštitnog iskopavanja, zapadno od Sonde 3, oni čine dio zapadnoga groblja kasnoantičke Siscije koje je dosad bilo nepoznato široj javnosti.

arhiv, located on the left bank of the River Kupa, a settlement horizon, with a length greater than 350 metres in the east-west direction, was registered, stretching towards the River Sava, with layers dated by the movable finds (fine pottery, fibulae, etc.) to the Augustan and Tiberian period. This horizon also contains the remains of wooden architecture or traces indicating usage of such structures.[86] Stratigraphically, they directly overlay the latest horizon of the Late Iron Age settlement in this area, clearly indicating continuity of the occupation of the area at the turn of the millennium (but not the continuity of the Late Iron Age settlement!). The fact that a large amount of fine Roman pottery (*Aco*-type beackers, *Sarius*-type cups, Arretine ware etc.),[87] earlier amphorae,[88] and some finds of *militaria* (tent pegs, weapons, elements of armour, etc.)[89] had been found in the layers mentioned, it would be possible to assume the existence of a military camp in this area, although more precise relation between the Late Iron Age settlement and the earliest military facilities will be cleared off after thorough analyses of several excavations on the left bank of the River Kupa, especially at the position of Sisak-Railway station.[90]

Furthermore, the Roman-period settlement layer with the remains of what was probably wooden architecture, preliminarily dated with the collected material (fragments of pottery, metal finds, a lamp and a coin) to the 2nd and 3rd centuries AD, was registered at Pogorelac in Trenches 3 and 4. It is important to emphasise that the layer described was not registered in Trenches 1 and 2, or even in the rescue excavations conducted in 2013–2014 in the canal parallel to Aleja V. Janić Capo, west of the area researched (Fig. 10: 1). Its length can be roughly estimated at 50 metres in the east-west direction. Interestingly, these structures were not observed in geophysical surveys conducted in 2012 and 2013 (Fig. 6-7).

The latest phase of occupation at the researched area of Pogorelac is represented by the remains of the Late Roman-period cemetery. Altogether 23 skeletal graves, dug into the Iron Age and Roman settlement layers, have been excavated in Trenches 2, 3 and 4, dated to a period from the end of the 3rd century AD to the first half of the 5th. Together with 65 registered graves from the rescue excavation in the aforementioned canal, west of Trench 3, they represent part of the western necropolis of Late Roman Siscia, until recently unknown to the general public.

85 *App.* III., 22-24; *D.C.*, 49.37.

86 Lolić 2003, 141–143, sl. 14–17; Lolić 2014, 112, 227–228, 252, 288–289; Leleković 2012; Jerončić, Paro, Kristović 2018, (u pripremi). U najraniju fazu rimske prisutnosti na prostoru Siska T. Lolić datira i građevinske radove koji su uključivali stabilizaciju močvarnog tla korištenjem drvenih pilota koji su zabilježeni na nekoliko pozicija unutar perimetra gradskih zidova (Lolić 2003, 141, sl. 14; Lolić 2014, 110–112, 265–266, 288–289).

87 Baćani *et al.* 2012, kat. br. 14, 101–-107, 110–111; Leleković 2012; Drnić, Miletić 2014, 189–190; Miletić 2018, (u pripremi); Škrgulja 2018, (u pripremi).

88 Drnić, Miletić Čakširan 2014, 188–189; Paro, Novaković, Radman-Livaja 2018, (u pripremi).

89 Škrgulja 2018, (u pripremi). Neobjavljeni nalazi iz iskopavanja na poziciji Sisak–Željeznički kolodvor.

90 Jerončić, Paro, Kristović 2018, (u pripremi).

86 Lolić 2003, 141-143, Fig. 14-17; Lolić 2014, 112, 227-228, 252, 288-289; Leleković 2012; Jerončić, Paro, Kristović 2018, (forthcoming). In the earliest stage of the Roman presence in the area of Sisak, T. Lolić also dates construction work which included the stabilization of wetlands using wooden piles, which are recorded at different positions inside the perimeter of the city walls (Lolić 2003, 141, Fig. 14; Lolić 2014, 110-112, 265-266, 288-289).

87 Baćani *et al.* 2012, cat. no. 14, 101-107, 110-111; Leleković 2012; Drnić, Miletić 2014, 189-190; Miletić, 2018, (forthcoming); Škrgulja 2018, (forthcoming).

88 Drnić, Miletić Čakširan 2014, 188–189; Paro, Novaković, Radman-Livaja 2018, (forthcoming).

89 Škrgulja 2018, (forthcoming); Unpublished finds from the excavation at the Sisak-Railway station position.

90 Jerončić, Paro, Kristović 2018, (forthcoming).

KRATICE
ABBREVIATIONS

RIC 2/1 - I. A. Carradice, T. V. Buttrey, *The Roman Imperial Coinage* 2/1, Spink, 2007.

RIC 5/1 - P. H. Webb, *The Roman Imperial Coinage* 5/1, Spink, 1927.

RIC 9 – J. W. E. Pearce, *The Roman Imperial Coinage* 9, Spink, 1933.

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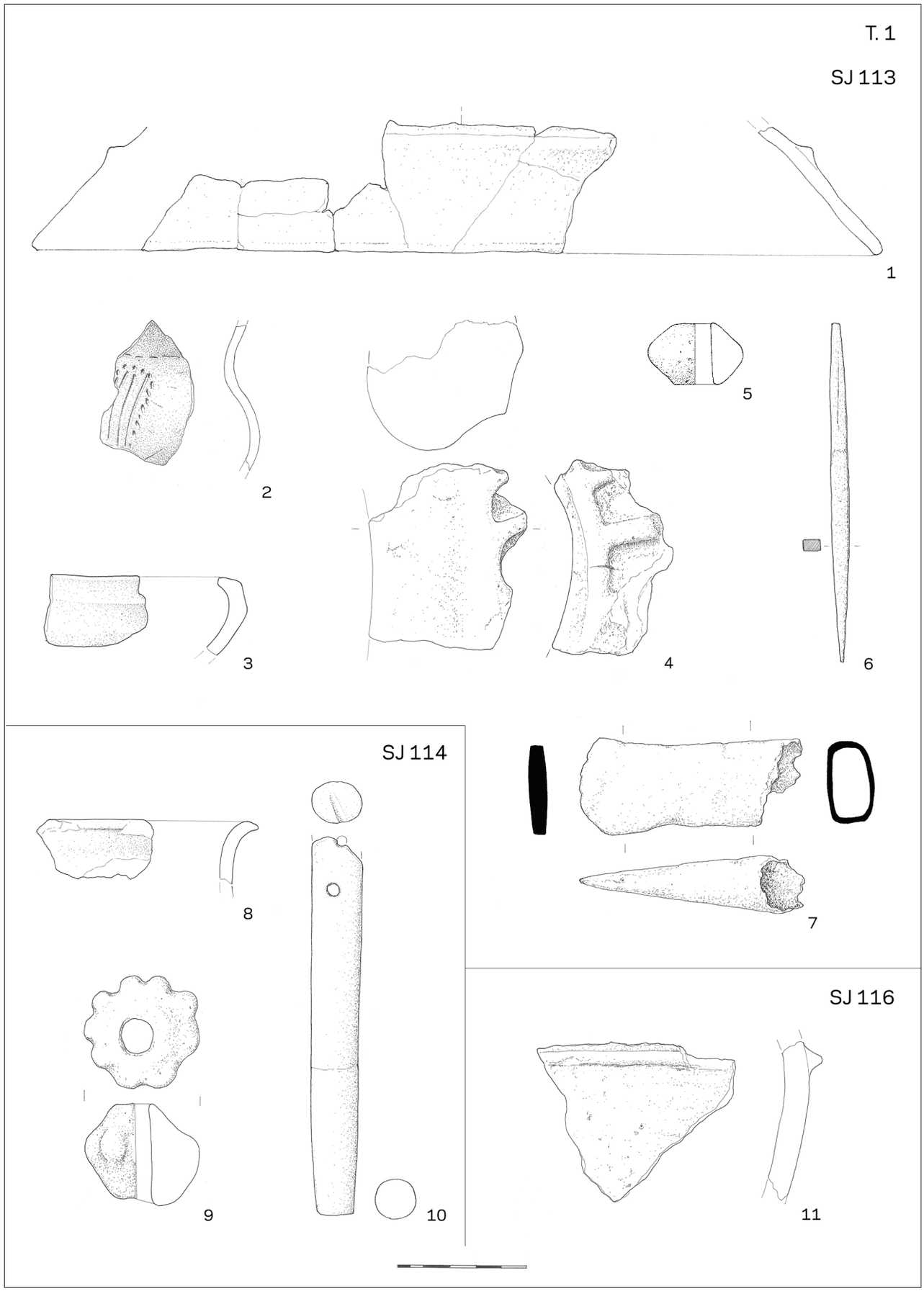

TABLA 1 1-11 (1:2) (izradila M. Galić).

PLATE 1 1-11 (1:2) (made by M. Galić).

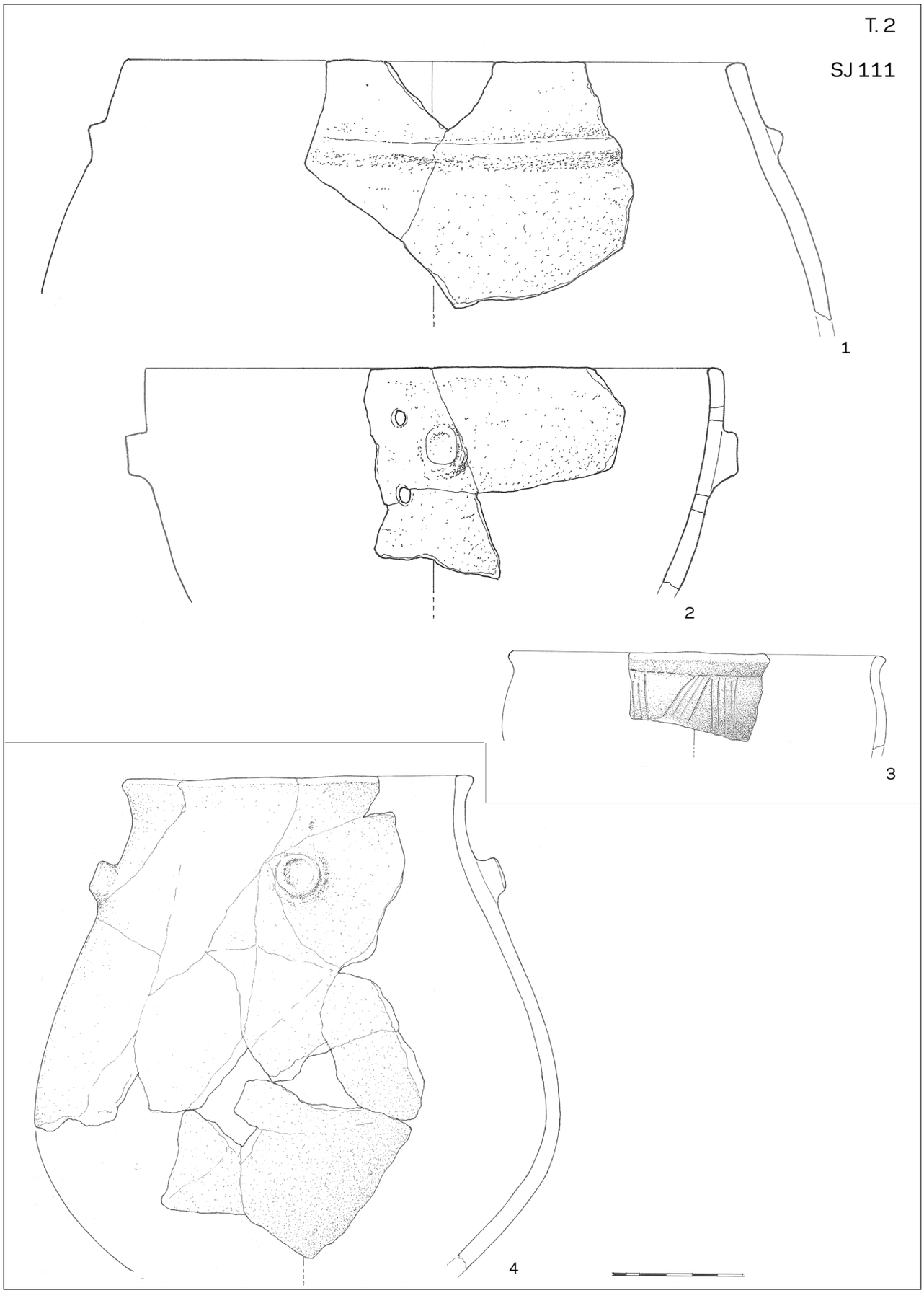

TABLA 2 1-4 (1:2) (izradila M. Galić).

PLATE 2 1-4 (1:2) (made by M. Galić).

TABLA 3 1-5 (1:3) (snimio: I. Drnić).

PLATE 3 1-5 (1:3) (photo by I. Drnić).

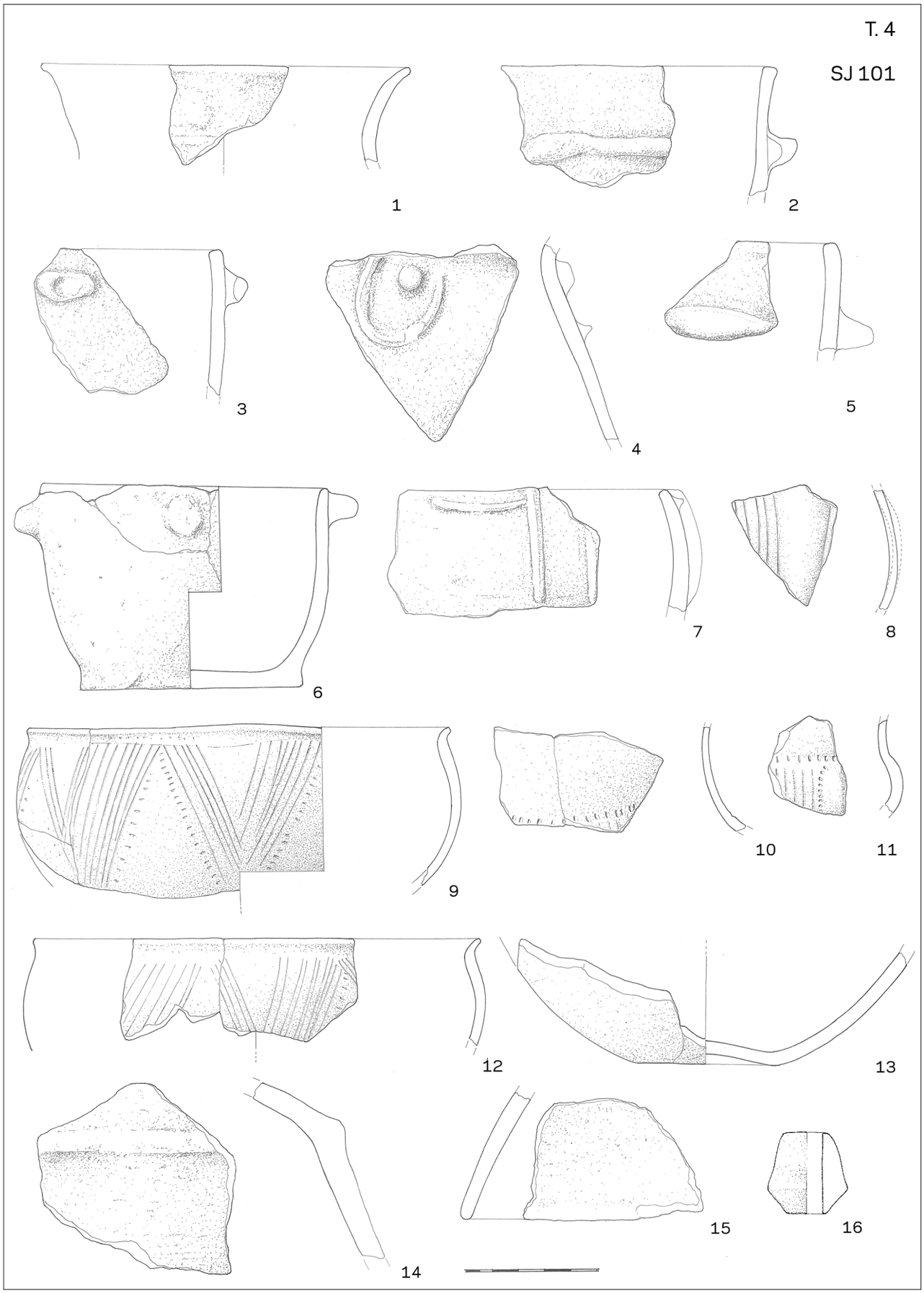

TABLA 4 1-16 (1:2) (izradila M. Galić).

PLATE 4 1-16 (1:2) (made by M. Galić).

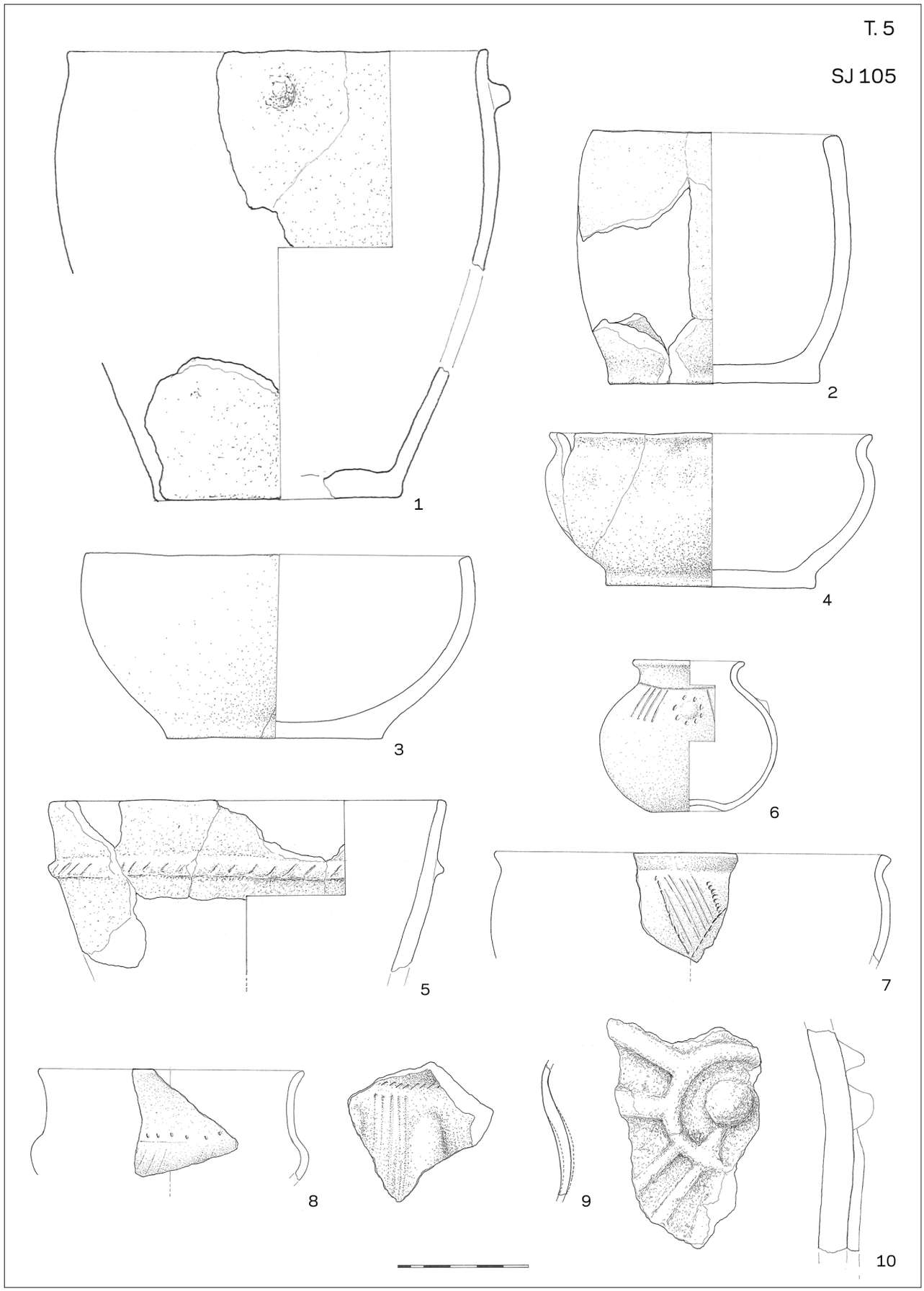

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PLATE 5 1-10 (1:2) (made by M. Galić).

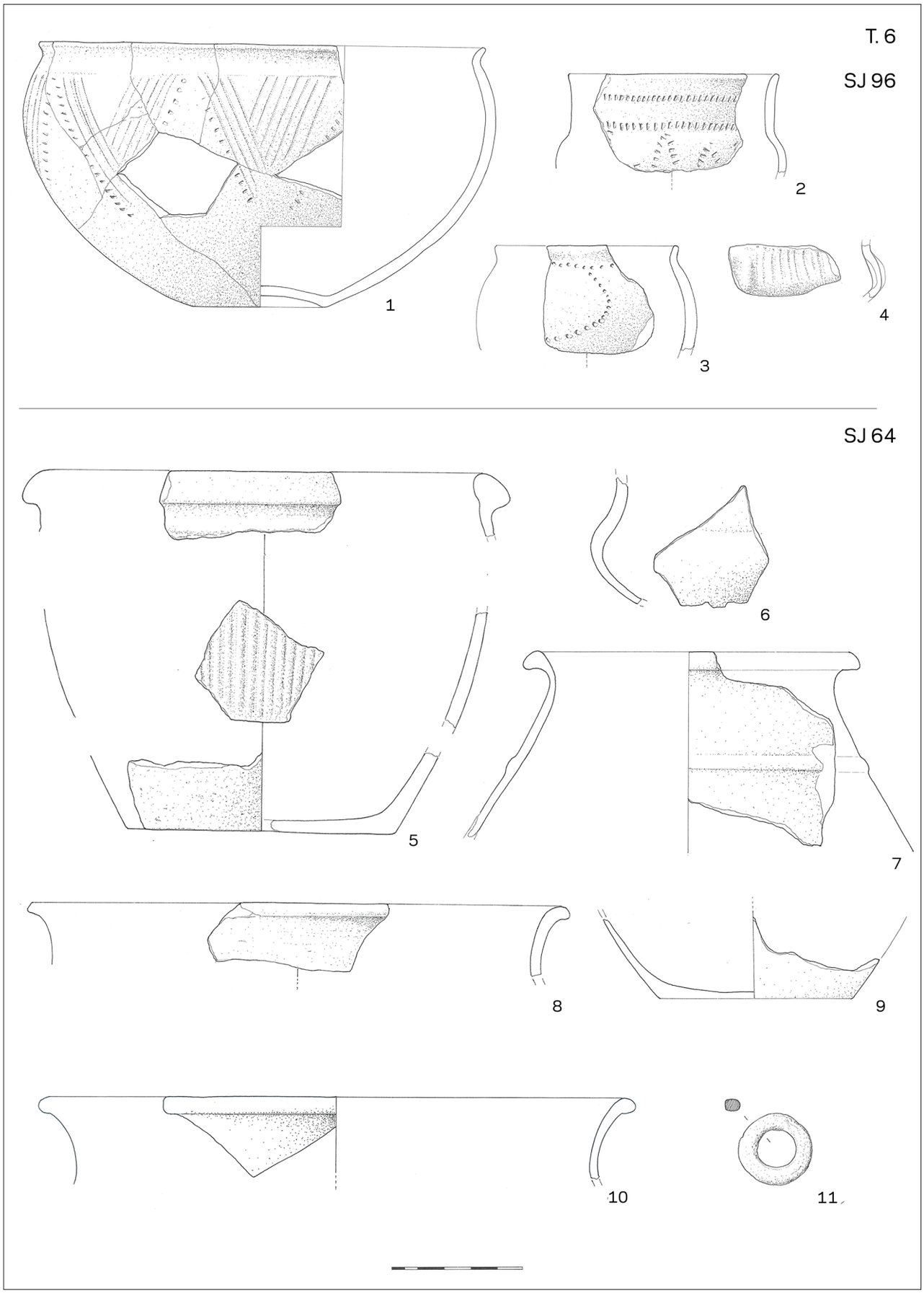

TABLA 6 1-11 (1:2) (izradila M. Galić).

PLATE 6 1-11 (1:2) (made by M. Galić).

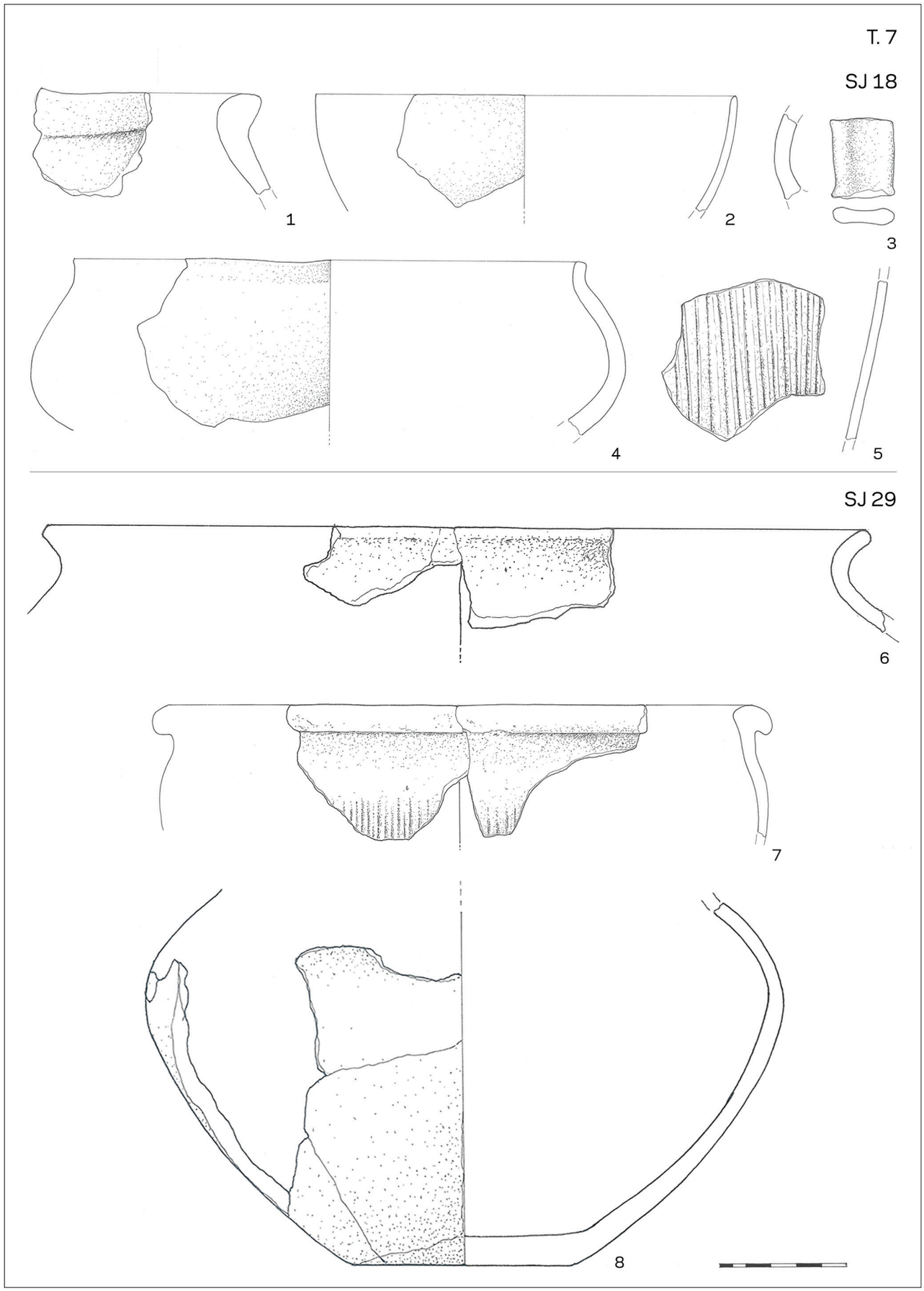

TABLA 7 1-11 (1:2) (izradila M. Galić).

PLATE 7 1-11 (1:2) (made by M. Galić).

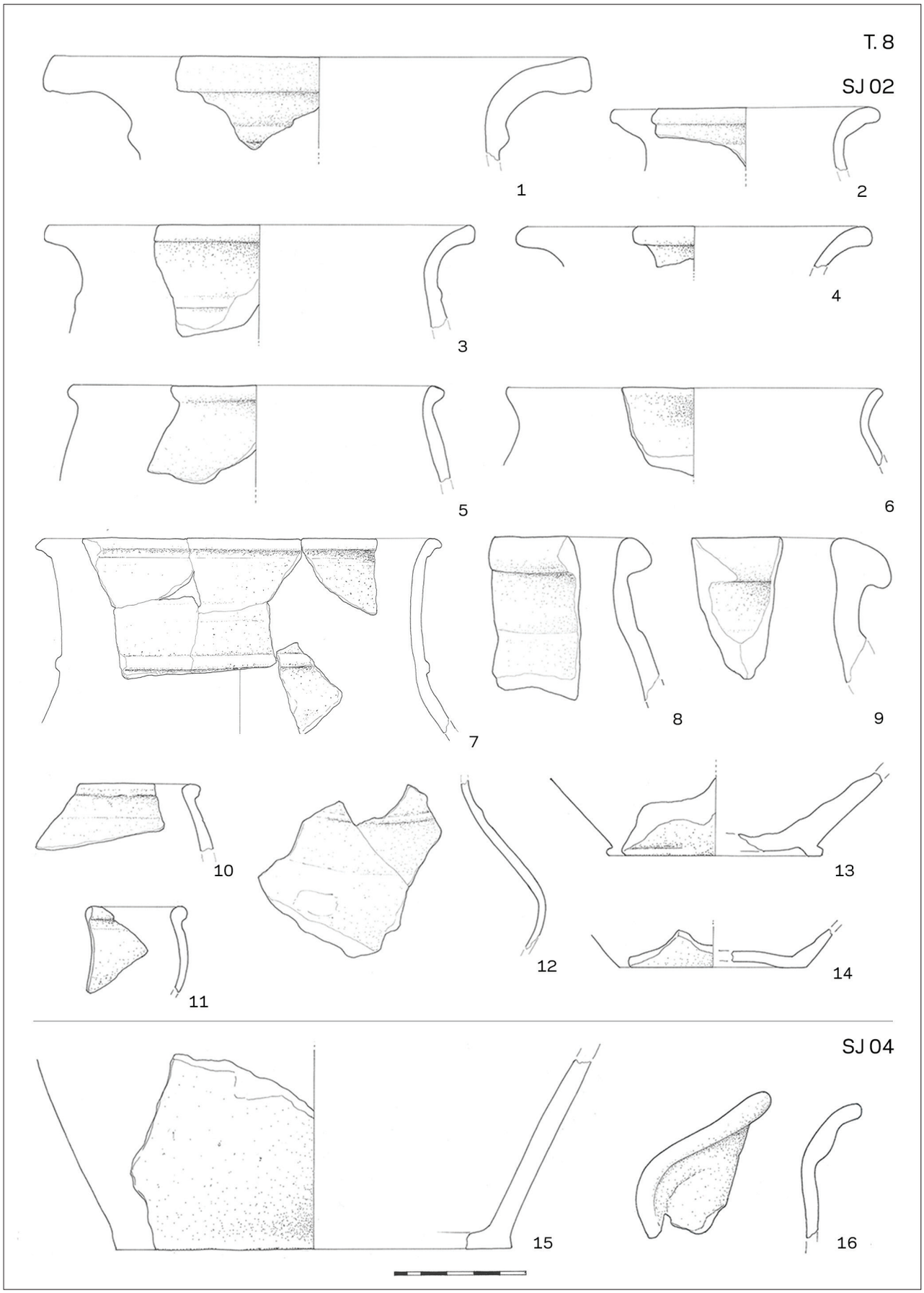

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PLATE 8 1-8 (1:2) (made by M. Galić).

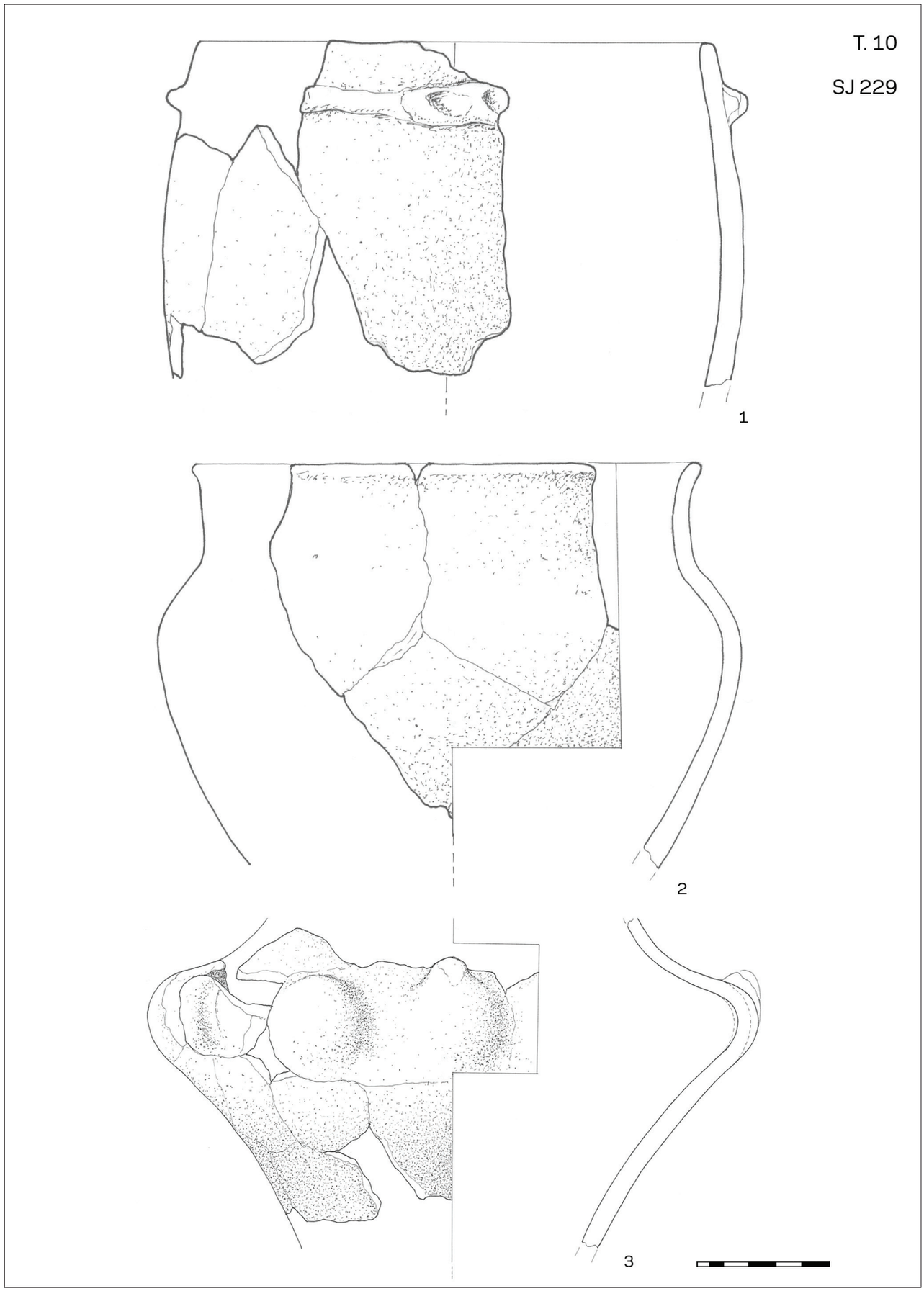


TABLA 9 1-9 (1:2), 10 (1:1) (izradila M. Galić; snimio I. Drnić).

PLATE 9 1-9 (1:2), 10 (1:1) (made by M. Galić; photo by I. Drnić).

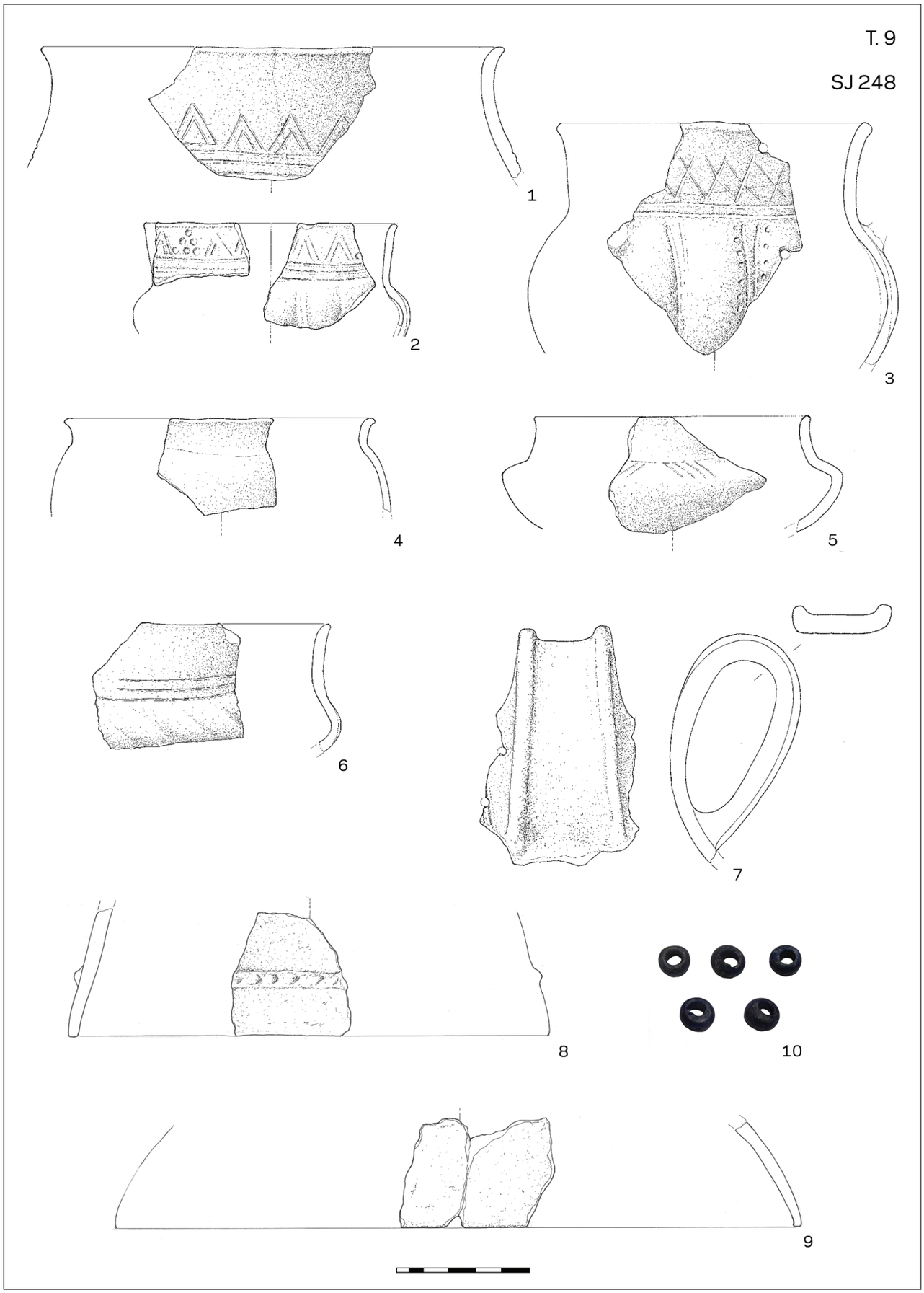


TABLA 10 1-3 (1:2) (izradila M. Galić).

PLATE 10 1-3 (1:2) (made by M. Galić).

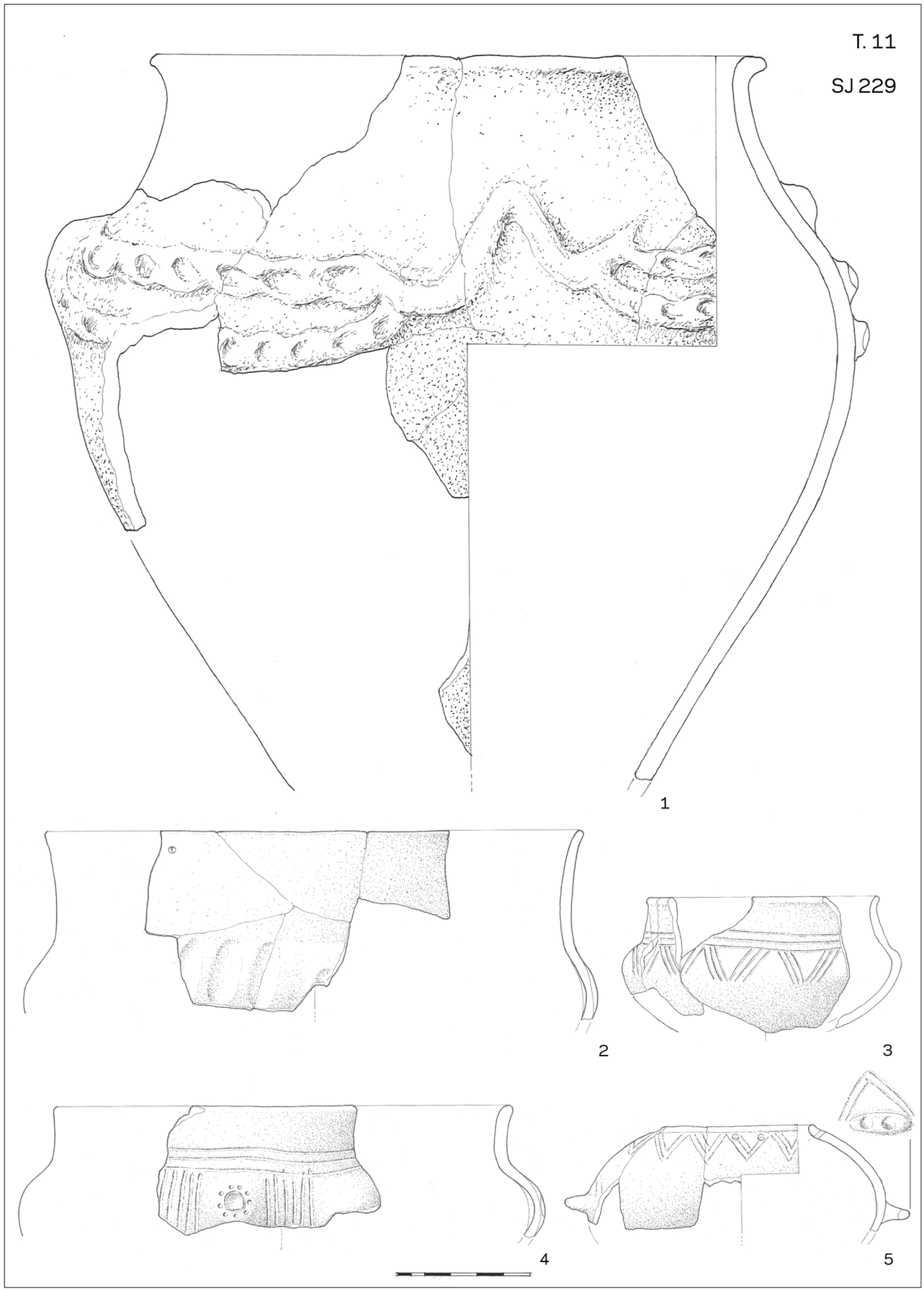


TABLA 11 1-5 (1:2) (izradila M. Galić).

PLATE 11 1-5 (1:2) (made by M. Galić).

