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PROJEKT SUSTAVNOG TERENSKOG PREGLEDA NEOLITIČKOG NALAZIŠTA GRADUŠA – LOKVE

THE SYSTEMATIC FIELD SURVEY OF THE NEOLITHIC SITE OF GRADUŠA – LOKVE PROJECT

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S nalazištem srednjeg i kasnog neolitika Graduša – Lokve u Islamu Grčkom (sjeverna Dalmacija) povezano je mnogo otvorenih pitanja. Veličina i granice nalazišta, međusobni prostorni, stratigrafski i kulturni odnosi između naselja srednjeg i kasnog neolitika, te korelacija distribucije površinskih nalaza s objektima iz neolitičkog naselja koji se mogu prepoznati na površini, samo su neka od njih. Kako bi se dali odgovori na neka od navedenih pitanja, proveden je sustavan terenski pregled tijekom veljače 2023. godine. Rezultati istraživanja pridonose boljem poznavanju nalazišta, te će služiti kao podloga u planiranju budućih istraživanja na nalazištu.

Key words:
systematic field survey, Graduša – Lokve, Islam Grčki, Middle Neolithic, Late Neolithic

When it comes to the Middle and Late Neolithic site of Graduša – Lokve in Islam Grčki (northern Dalmatia), many questions remain unanswered. The site size and boundaries, the spatial, stratigraphic and cultural correlations between the Middle and Late Neolithic settlements, as well as the correlation between surface findspots and the Neolithic settlement structures identifiable on the surface, are just some. To provide answers to a number of these questions, a systematic field survey was conducted in February 2023. The survey results contribute to a better understanding of the site and will serve as the basis for planning its future excavations.

UVOD

Neolitičko nalazište Graduša – Lokve u Islamu Grčkom (sjeverna Dalmacija) arheološkoj je javnosti poznato od druge polovice 20. stoljeća.[1] Riječ je o nalazištu srednjeg i kasnog neolitika smještenom južno od današnjeg sela, na položaju označenom toponimom Graduše / Građuše (sl. 1). Osim po iznimno plodnim poljoprivrednim zonama, taj dio naselja karakterizira i bogata hidrološka osnova, o kojoj svjedoči velik broj vodenih akumulacija.

Prva, probna arheološka iskopavanja na nalazištu provedena su 2021. i 2022. godine. Istražene su dvije sonde. U sondi A utvrđeni su kulturni slojevi koji pripadaju srednjem neolitiku, a u probnoj sondi B kulturni slojevi koji pripadaju kasnom neolitiku.[2] Istim neolitičkim fazama pripadaju i površinski arheološki nalazi prikupljeni sredinom i tijekom druge polovice 20. stoljeća na Gradušama u zonama tamne zemlje, pozicioniranim povrh pretpostavljenih neolitičkih objekata.[3] Zahvaljujući kontinuiranoj poljoprivrednoj djelatnosti lokalnog stanovništva, tamni obrisi još se uvijek jasno ocrtavaju na satelitskim i zračnim snimkama, a vidljivi su i pri obilasku nalazišta nakon oranja. U svrhu kartiranja, proučavanja i usporedbe vidljivih arheoloških formacija, nalazište je snimljeno iz zraka dronom u ožujku 2021. i 2022. godine. Na osnovi tih snimaka bilo je evidentno da je neolitičko nalazište veće od onoga kako je to prije pretpostavio Š. Batović.[4] S ciljem definiranja prostornih okvira nalazišta Graduša – Lokve, utvrđivanja povezanosti neolitičkih objekata vidljivih na zračnim snimkama i površinske distribucije nalaza, određivanja me-

1 BATOVIĆ 1985; 1987.

2 Voditeljica istraživanja bila je autorica ovog članka. Rezultati probnog arheološkog istraživanja bit će prezentirani u zasebnom radu.

3 BATOVIĆ 1987: 12, 24.

4 Batović navodi da se nalazište rasprostire na površini od oko 200 metara dužine i oko 150 metara širine (BATOVIĆ 1987: 16).

INTRODUCTION

The Neolithic site of Graduša – Lokve in Islam Grčki (northern Dalmatia) has been known to archaeological audiences since the second half of the 20th century.[1] It is a Middle and Late Neolithic site located south of the present-day village, at a position marked by the toponym of Graduša/Građuša (Fig. 1). In addition to extremely fertile agricultural zones, this part of the settlement is also characterised by a rich hydrological base, which is evidenced by multiple water reservoirs.

The first, trial archaeological excavations at the site were conducted in 2021 and 2022. Two trial trenches were excavated. Trench A revealed cultural layers belonging to the Middle Neolithic, and Trench B those belonging to the Late Neolithic.[2] Surface archaeological finds collected from the dark earth zones on top of the presumed Neolithic structures in Graduša in the mid- and late-20th century belong to the same stages of the Neolithic.[3] Due to continuous agricultural activity by the local population, the dark contours are still clearly outlined in satellite and aerial images, and were visible also during the site surveying after ploughing. In March 2021 and 2022, aerial photographs of the site were made using a drone, for the purposes of mapping, studying and comparing visible archaeological formations. The photos suggested that the Neolithic site was larger than had been previously assumed by Š. Batović.[4] In February 2023, a systematic field survey was undertaken and the terrain recorded using a drone. The aim was to determine the spatial framework of the Graduša – Lokve site, the correlation between the Neolithic structures visible on aerial photographs and surface findspots, and the spatial

1 BATOVIĆ 1985; 1987.

2 The author of this paper led the survey. The results of the archaeological trial trenching will be presented in a separate paper.

3 BATOVIĆ 1987: 12, 24.

4 Batović stated that the site stretched over an area c. 200 metres in length and c. 150 metres in width (BATOVIĆ 1987: 16).

Slika 1. *Geografska karta s položajem nalazišta Graduša – Lokve u Islamu Grčkom* (izvor: https://www.d-maps.com/index.php?lang=en, doradio: L. Bogadnić)
Figure 1 *Geographical map with the location of the Graduša – Lokve site in Islam Grčki* (source: https://www.d-maps.com/index.php?lang=en, adapted by: L. Bogdanić)

đusobnog prostornog odnosa između naselja srednjeg i kasnog neolitika, ali i eventualnih razlika u količini i karakteru prikupljene arheološke građe na različitim pozicijama nalazišnog kompleksa, poduzet je sustavan terenski pregled u veljači 2023. godine te snimanje terena dronom.

SMJEŠTAJ I OPIS NALAZIŠTA

Neolitičko nalazište Graduša – Lokve smješteno je oko 1 kilometar južno od današnjeg sela Islama Grčkog (sl. 1), na blagoj zaravni s koje se pogled pruža na sjever do Velebita, te na zapad preko obližnjih polja i naselja do vrhova zadarskih otoka. To tipično ravnokotarsko selo upravno pripada gradu Benkovcu, od kojeg je udaljeno oko 22 kilometra prema sjeverozapadu. Do najbližeg mora, onog Novigradskog, udaljenost iznosi 4,5 kilometra.

relationship between Middle and Late Neolithic settlements, but also possible differences in the quantities and character of collected archaeological goods at different points in the site complex.

SITE LOCATION AND DESCRIPTION

The Neolithic site of Graduša – Lokve is located about 1 kilometre south of the present-day village of Islam Grčki (Fig. 1), on a gently sloping plateau from which the view stretches to the north, towards the mountain Velebit, and to the west, over nearby fields and settlements, to the peaks of the Zadar islands. The village, typical of the Ravni Kotari region, is situated c. 22 kilometres northwest of the town of Benkovac, and is under its public administration. It is located 4.5 kilometres from the Adriatic Sea bay called the Novigrad Sea.

The Neolithic site in Islam Grčki was discov-

Neolitičko nalazište u Islamu Grčkom otkrio je 1962. godine K. Tomić iz Smilčića.[5] On je zajedno sa Š. Batovićem nalazište obilazio šezdesetih i sedamdesetih godina 20. stoljeća, sakupivši pritom bogatu arheološku građu iz srednjeg i kasnog neolitika. Nalazi su prikupljeni na površini od oko 200 x 150 metara, na kojoj su tijekom otkrića lokaliteta bili smješteni vinogradi i oranice. Nalazi su pretežito bili grupirani u zonama tamne zemlje, za koje je pretpostavljeno da predstavljaju ostatke neolitičkih objekata stambenog karaktera i rovove koji su opasavali naselje.[6] Dubina kulturnih slojeva mogla se definirati zahvaljujući profilima duboko iskopanih vodenih bunara (lokva), a iznosila je od 0,5 do 2 metra relativne dubine. Brojan i raznovrstan površinski prikupljeni arheološki materijal (keramički ulomci, izrađevine od lomljenog i glačanog kamena, ljušture školjka, životinjske kosti, ulomci kućnog lijepa itd.) upućuje na dugotrajnije neolitičko naselje koje je funkcioniralo tijekom srednjeg i kasnog neolitika, što su potvrdili i rezultati probnih arheoloških istraživanja provedeni tijekom 2021. i 2022. godine.[7] Nalazište je sredinom 20. stoljeća obilazio i M. Savić, nekadašnji kustos Zavičajnog muzeja Benkovac. Prikupljena građa također pripada srednjem i kasnom neolitiku.[8]

METODOLOGIJA SUSTAVNOG TERENSKOG PREGLEDA

U plan terenskog pregleda uključene su orane parcele, tj. one parcele na kojima je pretpostavljena dobra vidljivost za provođenje sustavnog terenskog pregleda. Parcele zarasle gustom vegetacijom nisu ušle u plan sustavnog terenskog pregleda. Izbor godišnjeg doba za provođenje terenskog pregleda

5 BATOVIĆ 1987: 12.
6 BATOVIĆ 1987: 24.
7 Usporediti bilješku 2.
8 Ravnatelju Zavičajnog muzeja Benkovac Marinu Ćurkoviću zahvaljujem na mogućnosti uvida u građu.

ered in 1962 by K. Tomić from Smilčić.[5] He surveyed the site with Š. Batović in the 1960s and 1970s, having collected multiple archaeological goods from the Middle and Late Neolithic. The finds were collected from an area of about 200 by 150 metres, on which, at the point of the site discovery, there were vineyards and ploughland. The finds were mostly grouped in the dark soil zones – supposedly the remains of Neolithic residential structures and ditches surrounding the settlement.[6] It was possible to determine the depth of the cultural layers based on the profiles of deeply dug water wells (Croatian *lokva* = puddle). The relative depth ranged from 0.5 to 2 metres. Multiple and diverse archaeological goods collected from the surface (such as pottery sherds, artefacts of cut and polished stone, shells, animal bones and house daub fragments) suggest a long-lasting Neolithic settlement that functioned in the course of the Middle and Late Neolithic periods (as later confirmed by the results of the 2021 and 2022 trial excavations).[7] In the mid-20th century, the site was also surveyed by M. Savić, former curator of the Benkovac Local History Museum. The goods collected also belonged to the Middle and Late Neolithic.[8]

SYSTEMATIC FIELD SURVEY METHODOLOGY

Included in the field-surveying plan were ploughed plots of land, that is those on which good visibility for conducting a systematic field survey was assumed. The plots that were overgrown with dense vegetation were not included in the systematic field-survey plan. The choice of the season for conducting the field survey was in line with agricultural activities, which also greatly affected the visibility of the surface

5 BATOVIĆ 1987: 12.
6 BATOVIĆ 1987: 24.
7 Cf. note 2.
8 I would like to thank the director of the Benkovac Local History Museum, Marin Ćurković, for allowing me to inspect the holdings.

Slika 2. *Pogled na nalazište Graduša – Lokve s naznačenim blokovima* (veljača 2023., foto: L. Bogdanić)
Figure 2 *View of the Graduša – Lokve site with indicated blocks* (February 2023, photo: L. Bogdanić)

usklađen je s poljoprivrednim aktivnostima koje također u velikoj mjeri utječu na vidljivost površinskog zapisa te uspješnost dokumentiranja površinskih nalaza. Odabran je sam početak veljače 2023.[9] kad je vegetacija niska i kad počinju pripreme za sadnju ljetnih kultura.

Prostor koji je odabran za sustavan terenski pregled obuhvaćao je nešto veću površinu od one na kojoj su zahvaljujući zračnim i satelitskim snimkama zabilježeni tamni obrisi. Taj prostor podijeljen je na deset blokova, koji su označeni slovima od A do J (sl. 2).

Svaki blok predstavljao je jednu sakupljačku jedinicu, unutar koje su pregledavači[10] bili

[9] Sustavno arheološko rekognosciranje provedeno je 6. i 7. veljače 2023. Rekognosciranje je provedeno u sklopu projekta *Život i razvoj prvih poljoprivrednih zajednica na području Ravnih kotara – primjer Islama Grčkog* voditeljice doc. dr. sc. K. Horvat Oštrić, koji je financiran sredstvima Zaklade Hrvatske akademije znanosti i umjetnosti u Zagrebu.

[10] Voditeljica sustavnog arheološkog rekognosciranja bila je doc. dr. sc. Kristina Horvat Oštrić. U terenskom pregledu uz voditeljicu sudjelovali su: doktorand Odjela za antropologiju Sveučilišta Santa Barbara u Kaliforniji Nicholas Triozzi, dokumentarist Odjela za arheologiju sa Sveučilišta u Zadru mag. archeol. Luka Bogdanić i dva studenta arheologije s istog Odjela, Mia Mandarić i Rudolf Pirak-Šepak.

record and successful documentation of surface finds. The beginning of February 2023[9] was chosen, when the vegetation is low, and the preparations for planting summer crops begin.

The area selected for the systematic field survey entailed a slightly larger surface area than that including dark contours that had been recorded in aerial and satellite images. The space was divided into ten blocks, each assigned a letter from A to J (Fig. 2).

Each block represented one collection unit, within which the surveyors[10] were evenly dis-

[9] On 6 and 7 February 2023, systematic archaeological prospecting was conducted. The prospecting was part of the project Life and Development of the First Agricultural Communities in the Area of Ravni Kotari – the Example of Islam Grčki, led by Associate Professor Horvat Oštrić, and financed by the Croatian Academy of Sciences and Arts Foundation in Zagreb.

[10] The systematic archaeological prospecting was led by Associate Professor Horvat Oštrić. In addition to the prospecting leader, also participating in the survey were: Nicholas Triozzi (PhD student of the Department of Anthropology of the University of California in Santa Barbara) and Luka Bogdanić (mag. archaeol., documentarian at the Archaeology Department of the University of Zadar), as well as Mia Mandarić and Rudolf Pirak-Šepak (archaeology students from the Archaeology Department of the University of Zadar).

Slika 3. *Pregledavači tijekom sustavnog terenskog pregleda* (snimila: K. Horvat Oštrić)
Figure 3 *Surveyors during the systematic field survey* (photo: K. Horvat Oštrić)

pravilno raspoređeni na međusobnoj udaljenosti 4 – 5 metara. Njihovo jednolinijsko kretanje prilagođeno je smjeru pružanja parcela (sjeveroistok-jugozapad i jugozapad-sjeveroistok) (sl. 3). Zahvaljujući blagoj topografiji polja, bilo je moguće kontrolirati dinamiku i ujednačeno kretanje pregledavača po terenu. Kretanje svakog pregledavača praćeno je s pomoću dviju mobilnih aplikacija: OruxMaps i Status GPS-a. Iste mobilne aplikacije korištene su i za kartiranje svih otkrivenih obrisa i nalaza.

Pri pregledu, svaki je pregledavač bilježio sljedeće podatke: ime i prezime pregledavača, naziv bloka, vrijeme pregledavanja, vidljivost / stanje kultiviranosti, opis površinskog zapisa s naglaskom na poziciju i pružanje obrisa u prostoru, dimenzije i tlocrt obrisa, broj i gustoća nalaza, te podatak o kulturnoj determinaciji prikupljenih nalaza ako ga je bilo moguće odrediti. Kako bi se zadovoljila ideja o optimalnom načinu prikupljanja površinskih nalaza, odnosno maksimumu prikupljenih informacija, prikupljeni su svi kameni i koštani

tributed, at a distance of 4–5 metres apart. Their linear movement was adjusted to the direction of the plots (north-east – south-west and *vice versa*) (Fig. 3). Thanks to the gentle topography of the field, it was possible to control the dynamics and the even movement of the surveyors in the fields. The movement of each surveyor was monitored with the help of two mobile applications: OruxMaps and GPS Status. These mobile applications were also used to map all discovered contours and finds.

During the survey, each surveyor entered the following data: the surveyor's first and last name, block name, survey time, visibility / state of cultivation, description of the surface record including the contour position and orientation in space, size and floor plan of the contour, number and density of finds, and, where possible, information on the cultural determination of the collected finds. In order to comply with the idea of the optimal method of collecting surface finds known as the collected data maxim, all stone and bone finds, as well as diagnostic ceramic fragments (ty-

nalazi, te dijagnostički keramički ulomci (tipološki odredivi ulomci i ulomci s ukrasom) i veći ulomci nedijagnostičkih keramičkih nalaza. Nalazi su prikupljani u vrećice s oznakom imena i prezimena pregledavača, nazivom bloka, te brojem i vremenskim okvirima pregleda. Dan nakon sustavnog terenskog pregleda teren je snimljen iz zraka dronom.

REZULTATI SUSATVNOG TERENSKOG PREGLEDA

Pri tumačenju rezultata sustavnog terenskog pregleda neolitičkog nalazišta Graduša – Lokve, u obzir treba uzeti nekoliko važnih činjenica. Ponajprije, nalazište je smješteno u polju, u kojem većinu parcela intenzivno i kontinuirano obrađuje lokalno stanovništvo već više desetljeća za sadnju različitih poljodjelskih kultura. Prema podatcima lokalnih zemljoposjednika[11], parcele su do sredine 20. stoljeća orane s pomoću konja i pluga do dubine od oko 15 centimetara. Od kraja 20. stoljeća za oranje se upotrebljavaju traktori s plugom, a dubina oraćeg sloja iznosi 30-ak centimetara. Zbog dugotrajnog oranja i poljoprivrednih radova, kulturni slojevi obuhvaćeni poljoprivrednim aktivnostima i nalazi iz njih djelomično su uništeni i / ili usitnjeni, odnosno premješteni s intaktnih položaja. Potvrda su tomu keramički nalazi prikupljeni tijekom obilazaka nalazišta sredinom 20. stoljeća, danas pohranjeni u Zavičajnom muzeju Benkovac. Oni su, naime, znatno većih dimenzija od nalaza prikupljenih tijekom sustavnog terenskog pregleda 2023. godine.[12]

Da je materijal izvan intaktnih položaja, svjedoče i kalupaste sjekire pronađene tijekom terenskog pregleda na rubu neobrađene parcele koja nije ušla u plan rekognosciranja. Pokraj navedene parcele rasprostire se parcela

[11] Zahvalu dugujem Željku Trkulji na svim informacijama u vezi s Gradušama.

[12] Usporediti bilješku 8.

pologically determinable fragments and fragments with decoration) and larger fragments of non-diagnostic ceramic finds were collected. The finds were collected in bags displaying the surveyor's name and surname, the name of the block, and survey number and duration. The day after the systematic field survey, the field was recorded from the air with a drone.

SYSTEMATIC FIELD SURVEY RESULTS

In interpreting the results of the systematic field survey of the Neolithic site Graduša – Lokve, several important facts should be borne in mind. Firstly, the site is in a field, where most of the plots have, for several decades, been intensively and continuously cultivated by the local population in the planting of different agricultural crops. According to information provided by local landowners[11], until the mid-20th century, the plots were ploughed with the help of horses and ploughs to a depth of about 15 centimetres. Since the late 20th century, tractors with ploughs have been used, and the depth of the plough layer is about 30 centimetres. As a result of long-term ploughing and farming, the cultural layers covered by agricultural activities as well as the finds from these layers have been partially destroyed and/or fragmented, or moved from intact positions. This is confirmed by ceramic finds collected during site visits in the mid-20th century, presently stored at the Benkovac Local History Museum. These are in fact significantly larger than the finds collected in the course of the 2023 systematic field survey.[12]

The fact that the artefacts were not in intact positions is also evidenced by adzes found during the field survey at the edge of an uncultivated plot not included in the archaeological

[11] I would like to express my gratitude to Željko Trkulja for the information related to Graduša.

[12] Cf. note 8.

(blok A) s jasno vidljivim tamnim, kružnim obrisom. Poviše i pored navedenog obrisa prikupljena je iznimno bogata arheološka građa, čiji su dio vjerojatno predastavljale i navedene sjekire, koje su uklonili lokalni zemljoposjednici zbog smetnje pri sadnji i rastu poljoprivrednih kultura.

Na broj prikupljenih nalaza tijekom sustavnog terenskog pregleda utjecalo je i prikupljanje arheoloških nalaza od strane Drage Kožul iz zaseoka Kožuli u Islamu Grčkom. Kao zaljubljenica u lokalnu kulturnu baštinu, Draga Kožul prikupila je veću količinu arheoloških nalaza s nalazišta Graduša – Lokve, koje obilazi već godinama.[13] Svi prikupljeni nalazi pripadaju srednjem i kasnom neolitiku i ne odstupaju od nalaza prikupljenih tijekom sustavnog terenskog pregleda.

Kvalitetu terenskog pregleda i kvantitetu prikupljenog materijala u velikoj je mjeri diktirala vidljivost. Ona je bila najbolja na parcelama koje su izorane otprilike tjedan dana prije provođenja sustavnog terenskog pregleda. Na tim parcelama (veći dio bloka A, blokovi B, C, D, F, G, I, J) bili su jasno uočljivi tamni obrisi i površinski arheološki materijal. S druge strane, na parcelama oranim netom prije provođenja sustavnog terenskog pregleda (zapadni dio bloka A, blokovi E i H) uočavanje tamnih obrisa i površinskih nalaza bilo je iznimno slabo. Istovremeno, zanimljivo je primijetiti kako su parcele orane netom prije snimanja dronom bile u idealnom stanju za uočavanje tamnih obrisa na zračnim snimkama, dok su na ostalim parcelama ti obrisi bili jedva uočljivi ili uopće nije bilo moguće utvrdili njihove pozicije.

Pri sustavnom terenskom pregledu provedenom u veljači 2023. godine prikupljen je: 701 keramički nalaz, 311 kamenih, 2 metalna i 2 nalaza od opsidijana (sl. 4). Najviše je nalaza prikupljeno poviše tamnih obrisa, dok se udaljavanjem od obrisa količina nalaza smanjivala,

[13] Posebnu zahvalu dugujem Dragi Kožul na svim informacijama o neolitičkom nalazištu i prikupljenim nalazima.

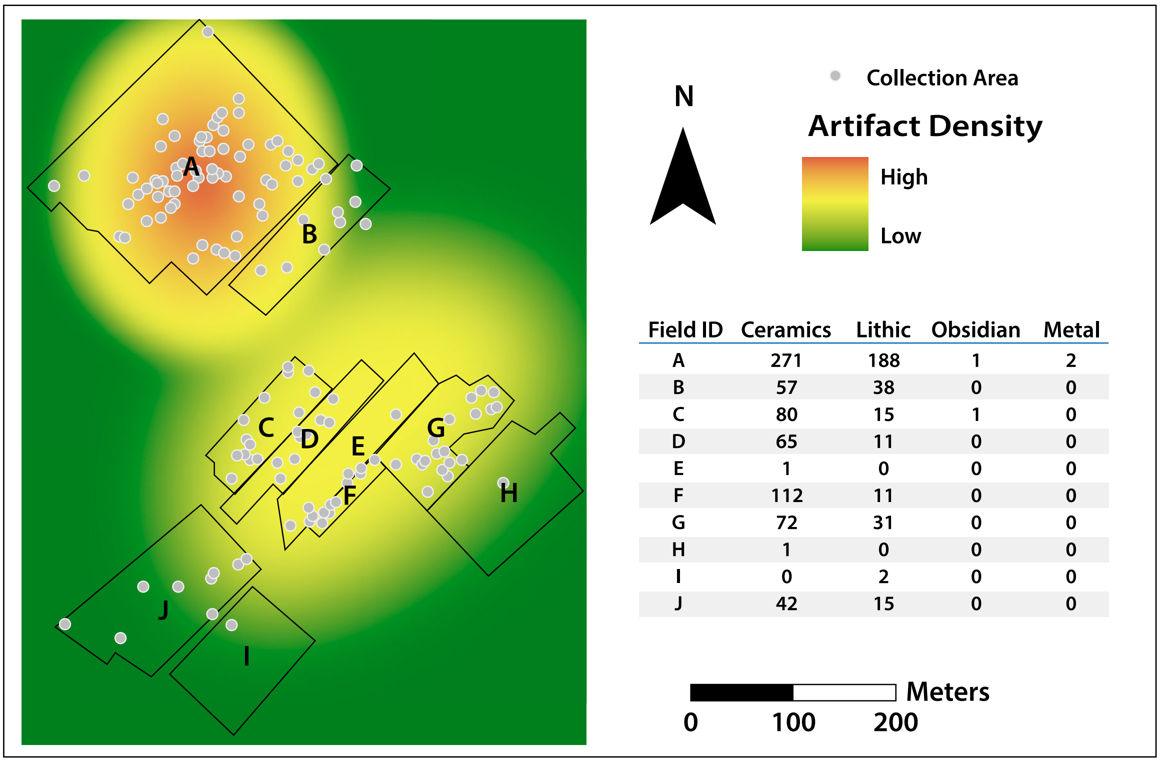
prospecting plan. Next to the mentioned plot is another (Block A) with a clearly visible dark, circular contour. Above the contour and next to it, an extraordinarily rich array of archaeological material was collected. The adzes must have originated from the same findspot, but had been removed by local landowners, because they hindered the planting and growth of agricultural crops.

The number of finds collected during the systematic field survey was also influenced by the collection of archaeological finds on the part of Draga Kožul from Kožuli, Islam Grčki. As a lover of local cultural heritage, Draga Kožul has collected multiple archaeological finds from the Graduša – Lokve site, which she has been visiting for years.[13] All collected finds belong to the Middle and Late Neolithic, and do not differ from the finds collected during the systematic field survey.

The quality of the field survey and the quantity of the collected material were largely dictated by visibility. It was best in the plots that were ploughed about a week before the systematic field survey was conducted. The dark contours and archaeological surface finds were clearly visible on these plots (most of Block A, and Blocks B, C, D, F, G, I and J). On the other hand, in the plots ploughed just before the systematic field survey was conducted (the western part of Block A, and Blocks E and H), the identification of dark contours and surface finds was extremely scarce. At the same time, it is interesting to note that the plots ploughed shortly before the drone recording were in an ideal condition for the identification of dark contours in aerial photographs, while on other plots the contours were barely visible or it was not possible to determine their positions at all.

Over the course of the systematic field survey conducted in February 2023, the following was collected: 701 ceramic finds, 311 stone finds, 2 metal and 2 obsidian finds (Fig. 4). Most find-

[13] Special thanks to Draga Kožul for the information she provided on the Neolithic site and the collected finds.



Field ID	Ceramics	Lithic	Obsidian	Metal
A	271	188	1	2
B	57	38	0	0
C	80	15	1	0
D	65	11	0	0
E	1	0	0	0
F	112	11	0	0
G	72	31	0	0
H	1	0	0	0
I	0	2	0	0
J	42	15	0	0

Slika 4. *Gustoća i broj nalaza po blokovima* (sliku izradio: N. Triozzi)
Figure 4 *Density and number of finds per block* (chart by: N. Triozzi)

s iznimkom svježe izoranih parcela E i H na kojima je prikupljen zanemariv broj površinskih nalaza zbog slabe vidljivosti. Osim metalnog novčića i metka, te nekoliko ulomaka novije proizvedenih keramičkih posuda, sav prikupljeni materijal pripada srednjem i kasnom neolitiku, odnosno danilskoj i hvarskoj kulturi.

Na temelju detaljnog pregleda zračnih i satelitskih snimaka, zapažanja na terenu pri izvršenju sustavnog pregleda terena i analize prikupljenog materijala (uključujući poziciju tamnih obrisa, brojnost i vrstu površinskih nalaza, kulturnu determinaciju keramičkih nalaza), moguće je donijeti nekoliko teza u vezi s neolitičkim nalazištem Graduša – Lokve.

Teza 1. Položaj i broj neolitičkih potpovršinskih objekata (sl. 5). U bloku A vjerojatno je riječ o četirima, a u blokovima B, C, D, E i F o jednom objektu. Oni su na površini vidljivi u obliku tamnih okruglih / ovalnih obrisa. Sjeverno od blokova C i D, na prilaznom putu koji prolazi Gradušama razdvajajući na-

spots were the dark contours, while the number of finds decreased as the surveyors moved away from these contours, with the exception of the newly ploughed plots E and H, where, due to poor visibility, a negligible number of surface finds was collected. Except for a metal coin and a bullet, and a few sherds of ceramic vessels of a more recent production, all collected artefacts belong to the Middle and Late Neolithic, that is, the Danilo and Hvar cultures.

Based on detailed inspection of aerial and satellite images, observations in the field during the systematic surveying, and an analysis of the collected material (including the position of dark contours and the number and type of surface finds, as well as the cultural determination of ceramic finds), it is possible to come up with several theses related to the Neolithic site of Graduša – Lokve.

Thesis 1. Location and number of Neolithic subsurface structures (Fig. 5). In Block A, there are probably four structures, and in Blocks B, C, D, E and F one structure in each. The structures are visible on the surface in the form of

Slika 5. *Pozicije neolitičkih objekata* (foto i dorada: L. Bogdanić)
Figure 5 *Positions of Neolithic structures* (photo and finishing: L. Bogdanić)

vedene blokove, još je tijekom probnih istraživanja 2021. godine utvrđen taman obris s većom količinom kamenih i keramičkih nalaza, zbog čega je i na toj poziciji moguće ubicirati položaj jednog neolitičkog objekta (sl. 5 / točka označena ljubičastom bojom). Osim toga, na temelju zračnih snimaka, u bloku H evidentirani su izduženi, blago zakrivljeni

dark round/oval contours. In the course of the 2021 trial excavations, north of Blocks C and D, on the access road that passes through Graduša separating the mentioned blocks, a dark contour had already been identified. It contained a large quantity of stone and ceramic finds, suggesting the possible position of another Neolithic structure on that spot (Fig. 5 / spot marked in pur-

obrisi koji podsjećaju na rovove, kako je to već pretpostavio Š. Batović[14]. Tijekom probnih istraživanja provedenih pri sredini bloka H gdje je pozicionirana probna sonda A (sl. 5), potvrđeno je da je zaista riječ o rovu dubine oko 2 m, zapunjenom s nekoliko sukcesivnih kulturnih slojeva danilske kulture.[15] Predstavlja li drugi tamni izduženi obris na istočnom dijelu bloka H također rov ili je riječ o nekoj drugoj vrsti neolitičkih objekata, nije jasno. Velika površina koju u tom bloku zauzima tamna zona jasno uočljiva na zračnim snimkama, zajedno s arheološkim materijalom prikupljenim pri provođenju probnih istraživanja 2021. i 2022., svakako sugerira da u ovom bloku treba očekivati više neolitičkih objekata. Je li riječ o više rovova, jamskim i / ili nadzemnim objektima, nije moguće utvrditi prije provođenja arheoloških istraživanja.

Prikupljena arheološka građa, poput ulomka kućnog lijepa u bloku C, ulomaka žrvnjeva i brusova (T. II) u blokovima A, B, D, F i G, govori u prilog nalazištu naseobinskog karaktera, čije je stanovništvo bilo orijentirano poljodjelstvu. Nalazi od opsidijana (T. I/1 i 2) sugeriraju na veze i razmjenu neolitičkih zajednica ovog naselja sa zajednicama drugih naselja, tj. zajednicama s područja izvan istočnog Jadrana. Dakako, ne treba isključiti ni mogućnost indirektnih kontakata, uz sudjelovanje distribucijskih centara na trasi Sušac – Vela Spila. Nalazi koji odstupaju od tipičnog repertoara danilske i hvarske kulture nisu zabilježeni, kao ni grupiranja različitih vrsta nalaza na temelju kojih bi bilo moguće razdvojiti eventualne stambene od radioničkih, kultnih i drugih dijelova naselja.

Teza 2. Položaji korišteni tijekom srednjeg, kasnog, srednjeg i kasnog neolitika. Detaljnom analizom prikupljenog keramičkog materijala po blokovima moguće je pretpostaviti da su se nekim pozicijama na Gradušama

[14] BATOVIĆ 1987: 24.
[15] Usporediti bilješku 2.

ple). In addition, on the evidence of aerial photographs, elongated, slightly curved contours reminiscent of ditches were recorded in Block H, as already assumed by Š. Batović[14]. During trial excavations conducted near the middle of Block H, where Trench A was positioned (Fig. 5), it was confirmed that it was indeed a c. 2 m deep ditch filled with several successive Danilo culture layers.[15] It remains unclear whether the other dark elongated contour on the eastern part of Block H also represents a ditch or some other type of Neolithic structure. The large area of the block occupied by the dark zone, clearly visible in aerial photographs, along with the archaeological material collected during the 2021 and 2022 trial excavations, certainly suggests that in this block more Neolithic structures should be expected. It has not been possible to determine whether there are several ditches, or pit and/or above-ground structures in advance of further archaeological excavations.

The collected archaeological goods, such as a house daub fragment in Block C, and grindstone and whetstone fragments (Pl. II) in Blocks A, B, D, F and G suggest a settlement site whose population mostly lived from farming. Obsidian finds (Pl. I, 1–2) suggest connections and exchange between the Neolithic communities residing in the settlement and communities from other settlements, including from areas outside the eastern Adriatic. Of course, the possibility of indirect contacts should not be excluded, via distribution centres on the Sušac – Vela Spila route. No finds have been recorded that would diverge from the typical Danilo and Hvar cultural repertoires, nor were there any groups of different find types which would enable making a distinction between supposedly residential parts of the settlement and other parts with workshops, religious structures and the like.

Thesis 2. Sites used during the Middle and Late Neolithic, or both periods. A detailed anal-

[14] BATOVIĆ 1987: 24.
[15] Cf. note 2.

zajednice koristile tijekom srednjeg, nekim tijekom kasnog neolitika, a nekim možda i tijekom obiju neolitičkih faza (sl. 6). Pri razdvajanju nalaza kod kojih nije bila sigurna kulturna determinacija, radila se usporedba s nalazima iz probne sonde A koji pripadaju danilskoj kulturi, nalazima iz probne sonde B koji pripadaju hvarskoj kulturi, te s publiciranim nalazima determiniranim od Š. Batovića. Kako je to već primijetio Š. Batović, razlika između danilske i hvarske keramike na prvom se mjestu očituje u načinu izrade i oblicima, a zatim i u načinu ukrašavanja.[16] Posebno je lako kulturološki odrediti vrlo lagane i šupljikave ulomke najčešće tamnih boja (T. V), koji su tipični u repertoaru kasnog neolitika Graduša – Lokva. U blokovima A, B, C i D evidentirani su nalazi obiju faza, s time da oni hvarski prevladavaju. U blokovima F i G u pitanju su danilski nalazi (T. III; IV), dok nalazi iz bloka J podsjećaju na hvarsku kulturu. Iako u bloku H tijekom sustavnog terenskog pregleda nisu prikupljeni arheološki nalazi, zahvaljujući provedenim probnim arheološkim istraživanjima, na tom dijelu nalazišnog kompleksa poznata je danilska pozicija pri sredini bloka H, te hvarska pozicija na njegovu krajnjem istočnom rubu (sl. 6).

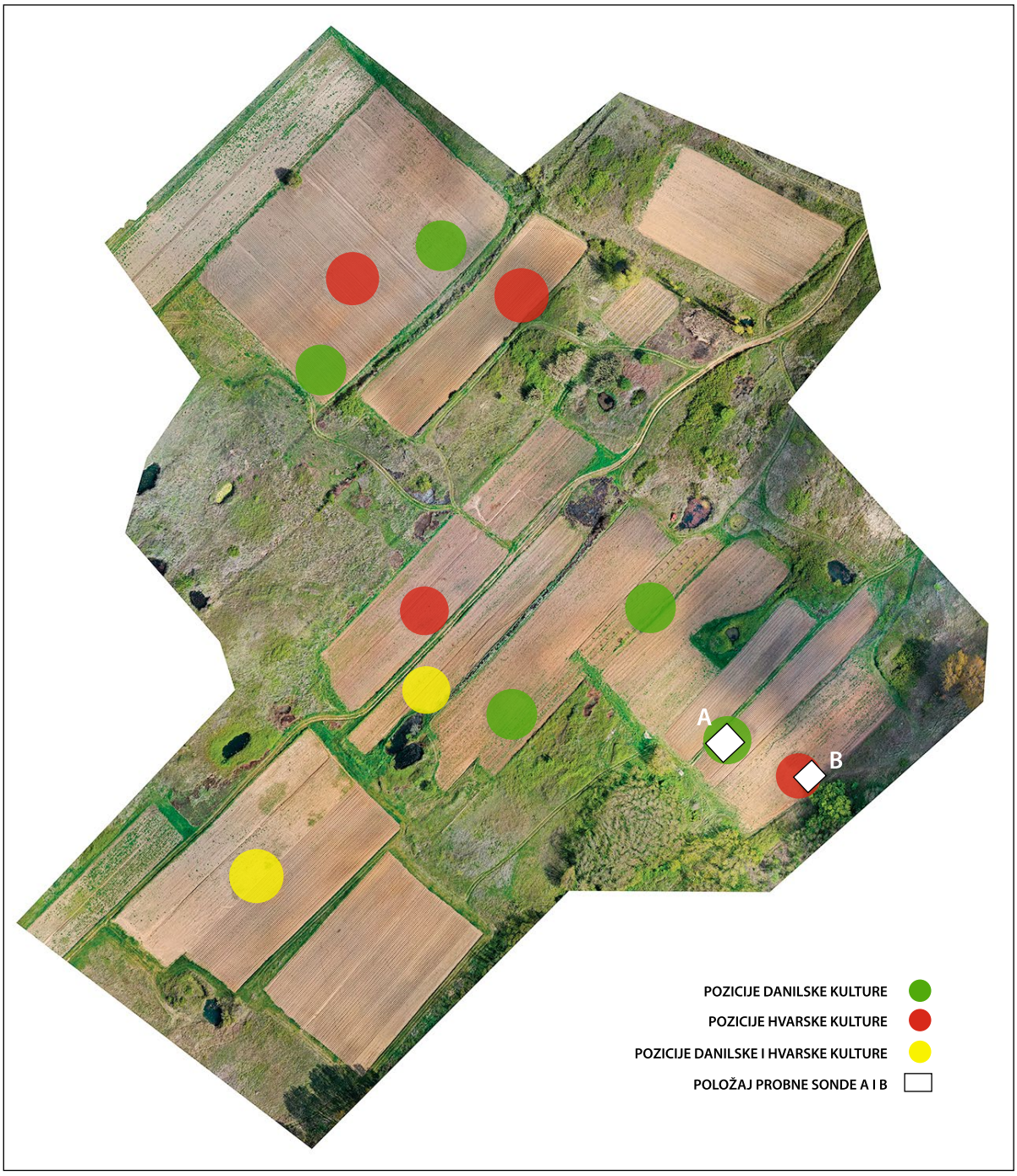
Pregledom prikupljenog materijala može se primijetiti da nalazi keramike hvarske kulture kvantitetom premašuju istovrsne nalaze danilske kulture. Veću zastupljenost hvarskih nalaza u odnosu na danilske navodi i Š. Batović,[17] a razlozi tomu mogu biti različiti. Od preslojavanja dubljih danilskih kulturnih slojeva hvarskima koji su većim dijelom uništeni poljoprivrednim radovima i bolje uočljivi u površinskom zapisu, preko različite relativne dubine zdravice u koju su objekti različitih faza ukopani, do veće površine naselja na Gradušama u vrijeme kasnog neolitika u odnosu na raniju fazu. Je li neki od

ysis of the collected ceramic material by blocks suggests that some locations at Graduša were used by communities during the Middle Neolithic, others during the Late Neolithic, and some possibly during both Neolithic stages (Fig. 6). The finds which could not be culturally determined with certainty having been isolated, a comparison was made with the finds from Trench A belonging to the Danilo culture, as well as with those from Trench B belonging to the Hvar culture, and with published finds categorised by Š. Batović. As already noted by Š. Batović, the differences between Danilo and Hvar pottery are evident primarily in their working and form, but also in decoration styles.[16] It is especially easy to culturally determine the rather light and hollow sherds, mostly in dark colours (Pl. V), typical in the Late Neolithic repertoire of the Graduša – Lokve site. In Blocks A, B, C and D, finds from both stages were recorded, with those belonging to the Hvar culture prevailing. Blocks F and G contained Danilo finds (Pl. III; IV), while finds from Block J are reminiscent of the Hvar culture. Although during the systematic field survey no archaeological finds were collected in Block H, thanks to archaeological trial excavations conducted in that part of the site complex, a Danilo findspot was already known near the middle of Block H, and a Hvar findspot at its easternmost edge (Fig. 6).

An inspection of the collected goods suggests that Hvar culture pottery finds prevail over Danilo culture pottery finds. Šime Batović[17] also mentioned the prevalence of Hvar finds over Danilo finds. This could be due to several reasons. Presumably, upon the deeper strata of Danilo culture the Hvar cultural strata was superimposed and the majority of artefacts from the latter destroyed by agricultural works, thus becoming easier to spot in the surface layer. Another reason may be the varying relative depth of sterile soil in which the structures from different stages had been buried. Finally, the Late

[16] BATOVIĆ 1987: 26.
[17] BATOVIĆ 1987: 16.

[16] BATOVIĆ 1987: 26.
[17] BATOVIĆ 1987: 16.



Slika 6. *Pretpostavljene danilske i hvarske pozicije* (foto i dorada: L. Bogdanić)
Figure 6 *Assumed Danilo and Hvar findspots* (photo and finalisation: L. Bogdanić)

ponuđenih odgovora točan, može se otkriti jedino otvaranjem većih istraživačkih površina i stjecanjem uvida u vertikalnu i horizontalnu stratigrafiju nalazišta.

Teza 3. Prostorni okviri neolitičkog nalazišta Graduša – Lokve. Već pri pregledu satelitskih i zračnih snimaka bilo je jasno da nalazište veličinom prelazi prije pretpostavljenih

Neolithic Graduša settlement was possibly larger than those of preceding periods. Only after the excavation of larger areas and the gaining of insight into the site's vertical and horizontal stratigraphies will there be a clue as to whether any of the suggested interpretations is correct.

Thesis 3. Spatial framework of the Neolithic site of Graduša – Lokve. Inspection of satellite

200 x 150 metara.[18] Sustavnim terenskim pregledom utvrđeno je da sjevernu granicu rasprostiranja nalazišta predstavljaju sjeverni rubovi blokova A, B i H. Ni na pristupnom putu kojim se do Graduša dolazi sa sjevera od današnje ceste, ni na parcelama poviše blokova A, B, E, G i H koje intenzivno obrađuje lokalno stanovništvo nisu pronađeni nikakvi arheološki nalazi ni tragovi tamnih obrisa, s iznimkom spomenutog tamnog obrisa otkrivenog na putu koji razdvaja blokove C i D (sl. 5, pozicija označena ljubičastom bojom), a koji je u ravnini sa sjevernim rubom bloka H. Na krajnjem zapadnom dijelu bloka A prikupljeno je svega 28 kamenih i 32 keramička nalaza. Nije jasno je li riječ o sporadičnim nalazima koji su na te pozicije dospjeli zbog poljoprivrednih radova ili taj dio predstavlja krajnji zapadni rub nalazišta. Dalje na zapad nalazi nisu utvrđeni. Ostatak bloka A, te blokovi B – H bez sumnje predstavljaju dio nalazišta. Tomu u prilog govore i jasno uočljivi tamni obrisi i velika količina raznovrsnog prikupljenog arheološkog materijala (sl. 4). Rasprostire li se nalazište dalje na istok i izvan bloka H, nije bilo moguće odrediti zbog gustog raslinja koje onemogućuje pristup tom dijelu terena. Uz pitanje istočne granice nalazišnog kompleksa, ostaje i pitanje južne granice. Naime, u blokovima I i J nisu evidentirani tamni obrisi pri sustavnom terenskom pregledu 2023., dok je količina prikupljenog materijala u bloku I bila iznimno skromna. Zračne snimke iz 2022. godine ipak bacaju drukčije svijetlo na navedene blokove, jer je na njima moguće uočiti tamne zone (sl. 7). Kako je riječ o dvjema parcelama koje se na Gradušama najintenzivnije obrađuju zadnjih godina, moguće je da nedostatak većeg broja nalaza može biti posljedica dubljeg pozicioniranja kulturnih slojeva i / ili uništenja materijala na tom dijelu neolitičkog nalazišnog kompleksa, kojem pripadaju i ove parcele.

Time bi veličina neolitičkog nalazišta iznosi-

[18] Usporediti bilješku 5.

and aerial images had already made it clear that the size of the site exceeded the previously assumed 200 x 150 metres.[18] Over the course of the systematic field survey, the northern border of the site was identified as stretching over the northern edges of Blocks A, B and H. Neither the access road leading to Graduša from the north of the present-day road, nor the plots above blocks A, B, E, G and H that are intensively cultivated by the local population, have yielded any archaeological finds or traces of dark contours. An exception is the above-mentioned dark contour discovered on the road separating Blocks C and D (Fig. 5, position marked in purple), which is on the same level as the northern edge of Block H. In the westernmost part of Block A only 28 stone and 32 ceramic finds were collected. It remains unclear whether these are sporadic finds that reached their findspots as a result of agricultural works, or whether the zone represents the site's westernmost edge. Further to the west, no finds have been identified. The rest of Block A and Blocks B – H undoubtedly belong to the site. This is supported also by clearly visible dark contours and a large amount of diverse collected archaeological artefacts (Fig. 4). It was not possible to determine whether the site extended further east and beyond Block H due to the dense vegetation that prevented access to that part of the terrain. Along with the question of the site complex eastern border, the question of its southern border also remains. Namely, in Blocks I and J, no dark contours were recorded during the 2023 systematic field survey, while the amount of collected material in Block I was extremely modest. However, aerial photographs from 2022 shed a different light on these blocks, as dark zones can be spotted in them (Fig. 7). Since these two plots have in recent years been the most intensively cultivated of all the Graduša plots, the absence of a larger number of finds might be a result of their cultural strata being deeper, and/or a destruction of the artefacts in that zone of the

[18] Cf. note 5.

Slika 7. *Pogled na blok I i J* (veljača 2022., snimio: L. Bogdanić)
Figure 7 *View of Blocks I and J* (February 2022, photo: L. Bogdanić)

Slika 8. *Pretpostavljeni prostorni okviri neolitičkog nalazišta Graduša – Lokve u Islamu Grčkom* (snimio: L. Bogdanić)
Figure 8 *The assumed spatial framework of the Neolithic site of Graduša – Lokve in Islam Grčki (photo: L. Bogdanić)*

la oko 370 x 300 metara ili oko 6 ha (sl. 8). U usporedbi s pretpostavljenim veličinama ostalih neolitičkih nalazišta u sjevernoj Dalmaciji (Smilčić 5 – 6 ha[19], Danilo 9 ha[20], Pokrovnik 4 ha[21], Crno vrilo 1,2 ha[22], Tinj 2,8 ha[23], Krivače 3 ha[24], Pod Jarugom 1 ha[25]), neolitičko nalazište u Islamu Grčkom spada u red velikih nalazišta.

Za prihvaćanje, odbacivanje i / ili izmjenu postavljenih teza, potrebna su nova arheološka istraživanja na različitim pozicijama neolitičkog nalazišta Graduša – Lokve. Korisno bi bilo nalazišni kompleks ispitati i s pomoću neinvanzivnih tehnika, poput gradiometra, metodom magnetskog skeniranja, radara koji prodire u zemlju (GPR) i sl., koje su se pokazale vrlo korisne za proučavanje neolitičkih nalazišta smještenih u prirodno-geografskim regijama poput sjeverne Dalmacije.[26]

ZAKLJUČAK

Zahvaljujući sustavnom terenskom pregledu Graduša u Islamu Grčkom provedenom u veljači 2023., te snimanju dronom tijekom 2021., 2022. i 2023. godine, prikupljeni su važni podatci za tumačenje neolitičkog nalazišta Graduša – Lokve i planiranje daljnjih istraživačkih strategija na nalazištu.

Ponajprije, definirana je sjeverna granica neolitičkog nalazišta, koje je površinski mnogo veće nego što je to prije pretpostavljeno. Koliko se nalazište rasprostire prema istoku, nije utvrđeno jer taj dio Graduša pokriva gusto raslinje i šuma. Što se tiče zapadne i južne

[19] BATOVIĆ 1990: 30.
[20] MOORE et al. 2019: 11.
[21] MOORE et al. 2019: 20.
[22] MARIJANOVIĆ 2009: 29.
[23] CHAPMAN, SHIEL, BATOVIĆ 1996: 178.
[24] BATOVIĆ 1979: 576.
[25] Podatci su preuzeti iz muzejske dokumentacije Zavičajnog muzeja Benkovac. Ravnatelju M. Ćurkoviću zahvaljujem na mogućnostima uvida u muzejsku dokumentaciju.
[26] GYUCHA et al. 2015; ŠOŠIĆ KLINDŽIĆ et al. 2019: 56–59; NAUMOV et al. 2023.

Neolithic site complex, part of which are also the two plots.

Thus, the size of the Neolithic site may have been c. 370 x 300 metres, or about 6 hectares (Fig. 8). In comparison with the assumed sizes of other Neolithic sites in northern Dalmatia (Smilčić 5–6 ha[19], Danilo 9 ha[20], Pokrovnik 4 ha[21], Crno Vrilo 1.2 ha[22], Tinj 2.8 ha[23], Krivače 3 ha[24], Pod Jarugom 1 ha[25]), the Neolithic site in Islam Grčki is among the larger sites.

New archaeological campaigns at different locations in the Graduša – Lokve Neolithic site will be necessary in order to confirm, reject and/or change the theses proposed in this paper. It would be useful to examine the site complex with the help of non-invasive techniques and instruments, such as a gradiometer, magnetic scanning method, and a ground-penetrating radar (GPR), which have proved to be very useful for the study of Neolithic sites located in natural-geographical regions similar to northern Dalmatia.[26]

CONCLUSION

Thanks to the systematic field survey of Graduša in Islam Grčki conducted in February 2023, and drone recordings made in 2021, 2022 and 2023, important data was collected for the interpretation of the Neolithic site of Graduša – Lokve, and planning of further research strategies at the site.

First, the northern border of the Neolithic site, which is much larger than had previously been assumed, was defined. The site's east-

[19] BATOVIĆ 1990: 30.
[20] MOORE et al. 2019: 11.
[21] MOORE et al. 2019: 20.
[22] MARIJANOVIĆ 2009: 29.
[23] CHAPMAN, SHIEL, BATOVIĆ 1996: 178.
[24] BATOVIĆ 1979: 576.
[25] Data taken over from the Benkovac Local History Museum documentation. I would like to thank to the Museum director M. Ćurković for enabling our access to the Museum's documentation.
[26] GYUCHA et al. 2015; ŠOŠIĆ KLINDŽIĆ et al. 2019: 56–59; NAUMOV et al. 2023.

granice, oni će biti prioritetni dijelovi nalazišta za nova istraživanja, orijentirana upravo na točno definiranje zapadne i južne granice nalazišnog kompleksa.

Sljedeće pozicije za iskopavanja bit će one na kojima je evidentiran materijal iz kasnog neolitika, odnosno hvarske kulture. Na tim pozicijama potrebna su sustavna arheološka istraživanja iz više razloga. Ponajprije, u okvirima suvremene arheologije kasni neolitik prilično je slabo istražen i poznat neolitički period na području istočnog Jadrana. Osim podataka o naseobinskim aspektima, nedostaje keramička građa za definiranje keramografskog stila kasnoneolitičkih zajednica sjeverne Dalmacije, kao i podatci o gospodarskim, ritualnim i pogrebnim aspektima kasnoneolitičkih zajednica. Nije zanemariva ni činjenica da na području sjeverne Dalmacije, uz Velištak u Velimskom polju (zaleđe Vodica), Graduša – Lokve predstavljaju tek drugo nalazište otvorenog tipa na kojem su otkriveni intaktni kasnoneolitički slojevi. Nema sumnje da će istraživanja intaktnih kasnoneolitičkih slojeva pridonijeti tumačenju kasnog neolitika sjeverne Dalmacije, na što upućuju i rezultati probnih arheoloških istraživanja (sonda B), koji će biti objavljeni u zasebnom radu.

Posebna će pozornost zatim biti usmjerena na pozicije na kojima su otkriveni i nalazi danilske i nalazi hvarske kulture. Kako su kulturni odnosi između danilske i hvarske kulture slabo poznati, otkrivanje i istraživanje takvih pozicija bit će od iznimne važnosti za razmatranje i tumačenje odnosa danilske i hvarske kulture. Predstavljaju li pozicije na kojima su pronađeni nalazi danilske i hvarske kulture mjesta na kojima hvarski kulturni slojevi preslojavaju danilske ili se zone aktivnosti mijenjaju kroz život naselja? Je li riječ o jednoj zajednici koja na Gradušama živi kontinuirano od srednjeg neolitika do kasnog neolitika, mijenjajući svoj lončarski stil? Ili je riječ o dvjema zajednicama koje su se za život koristile prostorom Graduša neovisno jedna o drugoj?

Mnogo je otvorenih pitanja na koja će budernmost borders have not been determined, because that part of Graduša is covered with dense vegetation and forest. Its western and southern borders will be a priority in new archaeological campaigns, aimed at precisely defining the western and southern borders of the site complex.

The next locations for excavation will be those where artefacts from the Late Neolithic, that is the Hvar culture, have been recorded. Systematic archaeological excavations are necessary at these places for several reasons. Firstly, within the framework of modern archaeology, the Late Neolithic has been a rather poorly researched and recorded Neolithic period in the eastern Adriatic. Information on habitation forms is scarce, as are pottery finds on the basis of which it would be possible to define a pottery-making style of the Late Neolithic communities in northern Dalmatia. The same applies to data on economic, ritual and burial aspects of Late Neolithic communities. Neither should it be ignored that, along with Velištak in Velimsko Polje (Vodice hinterland), Graduša–Lokve is the only open-type site in northern Dalmatia in which intact Late Neolithic layers have been unearthed. Excavations of the intact late Neolithic layers will undoubtedly contribute to the interpretation of the Late Neolithic in northern Dalmatia, as indicated by the trial-trenching results (Trench B), to be published in a separate paper.

Special attention will then be dedicated to the findspots of both the Danilo and Hvar culture artefacts. As the understanding of cultural relations between the Danilo and Hvar cultures is rather poor, for their consideration and interpretation it will be extremely important to reveal and excavate such findspots. Do the Danilo and Hvar culture findspots represent places where the Hvar cultural layers superimpose the Danilo ones, or do the activity zones change throughout the life of the settlement? Was there a single community in Graduša that lived continuously from the Middle Neolithic to the Late Neolithic, changing its pottery style? Alternatively, were there two separate

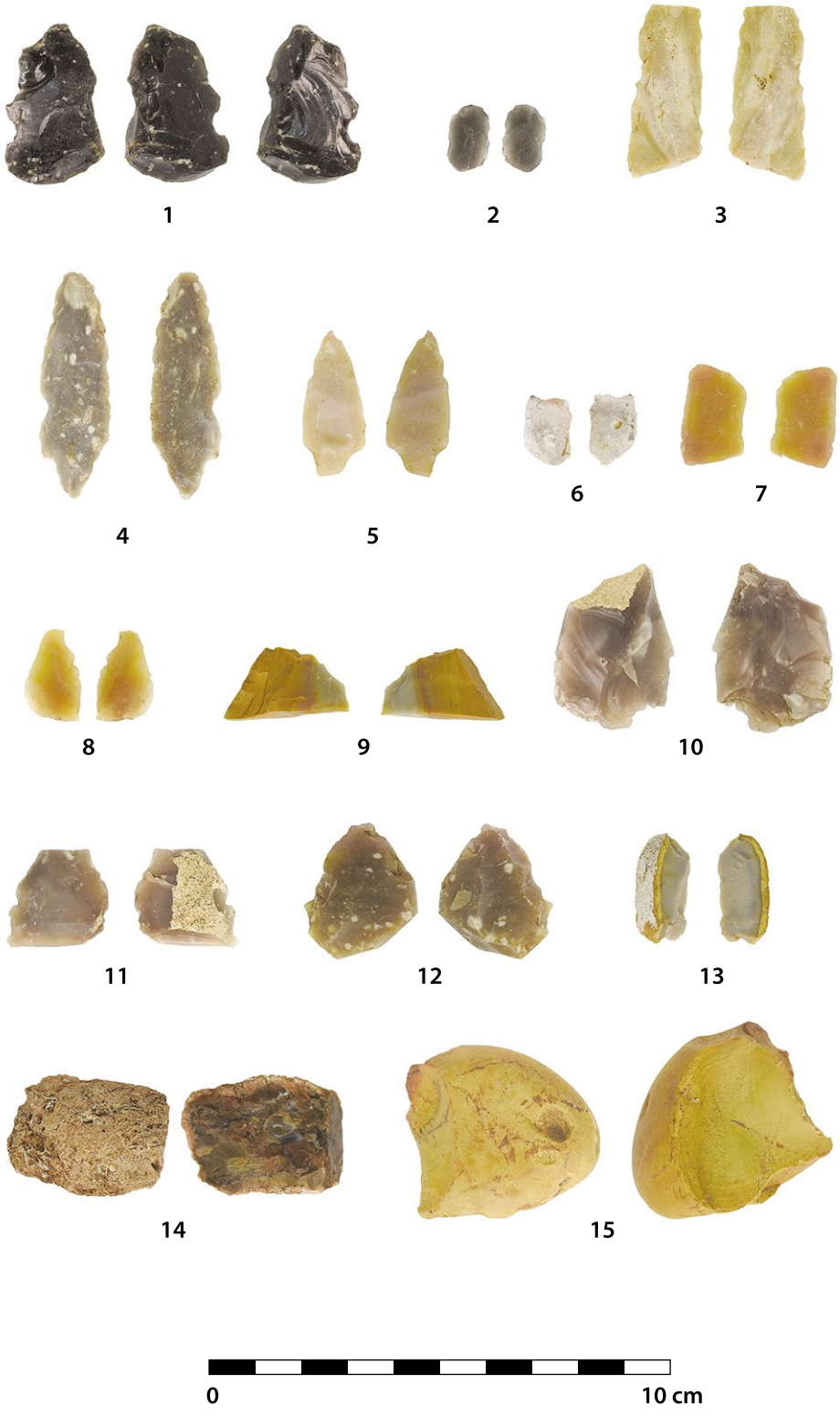
duća sustavna arheološka istraživanja pomno odabranih pozicija na Graduša – Lokvama zasigurno dati neke odgovore. Velik broj arheoloških nalaza prikupljenih tijekom sustavnog terenskog pregleda u veljači 2023., zajedno sa zračnim snimkama i rezultatima probnih arheoloških istraživanja, ne ostavljaju nikakvu sumnju da neolitičko nalazište u Islamu Grčkom skriva izniman arheološki potencijal.

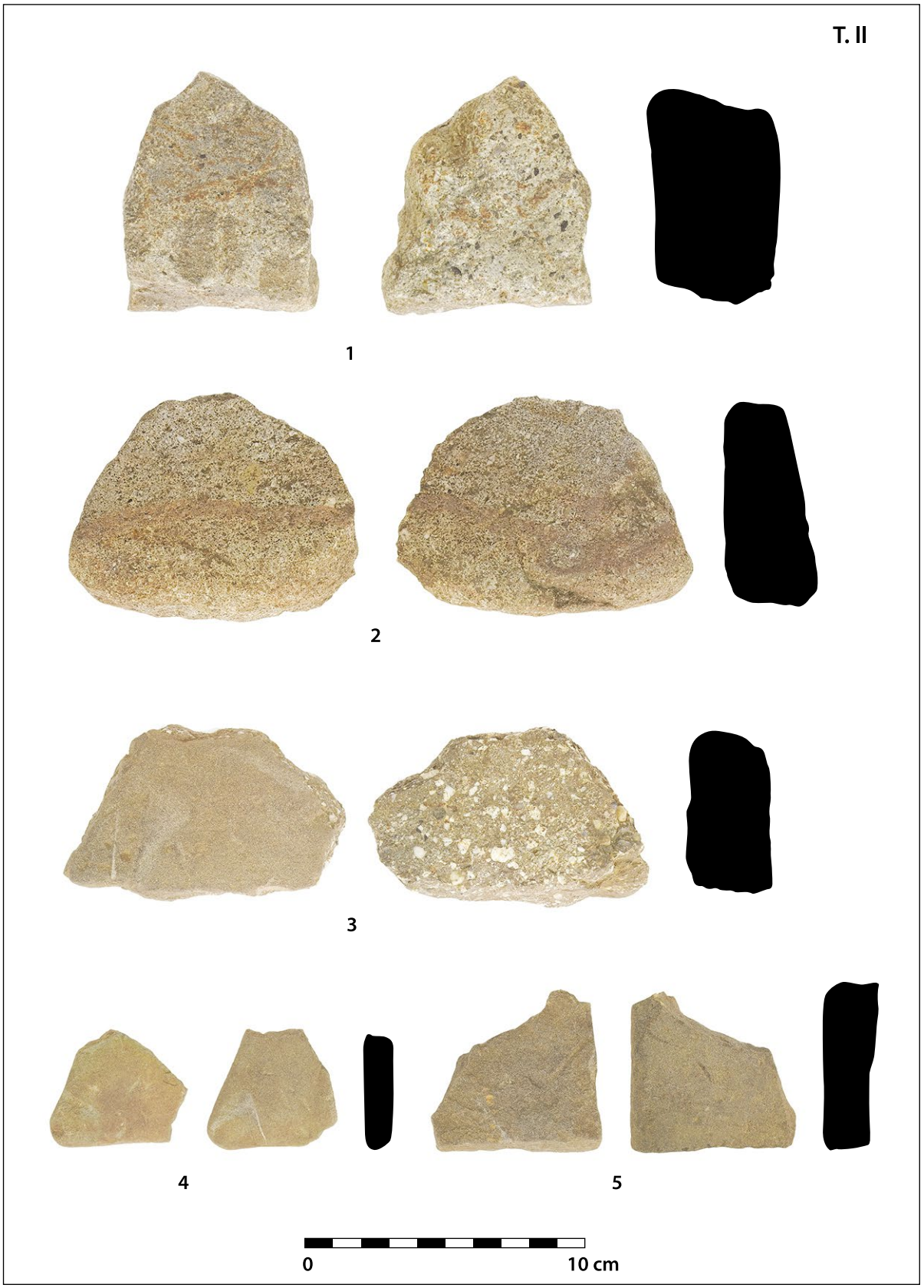
communities that lived in the Graduša area independently?

Many questions remain open, requiring further systematic archaeological campaigns at carefully selected positions in Graduša – Lokve, which will certainly provide answers to some of them. The large number of archaeological finds collected during the systematic field survey in February 2023, together with aerial photographs and the results of archaeological trial trenching, leave no doubt that the Neolithic site in Islam Grčki conceals exceptional archaeological potential.