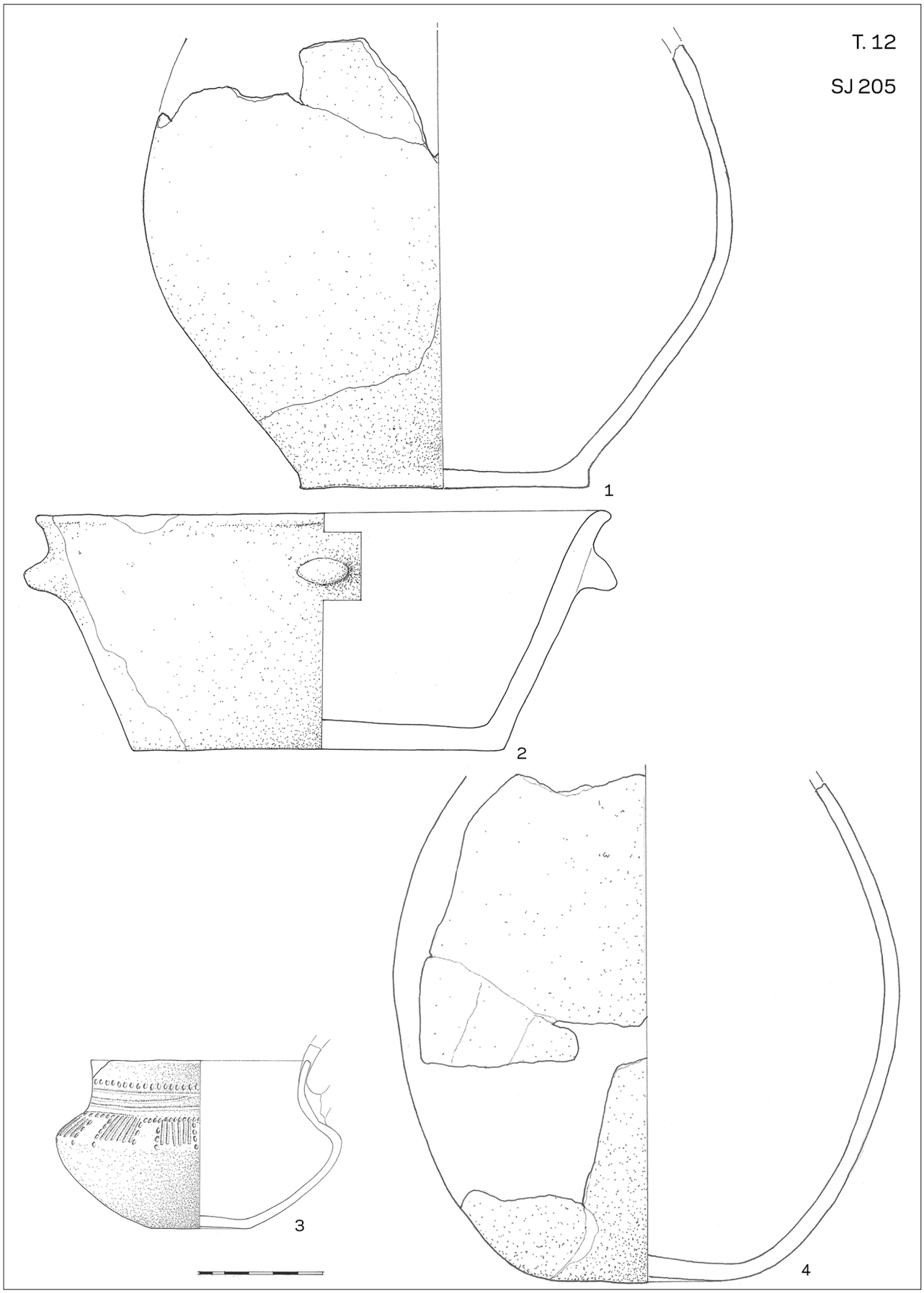


TABLA 12 1-4 (1:2) (izradila M. Galić).

PLATE 12 1-4 (1:2) (made by M. Galić).

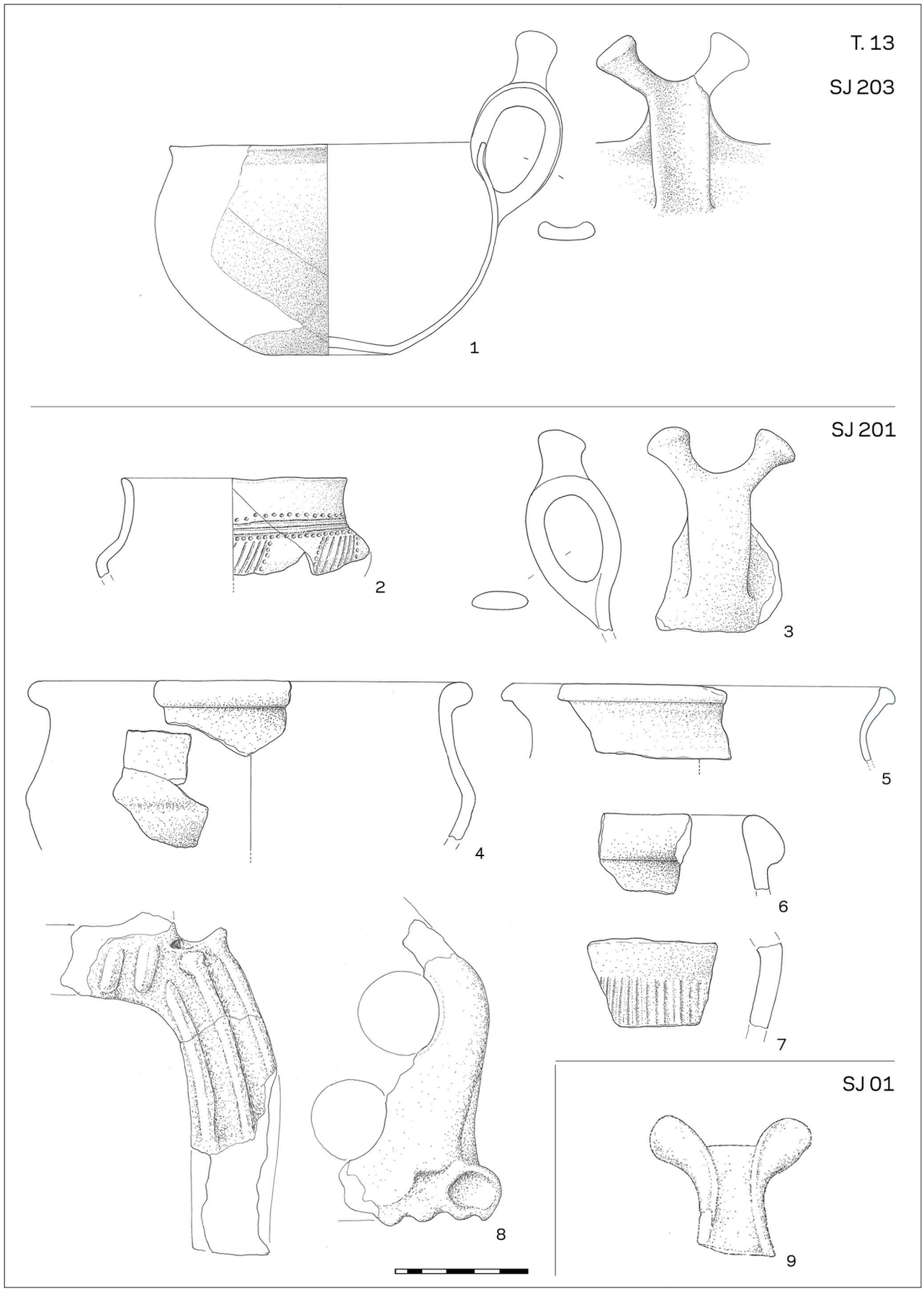


TABLA 13 1-9 (1:2) (izradila M. Galić).

PLATE 13 1-9 (1:2) (made by M. Galić).

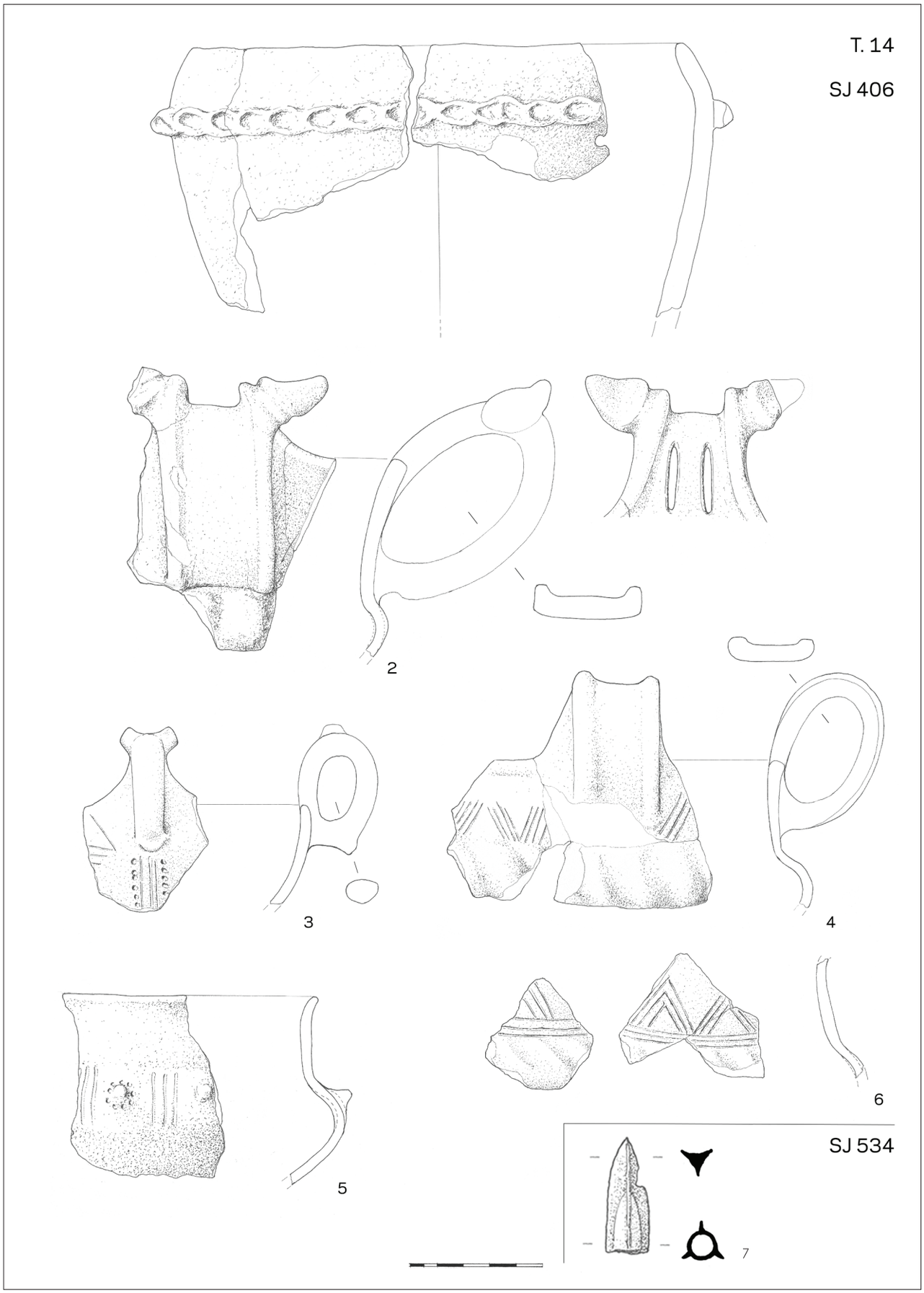


TABLA 14 1-6 (1:2), 7 (1:1) (izradila M. Galić).

PLATE 14 1-6 (1:2) 7 (1:1) (made by M. Galić).

TABLA 15 1-2, 5-8 (1:1), 3-4 (1:2) (izradila M. Galić; snimio: I. Krajcar).

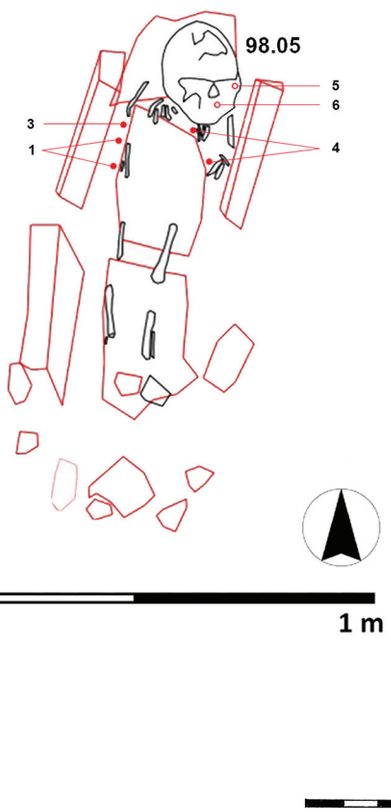
PLATE 15 1-2, 5-8 (1:1), 3-4 (1:2) (made by M. Galić; photo by I. Krajcar).

TABLA 16 1-8 (1:1), 9 (1:2)
(izradila M. Galić; snimili I. Krajcar, I. Drnić; nacrt izradio M. Mađerić).

PLATE 16 1-8 (1:1), 9 (1:2)
(made by M. Galić; photo by I. Krajcar, I. Drnić; made by M. Mađerić).

T. 17

grob 5



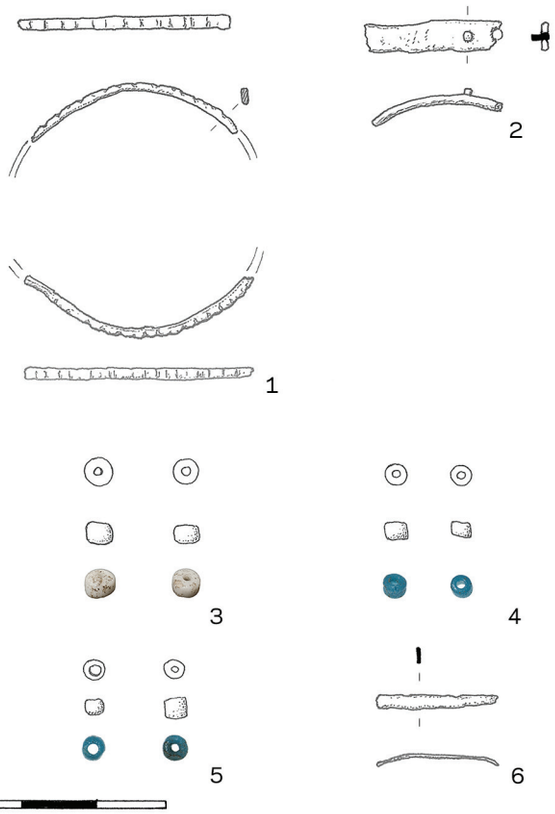


TABLA 17 1-6 (1:1)
(izradila M. Galić; snimili I. Krajcar, I. Drnić; izradio M. Mađerić).

PLATE 17 1-6 (1:1)
(made by M. Galić; photo by I. Krajcar, I. Drnić; made by M. Mađerić).

T. 18

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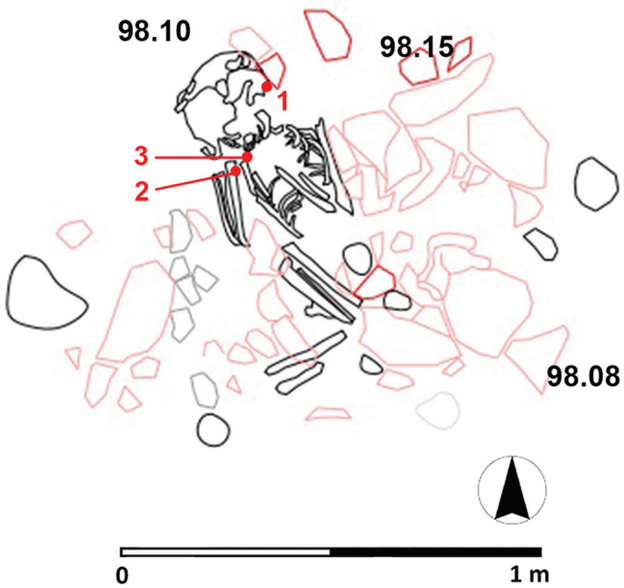


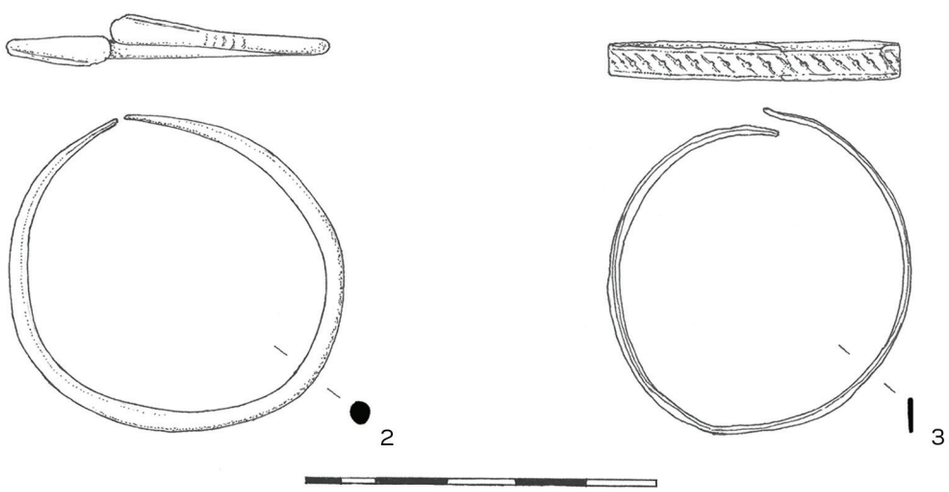
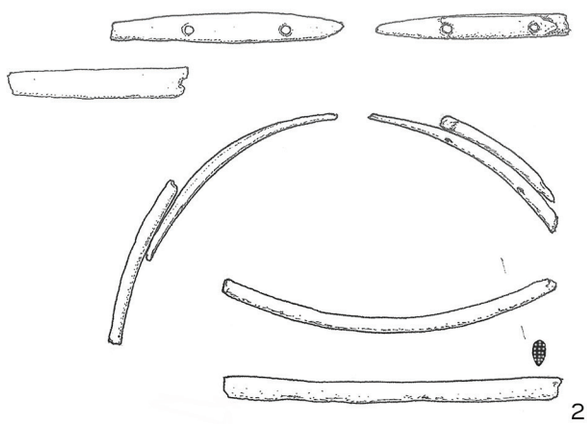


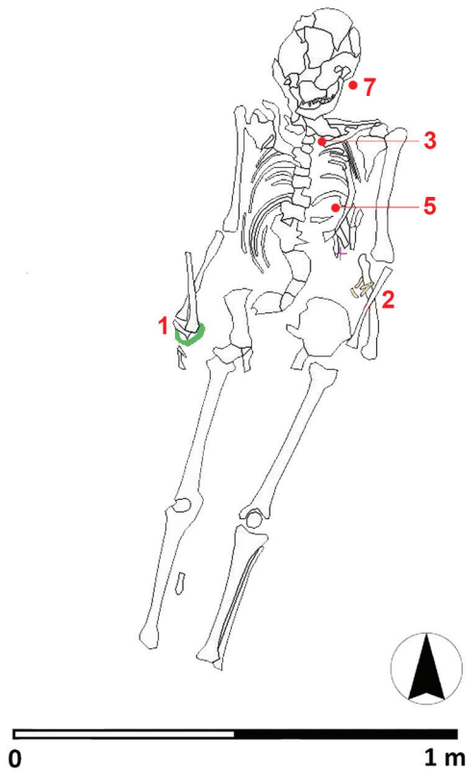
TABLA 18 2-3 (1:1) (izradila M. Galić; snimili I. Krajcar, I. Drnić; izradio M. Mađerić).

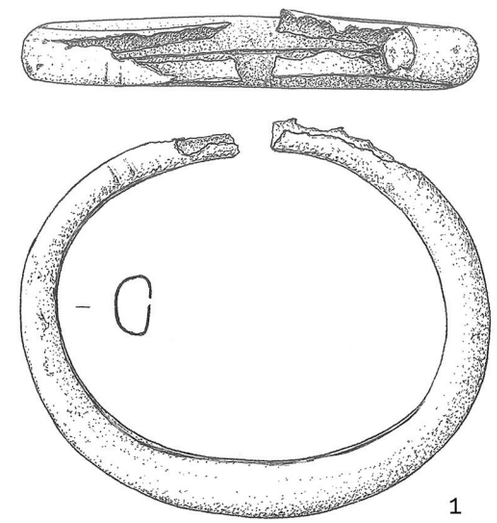
PLATE 18 2-3 (1:1) (made by M. Galić; photo by I. Krajcar, I. Drnić; made by M. Mađerić).

T. 19

grob 13







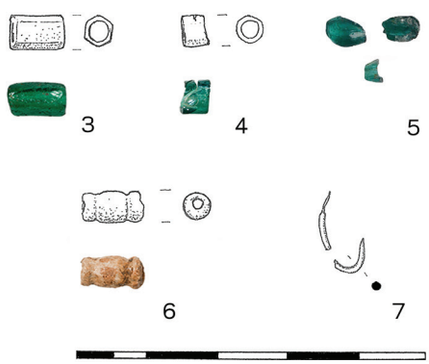


TABLA 19 1-7 (1:1) (izradila M. Galić; snimili I. Krajcar, I. Drnić; izradio M. Mađerić)..

PLATE 19 1-7 (1:1) (made by M. Galić; photo by I. Krajcar, I. Drnić; made by M. Mađerić).

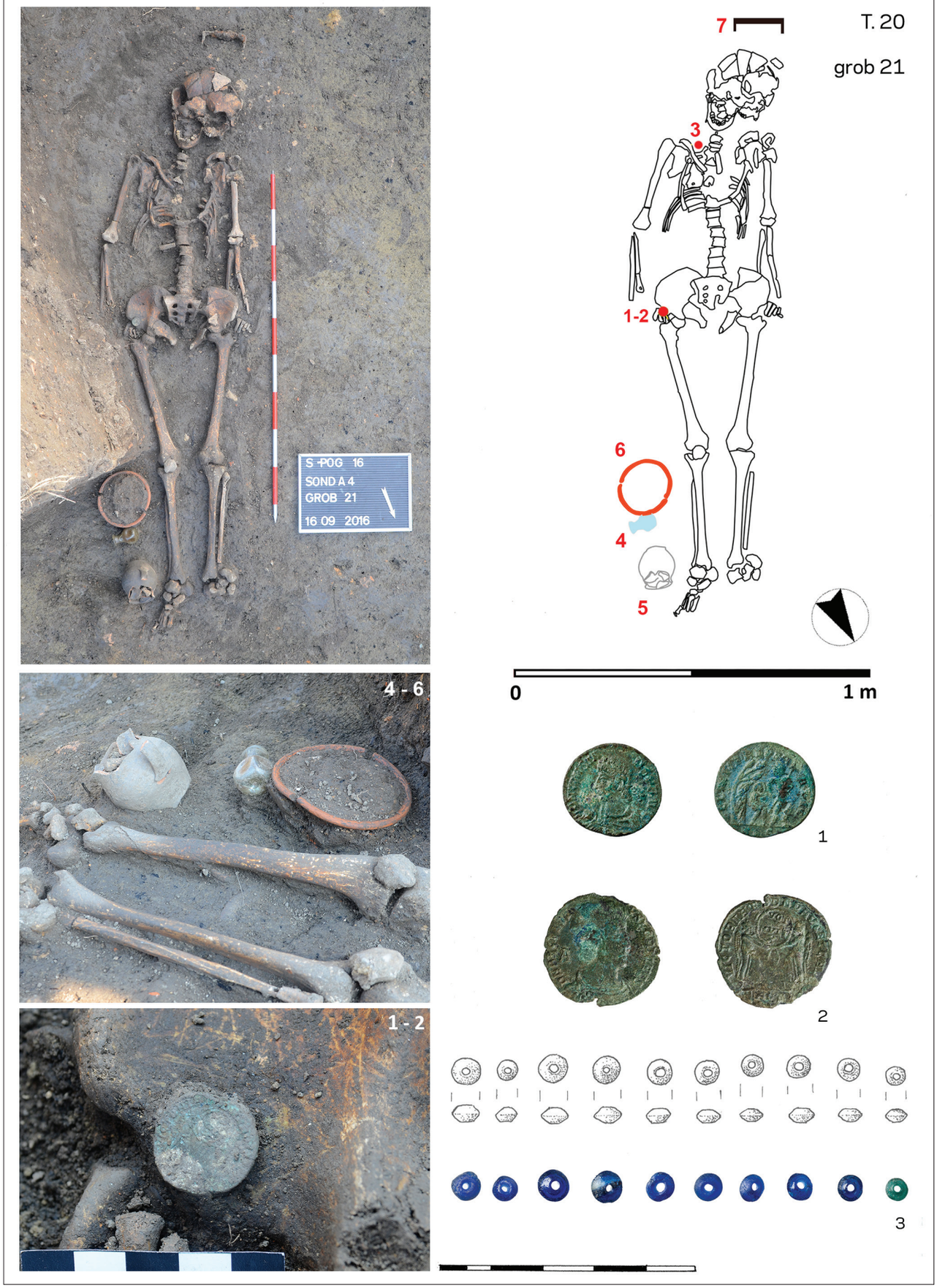


TABLA 20 1-3 (1:1) (izradila M. Galić; snimili I. Krajcar, I. Drnić; izradio M. Mađerić).

PLATE 20 1-3 (1:1) (made by M. Galić; photo by I. Krajcar, I. Drnić; made by M. Mađerić).

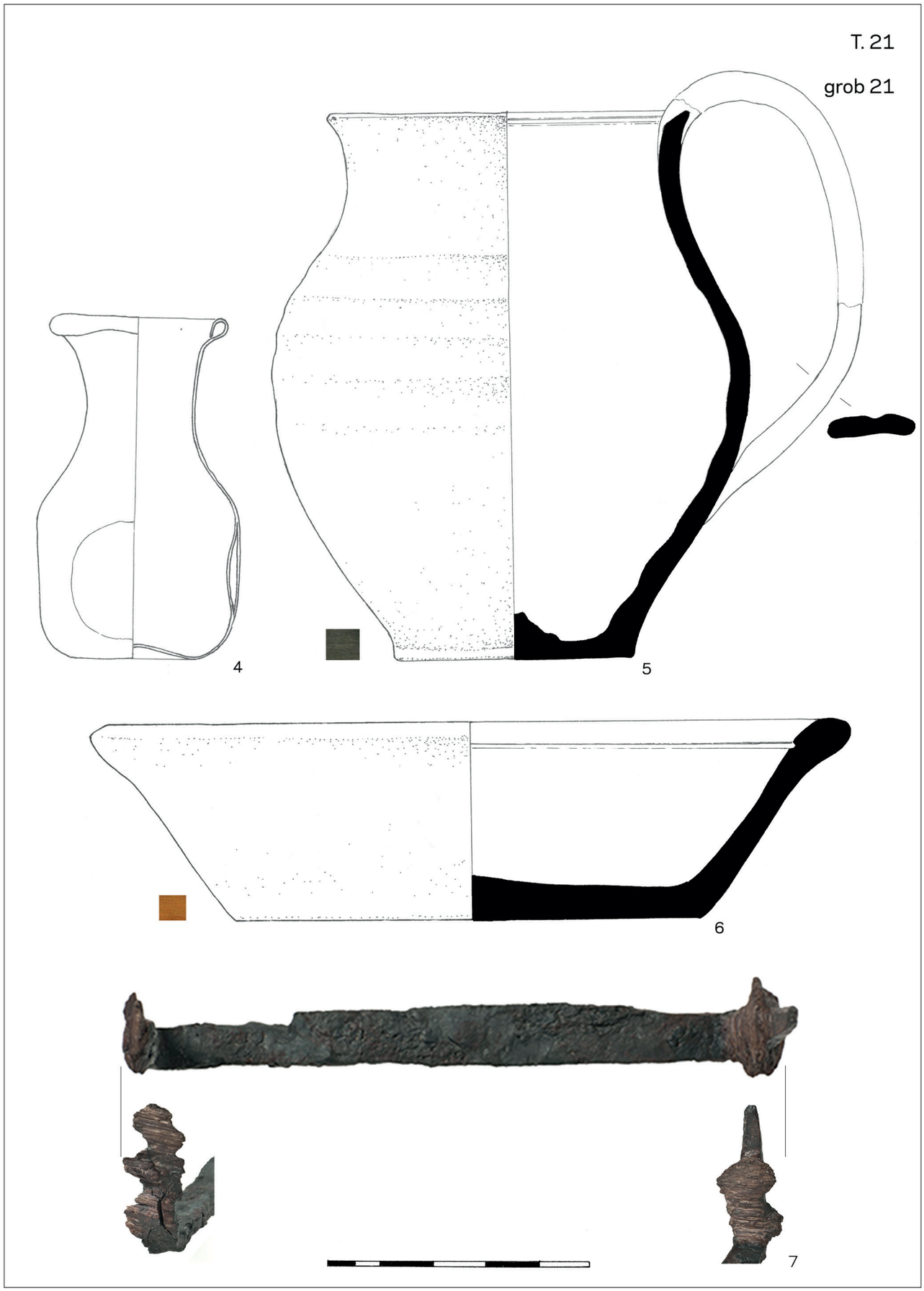


TABLA 21 4-6 (1:1) (izradila M. Galić).

PLATE 21 4-6 (1:1) (made by M. Galić).

ULOMAK STAKLENE SVJETILJKE IZ RIMSKE MURSE

A FRAGMENT OF A GLASS LAMP FROM ROMAN MURSA

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UDK: 903.03(497.5 Osijek)"652"
Prethodno priopćenje/Preliminary report

U kontekstu rimske Murse, u osječkoj ulici Branka Radičevića, 2010. je godine zaštitnim arheološkim iskopavanjima otkriven ulomak predmeta od stakla koji je vjerojatno bio dio svjetiljke. Zasad, riječ je o jedinstvenom nalazu takve vrste na području grada Osijeka, kontinentalne Hrvatske, odnosno hrvatskog dijela nekadašnje rimske provincije Panonije, i tek o trećem nalazu ove vrste pronađenom u Republici Hrvatskoj.

In the context of Roman Mursa, in Branko Radičević Street in Osijek, in 2010, archaeological excavations revealed a fragment of a glass object that was probably part of a lamp. This is the only such finding in the area of Osijek, continental Croatia and the Croatian part of the former Roman province of Pannonia, and it is only the third finding of this kind revealed in the Republic of Croatia.

Ključne riječi:
arheološko iskopavanje, Mursa, rimsko staklo, svjetiljka

Key words:
archaeological excavations, Mursa, Roman glass, lamp

Prije izgradnje višekatne stambene građevine u ulici Branka Radičevića 3 u Osijeku (k. č. br. 7729/1, k. o. Osijek),[1] na tome su mjestu obavljena zaštitna arheološka iskopavanja. Njihov je voditelj bio Igor Vukmanić, kustos-arheolog Arheološkog muzej Osijek . Istraživanje je, ovisno o vremenskim uvjetima, trajalo od 15. travnja do 17. lipnja 2010. godine, a bilo je uvjetovano okolnošću da se navedena lokacija nalazi u sklopu preventivno zaštićene povijesno-urbanističke cjeline grada Osijeka koja je upisana u Registar kulturnih dobara Republike Hrvatske, Listu preventivno zaštićenih kulturnih dobara pod brojem P-2060 te unutar područja zaštićenoga registriranoga arheološkog lokaliteta Mursa,

Prior to the construction of a multi-storey residential building at 3 Branko Radičević Street in Osijek (cadastral plot number 7729/1, Osijek),[1] rescue archaeological excavations were carried out there. They were conducted by Igor Vukmanić, curator-archaeologist at Archaeological museum Osijek. The excavation was carried out between April 15th and June 17th 2010, as weather permitted, under the circumstance that its location is part of the preventively protected historical-urban area of the city of Osijek, which is in the Register of Cultural Property of the Republic of Croatia, inscribed on the List of Preventively Protected Cultural Items under number P-2060, and within the protected area of the

1 Iskopavanje je financirao privatni investitor (podaci poznati autorima).

1 The excavations were financed by the private investor (data familiar to the authors).

upisanog u Registar spomenika kulture Republike Hrvatske pod brojem Z-6380.

Dimenzije sonde, u kojoj je na navedenoj adresi provedeno arheološko iskopavanje, iznosile su 25x11 m (275 m^2). Taj se položaj, prema mišljenjima Radoslava Franjetića[2] i Danice Pinterović,[3] nalazio u središtu nekadašnjeg rimskoga grada Murse. Suvremenim je arheološkim iskopavanjima na mjestu osječkog Donjega grada takvo vjerovanje promijenjeno budući da se navedenim istraživanjima pokazalo kako treba zapadnije tražiti istočni bedem Murse.[4] Na temelju trenutačnog stanja istraženosti, tekstova i kartografskih podataka iz 19. i 20. st., Hermina Göricke-Lukić[5] primijetila je da su Josephus Koller, Karlo pl. Matassich i Vjekoslav Celestin zastupali ispravno stajalište o položaju istočnog bedema Murse.

Kulturni sloj s ostacima rimskodobne arhitekture, u Radičevićevoj 3, uočen je na relativnoj dubini od 0,7 m i protezao se do zdravice koja je utvrđena na relativnoj dubini od 3,5 m. Iskopavanjem je definirano više građevinskih faza iz rimskog razdoblja, a analiza pronađenog materijala pokazuje da ga je moguće pripisati razdoblju od kraja 1. do druge polovine 4. st. Preliminarnom je analizom novca određeno da je najraniji pronađeni primjerak onaj iskovan u doba rimskog cara Nerve (96. god. – 98. god.), a najkasniji onaj careva Konstansa i Konstancija II. polovinom 4. st.

U Radičevićevoj 3 ukupno je dokumentirano 289 stratigrafskih jedinica, pronađena su 263 posebna nalaza, 739 drugih nalaza te je izuzeto 46 uzoraka. Pronađene su velike količine rimske stolne keramike, ulomci reljefnih sigilatnih posuda, keramičke svjetiljke i drška patere, opekarski proizvodi s pečatom, tesere i grla vodovodnih cijevi, velik broj koštanih i metalnih igala, koštani žetoni, metalni klinovi, ključanice, fibule i novac, ulomci staklenih posuda i veći broj raznobojno oslikanih ulomaka fresaka s geometrijskim motivima. Navedeni su nalazi polovinom 3. st. pripadali stanovnicima kuće s hipokaustom, čiji su pravci zidova definirani na katastarskoj čestici broj 7792/1 u Osijeku, a podvlačili su se pod sve profile u sondi. Preliminarni je izvještaj s iskopavanja objavljen u Hrvatskom arheološkome godišnjaku iz 2010. god.[6]

Nakon obavljenih arheoloških iskopavanja, u muzejskim je prostorijama pregledana veća količina ondje pronađenoga staklenog materijala – uglavnom razlomljenih ulomaka različitih tipova posuda, debljih i tanjih stijenki. Tom je prilikom izdvojen ulomak predmeta za koji autori članka vjeruju da je bio dio diska staklene svjetiljke (inv. oznaka MSO 207082, sl. 1).

2 Pinterović 1978, karta 3.
3 Pinterović 1956, 72–73.
4 Göricke-Lukić 2001, 175; Leleković 2008, 45–51.
5 Göricke-Lukić 2011, 187.
6 Vukmanić 2011, 47–50.

registered archaeological site of Mursa, listed in the Register of Cultural Monuments of the Republic of Croatia under number Z-6380.

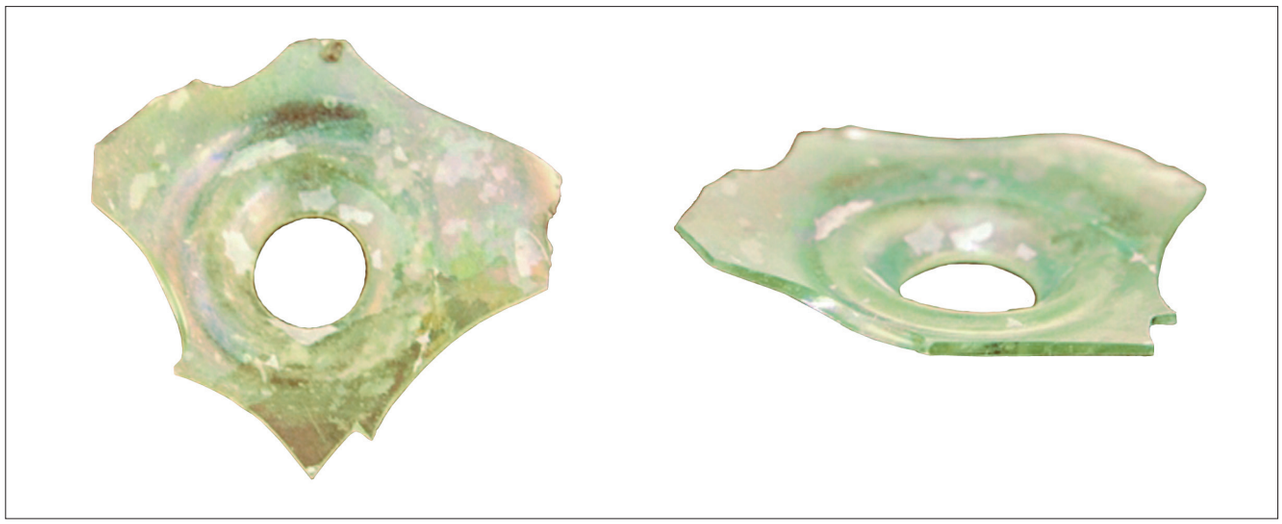
The dimensions of the excavation site, at which archaeological excavation was conducted (at the address given), were 25×11 m (275 m^2). This position, according to the opinions of Radoslav Franjević[2] and Danica Pinterović,[3] was at the very centre of the former Roman city of Mursa. Contemporary archaeological excavations at the site of Osijek's Lower Town, however, have changed such belief, as this research has shown that the eastern rampart of Mursa should be sought westward.[4] Based on the current state of research, texts and cartographic data from the 19th and 20th centuries, Hermina Göricke-Lukić[5] has noted that the position of the eastern rampart of Mursa was rightly represented by Josephus Koller, Karlo Matassich the Noble, and Vjekoslav Celestin.

The cultural layer with the remains of Roman architecture, at 3 Radičević Street, was observed at a relative depth of 0.7 m and extended to the sterile ground, which was established at a relative depth of 3.5 m. Excavations revealed several building phases from the Roman period, and analyses of the found material support its attribution to a period dating from the end of the 1st century to the second half of the 4th. Likewise, preliminary analysis of coins points to the fact that the earliest specimen excavated on the site was one forged during the reign of the Emperor Nerva (96 – 98), and the latest one in the middle of the 4th century, during the reigns of the Emperors Constance and Constantine II.

In 3 Radičević Street there is a total of 289 Stratigraphic Units documented; 263 special findings and 739 other findings were excavated, and 46 samples were excluded. A large quantity of Roman tableware pottery was found, as well as fragments of relief *terra sigillata* vessels, ceramic lamps and a patera handle, tiles with stamps, *tesserae* and throats of plumbing pipes, a large quantity of bone and metal needles, bone chips, metal wedges, key chains, *fibulae* and coins, fragments of glass vessels, and a large number of multicoloured fresco fragments with geometric motifs. The findings listed are dated to the middle of the 3rd century and were once belongings of the inhabitants of the House with a hypocaust whose walls followed the lines defined on cadastral plot number 7792/1, and they were submerged under all of the profiles in the probe. The preliminary excavation report was published in 2010, in the *Hrvatski arheološki godišnjak*.[6]

After the archaeological excavations were completed, a large quantity of glass material was examined in the museum – mostly broken pieces of different types of glass vessels with walls of various thickness. On that occasion, a fragment of a glass object was found, which the authors of this article believe to be part of the disc of a glass lamp (inv. no. MSO 207082, Fig. 1).

2 Pinterović 1978, Map 3.
3 Pinterović 1956, 72–73.
4 Göricke-Lukić 2001, 175; Leleković 2009, 45–51.
5 Göricke-Lukić 2011, 187.
6 Vukmanić 2011, 47–50.



SLIKA 1. Osijek, Radičevićeva 3, ulomak diska staklene svjetiljke (inv. oznaka MSO 207082, snimio V. Mesarić).

FIGURE 1. Osijek, 3 Radičević Street, fragment of the disc of a glass lamp. (inv. no. MSO 207082, photo by V. Mesarić).

Taj je ulomak,[7] koji je izrađen slobodnim puhanjem i čija dužina iznosi 6,6 cm, širina 6,4 cm, a debljina stijenki 0,11 cm (visinu nije moguće odrediti), pronađen u zapuni rimskodobne jame (stratigrafska jedinica 220/221), a kojoj je početak bio na 89,1 m nadmorske visine, dno na dubini od 87,7 m nadmorske visine, ispod razine poda podrumske prostorije napravljene polovinom 20. st. uz središnji sjeverni profil sonde. Stakleni je disk pronađen u jami dužine 343 cm i širine 105 cm, koja se podvlačila pod sjeverni profil sonde, a u kojoj je pronađeno mnogo ulomaka keramičkih posuda napravljenih u latenskoj tradiciji. S obzirom na to da neki autori[8] vjeruju kako je tradicija izrade keramičkih predmeta nalik keltskima u hrvatskom Podunavlju bila očuvana sve do 2. st., u to bismo doba najkasnije mogli datirati i svjetiljku o kojoj je riječ u tekstu.

Ulomak, u čijoj su strukturi stakla vidljivi mjehurići zraka, s obzirom na kružni otvor u disku, upućuje na to da je u izvornom obliku bio dijelom svjetiljke.

U istoj je stratigrafskoj jedinici pronađen i ulomak dna staklene posude (inv. oznaka MSO 207083) koji bi, s obzirom na strukturu stakla te boju (svijetlozelena), mogao biti dijelom iste svjetiljke (sl. 2). Debljina tog ulomka – posude ili svjetiljke – različita je (0,05 – 0,15 cm) u odnosu na debljinu stijenki ulomka diska svjetiljke, ali to ne znači da je riječ o drugom predmetu jer slobodnim puhanjem nisu morale biti načinjene jednake debljine stijenke.

This fragment[7] was made by free-blowing. Its preserved portion is of length 6.6 cm, width 6.4 cm and wall thickness 0.11 cm. (Its height cannot be determined.) It was found in the fill of the Roman pit (Stratigraphic Unit 220/221), the top of which lay 89.1 m above sea level, and the bottom 87.7 m above sea level, below the floor level of a basement room made in the middle of the 20th century, along with the central north profile of the probe. The glass disc was found in a pit, 343 cm long and 105 cm wide, which was submerged under the northern probe profile, where many fragments of pottery vessels made in the La Tène tradition were found. Given that some authors[8] believe that the tradition of making ceramic objects similar to Celtic ones, in the Croatian part of the Danube area, was preserved until the 2nd century, we could also date the lamp from Mursa to that time, at the latest.

The fragment, the structure of whose glass shows visible air bubbles, with respect to the circular opening in the disc, indicates that it was, in its original form, part of a glass lamp.

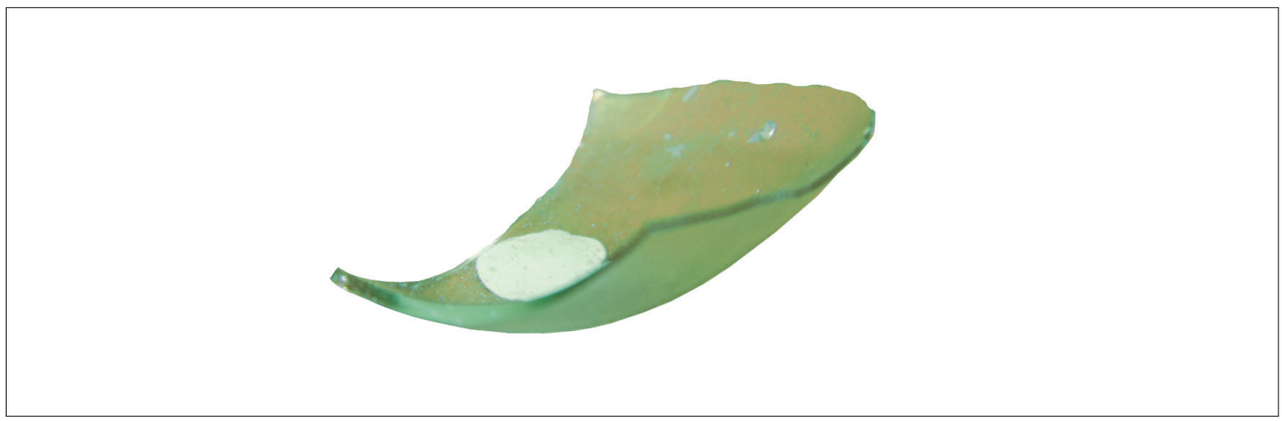
In the same Stratigraphic Unit, a fragment of the base of a vessel (inv. no. MSO 207083) was found, which could, in view of the structure of the glass and its colour (light green), have been part of the same lamp (Fig. 2). The thickness of that part – the bowl or the lamp – is different (0.05 to 0.15 cm) in relation to the thickness of the part of the disc, which does not necessarily mean that we are dealing with another vessel: given the free-blowing technique, the walls may not have been made to the same thickness.

7 U terenskoj je dokumentaciji nalaz označen brojem N-732. Pronađen je 17. lipnja 2010. god. na granici između kvadranata A2 i A3.

8 Šaranović-Svetek 1981, 29; Iskra-Janošić 2001, 51–53; Dizdar, Šoštarić, Jelinčić 2003, 68, bilj. 16.

7 In the field documentation the finding was marked as N-732. It was discovered on June 17th 2010, at the boundary between quadrants A2 and A3.

8 Šaranović-Svetek 1981, 29; Iskra-Janošić 2001, 51–53; Dizdar, Šoštarić, Jelinčić 2003, 68, n. 16.



SLIKA 2. Osijek, Radičevićeva 3, ulomak dna posude ili svjetiljke (MSO 207083, snimio V. Mesarić).

FIGURE 2. Osijek, 3 Radičević Street, fragment of the base of a vessel or lamp. (inv. no. MSO 207083, photo by V. Mesarić).