Translation and proof-reading:
ETNOtrend d.o.o

T. I

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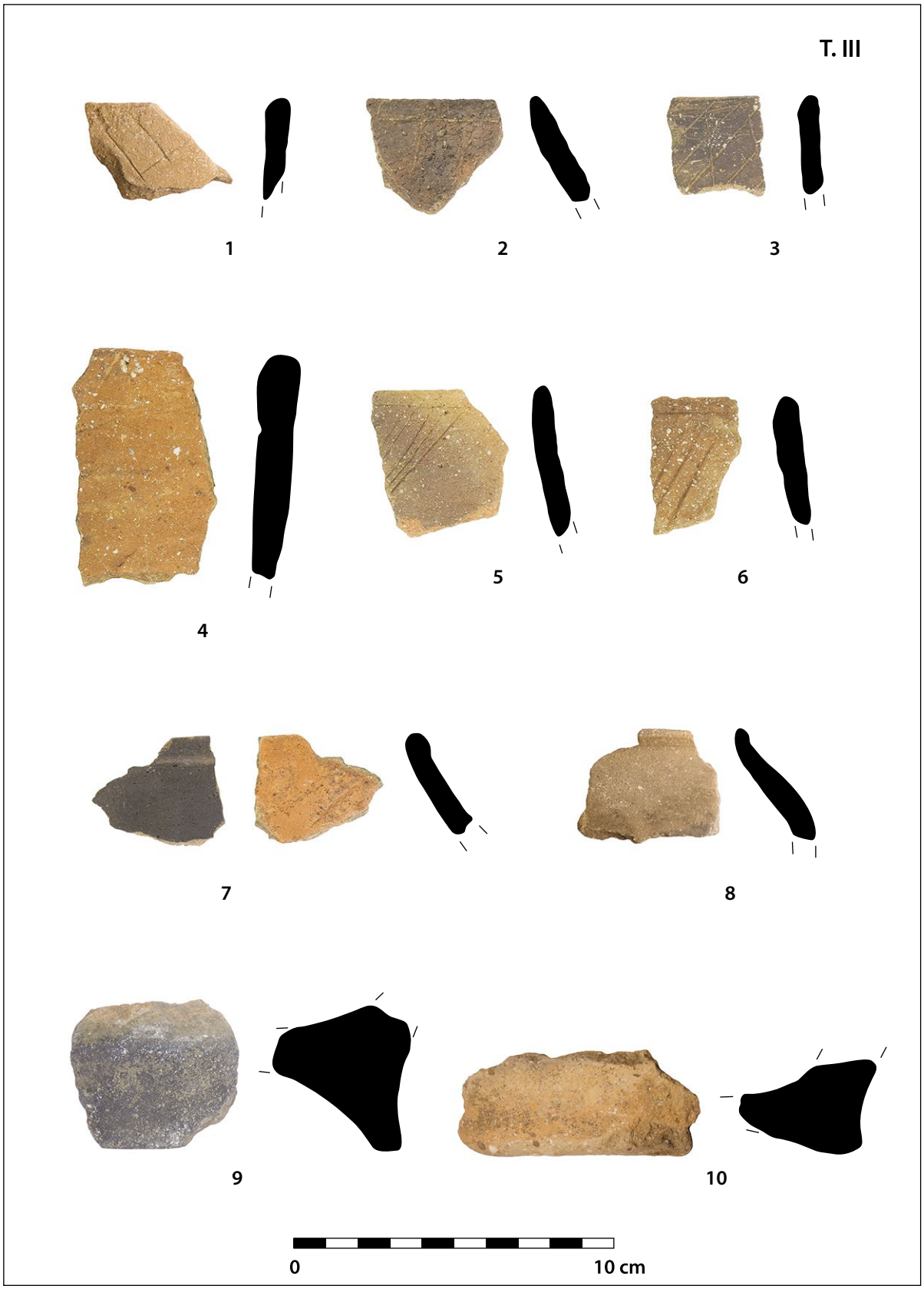
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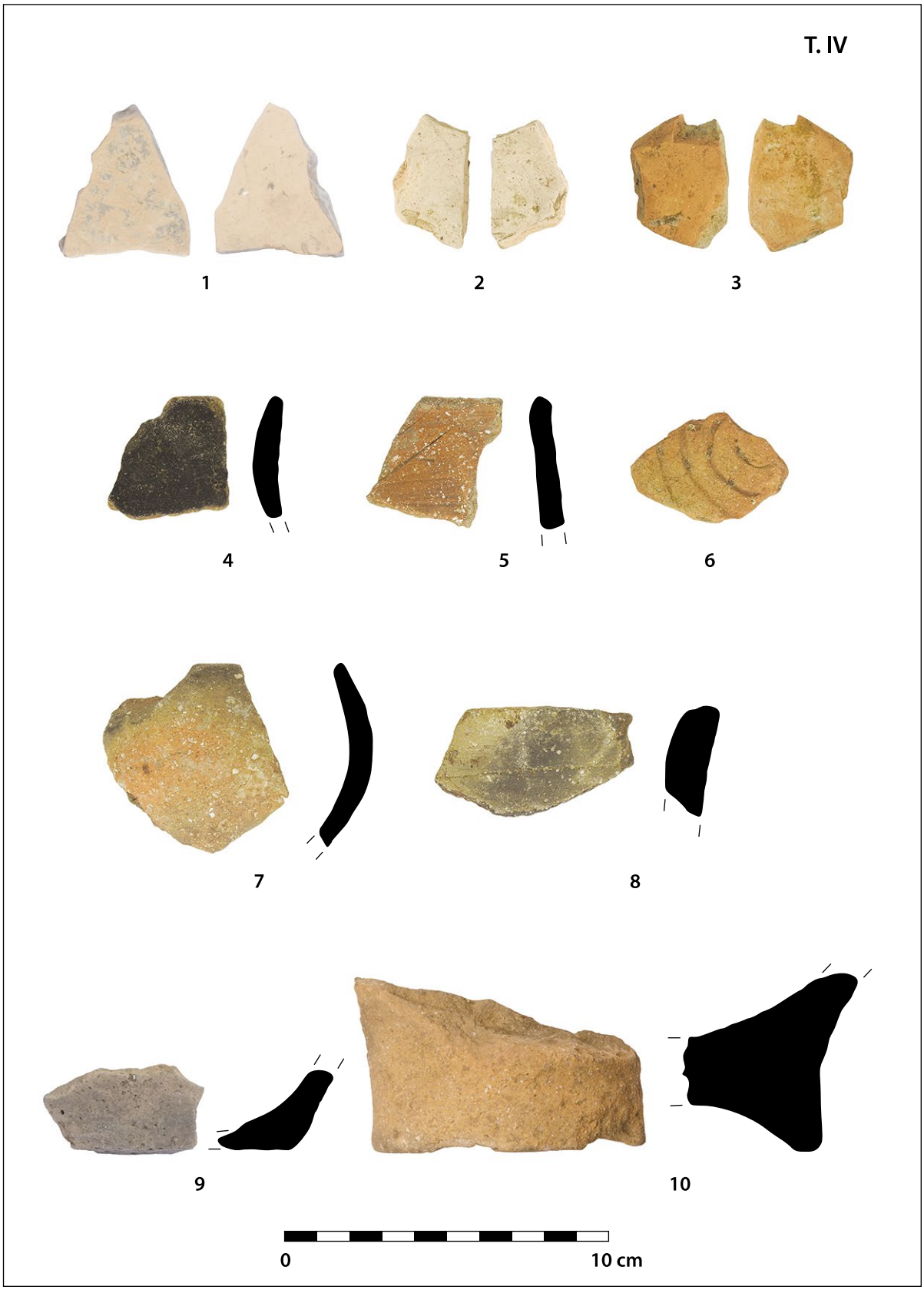
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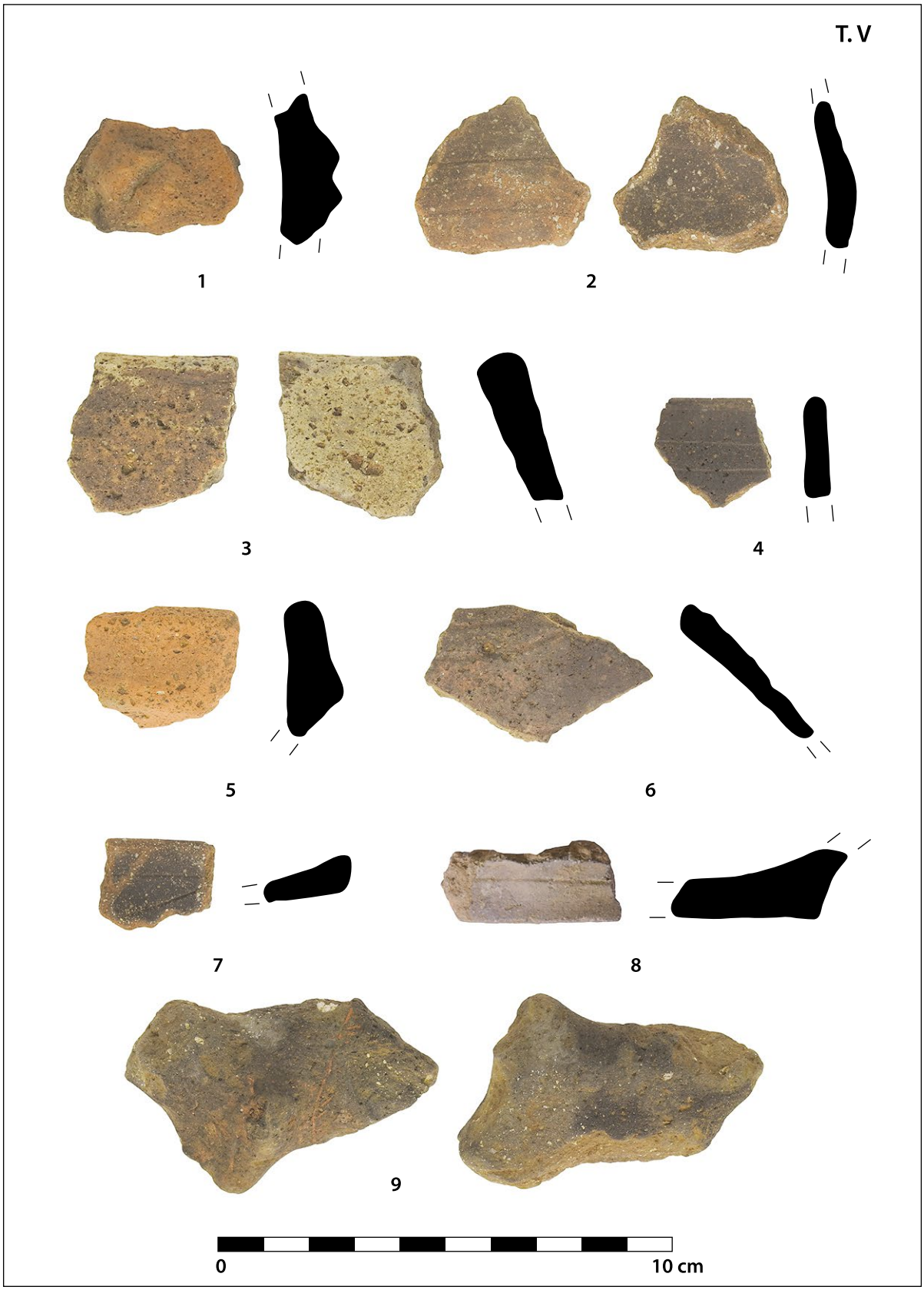
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DVIJE KAMENE GOMILE KOD SELA GRAB – KRIVODOL KRAJ TRILJA

TWO STONE CAIRNS BY THE VILLAGE GRAB – KRIVODOL NEAR TRILJ

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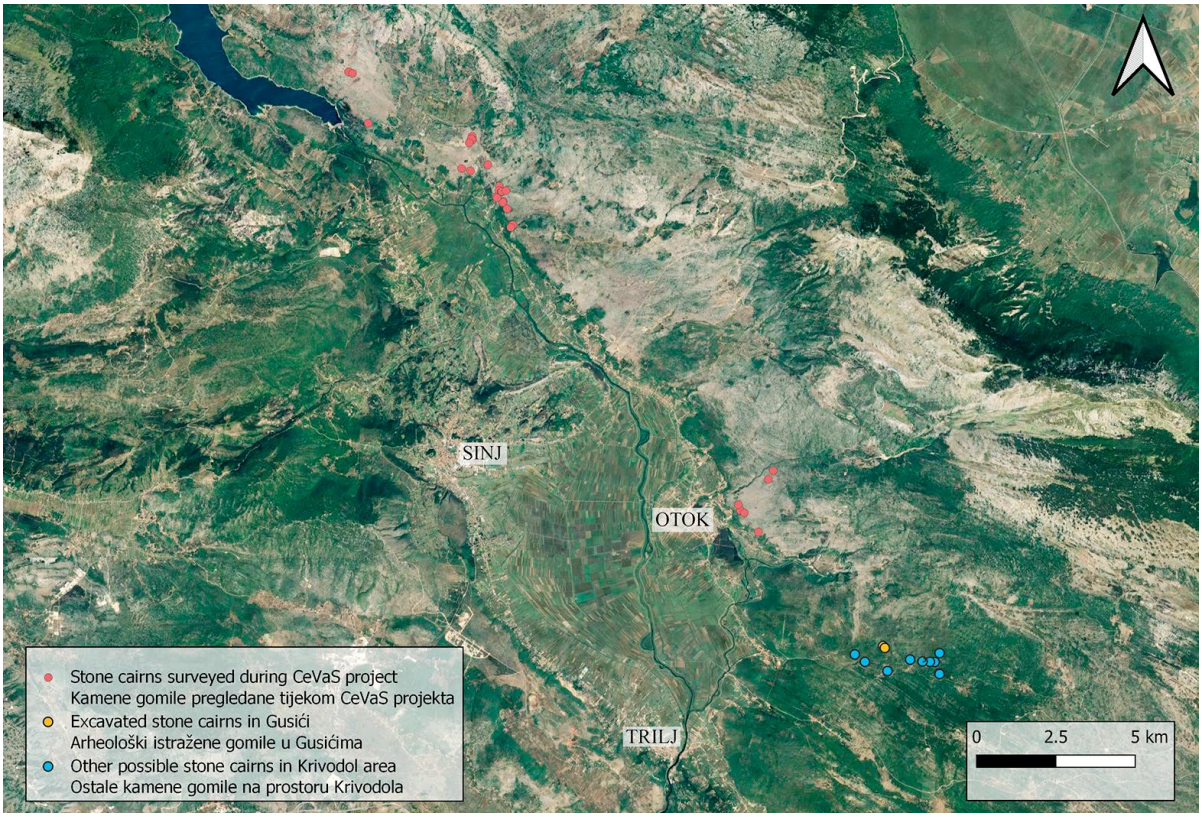
Ključne riječi:
kamene gomile, grobne ciste, Trilj, dolina Cetine, skeletni ostaci

Članak predstavlja rezultate preliminarnog istraživanja dviju gomila otkrivenih u području Krivodola kraj Trilja. Na obje su primijećeni tragovi ilegalnoga istraživanja i otvaranja grobnica. Usprkos tome otkrivene su i neke netaknute grobnice građene u obliku grobnih cista. Ukopi u njima bili su skeletni, pa članak donosi i rezultate preliminarnih analiza skeletnih ostataka. Zahvaljujući njima jednu smo grobnicu metodom C^{14} uspjeli datirati u 2. tisućljeće pr. n. e.

Key words:
stone cairns, cist graves, Trilj, Cetina valley, skeletal remains

The paper presents results of a trial excavation of two stone-cairns located in the area of Krivodol near Trilj in the Cetina valley. Both cairns showed traces of prior ilegitimate excavation, and looting of the graves. Despite that during our excavation we discovered some intact cist graves with skeletal remains in them. Preliminary analyisis of those skeltal remains are also given in the paper. Well preserved samples enabled us to conduct C^{14} dating, which placed the graves into the 2nd millennium B. C. E.



Karta 1. *Karta područja oko Krivodola kraj Trilja s naznačenim položajima dviju gomila kraj zaseoka Gusića nedaleko od Graba* (izradio: M. Vuković)
Map 1 *Map of the Krivodol area with marked locations of stone cairns discussed in this paper* (made by: M. Vuković)

U okviru projekta rekognosciranja doline rijeke Cetine provedeno je kartiranje dijela kamenih gomila.[1] Kamene gomile kao krški fenomen mogu nastati kao posljedica raščišćavanja poljoprivrednih parcela, ali u arheološkom kontekstu često predstavljaju grobne spomenike, dijelove fortifikacijskog sustava utvrđenih naselja, ritualne prostore ili granične oznake.[2] Što se tiče generalnog njihova kronološkog određivanja pojavljuju se u kasnom eneolitiku

[1] Riječ je o projektu CeVaS koji autorica H. Tomas vodi od 2016. zahvaljujući potpori Hrvatske zaklade za znanost (HRZZ). Autor M. Vuković bio je suradnik na tom projektu. Američki kolege Becky Seifried i Wayne Lee su već na samome početku projekta posjetili područje rekognosciranja, proveli obuku studenata, osmislili formulare za rekognosciranje i kreirali GIS bazu, na čemu im zahvaljujemo. Tijekom pripreme rekognosciranja dragocjenu pomoć i savjete pružili su Bill Parkinson, Mike Galaty, Joanne Murphy, Lorenc Bejko, Dimitris Nakassis, Alex Knodell, Michael Boyd, Cyprian Broodbank, John Bennet i Jack Davis. Dodatnu financijsku pomoć je tijekom nekoliko sezona projekta pružila američka fundacija INSTAP (Institute for Aegean Prehistory) sa sjedištem u Philadephiji.

[2] PERKIĆ 2018: 21.

During the archaeological survey of the Cetina river valley, in the scope of the CeVaS[1] project, we undertook a survey and mapping campaign focused on the numerous stone cairns dotted across the valley. Stone cairns, as a karst phenomenon, can form as a final product of field clearing, but in archaeological contexts they usually functioned as burial mounds, as integral parts of the fortification systems of hillforts, places of ritual,

[1] The project has an acronym CeVaS (Cetina Valley Survey). It has been directed by Helena Tomas. Miroslav Vuković was a collaborator on the project. Since 1016 the project has been financially supported by the Croatian Science Foundation (HRZZ). We would like to thank Becky Seifried and Wayne Lee for visiting the survey area at the outset of the project in 2015, for training the survey team, for helping us to establish the survey methodology and for creating survey forms and the GIS data base. Precious guidance while preparing the survey was provided by Bill Parkinson, Mike Galaty, Joanne Murphy,Lorenc Bejko, Dimitris Nakassis, Alex Knodell, Michael Boyd, Cyprian Broodbank, John Bennet and Jack Davis. Additional funding for this project was for several survey seasons provided by INSTAP (Institute for Aegean Prehistory) based in Philadephia.

i traju sve do željeznog doba.[3] Najvažniji pregled ove vrste lokaliteta za područje gornjeg i donjeg toka rijeke Cetine nalazimo u knjizi *Arheološka topografija Cetine*.[4] U toj publikaciji kamene gomile su opisane, te je zabilježen njihov prostorni položaj i eventualni nalazi koji su najčešće bili rezultat pljačkanja gomila. Autor na kraju publikacije donosi i tablični prikaz svih lokaliteta razdijeljenih prema tipu i dataciji, od kojih je jedan od tipova kamena gomila.[5] Ukupno je naveden 81 lokalitet koji se klasificira na taj način, premda količinski gledano postoji problem jer se nekada radi o pojedinoj gomili, a u nekim slučajevima o grupi gomila. Usprkos tomu, od 81 lokaliteta njih 16 je datirano u brončano doba, dok je još dodatnih sedam datirano šire u brončano doba i/ili eneolitik. Neke od kamenih gomila istraživao je sredinom 20. stoljeća Ivan Marović i ustanovio da pripadaju cetinskoj kulturi.[6] Velik je broj neistraženih devastiranih kamenih gomila kao što je, primjerice, slučaj lokaliteta Bugarinova i Bošnjakova gomila. Riječ je o dvjema većim gomilama, promjera 30 metara i nekoliko manjih, promjera 12 metara koje se nalaze sjeverno od Graba uz put koji vodi prema Podima na području oko Krivodola.[7] Sve gomile devastirane su tijekom proširenja puta za Pode, a prema pričanju mještana, uništeni su i grobovi koji su bili u središtu gomila.[8]

Tijekom rekognosciranja u sklopu projekta CeVaS naišli smo na brojne gomile koje su bez dozvole nadležnih tijela raskopavane,

or boundary markers.[2] As for their chronological determination, they first appear during the late Eneolithic period and the latest in the Iron Age.[3] The most thorough overview of the archaeological sites in the Cetina valley can be found in the book *Arheološka topografija Cetine*.[4] Here the stone cairns are described, their locations given and grave goods mentioned (in most cases these grave goods came from looted cairns).)In the table at the end of the book, the author lists all sites classified according to type and dating, including 81 cairns (although some of them represent accumulations of grouped cairns, not individual cairns), 16 of which he dated to the Bronze Age, and seven cairns were broadly dated to the Bronze Age and/or Eneolithic.[5] A number of the Cetina valley stone cairns were excavated in the mid-20th century by Ivan Marović, who dated them to the period of the Cetina culture.[6] There are still a large number of destroyed and uninvestigated cairns, for example at the Bugarinova and Bošnjakova gomila sites. These are two fairly large cairns (30 m in diameter), and several smaller ones (12 m in diameter). They are located to the north of the village of Grab along the road leading to the village of Podi in the area of Krivodol.[7] All mentioned cairns were destroyed during the process of widening the road to Podi. According to the locals, some of these cairns contained central graves that were destroyed during the same road construction project.[8]

3 PERKIĆ 2018: 22. Nezgrapnost primjene termina za ova kronološka razdoblja, uključujući i njihovo korištenje u kontekstu gomila, raspravlja se u: FORENBAHER 2023: 17.
4 MILOŠEVIĆ 1998.
5 MILOŠEVIĆ 1998: 325–343.
6 MAROVIĆ 1963; 1991; MAROVIĆ, ČOVIĆ 1983; za razumijevanje gomila dragocjena je tek objavljena analiza u FORENBAHER 2023, tu na stranicama 20 – 22 on donosi i dragocjen pregled povijesti istraživanja gomila u jadranskoj regiji; od novijih istraživanja gomila cetinske kulture izdvajamo: BATOVIĆ, ČONDIĆ 2005; još neka novija istraživanja gomila nabrojana su u FORENBAHER 2023: 23.
7 MILOŠEVIĆ 1998: 237.
8 MILOŠEVIĆ 1998: 237.

2 PERKIĆ 2018: 21.
3 PERKIĆ 2018: 22. The inappropriateness of using these chronological terms in the context of stone cairns is discussed in: FORENBAHER 2023: 17.
4 MILOŠEVIĆ 1998.
5 MILOŠEVIĆ 1998: 325–343.
6 MAROVIĆ 1963; 1991; MAROVIĆ, ČOVIĆ 1983. A recent detailed study of stone cairns, including those from the Cetina valley, is in: FORENBAHER 2023; on pages 20 – 22 he provides a valuable overview of the history of cairn research in the Adriatic region. Regarding more recent excavations of the Cetina culture cairns, we would like to mention BATOVIĆ, ČONDIĆ 2005; some other recent excavations are listed in: FORENBAHER 2023: 23.
7 MILOŠEVIĆ 1998: 237.
8 MILOŠEVIĆ 1998: 237.

Slika 1. *Primjer razrušene kamene gomile kraj sela Bitelić u središnjoj dolini Cetine; vide se odvaljene kamene ploče opljačkane grobne ciste* (snimila: H. Tomas)
Figure 1 *An example of a destroyed stone cairn by the village Bitelić in the central Cetina valley area. Stone slabs of looted grave cists are visible* (photo by: H. Tomas)

Slika 2. *Još jedan primjer devastirane i opljačkane gomile u predjelu srednjeg toka rijeke Cetine (iz sela: Gilići u Krivodolu); sudionik rekognosciranja stoji u rupi u kojoj je nekoć bio grob gomile* (snimila: H. Tomas)
Figure 2 *Another example of a looted cairn in the central Cetina valley (near the village of Bajagić); A project participant is standing inside a pit that once was a grave of this cairn* (photo by: H. Tomas)

a kamene grobne ciste[9] unutar njih otvorene su i njihov sadržaj odstranjen (sl. 1–2).[10] Lokalni stanovnici uputili su nas na dvije takve

[9] U ovome radu usvajamo Forenbaherovu definiciju grobne ciste: „Cista je grobna konstrukcija napravljena od kamenih ploča koja može biti ukopana u tlo, postavljena na razini podloge ili izdignuta nad njom unutar plašta gomile. U pravilu cista se sastoji od pet grubo priklesanih ploča: dvije duže uzdužne, dvije kraće poprečne te jedne poklopne, a tek ponekad popločano je i dno. Prostor unutar ciste je razmjerno tijesan i ne dozvoljava polaganje odraslog pokojnika u ispruženom položaju.“ (FORENBAHER 2023: 26, bilj. 3). U dvije ovdje opisane gomile u Gusićima, sveukupno smo otkrili šest cista. Sve su bile izdignute nad podlogom u plaštu gomile. Nijedna nije imala popločano dno, ali su sve imale ostale kamene ploče koje je nabrojao Forenbaher u citiranoj definiciji. Dno grobnih cista u Gusićima sastojalo se od zemlje i manjega kamenja. Svih šest grobnih cista u dvjema gomilama iz Gusića bilo je pravokutna oblike dužine oko 1 m, širine 50 – 60 cm. Sve su sadržavale inhumirane ostatke, no ni u jednoj pokojnike nismo našli u položaju u kojima su izvorno bili položeni, već su kosti bile ispremiješane.

[10] Lokalno stanovništvo prenijelo nam je općenito vjerovanje da grobnice u gomilama sadržavaju zlato, pa otud povod za njihovo pljačkanje. Marović pri svojim istraživanjima cetinskih gomila nije spominjao zlatne nalaze, no postoje slučajevi pronalaska zlata u gomilama u unutrašnjosti, npr. u Drinovcima (v. TOMAS 2023).

During the survey of the Cetina valley the participants of the CeVaS project came across many stone cairns that were excavated without legal permission; cist graves[9] within them were broken up (Fig. 1–2) and their contents loot-

[9] In this paper we accept Forenbaher's definition of a cist grave as : „a grave constructed of stone slabs that may be dug into the ground, built at ground level, or elevated above the ground inside the mantle, a cist consists of five rougly shaped stone slabs: two long ones placed lenghtwise, two short ones placed transversally, and a fifth slab serving as a cover; occasionally another slab serves as a base. The rather tight space within the cist does not allow for the deposition of the deceased in a supine position.“(FORENBAHER 2023: 26, note 3). In the two cairns that we excavated and described in this paper (cairns Gusići I and II) we discovered a total of 6 cist graves. They were all built elevated above the ground inside the mantle. They all had stone slabs as decribed by Forenbaher, except for the base slab. The base of the Gusići cist graves consisted of soil and small stones. All 6 cist graves in Gusići were of rectangular shape, about 1 m long and 50 – 60 cm wide.They all contained inhumations, but in none we found remains of the deceased in the position in which they were originally burried. Instead their bones were mixed in all graves.

gomile u blizini sela Gusići – Grab / Krivodol kraj Trilja. Nazvali smo ih Gomila Gusići I i Gusići II. Ove su dvije gomile jedna od druge udaljene oko 100 m. Tijekom prvog obilaska vidjeli smo da je središnja gomila Gusići već bila narušena, tj. vodoravna kamena ploča koja ju je pokrivala bila je uklonjena no kamene ploče koje su je omeđivale s njezinih bočnih strana još su bile *in situ* (sl. 3). Cista se bila činila ispražnjenom, no odlučili smo je svejedno detaljno istražiti u nadi da je nešto ostataka možda ipak ostalo u toj cisti. U rujnu 2016. organizirana je prva dvotjedna faza sustavnih arheoloških iskopavanja te prve, sjevernije kamene gomile (koju smo nazvali Gusići – gomila I). S obzirom na ranija istraživanja u tom području koje je uključivalo spomenuto rekognosciranje prostora uz samu rijeku Cetinu, a čiji je cilj bio ustanoviti prostorne obrasce naseljavanja u dolini, ta dvotjedna sezona iskopavanja relativno male kamene gomile kod sela Gusića bila je namijenjena ostvarivanju triju ciljeva: 1. boljem razumijevanju grobnih struktura prapovijesnih stanovnika ove regije, što onda uključuje i podatke u vezi s načinom pokapanja, vrstom gradnje ovih prapovijesnih grobnica, proučavanjem priloženog arheološkog materijala itd., 2. stvoriti potpuniju, prostornu sliku odnosa između gomila i prapovijesnih naselja, 3. Ustanoviti obrasce topografskog smještaja gomila u odnosu na tok rijeke Cetine.

Selo Gusići nalazi se istočno od Trilja, na području Krivodola (karta 1). Zračnim snimkama te terenskim pregledom uz samo selo Gusiće zabilježene su dvije kamene gomile u Gusićima promjera od oko 20 m te visine od oko 2 – 3 m. Te su dvije gomile međusobno udaljene oko 100 m. Gotovo su identične visinom i promjerom. Od prestanka intenzivnih stočarskih i poljoprivrednih aktivnosti u tom području krajem 20. stoljeća vegetacija je izrazito nabujala, što se odlično vidi usporedbom današnjih snimaka te ortofotosnimke iz 1968. godine,

ed.[10] Local inhabitants showed us two partly looted cairns by the village of Gusići – Grab / Krivodol area near Trilj. We named them Gusići I and II. They are 100 m apart. Upon the very first visit we noticed that the central cist grave of Gusići I was disturbed as the horizontal stone slab that once covered it was moved to the side; however, the stone slabs that formed the sides of the cist grave were still *in situ* (Fig. 3). In the hope that some remains could still be unearthed from this cist grave which seemed emptied, we decided to conduct a thorough excavation of this cairn (Gusići I). In September 2016, the first two-week phase of the systematic archaeological excavations of the first, northern stone cairn (which we called Gusići - cairn I) was organized. With regard to earlier research in the area, which included the aforementioned survey of the area along the Cetina river, with the aim of establishing spatial patterns of settlement in the valley, that two-week excavation season of a relatively small stone cairn near the village of Gusići was intended to achieve three goals: 1) a better understanding of burial structures of the prehistoric inhabitants of the Cetina valley (architecture of cairns, burial practices, types of grave goods); 2) an understanding of topographical patterns of the location of stone cairns, especially in relation to already known, or yet to be discovered prehistoric settlements of the Cetina valley; 3) the establishment of possible topographical patterns in the location of cairns in relation to the course of the Cetina river.

The village of Gusići is located in the wider area called Krivodol to the east of the town of Trilj (Map 1). Aerial photos, project survey and information from the locals led us to the two above-mentioned cairns, Gusići I

[10] Local inhabitants of the area told us that there is a general belief that graves in cairns contained gold. Hence the motivation for their looting. Marović never mentioned discoveries of gold during his excavations of Cetina valley cairns. However, further inland there are examples of cairns with gold, for example at Drinovci (see TOMAS 2023).

Slika 3. *Zračna snimka gomile Gusići I prije početka iskopavanja 2016. g. Opljačkana grobna cista (grob 1) vidljiva je unutar plave kružnice* (izradio: M. Vuković)
Figure 3 *Aerial image of the cairn Gusići I before the beginning of the excavation in 2016. The central looted grave is visible in the blue circle* (made by: M. Vuković)

pa je zbog toga pristup ovakvim lokacijama prilično otežan (sl. 14, 17, 19), a bilo kakva istraživanja zahtijevaju prethodno krčenje i čišćenje vegetacije što je i ovdje bio slučaj.

Prva arheološka istraživanja provođena su na sjevernijoj gomili, koja je shodno imenu sela nazvana „Gusići gomila I". Odmah napominjemo da zbog raznih razloga iskopavanje ove gomile nije u potpunosti završeno, već su potrebna finalna iskopavanja da bismo se spustili na razinu žive stijene.

Zatečena situacija na gomili jasno je pokazivala da je središnji grob (grob 1) gotovo u potpunosti opljačkan, što se vidi na slikama 3 i 5, tako da je u samoj sredini gomile bila prokopana jama promjera od oko 1,5 m koja je na sreću nelegitimnih „istraživača" pogodila ravno u samo mjesto ukopa (nemamo pouzdanih podataka o tome jesu li

and II, separated from each other by some 100 m of dense vegetation. The two cairns are of roughly identical dimensions: 20 m in diameter and 2 – 3 m high. Aerial photography of the region from 1968 has shown that the vegetation is much more dense nowadays – an outcome of reduction in agricultural activities since early and middle 20th century. Access to cairns is thus obstructed by heavy vegetation (Fig. 14, 17, 19). As a consequence, our investigation in 2016 required demanding work in clearing the area around the cairns and creation of clear spaces for depositing stone as it was being excavated and removed from the cairns.

The first archaeological research was carried out on the northern cairn, which was called "Gusići I cairn" after the name of the village. It is worth mentioning that due to various rea-

tada u grobu bili nađeni kakvi prilozi). Bilo je govora da su u toj opljačkanoj cisti nađeni brončani predmeti, no ako ih je i bilo, nama oni nikad nisu predočeni. Pokušaji daljnjih nelegitimnih kopanja primijećeni su i na drugim dvama mjestima na gomili, no te druge dvije iskopane jame evidentno nisu pogodile mjesto ukopa pa smo tijekom 2016. g. tako u gomili Gusići i otkrili dvije netaknute grobne ciste (grobovi 2 i 3; sl. 6, 9). Valja napomenuti da su na velikoj većini rekognosciranih kamenih gomila na cetinskom području zabilježeni neuspjeli pokušaji uklanjanja eventualnih dragocjenih grobnih priloga, što se jasno vidi po iskopanim jamama na samim gomilama, koje su najčešće bile u središtu gomile (sl. 1–2). Ravne kamene ploče koje su činile pokrovnu konstrukciju samoga groba (grobne ciste) bile su u velikom broju slučajeva odvaljene u stranu, a u zapuni groba nije bilo ostataka kostiju niti bilo kakvih drugih arheoloških nalaza. Što se tiče zabilježenih slojeva izgradnje kamene gomile, u Gusićima smo zabilježili gornji (površinski) sloj sastavljen od većeg neobrađenog kamenja dužine 20 – 50 cm, čime ova gomila nalikuje gomili u Drinovcima.[11] Ispod njega slijedio je sloj koji se sastojao od zemlje i sitnijeg kamenja, u kojem su se nalazili grobovi (kamene ciste).

Nakon uklanjanja prvog, gornjeg, sloja gomile Gusići I i sanacije ostataka narušenog centralnog groba (groba 1), uz pokrovni kamen groba 1 koji je bio opljačkan pronađene su životinjske kosti. Sav iskopani osteološki materijal poslije je predan na analizu u laboratorij Antropološkog centra HAZU-a iz čijeg izvještaja donosimo sve podatke u vezi s osteološkim materijalom.[12] Uz grob 1 iza odvaljene pokrovne kamene ploče nađena su 33 konjska zuba i oba petrozna dijela

[11] V. opis u: TOMAS 2017: 11.

[12] Zahvaljujemo prof. dr. sc. Mariju Šlausu što je zajedno sa svojim suradnicima obradio ovdje opisani koštani materijal i dopustio nam da rezultate njihove obrade objavimo u ovom članku.

sons the excavation of this pile is not completely finished, but final excavations are needed to reach the level of the bedrock.

The excavation revealed that the central grave (grave 1) was almost completely robbed, which can be seen in figures 3 and 5, so that a pit with a diameter of about 1.5 m was dug in the very middle of the cairn. The looters were lucky to dig into the part of the cairn where the central cist grave was situated. We do not have any trustworthy report that the grave contained any grave goods; there was a rumour that bronze daggers were found in it, but they were never shown to us. Since no other cist graves in the two Gusići cairns that we excavated contained any metal (a total of 6 cist graves, three in each cairn) we suspect that the rumour about bronze daggers is unfounded. We noticed attempts at further illegal excavations at another two locations in Gusići I, but in those two cases the looters had no luck in finding graves – in other words, they missed them. That was fortunate for our team, and during the 2016 season we unearthed two intact cist graves (graves 2 and 3; Fig. 6, 9). It is worth mentioning that on the vast majority of surveyed stone cairns in the Cetina region, unsuccessful attempts to remove possible precious grave goods were recorded, which can be clearly seen from the excavated pits on the cairns, most often in the center of the cairn (Fig. 1–2). The flat stone slabs that constituted the covering structure of the grave itself (grave cists) were in many cases rolled aside, and there were no remains of bones or any other archaeological finds in the filling of the grave. In Gusići cairn we detected two stratigraphical layers: the topmost layer was made up of large irregular stones, 20 – 50 cm long. In this aspect it resembles the above mentioned cairn from Drinovci.[11] Below this was a layer of smaller stones and earth; this was the layer in which cist graves were embedded.

[11] See description in: TOMAS 2017: 11.

Slika 4. *Pokrovna kamena ploča groba 2 gomile Gusići I* (snimio: J. Triplat)
Figure 4 *Cover stone of grave 2 at Gusići I* (photo by: J. Triplat)

sljepoočne kosti konja.[13] U zapuni groba 1 nije pronađen osteološki materijal, no u samoj blizini tog opljačkanog groba u drugom sloju (sloj zemlje i sitnijeg kamenja) nađene su dislocirane kosti mandibule i zubi koji su mogli pripadati pokojniku iz centralnog opljačkanog groba, a čija je starost određena na 30 i više godina, dok se spol nije mogao odrediti. Uz navedeno, bilo je prisutno i nekoliko životinjskih kostiju.

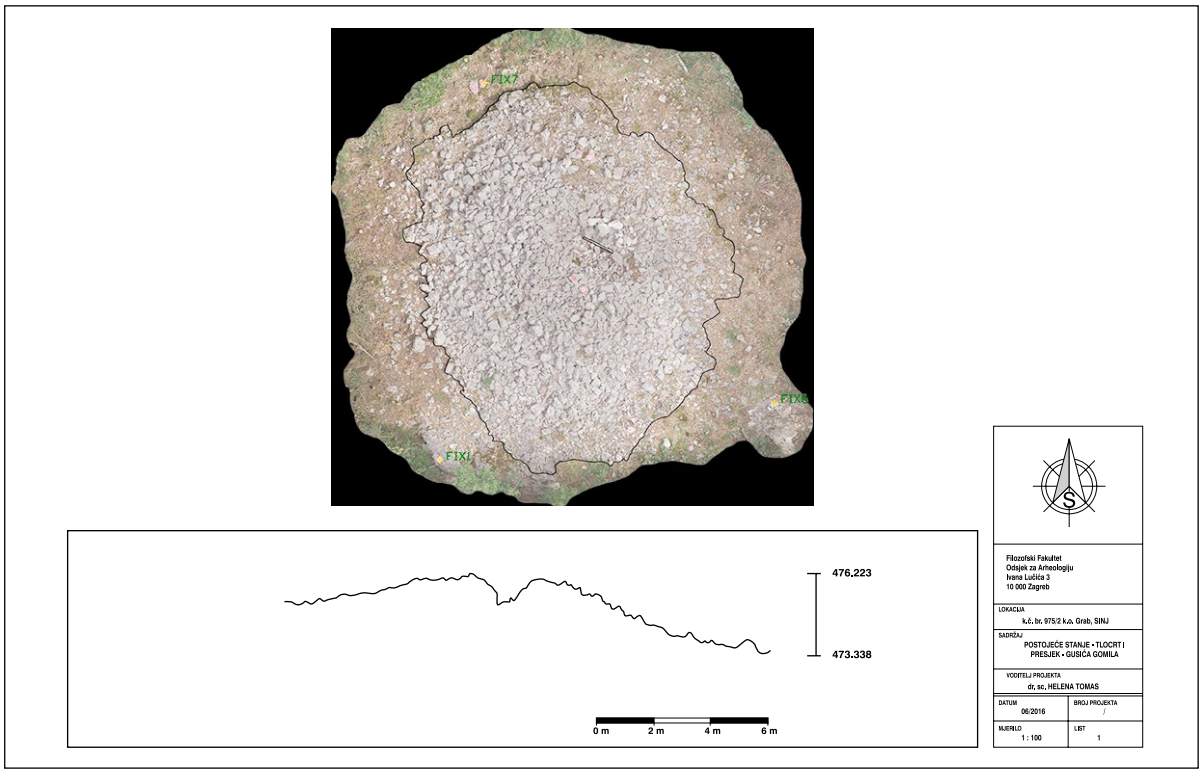
Nekoliko metara sjeverozapadno od groba 1 našli smo netaknutu grobnu cistu (grob 2) koja je također bila sagrađena od plosnatih kamenih ploča te pokrivena većom amorfnom kamenom pločom (sl. 4–6). Naposlijetku je svega metar južno od groba 1 otkriven i treći grob s cistom građenom na istovjetan način. Zapune svih otkrivenih

While clearing the area of the central, looted, grave of Gusići I we found remains of animal bones. All the excavated osteological material was later submitted for analysis to the laboratory of the Anthropological Center of the Croatian Academy of Sciences and Arts, from whose report we present all the data related to the osteological material.[12] Behind the broken-off cover slab removed from grave 1, 33 horse teeth and both petrous parts of the horse´s temporal bone were found.[13] No osteological material was detected in the grave filling. However, near the looted grave, in the second layer (the layer of earth and smaller stones), dislocated human mandible bones and teeth were found that could have belonged

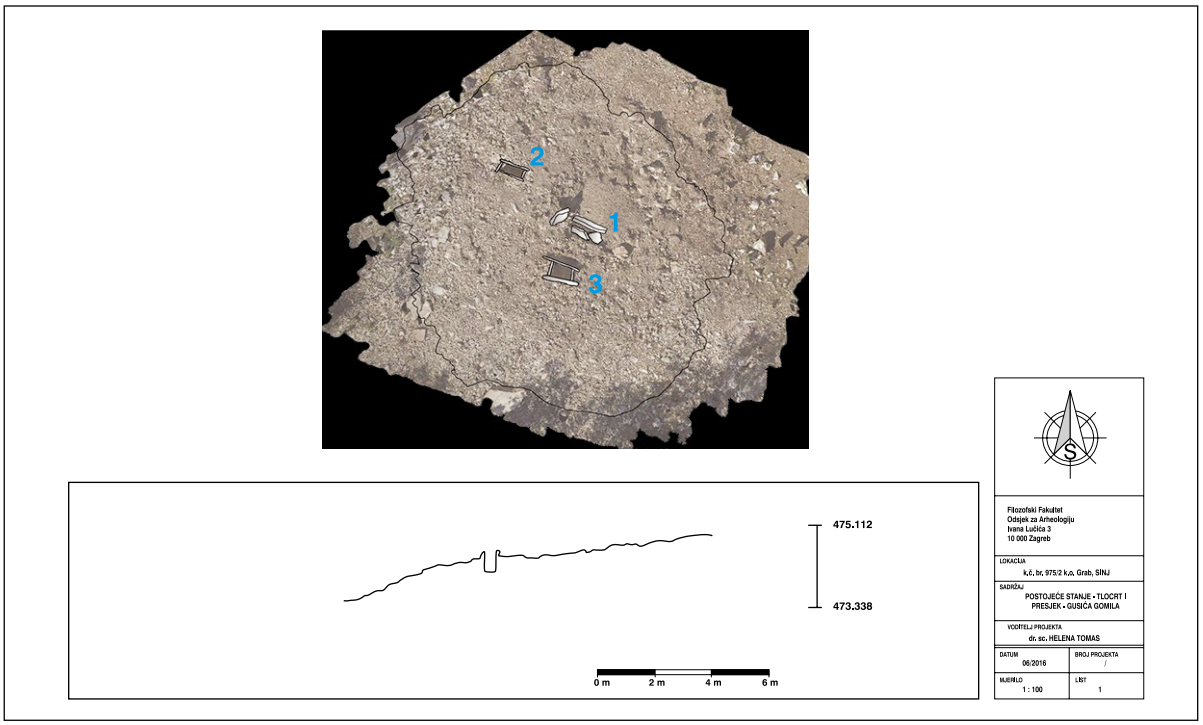
[12] We would like to thank prof. Mario Šlaus for the analysis of the mentioned osteological material and for allowing us to publish the data of that analysis in this paper.

[13] FORENBAHER (2023: 45) spominje da životinjske kosti nađene u nekim drugim gomilama, npr. u Pazhoku možda odražavaju ostatke životinja koje su činile dio obrednog rituala. Moguće je da su spomenuti zubi i kosti konja iz Gusića I također odraz sličnog rituala.

[13] FORENBAHER (2023: 45) mentions animal bones discovered at some other cairns (e.g. at Pazhok) perhaps they are remains of some funerary ritual. It is possible that the animal remains from Gusići I reflect a similar practice of funerary ritual.



Slika 5. *Tlocrt i presjek gomile Gusići I prije početka istraživanja 2016.g.; udubina vidljiva u presjeku je opljačkan grob 1* (izradio: M. Vuković)
Figure 5 *Plan and cross section of Gusići I before the trial excavation in 2016 – the depression visible in cross section is a looted grave 1* (made by: M. Vuković)



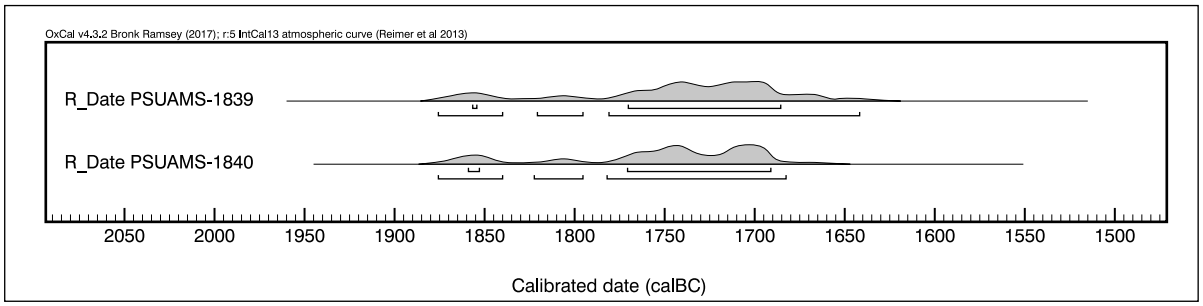
Slika 6. *Plan i presjek gomile Gusići I po završetku iskopavanja 2016 g. (grobne ciste 1, 2, i 3 označene su brojevima u plavoj boji), pravokutna udubina vidljiva u presjeku je grobna cista* (izradio: M. Vuković)
Figure 6 *Plan and cross section of Gusići I cairn upon at the completion of the 2016 excavation season (cist graves 1, 2 and 3 are marked by numbers in blue colour); the rectangular depression visible in cross section is the cist grave 2* (made by M. Vuković)

Slika 7. *Sadržaj grobne ciste 3 gomile Gusići I nakon uklanjanja pokrovne ploče* (snimila: H. Tomas)
Figure 7 *Contents of grave 3 at Gusići I upon the removal of cover slab* (photo by: H. Tomas)

grobova u pravilu su vrlo plitke, do 10 cm od dna. U grobu 2 pronađeni su relativno dobro uščuvani osteološki ostatci (kosti ruku te zubi gornje i donje čeljusti) najmanje troje djece te malih životinja. Riječ je o djeci starosti 9 – 10 godina, 6 –7 godina, te novorođenčetu starom manje od 1 godine. U grobu 3 pronađeno je najviše osteološkog

to the deceased from the central looted grave: whose age was determined to be 30 years, while the gender could not be determined. In addition to these, several animal bones were found at this point.[14]

[14] We would like to thank prof. Mario Šlaus once more for providing us with these data.



Slika 8. *Rezultati C14 analiza kostiju groba 2 gomile Gusići I* (izradio: Penn State laboratory)
Figure 8 *Results of the C14 analyis of the material from cist grave 2 in the Gusići I cairn (calibrated dates)* (made by: Penn State laboratory)

materijala (sl. 7): duge kosti udova, kosti lopatice, kosti rebara te zubi gornje čeljusti) za koje je utvrđeno da pripadaju ženi starosti 20 – 30 godina.

Nalazi keramike i metala u gomilama cetinske doline vrlo su rijetki. Ulomci manjih nedijagnostičkih fragmenata keramike u gomili Gusići I nađeni su većinom u plaštu najvišeg njezina sloja (veće neobrađeno kamenje), a nađen je i recentniji metalni ulomak oštrice. Keramički materijal, nažalost, nije bilo moguće pobliže datirati zbog nedostatka dijagnostičkih obilježja. No C^{14} analiza kostiju grobnice 2 iz gomile Gusići I grobnicu datiraju u prvu polovicu 2. tisućljeća pr. Kr., točnije između 1950 i 1650. g. pr. n. e. (sl. 8).

Pronađene kosti ne pokazuju nikakve patološke promjene, a zubi ne upućuju na prisutnost karijesa ili drugih defekata, pa prema tome možemo reći da je prehrana ovih pokojnika bila zadovoljavajuća.[14] Ipak, s obzirom na njihovu malu starost u vrijeme smrti i priličnom broju djece pokopane u opisanim grobovima, pretpostavljamo da je kvaliteta života bila slaba, vjerojatno su bile prisutne bolesti, koje nisu ostavile traga na nabrojenim pronađenim kostima. Detaljnije analize osteološkog materijala iz ove gomile bile bi veoma korisne, recimo DNK analiza koja bi nam mogla reći jesu li kosti mlade žene iz groba 3 moguće ostaci majke djece

[14] Iskoristili bi još jednom priliku i zahvalili prof. dr. sc. Mariju Šlausu na ovim podatcima.

A couple of metres to the south-west of grave 1 we found an intact grave 2, constructed as typical cist grave, with flat stone slabs walling the grave and another slab covering it (Fig. 4, 6). Finally, only a meter to the south of grave 1 we found an intact cist grave 3. The fillings of the two intact graves were shallow, only about 10 cm from the bottom. Relatively well-preserved osteological remains (hand bones, maxillary and mandibular teeth) of at least three children and small animals were found in grave 2. These children were aged 9–10, 6–7, and there was a newborn less than one year old. The osteological remains in grave 3 (Fig. 7) consisted of long bones of arms and legs, scapular bones, rib bones and maxillary teeth, determined to belong to a female aged 20–30 years.

Pottery and metal objects are rarely found in cairns of the Cetina valley. Small and undiagnostic pottery fragments were found in the mantle of the topmost layer of Gusići I. There we also found a fragment of a metal blade, but it was a modern piece. The mentioned pottery fragments could not be determined chronologically, since they had no diagnostic features. However, bones from the grave 2 were well enough preserved for C^{14} analysis, which placed the grave in the first half of the 2nd millennium B.C. more precisely between 1950 and 1650 B.C.E. (Fig. 8).

The bones found do not show any pathological changes, and the teeth do not indicate the presence of caries or other defects, so we can say that the nutrition of these deceased

Slika 9. *Izgled gomile Gusići I po završetku iskopavanja 2016. godine* (snimila: H. Tomas)
Figure 9 *Cairn Gusići I upon the completion of the excavation in 2016.* (photo by: H. Tomas)

Slika 10. *Gomila Gusići II prije početka iskopavanja 2016.* (snimila: H. Tomas)
Figure 10 *Gusići II cairn prior to the beginning of excavation in 2016* (photo by: H. Tomas)

pokopane u grobu 2.[15]

Kao što je navedeno prije, potpuno iskopavanje gomile nije još dovršeno. Preostaje rastaviti otkrivene kamene ciste (sl. 9) i spustiti se do žive stijene. Kao što je ustanovio Ivan Marović, pripadnici cetinske kulture katkad su svoje gomile znali graditi na sloju fragmenata cetinske keramike.[16] U gomili Gusići I nije nađen ni jedan fragment keramike koji bi se dao povezati s cetinskom kulturom. No, po rastavljanju grobnih cista možda bismo ispod njih imali sreće naći takve cetinske ulomke. Na temelju topografske karte bilo je zanimljivo primijetiti da je većina gomila u dolini Cetine bila smještena na brežuljcima s kojih se pruža dobar pogled na rijeku. Ako prihvatimo mogućnost da bi naselja bila smještena uz rijeku, možda se iz položaja gomila koje, kao da „nadgledaju" dolinu može iščitati eventualna simbolična slika pokojnika koji nadziru svoje potomke u eventualnim naseljima uz rijeku.

U selu Gusićima istražili smo još jednu gomilu (Gusići gomila II) (sl. 10) koja je svega stotinjak metara udaljena od gomile Gusići I. U njoj smo otkrili tri netaknute kamene ciste s dobro uščuvanim kostima (sl. 11–12).[17] Ni u ovoj gomili nije bilo grobnih priloga. Središnja kamena cista gomile bila je veoma impozantna. Njezinu pokrovnu ploču (sl. 13) uspjeli smo ukloniti tek nakon višednevnog i mukotrpnog truda velike skupine sudionika istraživanja. Takva impozan-

[15] Za potrebe takve analize sav osteološki materijal predan je prof. Philippu Stockhammeru na Sveučilištu u Münchenu.

[16] Forenbaher nam spominje da su se dodatni ukopi znali naći u jamama nad kojima su bile podignute gomile. On navodi primjer gomile kod Rakića Kuća, pod kojom su u jami nađeni ulomci kostura djeteta uz koji su bile odložene antropomorfne figurine (FORENBAHER 2023: 28, 41). Primjeri poput ovoga govore nam da je pod dosad otkopanim slojevima dviju gomila u Gusićima moguće naći i daljnje ukope.

[17] Taj osteološki materijal obrađuje dr. sc. Anna Osterholtz sa Sveučilišta u Mississipiju i njezine rezultate još iščekujemo. Preliminarna obrada kostiju provođena tijekom njihovog vađenja iz cista govori da je gomila Gusići II sadržavala inhumacije oko 10 različitih individua. Njihove su kosti u cistama bile izmiješane.

was satisfactory. However, considering their young age at the time of death and the considerable number of children buried in the described graves, we assume that the quality of life was poor; diseases were probably present, which did not leave a mark on the listed bones found. A more detailed study of the osteological material from this site would be very useful, for example a DNA analysis of bones from graves 2 and 3, which could reveal if the bones of a young woman from grave 3 were remains of the mother of one or more children whose bones were discovered in grave 2.[15]

For various reasons the excavation of Gusići I has not been completed. The remaining tasks include dismantling of cist graves (Fig. 9) and excavation of the remaining layers of the cairn down to the bedrock or virgin soil. Ivan Marović established that the Cetina culture cairns were in some cases built on top of a layer/stratum of fragmentary Cetina culture pottery.[16] As mentioned above, so far excavation of the Gusići cairns has not brought to light a single pottery fragment that relates to Cetina culture. But on the basis of earlier excavations in Cetina valley by I. Marović, there is hope that the dismantling of cist graves and continued excavation of the two cairns discussed in this paper may change that picture. It was interesting to observe on the topographic map that most cairns in the Cetina valley were positioned on hill tops or hill ridges with an excellent view of the river. If we accept that the settlements would have been located along the river, this positioning of cairns could have a symbolic meaning, e.

[15] For the purposes of such an analysis, all osteological material was sent to prof. Philipp Stockhammer at the University of Munich.

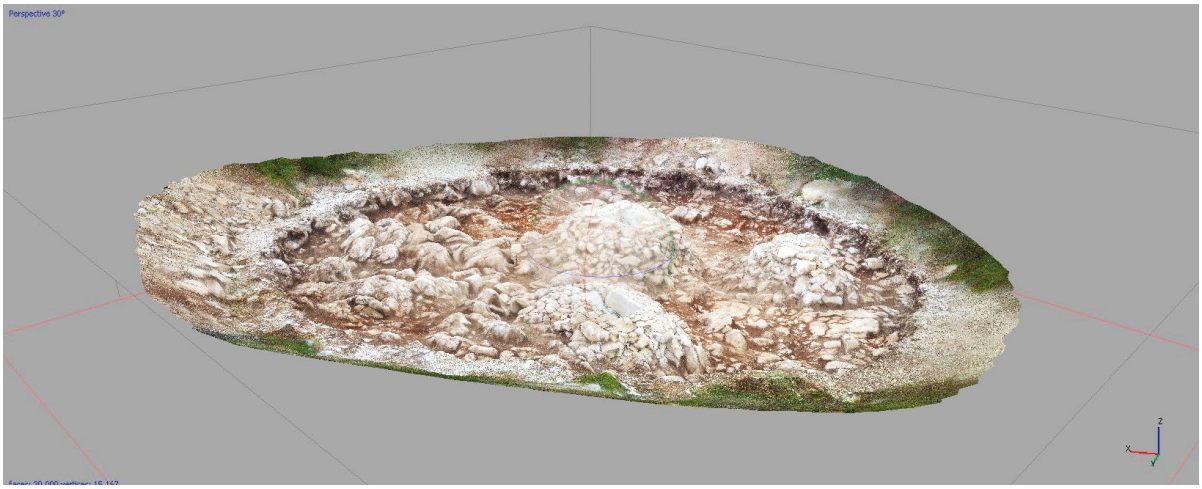
[16] Forenbaher claims that in some case additional burials were found in crevices in rocks on top of which cairns were built. As an example he mentions cairns at the site of Rakića Kuća. There, in a crevice below the cairn, bones of a child were deposited together with anthropomorphic figurines (FORENBAHER 2023: 28, 41). Such examples indicate that the final excavations of the two cairns in Gusići might reveal further discoveries, such as additional burials.

Slika 11. *Prof. Anna Osterholtz tijekom vađenja kostiju iz grobnica gomile Gusići II* (snimila: H. Tomas)
Figure 11 *Prof. Anna Osterholtz during the process of pulling out the bones from cist graves at Gusići II* (photo by: H. Tomas)

Slika 12. *Sadržaj grobnice 2 gomile Gusići II* (snimila: H. Tomas)
Figure 12 *Contents of grave 2 at Gusići II* (photo by: H. Tomas)

Slika 13. *Sudionici iskopavanja na uklonjenoj pokrovnoj kamenoj ploči središnjeg groba gomile Gusići II* (snimio: J. Triplat)
Figure 13 *Participants of the excavation on the removed cover stone slab of the central grave at Gusići II* (photo by: J. Triplat)

Slika 14. *Položaj gomile Gusići II u krajoliku* (snimio: M. Vuković)
Figure 14 *The position of the Gusići II cairn in the surrounding landscape* (photo by: M. Vuković)



Slika 15. *3-D model gomile Gusići II po završetku iskopavanja* (izradio: M. Vuković)
Figure 15 *A 3-D model of Gusići II upon the completion of excavation in 2016* (made by: M. Vuković)

tnost grobne strukture sugerira da je u njoj mogao biti ukopan pokojnik višeg staleža, možda čelnik zajednice. Grobni prilozi veće vrijednosti išli bi u prilog takvoj interpretaciji, ali, nažalost, kao što je već navedeno, grobnih priloga nije bilo uopće. Bez obzira na nedostatak priloga, impresivni su trud i resursi koje je zahtijevala gradnja takve grobnice (pod resursima misli se na gotovo megalitske[18] kamene ploče grobnih cista,

[18] Stašo Forenbaher gomile opisuje kao najstarije poznate

g. that the deceased ancestors were placed/buried in positions from which they could metaphorically observe and protect their offspring in the supposed settlements by the river.

In the village of Gusići we investigated another cairn (Gusići II cairn) (Fig. 10) which is only about a hundred meters away from Gusići I cairn. Gusići II cairn has revealed three cist graves, built in the same manner. All three were intact. These also contained no grave goods, but osteological remains were numerous and

Slika 16. *Zračna snimka gomile Gusići II po završetku probnih iskopavanja* (snimio: M. Vuković)
Figure 16 *An aerial image of Gusići II once all cist graves were uncovered and emptied* (photo by: M. Vuković)

pogotovo one horizontalne koje su ih pokrivale) (sl. 14–16). Zasad nam je nemoguće ustvrditi njihovu provenijenciju, ali očito je da je napor za njihovu dopremu i postavljanje bio golem, što govori o gospodarskoj i radnoj moći zajednice (engleski termin je *energy expenditure*) koja je gomilu konstruirala. Ni u jednom sloju plašta dviju gomila u Gusićima nismo primijetili tragove rasutih spaljenih ostataka pokojnika, što je jedna od karakteristika ukopa u gomilama istočnoga Jadrana,[19] a ponekad su i sami fragmenti keramike bili razasuti kroz plašt;[20] ni ova druga pojava nije primijećena u gomilama u Gusićima. Također, u Gusićima nismo primijetili ukope naknadno dodane u gomilu. Naime, u dolini Cetine gomile su se znale rabiti tijekom dužeg vremenskog razdoblja, tako su

monumentalne građevine na Jadranu (FORENBAHER 2023: 17).

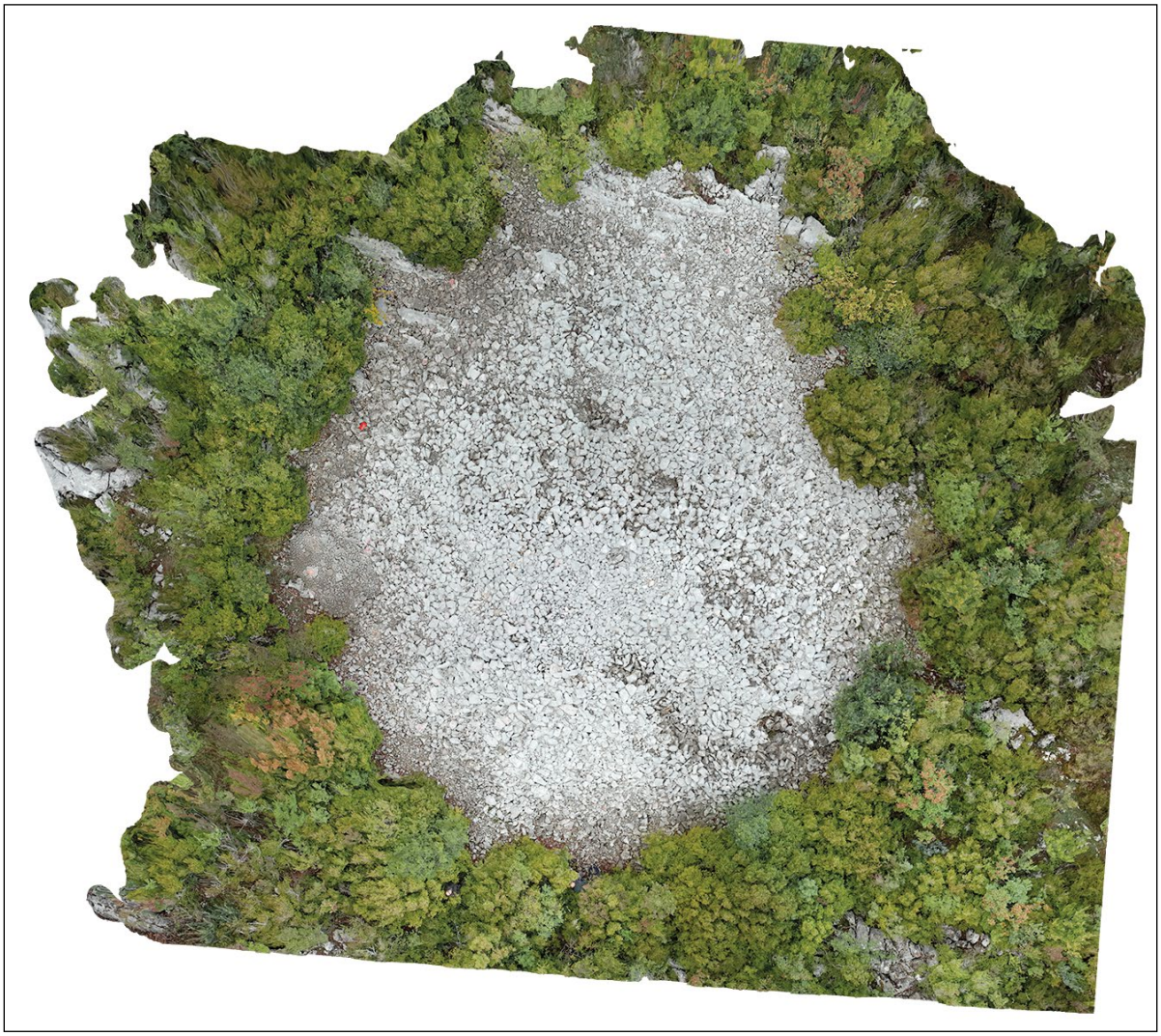
19 Incineracija je karakteristična za neke gomile cetinske kulture (FORENBAHER 2023: 49); za obred spaljivanja pokojnika v. KUKOČ 2009.

20 FORENBAHER 2023: 22, 28, 34.

well preserved (Fig. 11–12).[17] Neither this cairn yielded grave goods. The central cist grave was indeed impressive. Its covering stone slab was large, and so heavy that it took us days of hard work by a large group of the excavation team and several workmen to move it off the grave (Fig. 13). Such a magnificent cover obviously suggests that it was the grave of a highly positioned member of the community, perhaps of a chieftain. The effort that must have been invested in obtaining and positioning this nearly megalithic[18] cover slab gave us hope of uncovering a grave richly furnished with goods. But to our huge disappointment we found it empty, except for remains of a male burial. This central grave had not been looted; we found it intact, so obviously the person was buried

17 They are being studied and analysed by prof. Anna Osterholtz, Mississippi State University. Her preliminary observations suggest that perhaps 10 diffferent individuals were burried in Gusići II cairn. Their bones were mixed up in cist graves.

18 Stašo Forenbaher takes stone cairns as the earliest monumental buildings of the Adriatic area (FORENBAHER 2023: 17).



Slika 17. *3-D model Kukine gomile* (izradio: M. Vuković)
Figure 17 *3-D model of the Kuko cairn* (made by: M. Vuković)

Slika 18. *Presjek Kukine gomile* (izradio: M. Vuković)
Figure 18 *A cross section of the Kuko cairn* (made by: M Vuković)

se u plašt znali dodati kasniji ukopi koji nisu morali biti povezani s inicijalnim ukopima u grobnim cistama gomile.[21]

[21] FORENBAHER 2023: 10, 19, 22, 23, 25, 29.

without any grave goods. Despite the lack of grave goods, the resources expended in obtaining the nearly megalithic stone slabs that walled and covered the cist graves and in constructing the two cairns described in this paper are truly

Slika 19. *Pogled na vegetacijom obraslu Kukinu gomilu slikano s bedema moguće gradine nad selom Gilići u Krivodolu* (snimila: H. Tomas)
Figure 19 *Kuko cairn visible from the drystone fortification wall of the hillfort above the hamlet of Gilići in Krivodol* (photo by: H. Tomas)

Slika 20. *Kukina gomila – na njenom vrhu stoji vlasnik okolnoga zemljišta, Damir Gilić* (snimila: H. Tomas)
Figure 20 *Kuko cairn (with the the owner of the surrounding land, Damir Gilić standing on top of it)* (photo by: H. Tomas)

ZAKLJUČAK

Gomile u Gusićima nisu zasebna pojava, proučavajući dostupne zračne i satelitske snimke, otkrili smo čitav niz kamenih gomila koje se nalaze na području Krivodola. Za sada smo ih evidentirali desetak, a njihov detaljniji pregled i opis nam tek slijedi. Uz same gomile, važno je spomenuti i ostatke suhozidnog bedema između zaselaka Gilića i Kuka (Prilog 1), koji bi mogli biti sastavni dio prapovijesnog naselja. Neposredno uz bedeme nalaze se barem dvije kamene gomile.