Dakle, s obzirom na to da je vjerojatno očuvan samo jedan ulomak staklene svjetiljke, odnosno njezin disk, teško je nedvojbeno odrediti je li doista riječ o tom predmetu. Naime, osim svjetiljki, otvor su sredinom poklopca imale još tintarnice. Međutim, kružni otvor na disku pronađenom u Osijeku, u usporedbi s tintarnicama,[9] oblikom više sliči otvorima na disku svjetiljke.

Staklene su svjetiljke iz rimskog razdoblja rijedak nalaz na području čitavog Rimskoga Carstva. Dosad je ukupno pronađeno manje od dvadeset primjeraka, i to većinom na području nekadašnjega zapadnog dijela. Dva su primjerka pronađena i u istočnome dijelu Carstva.[10] Uz primjerak iz Radičevićeve ulice (u nekadašnjem zapadnom dijelu Carstva), još su dvije staklene svjetiljke pronađene u današnjoj Hrvatskoj, na području nekadašnje rimske provincije Dalmacije, u gradu Splitu i na otoku Visu.[11] Pronađeni se primjerci međusobno razlikuju s obzirom na dimenzije i oblik (oblik i dužinu kljuna, imaju li nogu ili nemaju, oblik noge, imaju li ručku ili nemaju, oblik ručke, oblik i veličinu otvora). Stoga, ni jedan od navedenih predmeta međusobno nema izravnu analogiju.

S obzirom na zajedničke elemente pojedinih primjeraka, Francesco Ceselin[12] je podijelio svjetiljke u nekoliko skupina. Sve dosad pronađene staklene svjetiljke datirane su u vremenski raspon od 1. do 3. st.,[13] a samo su tri pronađene u grobnom kontekstu – emonska, datirana u 2. polovinu 1. i 1. polovinu 2. st.,[14] iz Akkoa datirana u 1. st.[15] te viška, koja je datirana u prijelaz iz 2. u

Therefore, given that only a single fragment of a glass lamp or its disc are likely to be preserved, it is difficult to determine whether this is really part of a lamp. Not only lamps, but also inkwells, had an aperture in the middle of the lid. However, the circular aperture of the disc found in Osijek, compared with those of inkwells[9], is more similar to the apertures in the discs of lamps.

Glass lamps from the Roman period are rare finds in the area of the entire Roman Empire. So far, fewer than twenty examples have been found, mostly in the area of its former western part. Only two specimens have been found in the eastern part of the Empire.[10] Besides the example from Radičević Street (in the former western part of the Empire), two more glass lamps have been found in today's Croatia, in the area of the ancient Roman province of Dalmatia: in the city of Split and on the island of Vis.[11] The specimens differ from each other in terms of size and shape (shape and length of the beak, with or without leg, shape of the leg, with or without handle, handle shape, shape and size of the opening). There is, therefore, no direct analogy among these objects.

Francesco Ceselin, with regard to common elements of individual specimens, divided the lamps into several groups.[12] All the glass lamps found so far have been dated to the time range from the 1st century to the 3rd century.[13] Only three were found in a grave context: the one from Emona, dated to the second half of the 1st century and 1st half of the 2nd,[14] the one from Akko, dated to the 1st century,[15] and the one from Vis, dated to the turn 2nd century

9 Kunina 1997, 102; Whitehouse 1997, 199.
10 Casagrande, Ceselin 2003, 32; Wight 2011, 123.
11 Buljević 2006, 107.
12 Casagrande, Ceselin 2003, 32–33.
13 Casagrande, Ceselin 2003, 35.
14 Lazar 2004, 64.
15 Buljević 2006, 111.

9 Kunina 1997, 102; Whitehouse 1997, 199.
10 Casagrande, Ceselin 2003, 32; Wight 2011, 123.
11 Buljević 2006, 107.
12 Casagrande, Ceselin 2003, 32–33.
13 Casagrande, Ceselin 2003, 35.
14 Lazar 2004, 64.
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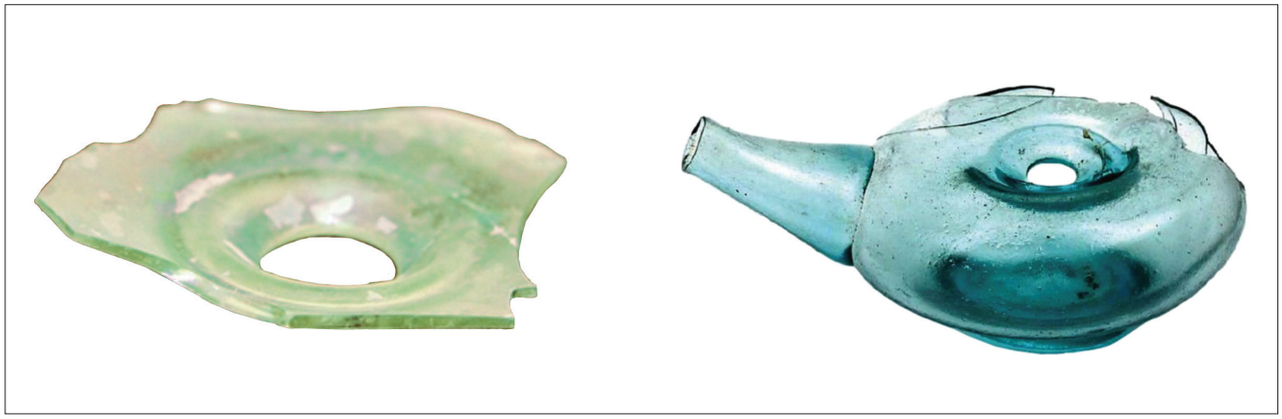

SLIKA 3. 1–2. 1: Osijek, Radičevićeva 3, ulomak diska; 2: Svjetiljka iz Splita (Buljević 2006, 109, sl. 1).

FIGURE 3. 1–2. 1: Osijek, 3 Radičević Street, fragment of a disc; 2: A lamp from Split (Buljević 2006, 109, Fig. 1).

3. st.[16] Mjesto je proizvodnje staklenih svjetiljki zasad nepoznato, ali s obzirom na to da su samo dvije pronađene u istočnome dijelu Carstva, trenutačno se smatra da je veća vjerojatnost da je riječ o proizvodima staklarskih radionica zapadnog dijela Rimskog Carstva.[17]

Ako je u slučaju nalaza iz Radičevićeve ulice (u Osijeku) doista riječ o dijelu svjetiljke, moguće je pretpostaviti njezin izgled na temelju cjelovitih primjeraka pronađenih u drugim dijelovima Rimskoga Carstva. Prema obliku, disk bi svjetiljke iz Radičevićeve ulice odgovarao obliku diska svjetiljke pronađene u Splitu (sl. 3 : 1–2) i oblicima otvora na diskovima svjetiljki iz gradova Vicenze i Pompeja u Italiji.[18] Iako Zrinka Buljević i Francesco Ceselin toj skupini pridodaju i svjetiljku iz grada Kölna u Njemačkoj,[19] prema mišljenjima autora ovog članka, otvor diska kölnske svjetiljke razlikuje se od ostalih primjeraka veličinom i načinom na koji je oblikovan.

Na osnovi ulomka pronađenog u Osijeku 2010. god., na kojem je disk napravljen na način da se njegov otvor blago spušta prema dolje, moguće je zaključiti kako je čitava svjetiljka najvjerojatnije imala zaobljena ramena što su se spuštala izravno iz diska (T. 1). Dakle, ta je svjetiljka izgledala kao one koje su pronađene u Splitu, Vicenzi, Pompejima i Kölnu. Uzmemo li u obzir i drugi ulomak, koji je možda bio dio dna iste svjetiljke, možemo zaključiti da svjetiljka nije imala postolje, odnosno nogu, već ravnu stajaću površinu poput svjetiljki iz Avenchesa u Švicarskoj, Voghenze u Italiji i možda Akkoa u Izraelu.[20] No ako taj ulomak nije ulomak

to 3rd century.[16] The place of production of the glass lamps is unknown to date, but since only two lamps have been found in the Eastern part of the Roman Empire, it is currently considered that they are more likely products of glass workshops in the western part of the Roman Empire.[17]

Insofar as the glass fragment from Radičević Street (in Osijek) is really part of a glass lamp, it is possible to assume its appearance on the basis of the complete specimens found in other parts of the Empire. According to its shape, the disc of the lamp from Osijek would correspond to that found in Split (Fig. 3 : 1–2) and the shapes of the apertures on those from Vicenza and Pompeii in Italy.[18] Although Zrinka Buljević and Francesco Ceselin have added the lamp from Cologne[19] to this group, the authors of this article believe that the disc aperture of the Cologne lamp differs from the other specimens in size and manner of shaping.

On the basis of the fragment found in Osijek in 2010, where the disc is made in such a way that its aperture slopes down slightly, it is possible to conclude that the whole lamp probably had folded shoulders which dropped directly from the disc (Pl. 1). That would mean that this lamp looked like those found in Split, Vicenza, Pompeii and Cologne. If we take into consideration the other fragment, which may have been part of the base of the same lamp, then it would be possible to conclude that the lamp had no standing surface, i.e. base ring, but a flat surface such as on the lamps from Avenchesa in Switzerland, Vogheza in Italy, and perhaps Akko in Israel.[20] However, if this base fragment is not a

16 Buljević 2006, 110.
17 Buljević 2006, 111.
18 Beretta, Di Pasquale 2004, 284–285; Buljević 2006, 110.
19 Buljević 2006, 110.
20 Casagrande, Ceselin 2003, 35.

16 Buljević 2006, 110.
17 Buljević 2006, 111.
18 Beretta, Di Pasquale 2004, 284, 285; Buljević 2006, 110.
19 Buljević 2006, 110.
20 Casagrande, Ceselin 2003, 35.

istog predmeta, onda nije moguće pouzdano odrediti je li dno na svjetiljci bilo napravljeno ravno ili u obliku prstena. Jednako tako, nije moguće odrediti niti je li svjetiljka imala apliciranu ručku i kljun. Vjerojatno jest, kao što na to upućuju navedene analogije, iako je izgled tih dijelova svjetiljke iz Osijeka moguće tek pretpostaviti jer su i kljun i ručka mogli biti različitih oblika.

Ulomak pronađen u osječkoj ulici Branka Radičevića najvjerojatnije jest ulomak staklene svjetiljke, a to ga čini prvim pronađenim, prepoznatim i zasad jedinstvenim takvim objavljenim nalazom iz rimskoga grada Murse i okolice, odnosno čitavog hrvatskoga dijela nekadašnje rimske provincije Panonije. Značajnim ga čini i podatak da je njegov kontekst jasno stratigrafski određen, tj. da je kronološki točno smješten u 2. st. No cjelokupan izgled svjetiljke; njezino dno, ručka i kljun ostaju pretpostavljena oblika.

fragment of the same object, then it is not possible to determine whether the bottom of the lamp was made straight or in the form of a ring. Likewise, it is not possible to determine whether the lamp had an applied handle and a beak. Probably it did, as the above-mentioned analogies point to such conclusion. However, it is only possible to assume the appearance of the parts of the lamp from Osijek described above, since the beaks and the handles could be of different shapes.

To conclude, the fragment found in Osijek most likely is a fragment of a glass lamp, which makes it unique: the first discovered, recognized and published find of that kind from the Roman town of Mursa and its surroundings, or the entire Croatian part of the former Roman province of Pannonia. It is also important to note that the context of the find is clearly stratigraphically determined: that is, chronologically correctly located in the 2nd century; but the overall appearance of the lamp – its bottom, handle and beak – remain presumed.

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T. I

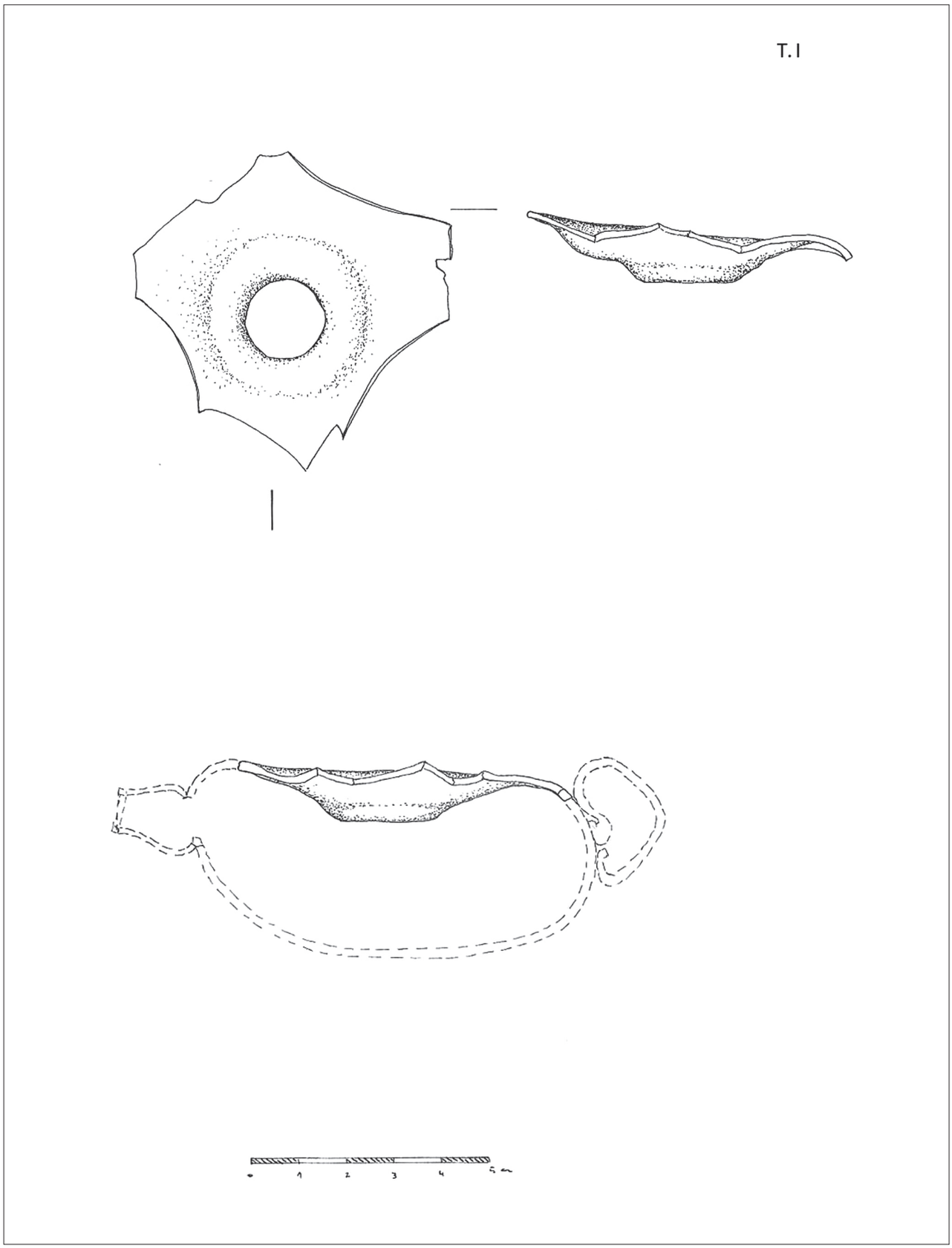

TABLA 1. Pretpostavljeni izgled lucerne iz Radičevićeve ulice u Osijeku (izradio D. Radman).

PLATE 1. The assumed appearance of the glass lamp from Osijek, 3 Radičević Street (made by D. Radman).

AN EARLY-MEDIAEVAL WINGED SPEARHEAD FROM FRUŠKA GORA

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Researchers have referred to the winged spearhead found on the southern slopes of Fruška Gora for more than 50 years. This paper fully describes and analyses this winged spearhead for the first time. The author briefly discusses the possible places of the spearhead's origin, compares the spearhead with morphologically and technologically similar artefacts found all over Europe, and places it within relevant typological-chronological classifications. Based on more or less close analogies, the Fruška Gora spearhead is dated to between the middle of the 9th century and the beginning of the 11th. The lack of archaeological context calls for caution when it comes to dating and interpreting this artefact and placing it in the course of known history.

Key words:
Syrmia, Fruška Gora, Grgurevci, Šuljam, early Middle Ages, winged spearheads

Introduction

The Mediaeval Collection of the Archaeological Museum in Zagreb treasures several winged spearheads, including one found on the southern slopes of Fruška Gora and shrouded in a veil of mystery.[1] The location of its discovery, its archaeological context and the circumstances of its appearance in the museum remain unknown.

Researching early-mediaeval weaponry from the territory of the former Yugoslavia, Dušan Pribaković touched on winged spearheads, citing the find from Fruška Gora as one of the examples.[2] Zdenko Vinski described it as a "Carolingian long and heavy" spearhead discovered in Grgurevci-Šuljam.[3] Both scholars deprived the readers of crucial information: a detailed description accompanied by an illustration, the spearhead's history and archaeological context, and an inventory number or its keeping place.

Museum curators probably neglected to enter the Fruška Gora spearhead into the inventory book of the Mediaeval Collection of the Archaeological Museum in Zagreb,[4] leading to its misplacement during the great reconstruction of the museum in 1997/1998. Recently, Željko Demo traced this artefact and assigned it a new inventory number (inv. no. S-4120).[5]

1 Željko Demo, museum advisor (now retired), and Maja Bunčić, senior curator of the Mediaeval Collection of the Archaeological Museum in Zagreb, kindly and selflessly granted me access to examine this winged spearhead and provided me with information, drawings, photographs, and X-ray images. I would like to use this opportunity to express my deepest gratitude.

2 Pribaković 1965a, 121; 1965b, 88, n. 400; 1966, 47, n. 95; Originally, Pribaković labelled the find-site as Grgurevac, subsequently calling it Grgurovac.

3 Vinski 1979, 176, n. 192, 187, no. 21.

4 Demo 2011, 62, n. 8.

5 The spearhead is still marked with its old inventory number, 2020. The number lacks a museum collection identification symbol (Pl. 2: 2). Željko Demo informed me in writing about the history of the Fruška Gora spearhead, in an e-mail of September 18, 2013.

In the meantime, several researchers have mentioned the Fruška Gora spearhead, usually citing the work of Zdenko Vinski.[6] One of them, intriguingly, even revealed one previously unpublished fact.[7]

A Possible Place of Discovery

The village of Grgurevci lies on the southern slopes of Fruška Gora, north of Sremska Mitrovica. It borders the village of Šuljam to the east. There are no documented early-mediaeval archaeological sites in Grgurevci or Šuljam.[8] In Grgurevci, the archaeologists found scant evidence of the mediaeval period: some pottery shards, the remains of mediaeval and/or post-mediaeval plumbing, and a vaulted underground structure thought to be part of the St. Grgur monastery, first mentioned in 1247.[9] In Šuljam, the traces of mediaeval life took the form of several furnaces discovered at the prehistoric site of Vagan.[10] On Gradac hill, about 6 km north of Šuljam, sit the remains of an elliptical mediaeval fortification.[11] However, a testament to early-mediaeval human activity near Grgurevci does exist: a necropolis excavated near Manđelos, a village on Grgurevci's western boundary. Until discovered, the necropolis slept next to the Sirmium-Bononia Roman vicinal road, active throughout the Middle Ages.[12] On the basis of small finds, the necropolis was dated to between the beginning of the 7th century and the middle of the 9th.[13]

Description of the Spearhead

The long (560 mm) and massive (1593 g) winged spearhead found either in Grgurevci or neighbouring Šuljam, or in their vicinity, exhibits quality artisanship and a high state of preservation, with the exception of sporadically damaged blade edges (Pl. 1–3).

A lenticular cross-section and almost uniform width characterize the blade (Pl. 1–2). Its maximum width lies in the lower part, 235 mm below the tip. From that point, the blade gradually narrows towards the tip and curves towards the socket. The blade length equals 386 mm, with maximum width 63 mm. Thickness at maximum width is 10.5 mm. X-radiography revealed that the spearhead was not made by pattern welding (Pl. 4). The X-ray brought to light a circular motif – invisible to the naked eye – in the lower part of the blade (Pl. 4: 2). Higher transparency of this motif to the X-rays could indicate either that the motif was made by inlaying some other metal, more radiolucent, into the iron blade, or that some ornament, symbol or workshop sign, which faded away in time, was very gently imprinted into the blade's surface. Two thin plastic protrusions of a semi-circular cross-section decorate the blade-socket connection, one below each of the blade's edges.

The long, narrow socket lacks decoration (Pl. 1–2; Pl. 3: 1). Its length equals 174 mm, outer diameter 38 mm, and inner diameter 32 mm. The socket's cross-section changes from octagonal, almost circular in the lower part, to hexagonal in the upper part. Massive wings with flat tops and concave bottoms sit near the socket's mouth and extend slightly above the middle of the socket (each wing is 94 mm long). The wings span 118 mm. Two vertical grooves trim the end of each wing (Pl. 1; Pl. 3). Iron nails, used to fasten the spearhead to a wooden shaft, pierce the lower part of each wing. One nail is missing its head. The nail with the preserved head (21 mm long) curves towards the socket's mouth; the other (19 mm long) inclines slightly (Pl. 1; Pl. 3: 3).

Comparative Analysis

The spearhead from Fruška Gora was compared with morphologically and technologically similar artefacts discovered throughout Europe. Comparison examples were chosen on the basis of similarities in contour, dimensions, proportions, weight, and lack of socket grooves and pattern-welded blades. It seems that the spearhead from Fruška Gora is rather unique, as none of the proposed analogies fully resembles it.

The winged spearhead from Fruška Gora resembles the spearhead discovered in the 10th – 11th century settlement in Malá Kopanja (Ukraine) in contour, dimensions and proportions (Tab. 1–2), and the lack of socket grooves. The spearhead from Malá Kopanja differs by having a prominent blade ridge and smaller, archaically shaped wings.[14]

A destroyed section of a necropolis excavated in Luboń (Poland) gave birth to a damaged spearhead found with weapons of mainly Scandinavian origin, belonging to one or two graves dated to the end of the 10th century and the first half of the 11th.[15] The spearheads from Fruška Gora and Luboń share common features such as contour, blade shape and lack of socket grooves, but differ in size (Tab. 1), proportions (Tab. 2) and placement of wings.[16]

Two winged spearheads surfaced from the wreck of a Byzantine merchant ship dated to the third decade of the 11th century, discovered in Serçe Limanı bay (Turkey).[17] The spearhead labelled WP6 resembles the find from Fruška Gora in contour, but differs

6 E.g. Милетић 1979, 146; Bekić 2004, 169; Sekelj Ivančan 2004, 111, n. 5; Husár 2006, 50; 2014, 33, 34, n. 48, 35, n. 57.

7 Husár 2006, 50; 2014, 34, n. 48. Husár described the socket of the spearhead as octagonal in cross-section.

8 I am indebted to Dragan Anđelić and Ivana Pašić, archaeologist-conservationists, who granted me access to the documentation of the Provincial Institute for Protection of Cultural Monuments, Petrovaradin. My gratitude goes to Biljana Lučić, archaeologist-conservationist, who provided me with information from the documentation of the Institute for Protection of Cultural Monuments, Sremska Mitrovica, in an e-mail of December 6, 2013. The archaeological documentation of these institutions does not contain information about the winged spearhead from Fruška Gora.

9 Dossier no. 272/B in the documentation of the Provincial Institute for Protection of Cultural Monuments, Petrovaradin; Прица 1991, 67; Поповић 1996, 57–59.

10 Dossier no. 279/B in the documentation of the Provincial Institute for Protection of Cultural Monuments, Petrovaradin.

11 Прица 1991, 255.

12 Тадин 1995, 257; For the route of the Sirmium-Bononia road, see Милошевић 1988.

13 Тадин 1995, 262.

14 Kovács 1980, 100, 106, Taf. 64: 1.

15 Kurasiński 2005, 169, 173.

16 Nadolski 1954, 178–179, no. 52, Tab. 27: 2; Kurasiński 2005, 169–170, Abb. 5.

17 Bass 2004, 3–4.

TABLE 1. Measurements of the winged spearhead from Fruška Gora and comparison examples (made by A. Sajdl).

Find-site, Country	L (mm)	BL (mm)	BW (mm)	SL (mm)	SD (mm)	WS (mm)
Fruška Gora, Serbia	560	386	63	174	32/38	118
Malá Kopanja, Ukraine[1]	530	360	55*	170	?	81*
Luboń, Poland[2]	450	340*	40*	110*	?	75*
Serçe Limanı WP6, Turkey[3]	563	434	42	129	27/?	80*
Budapest, Danube, Hungary[4]	570	410	65	160	40 / 30–45	?
Bosnia and Herzegovina[5]	522	354	58	168	46	104
Bosnia and Herzegovina[6]	>517	>385	65	132	?	N/A
Bosnia and Herzegovina[7]	495	368	56	127	?	N/A
Varaždin, Croatia[8]	520	385	57	135	39/43	100
Nijmegen, Waal, Netherlands[9]	±536	±425	±62	±111	?	±100
Rijswijk, Netherlands[10]	479	±360	39,3	±119	?	78,4
Chalon-sur-Saône, France[11]	465	350*	40*	115*	?	80*

L – spearhead length; BL – blade length; BW – maximum blade width;
SL – socket length; SD – socket diameter (inner/outer); WS – wing span; ? – unknown;
N/A – not applicable

*The author of this paper estimated these measurements by processing the published drawings with a computer software.

1 Kovács 1980, 100.
2 Nadolski 1954, 178–179, no. 52.
3 Schwarzer 2004, 367, 369, WP 6, 389, Tab. 21: 3.
4 Kovács 1980, 98.
5 Museum of Republika Srpska, inv. no. 443; Sijarić 2014, 221.
6 National Museum of Bosnia and Herzegovina, inv. no. 6898; Demo 2011, 74, tab. 4.
7 National Museum of Bosnia and Herzegovina, inv. no. 6899; Demo 2011, 74, tab. 4.
8 Tomičić 1985, 224.
9 Ypey 1982, 255, no. 7.
10 Ypey 1982, 261, no 23.
11 Bouzy 1990, 166, cat. no. 209.

TABLE 2. Proportions, weight, and type according to Westphal's typology of the winged spearhead from Fruška Gora and comparison examples (made by A. Sajdl).

Find-site, Country	BL/BW	BL/SL	Weight (g)	Type
Fruška Gora, Serbia	6.1	2.2	1593	III
Malá Kopanja, Ukraine	6.5	2.1	?	III (?)
Luboń, Poland	8.5	3.1	?	IV
Serçe Limanı WP6, Turkey	10.3	3.4	?	IV
Budapest, Danube, Hungary[1]	6.3	2.6	1710	III
Bosnia and Herzegovina[2]	6.1	2.1	1822.4	III
Bosnia and Herzegovina[3]	5.9	2.9	1333	III
Bosnia and Herzegovina[4]	6.6	2.9	1113.7	III
Varaždin, Croatia[5]	6.75	2.85	1200	III
Nijmegen, Waal, Netherlands[6]	6.9	3.8	1400	III
Rijswijk, Netherlands[7]	9.2	3.0	?	III/IV
Chalon-sur-Saône, France[8]	8.8	3.0	?	IV

BL – blade length; BW – maximum blade width; SL – socket length; ? – unknown; N/A – not applicable

1 Weight according to Kovács 1980, 98.
2 Museum of Republika Srpska, inv. no. 443; Weight according to Sijarić 2014, 213.
3 National Museum of Bosnia and Herzegovina, inv. no. 6898; Demo 2011, 72, tab. 3, 74, tab. 4.
4 National Museum of Bosnia and Herzegovina, inv. no. 6899; Demo 2011, 72, tab. 3, 74, tab. 4.
5 Demo 2011, 72, tab. 3, 74, tab. 4.
6 Ypey 1982, 255, no. 7; Westphal 2002, 295, Tab. 3.4.b.
7 Ypey 1982, 261, no 23; Westphal 2002, 295, Tab. 3.4.b.
8 Type according to Westphal 2002, 260.

by its pronounced blade ridge, its proportions (Tab. 2) and the position of the wings.[18]

A stray find from Rijswijk (Netherlands) parallels the spearhead from Fruška Gora in contour and blade shape. The pattern-welded blade, different dimensions and proportions (Tab. 1–2), presence of socket grooves, and position of the wings distinguish it from the Fruška Gora find.[19] A very similar spearhead emerged from the River Saône near Chalon-sur-Saône (France).[20] This spearhead, along with two other specimens from France, shows incised motifs on the blade. These motifs differ significantly in shape, position and creation technique in comparison with the motif on the Fruška Gora spearhead.[21]

Researchers did not publish the weight of the spearheads from Malá Kopanja, Luboń, Rijswijk and Chalon-sur-Saône. Joseph Schwarzer described the spearheads from the Byzantine shipwreck as "heavy".[22] Their weight could not be measured, as all iron artifacts from the shipwreck have disintegrated, and their reproductions were cast with epoxy resin using the natural mould that had formed around the artefacts before they perished.[23]

In weight, the Fruška Gora spearhead approximates the spearhead found in the Danube near Budapest (1710 grams)[24] and the stray find kept in the Museum of Republika Srpska (1822.4 grams).[25] Similar in size (Tab. 1), proportions (Tab. 2) and the lack of socket grooves, these spearheads contrast in shape. The latter two specimens have deltoid shaped blades with prominent ridges, and shorter, stronger sockets with a larger diameter.[26] László Kovács dated the Budapest spearhead to between the 9th and 11th centuries, with a possibility of later dating due to its shape.[27] Mirsad Sijarić dated the spearhead from the Museum of Republika Srpska to between the middle of the 9th century and the first decades of the 11th.[28]

Other winged spearheads, whose weight exceeds 1 kg, differ significantly from the Fruška Gora spearhead. Two stray finds from the territory of present-day Herzegovina have deltoid shaped blades with prominent ridge and socket grooves;[29] a spearhead from Varaždin, also with a grooved socket, and another from the River Waal, near Nijmegen, stand out with pattern-welded blades with prominent ridge and dissimilar wings.[30] Compared with the spearhead from Fruška Gora, these four specimens also differ in proportions and weight (Tab. 2): they are 12 – 30 % lighter.[31]

Typological Analysis and Dating

On the basis of the shape of its wings, one could classify the Fruška Gora find as a winged spearhead of fully developed form (*Flügellanze mit vollendeter Form*) according to Peter Paulsen's typology.[32] Spearheads of this type developed in the Alemannic-Frankish territory of southern Germany, where Paulsen linked specimens with decorative socket grooves with the expansionism of Charlemagne towards the southeast, along with the establishment of the Eastern March, dating them around the year 800.[33] The Fruška Gora find fits into Paulsen's next development stage of winged spearheads, dated up to the year 1000, and characterized by lack of socket grooves and a wingspan between 10 and 15 cm.[34]

Erik Szameit classified winged spearheads from the territory of present-day Austria on the basis of the position of their wings. According to his research, these spearheads, originating mostly from graves, appeared in the Austrian regions between the last third of the 8th century and the first third of the 9th, as early Carolingian products of western workshops.[35] The spearhead from Fruška Gora could be included in Szameit's type A, characterized by massive decorated wings with a relatively large wingspan, whose bottom edge extends to the socket mouth. However, other examples of Szameit's type A differ considerably: they weigh four times less and have pattern-welded blades and socket grooves.[36] These morphological differences are most probably chronological as well.

Martin Husár has typologically analysed spearheads from the Carpathian Basin. He designated winged spearheads as type BA, dividing them into four groups on the basis of the shape of their wings.[37] Despite the lack of detailed description and illustration, Husár included the spearhead from Fruška Gora in his variant BAd, citing the paper of Zdenko Vinski. Spearheads of this variant have flat wings with a large wingspan, a flat top perpendicular to the socket, and a concave bottom.[38]

Using typology developed by Herbert Westphal, who analysed grave and stray finds from Westphalia, Saxony, and neighbouring regions, Željko Demo suggested a somewhat different grouping and dating of winged spearheads from present-day Croatia

18 Schwarzer 2004, 367, 369, WP 6, Fig. 21: 6, WP 6, 389, Tab. 21: 3.

19 Ypey 1982, 261, no. 23, 262, Abb. 23.

20 Bouzy 1990, 166, Fig. 137, cat. no. 209.

21 Bouzy 1990, 164, 166, Fig. 137, cat. no. 207–209.

22 Schwarzer 2004, 367, WP 5, WP 6.

23 Bass, van Doorninck 2004, 65.

24 Kovács 1980, 98.

25 Sijarić 2014, 213.

26 Kovács 1980, 98, 105, Taf. 61: 4; Sijarić 2014, 212–213, 221, T. 45: 1.

27 Kovács 1980, 105.

28 Sijarić 2014, 215.

29 Miletić 1991, 204–205, T. 4: 1–2. A stray find from Vir, near Posušje, possibly the largest and heaviest spearhead found on the Balkan Peninsula, was not compared with the find from Fruška Gora, since the two differ in shape substantially and the exact dimensions and weight of the spearhead from Vir still remain unknown (Oreč 1984, 124, sl. 18: b; Miletić 1991, 205–206, T. 4: 3; Demo 2011, 72, tab. 3, kat. br. B8, 73, n. B8, 74, tab. 4.).

30 Tomičić 1968, 53–55, sl. 2; 1985, 223–226, sl. 9, 10; Ypey 1982, 255, no. 7, Abb. 7.

31 Tomičić 1985, 224; Demo 2011, 72, tab. 3, 74, tab. 4.

32 Paulsen 1967, 257–259.

33 Paulsen 1967, 262–263, Abb. 1.

34 Paulsen 1967, 263–264, Abb. 2.

35 Szameit 1987, 167–170.

36 Szameit 1987, 167, Abb. 2.

37 Husár 2014, 29–37.

38 Husár 2014, 33, Tab. 18–26.

and Bosnia and Herzegovina.[39] Westphal based his typology on technological and morphological characteristics of winged spearheads such as: ratio of blade length to blade width and of blade length to socket length, position of the blade's maximum width in relation to its length, presence/absence of pattern welding and decorative socket grooves, diameter and cross-sectional shape of the socket, shape and span of the wings, and material and decoration of the nails.[40]

Demo included the massive spearheads from Varaždin and Herzegovina in Westphal's type III.[41] Winged spearheads of this type share the following characteristics: a blade with mostly uniform width; a socket with circular, octagonal or square cross-section, diameter up to 38 mm, and decorative grooves; a wingspan considerably greater than the maximum blade width; and a weight up to and around 1 kg. Westphal dated this group from the end of the 8th century to the second half of the 9th.[42] This type also encompasses the spearhead from Nijmegen.[43] Based on proportions, shape and weight, the spearheads from Budapest and the Museum of Republika Srpska could also be placed in Westphal's type III. Depending on its weight, which is currently unknown, the spearhead from Malá Kopanja could belong to this type.

Westphal included the spearheads from Rijswijk and Chalon-sur-Saône in his type IV.[44] Spearheads of this type resemble the spearheads of type III in shape, but weigh less and have a more slender form. Westphal dated type IV to the second half of the 9th century and the 10th.[45] On the basis of shape, proportions, and placement of wings, the spearheads from Serçe Limanı (WP6) and Luboń probably belong to this type as well.

Plastic decorations on the blade-socket connection, present on the spearhead from Fruška Gora, characterize Westphal's type V from Otonian time. Based on their conspicuous and slender sockets, Westphal assumed that spearheads of this type had more of a parade use than a fighting one.[46] None of the spearheads previously mentioned, more or less similar to the one from Fruška Gora, shows this kind of decoration.

Martin Husár included the spearhead from Fruška Gora in Westphal's type II,[47] dated to the second half of the 8th century and the first half of the 9th,[48] despite the lack of detailed description or illustration. Indeed, the proportions of the Fruška Gora find (blade length / blade width ratio: 6.1; blade length / socket length ratio: 2.2) approximate the proportions of spearheads from Germany (6.9; 2.8), the Netherlands (6.1; 2.6) and Austria (6.3; 2.5), included in Westphal's type II.[49] However, as shown above, the Fruška Gora find has more in common with the spearheads of Westphal's types III and IV; but, due to its dimensions, proportions and weight, it is closer to type III. Besides, the proportions of the Fruška Gora find approximate the proportions of spearheads from present-day Croatia and Bosnia and Herzegovina, included by Željko Demo in Westphal's type III (6.22; 2.79).[50]

The characteristics of the spearhead from Fruška Gora match (more or less) the characteristics of later types of winged spearhead and those dated to the 10th/11th century. In accordance with the analogies offered, and with certain similarities to Westphal's type III, the spearhead from Fruška Gora could be dated to a broad time frame from the middle of the 9th to the end of the 10th / beginning of the 11th century. With the absolute lack of archaeological context, cautious dating is necessary.

Regarding Origin

Some scholars have associated the appearance of winged spearheads in the Carpathian Basin with Frankish conquests and wars against the Avars,[51] while their presence in the 9th and 10th centuries has been explained through cultural influences of the Carolingian Empire, East Francia and the Holy Roman Empire.[52]

Researchers have usually considered winged spearheads from the territories of present-day Bosnia and Herzegovina and Croatia as a product of Frankish workshops, dating them to the end of the 8th century and the beginning of the 9th, on the basis of analogies from Germany, Austria and the Carpathian Basin.[53] Similarly, archaeologists have dated the winged spearheads from nearby Slovenia to the end of the 8th century and the 9th.[54] Some researchers have interpreted their occurrence in the Pannonian regions of present-day Croatia, and in Slovenia, within the context of Frankish-Avar wars, Slavic-Frankish conflicts in the times of Liudewit or Ratimar,[55] or even Hungarian raids on Italy, in the case of later finds from Slovenia.[56] Others have observed winged spearheads from Bosnia and Herzegovina through the prism of historical events in the early-mediaeval Croatian state, which fell under Frankish control at the beginning of the 9th century.[57] The two massive spearheads from Herzegovina represent the only exception, since it was believed that they arrived later in the 9th century through the Carpathian Basin. Originally, Nada Miletić dated these finds to the 9th/10th century, because they

39 Demo 2011.

40 Westphal 2002, 221–266.

41 Demo 2011, 71–73.

42 Westphal 2002, 258.

43 Westphal 2002, 295, Tab. 3.4.b.

44 Westphal 2002, 260, 294, Tab. 3.4.c.

45 Westphal 2002, 259–260.

46 Westphal 2002, 260; 2004, 59–61.

47 Husár 2014, 35, n. 57.

48 Westphal 2002, 257.

49 Westphal 2002, 294, Tab. 3.4.a, 296, Tab. 3.4.c, 298, Tab. 3.4.e.

50 Demo 2011, 72, tab. 3.

51 Hampel 1905, 183–184; Kovács 1980, 97.

52 Kovács 1980, 97, 106–107; Husár 2014, 114–115.

53 Tomičić 1968; 1985, 224–226; Miletić 1977, 234–235; 1991; Милетић 1979; Vinski 1986, 67–69; Bekić 2004, 170–173; Sekelj Ivančan 2004.

54 Bitenc, Knific 1997, 22, 26, sl. 17; 2001a; 2001b; 2009, 328, cat. no. 91; Knific 2009, 139, Fig. 137; Knific, Nabergoj 2016, 73, sl. 85.

55 For Croatia see Tomičić 1968, 58–59; 1985, 226–228; Bekić 2004, 174–176; Sekelj Ivančan 2004, 122; For Slovenia see Bitenc, Knific 1997, 22; Knific 2009, 139; Knific, Nabergoj 2016, 73, sl. 85.

56 Bitenc, Knific 1997, 22; 2009, 328, cat. no. 91.

57 Miletić 1977, 237; 1991, 206; Милетић 1979, 149–150.

have decorative socket grooves, unlike analogous massive spearheads from the Carpathian Basin dated to the 10th/11th century.[58]

Ante Milošević has proposed that winged spearheads without pattern-welded blades and socket grooves, found within the territories of present-day Croatia and Bosnia and Herzegovina, could be local products based on Carolingian examples.[59] László Kovács has interpreted 10th/11th century winged spearheads from the Carpathian Basin as local products, as well.[60] Alexander Ruttkay, who studied weapons and warrior equipment made between the 9th and 14th centuries found within the territory of present-day Slovakia, has also pointed out the possibility of local production of winged spearheads.[61] According to Joseph Schwarzer, weapons from the Byzantine shipwreck at Serçe Limanı, including pole weapons, originate from the territory of present-day Bulgaria.[62] To favour his hypothesis, he used the results of botanical analysis of the wooden parts of the weapons. This analysis determined that the wooden shafts of the pole weapons were made of two species of beech (*Fagus sylvatica* and *Fagus orientalis*), both growing on the southern Crimea and in southern and southeastern parts of present-day Bulgaria.[63] We should keep in mind that *Fagus sylvatica* grows all over the European continent, while *Fagus orientalis* grows on the eastern parts of the Balkan peninsula and Crimea,[64] that winged spearheads have not been discovered in the territory of present-day Bulgaria,[65] and that iron spearheads and wooden shafts do not have to be produced at the same time, nor at the same place. If this type of weaponry was e.g. subject to trade, over long distances it would be easier to transport the iron spearheads only, nailing them to the shaft once they reached their destination. Besides, we should consider the possibility that a wooden shaft was replaced with a new one if any damage occurred. Metalographic analysis has not been performed on the Fruška Gora spearhead. Bearing in mind the lack of spearhead workshops as well, at this time it is not possible to determine where the Fruška Gora spearhead was produced.

Historical Context

Written sources regarding Syrmia between the 9th and 11th centuries are not numerous, and there is no consensus when it comes to historians' interpretations. Some scholars believe that Syrmia was a border region of the Frankish Empire during the entire 9th century,[66] until Hungarians conquered it at the beginning of the next century.[67] Advocates of this hypothesis consider toponyms like Fruška Gora (Φραγγοχώριον) and *Francavilla* (modern Manđelos) as the legacy of long-term Frankish presence,[68] although some linguists offer significantly different interpretations of these place-names' origins.[69] Others, however, think that Bulgarians conquered the area between Sava and Danube between the years 825 and 829/830, ruling it with short interruptions for more than one century.[70] Some supporters of this hypothesis believe that the Hungarians conquered Syrmia after the death of Bulgarian Tsar Simeon in 927,[71] while others think that the Bulgarians ruled Syrmia until the fall of the Bulgarian Empire in 971.[72] According to a generally accepted view, Syrmia was incorporated into the empire of Tsar Samuel at the end of the 10th century, and conquered by Byzantium after Samuel's death in 1018, and by the Hungarians before 1071/1072.[73] Lately, some scholars have hypothesized that Syrmia was under Hungarian rule from the first or the third decade of the 10th century, and connected Samuel's and Byzantine's conquest of Sirmium with the area of present-day Mačvanska Mitrovica, which was an island on the River Sava near Sirmium during the Middle Ages.[74]

Conclusion

Torn out of the archaeological context, the spearhead from Fruška Gora cannot and should not be a contribution to the resolution of these dilemmas. Without carefully documented archaeological context and exact dating, it would be dangerous to draw any far-reaching conclusions, especially since this type of weaponry is widespread across Europe. Multiple prohibitions to export weapons and cavalry equipment to potential enemies imposed by Charlemagne and Charles the Bold testify to widespread trade in these items.[75] Quality weapons were for sure valuable spoils of war or loot.[76] As a distinctive symbol of power and status, weapons played a specific role in the maintenance of social relationships through the process of gift giving.[77] Laying weapons in a grave, or sticking a spear into a grave mound,[78] as well as the possible ritual placing of a spear in a body of water,[79] speaks of a religious-spiritual role that weapons were able to play. Some weapons are simple remnants and silent witnesses of battles past, whether known to us or not. Getting into the murky waters of interpreting the spearhead from Fruška Gora in any of these ways without reliable archaeological context would be challenging at the least.

58 Miletić 1991, 204–206, T. 4: 1–2.

59 Milošević 2000, 132–133.

60 Kovács 1980, 107.

61 Ruttkay 1976, 300.

62 Schwarzer 2004, 386.

63 Schwarzer 2004, 363, 386, 396, n. 3.

64 Tutin 1964, 61.

65 Йотов 2004.

66 Калић-Мијушковић 1967, 28, 31–32; Калић 2007, 31–34; Gračanin 2011, 154, 175.

67 Gračanin 2011, 205.

68 For Fruška Gora see Šišić 1925, 304, n. 13; Gračanin 2011, 155; For Francavilla (Manđelos) see Калић 2007, 33–34.

69 For Fruška Gora see Скок 1939, 118–119; Михајловић 1965, 1–2; Šimunović 2014, 183; For Francavilla (Manđelos) see Скок 1939, 118–119; Andrić 2005, 34–35; For a brief overview of the scientific discussion, see Калић 1971, 118–119, n. 14.

70 Šišić 1925, 334; Ферјанчић 1969, 48; Andrić 2009, 117.

71 Šišić 1925, 428–429; Andrić 2009, 117.

72 Ферјанчић 1969, 50.

73 Šišić 1925, 466, 480–482; Калић-Мијушковић 1967, 35–36; Ферјанчић 1969, 50–53; Калић 2007, 36–37.