Važno je također spomenuti da se na prostoru Krivodola nalaze još i dvije arheološki zanimljive pozicije koje bi također mogle označavati lokaciju prapovijesnog naselja, Gradina i Glavica. Arheološki krajolik Krivodola kojim dominiraju prapovijesne strukture sastavni je dio šireg krajolika jugoistočnog dijela doline rijeke Cetine. Riječ je o tranzitnom području s prirodnim komunikacijskim rutama koje povezuje područje današnje Hercegovine s cetinskim krajem. Komunikacijske rute na tom području danas, a čini se i u antičkom periodu, prolaze kraj naselja Velića[22] i pokraj utvrde Čačvina, prema Vrpolju i granici prema Bosni i Hercegovini. Moguće je da je u prapovijesti postojala i druga ruta koja se pružala od Graba, preko Krivodola, Ljuta i Voštana prema prostoru današnje Hercegovine. Ovoj teoriji, za čije je potvrđivanje potrebno još mnogo istraživanja, ide u prilog i činjenica da se na toj ruti nalazi još nekoliko važnijih prapovijesnih lokaliteta: gradina iznad Graba,[23] gradina u Ljutu,[24] gradina Jelinak.[25] Nedavna daljinska i zaštitna arheološka istraživanja u obližnjim Vedrinama pokazala su impozantnu razinu očuvanosti prapovijesnih struktura u istim geomorfološkim uvjetima kakve nala-

[22] TONČINIĆ 2020.
[23] MILOŠEVIĆ 1998: 251.
[24] MILOŠEVIĆ 1998: 252.
[25] MILOŠEVIĆ 1998: 258.

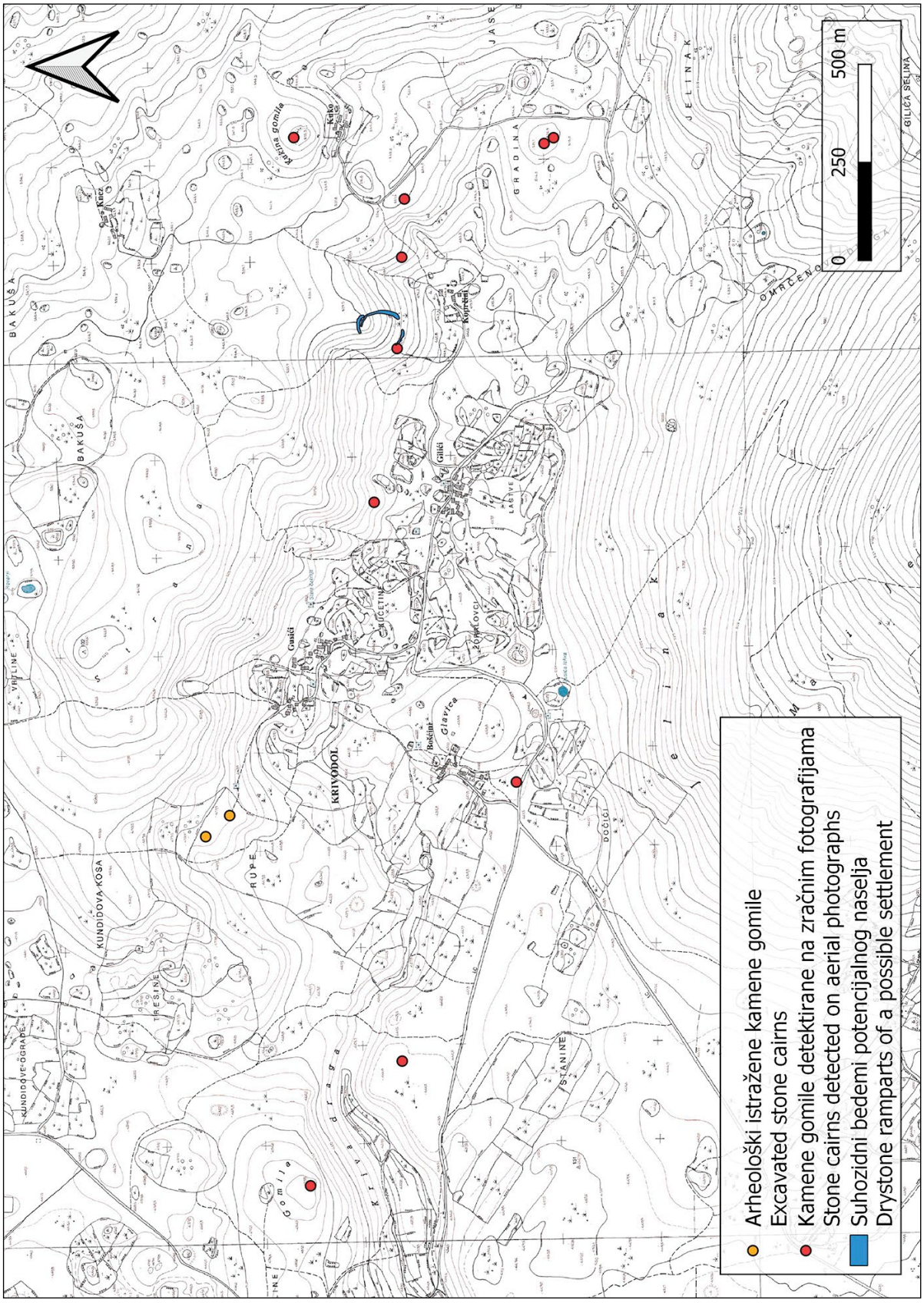
impressive (Fig. 14–16). We could not determine where the stone slabs were quarried and brought from, but the work force needed must have been enormous. Transportation of the stone needed for building the cairn must have been even more laborious and time consuming. In neither of the two cairns at Gusići did we notice incinerated remains scattered in the cairn mantles (a feature present in some cairns of the Cetina culture),[19] occasionally the pottery fragments were also scattered in the mantle;[20] the latter feature was not present in Gusići either. In some cases additional burials were inserted into the mantle of some cairns, that could be much later and unrelated to the burials in cist graves[21] That feature was not detected in the case of the Gusići cairns.

CONCLUSION

The two Gusići cairns are not an isolated feature. The aerial survey and satellite imagery of the Krivodol area has revealed at least another 10 cairns. In addition to cairns, it is important to mention the remains of a dry stone rampart between the hamlets of Gilići and Kuko (Appendix 1), which could be an integral part of the prehistoric settlement. At least two stone cairns are located next to the ramparts.

In addition to the numerous cairns in the area of Krivodol, there is another interesting feature, a dry stone fortification wall between the hamlets of Gilići and Kuko (see Appendix 1). This wall may have been part of a prehistoric settlement. There are at least two cairns in the immediate vicinity of the wall. In the area of Krivodol there are two additional locations of archaeological interest; these are called Gradina and Glavica and perhaps they are also remnants of the prehistoric habitation of the area. The archaeolog-

[19] Cremation is characteristic of some cairns of the Cetina culture (FORENBAHER 2023: 49); for the practice of cremation in the Adriatic area see KUKOČ 2009.
[20] FORENBAHER 2023: 22, 28, 34.
[21] FORENBAHER 2023: 10, 19, 22, 23, 25, 29.



Prilog 1. *Topografija područja Krivodola kraj Trilja* (izradio: M. Vuković)
Appendix 1 *Topographic map of the Krivodol area near Trilj* (made by: M. Vuković)

zimo na prostoru Krivodola i demonstrirala učinkovitost primjene daljinskih istraživanja i pristupa prostoru koji počiva na načelima arheologije krajolika.[26] Smatramo da je prostor Krivodola jedan od ključnih elemenata u arheološkoj interpretaciji južnog dijela doline rijeke Cetine, te da će daljnja arheološka istraživanja potvrditi naše teorije o širem funkcioniranju krajolika u prapovijesti. Napomenimo na samom kraju da je u blizini zaseoka Gilići – Kuko, također u Krivodolu, zabilježena dosad najveća gomila uočena tijekom rekognosciranja Projekta CeVas (tzv. Kukina gomila). Promjer joj je između 15 i 20 m, a visina oko 4 – 5 m (sl. 17–20).

ical landscape of Krivodol, which is obviously marked by prehistoric structures, belongs to a wider landscape of the south-eastern part of the Cetina valley, which is a transit area with natural communication routes connecting the valley with the region of Herzegovina. In the antiquity those routes passed by the settlement of Velić[22] and by the fort of Čačvina, towards Vrpolje and the present day state border of Bosnia and Herzegovina. It is quite possible that in prehistoric times there was an alternative route leading from Grab, across Krivodol, Ljut and Voštane, towards Herzegovina. To confirm the theory of this alternative route further archaeological investigation is needed. Yet already it is supported by the presence of several hillforts that lie along this proposed route: a hillfort above Grab,[23] a hillfort at Ljut[24] and a hillfort at Jelinak.[25] Recent remote and rescue archaeological investigation in the nearby area of Vedrine has revealed a significant stage of preservation of prehistoric structures in geomorphological conditions that strikingly resemble the conditions of the Krivodol area. They have also demonstrated the efficiency of remote sensing investigation in the field of landscape archaeology.[26] We believe that the area of Krivodol represents one of the crucial elements for the archaeological interpretation of the role of the southern part of the Cetina valley, and that further related archaeological investigation of the area will confirm our idea that Krivodol played a crucial role in the prehistoric landscape of this part of the Cetina valley. Finally, let us mention that by the hamlet of Gilići-Kuko, also in Krivodol, the largest cairn (Kukina gomila) has been registered during the CeVaS project; it has a diameter of ca. 30 m, and is about 3–4 m high (Fig. 17–20).

Translation: Helena Tomas

[22] TONČINIĆ 2020.
[23] MILOŠEVIĆ 1998: 251.
[24] MILOŠEVIĆ 1998: 252.
[25] MILOŠEVIĆ 1998: 258
[26] VUKOVIĆ et al. 2023

[26] VUKOVIĆ et. al. 2023.

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ARHEOLOGIJA OTOKA ISTA: OTOČNI KRAJOLIK I DINAMIKA NASELJENOSTI U SVJETLU PRELIMINARNIH REZULTATA TERENSKOG PREGLEDA

ARCHAEOLOGY OF THE ISLAND OF IST: INSULAR LANDSCAPE AND SETTLEMENT DYNAMICS IN THE LIGHT OF PRELIMINARY RESULTS OF THE FIELD SURVEY

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Ključne riječi:
arheologija otoka, zadarsko otočje, otok Ist, otočnost, resursi, marginalnost

Arheologija otoka je dinamično i inovativno istraživačko područje usmjereno na proučavanje brojnih pitanja povezanih s otočnim zajednicama, kulturama i okolišem. Usprkos svim istraživačkim potencijalima koje otoci pružaju opće je poznato da su hrvatski otoci slabo arheološki istraženi. Za razliku od brojnih selektivnih pristupa fokusiranih na pojedinačna nalazišta ili razdoblja, rijetki su otoci bili predmetom sustavnih istraživanja usmjerenih na cjelokupni otočni krajolik. Tragom takvih promišljanja 2020. godine pokrenut je studentski istraživački projekt „Arheološki krajolik otoka Ista – Archaeo.IST" s ciljem analize arheološkog krajolika otoka Ista kao kompleksnog i višeslojnog „arhiva" podataka koji mogu svjedočiti o dinamičnoj prošlosti otoka. Svojim geografskim položajem kao dio šire cjeline zadarskog otočja, malom površinom i heterogenim krajolikom s visokom razinom očuvanosti otok Ist pružio je idealan poligon za provedbu sustavnog istraživanja. Preliminarni rezultati terenskog pregleda omogućili su stjecanje uvida u slojevitost otočnog krajolika, pružili podlogu za praćenje dinamike naseljenosti i korištenja otoka od prapovijesti do kasnog srednjeg vijeka, a ujedno i otvorili vrata novim pogledima na razumijevanje interakcija ljudskih zajednica u marginalnim okolišima malih jadranskih otoka.

Key words:
island archaeology, Zadar archipelago, island of Ist, insularity, resources, marginality

Island archaeology is a dynamic and innovative field of research focused on the study of numerous issues related to island communities, cultures and environment. Despite all the research potential that the islands provide, it is known that the Croatian islands have been poorly explored in archaeological terms. In contrast to numerous selective approaches focused on individual sites or periods, rare islands have been the subject of systematic research focused on the entire island landscape. As a result of such considerations, the student research project "Archaeological landscape of the island of Ist - Archaeo.IST" was launched in 2020 with the aim of analyzing the archaeological landscape of the island of Ist as a complex and multi-layered "archive" of data that can testify to the dynamic past of the island. With its geographical position as part of the

wider Zadar archipelago, its small area and heterogeneous landscape with a high level of preservation, the island of Ist provided an ideal testing site for conducting systematic research. The preliminary results of the field survey made it possible to gain insight into the complexity of the island's landscape, provided a basis for monitoring the dynamics of population and use of the island from prehistoric times to the late Middle Ages, and at the same time opened the door to new perspectives on understanding the interactions of human communities in the marginal environments of small Adriatic islands.

UVOD

Arheologija otoka (engl. *island archaeology*) danas se sve više afirmira kao privlačno, dinamično i inovativno područje arheologije s fokusom na proučavanje otočnih zajednica, njihovih kultura i okoliša. Posljednjih desetljeća prednosti mediteranskih otoka kao istraživačkih područja prepoznati su zbog mogućnosti razmatranja širokog spektra različitih pitanja, poput kolonizacije, krajolika, naseljavanja, ljudskih prilagodbi, migracija, napuštanja, identiteta i uloge otoka u širim mrežama povezanosti i kulturoloških interakcija.[1] Prema posljednjim istraživanjima hrvatski dio Jadrana obuhvaća 1246 otoka, otočića, grebena i hridi.[2] Usprkos svim istraživačkim potencijalima koje otoci pružaju, treba istaknuti da, gledano u cjelini, hrvatski otoci nisu dovoljno arheološki valorizirani, a rijetki od njih su bili predmet opsežnih projekata usmjerenih na istraživanje cjelokupnog otočnog krajolika.[3] Većina studija usmjerenih na istraživanje otoka rijetko proučava male otoke (površine manje od 10 km^2) koji se stoga ističu kao poseban izazov za istraživanje.[4] Navedene činjenice potaknule su osmišljavanje projekta kojim bi se u središte zanimanja stavio jedan mali sjevernodalmatinski otok koji bi svojim geografskim položajem, malom površinom i heterogenim krajolikom s visokom razinom očuvanosti pružao sve preduvjete za provedbu sustavnog istraživanja.

Tragom takvih promišljanja 2020. godine pokrenut je studentski istraživački projekt „Arheološki krajolik otoka Ista – Archaeo. IST" s ciljem analize arheološkog krajolika

1 FITZPATRICK 2004: 3–18; DAWSON 2019: 1–8.
2 DUPLANČIĆ LEDER, UJEVIĆ, ČALA 2004.
3 Usp. metodologiju i rezultate projekta „Adriatic Islands Project (AIP)" kojim su obuhvaćeni otoci srednjodalmatinskog otočja u GAFFNEY et al. 1997; STANČIČ et al. 1999; KIRIGIN et al. 2006. Za otok Lastovo vidi DELLA CASA et al. 2009: 113–136; Za otok Korčulu RADIĆ, BASS 1999: 361–403. Usp. i projekt „Arheološka topografija otoka Raba" koji je trenutačno u tijeku (KONESTRA et al. 2017; 2019; 2020. i ondje citirana literatura).
4 FITZPATRICK et al. 2016; ATHANASOULIS et al. 2021; KNODELL et al. 2022.

INTRODUCTION

Today, island archaeology is asserting itself as an attractive, dynamic and innovative field of archaeology with a focus on the study of island communities, their cultures and environment. In recent decades, the advantages of Mediterranean islands as research areas have been recognized due to the possibility to consider a wide range of different issues, such as colonization, landscape, settlement, human adaptations, migrations, abandonment, identity and the role of islands in wider networks of connections and cultural interactions.[1] According to the latest research, the Croatian part of the Adriatic includes 1,246 islands, islets, reefs and rocks.[2] Despite all the research potentials that the islands offer, it should be emphasized that, viewed as a whole, the Croatian islands have not been sufficiently valorized archaeologically, and few of them have been the subject of extensive projects aimed at investigating the entire island landscape.[3] Most studies focused on island research rarely deal with small islands (areas smaller than 10 km^2), which therefore stand out as a special challenge for research.[4] The above-mentioned facts encouraged the creation of a project that would focus on a small northern Dalmatian island providing all the prerequisites for the implementation of systematic research with its geographical location, small area and heterogeneous landscape with a high level of preservation.

As a result of such considerations, the student research project "Archaeological landscape of the island of Ist - Archaeo.IST" was launched in

1 FITZPATRICK 2004: 3-18; DAWSON 2019: 1-8.
2 DUPLANČIĆ LEDER, UJEVIĆ, ČALA 2004.
3 Cf. the methodology and results of the "Adriatic Islands Project (AIP)", which included the islands of the Central Dalmatian archipelago, in GAFFNEY et al. 1997; STANČIČ et al. 1999; KIRIGIN et al. 2006. For the island of Lastovo, see DELLA CASA et al. 2009: 113-136; for the island of Korčula RADIĆ, BASS 1999: 361–403. Cf. also the project "Archaeological topography of the island of Rab" which is currently underway (KONESTRA et al. 2017; 2019; 2020 and the references cited therein).
4 FITZPATRICK et al. 2016; ATHANASOULIS et al. 2021; KNODELL et al. 2022.

otoka Ista kao kompleksnog i višeslojnog „arhiva" podataka koji mogu svjedočiti o dinamičnoj prošlosti otoka.[5] Prva faza trogodišnjeg projekta temeljila se na provedbi terenskog pregleda radi prikupljanja podataka na široj prostornoj rezoluciji, a potom, u skladu s planom projekta i postignutim rezultatima, predviđena su ciljana probna iskopavanja na reprezentativnim nalazištima iz pojedinih razdoblja radi dobivanja dodatnih podataka za različite komparativne analize (*inter-site*).[6] Na taj način namjera je prikupiti skup arheoloških izvora iz površinskog i potpovršinskog konteksta čija će interpretacija pokušati odgovoriti na ključna pitanja o prošlosti, razvoju i načinu korištenja malog dalmatinskog otoka, poput ovih: Kada je otok prvi put naseljen? Kako se razvijala dinamika njegove naseljenosti tijekom prošlosti? Na koji se način izdvojenost ili izoliranost malog otoka reflektirala u odnosu prema resursima i otočnom okolišu? Kakav je bio položaj otoka u širem regionalnom kontekstu i mrežama povezanosti?

Otok Ist pripada sjevernodalmatinskoj, odnosno zadarskoj otočnoj skupini (karta 1) koju čine otok Pag, kornatska skupina otoka

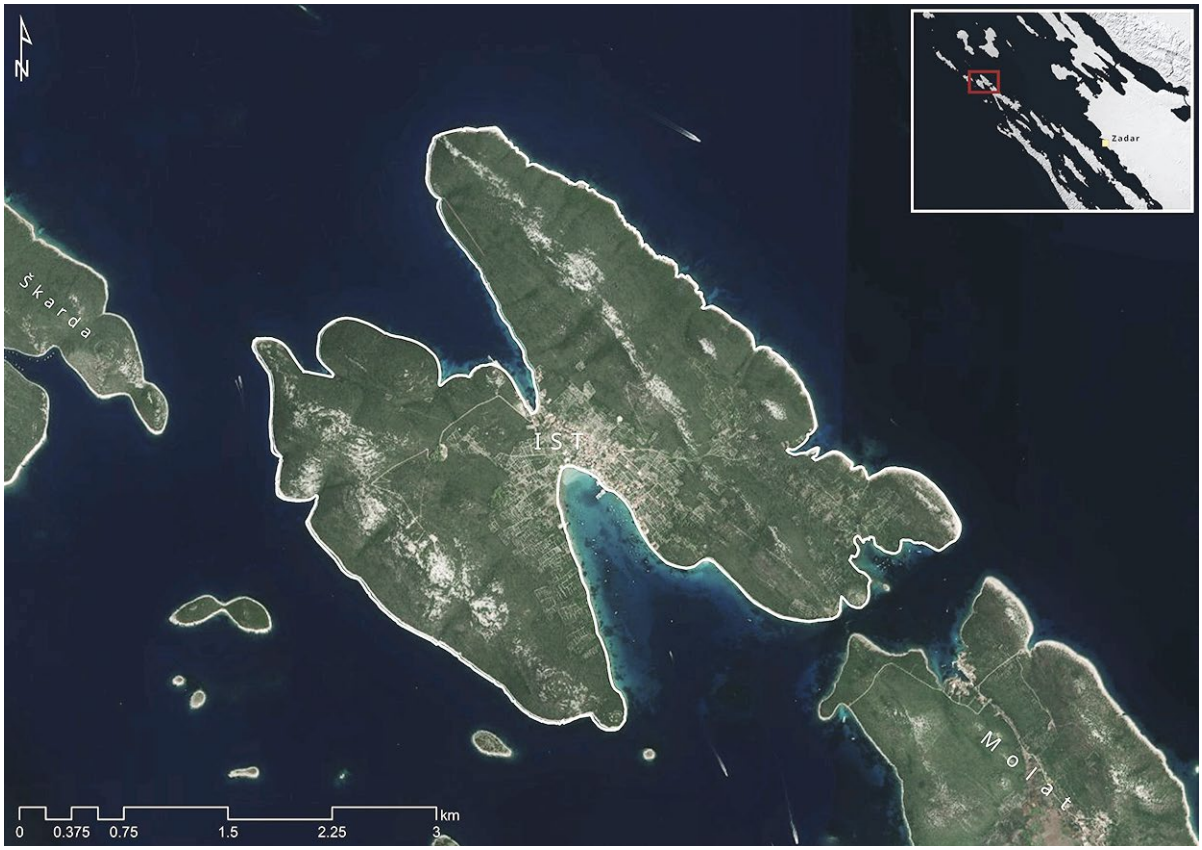
[5] Provedba projekta odvijala se u razdoblju od četiri godine (2020. – 2023.). Uz znanstveno-istraživački karakter, dio projekta bio je posvećen aktivnostima na turističkoj valorizaciji i prezentaciji arheološke baštine. Voditelj projekta bio je student arheologije Pio Domines Peter (Odjel za arheologiju, Sveučilište u Zadru). Voditelj terenskog pregleda i svih terenskih istraživanja bio je Domagoj Maurin, dipl. arheol. Uz spomenute, u terenskom pregledu su sudjelovali: Jure Mustać, dipl. arheol., Domagoj Knez, Luka Žarković, Karla Genda i Dominik Kelava (studenti Odjela za arheologiju Sveučilišta u Zadru). Provedbu projekta omogućila je kontinuirana financijska podrška Sveučilišta u Zadru u okviru programa za studentske projekte.

[6] U skladu s rezultatima terenskog pregleda definirane su daljnje projektne aktivnosti. Tijekom II. faze projekta (2021.) provedena su manja probna iskopavanja na prapovijesnoj gradini Straža, antičkom nalazištu Selišće i srednjovjekovnom nalazištu Mavrela. Tijekom III. faze projekta (2022.) realizirana su probna sondiranja i na gradini Gracina i Smokvenjak, čime je zaokružen poseban fokus stavljen na tragove kasnoprapovijesne naseljenosti. Naknadno je odlučeno da se tijekom III. faze projekta sustavnim terenskim pregledima obuhvate i manji nenaseljeni otočići išćunskog arhipelaga kako bi se ispitao njihov arheološki potencijal. U tijeku je obrada rezultata istraživanja i priprema za njihovu cjelovitu objavu.

2020 with the aim of analyzing the archaeological landscape of the island of Ist as a complex and multi-layered "archive" of data that can testify to the island's dynamic past.[5] The first phase of the three-year project was based on the implementation of a field survey in order to collect data at a wider spatial resolution, and then, in accordance with the project plan and the achieved results, targeted trial excavations were planned at representative sites from certain periods in order to obtain additional data for various inter-site analyses.[6] Thus, the intention is to collect a set of archaeological sources from the surface and subsurface context, the interpretation of which will try to answer the crucial questions about the past, development and way of use of the small Dalmatian island, such as: when was the island first inhabited? How did the dynamics of its population develop in the past? In what way was the separation or isolation of the small island reflected in the relationship to the resources and the island environment? What was the position of the island in the wider regional context and

[5] The implementation of the project took place over a period of four years (2020 – 2023). In addition to the scientific-research character, part of the project was focused on activities related to the tourist valorization and presentation of the archaeological heritage. The project leader was archaeology student Pio Domines Peter (Department of Archaeology, University of Zadar). The leader of the field survey and all field investigations was Domagoj Maurin, archaeologist. In addition to the aforementioned, the field survey included the following participants: Jure Mustać, archaeologist, Domagoj Knez, Luka Žarković, Karla Genda and Dominik Kelava (students of the Department of Archaeology of the University of Zadar). The implementation of the project was made possible by the continuous financial support of the University of Zadar within the program for student projects.

[6] Further project activities were defined in accordance with the results of the field survey. During the second phase of the project (2021), smaller trial excavations were carried out at the prehistoric hillfort Straža, the ancient site of Selišće and the medieval site of Mavrela. During the third phase of the project (2022), trial excavations were also carried out at Gracina and Smokvenjak hillforts, which corresponds to the special focus placed on traces of late prehistoric settlement. It was subsequently decided that the third phase of the project should include systematic field surveys of smaller uninhabited islands of the Ist archipelago in order to examine their archaeological potential. Processing of the research results and preparation for their complete publication are underway.



Karta 1. *Geografski položaj otoka Ista* (izradio: P. Domines Peter)
Map 1 *Geographical location of the island of Ist* (made by P. Domines Peter)

i zadarski otoci u užem smislu. Površinom od 9,73 km^2, duljinom obalne crte od 23 km i brojem od oko 200 stalnih stanovnika svrstava se u male naseljene jadranske otoke. Smješten između Škarde na sjeverozapadu i Molata na jugoistoku, Ist je dio vanjskog niza otoka čije su zapadne strane otvorene pučini Jadrana. Obale otoka uglavnom su stjenovite, strme i slabo pristupačne (indeks razvedenosti obale je 2,08), s tek nekoliko dubljih i zaštićenih uvala pogodnih za uplovljavanje i sidrenje (Široka, Kosirača, Mljake).[7] Otok Ist slijedi dinarski pravac pružanja (sjeverozapad-jugoistok), a njegov reljefni oblik definiraju dva uzdužna hrpta, jugozapadni s grebenom Gore i Biljavke te istaknutiji sjeveroistočni greben s najvišim vrhom Stražom (175 m n. v.). Dvije strane otoka povezane su na središnjem, najužem dijelu, gdje se na povišenom prostoru između dviju duboko uvu-

[7] MAGAŠ 2010: 68–69.

networks of connections?

The island of Ist belongs to the northern Dalmatian or Zadar island group (Map 1), which consists of the island of Pag, the Kornati archipelago and the Zadar islands in the narrower sense. With an area of 9.73 km^2, a coastline of 23 km and a number of about 200 permanent residents, it is classified as one of the small inhabited Adriatic islands. Located between Škarda in the northwest and Molat in the southeast, Ist is part of the outer chain of islands whose western sides are open to the open sea of the Adriatic. The coasts of the island are mostly rocky, steep and poorly accessible (coast indentation index is 2.08), with only a few deeper and sheltered coves suitable for sailing in and anchoring (Široka, Kosirača, Mljake).[7] The island of Ist follows the Dinaric strike of spreading (northwest-southeast), and its relief shape is defined by two longitudinal ridges, the south-

[7] MAGAŠ 2010: 68-69.

čenih uvala Široke i Kosirače razvilo jedino i istoimeno otočno naselje Ist. U geološkom smislu, otok Ist građen je pretežito od karbonatnih stijena, vapnenaca i dolomita kredske, a manjim dijelom i eocenske starosti, koji tvore tipični krški krajolik sa skromnom količinom obradive zemlje (crvenice), koja se u većim naslagama javlja uglavnom na jugoistočnom, a u manjoj mjeri i na središnjem i zapadnom dijelu otoka.[8] Krajolik otoka izgledom se ne razlikuje od drugih susjednih zadarskih otoka koji su danas najvećim dijelom zarasli u gustu vegetaciju. Međutim, sve donedavno raspoložive poljoprivredne površine bile su intenzivno obrađivane, a krčenjem kamena radi dobivanja obradivih površina oblikovan je specifični suhozidni krajolik, dok je ostatak nekultiviranog zemljišta tradicionalno korišten kao pašnjak za uzgoj stoke sitnog zuba, koza i ovaca. Međutim, zbog procesa deagrarizacije i depopulacije danas su takve površine zapuštene i prekrivene gustim raslinjem makije i crnike koje otežava pristupačnost znatnom dijelu otoka, a prohodnost usmjerava samo na one dijelove do kojih postoje prohodni putovi (sl. 1).[9] Unatoč tomu, krajolik otoka danas je sačuvao visoku razinu izvornosti i izbjegao veliku izgrađenost i degradaciju koja je uglavnom ograničena uz pojas današnjeg naselja. Poput ostalih susjednih otoka, otok Ist obilježava sredozemna klima s blagim i kišovitim zimama te toplim i suhim ljetima, dok su najčešći vjetrovi bura, jugo i maestral.[10] Na otoku nema stalnih površinskih izvora vode jer usprkos razmjerno znatnim količinama oborina (prosječna godišnja vrijednost količine padalina je 889 mm), propusna karbonatna podloga uzrokuje njihovo otjecanje.[11] Stoga je nedostatak pitke vode u prošlosti najčešće nadoknađivan korištenjem bunara s boća-

[8] HUSNJAK 2010: 121–136; MORO, ĆOSOVIĆ, MARTON 2010: 93–94.
[9] PANDŽA 2010: 187–208.
[10] MAGAŠ 2010: 79.
[11] MAGAŠ 2010: 82–83.

western one with peaks Gora and Biljavka and the more prominent northeastern ridge with the highest summit Straža (175 masl). The two sides of the island are connected at the central, narrowest part, where the only island settlement of the same name, Ist, has developed on the elevated area between the two deeply indented coves of Široka and Kosirača. In the geological sense, the island of Ist is built predominantly of carbonate rocks, limestones and dolomites of Cretaceous and, to a lesser extent, Eocene age, which form a typical karst landscape with a modest amount of arable land (terra rossa), which occurs in larger deposits mainly in the southeastern, and somewhat less in the central and western part of the island.[8] The landscape of the island does not differ in appearance from other neighboring Zadar islands, which today are mostly overgrown with dense vegetation. However, until recently, all available agricultural areas were intensively cultivated, and specific dry stone wall landscape was formed by clearing stone to obtain arable areas, while the rest of the uncultivated land was traditionally used as pasture for breeding goats and sheep. However, due to the process of deagrarianization and depopulation, today such areas are neglected and covered with dense vegetation of maquis and holm oak, which makes it difficult to access a significant part of the island, so that only those parts to which there are unobstructed paths can be reached (Fig. 1).[9] Nevertheless, the landscape of the island today has preserved a high level of originality and avoided large-scale construction and degradation, which is mostly limited to the belt of today's settlement. Like the other neighboring islands, the island of Ist is characterized by a Mediterranean climate with mild and rainy winters and warm and dry summers, while the most common winds are *bura*, *jugo* and *mistral*.[10] There are no permanent surface water sources on the island, because despite rel-

[8] HUSNJAK 2010: 121-136; MORO, ĆOSOVIĆ, MARTON 2010: 93-94.
[9] PANDŽA 2010: 187-208.
[10] MAGAŠ 2010: 79.

Slika 1. *Pogled na središnji (a) i jugoistočni dio otoka (b)* (snimio: P. Domines Peter)
Figure 1 *View of the central (a) and southeastern part of the island (b)* (photo by P. Domines Peter)

tom vodom ili gradnjom umjetnih kaptaža u obliku cisterni ili lokava. Najveća lokva koja nosi ime Jezero nalazi se na jugoistočnom dijelu otoka, presušuje isključivo za visoko sušnih razdoblja, a u literaturi se spominje i nekoliko manjih izvora boćate vode (lokalni naziv *studenci*) koji su danas uglavnom zatrpani i izvan uporabe.[12] Takva prirodno-geografska osnova sa skromnim resursima na maloj površini imala je presudno značenje za dinamiku naseljavanja, načine korištenja zemljišta i razvoj strategija održivosti otočnih zajednica.

Arheološki potencijali otoka Ista dosad nisu privukli znatniju pozornost arheologa. Količinom podataka iz terenskih istraživanja izdvaja se tek doprinos Š. Batovića koji se jedini detaljnije dotaknuo arheološke baštine otoka Ista.[13] Ostali su publicirani podatci vrlo skromni, općenitog sadržaja, često počivaju na topografsko-toponimskim studijama, a nerijetko su i plod selektivnog pristupa usmjerenog na pojedino razdoblje ili nalazište u fokusu istraživača.[14] Posljedica takvih istra-

[12] ČUKA, MAGAŠ 2003: 67–86; MAGAŠ 2010: 63–92.
[13] BATOVIĆ 2010: 213–220.
[14] FILIPI 1960: 143; BATOVIĆ 1973: 5–165; 1974: 21–34; SKRAČIĆ 1996: 156–162; ČUKA, MAGAŠ 2003: 67; VLASANOVIĆ (n.d.). Među rijetkim publiciranim arheološkim nalazima ističe se ostava bizantskih zlatnika iz 6. stoljeća na položaju „Pod Turtulom" (BULIĆ 1900: 192). Ciljani pregled arheoloških nalazišta na otoku Istu proveden je i 90-ih godina kao sastavni dio projekta „Naseljenje zadarsko-šibenskog otočja do početka 20. st." (voditelj: S. Čače), međutim, rezultati do danas nisu objavljeni (usmeno priopćenje: A. Kurilić).

atively significant amounts of precipitation (the average annual value of the amount of precipitation is 889 mm), the permeable carbonate substrate causes their runoff.[11] Therefore, the lack of drinking water in the past was most often compensated by using wells with brackish water or by building artificial catchments in the form of cisterns or ponds. The largest pond named Jezero is located in the southeastern part of the island, it dries up only during periods of extreme drought, and several smaller sources of brackish water (locally called *studenci*) are mentioned in the literature, which today are mostly filled in and out of use.[12] Such a natural-geographic basis with modest resources on a small area had a crucial significance for the dynamics of settlement, ways of land use and the development of strategies for the sustainability of island communities.

The archaeological potentials of the island of Ist have not attracted significant attention of archaeologists so far. In terms of the amount of data from field investigations, only the contribution of Š. Batović stands out, as he was the only one who dealt with the archaeological heritage of the island of Ist in more detail.[13] Other published data are very modest, of general content, often based on topographic-toponymic studies, and frequently the result of a selective approach focused on a particular

[11] MAGAŠ 2010: 82-83.
[12] ČUKA, MAGAŠ 2003: 67-86; MAGAŠ 2010: 63-92.
[13] BATOVIĆ 2010: 213-220.

živačkih perspektiva je znatna kvalitativna varijabilnost podataka koja postavlja prepreku u cjelovitom znanstvenom vrednovanju arheološke baštine.

METODOLOGIJA

Fokus prve faze projekta bila je primjena terenskog pregleda koji se u nizu primjera dokazao kao jedna od najuspješnijih neinvazivnih metoda za istraživanje mediteranskih otočnih krajolika.[15] Za potrebe organizacije terenskog pregleda otok je podijeljen na kvadratnu mrežu (okvirnih dimenzija 250 x 250 m, označeni A–U, numerirani 1–15). Gusta vegetacija, koja danas prekriva veći dio otoka, te smanjuje razinu površinske vidljivosti i otežava mogućnosti sistematičnog kretanja uvjetovala je prilagodbu istraživačke strategije. Umjesto prvotne ideje obuhvata cijelog otoka, selekcijom jedinica prema razrađenim kriterijima prohodnosti, zahtjevnosti terena i površinske vidljivosti odabran je tek dio jedinica – 128 kvadrata (ukupno 5,8 km^2; 60 % površine otoka) koje formiraju zonu obuhvaćenu pregledom (karta 2).[16] Dio otoka koji je ostao izvan zone pregleda uglavnom karakterizira neprohodni teren s gustom vegetacijom, većim dijelom na strmim padinama, a takvi uvjeti gotovo u potpunosti anuliraju mogućnosti kretanja i pregleda površine, time izazivajući i efikasnost te isplativost metode terenskog pregleda kao načina vrednovanja arheoloških potencijala takvih prostora. Provedba terenskog pregleda temeljila se na sukcesivnoj prospekciji odabranih kvadrata (od jugozapadnog prema jugoistočnom dijelu otoka) koji su, ovisno o varijacijama u razini površinske vidljivosti, pregledani kombinacijom sustavnog i nesustavnog kretanja. Sistematičan linijski pregled površine proveden je na način da se osigura što veća i detaljnija

[15] BEVAN, CONOLLY 2013; DAWSON 2019: 4; GAFFNEY et al. 2006: 89–106; KNODELL et al. 2023.

[16] Naseljeno područje isključeno je iz pregleda.

period or site in the focus of the researcher.[14] The consequence of such research perspectives is significant qualitative data variability, which poses an obstacle in the complete scientific evaluation of archaeological heritage.

METHODOLOGY

The focus of the first phase of the project was field survey, which has proven to be one of the most successful non-invasive methods for investigating Mediterranean island landscapes in a number of examples.[15] For the purposes of organizing the field survey, the island was divided into a square grid (approximate dimensions 250 x 250 m, marked A–U, numbered 1–15). The dense vegetation that covers a large part of the island, reduces the level of surface visibility and hinders the possibility of systematic movement, conditioned the adjustment of the research strategy. Instead of the original idea of encompassing the entire island, only some of the units - 128 square meters (total of 5.8 km^2; 60% of the island's area) that form the zone included in the survey - were selected according to detailed criteria of pass ability, terrain characteristics and surface visibility (Map 2).[16] The part of the island that remained outside the survey zone is mainly characterized by impassable terrain with dense vegetation, mostly on steep slopes, and such conditions almost completely prevent the possibility of movement and inspection of the surface, thus challenging the efficiency and cost-effectiveness of the field survey method as

[14] FILIPI 1960: 143; BATOVIĆ 1973: 5-165; 1974: 21-34; SKRAČIĆ 1996: 156-162; ČUKA, MAGAŠ 2003: 67; VLASANOVIĆ (n.d.). A hoard of Byzantine golden coins from the 6th century at the location Pod Turtulom stands out among the rare published archaeological finds (BULIĆ 1900: 192). A targeted survey of archaeological sites on the island of Ist was also carried out in the 1990s as an integral part of the project "Settlement of the Zadar-Šibenik islands until the beginning of the 20th century" (leader S. Čače). However, the results have not been published to date (oral communication with A. Kurilić).

[15] GAFFNEY et al. 2006: 89-106; BEVAN, CONOLLY 2013; DAWSON 2019: 4; KNODELL et al. 2023.

[16] The inhabited area is not included in the review.

pokrivenost površine, dok je nesustavni pregled oblik prilagodbe na terenske uvjete, koji bez obzira na to što nepravilnim kretanjem ne pruža mogućnost potpune pokrivenosti, ne mora nužno utjecati na smanjenje intenziteta pregleda.[17]

Tijekom terenskog pregleda, uz dokumentiranje arheoloških struktura, sustavno je registrirana disperzija površinskih artefakata uz bilježenje podataka o brojnosti nalaza, kontekstu pojave te prirodnim ili antropogenim procesima koji su mogli izravno utjecati na njihov položaj. Posebna se pozornost pridala registriranju površinskih nalaza izvan konteksta nalazišta. Najveći broj lokacija s takvim nalazima (više od 70 %) otkriven je na položajima kamenih krčevina gdje se njihova dominantna pojava povezuje s intenzivnim transformacijskim procesima krčenja zemljišta i odbacivanja pokretnog arheološkog materijala, a veća je šansa za otkrivanje uz bolje mogućnosti prohodnosti i veću razinu površinske vidljivosti koje omogućuje „kameno okruženje". Kako bi se pratile varijacije u brojnosti površinskih nalaza u poslijeterenskoj obradi podataka diferencirane su dvije kategorije: pojedinačni nalazi (1) i skupni nalazi (≥ 2 nalaza po lokaciji).[18]

[17] KULENOVIĆ 2019: 264. Na temelju zračnih fotografija unutar svake kvadrantne jedinice unaprijed su diferencirane tzv. zarasle zone (visoko zarasla područja sa smanjenom vidljivošću koja su nesustavno pregledana) i tzv. otvorene zone (područja s niskom vegetacijom i dobrom površinskom vidljivošću gdje je primijenjen sustavni pregled).

[18] Vrlo sličan pristup primijenjen je i u projektu Neotermalna Dalmacija (*Neothermal Dalmatia Project*). Usp. CHAPMAN, SHIEL, BATOVIĆ 1996: 50. Takva podjela upotrijebljena je i zbog činjenice da tijekom terenskog pregleda nisu korišteni geodetski uređaji (npr. diferencijalni GPS prijamnik) koji bi omogućili precizno bilježenje geografskog položaja svakog (pojedinačnog) površinskog nalaza. Korišteni ručni GPS uređaji imaju minimalno odstupanje do 5 m, stoga je takva udaljenost prihvaćena kao granični prag pri razdvajanju dviju koncentracija nalaza koje su blisko udaljene. Pristup se nije pokazao u potpunosti pogodnim za položaje (nalazišta) s velikom količinom i gustoćom površinskih nalaza (isključivo nalazište Selišće), stoga se na takvim mjestima, uz detaljnu pokrivenost, sustavno bilježenje nastojalo osigurati izdvajanjem manjih zona koncentracije nalaza (koji su dokumentirani kao položaji „skupnih nalaza" pod jednu geografsku točku). Pritom je posebno pomogla činjenica da se većina površinskih nalaza na nalazištu Selišće pojavljuje na površina-

a way of evaluating the archaeological potential of such space. The implementation of the field survey was based on the successive prospecting of selected squares (from the southwestern to the southeastern part of the island) which, depending on the variations in the level of surface visibility, were inspected by a combination of systematic and non-systematic movement. A systematic linear inspection of the surface was carried out in such a way as to ensure the largest and most detailed coverage of the surface, while an unsystematic inspection is a form of adaptation to field conditions, which, regardless of the fact that irregular movement does not provide the possibility of complete coverage, does not necessarily result in the reduction of the intensity of the survey.[17]

During the field survey, in addition to documenting the archaeological structures, the dispersion of surface artefacts was systematically recorded, with data on the number of finds, the context of occurrence, and natural or anthropogenic processes that could directly affect their location. Special attention was paid to recording surface finds outside the context of the site. The largest number of locations with such finds (more than 70%) were discovered in the positions of stone rubble, where their dominant appearance is linked to intensive transformation processes of land clearing and discarding of movable archaeological material, and a greater chance of discovery is associated with better accessibility and a higher level of surface visibility provided by the "stone environment". In order to monitor variations in the number of surfaces finds in post-survey data processing, two categories were differentiated: individual finds (1) and collective finds (≥2 finds per location).[18]

[17] KULENOVIĆ 2019: 264. On the basis of aerial photographs, two zone types were differentiated within each quadrant unit, the so-called overgrown zones (highly overgrown areas with reduced visibility that were inspected unsystematically) and the so-called open zones (areas with low vegetation and good surface visibility where systematic survey was applied).

[18] A very similar approach was applied in the *Neothermal Dalmatia Project*. Cf. CHAPMAN, SHIEL, BATOVIĆ

Uz krčenje kao jedan od najizraženijih transformacijskih procesa u krškom prostoru, koji je osobito izražen i kroz suhozidni krajolik otoka Ista,[19] registrirani su i drugi procesi koji su, u većoj ili manjoj mjeri, uzrokovali pomicanje arheoloških izvora, poput intenzivne reupotrebe kamenog materijala ili životinjskih disturbacija.[20] Pri terenskom su pregledu prikupljeni i podatci o okolišnim varijablama i prirodnim strukturama koji su tijekom prošlosti mogli utjecati na način i karakter korištenja zemljišta (npr. gliništa, lokve, speleološki objekti).

S druge strane, arheološke strukture i nalazi su opisani i fotografski dokumentirani (*Canon EOS 1200D, Canon EOS 100D*), a na mjestima gdje je to bilo moguće napravljena su i fotogrametrijska snimanja (korištenjem bespilotnih letjelica *DJI Mavic Mini 2* i *DJI Mavic Air 2S*), radi generiranja 3D modela. Za registriranje geografskog položaja korišteni su GPS uređaji (*Garmin Etrex 10, Garmin Etrex 20*), a za orijentaciju i praćenje trase kretanja mobilne aplikacije (*GPX Viewer*, *ViewRanger*) u koje je importirana pripremljena mreža kvadranata. Osobito su se lako dostupne mobilne aplikacije pokazale vrlo korisnim alatom za praćenje pokrivenosti terena i evaluaciju ukupnog dnevnog učinka svakog pregledača.

Kao komplementarne metode primijenjene su analize zračnih fotografija, satelitskih snimki, povijesnih karata i fotografija, topografskih karata, arhivske građe, a prikupljena su i usmena kazivanja lokalnih stanovnika. Terenski pregled pratilo je korištenje Geo-

ma kamenih krčevina, uskih struktura gdje se njihova raširenost i koncentracija mogla relativno jednostavno pratiti i odvojiti.

19 Više od 1/6 otoka prekriva gusta mreža suhozidnih struktura (lokalni naziv *mocira*) najvećim dijelom nastalih tijekom 18. i 19. stoljeća intenzivnim krčenjem zbog sadnje vinograda.

20 Disturbacija životinja odnosi se na rovanje divljih veprova koje katkad otvara dragocjeni „prozor“ u potpovršinski kontekst. Razgrađivanje i reupotreba kamenog materijala s antičke (ili prapovijesne) arhitekture česta je praksa u suhozidnom krajoliku, zabilježena i na otoku Istu.

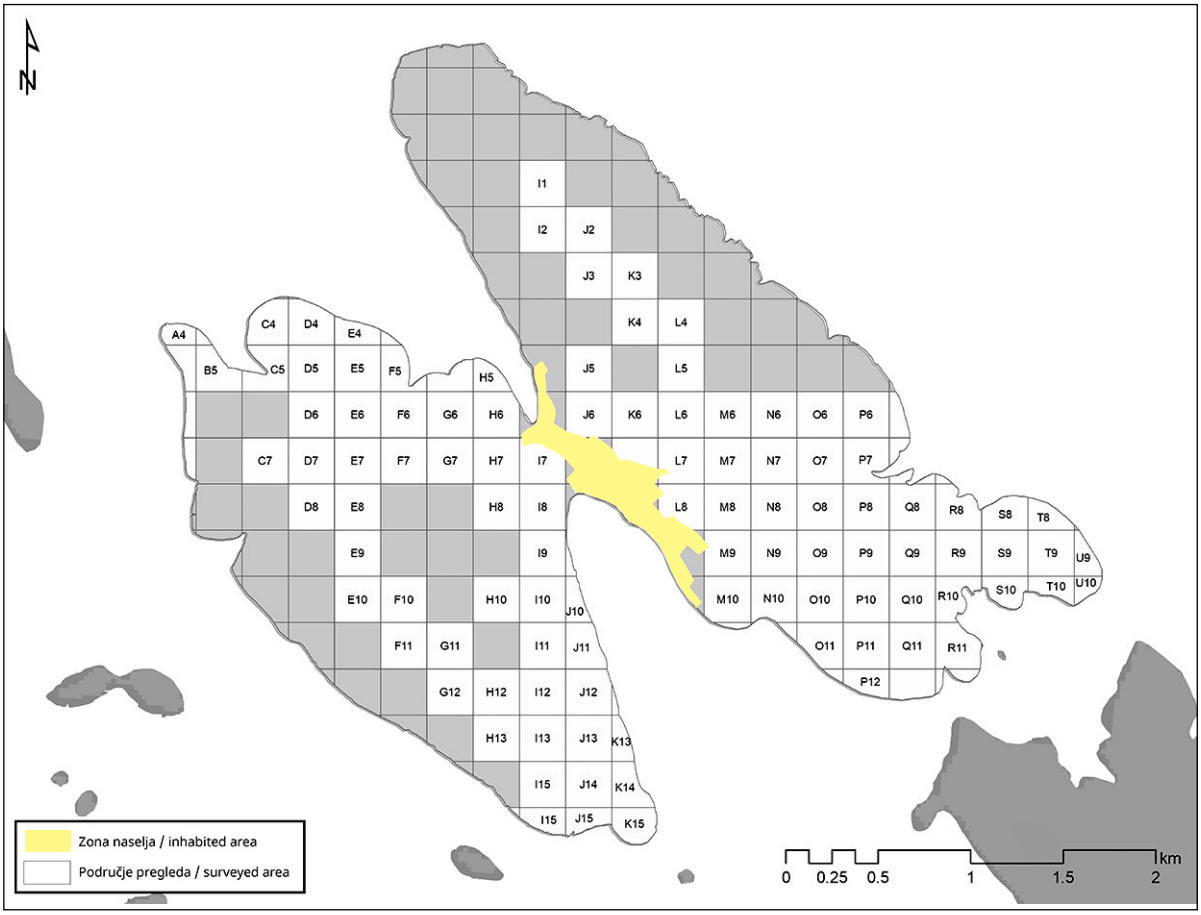
In addition to clearing as one of the most distinct transformation processes in the karst area, which is particularly noticeable in the dry stone wall landscape of the island of Ist,[19] other processes were also recorded that, more or less, caused the movement of archaeological sources, such as the intensive reuse of stone material or animal disturbances.[20] During the field survey, data was also collected on environmental variables and natural structures that could influence the manner and character of land use in the past (e.g. clay pits, ponds, speleological structures).

On the other hand, the archaeological structures and finds were described and photographically documented (Canon EOS 1200D, Canon EOS 100D), and where possible, photogrammetric recordings were made (using the DJI Mavic Mini 2 and DJI Mavic Air 2S drones) to generate a 3D model. GPS devices (Garmin Etrex 10, Garmin Etrex 20) were used to register the geographical position. For orientation and tracking we used mobile applications (GPX Viewer, ViewRanger) into which a prepared grid of squares was imported. In particular, easily available mobile appli-

1996: 50. Such a division was also used due to the fact that no geodetic devices (e.g. differential GPS receiver) were used during the field survey, which would allow precise recording of the geographical position of each (individual) surface find. The used handheld GPS devices have a minimum deviation of up to 5 m, therefore such a distance is accepted as a threshold when separating two concentrations of finds that are closely spaced. The approach did not prove to be completely suitable for locations (sites) with a large amount and high density of surface finds (only the Selišće site), therefore, in such places, with detailed coverage, we tried to ensure systematic recording by separating smaller zones of concentration of finds (which were documented as positions of "collective finds" under one geographical point). Fortunately, most of the surface finds at the Selišće site appear on the surfaces of narrow structures of stone rubble where their spread and concentration could be relatively easily tracked and separated.

19 More than 1/6 of the island is covered by a dense network of dry-stone wall structures (local name *mocira*) most of which were created during the 18th and 19th centuries by intensive clearing due to the planting of vineyards.

20 Animal disturbance refers to the burrowing of wild boars, which sometimes opens a precious "window" into the subsurface context. Decomposing and reusing stone material from ancient (or prehistoric) structures is a common practice in the dry-stone wall landscape, also recorded on the island of Ist.



Karta 2. *Područje istraživanja i mreža kvadranata* (izradio: P. Domines Peter)
Map 2 *Survey area and quadrant grid* (made by P. Domines Peter)

grafskog informacijskog sustava (*Esri ArcGIS 10.7.*) kao osnovne platforme za organizaciju pregleda, praćenje dinamike rada, sistematiziranje i obradu svih vrsta registriranih podataka.

REZULTATI TERENSKOG PREGLEDA

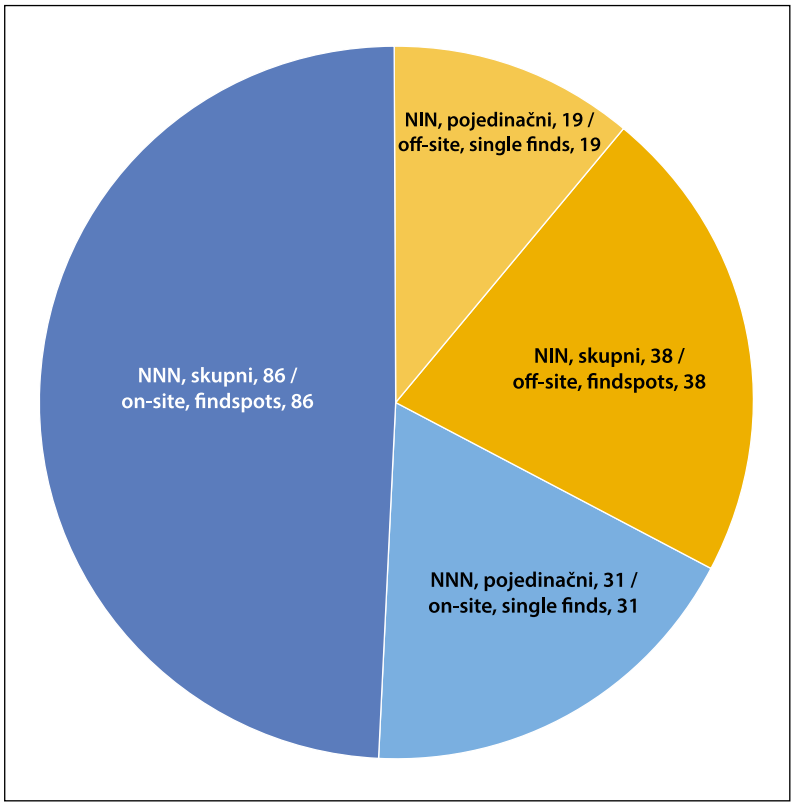
Terenski pregled proveden je krajem rujna i početkom listopada u razdoblju od osam dana, istraživačka ekipa brojila je 6 – 8 članova, pri čemu je prosječni radni dan iznosio oko 10 sati. Analiza svih trasa kretanja pregledača pokazala je da je njihov ukupni zbroj oko 121,4 km. Prosječna ukupna dnevna trasa kretanja iznosila je 15,18 km ili po jednom pregledaču 2,16 km. Dnevno je u prosjeku pregledano 14 – 16 kvadratnih jedinica.

cations have proven to be a very useful tool for monitoring field coverage and evaluating the overall daily performance of each fieldwalker.

Analyses of aerial photographs, satellite images, historical maps and photographs, topographical maps, archival materials were applied as complementary methods, and oral accounts of local residents were also collected. The field survey was accompanied by the use of the Geographical Information System (Esri ArcGIS 10.7) as a basic platform for organizing the survey, monitoring the dynamics of work, systematizing and processing all types of registered data.

FIELD SURVEY RESULTS

The field survey was carried out at the end of September and at the beginning of October in a period of 8 days. The research team consist-



Dijagram 1. *Kvantitativni podatci o površinskim nalazima u različitim kategorijama (NIN i NNN, pojedinačni i skupni)* (izradio: P. Domines Peter)
Diagram 1 *Quantitative data on surface finds in different categories (NIN and NNN, individual and collective)* (made by P. Domines Peter)

Tijekom terenskog pregleda zabilježene su ukupno 174 lokacije s površinskim nalazima, što prosječno predstavlja oko 1,4 lokacije po kvadrantu. Nalazi unutar pojedinačne lokacije su evidentirani u različitim količinama, pa je zabilježeno 50 lokacija s pojedinačnim nalazima i 124 lokacije sa skupnim nalazima (dijagram 1). Primjetna je izraženija gustoća lokacija s površinskim nalazima na jugozapadnom dijelu otoka (karta 3).[21]

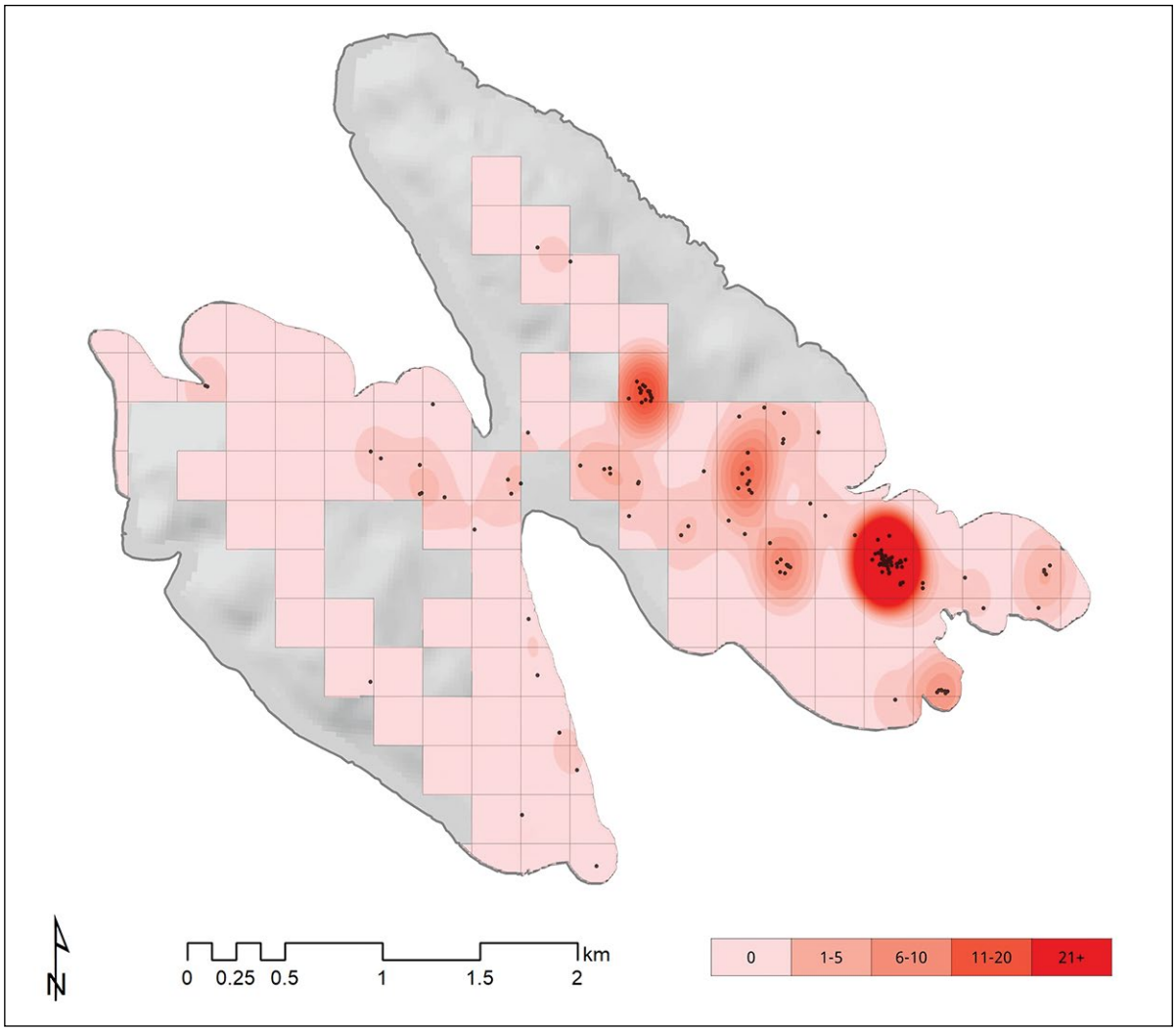
Tijekom terenskog pregleda evidentirano je 412 pokretnih nalaza, dok su prikupljena 272 nalaza. Većinu nalaza predstavljaju keramički ulomci koji su kronološki kategorizirani u četiri skupine: prapovijesna keramika, antička keramika, srednjovjekovna i novovjekovna keramika te kategorija neo-

[21] Za razliku od zapadnog dijela otoka, na jugoistočnom dijelu otoka mnogo je više otvorenih površina dobre površinske vidljivosti gdje je bilo moguće primijeniti sustavni pregled površine, što se vjerojatno posljedično odrazilo i u broju zabilježenih lokacija s površinskim nalazima. S druge strane, i koncentracija nalazišta iz različitih razdoblja upućuje na to da je taj dio otoka bio u izraženijem fokusu ljudskih aktivnosti.

ed of 6-8 members, with the average working day lasting about 10 hours. The analysis of all routes of the fieldwalkers' movements showed that their total sum is about 121.4 km. The average total daily travel route was 15.18 km or 2.16 km per fieldwalker. On average, 14-16 square units were inspected per day.

During the field survey, a total of 174 locations with surface finds were recorded, which represents an average of about 1.4 locations per quadrant. Finds within an individual location were recorded in different quantities, so 50 locations with individual finds and 124 locations with collective finds were recorded (Diagram 1). A more pronounced density of locations with surface finds is noticeable in the southwestern part of the island (Map 3).[21]

[21] Unlike the western part of the island, the southeastern part has many more open areas with good surface visibility where it was possible to apply systematic survey of the surface, which was probably consequently reflected in the number of recorded locations with surface finds. On the other hand, the concentration of sites from different periods also indicates that this part of the island was a more pronounced focus of human activities.



Karta 3. *Prostorna distribucija i gustoća površinskih nalaza (svaka točka predstavlja jedan položaj s nalazima)* (izradio: P. Domines Peter)
Map 3 *Spatial distribution and density of surface finds (each point represents one location with finds)* (made by P. Domines Peter)

dredive keramike (ostalo).

Pri obradi podataka napravljena je podjela površinskih nalaza na nalaze izvan nalazišta (NIN) i nalaze na nalazištima (NNN).[22] U slučaju nalaza izvan nalazišta riječ je o artefaktima koji su uglavnom odvojeni od nekog relevantnog arheološkog konteksta koji se može odrediti kao arheološko nalazište.[23] Slijedom toga, izdvojeno je 57 lokacija NIN-a i 117 lo-

[22] BINTLIFF, SNODGRASS 1998: 506–518; ČUČKOVIĆ 2012: 262–265. Umjesto termina *off-site* i *on-site* artefakata, koji su uvriježeni u stranoj terminologiji, kao odgovarajuće supstitucije na hrvatskom jeziku predloženi su pojmovi „nalazi izvan nalazišta" i „nalazi na nalazištima" (vidi kod KULENOVIĆ 2019: 263).

[23] NOVAKOVIĆ 2003: 142.

During the field survey, 412 small finds were recorded, while 272 finds were collected. The majority of finds are ceramic fragments, which are chronologically categorized into four groups: prehistoric pottery, ancient pottery, medieval and post-medieval pottery, and the category of indeterminate pottery (other).

When processing the data, surface finds were divided into off-site artifacts (NIN) and on-site artifacts (NNN).[22] The off-site artifacts refer to artefacts that are mostly separated from some relevant archaeological context that can be deter-

[22] BINTLIFF, SNODGRASS 1998: 506-518; ČUČKOVIĆ 2012: 262-265.

kacija NNN-a (prilog 1). Na taj način nastojalo se jasno diferencirati dvije skupine nalaza – jedna koja je povezana s kontekstom nalazišta kao nukleusom ljudskih aktivnosti i druga čije deponiranje može biti posljedica različitih privremenih ili povremenih radnji, koji, premda često ne ostavljaju važnijih tragova u strukturnoj modifikaciji krajolika, mogu biti važan pokazatelj o prostornom opsegu i intenzitetu upotrebe prostora. Preliminarna analiza dijagnostičkih keramičkih nalaza koji pripadaju kategoriji NIN-a pokazala je najveću zastupljenost antičke, potom srednjovjekovne/novovjekovne, dok je najmanje prapovijesne keramike.

Terenskim pregledom registrirano je ukupno 17 položaja koji su izdvojeni kao arheološka nalazišta (označeni IST 001-017). Većina registriranih nalazišta nije bila poznata u stručnoj literaturi. Najveći broj nalazišta može se kronološki smjestiti u prapovijesno razdoblje (3; IST 001-003), slijedi ga antičko razdoblje (2; IST 004-005) i kasni srednji vijek (1; IST 006). Kao posebna kategorija nalazišta izdvojene su kamene gomile (11; IST 007-017).

DINAMIKA NASELJENOSTI I TRANSFORMACIJE OTOČNOG KRAJOLIKA: DIJAKRONIJSKA PERSPEKTIVA

Preliminarni rezultati istraživanja pružili su uvid u strukturiranost i slojevitost otočnog krajolika i omogućili niz podataka pomoću kojih je moguće pratiti dijakronijske promjene u dinamici naseljavanja i prostorne okupacije kao procesa koji su se događali zbog specifičnih kulturnih, društvenih i gospodarskih okolnosti.[24] Transformacija krajolika promatra se u razdoblju od prapovijesti do kasnog srednjeg vijeka, odnosno ranog novog vijeka, a gornja kronološka granica definirana je činjenicom

[24] BEVAN, CONOLLY 2013; DAWSON 2014; KNAPP, VAN DOMMELEN 2014: 7–8.

mined as an archaeological site.[23] Consequently, 57 NIN locations and 117 NNN locations were singled out (Appendix 1). In this way, an effort was made to clearly differentiate two groups of finds - one that is related to the context of the site as a nucleus of human activities, and the other whose deposition may be the result of various temporary or occasional actions, which, although they often do not leave significant traces in the structural modification of the landscape, may be an important indicator of spatial extent and intensity of space use. A preliminary analysis of diagnostic pottery finds belonging to the category of NIN showed the greatest representation of ancient pottery followed by medieval/post-medieval ceramic artefacts while there were least prehistoric ceramic finds.

The field survey recorded a total of 17 positions that were singled out as archaeological sites (marked IST 001-017). Most of the recorded sites were not known in the professional literature. The largest number of sites can be chronologically associated with the prehistoric period (3; IST 001-003), followed by antiquity (2; IST 004-005) and the late Middle Ages (1; IST 006). Stone mounds (11; IST 007-017) were singled out as a special site category.

SETTLEMENT DYNAMICS AND TRANSFORMATION OF THE INSULAR LANDSCAPE: A DIACHRONIC PERSPECTIVE

The preliminary results of the research provided an insight into the structure and complexity of the insular landscape and offered data with which it is possible to monitor diachronic changes in the dynamics of settlement and spatial occupation as processes that occurred due to specific cultural, social and economic circumstances.[24] The transformation of the landscape

[23] NOVAKOVIĆ 2003: 142.