74 Andrić 2009, 118–119; Gračanin 2011, 208–209.

75 Gessler 1908, 152–154; Vinski 1981, 53, n. 123; Gračanin 2011, 166–168, n. 148.

76 For the prices of weapons, see Nicolle 2005, 28.

77 Le Jan 2000, 286–287, 293–294; Nelson 2000, 172; Curta 2006, 2010, 271.

78 Kovács 1971, 108.

79 Bošković 2009, 99; Eichert, Mehofer, Baier 2011, 147–148.

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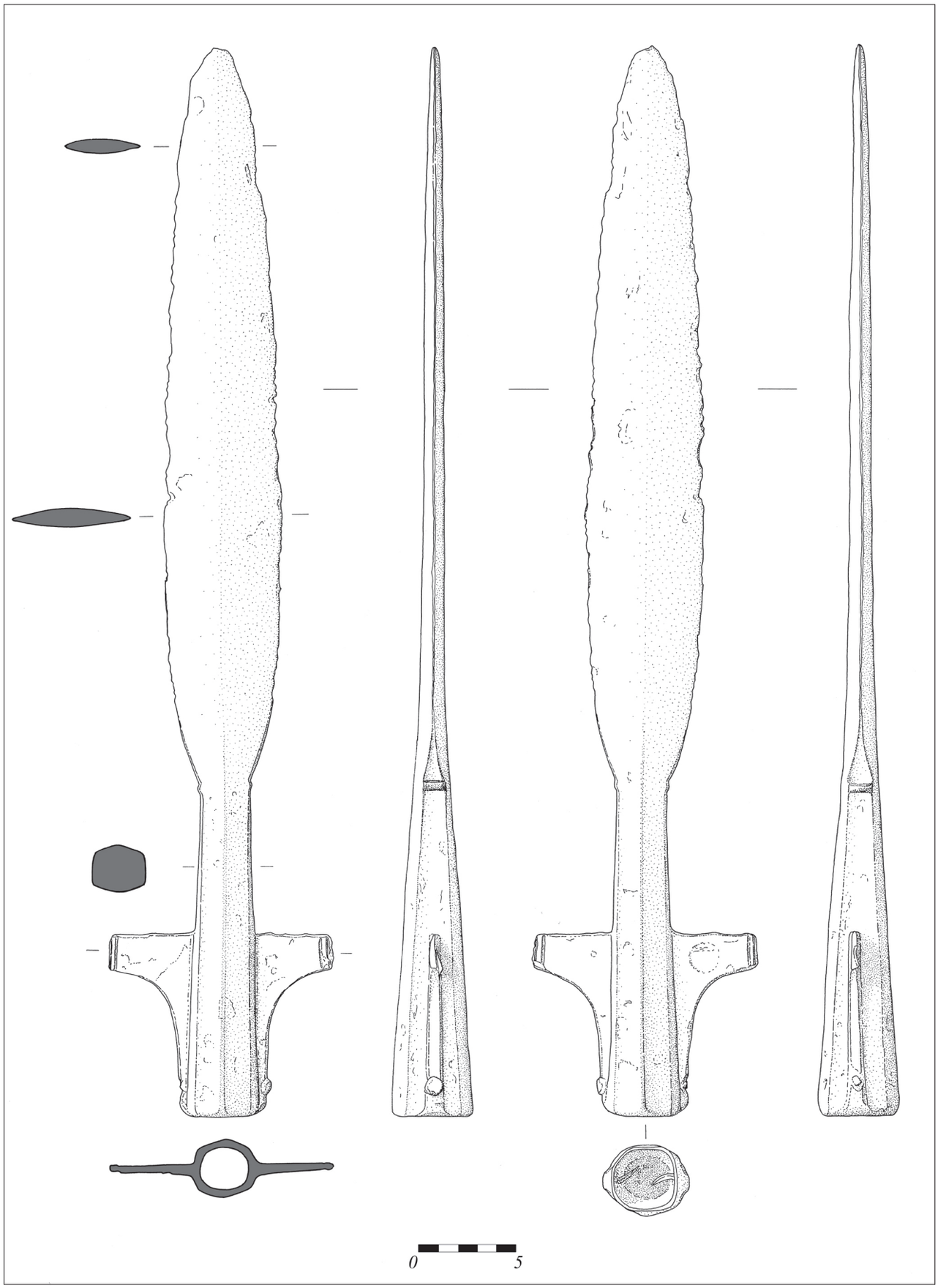

PLATE 1. Winged spearhead from Fruška Gora (The Medieval Collection of the Archaeological Museum in Zagreb, S-4120; made by A. Dugonjić).

PLATE 2. Winged spearhead from Fruška Gora (The Medieval Collection of the Archaeological Museum in Zagreb, S-4120; photo by I. Krajcar).

PLATE 3. Winged spearhead from Fruška Gora, details (The Medieval Collection of the Archaeological Museum in Zagreb, S-4120; photo by I. Krajcar).

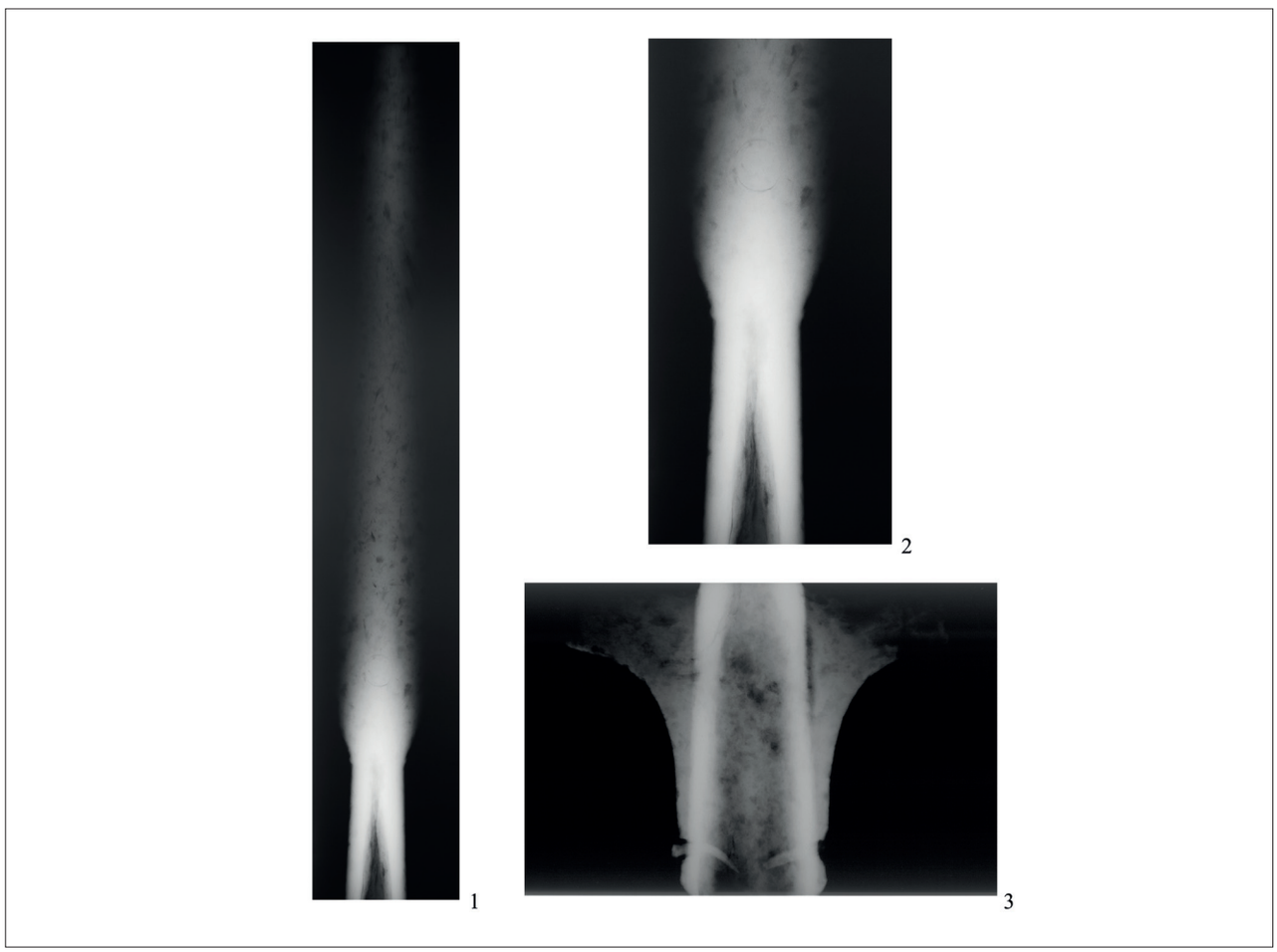

PLATE 4. Winged spearhead from Fruška Gora, radiographs (The Medieval Collection of the Archaeological Museum in Zagreb, S-4120; photo by D. Doračić).

ARHEOLOŠKO NALAZIŠTE BURDELJ NA TRASI AUTOCESTE ZAGREB-SISAK: STAMBENI OBJEKT S PEĆI IZ 15. I 16. STOLJEĆA

THE BURDELJ ARCHAEOLOGICAL SITE ON A SECTION OF THE ZAGREB-SISAK MOTORWAY: A RESIDENTIAL STRUCTURE WITH A STOVE FROM THE 15TH AND 16TH CENTURIES

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U radu se govori prije svega o nalazu stambenog objekta, njegovoj konstrukciji i unutarnjoj organizaciji prostorija i in situ *nalaza peći unutar njega. Daje se i pregled povijesne slike područja Župe Pešćenica kojoj je pripadao lokalitet. Unutar samoga objekta, te u jamama u njegovoj neposrednoj blizini, otkriven je veći broj keramičkih ulomaka kuhinjskih lonaca i stolne keramike koji datiraju lokalitet u 15. i 16. stoljeće.*

This paper primarily covers the find of a residential structure, its construction and the internal organization of its rooms, as well as the in situ *find of a stove inside it. An historical overview of the territory of the Pešćenica Parish to which this site belongs is also provided. A high number of potsherds from kitchenware and tableware were discovered inside the structure itself and in the pits in its immediate vicinity, which date the structure to the 15th and 16th centuries.*

Ključne riječi:
Burdelj, stambeni objekt, pećnjaci, kasni srednji vijek, rani novi vijek

Key words:
Burdelj, residential structure, stove tiles, Late Middle Ages, Early Modern era

Uvod

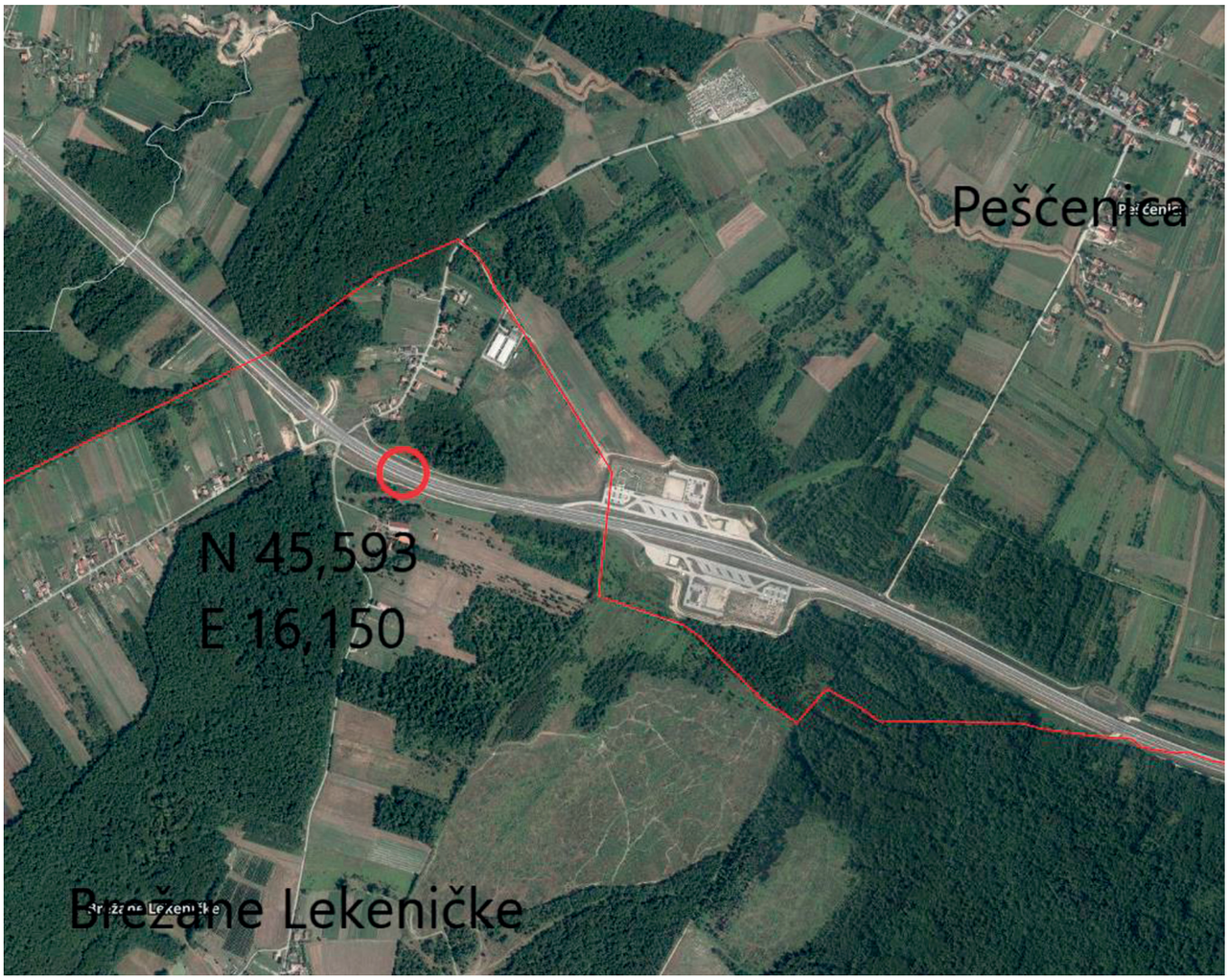
Arheološki lokalitet Burdelj smješten je na trasi autoceste Zagreb – Sisak. Nalazi se u mikroregiji Turopolja, koja se prostire južno od Zagreba, a obuhvaća prostrano nizinsko područje od Zagreba do sutoka Kupe u Savu, na jugoistoku, te brežuljkasti prostor pobrđa Vukomeričkih gorica.[1] Lokalitet je smješten

Introduction

The archaeological site of Burdelj is located on a section of the Zagreb-Sisak motorway. It is in the Turopolje micro-region which extends south of Zagreb, and encompasses a spacious lowland zone from Zagreb to the confluence of the River Kupa into the Sava in the south – east, as well as the rolling foothills of the Vu-

1 Fürst-Bjeliš 1996, 5.

1 Fürst-Bjeliš 1996, 5.



KARTA 1. Položaj lokaliteta Burdelj (Google maps; obradila M. Sečkar).

MAP 1. The location of the site Burdelj (Google maps; adapted by M. Sečkar).

istočno od lokalne ceste, koja povezuje mjesto Pešćenicu s Brežanama Lekeničkim, točno iznad odvojka za potonje naselje, na uzvisini, odnosno, platou koji nadvisuje okolno područje i koji je do početka radova u potpunosti bio prekriven gustom vegetacijom, gustišem i šumom (karta 1).[2] U podnožju platoa, zapadno od lokaliteta, nalazi se Burdeljski potok, odvojak Lekeničkog potoka, po kojemu je lokalitet i dobio naziv, dok je samo mjesto lokaliteta označeno toponimom Mažići. Područje na kojem se smjestio lokalitet danas administrativno pripada općini Lekenik. U zaštitnim arheološkim istraživanjima, koja su trajala 80 radnih dana, u razdoblju od 26. 7. do 5. 11. 2010. godine, ukupna istražena površina iznosila je 21.000 m².[3]

komerec highlands.[1] The site is east of the local road that connects the village of Pešćenica with Brežane Lekeničke, just above the turn-off for the latter settlement, on a rise, or more precisely a plateau which overlooks the surrounding area and which at the commencement of works was entirely covered with dense vegetation, undergrowth and trees (Map 1).[2] At the foot of the plateau, west of the site, is a stream called Burdelj, itself a branch of the Lekenik stream, which gives the site its name, although the actual site is designated with the toponym Mažići. The area that encompasses the site is today administratively a part of the Lekenik Municipality. In rescue archaeological excavations which had a duration of 80 work days over the period from 26 July to 5 November 2010, the total excavated surface covered 21,000 m².[3]

2 Radman-Livaja 2011, 300.

3 Istraživanje lokaliteta je proveo Arheološki muzej u Zagrebu pod vodstvom dr. sc. Ivana Radmana-Livaje, višeg kustosa Muzeja.

2 Radman-Livaja 2011, 300.

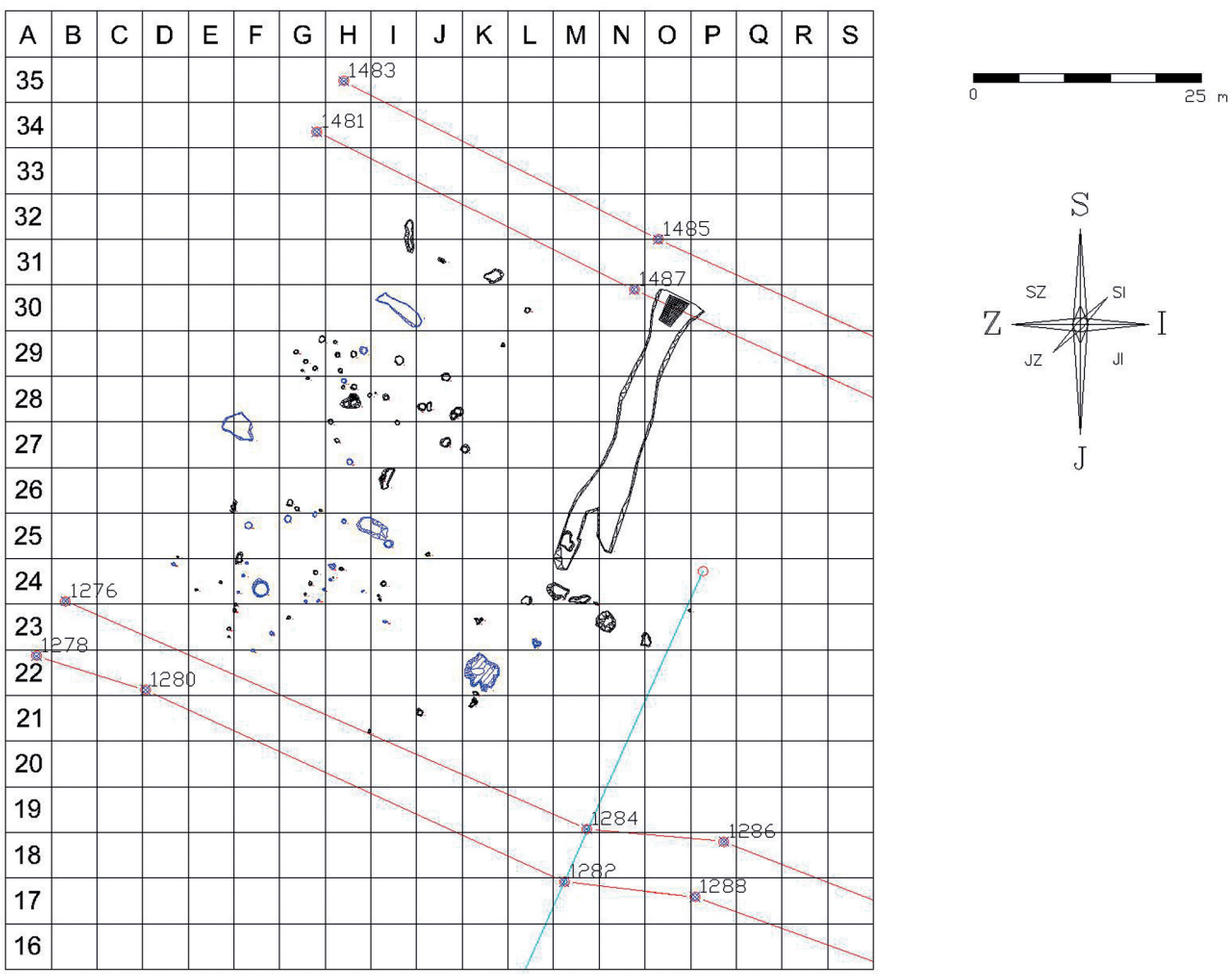
3 Excavations at the site were conducted by the Archaeological Museum in Zagreb under the leadership of Ivan Radman-Livaja, Ph.D., the Museum's senior curator.

Sloj humusa, SJ 001, skidao se strojno te je njegova debljina iznosila u prosjeku 40-ak centimetara. Ispod humusa SJ 001 prostirao se sloj zdravice žućkasto-sive boje, označen kao SJ 002, na istočnom dijelu terena, te kao SJ 003, na zapadnome dijelu. Razlog dodjele dvaju stratigrafskih oznaka sloju zdrave ilovače leži u tome što se istraživanje odvijalo u dvije etape. Prvobitno istraživanje istočnog dijela lokaliteta nije ukazalo na postojanje arheoloških tragova, površinski nalazi su potpuno izostali, a u sterilnom sloju bili su vidljivi isključivo plitki, recentni, irigacijski i odvodni kanali pa se odmah prešlo na otvaranje površine sa zapadne strane, gdje su brojni površinski nalazi upućivali na postojanje arheološkog lokaliteta. U humusnom je sloju zapadnog dijela pronađeno 26 ulomaka koji su se mogli preliminarno odrediti kao ulomci kasnosrednjovjekovne keramike, od kojih sedam ulomaka pripada žuto i zeleno glaziranoj. Mogu se izdvojiti ulomak ruba (T. 1: 1), zeleno glaziran s vanjske i unutarnje strane, i dvije glazirane ručke iste boje (T. 1: 2–3), koji su vjerojatno pripadali vrčevima. Između ostalih pronađenih ulomaka, izdvojiti se mogu nalaz dna kuhinjske posude (T. 1: 4–4a) i ručke poklopca (T. 1: 5–5a).

The topsoil layer, SU 001**,**was removed with machinery; its thickness was approximately 40 cm on average. A layer of yellowish-grey sterile soil, designated SU 002 in the eastern section of the terrain and SU 003 in the western section, extended beneath the topsoil of SU 001. The reason for conferring two stratigraphic designations to the layer of sterile loam lies in the fact that excavations proceeded in two stages. The initial excavation of the eastern section of the site did not yield any archaeological traces, as surface finds were entirely lacking, and only shallow, recent, irrigation and drainage canals were visible in the sterile layer, so the excavation works were immediately moved to the western section, where numerous surface finds indicated the existence of an archaeological site. A total of 26 potsherds were discovered in the topsoil layer which could be preliminarily classified as fragments of late medieval pottery, of which seven sherds are yellow- and green-glazed. Notable among them are a rim fragment (P. 1: 1), a fragment with green glaze on the external and internal surface, and two glazed handles of the same colour (P. 1: 2–3), which probably belonged to jugs. Among the remaining discovered potsherds, the bottom of a kitchen vessel (P. 1: 4–4a) and a lid grip (P. 1: 5–5a) stand out.

SLIKA 1. Tlocrt lokaliteta, plavom bojom označene zapune s nalazima (izradila A. Franjić).

FIGURE 1. The ground plan of the site, fills containing finds are marked with colour blue (made by A. Franjić).



Otvaranje je sonde na zapadnome dijelu lokaliteta ukazalo na postojanje arheoloških objekata na ovom dijelu u vidu jama i ukopa stupova. Utvrđen je nalaz jednog stambenog objekta s peći te veći broj jama, praznih ili tek s manjim brojem keramičkih nalaza, čija namjena nije jasna (sl. 1). Svi su objekti zabilježeni u SJ 003, ukupno 213 stratigrafskih jedinica, od kojih se mogu izdvojiti slojevi, ukopi i zapune. U 34 stratigrafske jedinice otkriveni su arheološki nalazi, s najvećom koncentracijom u SJ 166 i 228, a u obrazac posebnih nalaza upisana su dva nalaza, kameni brus i oslikani vrč. Prikupljeni keramički ulomci su već preliminarnom analizom mogli datirati život lokaliteta u 15. i 16. st., a provedena obrada nalaza i radiokarbonska analiza uzoraka ugljena, prikupljenog u nekoliko zapuna, dataciju je i potvrdila.

Površinski nalazi ukazuju na veliku mogućnost postojanja objekata zapadno od istražene površine jer je, pregledom područja tijekom istraživanja lokaliteta, ondje prikupljen veći broj ulomaka kuhinjske keramike: dna (T. 2: 1–1a) i rubovi lonaca (T. 2: 2–7), drška poklopca (T. 2: 8–8a) te ulomaka koje možemo pripisati pećnjacima (T. 3: 1–4), međutim, zbog građevinskih radova, koji su se već odvijali na tome dijelu, nismo mogli odrediti granice rasprostiranja nalaza. Riječ je vjerojatno o tragovima ranonovovjekovnog naselja ruralnog karaktera koje je moglo pripadati Župi Pešćenica, kao što, uostalom, i danas to područje pripada istoimenoj Župi, no ne možemo isključiti ni mogućnost da se radilo samo o zasebnom majuru oko kojega nije postojalo organizirano selo. Također, potrebno je napomenuti da je na lokalitetu pronađena jama, SJ 005, s nekoliko ulomaka vjerojatno eneolitičke keramike (T. 3: 5) koja nam govori o nekom vidu korištenja ovog prostora i u razdoblju pretpovijesti.

Povijesna slika područja Pešćenice

Područje lokaliteta u povijesnim izvorima i dosadašnjoj literaturi nije spominjano, ne nalazimo ga na karti Stjepana Glavače iz 1673. niti na nešto kasnijoj Valvasorovoj karti iz 1689. godine, a ni domaće stanovništvo ne poznaje ikakve arheološke nalaze na tom prostoru. Laszowski govori, u svome djelu *Povijest plemenite općine Turopolja* iz 1910., o nestalim turopoljskim naseljima, ali položaj ovoga lokaliteta nije moguće pripisati ni jednom od navedenih neubiciranih. Poznata su samo dva arheološka nalaza sa šireg područja lokaliteta, kamena sjekira nađena početkom 20. st. u šumi Kalje kraj Lekenika,[4] koja svjedoči o prisutnosti čovjeka na ovim prostorima u razdoblju prapovijesti, te zlatna moneta s likom cara Valensa (364. – 378.) koju čuva Arheološki muzej u Zagrebu.[5]

Povijesni i arheološki izvori govore da je međurječje Save i Kupe prvi put urbanizirano u razdoblju antike, i to gradnjom Andautonije te povezivanjem prostora sustavom cesta i mostova. Područjem Turopolja tada su prolazile dvije glavne državne ceste, iz Akvileje preko Emone (Ljubljane) za Sisciju (Sisak) te iz Dalma-

The digging of a trench in the western section of the site has indicated the existence of archaeological structures here in the form of pits and post holes. The find of a residential structure was ascertained, together with a stove and a high number of pits, either empty or containing a small number of pottery finds, for which the purpose is unclear (Fig. 1). All structures were recorded in SU 003, a total of 213 stratigraphic units, in which layers, holes and filler material may be distinguished. Archaeological finds were discovered in 34 stratigraphic units, with the highest concentration in SU 166 and 228, and two finds, a grindstone and a painted jug, were registered in the data form of special finds. Just on the basis of a preliminary analysis of the gathered potsherds, life at the site could be dated to the 15th and 16th centuries, and a completed analysis of the finds and radiocarbon dating of charcoal samples gathered in several fills confirmed this data.

The surface finds indicate a significant possibility of the existence of a structure west of the excavated surface, because a high number of kitchenware potsherds were gathered there during an inspectionof the area during excavation of the site: a bottom (P. 2: 1–1a) and rims of a pot (P. 2: 2–7), a lid grip (P. 2: 8–8a) and fragments which may be attributed to stove tiles (P. 3: 1–4). However, due to construction works that were already under way at this section, the extent of the find could not be determined. These are probably traces of an early medieval rural settlement which may have belonged to the Pešćenica Parish, just as this area today belongs to a parish of the same name, but we cannot exclude the possibility that this was a separate feudal estate around which there was no organized village. It should also be noted that a pit, SU 005, was found at the site, containing several fragments of what is probably Eneolithic pottery (P. 3: 5) which indicates some aspect of this area's use during prehistory.

Historical picture of the Pešćenica area

The area that encompasses the site has not been mentioned in historical sources or in the previous scholarly literature, nor can it be found on the map by Stjepan Glavača from 1673 nor on Valvasor's somewhat later map from 1689, while the local population had no knowledge of any archaeological finds in the area. In his 1910 book about the Turopolje district, *Povijest plemenite općine Turopolja*, historian Emilij Laszowski spoke about settlements in Turopolje that had vanished, but the position of this site cannot be ascribed to any of those mentioned but not located. Only two other archaeological finds from the wider vicinity of the site are known: a stone axe found at the beginning of the 20th century in Kalje Forest next to Lekenik[4] which testifies to the human presence in this area in prehistory, and a gold coin bearing the image of Emperor Valens (364 – 378), currently held in the Archaeological Museum in Zagreb.[5]

According to historical and archaeological sources, the interfluve of the Rivers Sava and Kupa was first urbanized in Antiquity, with the construction of Andautonia and the linkage of this area

4 Klemenc 1938, 27.
5 Grgić 2010, 2.

4 Klemenc 1938, 27.
5 Grgić 2010, 2.

cije preko Siscije (Siska) za Poetovio (Ptuj).[6] Druga je navedena cesta prolazila pokraj današnje Pešćenice, a zanimljivi su opisi njene trase iz 18. st., koje donosi Matija Petar Katančić, u čije je vrijeme cesta još bila vidljiva i poznata pod nazivom Rimski put,[7] te iz 1938., kada je put ove prometnice, nešto preciznije, opisan u *Arheološkoj karti Jugoslavije,* no možemo primijetiti njen prolazak neposredno uz lokalitet, istočno od istražene površine.[8] Naime, cesta se spuštala sa sjevera od Buševca i prolazila blizinom Pešćenice i Brežana pa tako i uz područje Mažići na kojemu se nalazi lokalitet.[9] Propašću Rimskog Carstva i nastupom srednjega vijeka dolazi do prekida u kontinuitetu dotadašnjeg razvoja rimske urbane i prometne mreže, a počinje i oblikovanje primarne naseobene jezgre Turopolja.[10] Sjeverozapadni dio nizinskog Turopolja postaje jezgra naseljenosti i organizacije svih oblika društvenih djelatnosti, što je vidljivo u nastajanju naselja i crkvenih središta već u 13. st., kada se u povijesnim izvorima spominje prvih dvanaest nizinskih naselja, a do 14. i 15. st. u cijelom je nizinskom dijelu Turopolja, sve do Turopoljskog Luga na jugoistoku, vrlo dobro razvijena mreža naselja. Za usporedbu, na području Vukomeričkih gorica na prve spomene naselja i župa nailazi se tek u 14. stoljeću.[11]

Od dosadašnjih arheoloških nalaza na ovome području, iz razdoblja srednjega vijeka možemo spomenuti samo žbuku i šutu pronađenu prilikom rigolanja vinograda seljaka Imbre Drnića u zaseoku Gradec kod Brežana Lekeničkih, a koje J. Klemenc navodi kao srednjovjekovno naselje.[12] Kriteriji datiranja u navedeno povijesno razdoblje, kao i njegova točnost, nepoznati su nam, no sam naziv mjesta upućuje na postojanje arheološkog lokaliteta, najčešće utvrde, te bi se zasigurno trebalo uključiti u neka buduća rekognosciranja i istraživanja ovoga prostora.

Prvi spomen Pešćenice u povijesnim izvorima nalazimo u 13. stoljeću, točnije 1211. godine, vezano uz dolazak novih crkvenih redova na područje srednjovjekovne Slavonije, kada ugarsko-hrvatski kralj Andrija II. potvrđuje cistercitskom samostanu Svete Marije u Topuskom opseg zemalja koje im pripadaju, pritom navodeći kako njihov posjed prema sjeveru graniči s posjedom Pešćenice u vlasništvu Ivanovaca.[13] Za razliku od Pešćenice, Burdelju susjedni Lekenik se, kao posjed, spominje tek 1487., a moguće je osnivanje naselja smjestiti u polovicu 15. stoljeća.[14] Župa u Pešćenici osnovana je godine 1275.,[15] što nam također govori o gušćoj naseljenosti ovoga područja u 13. stoljeću.

Podatke o životu naselja u kasnijem razdoblju pružaju popisi poreza, prvenstveno podaci o gospodarstvu ovoga kraja, ali i o demografskim promjenama. Iz popisa poreza saznajemo da je

to the network of roads and bridges. The Turopolje area was traversed by two main roads at the time, one from Aquileia via Emona (Ljubljana) to Siscia (Sisak) and the other from Dalmatia via Siscia to Poetovio (Ptuj).[6] The latter road passed next to today's Pešćenica, and descriptions of this section of it from the 18th century written by Matija Petar Katančić are intriguing, as during his time the road was still visible and called the Roman Way.[7] When this thoroughfare was somewhat more precisely depicted in the archaeological map of Yugoslavia (*Arheološkoj karti Jugoslavije*) from 1938, the fact that it passed directly next to the site, east of the excavated surface, could be observed.[8] From the north, the road ran from Buševac and passed by Pešćenicaand Brežane and on to the Mažići area, in which the site is located.[9] After the fall of the Roman Empire and the beginning of the Middle Ages, the continuity of the preceding development of the Roman urban and traffic network was interrupted, and the formation of the primary settlement core of Turopolje began.[10] The north – western part of the Turopolje plain became the nucleus of habitation and organization of all forms of social activities, which was reflected in the emergence of a settlement and ecclesiastical centre already in the 13th century, when the first twelve lowland settlements were mentioned in historical sources, and by the 14th and 15th centuries, the entire lowland section of Turopolje, up to Turopoljski Lug in the south – east, had a very well-developed network of communities. By way of comparison, the first mention of settlements and parishes in the hills of Vukomerec only appeared in the 14th century.[11]

Out of the archaeological finds in the area from the Middle Ages, all that can be noted are plaster and construction debris discovered during the tilling of a vineyard belonging to the farmer Imbro Drnić in the hamlet of Gradec near Brežane Lekeničke, which J. Klemenc cited as a medieval settlement.[12] The criteria for dating to this historical period, as well as their accuracy, are not currently known, but the very name of the village indicates the existence of an archaeological site, most likely a fort, and it should certainly be incorporated into some future reconnaissance and research of this area.

The first mention of Pešćenica in the historical sources can be found in the 13th century, specifically in 1211, connected to the arrival of new clerical orders in the territory of medieval Slavonia, when the Ugro-Croatian King Andrew II confirmed the extent of lands belonging to the Cistercian Abbey of St. Mary in Topusko, stating that to the north their estate bordered the Pešćenica estate under the ownership of the Hospitallers.[13] As opposed to Pešćenica, Lekenik, which neighbours Burdelj, was only men-

6 Fürst-Bjeliš 2005, 50.
7 Katančić 1795, 125.
8 Klemenc 1938, 31, 109.
9 Klemenc 1938, karta.
10 Fürst-Bjeliš 2005, 50.
11 Fürst-Bjeliš 2005, 50.
12 Klemenc 1938, 18.
13 Grgić 2010, 7.
14 Laszowski 1995, 356.
15 Feldbauer 2004, 577.

6 Fürst-Bjeliš 2005, 50.
7 Katančić 1795, 125.
8 Klemenc 1938, 31, 109.
9 Klemenc 1938, Map.
10 Fürst-Bjeliš 2005, 50.
11 Fürst-Bjeliš 2005, 50.
12 Klemenc 1938, 18.
13 Grgić 2010, 7.

svinjogojstvo bila važna grana poljoprivrede, koja je pridonijela i razvoju trgovine, naime, u istrazi parnice iz 1550. godine, zagrebačkog tridesetničara Krste Kordata protiv tridesetničara u Jamnici, među izvoznicima velikih krda svinja spominje se upravo župnik iz Pešćenice.[16] Popisi nam daju podatak i o smanjenju broja dimova na području Slavonije u 16. st., povezanog prije svega s osmanlijskim pustošenjima, odvlačenjem i migracijama stanovništva te osvajanjem našeg teritorija.[17] Područje Turopolja je već od kraja 15. st. u više navrata bilo izloženo provalama Osmanlija. Poznato je da su u lipnju 1474. dva tjedna pustošili vlastelinstva u Zagorju, Turopolje i okolicu Križevaca,[18] a veće su provale bile i 1524., kada se bilježi da su „jakom vojskom provalili u Turopolje, te ga mačem i ognjem opustošili", i 1556., kada je područje opljačkano i popaljeno.[19] Naime, padom utvrde Kostajnice, krajem srpnja 1556., Osmanlijama je otvoren put preko Zrinske gore u dolinu rijeka Gline i Kupe te dalje, prema Turopolju i Zagrebu, a o njihovim upadima u Turopolje kralju Ferdinandu I. Habsburgovcu u kolovozu 1556. piše i krajiški general Ivan Lenković.[20] Može se pretpostaviti da je tada prvi put od njihovih četa stradalo i stanovništvo Pešćenice, a jedan je dio odveden u roblje.[21] Najveća je pustošenja Pešćenica doživjela nakon 1578., kada su osmanlijske snage osvojile Zrin i Gvozdansko te svake godine u proljeće redovito provaljivale u Turopolje.[22] Provale i pustošenja smiruju se tek nakon 1590. godine, završetkom izgradnje linije obrane na rijeci Kupi, uz iznimku 1592., kada je Pešćenica u kasno ljeto i jesen doživjela znantna pustošenja kao odmazdu za poraz Osmanlija podno Siska u srpnju iste godine.[23] O težini stradavanja Turopolja govori smanjenje broja dimova s četiri, sredinom 16. st., na samo jedan u drugoj polovici istog stoljeća[24] i podatak da je 1593. turopoljska desetina "desolata per Turcas" uslijed čega se čak nekoliko godina nije pobirala,[25] dok Laszowski govori o bježanju kmetova krajem 16. st., osobito iz Lekenika, i propadanju više turopoljskih sela za vrijeme osmanlijskih provala koja se kasnije više ne spominju u izvorima.[26]

Na lokalitetu Burdelj nismo naišli na tragove paleži ili devastacije koji bi svjedočili tome da je naselje nestalo izravno u jednoj od osmanlijskih provala. Kontekst nalaza u otkrivenom objektu upućuje na njegovo svjesno napuštanje te je očito do odumiranja lokaliteta doveo splet ondašnjih ratnih i ekonomskih okolnosti o kojima pišu Laszowski, Adamček i, nedavno, Kekez. Uostalom, i rezultati istraživanja nestalih srednjovjekovnih naselja na području današnje Češke i Slovačke pokazuju kulminaciju iščezavanja sela u 15. i 16. st., čemu nije jedini uzrok rat, već se uz njega kao jedan od ključnih faktora javlja i bijeg kmetova.[27]

tioned as an estate in 1487 and it is possible to place the establishment of the settlement in the mid-15th century.[14] The parish in Pešćenica was established in 1275,[15] which may also speak to the population density of this area in the 13th century.

Data on life in the settlement in later periods are provided by tax registers, primarily data on the economy of this area, as well as demographic trends. From these tax registers, we learn that hog-farming was a vital branch of agriculture which contributed to the development of trade. For example, in the evidence for a lawsuit filed in 1550 by the Zagreb tax collector Krsto Kordat against the tax collector in Jamnica, the parish in Prešćenica is specifically mentioned among the exporters of large herds of hogs.[16] The registers provide data on a decline in the number of household taxable units (households) in Slavonia's territory in the 16th century, tied primarily to the Ottoman devastation and the ensuing withdrawal and migration of the population in the wake of the conquest of Croatian territory.[17] By the end of the 15th century, the territory of Turopolje had already been subjected to a number of Ottoman raids. It is known that in June of 1474, the feudal estates in Zagorje, Turopolje and the vicinity of Križevci had been pillaged for two weeks,[18] and larger raids were also staged in 1524, when it according to one account "a strong army invaded Turopolje, and devastated it by sword and fire," and in 1556, when the area was looted and set ablaze.[19] Namely, after the fall of the fortress in Kostajnica at the end of July 1556, the way had been opened for the Ottomans to cross the Zrinski highlands and march through the Glina and Kupa river valleys and onward to Turopolje and Zagreb. Their incursions into Turopolje in August of 1556 were the subject of a report from the Frontier General Ivan Lenković to Habsburg King Ferdinand I.[20] It may be assumed that this was the first time the populace of Pešćenica also suffered at the hands of their contingents, with a part of them also taken into slavery.[21] Pešćenica endured its greatest devastation after 1578, when Ottoman forces seized Zrin and Gvozdansko, and raided Turopolje every successive year in the spring.[22] Such raids and pillaging only subsided after 1590, when the construction of a defensive line on the River Kupa was completed, although an exception was 1592, when Pešćenica suffered considerable devastation in the late summer and autumn in retaliation for the Ottoman defeat at Sisak in July of that same year.[23]

The severity of the devastation of Turopolje is reflected in the fact that the number of household taxable units (known as the *dim*, an older term for hearth; the unit actually encompassed an

16 Adamček 1980, 217.
17 Adamček, Kampuš 1976, XII.
18 Adamček 1980, 55.
19 Laszowski 1995, 274.
20 Kekez 2016, 174.
21 Kekez 2016, 174.
22 Kekez 2016, 174–175.
23 Kekez 2016, 183.
24 Kekez 2016, 177.
25 Adamček 1980, 356.
26 Laszowski 1995, 276–277.
27 Nekuda 1968, 2.

14 Laszowski 1995, 356.
15 Feldbauer 2004, 577.
16 Adamček 1980, 217.
17 Adamček, Kampuš 1976, XII.
18 Adamček 1980, 55.
19 Laszowski 1995, 274.
20 Kekez 2016, 174.
21 Kekez 2016, 174.
22 Kekez 2016, 174–175.
23 Kekez 2016, 183.

Povijesni je pregled šireg područja lokaliteta oblikovan na temelju svih dostupnih spoznaja iz povijesnih izvora i arheološke literature vezane uz područje Turopolja, s naglaskom na vremenski okvir u kojemu je, sudeći prema obilježjima pokretnih nalaza, trajao život na kasnosrednjovjekovnom lokalitetu Burdelj. Pregledom sam željela dati povijesni okvir materijalnim nalazima lokaliteta, odnosno prikazati povijesne okolnosti u vremenu života lokaliteta i navesti moguće razloge, kao i sam način prestanka života na tome području.

Naseobinski pokazatelji

Kao što je već spomenuto, lokalitet se nalazi na platou iznad Burdeljskog potoka. Izdignut položaj, koji štiti od poplava, plodna polja, blizina vode i hrastova šuma, činili su ga povoljnim za naseljavanje. Stalne mijene razine vode bile su karakteristične za ovo područje prije suvremenih radova na obrani od poplava, uslijed čega su i manje uzvisine u nizinskom dijelu Turopolja korištene za naseljavanje. Samo ime toponima Čret, nedaleko od lokaliteta, upućuje na močvarno, vlažno stanište, obraslo grmljem i mahovinom,[28] te dočarava izgled okoliša u kojemu se lokalitet nalazio, kao i priče današnjih stanovnika Pešćenice o tome kako su u davnoj prošlosti, zbog poplavljenog i močvarnog tla koje ih je okruživalo, ljudi ondje živjeli u sojenicama i kretali se u čamcima.[29]

entire patriarchal communal family) fell from four in the mid-16th century to one by the end of that same century,[24] and the fact that in 1593, due to "*desolata per Turcas*" the Turopolje tithe was not collected for several years thereafter,[25] while Laszowski spoke about the flight of serfs at the end of the 16th century, particularly from Lekenik, and the desolation of many Turopolje villages during the Ottoman incursions that were then no longer mentioned in later sources.[26]

No traces of burning or devastation were found at the Burdelj site that would testify to the settlement disappearing directly due to an Ottoman raid. The context of the find in the discovered structure indicates that it was intentionally abandoned and that the dissipation of the site had obviously been caused by a set of wartime and economic circumstances at the time, about which Laszowski, Adamček and, recently, Kekez have written. After all, the results of research into vanished medieval settlements in the territory of today's Czech Republic and Slovakia have shown that the extinguishment of villages culminated in the 15th and 16th centuries, wherein the sole cause was not war, as one of the key factors that emerged was also the flight of serfs.[27]

This historical overview of the wider area encompassing the site was formed on the basis of all available data from historical sources and the archaeological literature tied to the Turopolje area, with emphasis on the chronological framework which, judging by the features of the movable finds, was when human life proceeded at the late medieval site of Burdelj. I wanted this overview to provide an historical framework for the physical finds from the site, and to present the historical circumstances prevalent at the time when the site was inhabited and cite the reasons and ways in which life there ended.