[24] BEVAN, CONOLLY 2013; DAWSON 2014; KNAPP, VAN DOMMELEN 2014: 7-8.

da se sredinom 17. stoljeća događaju bitne promjene u strukturi vlasništva koje će definirati pravce daljnjeg razvoja otoka.[25]

Prapovijest

Najstariji zabilježeni trag ljudskih aktivnosti je strugalo (*NIN*), pojedinačni nalaz s položaja Ogradica u uvali Mljakama, koji pokazuje karakteristike musterijenske kulture (srednji paleolitik) (T. I/1).[26] Nalaz litičkih izrađevina na otoku Istu potvrda je da je i područje Ista bilo uključeno u prostor kretanja paleolitičkih skupina u potrazi za ležištima za izradu i obradu alata, a moguće ga je sagledati u okviru drugih paleolitičkih nalaza na sjevernodalmatinskim otocima koji se javljaju u kontekstima sličnih geoloških formacija.[27]

Za rekonstrukciju prapovijesnog okoliša i razumijevanje najranijih obrazaca ljudskih kretanja i iskorištavanja resursa ključnu ulogu ima proučavanje promjena obalnih linija. To je posebno važno i u kontekstu razumijevanja kulturnih koncepata poput „teritorijalnosti" ili „limitiranosti" koji utječu na ljudsko ponašanje.[28] Nakon posljednje velike oledbe krajem pleistocena koja je znatno promijenila sliku regionalnog krajolika otok Ist i Molat vjerojatno su bili dio iste otočne cjeline. Oblikovanje današnje obalne linije u znatnoj je mjeri povezano s kasnijom postpleistocenskom trangresijom mora koja je postupno dovela do potapanja Zapuntelskog prolaza i razdvajanja dvaju otoka.[29] Ne zanemarujući utjecaje lokalnih tektonskih procesa, ako se najveće dubine Zapuntelskog prolaza, koje na mjestu

[25] Ključni događaj u povijesnom razvoju otoka dogodio se 1639. kada je na javnoj dražbi u Zadru otok prodan te iz komunalnog prelazi u privatno vlasništvo imućne zadarske porodice Lantana. Privatizacija otoka potaknut će nove ili intenzivirati postojeće obrasce iskorištavanja otočnih resursa (JURAN 2010: 232).

[26] Na determinaciji nalaza zahvaljujemo M. Bodrožiću.

[27] BATOVIĆ 1974: 51–53; VUJEVIĆ 2009: 2, 42; KRILE, VUJEVIĆ 2017: 24.

[28] SHACKLETON, VAN ANDEL, RUNNELS 1984: 312; DAWSON 2014: 22.

[29] VAN ANDEL 1990: 151–152; BATOVIĆ 2010: 214.

is observed in the period from prehistory to the late Middle Ages, that is, the early Modern Age, and the upper chronological limit is defined by the fact that during the middle of the 17th century, significant changes took place in the ownership structure that would define the direction of the island's further development.[25]

Prehistory

The oldest recorded trace of human activity is a scraper (*NIN*), a single find from the location of Ogradica in Mljake cove, which shows the characteristics of the Mousterian culture (Middle Palaeolithic) (Pl. I/1).[26] The discovery of lithic artefacts on the island of Ist is a confirmation that the area of Ist was also included in the area of movement of Palaeolithic groups in search of deposits for the manufacture and processing of tools, and it can be observed in the context of other Palaeolithic finds on the northern Dalmatian islands that occur in contexts of similar geological formations.[27]

For the reconstruction of the prehistoric environment and the understanding of the earliest patterns of human movements and exploitation of resources, the study of changes in coastlines plays a key role. This is especially important in the context of understanding cultural concepts such as "territoriality" or "limitation" that influence human behaviour.[28] After the last great glacial period at the end of the Pleistocene, which significantly changed the image of the regional landscape, the islands of Ist and Molat were probably part of the same island unit. The for-

[25] A crucial event in the historical development of the island took place in 1639, when the island was sold at a public auction in Zadar, thus no longer in communal but private ownership of the wealthy Lantana family from Zadar. Privatization of the island will encourage new or intensify existing patterns of exploitation of the island's resources (JURAN 2010: 232).

[26] We would like to thank M. Bodrožić for determining the finds.

[27] BATOVIĆ 1974: 51-53; VUJEVIĆ 2009: 2, 42; KRILE, VUJEVIĆ 2017: 24.

[28] SHACKLETON, VAN ANDEL, RUNNELS 1984: 312; DAWSON 2014: 22.

najbližeg dodira dvaju otoka (udaljenost oko 160 m) ne premašuju 6,5 m, usporede s relativnim kretanjima razine mora, s oprezom se može doći do zaključka da se formiranje Ista kao zasebnog otoka dogodilo negdje u 7. – 6. tisućljeću pr. Kr.[30] Međutim, čini se da se odvojenost malog otoka s oskudnim resursima nije pokazala privlačnom za naseljavanje jer nisu utvrđeni tragovi konkretnih ljudskih aktivnosti iz starijih prapovijesnih razdoblja. Odsustvo neolitičkih ili enolitičkih nalaza moguće je gledati kroz prizmu skromne zastupljenosti takvih nalaza i na susjednim otocima, ali i kroz povećalo općih karakteristika obrazaca prostorne okupacije u tim razdobljima koje su bitno određene topografskim obilježjima.[31] S druge strane, iako je mala pličina između dvaju otoka omogućavala kratkotrajne posjete, povremene aktivnosti ostavljaju malo dokaza u krajoliku, a najlakše ih je dokumentirati u špiljskim objektima sa svojstvima pogodnim za boravak ljudi, kakvi na otoku Istu zasad nisu registrirani.[32]

Prvi strukturirani krajolik kao produkt intenzivnijih ljudskih aktivnosti u prostoru pojavljuje se u brončanom i željeznom dobu, a povezan je s pojavom gradina i gomila. Terenskim pregledom otoka registrirane i dokumentirane su tri dosad nepoznate prapovijesne gradine raspoređene na središnjem otočnom grebenu. Na vrhu Straži (175 m n. v.) dokumentirana je najviša gradina otoka Ista (IST 001). Gradina je formirana na vršnom platou koji s triju strana definira monumentalna suhozidna konstrukcija oblikovana kao podzid sa samo jednim, vanjskim licem građenim od masivnih neobrađenih kamenih

[30] ANTONIOLI et al. 2007: 2479.

[31] BATOVIĆ 1974: 56–65; BASS 1998: 165–190; HORVAT 2021. Nedavno je otkriveno i nekoliko potencijalnih eneolitičkih i neolitičkih potopljenih nalazišta na sjevernodalmatinskim otocima (PARICA 2021: 29–37, 49–52).

[32] U okviru terenskog pregleda pregledana su i dva speleološka objekta na zapadnoj strani otoka, Tomina jama u uvali Mavreli i Haršova jama uz more podno vrha Beljavke. Riječ je o objektima s jamskim, vertikalnim otvorima koji prelaze u horizontalne kanale, no u njima nisu utvrđeni arheološki nalazi.

mation of today's coastal line is significantly related to the later post-Pleistocene transgression of the sea, which gradually led to the submergence of Zapuntelski prolaz (*Zapuntel passage*) and the separation of the two islands.[29] Without neglecting the influence of local tectonic processes, if we compare the greatest depths of Zapuntelski prolaz, which at the point of closest contact between the two islands (distance about 160 m) do not exceed 6.5 m, with the relative movements of the sea level, one can cautiously come to the conclusion that the formation of Ist as a separate island happened sometime in the 7th-6th millennium BC.[30] However, it seems that the isolation of a small island with scarce resources was not attractive for settlement, as no traces of specific human activities from older prehistoric periods have been identified. The absence of Neolithic or Eneolithic finds can be viewed through the prism of the modest presence of such finds on the neighbouring islands, but also through the lens of the general characteristics of patterns of spatial occupation in those periods, which are significantly determined by topographic features.[31] On the other hand, although the small shoal between the two islands allowed short-term visits, occasional activities leave little evidence in the landscape, and it is easiest to document them in cave structures suitable for human habitation, such as have not yet been recorded on the island of Ist.[32]

The first structured landscape as a product of more intensive human activities in space appears in the Bronze and Iron Ages, associated with the appearance of hillforts and mounds.

[29] VAN ANDEL 1990: 151-152; BATOVIĆ 2010: 214.

[30] ANTONIOLI et al. 2007: 2479.

[31] BATOVIĆ 1974: 56-65; BASS 1998: 165-190; HORVAT 2021. Recently, several submerged sites, tentatively dated to the Eneolithic and Neolithic, have been discovered on the northern Dalmatian islands (PARICA 2021: 29-37, 49-52).

[32] As part of the field survey, two speleological structures were inspected on the western side of the island: Tomina jama in Mavrela cove and Haršova jama by the sea at the foot of Beljavka peak. These are structures with vertical pit openings that turn into horizontal channels, but no archaeological finds have been identified in them.

blokova (sl. 2). Podzid podržava terasu koja je formirana duž istočne strane ispunjavanjem škrapa manjim kamenjem, uz djelomično priklesivanje kamenog živca. Na sjevernoj i južnoj strani struktura se nastavlja na dinamičnu stjenovitu konfiguraciju koja se pruža prema istočnim padinama. Na istočnoj je terasi dokumentiran ulaz u ograđeni perimetar (širine 1,20 m) koji flankiraju poprečno postavljeni kameni blokovi. Na zapadnim, strmim padinama Straže, artificijelno je stvorena veća terasa koju podržava podzid građen od većeg neobrađenog kamenja.

Gradina Gracina (IST 002) smještena je na vrhu (118 m n. v.) jugoistočno od Straže. Gradina je kompleksnog oblika s trima (djelomično) ograđenim platoima koji se na zračnim fotografijama ocrtavaju kroz osipine urušenih suhozidnih konstrukcija. Izvorno očuvani segmenti arhitekture uključuju tragove suhozidnog podzida na istočnoj i sjevernoj strani s vanjskim licem građenim od masivnog neobrađenog kamenja temeljenog na kamenom živcu. Podzid podržava terasu koja je dijelom formirana priklesivanjem živca i zapunjavanjem škrapa kamenjem manjih dimenzija čime je prirodna strmina prilagođena u nivelirani prostor. Suhozidne konstrukcije nadopunjuju se s dinamičnim vapnenačkim reljefom. Dva ulaza na gradinu, omeđena dužim, poprečno postavljenim kamenim blokovima dokumentirana su na terasama na sjevernoj strani gradine. Ulazi su međusobno povezani putom koji je trasiran između djelomično priklesanih kamenih škrapa, a vodi sjevernom padinom iz smjera podnožja Gracine i položaja Trišćeni.

Gradina Smokvenjak (IST 003) nalazi se jugoistočnom dijelu otoka, na manjem uzvišenju (32 m n. v.) koje se izdiže iznad Zapuntelskog prolaza. Na strmim istočnim, sjevernim i dijelom zapadnim padinama dokumentiran je suhozidni podzid s vanjskim licem građenim od masivnog neobrađenog kamenja koji se polukružno obavija oko uzvišenja (sl. 3). S unutarnje strane podzida stvorena je terasa koja nivelira strmu konfiguraciju padine u za-

A field survey of the island registered and documented three previously unknown prehistoric hillforts located on the island's central ridge. The highest hillfort on the island of Ist (IST 001) is documented on the summit of Straža (175 masl.). The hillfort was formed on the top plateau, which is defined on three sides by a monumental dry-stone wall construction shaped like a retaining wall with only one, outer face built of massive undressed stone blocks (Fig. 2). The retaining wall supports the terrace, which was formed along the eastern side by filling the cracks with smaller stones, while the bedrock was partially chiselled. On the northern and southern sides, the structure continues to a dynamic rocky configuration that extends towards the eastern slopes. The entrance to the enclosed perimeter (width 1.20 m) flanked by transversely placed stone blocks is documented on the eastern terrace. On the western, steep slopes of Straža, a larger terrace was artificially created, which is supported by a retaining wall built of larger undressed stones.

Gracina hillfort (IST 002) is located on the summit (118 masl) southeast of Straža. The hillfort has a complex shape with three (partially) enclosed plateaus that can be seen on aerial photographs through the rubble of collapsed dry stone wall structures. The originally preserved segments of constructions include traces of a dry-stone retaining wall on the eastern and northern sides with an outer face built of massive undressed stones and foundation on the bedrock. The retaining wall supports the terrace, which was partly formed by chiselling the bedrock and filling the cracks with stones of smaller dimensions, which adapted the natural slope into a levelled space. Dry stone wall constructions are complemented by dynamic limestone relief. Two entrances to the hillfort, bordered by longer, transversely placed stone blocks, are documented on the terraces on the northern side of the hillfort. The entrances are connected to each other by a road between partially carved stone karrens, leading along the northern slope from the direction of the foot of

Slika 2. *a) Pogled na gradinu Straža iz zračne perspektive, b) Vanjsko lice suhozidnog podzida na istočnoj padini* (snimio: P. Domines Peter)
Figure 2 *a) aerial view of Straža hillfort, b) outer face of the dry stone wall on the eastern slope* (photo by P. Domines Peter)

Slika 3. *a) Pogled na gradinu Smokvenjak, b) Terasa na sjevernoj padini* (snimio: P. Domines Peter)
Figure 3 *a) view of Smokvenjak hillfort, b) terrace on the northern slope* (photo by P. Domines Peter)

ravnjenu površinu. Na sjevernom dijelu registriran je ulaz u gradinu (širine 120 cm) koji formiraju poprečno postavljeni kameni blokovi usklađeni s prirodnim pružanjem matične stijene.

U izostanku arheoloških iskopavanja, apsolutnih datuma ili vremenski osjetljivih nalaza teško je donijeti preciznije podatke o vremenu formiranja gradina na otoku Istu, iako ih se konvencionalno može datirati u relativno široko razdoblje od brončanog do željeznog doba. To potvrđuju i površinski ulomci prapovijesnih keramičkih posuda koji se prema svojim oblicima i tehnološkim svojstvima uklapaju u standarde mlađih prapovijesnih razdoblja (T. I/2-20). Općenito, izraženija koncentracija gradinskih nalazišta, ali i gustoća prapovijesne keramike (NIN) potvrđuje težište aktivnosti na jugoistočnoj strani otoka, gdje se nalaze i važni otočni prirodni resursi – površine obradive zemlje i izvor vode (karta 4a).

Gracina and the position of Trišćeni.

Smokvenjak hillfort (IST 003) is located in the southeastern part of the island, on a small hill (32 masl) that rises above Zapuntelski prolaz. A dry-stone retaining wall with an outer face built of massive undressed stones that enclose the elevation in a semicircle was documented on the steep eastern, northern and partly western slopes (Fig. 3). A terrace was created on the inside of the retaining wall which levels the steep configuration of the slope into a flat surface. In the northern part, the entrance to the hillfort (120 cm wide) is recorded, which is formed by transversely placed stone blocks aligned with the natural extension of the bedrock.

In the absence of archaeological excavations, absolute dates or diagnostic finds, it is difficult to provide more precise data on the time of formation of the hillforts on the island of Ist, although conventionally they can be dated

Slika 4. *Komparacija veličina i tlocrta gradina na Istu: a) Straža, b) Gracina, c) Smokvenjak* (izradio: P. Domines Peter)
Figure 4 *Comparison of the sizes and ground plans of the hillforts on Ist: a) Straža, b) Gracina, c) Smokvenjak* (made by P. Domines Peter)

Podizanje gradina označava najraniju pojavu monumentalne arhitekture na otoku Istu. Zajednička arhitektonska obilježja iščunskih gradina očituju se u formi podzida i terasa kao najistaknutijih suhozidnih elemenata građenih od masivnog kamenja čije je podizanje povezano sa savladavanjem prirodne morfologije padine koja se poravnava u nivelirani operativni prostor koji se mogao rabiti za različite aktivnosti.[33] Iako se gradinsko terasiranje ističe kao složeni oblik intervencije u prapovijesnom krajoliku, koji može poprimiti i simboličku ulogu, određene rekonstrukcije pokazuju da je gradnju takvih monumentalnih struktura bilo moguće ostvariti i angažiranjem relativno malog broja ljudi unutar relativno malo vremena.[34] Gradnja suhozidnih struktura može biti povezana i s krčenjem tla, čime se osigurava dovoljno potrebnog kamena za gradnju, a istovremeno povećava gospodarski potencijal zemljišta.[35]

[33] Starija literatura uglavnom je isticala bedeme kao temeljne arhitektonske značajke gradina. Međutim, pomnije analize strukturnih elemenata pokazuju da su terase također česti element na gradinama. Terase mogu određivati površinu unutarnjeg perimetra prilagođavajući se prirodnoj konfiguraciji padina oko vršnog platoa, a zbog tehnike gradnje, rasporeda i linije njihova protezanja i njima se može pripisati uloga obrambenog bedema. Međutim, takvi „terasasti bedemi", za razliku od samostojećih zidova, imaju samo jedno, vanjsko lice. Vidi CHAPMAN, SHIEL, BATOVIĆ 1996: 255; RADIĆ, BASS 1999: 37; GLAVAŠ 2015: 72–77.
[34] CHAPMAN, SHIEL, BATOVIĆ 1996: 169–175.
[35] CHAPMAN, SHIEL, BATOVIĆ 1996: 284.

to a relatively broad period from the Bronze Age to the Iron Age. This is also confirmed by the surface fragments of prehistoric ceramic vessels, which according to their shapes and technological properties fit into the standards of younger prehistoric periods (Pl. I/2-20). In general, the more pronounced concentration of hillforts, but also the density of prehistoric pottery (NIN) confirms the focus of activity on the southeastern side of the island, where there are also significant natural resources - areas of arable land and a source of water (Map 4a).

The building of the hillfort marks the earliest appearance of monumental architecture on the island of Ist. The common architectural features of hillforts on Ist are manifested in the form of retaining walls and terraces as the most prominent dry stone wall elements built from massive stones, the construction of which is connected with mastering the natural morphology of the slope, which is levelled into an operational space that could be used for various activities.[33]

[33] Older literature mainly emphasized ramparts as the basic architectural features of hillforts. However, a closer analysis of the structural elements shows that terraces are also a common element on hillforts. The terraces can determine the area of the inner perimeter by adapting to the natural configuration of the slopes around the peak plateau, and due to the construction technique, layout and line of their spreading, they can also be attributed the role of a defensive rampart. However, such "terraced ramparts", unlike free-standing walls, have only one, outer face, see CHAPMAN, SHIEL, BATOVIĆ 1996: 255; RADIĆ, BASS 1999: 37; GLAVAŠ 2015: 72-77.

Linearni prostorni raspored gradina na otoku Istu, koncentriranih na dominantnim položajima središnjeg otočnog grebena odaje moguću korelaciju s kontrolom prirodnih resursa i agrarnih potencijala, osobito površinama obradive zemlje koja je mogla biti korištena kao pašnjak ili za obrađivanje, kakvih je najviše na jugoistočnom dijelu otoka. S druge strane, nije moguće zanemariti i činjenicu da se na tom dijelu nalazi i najveća lokva Jezero, koja je kao jedan od ključnih resursa i ekoloških determinanti možda imala ključnu ulogu i tijekom prapovijesti. Išćunske gradine svojim površinama i tlocrtima ne razlikuju se znatno od gradina na susjednim otocima, gdje također prevladava niz gradina manjih površina čije je formiranje vjerojatno povezano s kontrolom resursa.[36] Složenijim tlocrtom s nekoliko platoa ističe se tek gradina Gracina kojoj je na temelju toga moguće pretpostaviti i istaknutije mjesto u naseobinskoj hijerarhiji (sl. 4). Međutim, u razmatranju funkcije, svrhe podizanja ili prostorne uloge otočnih gradina pogrešno je promatrati isključivo naseobinsku ili fortifikacijsku funkciju, posebice u slučajevima kada je bez iskopavanja nemoguće pronaći ikakve dokaze habitacije, a pritom zanemariti čitav spektar drugih mogućih funkcija gradina, od promatračnica, zakloništa, refugija, ograda za stoku, markera teritorijalnosti i kontrole mora, oznake položaja zajednice, orijentira u plovidbi, određenih simboličkih uloga ili drugih društvenih značenja o kakvima zapravo vrlo malo znamo.[37]

Na išćunskim gradinama nedostaju čvrsti kronološki pokazatelji o dugotrajnom kontinuitetu korištenja, koji se može protezati i do

[36] BATOVIĆ 1973: 68–94.

[37] ČAČE 1981: 35–40; NOVAKOVIĆ 2001: 186; GLAVAŠ 2015: 119–126; ČUČKOVIĆ 2017: 539. Pri opisivanju gradine kao ključna odrednica često se ističe položaj na uzvišenom koji jamči dobru vidljivost i vizualnu kontrolu. Takve preduvjete, čini se, ispunjavaju sve gradine na otoku, iako je bez konkretnih analiza vidljivosti moguće zadržati se samo na subjektivnom zapažanju da gradina Straža omogućuje najveći opseg vizualnog dometa jer se s nje pruža izvanredan pogled na sve druge gradine, kao i uvale, komunikacije, gomile, more i okolno otočje.

Although hillfort terracing stands out as a complex form of intervention in the prehistoric landscape, which can also take on a symbolic role, certain reconstructions indicate that the building of such monumental structures was also possible by engaging a relatively small number of people within a relatively short time.[34] The construction of dry stone wall structures can also be associated with land clearing, which provides enough necessary stone for construction, and at the same time increases the economic potential of the land.[35]

The linear spatial arrangement of hillforts on the island of Ist, concentrated on the dominant positions of the island's central ridge, reveals a possible correlation with the control of natural resources and agrarian potentials, especially areas of arable land that could have been used as pasture or for cultivation, which are mostly found in the southeastern part of the island. On the other hand, it is not possible to ignore the fact that the largest pond Jezero, is also located in that part, which as one of the crucial resources and ecological determinants may have played a key role during prehistory as well. Hillforts on the island of Ist do not differ significantly in terms of their areas and ground plans from the hillforts on the neighbouring islands where there are also a number of smaller fortifications, the formation of which is probably related to the control of resources.[36] Only Gracina hillfort stands out with a more complex ground plan with several plateaus suggesting a more prominent place in the settlement hierarchy (Fig. 4). However, when considering the function, the purpose of building or the spatial role of island hillforts, we must not concentrate only on the settlement or fortification function, especially in cases where it is impossible to find any evidence of habitation without excavation, while ignoring the entire range of other possible functions of fortifications, from observation towers, shelters, refugia, livestock enclosures, markers

[34] CHAPMAN, SHIEL, BATOVIĆ 1996: 169-175.

[35] CHAPMAN, SHIEL, BATOVIĆ 1996: 284.

[36] BATOVIĆ 1973: 68-94.

kasnog željeznog doba kada se u regionalnom kontekstu razvijaju glavna upravna, gospodarska i teritorijalna središta zajednica koja će takvo značenje zadržati i tijekom antike.[38] Među površinskim nalazima na gradinama (NNN) nije uočen importirani materijal koji potencijalno može biti važan kronološki marker.[39] Kao jedini pouzdano atribuirani nalaz izdvaja se ulomak oboda amfore pronađen kao pojedinačni nalaz (NIN) na zapadnoj strani otoka (T. II/1). Prema obliku i svijetloj fakturi ulomak odgovara tipu Korint B amfora, i to vjerojatno tzv. prijelaznim oblicima prema grčko-italskim amforama (sred. 4. – sred. 3. st. pr. Kr). Iako je distribucija takvih amfora u sjevernoj Dalmaciji još uvijek vrlo ograničena, ulomak s Ista dokazuje participaciju otoka u široj mreži gospodarskih interakcija i pomorskih kontakata koji su posebno intenzivirani tijekom posljednjih stoljeća prije Krista.[40]

Dominantna brojnost gomila (IST 007-017) među nalazištima na otoku Istu uklapa se u postojeće obrasce po kojima su upravo gomile jedne od najbrojnijih prapovijesnih struktura na sjevernodalmatinskim otocima (sl. 5).[41] U mnogim slučajevima gomile je bez direktnih dokaza teško kronološki i funkcionalno odre-

[38] Posljednjih stoljeća prije Krista postojeće indigene zajednice dolaze u znatniji kontakt s grčkim utjecajima, a na određenom se području izdvajaju naselja koja će s vremenom preuzeti ulogu gospodarskog, političkog i društvenog središta šireg teritorija (SUIĆ 1974: 49) Međutim, takav razvoj nije moguće implicirati i za zadarske otoke, kao niti za otok Ist, posebice u izostanku bilo kakvih pisanih tragova u antičkim izvorima, ali i arheoloških podataka koji bi upućivali na takav kontinuitet naseobinske hijerarhije. Već u predrimsko doba postojale su izražene veze između sjevernodalmatinskih otoka i Jadera kao najvažnijeg obalnog naselja (ČAČE 1993: 19), a možda je takav odnos potaknuo i promjenu u naseljenosti malih otoka u korist naseljavanja regionalnih središta tijekom protopovijesnog razdoblja.

[39] Pojava importiranog grčko-helenističkog materijala može se prihvatiti kao indikator naseljenosti pojedinog gradinskog nalazišta tijekom mlađeg željeznog doba (ČAČE 2006: 69).

[40] PARAMAN, UGARKOVIĆ 2021: 69–71, T. 9/122. Nalaz s otoka Ista prvi je takav nalaz na sjevernodalmatinskim otocima. Najbliži primjerak registriran je u podmorju otoka Mauna. Za distribuciju amfora tipa Korint B na istočnom Jadranu vidi BORZIĆ 2017: 5–12; RADIĆ ROSSI 2017: 13–25.

[41] BATOVIĆ 1974: 42–43.

of territoriality and control of the sea, marks of the community positions, landmarks in navigation, certain symbolic roles or other social meanings which are actually poorly known.[37]

There are no firm chronological indicators of the long-term continuity of use on the Ist hillforts, which can extend to the late Iron Age, when the main administrative, economic and territorial centres of communities developed in the regional context, which would retain such importance even during antiquity.[38] Among the surface finds on the hillforts (NNN), no imported material was observed, which could potentially be a significant chronological marker.[39] The only reliably attributed find is the amphora rim fragment found as a single find (NIN) on the western side of the island (Pl. II/1). The shape and light fabric of the fragment indicate the Corinth B amphora type, and probably the so-called transitional forms to Greco-Italic amphorae (mid-4th – mid-3rd century BC). Although the distribution of such amphorae in northern Dalmatia is still very limited, the frag-

[37] ČAČE 1981: 35-40; NOVAKOVIĆ 2001: 186; GLAVAŠ 2015: 119-126; ČUČKOVIĆ 2017: 539. When describing a hillfort, the location on an elevated ground that guarantees good visibility and visual control is often highlighted as a crucial determinant. All the hillforts on the island seem to meet such preconditions, although without concrete analysis of visibility, it is possible to stick only to the subjective observation that Straža hillfort provides the greatest scope of visual range because it offers an extraordinary view of all other hillforts, as well as coves, communication lines, mounds, the sea and the surrounding islands.

[38] In the last centuries BC existing indigenous communities come into more significant contact with Greek influences, and in a certain area there are settlements which will eventually become the economic, political and social centers of a wider territory (SUIĆ 1974: 49). However, such development cannot be implied for the Zadar islands, nor for the island of Ist, especially in the absence of any written traces in ancient sources, but also of archaeological data that would point to such a continuity of the settlement hierarchy. Already in pre-Roman times, there were pronounced connections between the northern Dalmatian islands and Iader as the most important coastal settlement (ČAČE 1993:19), and perhaps such a relationship also stimulated a change in the settlement of small islands in favour of the settlement of regional centers during the prehistoric period.

[39] The appearance of imported Greco-Hellenistic material can be accepted as an indicator of the settlement of a particular hillfort site during the Late Iron Age (ČAČE 2006: 69).

Slika 5. *Kamene gomile na otoku Istu: a) Zadoci, b) Binus, c) Pod Klundom, d) Trišćeni* (snimio: P. Domines Peter)
Figure 5 *Stone mounds on the island of Ist: a) Zadoci, b) Binus, c) Pod Klundom, d) Trišćeni* (photo by P. Domines Peter)

diti, odnosno sa sigurnošću identificirati kao arheološke strukture ili kao recentne krčevine, stoga činjenica da njihova sigurna atribucija prapovijesnom razdoblju često nije moguća opravdava odvajanje gomila u posebnu kategoriju nalazišta.[42] Gomile se konvencionalno određuju kao prapovijesna sepulkralna nalazišta, iako se razlozi njihova podizanja na odabranim mjestima u prostoru mogu sagledati i kroz prizmu drugih predloženih funkcija, poput gradnje promatračnica i ciljane vizualne kontrole, putokaza za pomorce ili markiranja vlasništva nad obradivim površinama, pašnjacima ili komunikacijama.[43] U svjetlu toga, treba istaknuti da se prostorni položaj pojedinih išćunskih gomila može promatrati u korelaciji s nadzorom komunikacija (kopnenih i pomorskih putova) ili simboličnim označavanjem vlasništva nad obradivim zemljištem.

ment from Ist proves the island's participation in a wider network of economic interactions and maritime contacts that were especially intensified during the last centuries BC.[40]

The dominant number of mounds (IST 007-017) among the sites on the island of Ist fits into the existing patterns according to which the mounds belong to the most numerous prehistoric structures on the northern Dalmatian islands (Fig. 5).[41] In many cases, without direct evidence, it is difficult to determine the mounds chronologically and functionally, that is, to identify them with certainty as archaeological structures or as recent piles resulting from land clearing, therefore the fact that their reliable attribution to a prehistoric period is often not possible justifies the separation of mounds into a special category of sites.[42] The mounds are conventionally deter-

[40] PARAMAN, UGARKOVIĆ 2021: 69-71, T. 9/122. The find from the island of Ist is the first such find on the northern Dalmatian islands. The closest specimen is registered on the seabed near the island of Maun. For the distribution of Corinth type B amphorae in the eastern Adriatic, see BORZIĆ 2017: 5-12; RADIĆ ROSSI 2017: 13-25.

[41] BATOVIĆ 1974: 42-43.

[42] Cf. BARBARIĆ 2011: 145-152. The same applies to the

[42] Usp. BARBARIĆ 2011: 145–152. Isto vrijedi i za gomile na Istu koje nije moguće u cjelini jednoznačno odrediti kao prapovijesne strukture.

[43] OREČ 1978: 181–291; ČAČE 1981: 36–39; BORGNA, CASSOLA GUIDA 2009: 89–104; ČUČKOVIĆ 2017: 526–546.

Antika

Promjena političkih i društvenih okolnosti koje prati uspostava rimske vlasti na istočnom Jadranu dovest će do promijenjenih obrazaca korištenja prostora. Sadašnje stanje istraženosti pokazuje da je transformacija otočnih krajolika primarno povezana s novim oblicima korištenja zemljišta i eksploatacijom agrikulturnih resursa koje je moguće pratiti kroz prostornu organizaciju ruralnih stambeno-gospodarskih kompleksa (*villa rustica*) koji se ističu i kao dominantni izraz naseljenosti zadarskih otoka koji će tijekom čitave antike zadržati svoj ruralno-agrarni karakter.[44] Međutim, posebnu poteškoću predstavlja činjenica da, za razliku od pojedinih susjednih otoka,[45] u povijesnim izvorima nema podataka o administrativnoj i teritorijalnoj pripadnosti ili vlasništvu otoka Ista za rimske vladavine. Suić pretpostavlja da su pojedini zadarski otoci bili organizirani kao državna zemlja (*ager publicus*), dok su drugi bili privatna zemlja (*ager privatus*) ili su pripadali kategoriji neobrađene zemlje pašnjaka i šuma (*compascua et silvae*).[46] Iako gusta disperzija položaja pretpostavljenih rustičnih vila na zadarskim otocima upućuje na naglašenu gospodarsko-rezidencijalnu ulogu ruralnog krajolika, širi pogled otkriva i druge oblike ljudskih modifikacija prostora u funkciji kamenarstva,[47] solarstva i ribarstva[48], pomorskog prometa[49], a sasvim je sigurno da su dostupne površine šuma i pašnjaka otvarale mogućnosti za ramined as prehistoric sepulchral sites, although the reasons for their erection in selected places in space can also be seen through the prism of other proposed functions, such as the construction of observation posts and targeted visual control, guideposts for sailors or marking ownership of arable land, pastures or communication lines.[43] In light of this, it should be emphasized that the spatial position of individual mounds on Ist can be observed in correlation with the monitoring of communication lines (land and sea routes) or the symbolic marking of ownership of arable land.