Settlement indicators

As already mentioned, the site is situated on the plateau above the Burdelj stream. The elevated position which keeps it safe from floods, the fertile fields, the nearby water source and oak forest made it an ideal place for human settlement. Constant changes in water levels were typical of this area prior to modern flood defence works, so that even smaller elevations in the lowland section of Turopolje were used for settlements. Just the toponym Čret (an archaic Croatian word for swamp), not far from the site, indicates a marshy, damp habitat overgrown with shrubs and moss,[28] and suggests the appearance of the environment in which the site was located, as does thetestimony of today's residents of Pešćenica, according to whom people in the distant past lived in stilt houses and travelled in boats due to the flooded and marshy land that surrounded them.[29]

28 Opačić, 2001.
29 Grgić 2010, 6, bilj. 16.

24 Kekez 2016, 177.
25 Adamček 1980, 356.
26 Laszowski 1995, 276–277.
27 Nekuda 1968, 2.
28 Opačić, 2001.
29 Grgić 2010, 6, n. 16.

Na jugozapadnoj strani lokaliteta otkriven je stambeni objekt orijentiran dužom bočnom stranom jugoistok– sjeverozapad (sl. 1). Na njegovo je postojanje upućivao pronalazak 16 ukopa koji su, zbog položaja i međusobnih odnosa, definirani kao ukopi drvenih stupova koji su činili konstrukciju objekta. U tlocrtu se ocrtavalo postojanje dviju prostorija, veće, koju omeđuju ukopi SJ 121 (▫ F24), SJ 135 (▫ F24), SJ 141 (▫ F24), SJ 137 (▫ F23/F24), SJ 139 (▫ E/F23), SJ 143 (▫ E23), SJ 147 (▫ F 22/23), SJ 149 (▫ F23), SJ 207 (▫ G23), SJ 111 (▫ G24), a u kojoj je naknadno otkrivena jama s pećnjacima SJ 159, i manje smještene s njezine sjeveroistočne strane, koju čine ukopi SJ 109 (▫ G24), SJ 107 (▫ G24), SJ 105 (▫ G24), SJ 113 (▫ G24), SJ 115 (▫ G24) i SJ 117 (▫ H24). Tragova gradnje, poput ostataka drvenih greda, lijepa, kamena ili opeke, nema, a izostali su također ukop temelja kuće i nalaz podnice.

Na istraženome prostoru, izvan površine objekta, otkrivene su jame i veći broj manjih ukopa. Pisani izvori o srednjovjekovnim selima Mađarske kazuju da su u razdoblju od 14. do 16. st. pripadajuća zemljišta stambenih objekata bila razgraničena iskopima ili ogradama,[30] dok na području Hrvatske početke ograđivanja kuća i okućnica možemo tražiti u vremenu pojačane feudalizacije prostora, od 12. st. nadalje, što je uočeno oko pojedinih kuća na slavonskom lokalitetu Stružani.[31] Na Burdelju nemamo sigurnih tragova ograđivanja okućnice, no na sjevernoj strani lokaliteta uočava se niz ukopa (SJ 71, SJ 77, SJ 79, SJ 73, SJ 87, SJ 85) koji prate sjevernu liniju stambenog objekta i koji bi mogli sugerirati na postojanje ograde iako, s obzirom na njihove veće dimenzije, prije bi mogla biti riječ o ukopima nosivih stupova određenih gospodarskih objekata u sklopu posjeda. Ukopi SJ 71, SJ 77 i SJ 79 u ▫ G29 tvore liniju sjeverozapad– jugoistok, gotovo su identičnih dimenzija, promjera vrha 50 cm i dna 33 cm, a u njihovim je zapunama bio prisutan gar. Na navedenu liniju nadovezuju se ukopi SJ 73 i SJ 85, smješteni u ▫ H28. Može se primijetiti pravilan razmak između ukopa SJ 71, SJ 77, SJ 79, između SJ 79 i SJ 73 te SJ 73 i SJ 85. U istoj liniji, između SJ 73 i SJ 85, nalazio se ukop SJ 87, većih dimenzija. Poviše navedene linije nalazimo još jednu liniju smjera sjever – jug koju čine SJ 25, SJ 31 i SJ 27. Nalaze se u ▫ H29 i približno su istog promjera ukopa od 25, odnosno, 30 cm. Velik broj ukopa stupova, koncentriranih u kvadrantima G29, H28 i H29, koji se mogu povezivati u pravilne linije, zasigurno sugerira postojanje određenih nadzemnih objekata. No, je li doista riječ o ostacima konstrukcija gospodarskih ili radioničkih objekata, očekivanih u blizini stambenog objekta i općenito unutar naselja, ne možemo sa sigurnošću potvrditi zbog odsutstva pokretnih nalaza. Gotovo sve jame sadrže ulomke keramike, ali u vrlo malom broju i na temelju kojih ne možemo govoriti o njihovoj namjeni. Izdvaja se jedino veća jama SJ 166 (sl. 1) o kojoj će više riječi biti kasnije. Zapuna nekolicine jama jasno se ocrtavala u zdravici, a nalazi su u potpunosti izostali te je moguće da su služile kao jame iz kojih se vadila glina korištena za lijep ili izradu keramičkih predmeta. Također, ni jedna se jama ne može definirati kao bunar, koje inače nalazimo u većem broju unutar srednjovjekovnih naselja.[32]

On the south – western side of the site, a residential structure was discovered with its longer side oriented SW – NE (Fig. 1). Its existence was indicated by the discovery of 16 holes which, due to their positions and mutual relations, were defined as holes for the posts that formed the structure's frame. The existence of two rooms were determined in the layout: a larger one bounded by holes SU 121 (▫ F24), SU 135 (▫ F24), SU 141 (▫ F24), SU 137 (▫ F23/F24), SU 139 (▫ E/F23), SU 143 (▫ E23), SU 147 (▫ F 22/23), SU 149 (▫ F23), SU 207 (▫ G23), and SU 111 (▫ G24), and in which pit SU 159 containing stove tiles was subsequently discovered, and a smaller one to its NE side consisting of holes SU 109 (▫ G24), SU 107 (▫ G24), SU 105 (▫ G24), SU 113 (▫ G24), SU 115 (▫ G24) and SU 117 (▫ H24). Traces of construction, such as the remains of wooden beams, daub, stones or bricks, are absent, as were the foundation trenches of the house or its floor.

Pits and a considerable number of smaller holes were found in the excavated surface outside of the structure. Written sources on medieval villages in Hungary indicate that in the period from the 14th to 16th centuries, the land belonging to a residential structure was demarcated with holes or fences,[30] while in Croatia's territory the beginnings of fences around houses and yards may be sought in the era of increased feudalization of the land, from the 12th century onward; it has been observed at individual houses at the Stužani site in Slavonia.[31] There are no certain traces of fencing of the structure's yard at Burdelj, but a row of holes (SU 71, SU 77, SU 79, SU 73, SU 87, SU 85) is visible on the northern side of the site that adheres to the northern line of the residential structure, and which may suggest the existence of a fence, although, given their larger dimensions, these may be the holes for load-bearing posts for certain outbuildings that were part of the complex. Holes SU 71, SU 77 and SU 79 in ▫ G29 form a NW – SE line, and their dimensions are virtually identical, with 50 cm diameters at the top and 33 cm at the bottom, while soot was present in their fill. Holes SU 73 and SU 85, situated in ▫ H28 lie in the extension of the aforementioned line. A regular interval between holes SU 71, SU 77 and SU 79, between SU 79 and SU 73 and SU 73 and SU 85 may be observed. Hole SU 87, with larger dimensions, was situated along that same line, between SU 73 AND SU 85. Above that line, there is one more line running in a north – south direction which consists of SU 25, SU 31 and SU 27. They are in ▫ H29 and have roughly the same diameters of 25 and 30 cm. The high number of post holes concentrated in quadrants G29, H28 and H29, which may be linked in straight lines, certainly suggest the existence of some manner of above-ground structures. However, whether this truly constitutes the remains of the outbuildings or workshops, expected in the vicinity of a residential structure and inside settlements in general, cannot be verified with any certainty due to the absence of movable finds. Virtually all of the pits contain potsherds, but in very small numbers, so nothing can be said of their purpose on that basis. Only the larger pit SU 166 (Fig. 1) may be distinguished – about which more shall be said below. The fill in several pits could clearly be

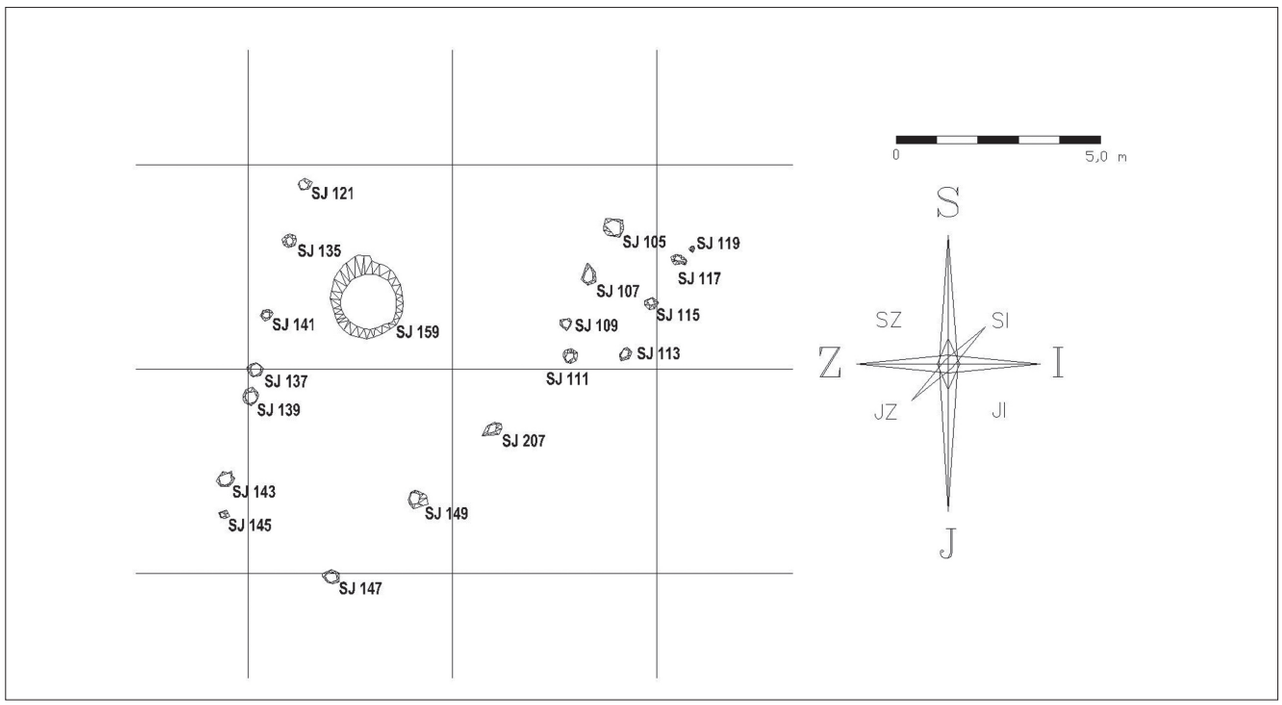
30 Holl, Parádi 1982, 126.

31 Lozuk 2011, 18–19.

32 Bugar 2011, 161–178; Lozuk 2011, 21–22; Minichreiter, Marković 2013, 200.

30 Holl, Parádi 1982, 126.

31 Lozuk 2011, 18–19.



SLIKA 2. Tlocrt otkrivenog stambenog objekta (izradila A. Franjić).

FIGURE 2. The ground plan of the revealed residential structure (made by A. Franjić).

Stambeni objekt

Stambeni je objekt otkriven na jugozapadnoj strani lokaliteta (sl. 2). Zapadnu liniju zida objekta, dužine 7, 80 m, činilo je šest ukopa stupova: SJ 121, SJ 135, SJ 141, SJ 137, SJ 139 i SJ 143 u razmacima od 1,3 do 2,8 m, osim SJ 137, koji je bio smješten bliže ukopu SJ 139, te njihova udaljenost iznosi samo70 cm. Liniju istočnog zida kuće činili su ukopi SJ 147, SJ 149, SJ 207, SJ 111, SJ 109, SJ 107, SJ 105. U liniji dugoj 11 m, nalazili su se ukopi SJ 147, SJ 149, SJ 207, SJ 111, dok su ukopi SJ 109, SJ 107, SJ 105, paralelni ukopima SJ 113, SJ 115 i SJ 117, činili manju sjeveroistočnu prostoriju objekta. Uz SJ 117, nalazimo i manji ukop SJ 119, koji možda potječe od potpornog stupa, nosivome SJ 117.

Zapadna i istočna os objekta nisu paralelne, već postoji otklon prema sjeveru uslijed kojega proizlazi da je jugozapadna bočna stranica objekta duljine 4 m, dok je sjeveroistočna bočna stranica duljine 7,5 m, ne računajući zid bočne prostorije. Nemamo podataka o tome što je uzrok ovoj pojavi, no moguće je da je tijekom korištenja objekta došlo do određenih dogradnji koje su rezultirale nepravilnim tlocrtom. Nalazi keramike, pronađeni u zapunama SJ 146, SJ 116, SJ 114 i SJ 112, ne mogu nam dati njihove bliže datacije, a radiokarbonska analiza, koja bi možda dala podatke o različitoj starosti drvenih stupova u ovim ukopima i ukazala na različite faze gradnje kuće, mogla je biti izvedena samo za ukope stupova SJ 147 i SJ 149 i dala je podjednake rezultate (tab. 1). Zapuna SJ 146 u ukopu SJ 147 datirana je radiokarbonski od 1490. do 1655., dok je za zapunu SJ 148, ukopa SJ 149, dobiven

discerned in the sterile soil, but finds were lacking and it is possible that they served as pits from which clay was extracted for use as daub or for making ceramics. Furthermore, not one pit can be defined as a well, which are usually found in larger numbers inside medieval settlements.[32]

Residential structure

The residential structure was discovered on the south – western side of the site (Fig. 2). The western line of the structure's wall, with a length of 7.8 m, was formed by six post holes: SU 121, SU 135, SU 141, SU 137, SU 139 and SU 143 at intervals of 1.3 to 2.8 m, except SU 137, which was situated close to hole SU 139, and their mutual distance is only 70 cm. The line of the eastern wall consisted of holes SU 147, SU 149, SU 207, SU 111, SU 109, SU 107, and SU 105. The 11 m long line encompassed holes SU 147, SU 149, SU 207, and SU 111, while holes SU 109, SU 107, and SU 105, parallel to holes SU 113, SU 115 and SU 117, formed the smaller north – eastern room of the structure. Next to SU 117, there is a small hole, SU 119, which may have come from the support post, the load-bearing SU 117.

32 Bugar 2011, 161–178; Lozuk 2011, 21–22; Minichreiter, Marković 2013, 200.

LAB. BR. / LAB. NO.	KONTEKST I MATERIJAL / CONTEXT AND MATERIAL	Δ 13 C	DATUM /DATE BP	KALIBRIRANI DATUM / CALIBRATED DATE
Beta - 340897	Ugljen, U-37, SJ 158 / Charcoal, S-37, SU 158	-24.0 o/oo	290±30 BP	Cal AD 1500 to 1500 (Cal BP 450 to 450)
				Cal AD 1510 to 1600 (Cal BP 440 to 350)
				Cal AD 1620 to 1660 (Cal BP 330 to 290)
Beta - 340899	Ugljen, U-10, SJ 146 / Charcoal, S-10, SU 146	-26.6 o/oo	300±30 BP	Cal AD 1490 to 1605 (Cal BP 460 to 345)
				Cal AD 1610 to 1655 (Cal BP 340 to 295)
Beta - 340900	Ugljen, U-9, SJ 148 / Charcoal, S-9, SU 148	-26.5 o/oo	320±30 BP	Cal AD 1470 to 1650 (Cal BP 480 to 300)
Beta - 340901	Ugljen, U-19, SJ 158 / Charcoal, S-19, SU 158	-25.0 o/oo	360±30 BP	Cal AD 1450 to 1640 (Cal BP 500 to 310)
Beta - 340902	Ugljen, U-43, SJ 212 / Charcoal, S-43, SU 212	-24.1 o/oo	350±30 BP	Cal AD 1450 to 1640 (Cal BP 500 to 310)
Beta - 340898	Ugljen, U-34, SJ 210 / Charcoal, S-34, SU 210	-24.6 o/oo	490±30 BP	Cal AD 1410 to 1450 (Cal BP 540 to 500)
Beta - 340904	Ugljen, U-24, SJ 210 / Charcoal, S-24, SU 210	-25.2 o/oo	450±30 BP	Cal AD 1420 to 1465 (Cal BP 530 to 485)

TABLICA 1. Apsolutni datumi pojedinih zapuna (izradila M. Sečkar).

TABLE 1. Absolute dating of certain fills (made by M. Sečkar).

radiokarbonski datum od 1470. do 1650. godine. Dogradnja ili pregradnja kuće bila je moguća jer smo i u ukopu SJ 159, otkrivenom unutar kuće, a u kojemu se nalazila peć, naišli na dva sloja gara, SJ 212 i SJ 227, koji govore o postojanju dviju peći na istome mjestu, pri čemu je mlađa vjerojatno postavljena tijekom nekog opsežnijega preuređenja prostora. Jasnih dokaza tomu, nažalost, nemamo, te sve ostaje samo u domeni nagađanja.

O izgledu objekta također možemo samo nagađati. Čovjek seljak, narodni graditelj, gradeći svoj dom, bio je u izboru materijala nužno oslonjen i upućen na prirodni okoliš.[33] Nesumnjivo je da je bio građen u drvetu s obzirom na to da geografski, kao i u tradicijskom smislu, pripada području tipičnom po izgradnji u drvetu.[34] Na lokalitetu nije niti pronađen građevinski materijal poput ostataka vapna, žbuke ili opeke, koji bi upućivao na drugi način gradnje pa je objekt zasigurno bio u cijelosti izgrađen od drveta. Također, drveni tip gradnje bio je tijekom srednjovjekovlja, sve do osmanskih ratova, raširen po cijeloj sjeverozapadnoj Hrvatskoj, a u samome se Turopolju zadržao sve do nakon Drugoga svjetskog rata.[35] Kao drvna građa koristio se hrast, kojim Turopo-

The western and eastern axes of the structure are not parallel, rather there is a northward deviation, so it follows that the south – western lateral side of the structure has a length of 4 m, while the NE lateral side is 7.5 m long, not counting the wall of the lateral room. There are no data to account for the cause of this aspect, but it is possible that during use of the structure certain additions were constructed which resulted in an irregular floor-plan. The pottery finds in fills SU 146, SU 116, SU 114 and SU 112 cannot provide any narrower dating, while radiocarbon analysis, which may provide data on the various ages of the wooden posts in their holes and illustrate the various construction phases of the house, could only be conducted for post holes SU 147 and SU 149, and this yielded uniform results (Tab. 1). Fill SU 146 in hole SU 147 has been radiocarbon dated to the period from 1490 to 1655, while fill SU 148, hole SU 149, yielded a radiocarbon date of 1470 to 1650. The expansion or reconstruction of the house was possible, because hole SU 159, discovered inside the house, in which the stove was located, contained two layers of soot, SU 212 and SU 227, which indicates the existence of two stoves at this place, wherein the later one may have been installed during some major remodelling of the room. Clear evidence of this is, unfortunately, lacking, and all of this remains within the realm of conjecture.

We may only speculate as to the appearance of the structure as well. When making his home, the peasant, a common builder, had to rely on his natural environment when selecting the ma-

33 Živković, 2013, 10.

34 Detaljniji pregled gradnje u drvetu na području Turopolja možemo pronaći u djelu A. Freudenreicha, Kako narod gradi na području Hrvatske, 1972, 151–162.

35 Marković 1989, 292.

lje obiluje, osobito u jugoistočnome dijelu koji Laszowski opisuje kao nepreglednu šumu hrasta.[36]

Podatke o izgledu i načinu gradnje kuća turopoljskog područja daju nam etnografska istraživanja koja se odnose isključivo na one iz kasnijeg razdoblja od burdeljske, podignute u 18. i 19. stoljeću. Istraživanje tradicijskoga graditeljstva sela Resnika pokazalo je da su kuće bile prizemnice, građene od hrastovih greda i planjki, manjih dimenzija, unutrašnjosti podijeljene na dvije prostorije u koje se ulazilo iz manjega unutarnjeg hodnika (ganjka). Najstarija sačuvana kuća u Resniku bila je iz 1763. i sagrađena od velikih planjki koje su na uglovima bile spojene na hrvatske vugle te krovom prekrivenim slamom.[37] Grede su bile postavljene direktno na zemlju zbog čega je izostao ukop za temelj.[38] Gjetvaj donosi i podatak da su kuće u Šćitarjevu po načinu gradnje i obliku bile gotovo identične onima u Resniku,[39] dok Laszowski daje opis izgleda tradicijske turopoljske kuće kao troprostorne kuće, građene od jakih i debelih hrastovih balvana, prekrivene slamom ili daščicama i s krovićem nad glavnim ulazom.[40]

Iz navedenih etnografskih podataka možemo zaključiti da su u 18. i 19. st. turopoljske kuće podizane u tehnici *Blockbau*, bez ukopanih stupova, s temeljnom gredom na koju su vodoravno polagane planjke.

Spoznaje o načinu izgradnje ruralnih stambenih objekata razvijenog i kasnoga srednjeg vijeka daju arheološka istraživanja sela na području današnje Mađarske, Austrije i Slovačke. Istražene su kuće mahom imale kamene temelje s nadogradnjom u *Blockbau* tehnici, odnosno na temelje je bila postavljena konstrukcija od drveta, a primjere ovakve izgradnje nalazimo na lokalitetima Sarvaly i Szentkirály u Mađarskoj, Mstenice u Slovačkoj te Hard u Austriji.[41]

Suprotno navedenim podacima iz domaće i strane literature, objekt na Burdelju ukazuje na potpuno drugačiji način izgradnje, na izgradnju u tzv. *Pfostenbau* tehnici s nosivim stupovima ukopanima u tlo, prisutnoj još od neolitika, a uobičajenoj u gradovima i ruralnim naseljima srednje Europe u razvijenom srednjem vijeku, između 10. i sredine 13. stoljeća.[42] Navedenu tehniku gradnje tijekom 13. st. zamjenjuje nova, tzv. *Ständerbau*, no ostaje ipak sve do kasnoga srednjeg vijeka raširena u ruralnim područjima nakon čega se definitivno gubi.[43]

Uvid u gradnju kuća u *Pfostenbau* tehnici pruža mađarski lokalitet Móric, datiran od 15. do početka 17. stoljeća. Naime, ondje su konstrukciju kuća, za razliku od *Blockbau* kuća ostalih kasnosrednjovjekovnih lokaliteta s toga područja, činili ukopi nosivih

terials to build it.[33] It was certainly made of wood, given that geographically and also traditionally, the location is in an area characterized by wood-based construction.[34] No construction materials such as lime, plaster or bricks that point to any other type of construction were even found at the site, and the structure was certainly made entirely of wood. Furthermore, wood-based construction was widespread throughout north – western Croatia during the Middle Ages and up to the Ottoman wars, and in Turopolje it persisted until after the Second World War.[35] The timber used was oak, which abounds in Turopolje, particularly in its south – eastern section, which Laszowski described as a vast oak forest.[36]

Data on the appearance of houses and their construction techniques in the Turopolje area are provided by ethnographic research which pertains exclusively to periods later than that of Burdelj, i.e., those constructed in the 18th and 19th centuries. Research into traditional architecture in the village of Resnik has shown that the houses were single-story and made of smaller-dimension oak beams and planks, with interiors divided into two rooms that were entered through a small internal corridor (*ganjak*). The oldest preserved house in Resnik was built in 1763, using large planks that were connected at the corners by a specific joint, the so-called Croatian corner (*vugla*), with a roof covered by straw.[37] The beams were placed directly on the ground, so that a foundation trench is absent.[38]

Gjetvaj also pointed out that the houses in Šćitarjevo were virtually identical to those in Resnik in terms of construction technique and form,[39] while Laszowski provided a description of the appearance of a traditional Turopolje house as a three-room structure made of sturdyand thick oak logs, covered with straw or shingles and with a small canopy above the main entrance.[40]

Based on these ethnographic data, it may be concluded that in the 18th and 19th centuries, Turopolje houses were built using the *Blockbau* technique, without post holes, but with a foundation beam onto which planks were attached horizontally.

Knowledge on the construction methods for rural residential structures during the High and Late Middle Ages has been provided by archaeological research in villages in the territory of modern Hungary, Austria and Slovakia. The excavated houses largely had stone foundations onto which the structures were built in the *Blockbau* technique, i.e., a building made of wood was set on the foundations. Examples of such construction can be found at sites such as Sarvaly and Szentkirály in Hungary, Mstenice in Slovakia and Hard in Austria.[41]

36 Laszowski 1910, 16.
37 Gjetvaj 1980, 16.
38 Gjetvaj 1980, 16.
39 Gjetvaj 1980, 16.
40 Laszowski 1910, 10–12.
41 Nekuda 2005, 264–291.
42 Theune 2010, 397–400.
43 Theune 2010, 396–398.

33 Živković, 2013, 10.
34 A more detailed overview of wood construction in the Turopolje area can be found in the work by A. Freudenreich, Kako narod gradi na području Hrvatske, 1972, 151–162.
35 Marković 1989, 292.
36 Laszowski 1910, 16.
37 Gjetvaj 1980, 16.
38 Gjetvaj 1980, 16.
39 Gjetvaj 1980, 16.
40 Laszowski 1910, 10–12.
41 Nekuda 2005, 264–291.

stupova i zidovi od pletera prekrivenog blatom,[44] dok, također mađarski, lokalitet Nyärsapat, ukazuje na mogućnost kombiniranih tehnika gradnje jer, osim kuća u Blockbau tehnici, ima i nekoliko kuća s temeljima te ukopanim drvenim stupovima u uglovima.[45]

Tlocrt burdeljske kuće ukazuje na dvije prostorije, veću i manju prostoriju na sjeveroistočnoj strani, veličine 3,05 x 2,2 m, kojoj pripadaju ukopi stupova SJ 109, SJ 107, SJ 105, SJ 113, SJ 115 i SJ 117. Rezultati istraživanja načina gradnje kuća mađarskih kasnosrednjovjekovnih sela govore da su one 15. i 16. st. u pravilu imale 2, 3 ili više prostorija.[46] Tako se, primjerice, i rekonstruirana kuća 25 iz Szentkirályja, koja predstavlja česti tip kuće nizinskih i brdovitih područja Mađarske, u etnologiji poznat pod nazivom srednjemađarski tip, sastojala od dvije prostorije, dnevnog boravka i kuhinje.[47] Veću prostoriju našega objekta možemo sa sigurnošću identificirati kao grijani stambeni prostor u kojem se zadržavalo tijekom dana, kuhalo i spavalo. Otvorenom ostaje mogućnost postojanja pregrade prostorije u smislu tanke pletene ograde s glinenim premazom, bez statičke funkcije, kakva je postojala u kući 17 sela Sarvaly,[48] a na području Hrvatske nalazimo ih u tradicijskim kućama Moslavine, gdje su unutarnji zidovi kuća bili od šiblja oblijepljenog ilovačom te potom oličeni vapnom.[49] Prostorija je bila grijana, što zaključujemo iz nalaza dijelova konstrukcije peći u jami SJ 159, te bez dima, o čemu nam govori nalaz dimnjaka iz iste jame. Osim nalaza iz SJ 159, u prostoriji izostaju drugi deponirani nalazi koji bi nam mogli pružiti sliku o njenoj funkciji i životu ukućana. Smjernice u rekonstrukciji mogućeg izgleda prostorije mogu nam samo, između ostalog, pružiti priče starijih stanovnika mađarskih sela kasnijeg razdoblja, 19. st., koje bilježe da se u stambenim objektima unutar iste prostorije kuhalo i spavalo, nije bilo odvojene kuhinje, već se kuhalo u velikoj peći, a ukućani su spavali na klupama pored štednjaka i onima postavljenima na zidove prostorije.[50]

Odnos nosivih stupova veće i manje bočne prostorije ostavlja dojam da nije riječ o istovremenoj gradnji, naime zbog položaja ukopa SJ 109 u odnosu na ukop SJ 111 (sl. 2) djeluje kao da se manja prostorija „uvlači" u veću i ukazuje na njenu kasniju dogradnju ili mogućnost da je zapravo ona bila prvobitni samostalni objekt na koji je dograđena veća prostorija. Funkcija ovoga manjeg prostora nam je nepoznata, nalazi koji bi mogli pomoći pri određenju namjene u potpunosti izostaju, no smjernice možda daje nalaz kuće kasnosrednjovjekovnog sela Csesztreg-Mihomi erdő kojoj je, upravo s njezine sjeveroistočne strane, dodana drvena ostava, ili samo nadstrešnica, dimenzija 2,7 x 2 m, sa svrhom držanja raznih uporabnih predmeta.[51]

In contrast to these data from the domestic and foreign scholarly literature, the structure at Burdelj exhibits an entirely different construction technique, in the so-called *Pfostenbau* technique, with the posts driven into the ground, present since the Neolithic, and common in cities and rural settlements in Central Europe in the High Middle Ages, between the 10th and mid-13th centuries.[42] This construction technique was replaced by a new one during the 13th century, the so-called *Ständerbau*, but it remained widespread in rural areas until the Late Middle Ages, after which it definitely disappeared.[43]

Insight into house construction in the *Pfostenbau* techniqueis provided by the Hungarian site Móric, dated from the 15th to the beginning of the 17th century, for the construction of houses there, as opposed to the *Blockbau* houses in other late medieval sites in this area, consist of the partially buried load-bearing posts and wattle and daub walls,[44] while another Hungarian site, Nyärsapat, exhibits the possibility of a combined construction technique, for besides houses in the *Blockbau* technique, there are also several houses with foundations and buried wooden posts at the corners.[45]

The layout of the Burdelj house indicates two rooms, larger and smaller, on the NE side, with dimensions of 3.05 x 2.2 m, to which post holes SU 109, SU 107, SU 105, SU 113, SU 115 and SU 117 belong. The results of research into house construction techniques in Hungarian medieval villages show that in the 15th and 16th centuries had two, three or more rooms as a rule.[46] Thus, for example, reconstructed house 25 from Szentkirály, which represents a common house type in Hungary's plains and hilly regions (known in ethnography as the central Hungarian type), consisted of two rooms, a living room and a kitchen.[47] The larger room in the structure in question herein can be certainly identified as a heated living space in which persons resided, cooked and slept during the day. A possibility that remains open is the existence of a divider between the rooms in the sense of a thin woven partition with a clay coating, without a static function, as existed in house 17 in the village of Sarvaly.[48] In Croatia, they can be found in the traditional houses of the Moslavina region, where the internal walls of houses were made of reeds covered with loam and then coated with lime.[49] The room was heated, which has been ascertained on the basis of finds of components of a stove structure in pit SU 159, and smoke-free, which is indicated by the find of a chimney from the same pit. Besides the find from SU 159, the room is lacking any other deposited finds that could provide some picture of its function and the lives of its residents. Guidelines for the reconstruction of the possible appearance of

44 Nekuda 2005, 266.
45 Nekuda 2005, 267.
46 Kvassay 2005, 326.
47 Pálòczi-Horváth 1997, 510.
48 Holl, Parádi 1981, 125.
49 Moslavac 2011, 94.
50 Holl, Parádi 1982, 119, 124.
51 Kvassay 2005,326.

42 Theune 2010, 397–400.
43 Theune 2010, 396–398.
44 Nekuda 2005, 266.
45 Nekuda 2005, 267.
46 Kvassay 2005, 326.
47 Pálòczi-Horváth 1997, 510.
48 Holl, Parádi 1981, 125.
49 Moslavac 2011, 94.

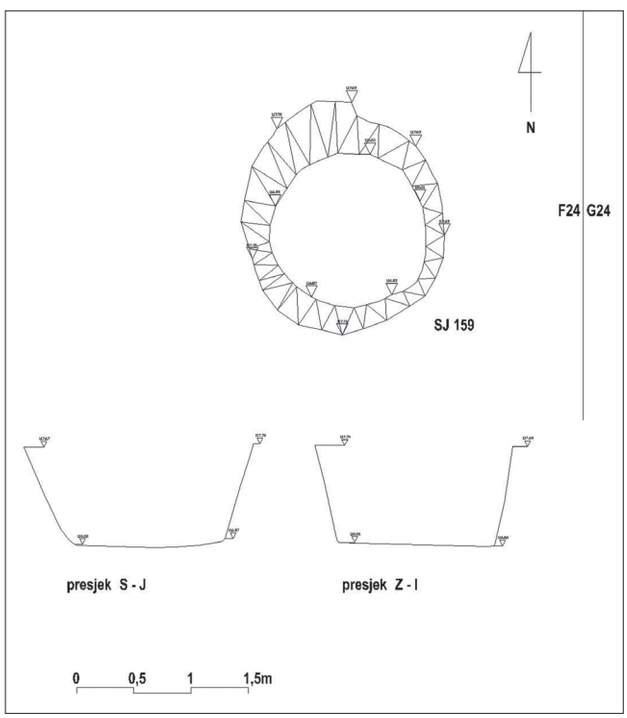
Mjesto ulaza u kuću, kao što sam već napomenula, nije moguće sigurno utvrditi, no prihvaćanje mišljenja o funkciji sjeveroistočne prostorije kao ostave isključilo bi mogućnost da se kući pristupalo s te strane pa je vjerojatnije da se nalazio na jednoj od drugih strana kuće i da se ulazilo kroz veću prostoriju s pećí.

Nalaz peći

Ukop SJ 159 s pronađenom pećí u zapuni ističe se kao poseban nalaz na lokalitetu (sl. 3). Peć se nalazila uz zapadni zid opisanoga stambenog objekta, pronađenog u južnom dijelu lokaliteta, a na površini je bila vidljiva kao pravilna kružna mrlja sive boje. Unutar ukopa naišli smo na četiri razine zapune, gornju SJ 158, činila je sivosmeđa zemlja s nalazima pećnjaka, dimnjaka i veće količine lijepa, posebno koncentriranog na samom dnu zapune. Ispod SJ 158 nalazila se zapuna SJ 212 u vidu gara i zapečene zemlje debljine 2 – 3 cm s „taracom" od ulomaka keramike, nakon čijeg se uklanjanja naišlo na treću zapunu debljine 14 cm, evidentiranu kao SJ 210 i sačinjenu od nabijene ilovače izrazito sive boje s velikim količinama gara i zapečene zemlje te ulomcima keramike. Ispod SJ 210 nalazio se drugi sloj gara, SJ 227, debljine 2 cm, također s „taracom" od ulomaka keramike. Nalaz dvaju slojeva gara i „taraca", ali i nalazi pećnjaka različite fakture u zapuni SJ 158, govore nam da su na istome mjestu stajale dvije peći, odnosno upućuje na zaključak da je starija peć bila obnavljana.

SLIKA 3. Tlocrt i presjeci (S – J i Z – I) ukopa sa urušenom pećí SJ 159 (izradila M. Sečkar).

FIGURE 3. The ground plan and cross sections (N – S i W – E) of the pit with the collapsed stove SU 159 (made by M. Sečkar).



the rooms can only be provided by the stories told by the older residents of Hungarian villages of a more recent period, the 19th century, who recounted that people cooked and slept in the same room in residential structures, as there was no separate kitchen, rather the cooking was done in a large stove, while the residents slept on benches next to the stove and those installed on the walls of the room.[50]

The relationship between the load-bearing posts for the larger and smaller lateral rooms seems to indicate that construction was not simultaneous, as the position of hole SU 109 in relation to hole SU 111 (Fig. 2) creates the impression that the smaller room was "drawn into" the larger one, suggesting its subsequent construction or the possibility that it was in fact originally a stand-alone structure to which the larger room was added. The function of this smaller room is not known, as finds that would help determine its purpose are entirely lacking, but some indication may be provided by the find of a house in the late medieval village of Csesztreg-Mihomi erdő, which had a wooden shed, or perhaps just a canopy, added to its NE side, with dimensions of 2.7 x 2 m, for the purpose of storing various items of everyday use.[51]

The position of the entrance to the house, as I have already mentioned, could not be determined with any certainty, but acceptance of the view on the function of the NE room as a storage space would exclude the possibility that the house was entered from this side, and the entrance was probably located on one of the other sides of the house, so that it could be entered through the large room with the stove.

Stove

Hole SU 159 with a stove found in its fill stands out as a special find at the site (Fig. 3). The stove rested against the western wall of the described residential structure, found in the southern section of the site, and on the surface it was visible as an orderly circular grey blemish. Four levels of fill were uncovered inside the hole; the upper SU 158 consisted of light brown soil with finds of stove stiles, a chimney and a high quantity of daub, particularly concentrated at the very bottom of the fill. Fill SU 212 was below SU 158, consisting of soot and baked earth with a thickness of 2 – 3 cm, as well as a "potsherd floor." After removal of the latter, a third fill with a thickness of 14 cm was found, registered as SU 210 and consisting of packed loam with a notably grey colour and large quantities of soot and baked earth, as well as potsherds. Below SU 210 there was another layer of soot, SU 227, with a thickness of 2 cm, and with a "potsherd floor." The find of two layers of soot and "potsherd floors," as well as finds of stove tiles of varying facture in fill SU 158, tells us that two stoves were in the same position, i.e., it points to the conclusion that the older stove had been restored.

The restoration of older stoves was not at all unusual, and records can be found in the scholarly literature indicating that stoves had to be restored because they could very quickly de-

50 Holl, Parádi 1982, 119, 124.

51 Kvassay 2005, 326.

Obnavljanje starijih peći nije ništa neobično, u literaturi nailazimo na zapise kako je peći bilo potrebno obnavljati jer su pri redovnom loženju vrlo brzo dotrajale, dok bi pećnjaci samo iznimno izdržali više od dvije obnove.[52] Navedeno potvrđuju i arheološka istraživanja srednjovjekovnih naselja datiranih u 15. i 16. st. na području Mađarske, u čijim su kućama peći bile više puta obnavljane na istome mjestu.[53]

Oblik ukopa SJ 159 govori nam da je peć bila ovalnog oblika. Dimenzije ukopa od 1,90 x 1,80 x 1,14 m, ali i broj te raznovrsnost pronađenih pećnjaka, upućuju na zaključak da se radilo o većoj peći, iako, u usporedbi s veličinom onih koje susrećemo na istraživanim kasnosrednjovjekovnim naseljima srednje Europe (Sarvaly, Csesztreg-Mihomi), mogli bismo je svrstati i u red manjih. Primjerice, u literaturi nailazimo na podatak kako su peći otkrivene na lokalitetu Sarvaly imale postolje dimenzija do 2 – 2,5 x 2 – 2,5 m u tlocrtu.[54]

Veća količina lijepa pronađena u zapuni SJ 158 upućuje nas na zaključak da je peć imala glineno podnožje i okvir. Na ulomcima prikupljenog lijepa vidljivi su tragovi utiskivanja pećnjaka i pruća koji nam govore o načinu gradnje peći. Peć se gradilo na način da se prvo izradio okvir od pletenog pruća na koji se dodavala glina, a zatim su na nastalu konstrukciju od glinenog plašta gusto, jedan do drugoga, postavljani pećnjaci. Pećnjaci su prekrivali čitavu površinu konstrukcije kako bi povećali grijaću površinu peći s obzirom na to da je njihova osnovna funkcija bila pohrana i davanje topline. Isti način gradnje nalazimo i na lokalitetu Sarvaly, s time da je ondje u pojedinim objektima konstrukcija stajala na kamenoj podlozi,[55] dok je ulogu podloge kod burdeljske peći očito imala nabijena zemlja SJ 210 jer je kamenje, koje bi sugeriralo na takvu vrstu podloge, u zapuni u potpunosti izostalo.

Sam kontekst nalaza upućuje na to da se peć nakon napuštanja objekta urušila, a ne postoje tragovi namjernog uništenja u smislu rušenja, razbijanja ili paleži. Na temelju radiokarbonskih datuma,[56] dobivenih analizom gara iz zapuna ukopa SJ 159, stariju peć možemo datirati u sredinu ili 2. polovicu 15. st., dok mlađu peć možemo pripisati razdoblju 16. stoljeća.

Pećnjaci

Na pećarskom materijalu srednje Europe iz razdoblja kasnog i razvijenog srednjeg vijeka izdvojen je velik broj tipova te na desetke varijanti i podvarijanti osnovnih jednostavnih tipova pećnjaka. Pećnjaci pronađeni na ovome lokalitetu predstavljaju stoga zaista reprezentativni nalaz jer nailazimo na većinu osnovnih

teriorate in the course of regular firing, while the stove tiles could only endure more than two reconstructions in exceptional cases.[52] This has also been confirmed by archaeological research into medieval settlements dated to the 15th and 16th centuries in the territory of Hungary, in which the houses had stoves rebuilt more than once in the same position.[53]

The shape of hole SU 159 indicates that the stove was oval. The dimensions of the hole of 1.9 x 1.8 x 1.14 m, as well as the number and diversity of stove tiles found, point to the conclusion that this was a large stove, although in comparison to the size of those seen in the excavated late medieval settlements of Central Europe (Sarvaly, Csesztreg-Mihomi), it could be classified among the smaller ones. For example, in the scholarly literature there is information about a stove discovered at the Sarvaly site which had a base with dimensions up to 2–2.5 x 2–2.5 m in the floor plan.[54]

The high quantity of daub found in fill SU 158 points to the conclusion that the stove had a clay pedestal and frame. Traces of imprints made by stove tiles and reeds visible on the pieces of gathered daub say something about the stove construction technique. The stove was built such that the frame was made first from woven reeds to which clay was added, and then the clay mantle structure emerged, onto which stove tiles were densely affixed, one next to the other. Stove tiles covered the entire surface of the construction in order to increase the heating surface, given that their basic function was to store and emit heat. The same construction method can also be seen at the Sarvaly site, although there the construction stood on a stone base in individual buildings,[55] while the role of the pedestal for the Burdelj stove was obviously played by packed soil SU 210, because stones that would have suggested such a base were entirely absent in the fill.

The very context of the find indicates that the stove collapsed after the abandonment of the structure, as there were no signs of intentional destruction, demolishing or burning. Based on radiocarbon dates[56] obtained from an analysis of the soot from the fill in hole SU 159, the older stove may be dated to the mid-15th century or its latter half, while the later stove may be ascribed to the 16th century.

Stove tiles

The stove-making materials of Central Europe from the High and Late Middle Ages have been broken down into a high number of types and dozens of variants and sub-variants of basic simple stove tile types. The stove tiles found at this site therefore constitute a truly representative find, because most of the basic types

52 Makarovič 1981, 145.
53 Sabján 2001, 330; Holl, Parádi 1981, 126–127.
54 Holl, Parádi 1982, 127; Kvassay 2005, 326.
55 Holl, Parádi 1982, 127.
56 Analiza rađena u Beta Analytic Inc., Miami, Florida, SAD; detaljnije tab. 1.

52 Makarovič 1981, 145.
53 Holl, Parádi 1981, 126–127; Sabján 2001, 330.
54 Holl, Parádi 1982, 127; Kvassay 2005, 326.
55 Holl, Parádi 1982, 127.
56 The analysis was conducted in Beta Analytic Inc., Miami, Florida, USA; more details in Tab. 1.

tipova jednostavnih pećnjaka zabilježenih u litetaturi.[57] Zapuna SJ 158 sadržavala je, gotovo u potpunosti sačuvanih, 25 lukovičastih pećnjaka, 7 zdjelastih pećnjaka s četverokutnim i 7 zdjelastih s trokutnim otvorom, 2 perforirana pećnjaka, 27 čašastih pećnjaka, 2 plitičasta pećnjaka te ulomke dimnjaka. Osim cjelovitih nalaza pećnjaka, pronađeno je još 77 ulomaka koji se većinom mogu pripisati ulomcima dna i rubova čašastih (T. 4: 1–9a). Kao što je već spomenuto, na osnovi njihove fakture i boje, moguće ih je pripisati starijoj ili mlađoj fazi peći.

Pećnjaci, koji su pripadali konstrukciji starije peći, grublje su fakture, izrađeni od znatno slabije pročišćene gline, debljih stijenki i tamnosmeđe boje te djeluju masivnije, za razliku od onih mlađih, koji su finije izrade, od dobro pročišćene gline, tanjih stijenki i narančaste boje. Starijim pećnjacima možemo pripisati najmanje po dva perforirana (T. 5: 1–1a; T. 6) i zdjelasta pećnjaka s trokutastim otvorom (T. 7), zatim zdjelasti pećnjak s četvrtastim otvorom (T. 10: 1) i ulomke starijih čašastih pećnjaka koji su, za razliku od kompaktnih ulomaka smeđe boje iz mlađe faze, boje cigle i vrlo drobljivi. Stariji su pećnjaci najvjerojatnije bili ugrađeni u konstrukciju mlađe peći s obzirom na to da su također pronađeni unutar zapune SJ 158 i ne može se ni po čemu zaključiti da su prilikom obnove bili odbačeni. Krunište peći bilo je građeno iz, najmanje, 25 lukovičastih pećnjaka ugrađivanih na način da ih se otvorom utisnulo u glinu. Svi su bili podjednake visine, između 17,5 i 19,5 cm, promjera otvora 6 – 8 cm te šiljastog završetka (T. 8). U unutrašnjosti ovih pećnjaka nailazimo na tragove gara, što potvrđuje njihovu uporabu. Većinom su narančasto-oker boje, izrađeni od dobro pročišćene gline, s malo primjesa pijeska i kamenčića, te ukrašeni u gornjem dijelu različitim inačicama kombinacija urezanih horizontalnih linija, valovnica, zareza, utisnutih krugova i kapljica (T. 8–9). Zanimljivo je kako svaki od njih ima vlastitu kombinaciju spomenutih ukrasa, ista se kombinacija ukrasa ne ponavlja, odnosno, svaki je lukovičasti pećnjak unikatan. Raznolikost ukrasa ne čudi s obzirom na to da je kod ovog tipa pećnjaka kuglasti dio sa šiljkom predstavljao, uz funkcionalnu grijaću plohu, i ukras peći. Na većem broju spomenutih pećnjaka nailazimo na tragove veziva u vidu gline, a samo nekoliko ih možemo pripisati starijoj peći, što govori u prilog tome da je kod glinenih konstrukcija peći najbrže propadao gornji dio, dakle, krunište.[58]

Pri vrhu zapune SJ 158 pronađeni su perforirani ulomci, dvije gotovo u potpunosti sačuvane ploče trokutastog oblika s geometrijskim ukrasom (T. 5: 1–1a; T. 6) i tri keramička ulomka (T. 10: 2–4) u obliku zraka i ukrasom utisnutih krugova. Ulomci su pronađeni pomiješani s lukovičastim pećnjacima pri vrhu zapune SJ 158, što nas navodi na zaključak da su služili kao ukrasni elementi kruništa. S dozom opreza mogli bismo zaključiti kako je riječ o ulomcima perforiranih zdjelastih pećnjaka s trokutastim otvorom (T. 5: 1–1a; T. 6) jer trokutaste perforirane ploče imaju namjerno tordirani rub, što nikako ne bi odgovaralo rubu odlomljene pred-

of simple stove tiles recorded in the scholarly literature were found here.[57] Fill SU 158 contained, in almost entirely preserved condition, 25 bulb-shaped tiles, 7 bowl-shaped tiles with square openings and 7 bowl-shaped tiles with triangular openings, 2 perforated tiles, 27 cup-shaped tiles and 2 saucer-shaped tiles, as well as pieces of a chimney. Besides the finds of whole stove tiles, an additional 77 fragments were found, which can mostly be ascribed to pieces of the bottoms and edges of cup-shaped tiles (P. 4: 1–9a). As already mentioned, based on their facture and colour, they may be attributed to the earlier or later phase of the stove.

The stove tiles that belonged to the older stove have a coarser facture, made of far less refined clay, with thicker walls and a dark-brown colour, as opposed to those from the later phase which exhibit finer craftsmanship, and are made of highly-refined clay, with thinner walls and an orange colour. At least two perforated stove tiles (P. 5: 1–1a; P. 6) and a bowl-shaped tile with a triangular opening (P. 7), and then a bowl-shaped tile (P. 10: 1) with a rectangular opening and fragments of older cup-shaped tiles that are, as opposed to the compact brown fragments from the later phase, the colour of brick and rather crumbly, may be classified as older stove tiles. The older stove tiles were most likely installed into the structure of the later stove, since they were also found inside fill SU 158 and there are no grounds to conclude that they had been discarded during reconstruction. The crown of the stove was built with a minimum of 25 bulb-shaped stove tiles installed so that they would be pressed into the clay at their openings. All of them have roughly the same height, 17.5 and 19.5 cm, the diameter of their openings are 6 – 8 cm, and they have tapered ends (P. 8). Traces of soot can be found in the interior of these stove tiles, which confirms their use. Most are orange-ochre, made of highly-refined clay with sand and pebbles as temper, and decorated in their upper sections with various combinations of incised horizontal lines, wave patterns, notches, impressed circles and teardrops (P. 8–9). It is interesting that each of them has its own combination of these decorations, and the same decorative combination is never repeated, i.e., each bulb-shaped tile is unique. The diversity of decorations is not surprising, given that on this type of stove tile, the bulbed section with the tip not only served as a functional heating service but also as a decoration. On a high number of these stove tiles, traces of a bonding agent, clay, can be seen, and only a few can be ascribed to the older stove, which indicates that the upper section, the crown, deteriorated most rapidly in the clay structure of stoves.[58]

Perforated fragments, two almost entirely preserved triangular tiles with geometric decorations (P. 5: 1–1a; P. 6) and three ceramic fragments (P. 10: 2–4) with radial shape and impressed circle decorations were found at the top of fill SU 158. The fragments were found mixed with bulb-shaped tiles near the top of fill SU 158, which leads to the conclusion that they were used as decora-

57 Kako bih stekla uvid u tipove pećnjaka, pri izradi ovog poglavlja poslužila sam se monografijom E. Roth Heege, Ofen keramik und Kachelofen – Typologie, Terminologie und Rekonstruktion, Schweizer Beiträge zur Kulturgeschichte und Archäologie des Mittelalters 39, 2012.

58 Holl, Parádi 1982,127.

57 In order to gain insight into stove tile types, when writing this chapter I made use of the monograph by E. Roth Heege, Ofenkeramik und Kachelofen – Typologie, Terminologie und Rekonstruktion, Schweizer Beiträge zur Kulturgeschichte und Archäologie des Mittelalters 39, 2012.

58 Holl, Parádi 1982,127.

nje perforirane ploče, a sa stražnje strane niti ne nailazimo na tragove stražnjeg dijela pećnjaka u smislu da su odlomljene od njega. Uzevši u obzir navedeno, nalaze bismo prije mogli protumačiti kao vezivno sredstvo korišteno pri gradnji peći, a imalo je ukrasne elemente. Ukrašavanje peći na taj način prisutno je na cjelokupnom području rasprostiranja pećnjaka između 12. i 15. st., s iznimkom Donje Saske, gdje se pojavljuje od sredine 16. stoljeća.[59] Opisane ulomke pripisujemo isključivo starijoj peći.

Zdjelasti pećnjaci četvrtastog otvora pojavljuju se početkom 14. st. na području sjeverno od Alpa, a u uporabi su do 16. st., ponegdje i duže.[60] Oni pronađeni uzapuni SJ 158 većinom su narančaste boje, duljine stranica otvora između 15,5 i 17,5 cm i visine 13 – 14 cm (T. 11: 1; T. 12: 1). Dno im je prstenasto, promjera 9 – 10 cm, a na njemu je vidljiv reljefni ukras u obliku križa (T. 11: 1a). Slične znakove nalazimo na dnu posuda iz Čanjeva i Ciglenice datiranima u 16. st., a najvjerojatnije potječu od utora lončarskog kola koji je pridržavao posude kako se ne bi srušile prilikom vrtnje.[61] Samo jedan ulomak ovog tipa pećnjaka možemo pripisati starijoj peći (T. 10: 1). Ulomak je debljih stijenki, tamnosmeđe boje, visine 10 cm, s otvorom koji je služio za međusobno vezanje pećnjaka. Naime, pećnjaci su se vezali kako bi se postigla dobra stabilnost peći, a potvrdu tomu u nas su nalazi željeznih spona iz Velikog Tabora, kojima su spajani bridovi stražnjih strana dvaju susjednih pećnjaka datiranih 16. – 17. stoljeće.[62] U zapuni SJ 158 nisu pronađene slične spone niti drugi nalazi koji su mogli služiti za vezanje pećnjaka pa su oni vjerojatno bili povezivani vezicama od organskog materijala koji je propao.

Zanimljivo je da otvore za vezanje nalazimo na svim sačuvanim pećnjacima pripisanima starijoj fazi peći, dok na onima mlađe faze u potpunosti izostaju, što se možda može objasniti pronalaskom novih načina osiguranja stabilnosti peći. U literaturi nailazimo na podatak da su, kako bi se postigla dobra stabilnost peći, često s unutrašnje strane peći, između pećnjaka, u glinu ugrađivani obluci i/ili smrvljena opeka,[63] a kako je u zapuni SJ 158 pronađen i veći broj drobljivih, manjih, ulomaka keramike pripisanih starijim čašastim pećnjacima, možemo pomisliti da su mogli biti u sekundarnoj uporabi ovoga tipa. Moguće je da su prilikom obnove peći u novu peć ugrađivani dobro očuvani stariji pećnjaci, dok su oni u lošijem stanju odbačeni i korišteni prilikom izrade nove peći u svrhu izgradnje unutrašnje nosive konstrukcije peći, za što primjere nalazimo i u literaturi,[64] te pritom više nije bilo potrebno vezanje pećnjaka radi njezine stabilnosti.

Zdjelasti pećnjaci trokutastog otvora također se mogu podijeliti na one iz starije i one iz mlađe faze, s time da starijoj pripisujemo dva od ukopno sedam pronađenih (T. 7: 1–1a). Približno su jednakih dimenzija, duljine stranica između 18 i 21 cm te visine od 6,5 do 8 cm. Većinom su prstenastih dna, promjera 8 – 9 cm, a kod dva

tive elements for the crown. With some caution, it may be stated that these are fragments of perforated bowl-shaped stove tiles with triangular openings (P. 5: 1–1a; P. 6) because triangular perforated tiles have intentionally twisted edges, which certainly would not correspond to the edge of the broken off frontal perforated tile, while on the back side there are no traces of the rear section of a stove tile in the sense that they were broken off from it. Taking into consideration the aforementioned points, the finds may be interpreted as a bonding material in the construction of the stove, albeit with decorative elements. The decoration of stoves in this manner was present in the entire area of distribution of stove tiles between the 12th and 15th centuries, with the exception of Lower Saxony, where it appeared as of the mid-16th century.[59] The fragments so described may be attributed exclusively to the older stove.

Bowl-shaped stove tiles with square openings appeared in the territory north of the Alps at the beginning of the 14th century, and remained in use until the 16th century, and even longer at places.[60] Those found in fill SU 158 are mostly orange; the sides of the openings range in length from 15.5 to 17.5 cm with heights of 13 – 14 cm (P. 11: 1; P. 12: 1). The bottoms are ringed, with diameters of 9 – 10 cm, and they have visible cross-shaped decorations in relief (P. 11: 1a). Similar symbols can be seen on the bottoms of vessels from Čanjevo and Ciglenica dated to the 16th century, and they were most likely made by the slot on the potter's wheel which held the vessel so that it would not fall when spun.[61] Only one fragment of this stove tile type can be attributed to the older stove (P. 10: 1). The fragment has thicker walls, is dark brown, 10 cm high, and has an opening that allowed the stove tiles to be interconnected. This is because stove tiles were linked in order to ensure the sound stability of the stove, and this has been confirmed by finds of iron clasps from Veliki Tabor that were used to connect the edges of the rear sides of two neighbouring stove tiles dated to the 16th – 17th centuries.[62] Similar clasps were not found in fill SU 158, nor were there any other finds that could have served to link stove tiles, so they were probably connected with ties made of organic materials which have since decomposed.

It is interesting that the connective openings can be seen on all preserved stove tiles ascribed to the older phase of the stove, while they are entirely lacking on those from the later phase, which may perhaps be explained by the discovery of new ways to secure the stability of stoves. According some data from the scholarly literature, cobbles and/or crushed bricks were inserted into the clay, often from the inside of the stove between the tiles, in order to ensure its stability,[63] and since a high number of crumbly, small pieces of ceramic ascribed to older cup-shaped stove tiles were found in fill SU 158, it is conceivable that they

59 Roth Heege 2012, 316–317.
60 Železnikar 2002, 326.
61 Bekić 2006, 39, T. 5: 1, T. 6: 14; Čimin 2008, 126, 175, T. 8: 4, 8.
62 Škiljan 2007, kat. br. 138–139.
63 Škiljan 2015, 38.
64 Roth Heege 2012, 319.

59 Roth Heege 2012, 316–317.
60 Železnikar 2002, 326.
61 Bekić 2006, 39, P. 5: 1., P. 6: 14; Čimin 2008, 126, 175, P. 8: 4, 8.
62 Škiljan 2007, cat. no. 138–139.
63 Škiljan 2015, 38.

sačuvana mlađa pećnjaka nailazimo na unutarnjoj strani dna reljefni ukras u obliku rozete (T. 13: 1–1a).Ništa neobično jer je dno zdjelastih pećnjaka radi plitkosti bilo dobro vidljivo i stoga pogodno za ukrašavanje.[65]

Čašasti pećnjaci predstavljaju najjednostavniji oblik pećnjaka, poznatog u srednjoj Europi od 12. stoljeća.[66] Pećnjaci ovog tipa na Burdelju visine su od 17,5 do 18 cm, promjera otvora od 13 do 15,5 cm i ravnog dna promjera 7 – 7,5 cm (T. 14: 1–1a; T. 14: 2). Stijenke su pretežito smeđe boje te debljine 0,7 – 1 cm, a izdvaja se tek jedan niži pećnjak visine 13 cm. Ukras na pećnjacima ovoga tipa većinom izostaje jer su bili unutar peći postavljani otvorom prema van, no na nekoliko njih nalazimo ukras u vidu plitkih rebara i tankih urezanih horizontalnih linija. Također, u zapuni su pronađena i dva manja, plitka, pećnjaka (T. 10: 5–5a) koja bismo mogli pripisati tipu plitičastih pećnjaka, vrlo čestih na području sjeverne i srednje Njemačke te datiranima u 15. i rano 16. stoljeće.[67]

Osim pećnjaka, u zapuni SJ 158 pronađeni su i ulomak ruba posude vrlo sličan rubu pronađenom u SJ 210 (T. 16: 1), a u literaturi većinom datiran u 15 – 16. st. (T. 16: 3), te ulomak, vjerojatno, poklopca (T: 16: 5).

Nalaz dimnjaka

Osim velikog broja pećnjaka, u zapuni SJ 158 pronađen je i sačuvani dio dimnjaka peći te brojni ulomci (T. 15). Dimnjak je oker boje, izrađen od dobro pročišćene gline, širine otvora 10,8 – 13,5 cm i debljine stijenke od 1 cm. Nalaz je dimnjaka posebno zanimljiv. Etnografska i arheološka istraživanja sustava grijanja u kasnosrednjovjekovnim naseljima srednje Europe pokazuju odsutnost dimnjaka u kućama te korištenje otvora u stropu za odvod dima, zbog čega su stambene prostorije duži niz stoljeća bile zadimljene i crne.[68] Upravo nalazi stambenih objekata naselja

were put to a secondary use of this type. It is possible that during the reconstruction of the stove, the well-preserved older tiles were built into the new stove, while those in poorer condition were set aside and used during the crafting of a new stove for the purpose of making its internal load-bearing frame, for which examples can be found in the scholarly literature. [64] In this case, the mutual linkage of the stove tiles for the sake of stability was no longer necessary.

The bowl-shaped stove tiles with triangular openings may also be divided into older and later phases, although the two out of the total of seven found (P. 7: 1–1a) may be ascribed to the older phase. They have roughly identical dimensions, with the sides having lengths from 18 to 21 cm, and heights ranging from 6.5 to 8 cm. Most had ringed bottoms, with diameters of 8 – 9 cm, while two preserved later stove tiles have rosette-shaped decorations on the internal side of their bottoms (P. 13: 1–1a). This is not unusual, as the bottoms of bowl-shaped stove tiles were quite visible due to their shallowness, and thus suited to decoration.[65]

Cup-shaped stove tiles are the simplest form, known in Central Europe from the 12th century onward.[66] The stove tiles of this type at Burdelj have heights of 17.5 to 18 cm, opening diameters of 13 to 15.5 cm and flat bottoms with diameters of 7 – 7.5 cm (P. 14: 1–1a; P. 14: 2). The walls were mostly brown and 0.7 – 1 cm thick. Only one shorter stove tile with a height of 13 cm can be distinguished. The decorations on stove tiles ofthis type are mostly lacking because they were installed inside the stove with their openings outward, but on a few there are decorations in the form of shallow ribs and thin incised horizontal lines. Also, two small, shallow stove tiles (P. 10: 5–5a) were found in the fill which may be ascribed to the saucer-shaped stove tile type, very common in northern and southern Germany and dated to the 15th and early 16th centuries.[67]

Besides stove tiles, a fragment of a vessel rim was also found in fill SU 158 that is rather similar to the rim found in SU 210 (P. 16: 1), and already dated in the scholarly literature to the 15th – 16th centuries (P. 16: 3). A fragment of what was likely a lid was also found there (P: 16: 5).

Chimney

Besides a high number of stove tiles, the preserved portion of the stove's chimney was also found in fill SU 158, as well as numerous fragments (P. 15). The chimney is ochre, made of well-refined clay. The width of its openings is 10.8 to 13.5 cm, and the thickness of its wall is 1 cm. The chimney find is particularly interesting. Ethnographic and archaeological research into heating systems in late medieval settlements in Central Europe have shown an absence of chimneys in houses and the use of openings in the ceiling to release smoke, which is why residential

65 Guštin, Horvat 2004, 57.
66 Čimin 2008, 135.
67 Roth Heege 2012, 239–240.
68 Guštin, Horvat 1994, 53; Lončarić, 2010, 7, 18.

64 Roth Heege 2012, 319.
65 Guštin, Horvat 2004, 57.
66 Čimin 2008, 135.
67 Roth Heege 2012, 239–240.

Szentkirály, datiranog u 15. i 16. st.,[69] koja vremenski odgovaraju razdoblju uporabe burdeljskog objekta, pokazuju izostanak dimnjaka i odvoda dima putem otvora u krovu kuhinje.[70] No na istom lokalitetu nailazimo i na još jedno rješenje protiv zadimljenosti prostora, a ono je postavljanje peći u zidu i loženje izvana, s dvorišne strane.[71] U literaturi nailazimo također na podatak da su u ruralnim područjima Češke, Moravske, Karpata i u južnonjemačkim selima, kako bi dobili grijani prostor bez prisutnosti dima, bogatiji seljaci u 16. st. gradili posebnu prostoriju s peći koja je stajala u perforiranom zidu i bila grijana iz susjedne kuhinje,[72] dakle, u kuhinji se nalazio otvor u zidu kroz koji se peć, smještena u susjednom prostoru, zagrijavala.[73]

Zbog prisutnosti dimnjaka u zapuni SJ 158 i njegove funkcije odvlačenja dima i čađe iz prostorije, možemo pretpostaviti da je peć, pronađena na Burdelju, bila grijana iz prostorije u kojoj se i nalazila, uostalom, nemamo ni dokaza o postojanju druge prostorije iz koje se mogla ložiti, primjerice zasebne kuhinje. Vjerojatno je ovdje riječ o ostanku pri tradiciji gradnje jednoprostorne kuće, ali korištenju nove tehnologije odvlačenja dima. Burdeljska je peć zasigurno imala i dvojaku funkciju, osim za grijanje, služila je vjerojatno i kao ognjište za pripremu hrane, na što bi mogao upućivati nalaz nekoliko životinjskih kosti u zapuni SJ 158. No nije bilo moguće odrediti kojoj životinjskoj vrsti su navedene kosti pripadale zbog njihove fragmentiranosti.

„Tarac“ u ukopu SJ 159

Kao što je već navedeno, u ukopu peći pronađena su dva sloja „taraca“ od ulomaka keramičkih lonaca. „Tarac“ je očito bio uobičajeni dio konstrukcije peći jer ga nalazimo i kod nalaza peći s lokaliteta Buzadovec-Vojvodice, a imao je ulogu dodatnog termičko-akumulacijskog medija.[74] U oba se „taraca“ nalazio veći broj ulomaka posuda, a ukupno je izdvojeno njih minimalno devet. Riječ je o ulomcima kuhinjskih lonaca i većoj posudi za čuvanje hrane koji su, s obzirom na to da ih ne nalazimo u cijelosti, očito bili razbijeni na drugome mjestu i zatim ovdje postavljeni. Zanimljivo je i da se jedan ulomak iz susjedne jame, SJ 166, fizički spojio s ulomkom iz „taraca“ peći SJ 227, što može govoriti u prilog navedenoj tvrdnji. Zastupljeni su ulomci lonaca sa širokim obodima čiji se rub naglašeno izvija prema van te je površina ukrašena rebrima ili urezanim horizontalnim linijama. Između rubova posuda starijeg i mlađeg sloja „taraca“ ne nalazimo izrazite razlike koje bi nam mogle poslužiti pri njihovoj dataciji, tim više

69 Pálòczi-Horváth 1997, 507.
70 Pálòczi-Horváth 1997, 511.
71 Pálòczi-Horváth 2001, 260.
72 Hoffmann 2008, 243.
73 Guštin, Horvat 1994, 53.
74 Tkalčec 2013, 83.

rooms were sooty and black for many centuries.[68] The finds of residential structures in the settlement of Szentkirály, dated to the 15th and 16th centuries,[69] which chronologically corresponds to the period of use of the Burdelj structure, indeed exhibit the absence of chimneys and a hole in the ceiling of the kitchen to release smoke,[70] but at that same site there is yet another solution to avoid smoke-filled rooms, and that was the installation of stoves into the wall and firing from the outside, from the yard side.[71] The scholarly literature indicates that in order to have smoke-free rooms in the 16th century, the wealthier peasants in the rural areas of Bohemia, Moravia and the Carpathians, as well as southern German villages, built separate rooms containing the stove, which stood in a perforated wall and was heated from the neighbouring kitchen,[72] thus the kitchen had an opening in the wall through which the stove in the neighbouring room was heated.[73]

Due to the presence of a chimney in fill SU 158 and its function of drawing smoke and soot from the room, it may be assumed that the stove found at Burdelj was heated in the room in which it was installed; furthermore, there is no evidence of the existence of another room from which it could be fired, such as a separate kitchen, for example. This was probably a matter of adherence to the tradition of building single-room houses, but using a new technology to eliminate smoke. The Burdelj stove certainly had a dual function; besides heading, it probably also served as a hearth to prepare food, which may be reflected in the discovery of several animal bones in fill SU 158. The fragmentary condition of the bones made it impossible to determine the species to which they had belonged.

Potsherd floor in hole SU 159

As already stated, two layers of potsherd floor were found in the hole. The potsherd floor was a customary component in the construction of stoves, because it has also been noted at the stove find at the Buzadovec-Vojvodice site, and it served the role of an additional thermal-accumulation medium.[74] Both of these floors contained a high number of potsherds, and a minimum of nine were distinguished in total. These are fragments of kitchenware pots and a large vessel to store food which were, given that they are not whole, obviously shattered at another location and then installed here. It is interesting that one sherd from neighbouring pit SU 166 was physically connected to a sherd from the potsherd floor of stove SU 227, which may support this assertion. Fragments of pots are present with wide rims that are prominently outwardly drawn and surfaces decorated with ribs or incised horizontal lines. There were not notable differences between the rims of vessels in the older and later potsherd floor layers

68 Guštin, Horvat 1994, 53; Lončarić, 2010, 7, 18.
69 Pálòczi-Horváth 1997, 507.
70 Pálòczi-Horváth 1997, 511.
71 Pálòczi-Horváth 2001, 260.
72 Hoffmann 2008, 243.
73 Guštin, Horvat 1994, 53.
74 Tkalčec 2013, 83.

što znamo kako su isti oblici posuda trajali kroz više stoljeća,[75] a i radiokarbonskoje datiranje gara iz slojeva starije i mlađe peći dalo vrlo bliske datume.

U oba se sloja „taraca" pojavljuju oblici kasnosrednjovjekovnih višestruko profiliranih rubova, izvijenih prema van, datiranih u literaturi većinom od 14. do 16. stoljeća. Iz starijeg SJ 227 možemo izdvojiti ulomak ruba posude (T. 16: 2) koji se po obliku datira u 15. i 16. st.,[76] a sličan je pronađen na lokalitetu Varaždinske Toplice-Ciglenica u sloju datiranom radiokarbonskom metodom u 16. stoljeće.[77] U istome sloju pronalazimo ulomak ruba jednostavnije profilacije, tanji i manji, odrezan ukoso te s vidljivim plitkim žlijebom na unutarnjoj strani ruba (T. 16: 4). Vrat posude bio je malo zadebljan, a sama posuda je u gornjem dijelu trbuha bila ukrašena plitkim rebrenjem. Možemo ga usporediti s rubovima s burga Vrbovca, datiranima u 13. st.,[78] rubom tipa 8 s kamniškog Maloga grada, za koji autor navodi da je prije svega poznat s austrijskog lokaliteta Alt-Hollenegg i ondje datiran u razdoblje od kraja 12. do početka 14. st.,[79] te sličnima s lokaliteta Podbočje-Stari grad gdje su datirani analogijama iz Švicarske i Austrije u kraj 13. i početak 14. stoljeća.[80] Prema navedenim analogijama, mogli bismo ga datirati u 13. st., ali s obzirom na cjelokupan kontekst ove cjeline, vjerojatno je kasniji i radi se o zadržavanju tradicije starijih oblika rubova ili ponovnog korištenja jednostavnijih oblika koje se pojavljuje u određenim krajevima u 16. st., a vidljivo je na primjeru Čanjeva, gdje se jednostavni rubovi pojavljuju u slojevima iz 17. i 18. stoljeća.[81] Također,ovdje moramo izdvojiti i ulomke posude debelih stijenki, prema sačuvanim ulomcima očito i većih dimenzija, a koji bi se mogli definirati kao ulomci posude namijenjene skladištenju hrane kakve su inače pronađene na mnogim nalazištima u Češkoj i datiraju se u 14. i 15. stoljeće.[82] Riječ je o ulomcima donjeg dijela trbuha posude koji se od ostalih iz ovoga sloja ističu po debljini stijenke od 1 cm. Nažalost, nije pronađeno dno ni gornji dio posude pa o njezinu točnom obliku ne možemo govoriti. Od nalaza u ovome sloju još možemo izdvojiti ravno dno posude i jedini nekeramički nalaz u ukopu SJ 159 – kamen ravne površine i glatkih, zaobljenih rubova koji je možda imao funkciju brusa (T. 16: 6).

U mlađem sloju „taraca" SJ 212, ističu se ulomci posude s urezanim znakom X na ramenu (T. 16: 7). Znak je bio urezan u vlažnu glinu, preko snopa vodoravnih žljebova, kojima je posuda bila ukrašena gotovo cijelom površinom. Ukras u vidu vodoravnih žljebljenih linija na ramenu i gornjem dijelu posude česta je pojava u 15. i 16. st., a ukrašavanje posuda snopovima vodoravnih žljebova u kombinaciji s urezanim znakom X pronađeno je na burgu Vrbovcu u slojevima datiranima u kraj 15. i početak 16. stoljeća.[83] Rub je posude naglašeno izvijen prema van, dok se sam vrh uvija prema

that could serve to date them, all the more so since we know the same vessel forms persisted over many centuries,[75] while even the radiocarbon dating of soot from the layers of the older and later stoves yielded rather proximate dates.

In both potsherd floor layers, late medieval multiply moulded, outwardly drawn rim forms appear, mostly dated in the scholarly literature to the 14th to 16th centuries. From the older SU 227, a vessel rim fragment may be distinguished (P. 16: 2) which based on its form has been dated to 15th and 16th centuries,[76] and a similar one was found at the Varaždinske Toplice-Ciglenica site in a layer dated by the radiocarbon method to the 16th century.[77] In the same layer, a rim fragment was found with simpler moulding, thinner and smaller, cut diagonally with a visible shallow groove on the inside of the edge (P. 16: 4). The vessel neck was slightly thickened, and the vessel itself was adorned with shallow ribbing at the upper part of the belly. It may be compared to the rims from the Vrbovec burg dated to the 13th century,[78] and rim type 8 from Kamnik's Mali grad ('Little Burg') about which the scholar pointed out that it is primarily known from the Austrian Alt-Hollenegg site and then dated to the period from the end of the 12th to the beginning of the 14th centuries,[79] as well as similar ones from the Podbočje-Stari grad site, where they were dated based on analogies from Switzerland and Austria to the end of the 13th and beginning of the 14th centuries.[80] Based on the aforementioned analogies, it may be dated to the 13th century, but given the entire context of this find, it probably has a later date and this is a matter of maintaining the tradition of older forms of rims or the re-use of simpler forms that appeared in certain regions in the 16th century. This is reflected in the example of Čanjevo, where simpler edges appeared in layers from the 17th and 18th centuries.[81] Here the fragments of vessels with thick walls and, based on the preserved pieces, obviously larger dimensions should be distinguished; they may be defined as fragments of vessels intended to store food otherwise found at many sites in the Czech Republic and dated to the 14th and 15th centuries.[82] These are fragments of the lower section of the belly of vessels which differ from the rest in this layer due to the thickness of their walls, 1 cm. Unfortunately, neither the bottoms nor upper sections of the vessels were found, so nothing can be ascertained about their shape. Among the finds in this layer, also noteworthy are the flat bottom of a vessels and the sole non-ceramic find in hole SU 159, a stone with a flat surface and smooth, rounded edges that may have been a grindstone (P. 16: 6).

In the later potsherd floor layer, SU 212, vessel fragments with the letter X incised on the shoulder (P. 16: 7) stand out. The symbol was incised into the damp clay, over a sheaf of horizontal

75 Brišnik, Ravnikar 1999, 267.
76 Gutjahr, Tiefengraber 2003, 450, T. 7: 19.
77 Bekić 2006, 57, T. 6: 2, 8.
78 Tkalčec 2010, 67, 162, T. 4: 86;T. 14: 1.
79 Štular 2005, 444–445; Gutjahr, Tiefengraber 2003, 102.
80 Predovnik 2003, 59, 199, T. 41: 34, 202, T. 44: 104.
81 Čimin 2008, 125, 170, T. 3: 171, T. 4.
82 Bekić 2006, 38.
83 Tkalčec 2010, 165, T. 7: 167, 172, T. 9: 198–200.

75 Brišnik, Ravnikar 1999, 267.
76 Gutjahr, Tiefengraber 2003, 450, P. 7: 19.
77 Bekić 2006, 57, P. 6: 2, 8.
78 Tkalčec 2010, 67, 162, P. 4: 86, P. 14: 1.
79 Gutjahr, Tiefengraber 2003, 102; Štular 2005, 444–445.
80 Predovnik 2003, 59, 199, P. 41: 34, 202, P. 44: 104.
81 Čimin 2008, 125, 170, P. 3: 171, P.4.
82 Bekić 2006, 38.
83 Tkalčec 2010, 165, P. 7: 167, 172, P. 9: 198–200.

unutra, a prisutan je i utor za poklopac na njegovoj unutrašnjoj strani. Možemo ga usporediti s rubom tipa 1 s Maloga grada na Kamniku[84] te s rubovima s Vrbovca datiranima u 16. stoljeće.[85] Slični se rubovi na Podbočju pojavljuju od početka 14. stoljeća.[86]

Zapuna SJ 210 nalazila se između dva sloja „taraca" i vjerojatno je nastala nakon uklanjanja starije peći pripremom baze za postavljanje mlađe peći u vidu debljeg sloja nabijene zemlje. Zapuna je siromašna nalazima, ali pronađeni ulomci rubova lonaca također ukazuju na karakteristike 15. i 16. stoljeća. Dva tanja ruba, s ležištem za poklopac na unutarnjoj strani (T. 17: 1–2), možemo usporediti s oblicima rubova na lokalitetu Podbočje-Stari grad, datiranima u mlađa razdoblja, analogijama s Flaschberga u Austriji u 16. st. i Otoka pri Dobravi u 14. i 15. stoljeću.[87] Na Čanjevu su slični rubovi datirani u 16. stoljeće.[88] Posudi T. 14: 5 vjerojatno je pripadao i ulomak ruba prikazan na T. 20: 1 pa ga možemo isto datirati. Još jedan rub, pronađen u SJ 210 (T. 17: 4), ukazuje na jako izvijanje prema van, dok je sam vrh uvinut prema unutra i može se usporediti s onima s Vrbovca datiranima u 16. st.[89] i rubom s Podbočja svrstanim u višestruko profilirane rubove razdoblja od 14. do 16. st.,[90] dok su na Čanjevu slični rubovi pronađeni u sloju datiranom u 16. stoljeće.[91] U istoj su zapuni pronađeni ulomci dviju posuda očuvanih u gornjem dijelu (T. 17: 5–6). Obje su posude svjetlije oker boje i tanjih stijenki. Rub je posude T. 17: 5 izvijen prema van i koso odrezan, a sličnost mu nalazimo u skupini rubova s Podbočja datiranima analogijom s tipom Af lokaliteta Otok pri Dobravi u 14. i 15. st., ali navodi se i analogija na austrijskom gradu Flaschberg s datacijom u 16. stoljeće.[92] Slični se datiraju na Vrbovcu u 16., možda i 2. polovicu 15. stoljeća.[93] Rub posude prikazan u T. 17: 6 nešto je jednostavniji, ravno odrezan prema van, a pojava je sličnih tipova datirana na Podbočju u 13. i 14., možda i u 15. st.[94] pa je vjerojatno riječ o zadržavanju tradicije starijih jednostavnijih rubova te ga, s obzirom na ostale nalaze u sloju, možemo datirati 15. – 16. stoljeće. Od nalaza se još ističu manji vrč oker boje, sačuvan gotovo u cijelosti (T. 18: 1–1a), visine sačuvanog dijela 13 cm, tanjih stijenki i ručke koja je nadvisivala obod, te dva manja ulomka bijelo glazirane keramike (T. 18: 2–3) koji zasigurno potječu od stolne keramike, vjerojatno vrča. Oba su ulomka ukrašena linijama plave boje, pri čemu je na jednome (T. 18: 2) prostor između dviju linija ispunjen crvenom bojom. Ulomci ukrasom podsjećaju na majoliku, ali to se, zbog njihovih izrazito malih dimenzija, ne može sa sigurnošću utvrditi. Iz ove zapune možemo još izdvojiti nalaz ulomka ukrašen plitko urezanom valovnicom (T. 18: 4), ulomke ukrašene žljebljenjem i urezanim linijama (T. 18: 5–7; T. 18: 8),dno posude (T. 18: 9–9a) i ulomak poklopca, vjerojatno tanjura (T. 18: 10).

grooves adorning almost the entire vessel's surface. Decorations in the form of horizontal grooved lines on the shoulder and upper section were a common phenomenon in the 15th and 16th centuries, and the decoration of vessels with sheaves of horizontal grooves in combination with the letter X was found in the Vrbovec burg in layers dated between the end of the 15th and early 16th century.[83] The vessel's rim is prominently outwardly drawn, while the tip curves inward, and there is also a slot for the lid on its inside. It may be compared to rim type 1 from Mali grad at Kamnik[84] and the rims from Vrbovec dated to the 16th century.[85] Similar rims at Podbočje have appeared since the onset of the 14th century.[86]

Fill SU 210 was situated between the two layers of potsherd floors and probably emerged after the removal of the older stove to prepare a base as a thick layer of packed earth to install the later stove. The fill contained few finds, but the fragments of pot rims found in it also exhibit the features of the 15th and 16th centuries. Two thin rims, with a lip for lids on the inside (P. 17: 1–2) may be compared to the rim shapes at the Podbočje-Stari grad site, dated to more recent periods, and to analogies from Flaschberg in Austria in the 16th century and Otok pri Dobravi in the 14th and 15th centuries.[87] At Čanjevo similar rims have been dated to the 16th century.[88] The rim fragment shown on P. 20: 1 probably belongs to vessel P. 14: 5, and it may be dated to the same period. Another rim, found in SU 210 (P. 17: 4), exhibits an extreme outward curve, while the actual end is inwardly drawn, and may be compared to those from Vrbovec dated to the 16th century[89] and the rim from Podbočje may be classified among the multiply moulded rims from the period spanning the 14th to 16th centuries,[90] while at Čanjevo similar rims were found in the layer dated to the 16th century.[91] Fragments of two vessels preserved in their upper sections (P.17: 5–6) were found in the same fill. Both vessels have a lighter, ochre colour and thinner walls. Vessel rim P. 17: 5 is outwardly drawn and bevelled, and similarities to it can be found in the group of rims from Podbočje dated by analogy to type Af at the Otok pri Dobravi site dated to the 14th and 15th centuries, although another analogy is from the Austrian town of Flaschberg with dating to the 16th century.[92] Similar pieces at Vrbovec have been dated to the 16th, and perhaps the latter half of the 15th century.[93] The rim of the vessel shown in P. 17: 6 is somewhat simpler, severed flat outwardly, and the appearance of similar types at Podbočje has been dated to the 13th and 14th centuries, and perhaps into the 15th century[94] and this was probably a matter of maintaining the tradition of older, simpler rims and, given the remaining finds in the layer, it may be dated to the

84 Štular 2005, 445.
85 Tkalčec 2010, T. 11: 225, 228.
86 Predovnik 2003, 59.
87 Predovnik 2003, 59, 60, 211, T. 53: 265.
88 Čimin 2008, 124–125.
89 Tkalčec 2010, 169, T. 11: 225–228.
90 Predovnik 2003, 211, T. 53: 265.
91 Čimin 2008, 125, 173, T. 6: 7, 11.
92 Predovnik 2003, 59–60, 208, kat. br. 203–204.
93 Tkalčec 2010, 69, 167, T. 9: 194.
94 Guštin, Cunja, Predovnik 1993, 56, sl. 19: 3–20.

84 Štular 2005, 445.
85 Tkalčec 2010, P. 11: 225, 228.
86 Predovnik 2003, 59.
87 Predovnik 2003, 59–60, 211, P. 53: 265.
88 Čimin 2008, 124–125.
89 Tkalčec 2010, 169, P. 11: 225–228.
90 Predovnik 2003, 211, P. 53: 265.
91 Čimin 2008, 125, 173, P. 6: 7, 11.
92 Predovnik 2003, 59–60, 208, cat. no. 203–204.
93 Tkalčec 2010, 69, 167, P. 9: 194.

Ostali ukopi i keramički nalazi

U neposrednoj blizini stambenog objekta nalazilo se nekoliko jama s nalazima keramike čiju je namjenu teško odrediti. Manja jama SJ 126 nalazila se sa sjeveroistočne strane objekta te sadržavala u zapuni nogu i donji dio trbuha vrča (T. 19: 1–1a). Radi se o finoj keramici svijetlo oker boje, oslikanoj linijama crvene boje koje čine motiv mreže. Slično oslikavanje pojavljuje se na keramici s Ružice i datira u 15. – 16. st. te na Čanjevu i Ciglenici, gdje se datira u 2. polovicu 16. stoljeća.[95] Još jedan ulomak stolne keramike nalazimo u zapuni jame SJ 151, zapadno od objekta. Riječ je o manjoj i plitkoj jami u kojoj je pronađen ulomak, vjerojatno vrča, narančaste boje i oker presjeka, ukrasa izvedenog kombinacijom urezane linije ispunjene crvenom bojom te linije utisnutih kružića i stupaca kružića utisnutih vjerojatno pečatom (T.19: 2). Tehnika ukrašavanja pečatom karakteristična je za glaziranu i neglaziranu keramiku na području Mađarske u 14. i 15. st., dok je u Slovačkoj ograničena isključivo na neglaziranu keramiku.[96]

Istočno od stambenog objekta nalazila se veća jama SJ 166/167, s nalazom ulomka posude debljine stijenke 1,5 cm, i dno posude (T. 19: 3–3a) promjera 11,5 cm i debljine stijenke 2 cm koji najvjerojatnije potječu od veće posude koja je služila za skladištenje hrane. U zapuni jame pronađen je i kremen, a na njezinuzapadnom rubu nalazila se stratigrafska jedinica SJ 213/214, pravilnog, kružnog oblika i crvene boje zapune s tragovima gara, što upućuje na vatrište. Pokretni nalazi i nalaz vatrišta upućujena mišljenje kako je ova jama možda služila kao poluzemunica s ognjištem za pripremu hrane ili kao krušna peć u neposrednoj blizini objekta, a kakve su već pronađene na lokalitetu Beketinci-Bentež ili u srednjovjekovnim naseljima Tófej i Keszthely u Mađarskoj.[97] O određenoj konstrukciji nad jamom u smislu nadstrešnice nije moguće govoriti jer su izostali ukopi stupova. U zapuni jame pronađen je i ulomak keramike tankih stijenki (3 mm), ukrašen plitkim rebrenjem površine, koji se spojio s ulomkom pronađenim u SJ 227. Navedeno bi moglo upućivati na neku vrstu kontaminacije, ali i mogućnost da je posuda bila pohranjena u jami pa je, uslijed oštećenja ili razbijanja, iskorištena za „tarac" prilikom gradnje peći. Ako bismo prihvatili drugu tvrdnju, jamu bismo mogli datirati u isto razdoblje kao i stariju peć, dakle u 1. polovicu 15. stoljeća.

Jama SJ 228/229 s većim brojem ulomaka keramike nalazila se uz istočni rub iskopa sonde. Prosječna je širina jame bila 3,21 m, dužina 2,80 m, dok je dubina iznosila samo 10 cm, ali zbog učestalih kiša, prije i za vrijeme njezina iskopavanja, jama je bila više puta polirana, čime je skinut dio zapune, stoga je prvotno zasigurno bila dublja. U zapuni SJ 228 pronađeno je 40 ulomaka keramike, a u većem broju nalazimo ulomke stijenki posuda ukrašenih žljebljenjem i urezanim linijama (T. 19: 4; T. 19: 5–6). Dna pronađena u zapuni su ravna, promjera od 9 do 11 cm, dok je jedno prstenasto i manje, promjera 7,5 cm, a ističe se masivno dno ukrašeno

95 Bojčić, Radić 2004, 187–189; Bekić 2006, 59, T. 8: 4; Čimin 2008, 133–134, 183, T. 16: 17–26.

96 Železnikar 2002, 325–326.

97 Müller, 1972, 201–203; Minichreiter, Marković 2013, 202.

Other holes and pottery finds

In the immediate vicinity of the residential structure, there were several pits containing pottery finds for which the purpose has been difficult to ascertain. The smaller pit SU 126 was on the north – eastern side of the structure and contained the foot and lower part of the belly of a jug (P. 19: 1–1a) in its fill. It was made of fine light-ochre ceramic, with red lines painted on it to create a grid motif. Similar painted decorations appear on the pottery from Ružica, which has been dated to the 15th – 16th centuries, and at Čanjevo and Ciglenica, where it has been dated to the latter half of the 16th century.[95] Another tableware fragment was found in the fill of the smaller and shallower pit SU 151 west of the structure. The fragment, possibly of a jug, is orange and ochre at the cross-section, with decorations rendered by a combination of incised lines filled with red paint and lines of impressed circlets and columns of circlets probably imprinted with a stamp (P.19: 2). The decoration technique is typical of the glazed and non-glazed pottery from Hungary's territory in the 14th and 15th centuries, while in Slovakia it is limited exclusively to non-glazed pottery.[96]

The larger pit SU 1667/167 east of the residential structure contained a vessel fragment with 1.5 cm thick walls and a vessel bottom (P. 19: 3–3a) with a diameter of 11.5 cm and 2 cm thick walls which were probably part of a large vessel used to store food. Flint was also found in the pit, and at its western edge was stratigraphic unit SU 213/214, with a regular, circular shape and red fill with traces of soot that indicate a fire-place. The movable finds and the fire-place suggest that this pit may have served as a semi-dugout with a hearth to prepare food, or as a bread oven in the immediate vicinity of the structure, which have already been found at the Beketinci-Bentež site or in the medieval settlements of Tófej and Keszthely in Hungary.[97] Nothing specific could be determined about the construction above the pit in the sense of a canopy, because post holes were absent. Also found in the pit was a potsherd with thin walls (3 mm) decorated by shallow ribbing on the surface which could be connected to a sherd

94 Guštin, Cunja, Predovnik 1993, 56, Fig.19: 3–20.

95 Bojčić, Radić 2004, 187–189; Bekić 2006, 59, P. 8: 4; Čimin 2008, 133–134, 183, P. 16: 17–26.

96 Železnikar 2002, 325–326.

97 Müller 1972, 201–203; Minichreiter, Marković 2013, 202.

kapljičastim motivom koje je možda bilo u funkciji noge većega vrča (T. 19: 7). U zapuni su jame pronađena i četiri ulomka glazirane keramike. Ulomak noge s tragovima žute glazure na vanjskoj strani, promjera 6 cm, također je ukrašen utisnutim kapljičastim motivom pa vjerojatno predstavlja ulomak noge vrča (T. 19: 8–8b), a jedan ulomak možemo pripisati tanjuru ili zdjeli (T. 20: 1) s obzirom na to da zelenu glazuru nalazimo samo s unutarnje strane. Naime, to je karakteristika tanjura i zdjela pronađenih na Čanjevu, kod kojih redovito izostaje ukrašavanje vanjske površine.[98] U zapuni su se još nalazili sitni ulomak tankog ruba bijele boje glazure i manja, bijelo glazirana, ručka svijetlonarančastog biskvita. Zbog izrazito malih dimenzija i odsutnosti većeg broja sličnih ulomaka, možemo samo nagađati jesu li bili dio istoga vrča, kao i o mogućoj pripadnosti majoličkom tipu posuđa, tipičnom upravo za razdoblje 15. – 17. stoljeća.[99]

U preostalim jamama nalazimo u većem broju ulomke dna pa tako možemo izdvojiti SJ 124 s nalazom četiri ravna dna, promjera 5 – 10 cm (T. 20: 2–2a, T. 20: 3–4), SJ 204 s ulomkom dna (T.20: 5, T.20: 5a) i SJ 20 s ulomkom dna sive boje i tragovima gorenja na vanjskoj strani. Ulomci kuhinjskih posuda pronađeni u zapunama jama većinom su ukrašeni žljebljenjem ili urezanim linijama poput onih na keramici iz SJ 56 (T. 20: 6). Osim ulomaka kuhinjske keramike, pojavljuju se i sporadični ulomci pećnjaka pa tako rub iz SJ 140 (T. 21: 1) možemo pripisati čašastom pećnjaku zbog oblika i fakture vrlo sličnih onima iz SJ 159. Možemo još izdvojiti SJ 112 s nalazom poklopca (T. 21: 2) i jamu SJ 58 s rubom izvijenim prema van i istaknutom, na dolje izvučenom usnom (T. 21: 3) te ravnim dnom promjera 11 cm (T. 21: 4). Sličan je rub pronađen i u zapuni jame SJ 94 (T. 21: 5), a možemo ih analogijama s Podbočja i Vrbovca datirati u 15. – 16. stoljeće.[100] Nalaz ulomka u jami SJ 220 je također vrlo zanimljiv jer bismo ga mogli pripisati ulomku čaše (T. 21: 6). Čaše inače predstavljaju posebnu skupinu posuđa koja se u srednjovjekovnoj Europi pojavila usporedno s potrebom da svaki pojedinac koristi vlastitu posudu za piće.[101] Navedeni ulomak je tanje stijenke i izrađen od fino pročišćene gline. Obod možemo usporediti s obodima čaša pronađenima na lokalitetima burg Šalek i Slovenj Gradec u Sloveniji,[102] a koje se ubrajaju u skupinu jednostavnih čaša datiranih 14. – 15. st., no postoji mogućnost da su i mlađe.[103] Poznato je i da se na ukrašavanje čaša obraćala veća pozornost jer su ih upotrebljavali bogatiji pojedinci,[104] ali ga na navedenom ulomku ne nalazimo, što se može objasniti činjenicom da je sačuvan zaista mali ulomak oboda i ukras se vjerojatno nalazio niže na čaši, na dijelu koji nije sačuvan.

98 Čimin 2008, 127.
99 Čimin 2008, 131.
100 Predovnik 2003, 59–60, T. 54: 278.; Tkalčec 2010, 69, 168, T. 10: 214.
101 Tkalčec 2001, 219.
102 Guštin 2001, 147, sl. 5: 3–4.
103 Guštin 2001, 156.
104 Tkalčec 2001, 214.

found in SU 227. This may indicate some type of contamination, but also the possibility that the vessel had been deposited into the pit and, as a result of damage or destruction, used for a potsherd floor during construction of a stove. If the latter assertion is accepted, the pit may date to the same period as the older stove, i.e., the first half of the 15th century.

Pit SU 228/229, containing a high quantity of potsherds, was situated along the eastern edge of the trench excavation. The average width of the pit was 3.21 m, its length 2.8 m, while its depth was only 10 cm, but due to frequent rains before and during the time of its excavation, the pit was washed several times, thereby removing part of the fill, so that originally it was certainly deeper. Fill SU 228 contained 40 potsherds, mostly fragments of vessel walls decorated with grooved and incised lines (P. 19: 4; P. 19: 5–6). The bottoms found are flat, with diameters from 9 to 11 cm, while one is ringed and smaller, with a diameter of 7.5 cm. A massive bottom is notable, as it is adorned with a teardrop motif and may have been the foot of a large jug (P. 19: 7). Four glazed potsherds were found in the fill. A foot fragment with traces of yellow glaze on its exterior, with a diameter of 6 cm, was also decorated with an impressed teardrop motif and was probably the foot of a jug (P. 19: 8–8b), while one fragment may perhaps have been part of a plate or bowl (P. 20: 1), since the green glaze was only on its inside, which was typical of the plates and bowls found at Čanjevo, on which the exteriors are normally undecorated.[98] The fill also contained a tiny fragment of a thin white-glazed rim and a handle with the light-orange colour of cake dough. Due to their exceptionally small dimensions and the absence of a considerable number of similar fragments, we may only speculate as to whether they had belonged to the same jug, or the possibility that this was a maiolica-type vessel typical of the period from the 15th to 17th centuries.[99]

There was a high number of potsherds in the remaining pits, so SU 124 may be distinguished by finds of four flat bottoms, diameters 5 – 10 cm (P. 20: 2–2a, P. 20: 3–4a), SU 204 by a bottom fragment (P. 20: 5) and SU 20 by a grey bottom fragment that had traces of burning on its exterior. The kitchenware fragments found in the fills of these pits are mostly decorated with grooved or incised lines such as those on the pottery from SU 56 (P. 20: 6). Besides kitchenware fragments, sporadic stove tile fragments also appeared, so that the edge from SU 140 (P. 21: 1) may be ascribed to a cup-shaped stove tile because of its shape and facture very similar to those from SU 159. Also noteworthy are SU 112 with its lid find (P. 21: 2) and pit SU 58 with its outwardly drawn rim and prominent downwardly drawn lip (P. 21: 3) and flat bottom with a diameter of 11 cm (P. 21: 4). A similar rim was found in the fill of pit SU 94 (P. 21: 5), and based on analogies from Podbočje and Vrbovec, it can be dated to the 15th – 16th centuries.[100] The fragment found in pit SU 220 is also rather interesting, because it may be attributed to a cup fragment (P. 21: 6). Cups are a special group of vessels that appeared in Central Europe parallel to the need

98 Čimin 2008, 127.
99 Čimin 2008, 131.
100 Predovnik 2003, 59–60, P. 54: 278; Tkalčec 2010, 69, 168, P. 10: 214.

Zaključna razmatranja

Podaci kojima raspolažemo o ovome ranonovovjekovnom selu nisu dovoljni da se progovori o nekom konkretnijem planu i rasporedu objekata. Naime, istraživanjem je obuhvaćena samo periferija sela, a terenski pregled i prikupljeni površinski nalazi ukazuju na to da se njegova glavnina nalazila na blagoj padini, zapadno od istražene površine, no otkriveni objekt, njegov položaj, velik broj raznovrsnih pećnjaka te nalazi stolnog posuđa u okolnim jamama daju vrijedne podatke o materijalnoj kulturi i načinu života ruralnih zajednica u razdoblju 15. i 16. stoljeća. Nesumnjivo je riječ o stambenom objektu koji je bio u funkciji krajem 15. i tijekom 16. st., što potvrđujemo pokretnim nalazima i datiranjem radiokarbonskom metodom. Što se tiče vremenskog okvira, potrebno je reći da se arheološki nalazi slažu s povijesnim izvorima koji navode masovno napuštanje naselja na području Župe Pešćenica krajem 16. st. zbog učestalih osmanlijskih pljačkaških provala. Istraživanjem se nije naišlo na tragove ratnog razaranja, ali objekt je napušten, te arheološki nalazi ne potvrđuju kontinuitet života nakon kraja 16. stoljeća. Nalazi govore o ekonomskom i društvenom položaju vlasnika, odnosno navode na zaključak da se radilo o bogatijem vlasniku objekta, višega društvenog položaja, vjerojatno jednom od turopoljskih plemića koji su bili *iobagiones castri*, sami su sebe smatrali plemenitima i uspjeli su postići plemićki status.[105]

Mnoštvo ukopa pronađenih uokolo stambenog objekta dijelom vjerojatno potječe od konstrukcija različitih radnih prostora, ali velikom broju njih nije moguće odrediti točnu namjenu. Neobično je što se u jamama u neposrednoj blizini objekta nailazi na ulomke luksuznijih keramičkih proizvoda, poput ukrašenih vrčeva iz SJ 127 i SJ 151, a ne možemo isključiti ni mogućnost posjedovanja majoličkog posuđa, na što upućuje nalaz ruba i ručke vrča iz jame SJ 229. Najlakše bismo ih mogli pripisati otpadnim jamama, ali sve su manjih veličina i plitke te sadrže samo po nekoliko ulomaka posuđa. Jedina koja bi mogla biti bliža namjeni otpadne jame po dimenzijama i količini pronađenih ulomaka je SJ 229. U hrvatskoj je stručnoj literaturi tematika srednjovjekovnoga grijanja i peći poprilično neistražena zbog malog broja istraženih srednjovjekovnih naselja i neočuvanosti peći *in situ*. Pronalazak očuvane peći na Burdelju stoga daje izvrstan uvid u tehniku gradnje peći ruralnog područja i tipologiju pećnjaka, ali i govori da peć nije imala samo funkciju grijanja već je, imajući na umu raznolikost ukrašavanja pećnjaka i pažnju koja se pridaje ukrašavanju, a prije svega vidljivu na primjeru unikatnosti ukrasa lukovičastih pećnjaka, služila kao ukras prostora i način iskazivanja društvenog statusa vlasnika.

105 Miljan 2011, 30.

for each individual to use his or her own drinking vessel.[101] This fragment has thin walls and is made of well-refined clay. The rim may be compared to the rims of cups found at the sites of the Šalek burg and Slovenj Gradec in Slovenia[102] which are counted among the group of simple cups dated to the 14th – 15th centuries, but they are possibly from a later date as well.[103] It is known that particular attention was accorded to the decoration of cups because they were used by wealthier individuals,[104] but this was lacking on the fragment, which may be explained by the fact that only a very small fragment of the rim was preserved, and it is possible that the decoration was lower on the cup, on the part that had not been preserved.

Concluding considerations

The data on the late medieval settlement that we have at our disposal do not provide sufficient information on a more specific floor-plan and layout of the structure, as the excavations only encompassed the periphery of a village, while a field inspection and the gathered surface finds indicate that most of it was situated on a gentle slope west of the researched surface, although the discovered structure, its position, the high number of various stove tiles and the finds of tableware in the surrounding pits do provide valuable data on the material culture and lifestyle of a rural community in the 15th and 16th centuries. This was undoubtedly a residential structure that was in use at the end of the 15th and during the 16th century, which has been confirmed by movable finds and radiocarbon dating. As to the chronological framework, it is necessary to state that the archaeological finds comply with the historical sources which speak of the mass abandonment of settlements in the territory of the Pešćenica Parish during the 16th century due to frequent Ottoman looting raids. Excavations have not yielded any traces of wartime destruction, but the structure was abandoned and the archaeological finds do not confirm any continuity of life there after the end of the 16th century. The finds speak of the economic and social status of the owner, i.e., they point to the conclusion that the structure's owner was wealthier and had a higher social status, perhaps one of the Turopolje nobles who were *iobagiones castri*, who considered themselves noble and managed to achieved the status of nobility.[105]

The multitude of holes found around the residential structure probably originated as a result of the construction of various work facilities, but the precise purpose of many of them could not be ascertained. It is unusual that many of the pits in the immediate vicinity of the structure contained fragments of luxury ceramic products, such as the decorated jugs from SU 127 and SU 151, and the possibility of possession of maiolica vessels, indicated by the find of a jug rim and handle in pit SU 229, cannot be excluded. They may most easily be ascribed to waste pits, but

101 Tkalčec 2001, 219.
102 Guštin 2001, 147, Fig. 5: 3–4.
103 Guštin 2001, 156.
104 Tkalčec 2001, 214.
105 Miljan 2011, 30.

Zaštitno arheološko istraživanje lokaliteta Burdelj ukazuje na to da je ono jedno od važnih ranonovovjekovnih arheoloških nalazišta. Istraživanja kasnog srednjovjekovlja i srednjovjekovlja općenito, te ranoga novog vijeka, odnosila su se do sada na istraživanje groblja, plemićkih utvrda i sakralnih objekata, dok je život ruralnog područja bio zapostavljen. Zahvaljujući ovome istraživanju, dobili smo vrijedan uvid i spoznaje o organiziranju i stupnju načina života jednog dijela stanovnika ranonovovjekovnog sela.

Zahvala

Istraživanja na lokalitetu Burdelj provedena su pod vodstvom dr. sc. Ivana Radmana-Livaje kojem se ovim putem zahvaljujem na ustupljenome materijalu za obradu, kao i na strpljivom čekanju ovoga rada. Zahvaljujem i kolegicama Anji Bertol Stipetić i Mariji Turkalj na višemjesečnom angažmanu oko pranja, signiranja i lijepljena mnogobrojnih ulomaka, a Mariji Turkalj zahvaljujem i na restauraciji pećnjaka. Veliko hvala kolegici Hani Ivezić koja je materijal nacrtala, kolegici Ani Franjić na izradi plana (sl. 1) te kolegama Tatjani Tkalčec i Miroslavu Nađu koji su svojom stručnom pomoći pridonijeli radu.

Zahvaljujem također i kolegi povjesničaru Stipici Grgiću na uvidu u njegovu neobjavljenu monografiju.

they are increasingly smaller and shallower and contain only a few vessel fragments, and the only one that may be closest to the function of a waste pit in terms of dimensions and the quantity of discovered fragments is SU 229. In the Croatian scholarly literature, the topic of medieval heating and stoves is rather under-researched due to the small number of excavated medieval settlements and the lack of stoves preserved *in situ*. The discovery of preserved stoves at Burdelj therefore provides outstanding insight into the construction of stoves in rural areas and the typology of stove tiles, and it demonstrates that the stove was not only used for heating but also, keeping in mind the diversity of stove tile decorations and the care taken in the decoration process (primarily reflected in the example of the uniqueness of the bulb-shaped stove tiles), to decorate a room and express the owner's social status.

Rescue archaeological excavations at the Burdelj site have demonstrated that it is among the important Early Modern era archaeological sites. Research into the late Middle Ages and the Middle Ages in general, as well as the Early Modern era has previous focused on the excavation of cemeteries, fortifications belonging to the nobility and sacral buildings, while the life in rural areas has been neglected. Thanks to this research, we now have valuable insight and knowledge on the organization and level of the lifestyle of a part of the population of an Early Modern era village.

Acknowledgements

Excavations at the Burdelj site were conducted under the leadership of Ivan Radman-Livaja, Ph.D., whom I would like to thank for providing the materials for analysis and for his patience in awaiting this paper.I would also like to convey gratitude to my colleagues Anja Bertol Stipetić and Marija Turkalj for their many months of effort in washing, designating and assembling numerous potsherds, and special thanks to Marija Turkalj for carrying out the reconstruction of stove tiles. Major thanks also go to my colleague Hana Ivezić, who drew the materials, my colleague Ana Franjić for sketching the floor plan (Fig. 1.) and my colleagues Tatjana Tkalčec and Miroslav Nađ, whose expert assistance contributed to this paper.

I also wish to thank another colleague, historian Stipica Grgić, for allowing me to read his unpublished monograph.

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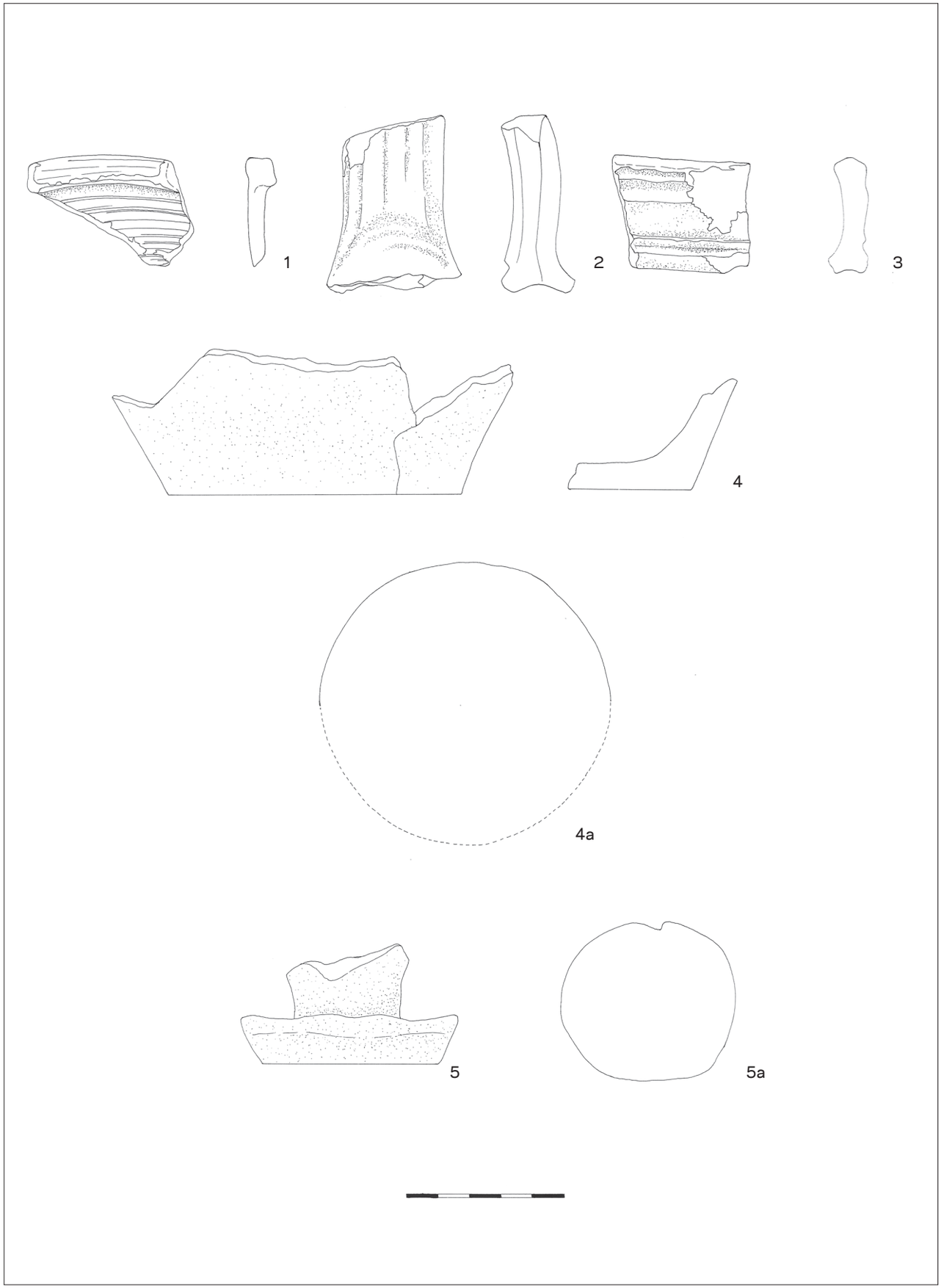

TABLA 1.

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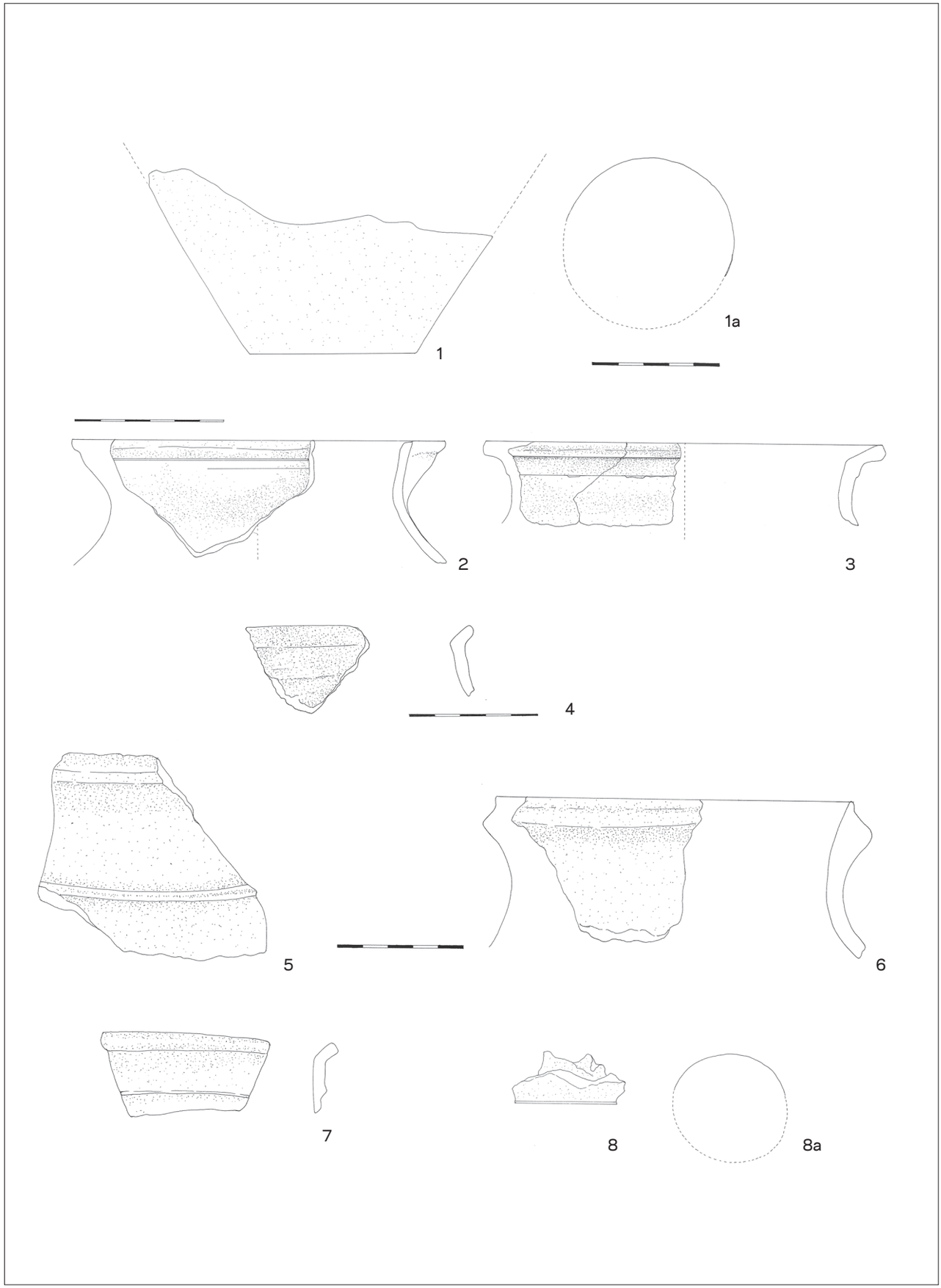

TABLA 2.

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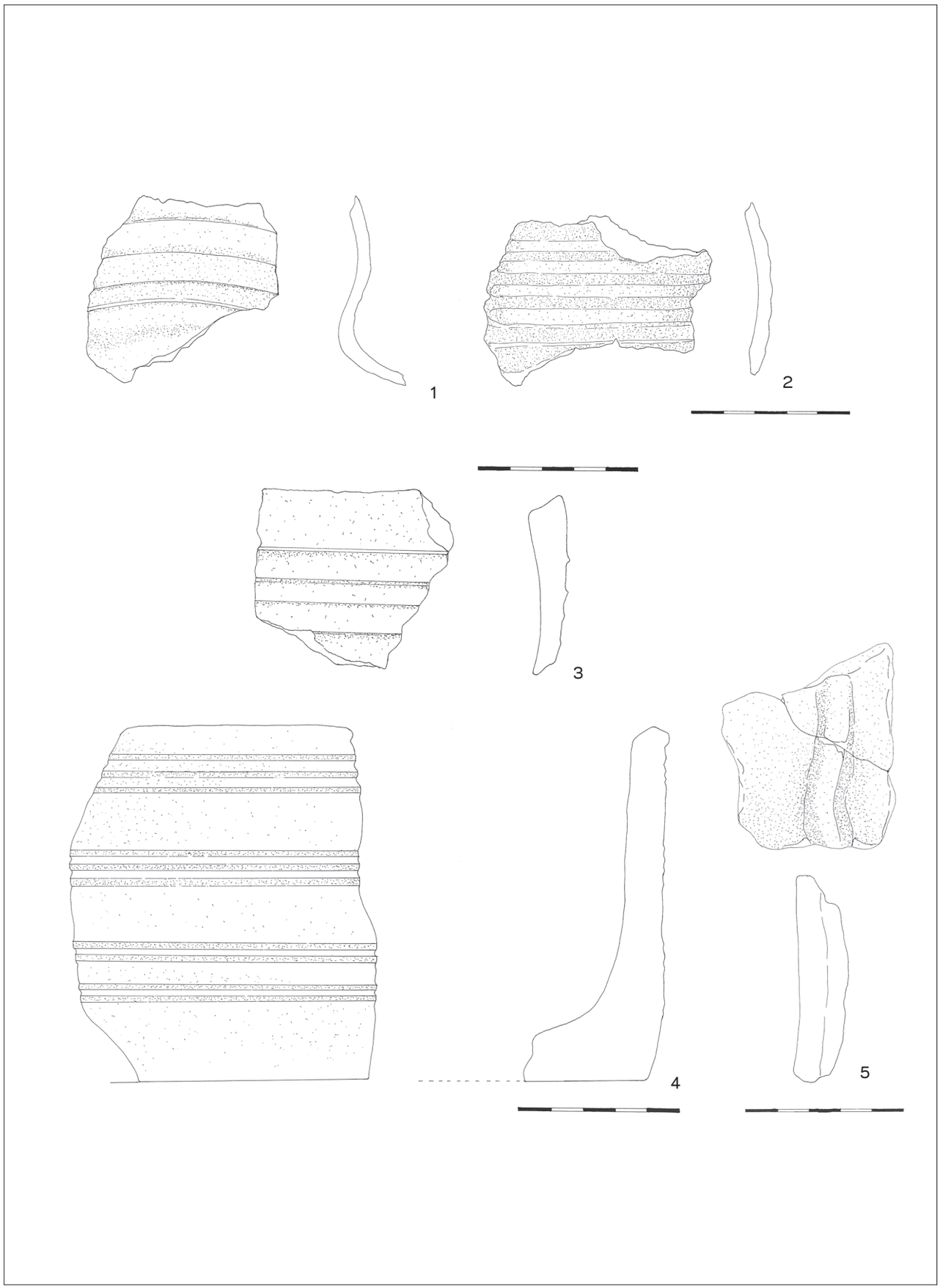

TABLA 3.

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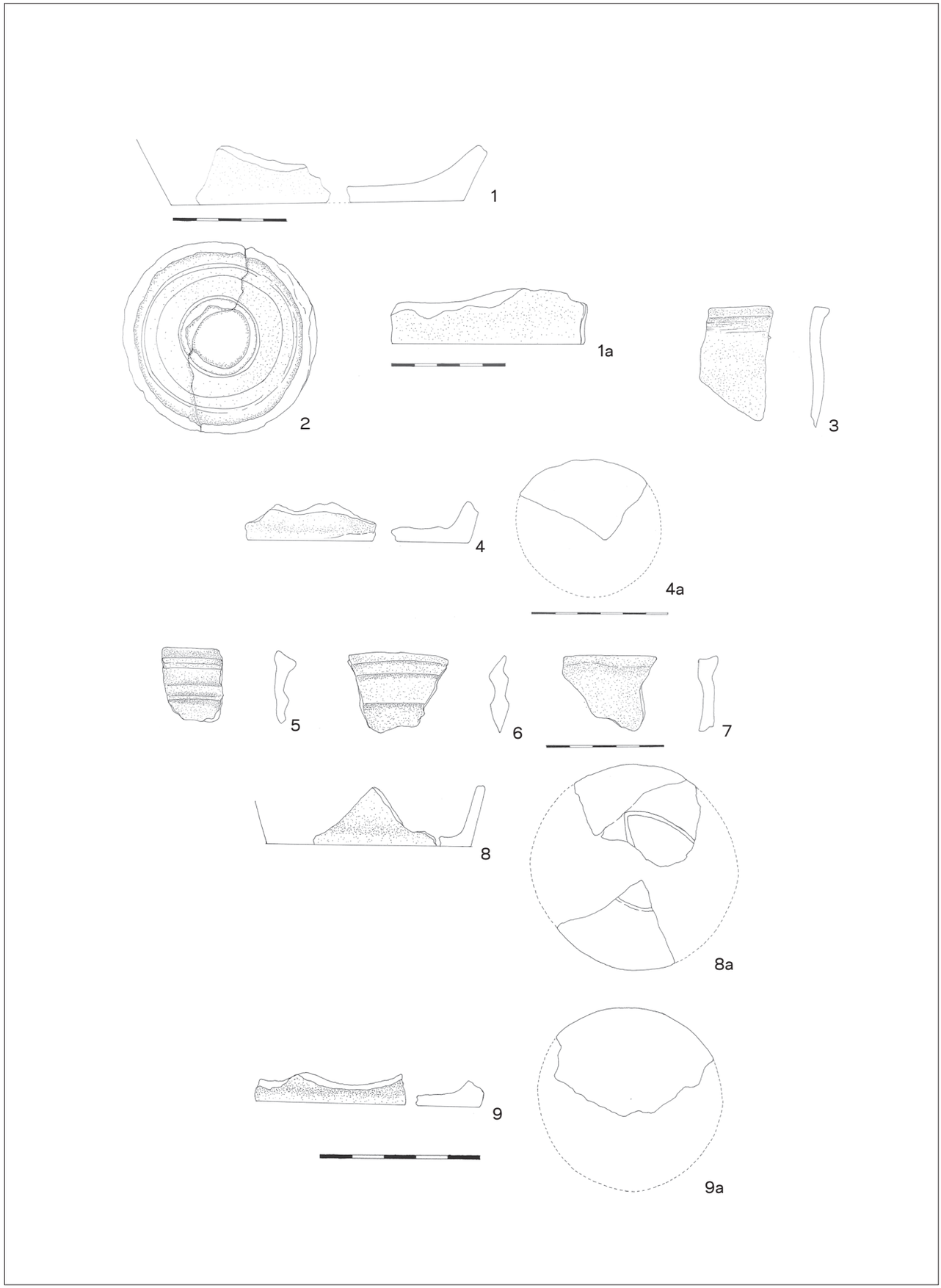

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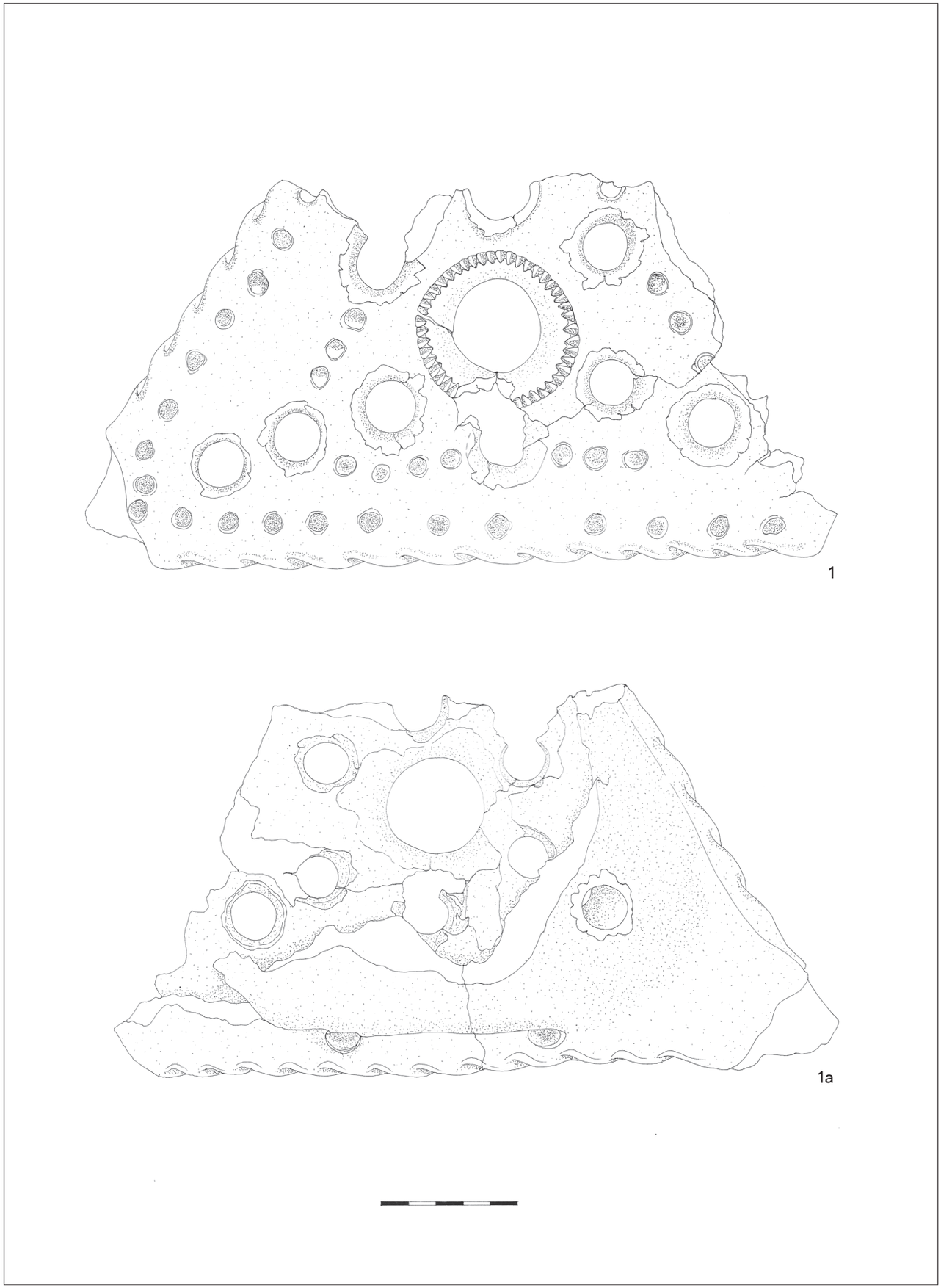

TABLA 5.

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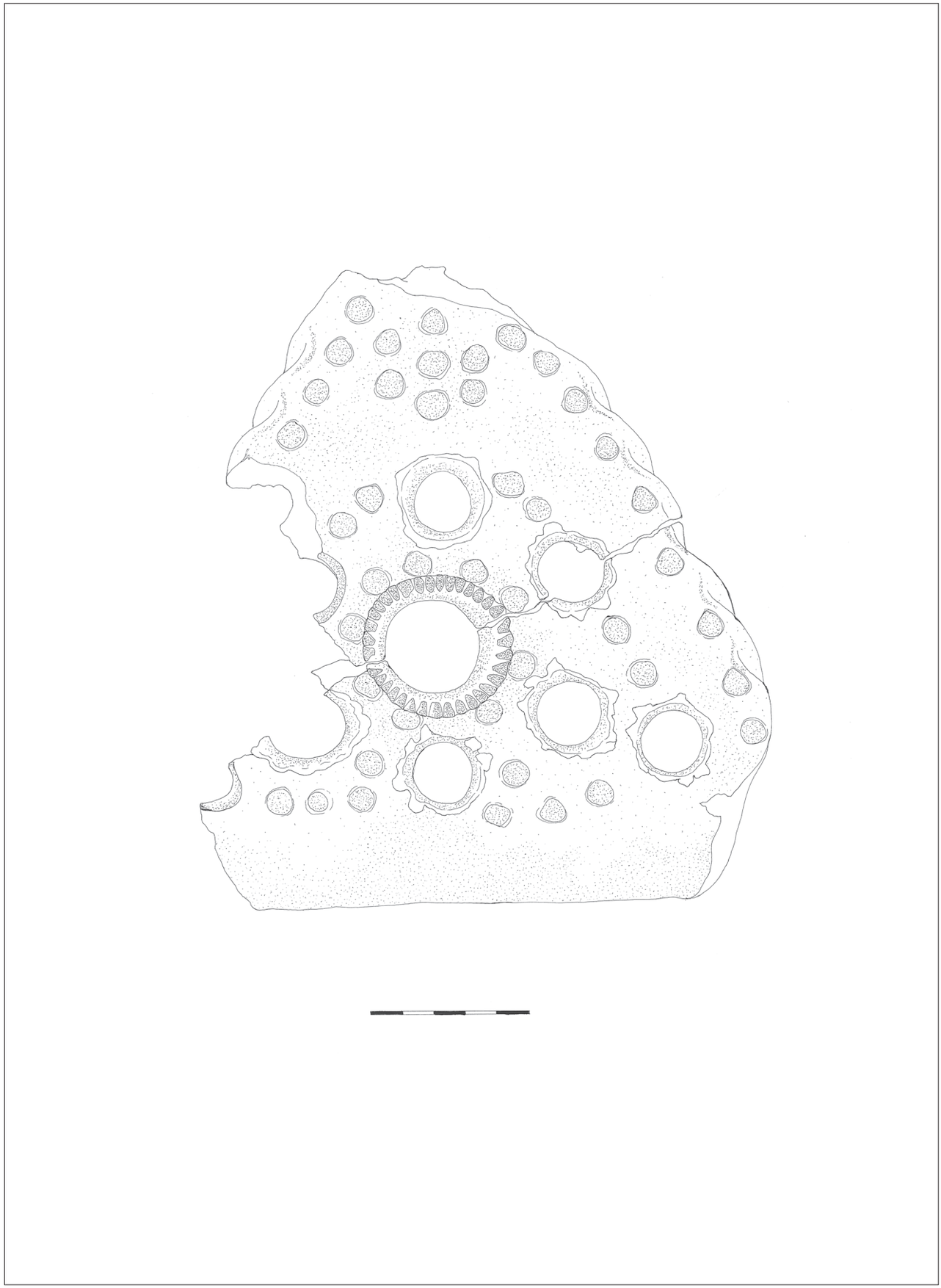

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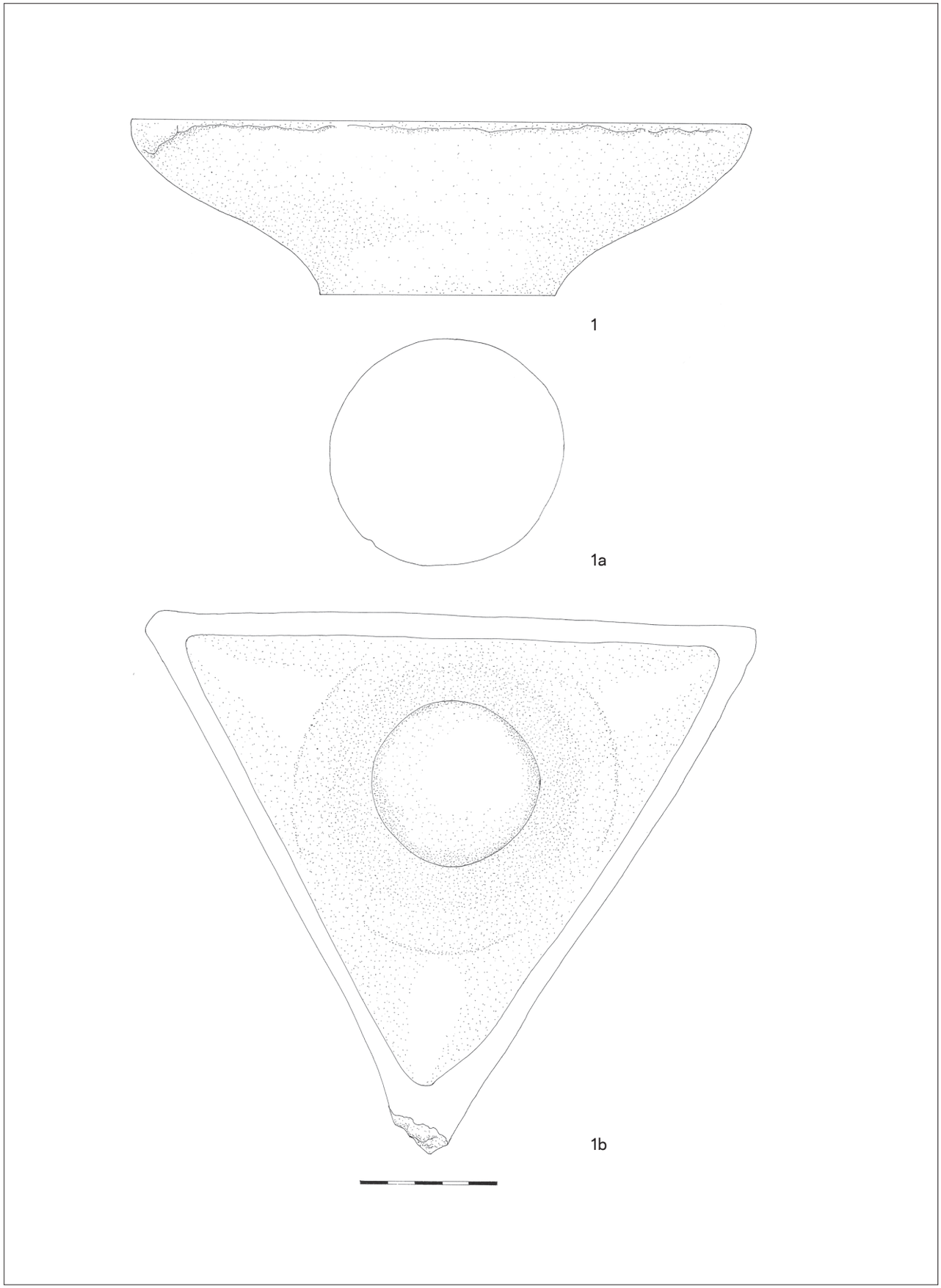

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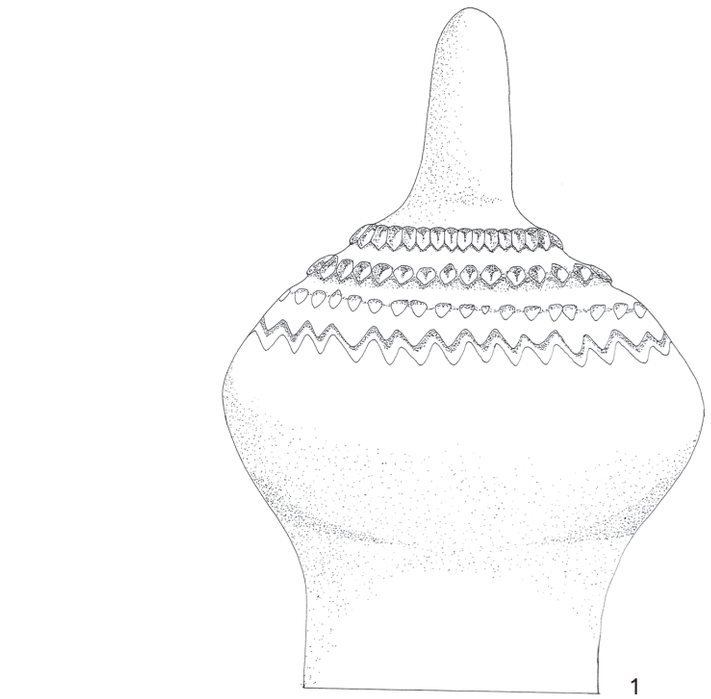

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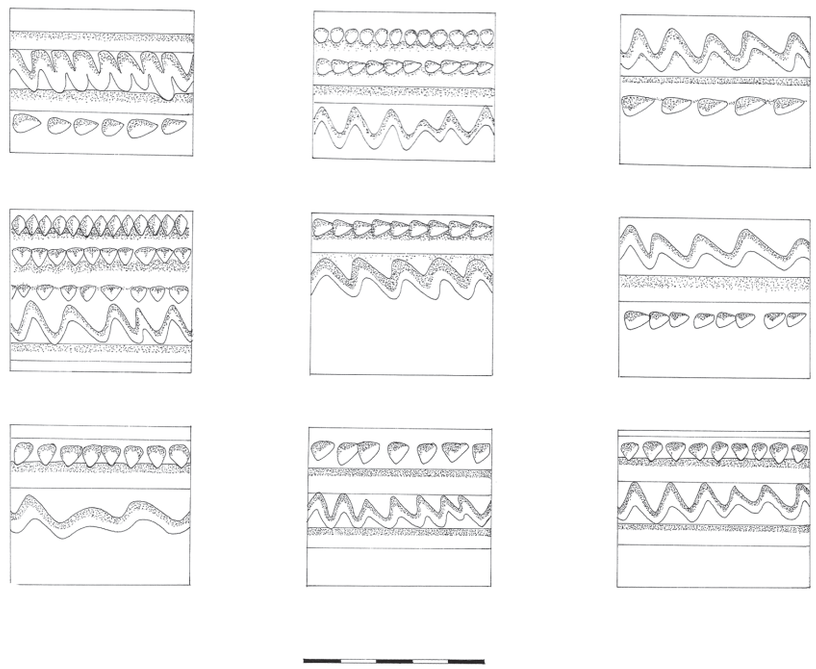

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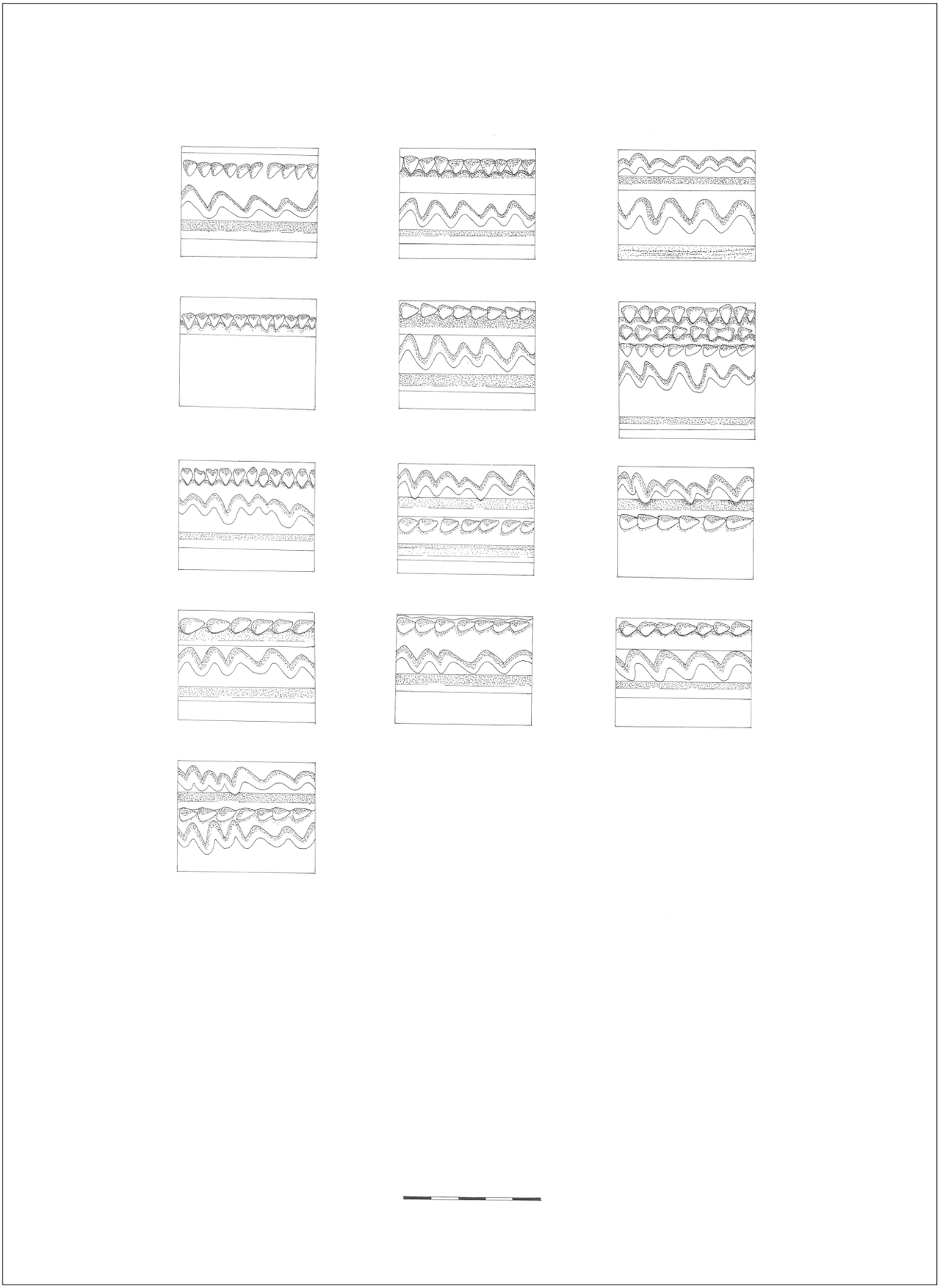

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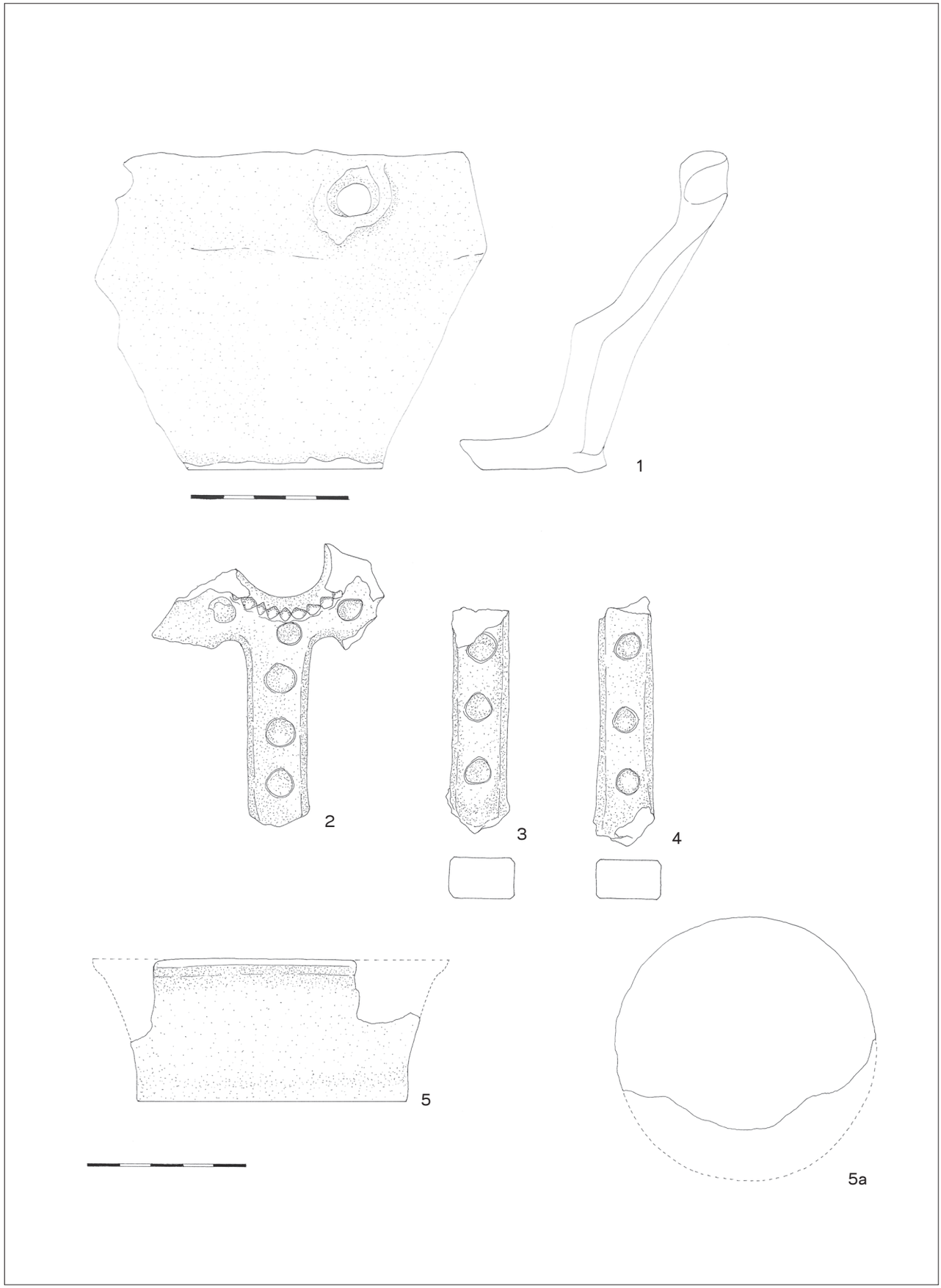

TABLA 10.

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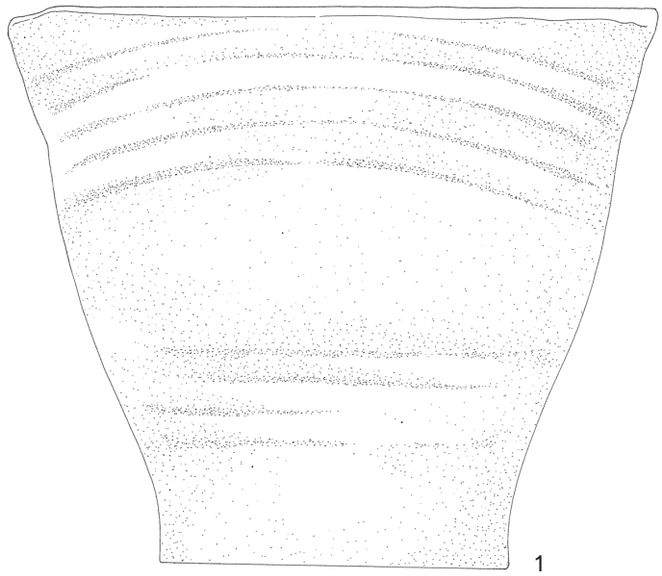

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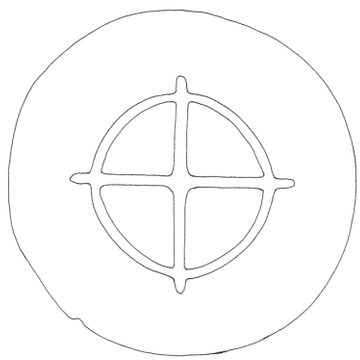

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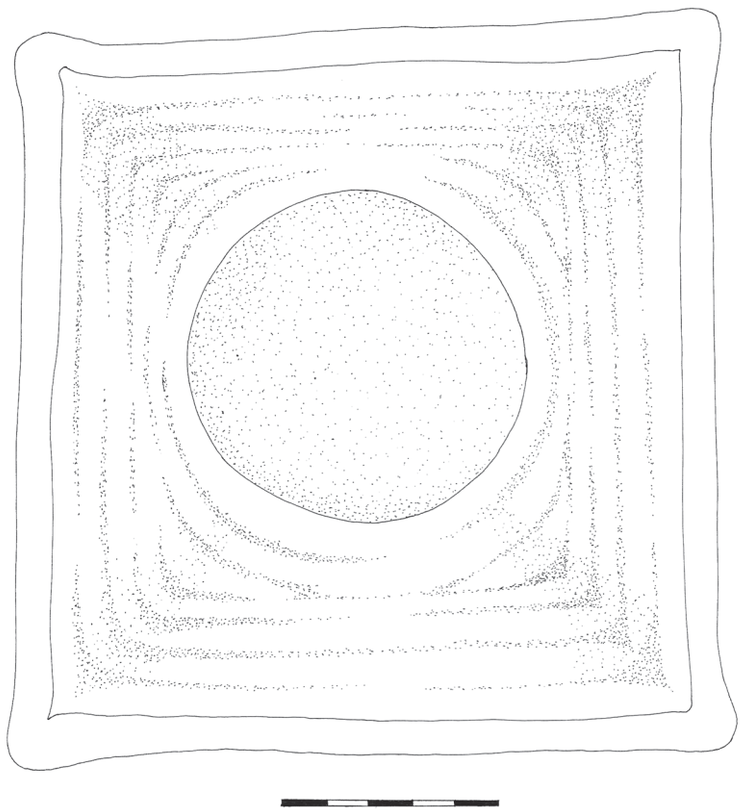

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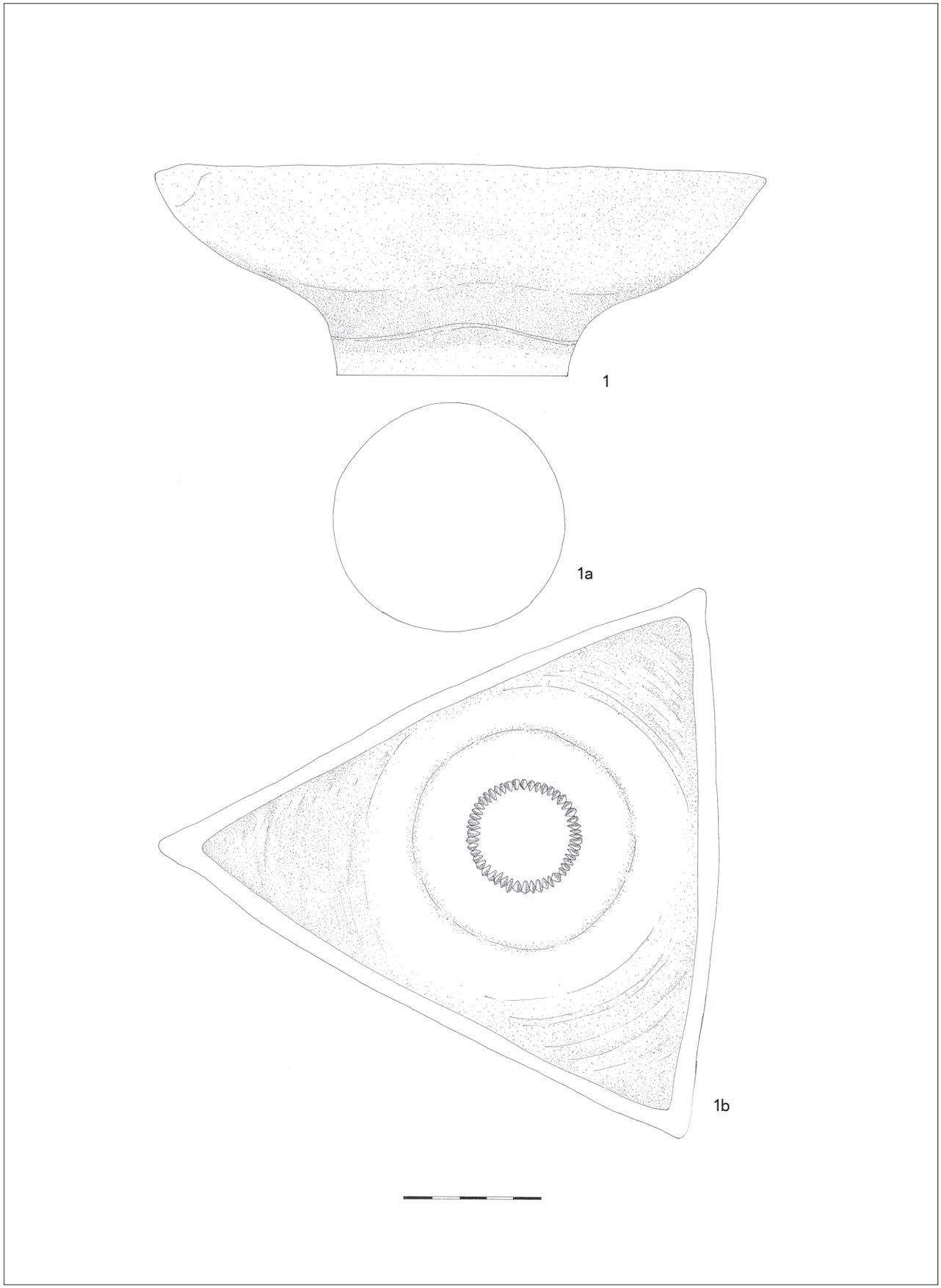

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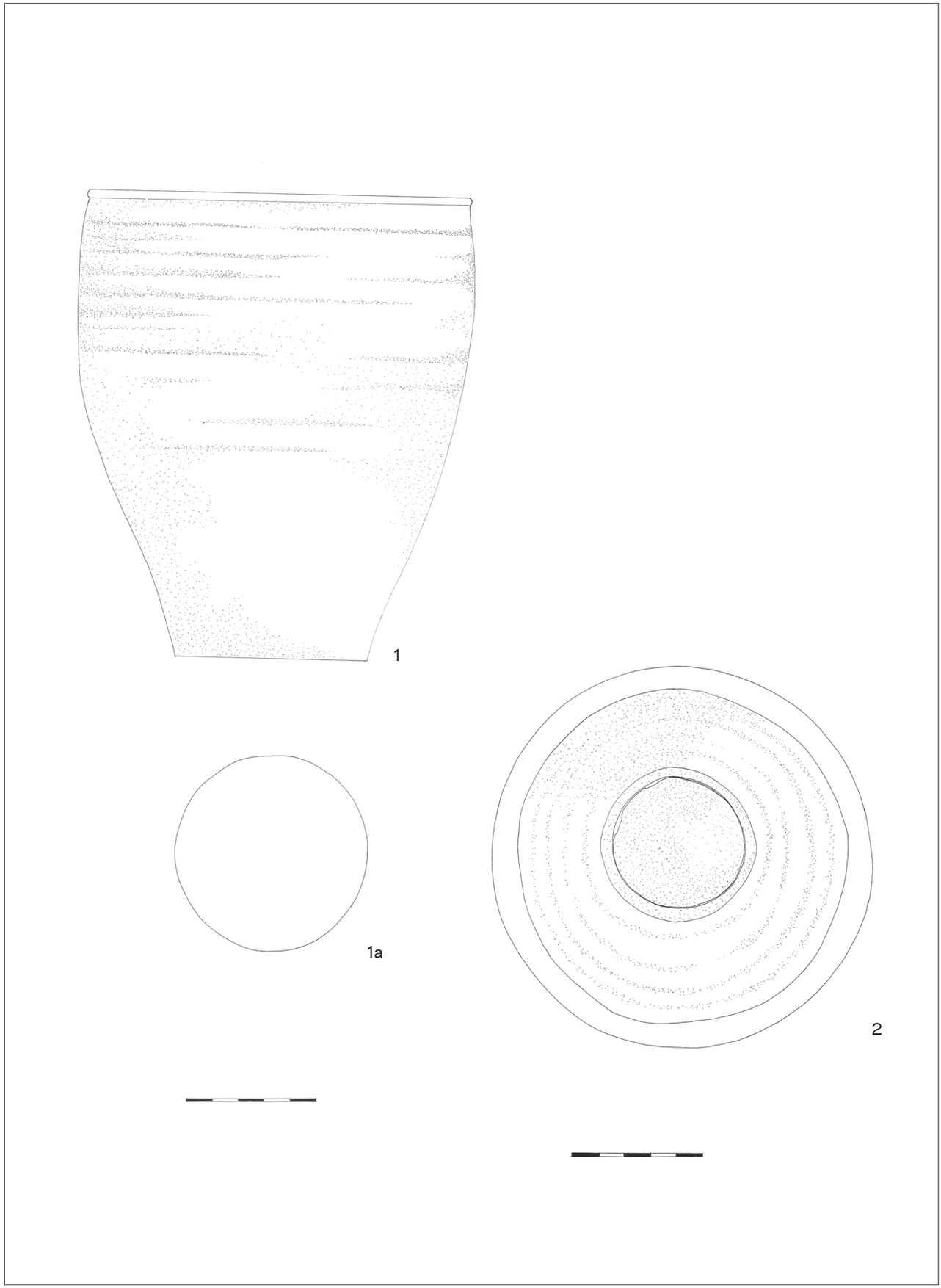

TABLA 14.

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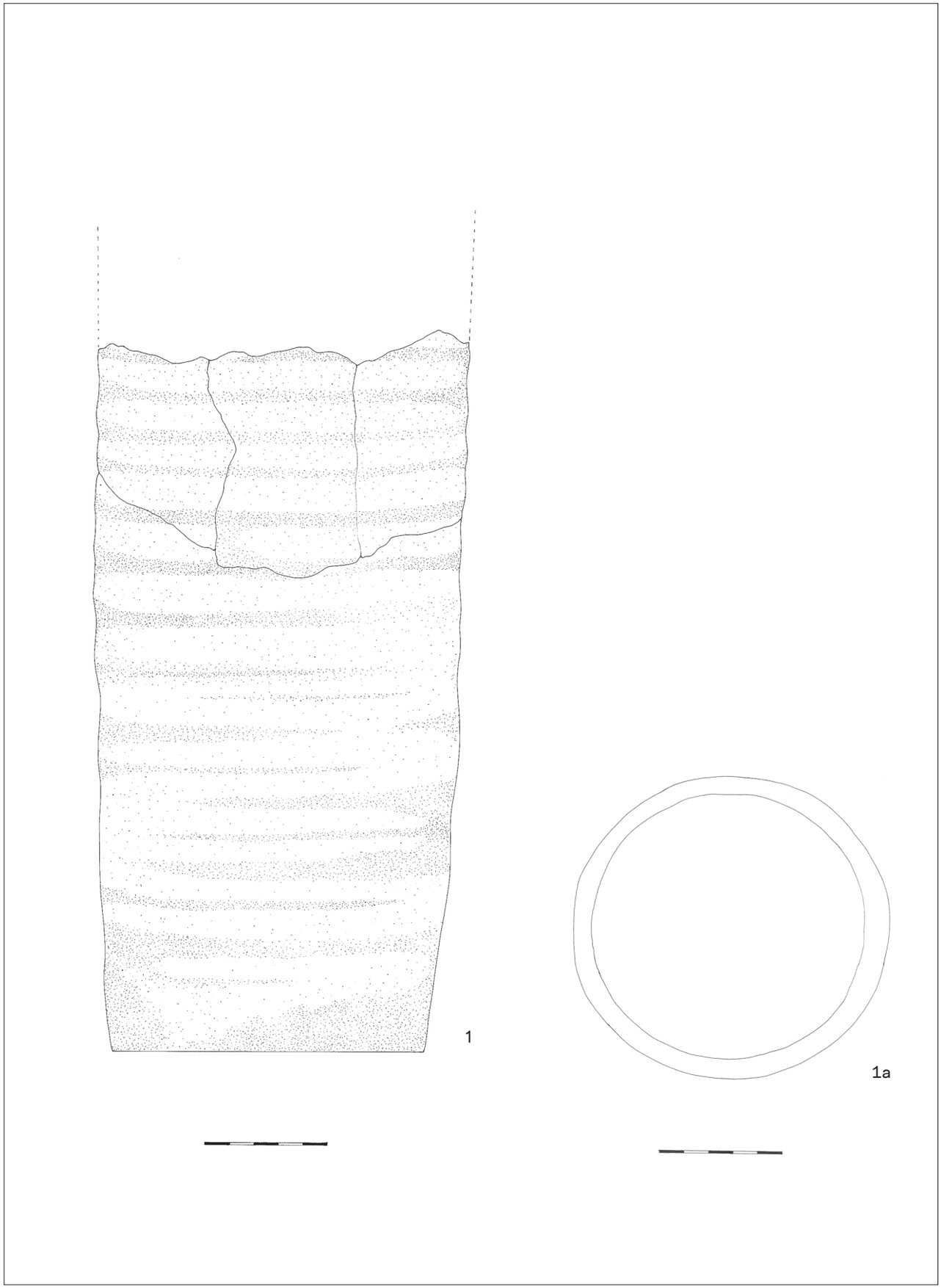

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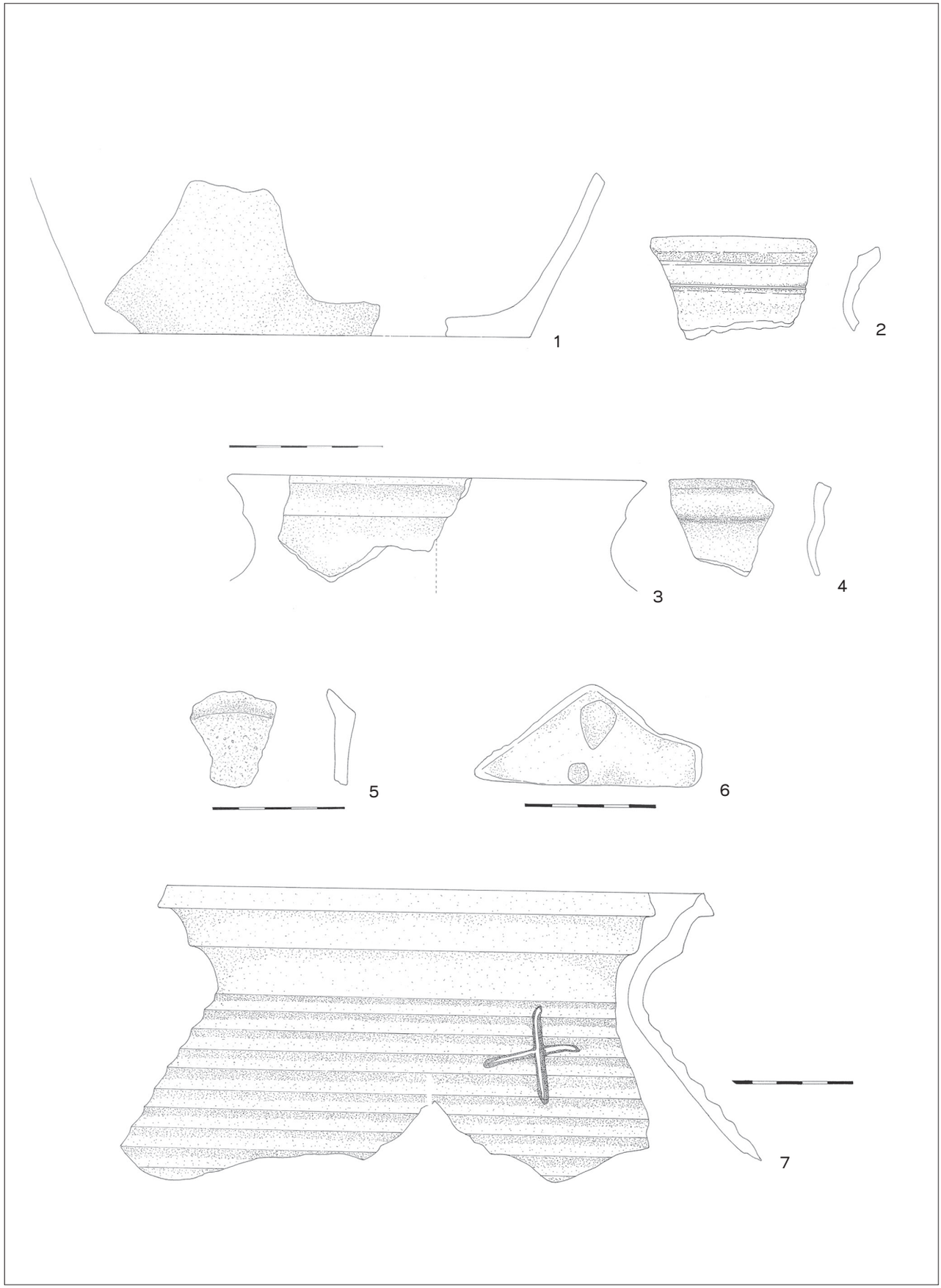

TABLA 16.

PLATE 16.

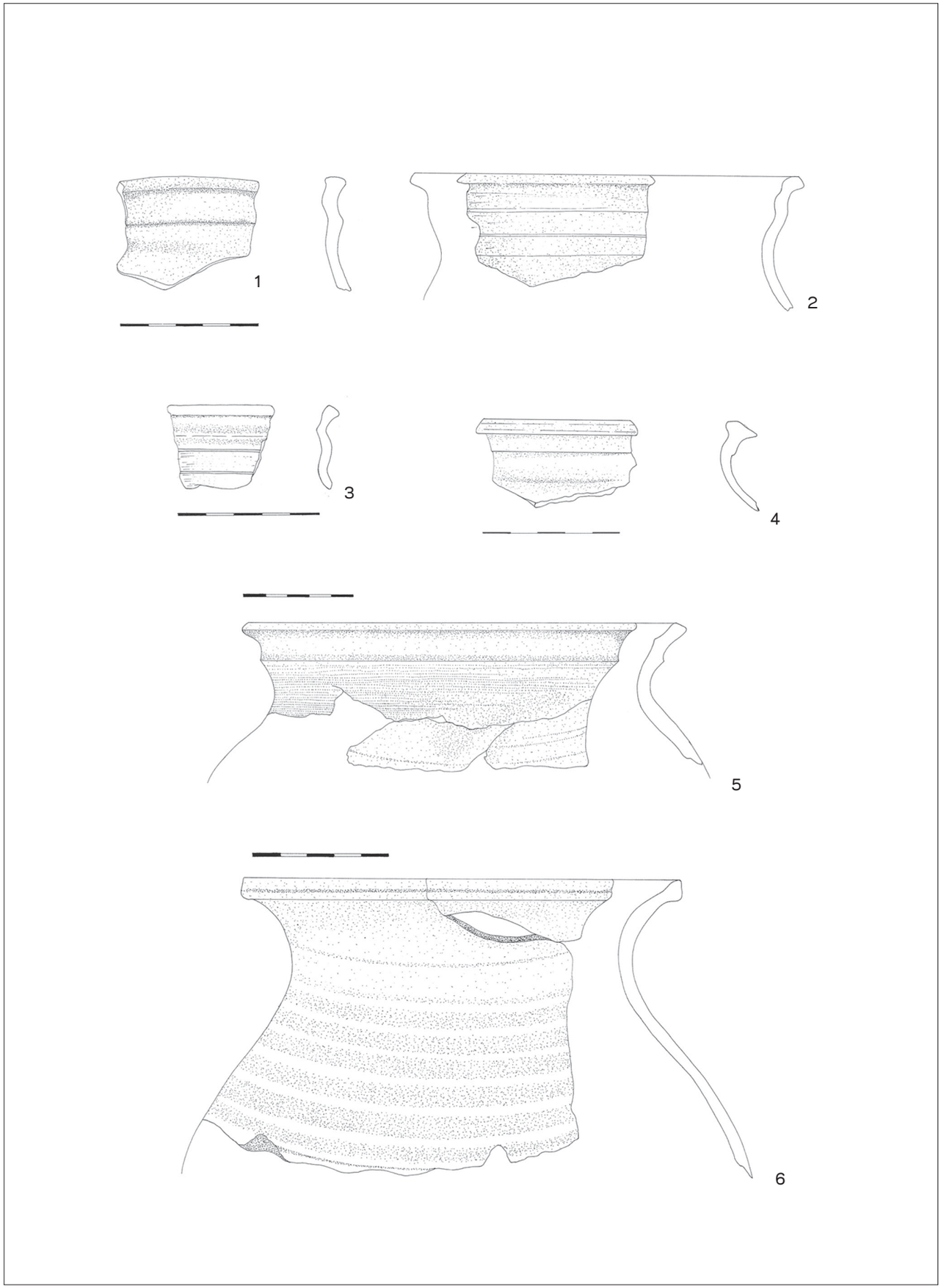

TABLA 17. **PLATE 17.**

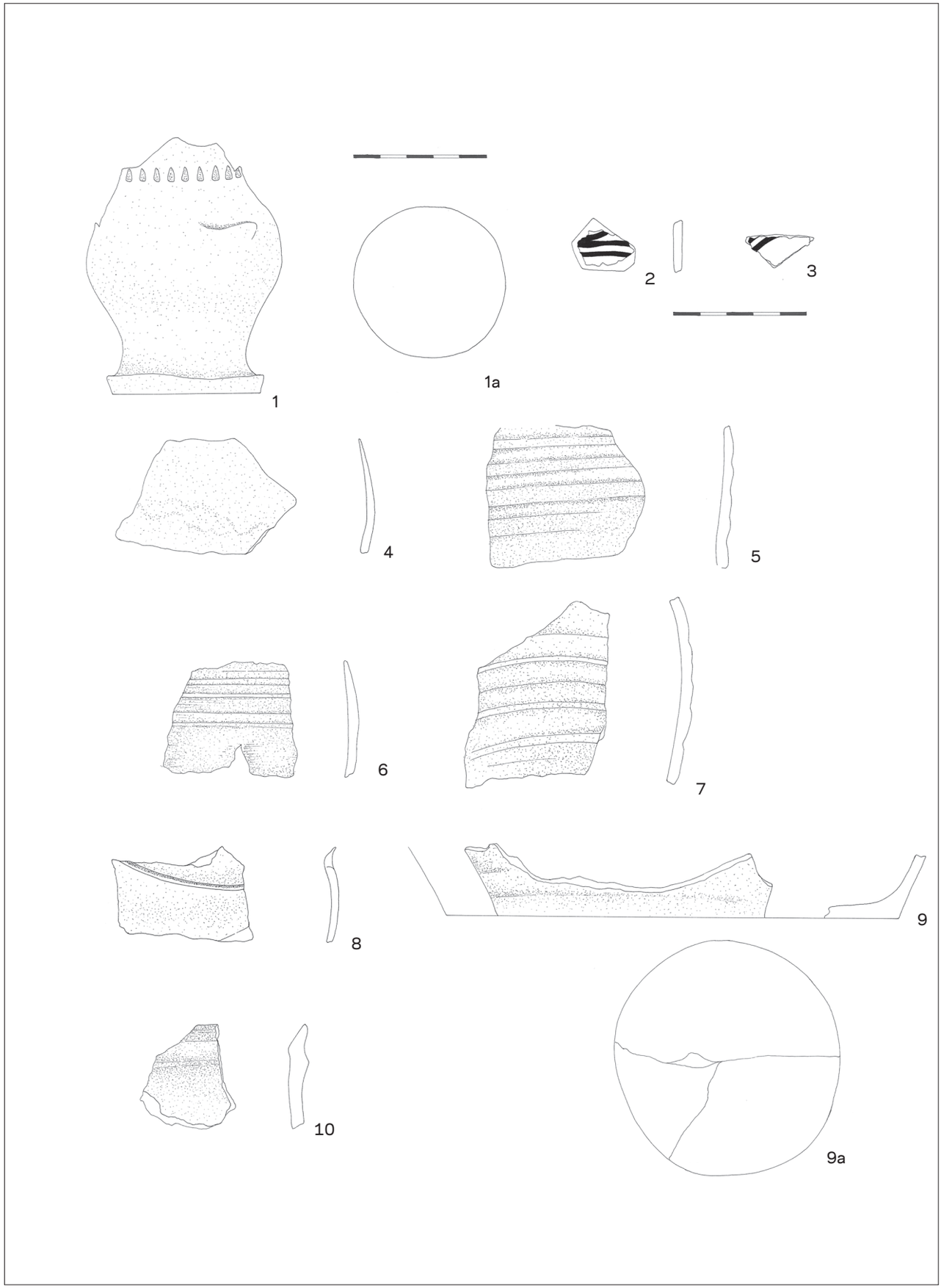

TABLA 18.

PLATE 18.

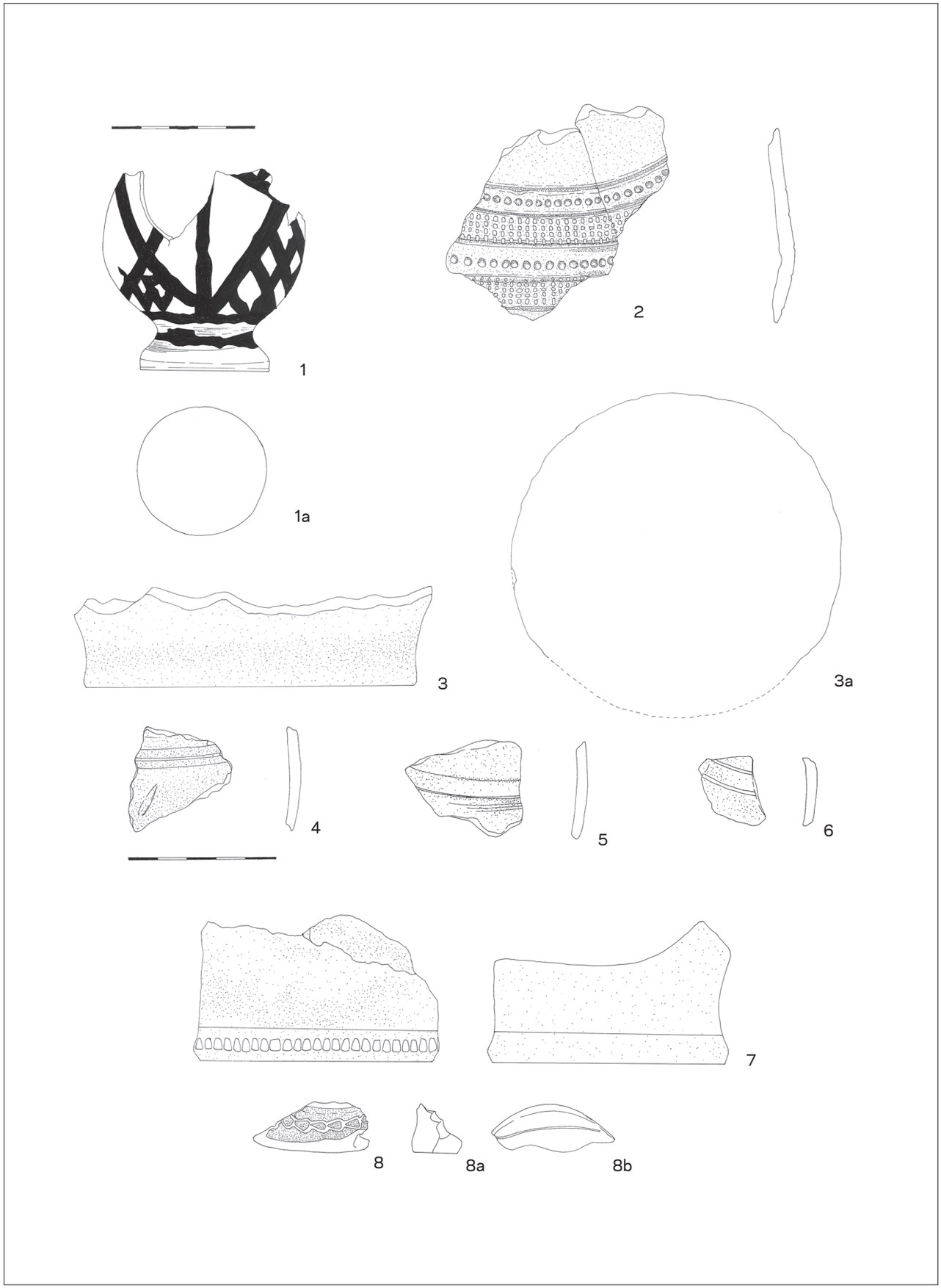

TABLA 19.

PLATE 19.

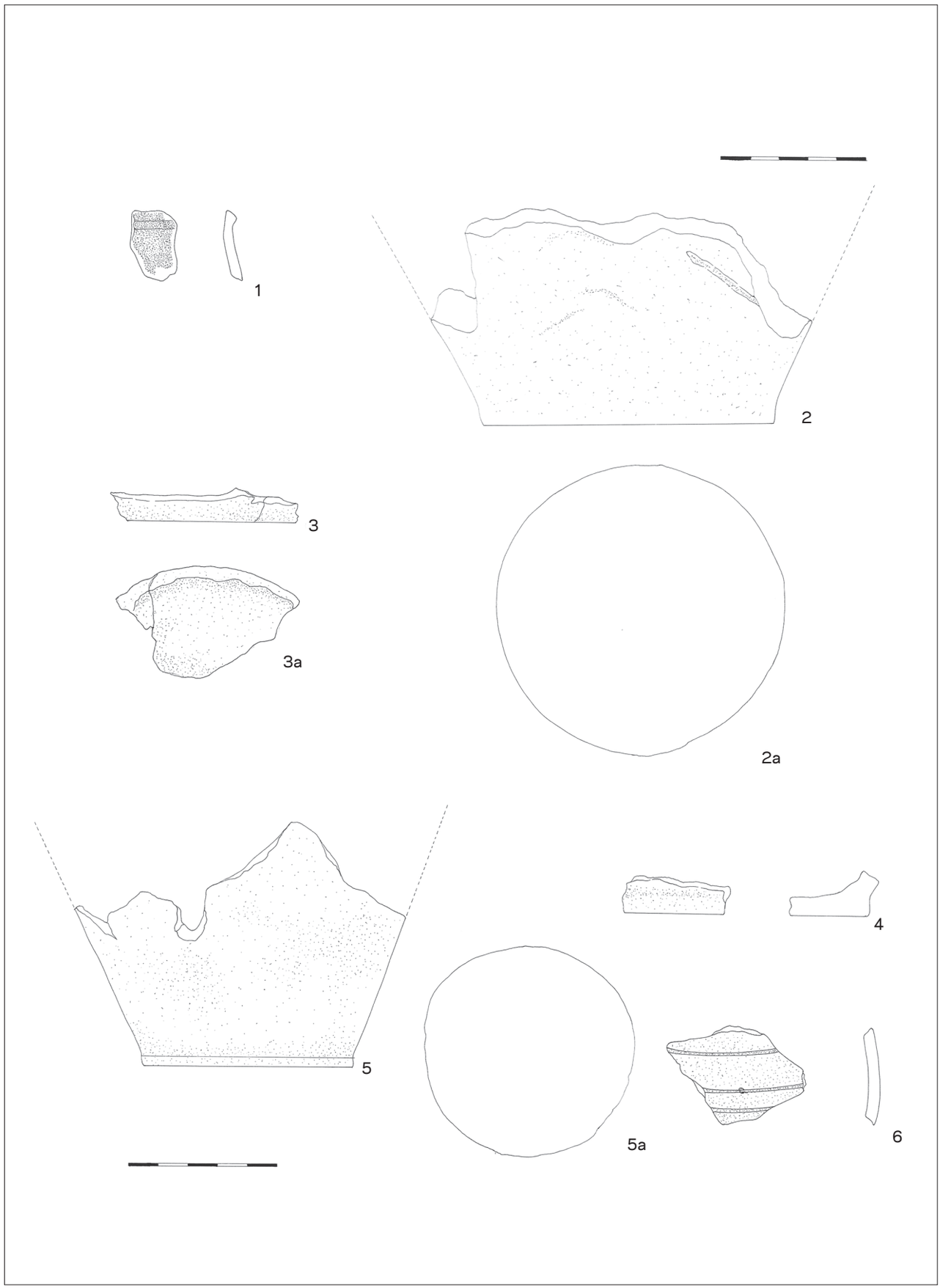

TABLA 20.

PLATE 20.

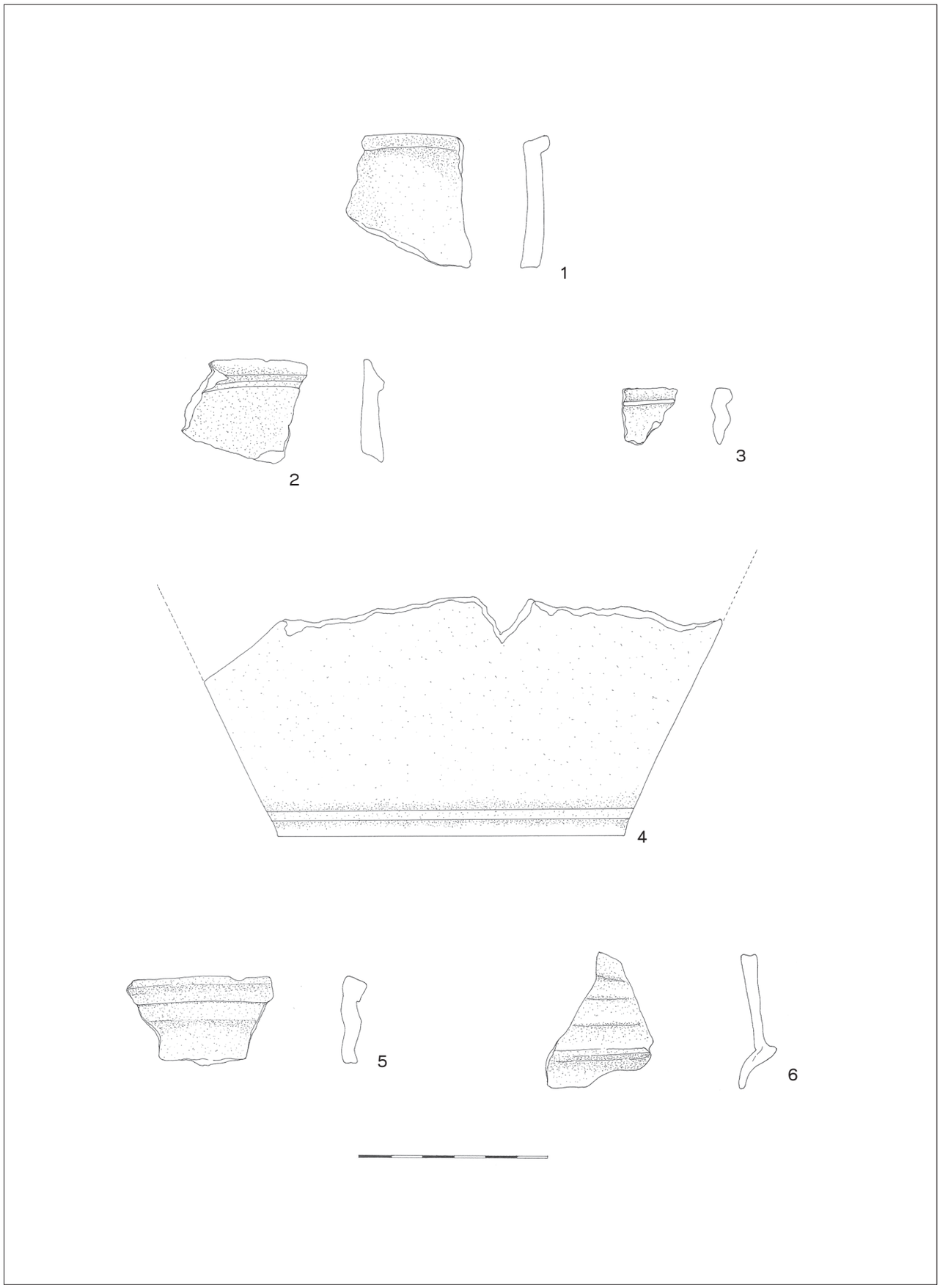

TABLA 21.

PLATE 21.