Antiquity

The change in political and social circumstances accompanied by the establishment of Roman rule in the eastern Adriatic led to changed patterns of space use. The current state of research shows that the transformation of island landscapes is primarily associated with new forms of land use and exploitation of agricultural resources, which can be traced through the spatial organization of rural residential and agricultural complexes (*villa rustica*), which also stand out as the dominant expression of settlement of the Zadar islands, which will retain its rural-agrarian character throughout antiquity.[44] However, unfortunately there is no information in historical sources about the administrative and territorial affiliation or ownership of the island of Ist during Roman rule, unlike for some neighbouring islands.[45] Suić assumes that certain Zadar islands were organized as state land (*ager publicus*), while

[44] SUIĆ 1974: 47–49. Za vile rustike u Dalmaciji vidi BEGOVIĆ, SCHRUNK 2002. Za ruralni krajolik sjeverne Liburnije vidi KONESTRA, LIPOVAC VRKLJAN, WELC 2022. Za naseljenost zadarskih otoka usp. SUIĆ 1974: 41–63. Za topografiju rustičnih vila na zadarskim otocima vidi JURJEVIĆ 2020: 156–198 i ondje citiranu literaturu.

[45] Za povijesnu toponimiju zadarskih otoka vidi KATIČIĆ 1974: 35–46.

[46] SUIĆ 1974: 52.

[47] PARICA 2012: 345–353.

[48] CARRE, AURIEMMA 2009: 89; UGLEŠIĆ, PARICA 2013: 149–153; PARICA 2017: 88–93.

[49] Brojni su ostatci luka i pristaništa iz rimskog razdoblja. Vidi BRUSIĆ 1974: 67–68; JURIŠIĆ 2006; PARICA 2017.

mounds on Ist, which cannot all be unambiguously identified as prehistoric structures.

[43] OREČ 1978: 181-291; ČAČE 1981: 36-39; BORGNA, CASSOLA GUIDA 2009: 89-104; ČUČKOVIĆ 2017: 526-546.

[44] SUIĆ 1974: 47-49. About *villae rusticae* in Dalmatia, see BEGOVIĆ, SCHRUNK 2002. For rural landscape of northern Dalmatia, see KONESTRA, LIPOVAC VRKLJAN, WELC 2022. About the settlement of the Zadar islands cf. SUIĆ 1974: 41-63. For the topography of *villae rusticae* on the Zadar islands, see JURJEVIĆ, 2020: 156-198 and the references cited therein.

[45] For the historical toponymy of the Zadar islands, see KATIČIĆ 1974: 35-46.

zvoj stočarstva, šumarstva i drugih povezanih aktivnosti.

Nemoguće je precizno reći kada su prvi odjeci romanizacije zahvatili otok Ist. Skromni površinski nalazi iz ranorimskog razdoblja (NIN) sugeriraju da je određena razina prostorne i ekonomske organizacije unutar rimskog sustava postojala već tijekom 1. st. pr. Kr., iako je teško prosuditi je li način korištenja otoka uključivao povremenu ili stalnu naseljenost. Integriranje u rimski svijet otvorilo je vrata novim građevnim tehnikama, materijalima i načinima obrade zemlje, a smještaj na važnom dužjadranskom pomorskom putu, koji prolazi uz istočnu obalu Ista, naglasio prometni položaj otoka.[50] Najveća koncentracija antičkih nalaza povezana je s položajem Selišće u zaleđu uvale Mljaka na jugoistočnoj strani otoka (IST 004). Dokumentirane strukture uključuju tri zida i ukopanu pravokutnu strukturu (unutarnje dimenzije 1,80 x 1,20 m). Tlocrt nalazišta otkriva pravilnu dispoziciju zidova koje povezuje identična širina i način gradnje uz uporabu sličnog vezivnog sredstva što može upućivati na zaključak da vjerojatno pripadaju istoj arhitektonskoj cjelini (sl. 6). Osim arhitektonskih ostataka koji podupiru pretpostavku da je riječ o ostatcima ruralnog stambeno-gospodarskog kompleksa,[51] prilog toj tvrdnji mogla bi biti i dominantna količina ulomaka amfora, koji uz ulomke dolija i kamenih žrvnjeva upućuju na gospodarski karakter te preradu i skladištenje poljoprivrednih proizvoda, dok nalazi troske i na aktivnosti povezane s preradom metala. Po-

others were private land (*ager privatus*) or belonged to the category of uncultivated pasture and forest land (*compascua et silvae*).[46] Although the dense dispersion of the positions of presumed *villae rusticae* on the Zadar islands indicates an emphasized productive and residential role of the rural landscape, a wider view reveals other forms of human modification of space in the function of stonework,[47] salt production and fishing,[48] maritime traffic,[49] and it is quite certain that the areas of forests and pastures opened opportunities for the development of animal husbandry, forestry and other related activities.

It is impossible to say precisely when the first echoes of Romanization were felt on the island of Ist. Modest surface finds from the early Roman period (NIN) suggest that a certain level of spatial and economic organization within the Roman system already existed during the 1st century BC, although it is difficult to say whether the way the island was used included occasional or permanent settlement. Integration into the Roman world opened the door to new construction techniques, materials and ways of tilling the land, and the location on the important maritime route along the Adriatic, which runs along the eastern coast of Ist, highlighted the traffic importance of the island.[50] The largest concentration of ancient finds is related to the location of Selišće in the hinterland of Mljake cove on the southeastern side of the island (IST 004). Documented structures include three walls and a buried rectangular structure (inner dimensions 1.80 x 1.20 m). The ground plan of the site reveals regular disposition of the walls connected by identical width and construction method with the use of

[50] Više antičkih brodoloma evidentirano je u podmorju otoka Ista (usp. JURIŠIĆ 2006: 322; VRSALOVIĆ 2011: 91). U uvali Dumboka na zapadnoj obali otoka navodi se podatak o postojanju potopljene antičke maritimne konstrukcije (JURIŠIĆ 2006: 322).

[51] Ukopanoj strukturi sa Selišća pronalaze se analogije u obliku i dimenzijama ožbukanog bazena s nalazišta rimske vile u uvali Solinama na otoku Sv. Klement kod Hvara (UGARKOVIĆ et al. 2016: 163) koji je mogao imati ulogu u različitim prerađivačkim pogonima, povezanim s proizvodnjom vina, ulja ili soljenjem ribe (SCHRUNK et al. 2022: 199–200).

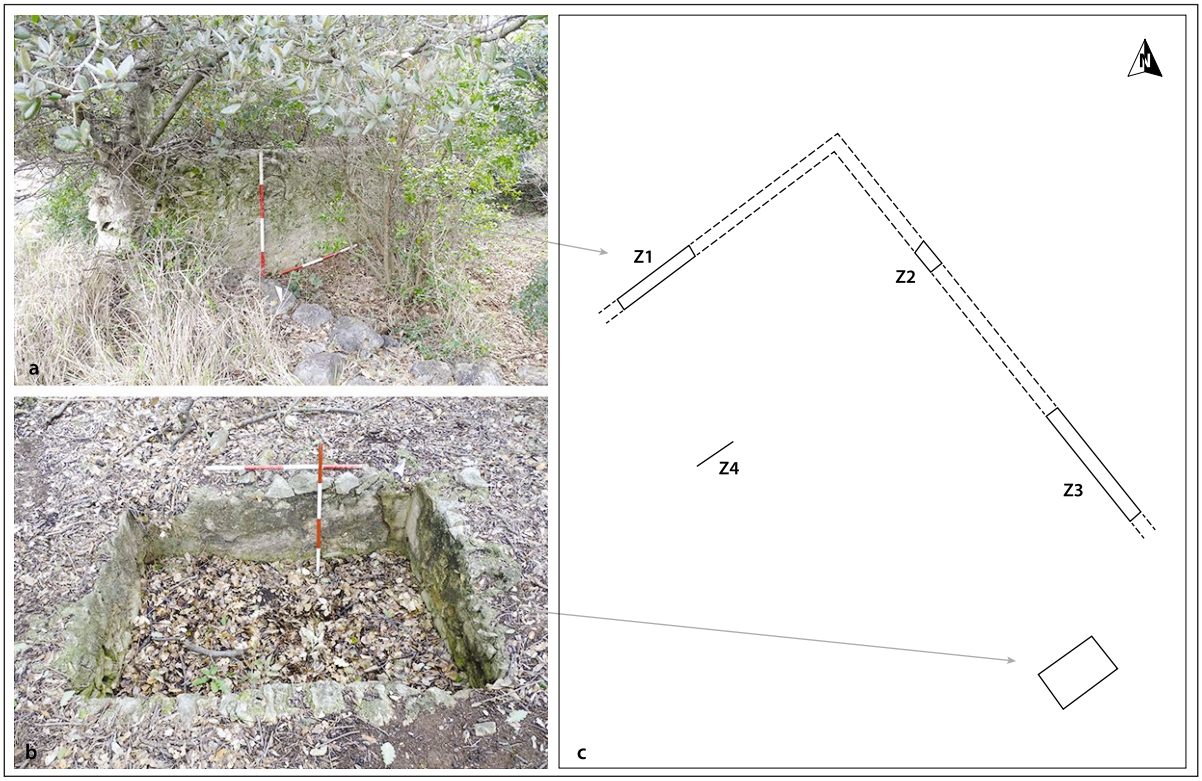
[46] SUIĆ 1974: 52.

[47] PARICA 2012: 345-353.

[48] CARRE, AURIEMMA 2009: 89; UGLEŠIĆ, PARICA 2013: 149-153; PARICA 2017: 88-93.

[49] There are numerous remains of harbours and piers from the Roman period, see BRUSIĆ 1974: 67-68; JURIŠIĆ 2006; PARICA 2017.

[50] Several ancient shipwrecks have been recorded on the seabed of the island of Ist (cf. JURIŠIĆ 2006: 322; VRSALOVIĆ 2011: 91). There is information about submerged ancient maritime structure in Dumboka cove on the west coast of the island (JURIŠIĆ 2006: 322).



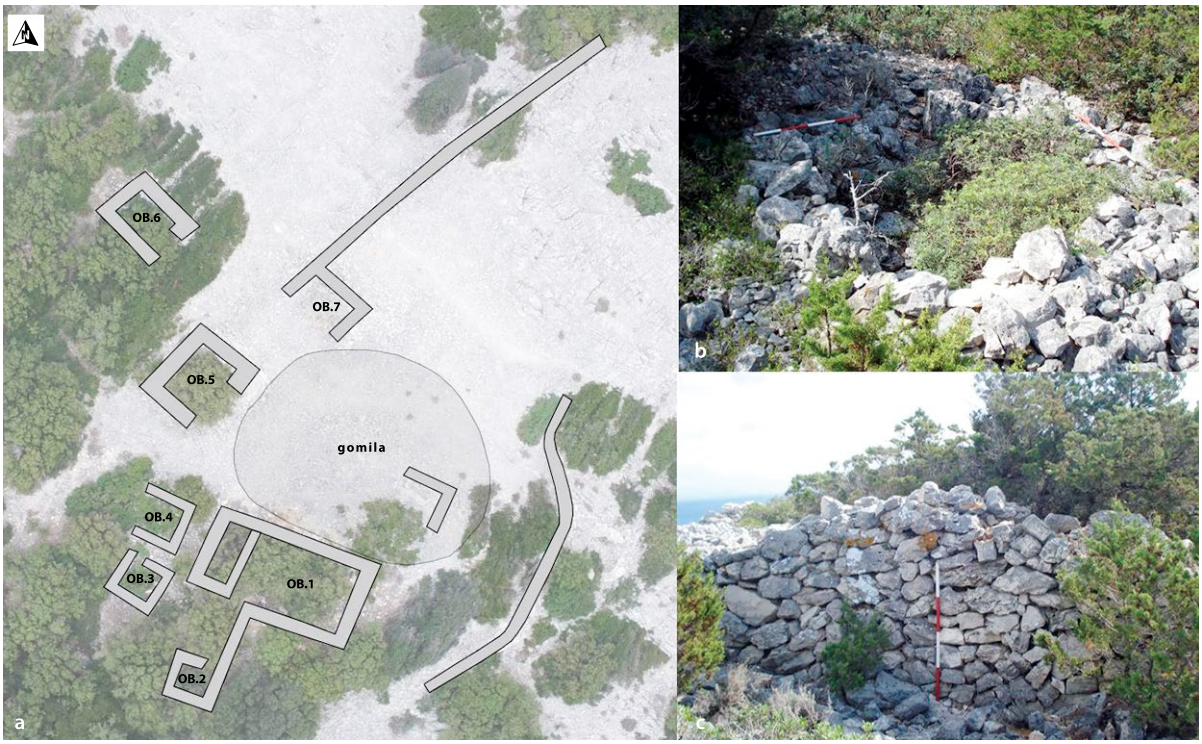
Slika 6. *Nalazište Selišće: a) antička arhitektura – zid Z1, b) antički bazen?, c) situacijski plan i hipotetska rekonstrukcija rustične vile (?)* (snimio: P. Domines Peter)
Figure 6 *Selišće site: a) Roman-era structure - wall Z1, b) Roman-era pool?, c) situation plan and hypothetical reconstruction of villa rustica (?)* (photo by P. Domines Peter)

ložaj je svakako bio korišten u kasnoj antici, što posvjedočuje dominantna zastupljenost kasnoantičkog površinskog materijala (4. – 7. st.), a prilog tomu je i nalaz, zasad još uvijek neodređenog, kasnoantičkog novca (T. II/2-11). Za razliku od sličnih nalazišta na susjednim otocima, često smještenih na samom obalnom pojasu, položaj nalazišta Selišće usred zone s najboljim agrarnim potencijalom naglašava gospodarsku orijentaciju povezanu s iskorištavanjem obradivog zemljišta, potencijalno za uzgoj vinove loze ili maslina, čija je široka kultivacija na prostoru sjevernodalmatinskih otoka tijekom rimskog doba potvrđena arheološkim i povijesnim izvorima.[52] Teško je raspravljati u kolikoj su mjeri stabilne gospodarske prilike potaknule intenzivnije naseljavanje otoka i stvaranje kompleksnijeg naseobinskog su-

[52] SUIĆ 1960: 230–249; MATIJAŠIĆ 1993: 247–261; ILAKOVAC 2003: 49–64; KOPÁČKOVÁ 2020: 163–184.

a similar binding agent, which may suggest that they probably belong to the same architectural unit (Fig. 6). In addition to the architectural remains that support the assumption that these are the remains of a rural residential and agricultural complex,[51] this assertion could also be supported by the dominant number of amphora fragments, which together with fragments of dolia and stone querns indicate an economic character and the processing and storage of agricultural products, while finds of slag suggest activities related to metal processing. The location was certainly used in Late Antiquity, which is evidenced by the dominant presence of late antique surface finds (4th-7th centuries), and this is supported by the finding of a still undetermined late antique coin

[51] Analogies to the buried structure from Selišće are found in the shape and dimensions of the plastered pool from the site of the Roman villa in Soline cove on the island of Sv. Klement near Hvar (UGARKOVIĆ et al. 2016: 163), which could have been used in various processing facilities, related to the production of wine, oil or salting fish (SCHRUNK et al. 2022: 199-200).



Slika 7. *Nalazište Jabucina: a) situacijski plan, b) suhozidni objekt OB.4, c) zidovi objekta OB.1* (snimio: P. Domines Peter)
Figure 7 *Jabucina site: a) situation plan, b) dry stone wall structure OB.4, c) walls of structure OB.1* (photo by P. Domines Peter)

stava. Izuzev nalazišta Selišće, u literaturi se navodi podatak o depozitu s ostatcima iz rimskog vremena evidentiranom i na mjestu današnjeg naselja,[53] no bez preciznih podataka.

Posebnu pozornost privlače antički ostatci na vrhu uzvisine Jabucine (37 m n. v.) iznad Zapuntelskog prolaza (IST 005). Nalazište prethodno opisuje Batović navodeći da je riječ o kasnoantičkim objektima.[54] Kompleks se sastoji od sedam objekata različitih dimenzija koji su raspoređeni na vršnoj za-

[53] BATOVIĆ 2010: 216. Tragom vijesti o pronalasku koštanih breča na Istu skupina zadarskih arheologa 1989. je posjetila otok i zabilježila podatke o kontekstu i lokaciji nalaza. Tijekom pregleda jame za gustirnu uz kuću Mate Komaća, uz koštane breče, u profilu je zamijećen i sloj „s crnom zemljom u kojem su se nalazili ulomci rimske keramike i stakla". U kontekstu antičkih nalaza treba spomenuti i kamenu glavu koja se nalazi na zabatu kuće (Tomina kuća) u uvali Široka. Prema stilskim značajkama mogla bi se datirati u dr. pol. 1. – poč. 2. st. Međutim, informacije o njezinu podrijetlu ili mjestu otkrića nisu poznate, pa nije moguće isključiti mogućnost da je na otok donesena s nekog drugog mjesta.

[54] BATOVIĆ 2010: 215.

(Pl. II/2-11). In contrast to similar sites on neighbouring islands, often located on the coastal belt itself, the location of the Selišće site in the middle of the zone with the best agricultural potential emphasizes the economic orientation associated with the use of arable land, potentially for the cultivation of vines or olives, which were widely cultivated in the area of the northern Dalmatian islands during the Roman era as confirmed by archaeological and historical sources.[52] It is difficult to say to what extent stable economic conditions encouraged more intensive settlement of the island and the creation of a more complex settlement system. With the exception of the Selišće site, the literature mentions information about a deposit with remains from Roman times also recorded at the site of today's settlement,[53]

[52] SUIĆ 1960: 230-249; MATIJAŠIĆ 1993: 247-261; ILAKOVAC 2003: 49–64; KOPÁČKOVÁ 2020: 163-184.

[53] BATOVIĆ 2010: 216. Following the news about the discovery of bone breccias on Ist, a group of archaeologists from Zadar visited the island in 1989 and recorded information about the context and location of the find. During the inspection of the pit for a water tank next to the house of

ravni oko veće prapovijesne gomile (sl. 7). U strukturi najvećeg objekta čiji su zidovi djelomično vezani žbukom dokumentirane su kamene ploče koje vjerojatno predstavljaju kamene ploče grobne škrinje iz susjedne gomile. Objekte s južne strane omeđuje polukružni suhozid, dok se prema sjeveroistočnim padinama nastavlja pravilno građeni suhozid. Među površinskim nalazima zastupljen je dijagnostički materijal dominantno kasnoantičke provenijencije. Pojava kasnoantičkih objekata na Jabucini, moguće i ulomaka kasnoantičke keramike registriranih na položajima prapovijesnih gradina Gracina i Smokvenjak, a njima treba pridodati i nalaze keramike na lokaciji Varh od Turtule (NIN), pokazuje da u nestabilnim vremenima na odmaku antike u fokus ponovno dolaze aktivnosti na uzvišenim položajima. Iako nije moguće u potpunosti rasvijetliti karakter nalazišta koje je, čini se, bilo tek kratkotrajno korišteno, istaknuti položaj Jabucine koja se izdiže uz istočni dio i danas prometno važnog Zapuntelskog prolaza možda treba razmatrati kroz prizmu intenziviranja važnosti otoka, formiranja refugijskih naselja, kao i povećane kontrole plovidbenih putova zbog nestabilnih i nesigurnih društvenih i političkih okolnosti kasne antike.[55]

Srednji i rani novi vijek

Tijekom 14. stoljeća javljaju se najraniji pisani i kartografski izvori koji izravno svjedoče o naseljenosti otoka. Ime otoka prvi put se navodi 1318. u obliku *Est*, za koji se pretpostavlja da podrijetlo vuče još iz pre-

[55] GUNJAČA 1986; TOMIČIĆ 1989; SUIĆ 1995: 136–38. U ovom kontekstu zanimljivo je spomenuti mišljenje A. Badurine koji ističe raširenu prisutnost toponima Straža na jadranskim otocima i priobalju te tumači takav fenomen u smislu postojanja kasnoantičkih izvidnica koje su služile za nadziranja pomorskih pravaca. Među takva nalazišta ubraja i položaj Straža na otoku Istu (BADURINA 1992: 7). Međutim, terenskim pregledom Straže nisu evidentirani kasnoantički nalazi.

but without precise data.

Ancient remains on the top of Jabucina hill (37 masl) above Zapuntelski prolaz (IST 005) are particularly interesting. The site was previously described by Batović who stated that these are late antique structures.[54] The complex consists of seven buildings of different dimensions that are arranged on the summit plateau around a larger prehistoric mound (Fig. 7). In the structure of the largest building, the walls of which are partially bound with plaster, stone slabs were documented, which probably represent the stone slabs of the burial cist from the adjacent mound. The buildings are bounded on the southern side by a semi-circular dry-stone wall, while neatly built dry stone wall continues towards the northeastern slopes. Diagnostic material of late antique provenance is dominant among the surface finds. The presence of late antique objects on Jabucina, possibly also fragments of late antique pottery recorded at the sites of the prehistoric hillforts Gracina and Smokvenjak, and the finds of pottery at the location of Varh od Turtula (NIN), indicate that in turbulent times, at the end of antiquity, activities on elevated positions gain importance once more. Although it is not possible to shed light on all aspects of the site, which seems to have only been used for a short time, the prominent position of Jabucina, rising along the eastern part of Zapuntelski prolaz, which is still important for traffic today, should perhaps be considered through the prism of the intensification of the island's importance, the formation of refuge settlements, as well as the increased control of navigation routes due to the unstable and

Mate Komać, in addition to the bone breccias, a layer "with black soil in which there were fragments of Roman pottery and glass" was noticed in the profile. In the context of ancient finds, we should also mention the stone head located on the gable of the house (Toma's house) in Široka cove. According to the stylistic features, it could be dated to the second half of the 1st - the beginning of the 2nd century. However, information about its origin or place of discovery is missing, so we cannot rule out the possibility that it was brought to the island from somewhere else.

[54] BATOVIĆ 2010: 215.

drimskog jezičnog supstrata.[56] Mnoge metodološke poteškoće u proučavanju srednjovjekovne povijesti Ista proizlaze iz činjenice da se otok Ist promatrao kao administrativno sastavni dio otoka Molata, a posljedica toga jest nemogućnost istraživanja pojedinačne otočne povijesti, što osobito dolazi do izražaja u općenitom nedostatku pisanih isprava koje se odnose na Ist iz razdoblja prije 17. stoljeća. Do 1639. godine i prelaska otoka u privatno vlasništvo zadarske obitelji Lantana, otok Ist zajedno s otokom Molatom bio je pod vlasništvom Mletačke Republike kao jedan od komunalnih otoka koje je zadarska komora davala u zakup pojedincima iz plemićkog i trgovačkog staleža. Poput ostalih komunalnih otoka, bio je namijenjen isključivo stočarskoj privredi, a zakupnici su naseljavali otok svojim stadima ovaca i koza dajući ih na brigu lokalnim pastirima ili doseljenim stočarima. Društveni odnosi između zakupnika i stočara bili su najčešće temeljeni na usmenim dogovorima, što se posebice odrazilo u nedostatku odgovarajuće arhivske građe koja bi pružila detaljniji uvid u gospodarske odnose i demografsku sliku otočnog stanovništva.[57]

Usprkos pojavi prvih pisanih tragova arheološki izvori iz srednjeg vijeka su skromni. Jedino nalazište iz srednjovjekovnog razdoblja registrirano je u uvali Mavreli (IST 006), na sjeverozapadnoj strani otoka gdje su dokumentirani ostatci kompleksa koji se sastoji od dvaju međusobno prislonjenih suhozidnih objekata (sl. 8) i dvaju zatrpanih suhozidnih bunara kružnog oblika. Površinski nalazi pronađeni su neposredno uz najveći objekt, a riječ je o ulomcima keramičke peke (T. II/12) koja se prema tipološkim značajkama i pojavi plastičnih rebara može datirati u kasni srednji vijek, odnosno rani

[56] FILIPI 1960: 143; BATOVIĆ 2010: 213; JURAN 2010: 222–233.

[57] JURAN 2010: 222–233. Za više o naseljenosti i gospodarstvu zadarskog otočja u srednjem vijeku vidi RAUKAR 1977; 1997: 69–80; GRGIN 1989: 311–327; 1996: 40–52.

uncertain social and political circumstances of Late Antiquity.[55]

Medieval and post-medieval period

In the 14th century, the earliest written and cartographic sources appear that directly testify to the island's settlement. The name of the island was mentioned for the first time in 1318 in the form of *Est*, which is assumed to have its origins in the pre-Roman language substrate.[56] Many methodological difficulties in the study of the medieval history of Ist arise from the fact that the island of Ist was viewed as an integral part of the island of Molat in terms of administration, and the consequence of this is the impossibility of researching individual island history, which is particularly evident in the general lack of written documents relating to Ist from the period before the 17th century. Until 1639 and the transfer of the island to the private ownership of the Lantana family from Zadar, the island of Ist together with the island of Molat was in possession the Republic of Venice as one of the communal islands that the Zadar chamber leased to individuals from the nobility and merchant class. Like other communal islands, it was intended exclusively for livestock farming, and tenants inhabited the island with their flocks of sheep and goats, leaving them in the care of local shepherds or immigrant herdsmen. Social relations between tenants and herders were most often based on oral agreements, resulting in the lack of adequate archival materials that would provide a more detailed insight into economic relations

[55] GUNJAČA 1986; TOMIČIĆ 1989; SUIĆ 1995: 136-38. In this context, it is interesting to mention the opinion of A. Badurina, who emphasizes the widespread presence of the toponym Straža on the Adriatic islands and the coast, and interprets such a phenomenon in terms of the existence of late antique surveillance points that were used to monitor maritime routes. The location of Straža on the island of Ist belongs to such sites (BADURINA 1992: 7). However, no late antique finds were recorded during the field survey of Straža.

[56] FILIPI 1960: 143; BATOVIĆ 2010: 213; JURAN 2010: 222-233.

Slika 8. *Uvala Mavrela: a) unutarnje lice objekta, b) suhozidno okno bunara* (snimio: P. Domines Peter)
Figure 8 *Mavrela cove: a) inner face of the structure, b) dry stone lining of the well* (photo by P. Domines Peter)

novi vijek (15.-16. st.).[58] Može se samo naslutiti da je razlog podizanja kompleksa bila zaštićena uvala koja je mogla služiti kao pogodno sidrište s izvorima, vjerojatno boćate vode. Nedostatak drugih nalazišta iz srednjeg vijeka može se protumačiti pretpostavkom da je naseobinski obrazac, koji je vjerojatno određen malobrojnim stanovništvom, u srednjem vijeku snažno centraliziran na položaju koji je podudaran s područjem današnjeg mjesta Ista. Izbor takve lokacije vjerojatno je naglašen povoljnim pomorskim i zemljopisnim značajkama s izlazom na dvije uvale na suprotnim stranama otoka. S obzirom na takav način korištenja prostora, moglo bi se pretpostaviti da su graditeljske intervencije u širem otočnom krajoliku bile skromne i uglavnom povezane sa suhozidnim pregrađivanjem pašnjaka, gradnjom zaklona i pastirskih objekata koje je bez asociranih nalaza i iskopavanja često vrlo teško kronološki odrediti.

Među drugim registriranim nalazima treba istaknuti uklesane znakove na stijeni na prijevoju Prisligu preko kojeg prolazi glavna komunikacija između središnjeg i jugoistočnog dijela otoka. Kompozicija se sastoji od dvaju križeva razgrnutih krakova i natpisa IHS uklesanih na izlizanoj vapnenačkoj

[58] BUNČIĆ 2010: 93, T. 2/15. Za nalaze iz utvrde u Donjem Zemuniku Gusar navodi se da se reljefne trake počinju upotrebljavati u 15. stoljeću (GUSAR, VUJEVIĆ 2016: 26).

and the demographic picture of the island's population.[57]

Despite the appearance of the first written traces, archaeological sources from the Middle Ages are modest. The only site from the medieval period was registered in Mavrela cove (IST 006), on the northwestern side of the island, where the remains of a complex consisting of two adjacent dry-stone wall buildings (Fig. 8) and two filled-in circular dry-stone wells were documented. The surface finds, fragments of ceramic baking lid, were found right next to the largest object (Pl. II/12) which, according to typological features and the appearance of embossed ribs, can be dated to the late Middle Ages, that is, the early Modern Age (15th-16th centuries).[58] One can only speculate that the reason for building the complex was a protected cove that could serve as a convenient anchorage with springs of probably brackish water. The lack of other sites from the Middle Ages can be interpreted by the assumption that the settlement pattern, which was probably determined by a small population, was strongly centralized in the Middle Ages in a position that coincides with the area of

[57] JURAN 2010: 222-233. More about settlement and economy of the Zadar archipelago in the Middle Ages, in RAUKAR 1977; 1997: 69-80; GRGIN 1989: 311-327; 1996: 40-52.

[58] BUNČIĆ 2010: 93, T. 2/15. Gusar claims that the relief bands started to be used in the 15th century regarding the finds from the fort in Donji Zemunik (GUSAR, VUJEVIĆ 2016: 26).

Slika 9. *Uklesani znakovi na položaju Prislig* (snimio: P. Domines Peter)
Figure 9 *Carved signs at the Prislig site* (photo by P. Domines Peter)

stijeni (sl. 9). Iako je takve nalaze u načelu vrlo teško kronološki odrediti, treba spomenuti da su križevi sličnih oblika zabilježeni u pripećku Abri Uho u Lovranskoj dragi na istarskoj obali gdje se na temelju konteksta povezuju s upotrebom položaja od kristijaniziranog kasnoantičkog stanovništva.[59] Slični križevi dokumentirani su i u drugim špiljskim nalazištima.[60] Monogram IHS javlja se već tijekom kasne antike, a njegova upotreba osobito se širi tijekom 14.-15. stoljeća.[61] Položaj Prislig može se identificirati s toponimom *Očenaš*, zabilježenim u starijim povijesnim dokumentima, pod kojim se opisuje mjesto na putu prema uvali Mljakama, odakle se posljednji put vidi mje-

[59] BLEČIĆ KAVUR, KOMŠO 2015: 94.
[60] Primjerice, u jami Kapljici na sjevernom Velebitu (GLAVAŠ 2018: 89).
[61] HAUCK 1910: 168.

the present-day settlement of Ist. The choice of such location was probably emphasized by favourable maritime and geographical features with access to two coves on the opposite sides of the island. Considering such a way of using the space, it could be assumed that the construction interventions in the wider island landscape were modest and mostly connected with the dry-stone wall partitioning of pastures, the construction of shelters and shepherds' huts, which are often very difficult to determine chronologically without associated finds and excavations.

Among other recorded finds, we should highlight the carved signs on the rock at Prislig pass, on the main communication line between the central and southeastern part of the island. The composition consists of two crosses with flared arms and the inscription IHS carved on weathered lime-

sna crkva, a na kojem bi se težaci odmorili i pomolili. Sličan je običaj dokumentiran i na obližnjim otocima, primjerice u Salima na Dugom otoku, gdje su takvi položaji također bili označeni uklesanim križevima.[62] U svakom slučaju, neovisno o tome kada se javlja običaj uklesavanja križeva, takve položaje moguće je promatrati kao sastavni dio sakralnog krajolika i mjesta posebnog značenja u društvenoj memoriji i vjerskim praksama otočnog stanovništva.

MARGINALNOST, RESURSI I OBRASCI KORIŠTENJA MALIH JADRANSKIH OTOKA

Krajolik otoka geografski je zaokružen, socijalno konstruiran, dinamični medij u kojem su otočani živjeli, producirali svoje društvene odnose i svakodnevne materijalne prakse.[63] Efekti kulturnih i okolišnih procesa mnogo su očitiji na otocima nego što je to izraženo na kopnu. Ograničeni otočni prostor i njegov fizički krajolik određivali su brojne aspekte života i razvoja ljudskih zajednica na otoku, a utjecaj otočnosti može se u određenoj mjeri osjećati kroz sve elemente habitata. Iz tog razloga mali otoci poput Ista mogu se smatrati izvanrednim poligonom za arheologiju krajolika koja u specifičnom okružju i ekosustavu otoka može proučavati tragove koji su nastali kao posljedica dugotrajne i kompleksne interakcije čovjeka – otočanina i njegova okoliša tijekom prošlosti. Istraživački potencijal proizlazi iz izvanredne mogućnosti praćenja interakcije u obama smjerovima – načina na koji marginalni otočni prostor i njegovi resursi motiviraju ili limitiraju ponašanje ljudi i zajednica, ali i načina na koji otočne populacije svojim društvenim i materijalnim praksama uzrokuju njegovu transformaciju.

62 VIGATO 2015: 60.
63 DAWSON 2014: 22–23.

stone rock (Fig. 9). Although chronological determination of such finds is usually very difficult, it should be mentioned that crosses of similar shapes were recorded in rock shelter Abri Uho in Lovranska draga on the Istrian coast where, based on the context, they are associated with the use of the position by the Christianized late antique population.[59] Similar crosses have been documented in other cave sites.[60] The IHS monogram appeared already in Late Antiquity, and it became especially widespread during the 14th-15th centuries.[61] The location of Prislig can be identified with the toponym Očenaš, recorded in older historical documents, which describes the place on the way to Mljake cove, from where the local church can be seen for the last time, and where the laborers would rest and pray. A similar custom was also documented on nearby islands, for example in Sali on Dugi otok, where such positions were also marked with carved crosses.[62] In any case, regardless of when the custom of carving crosses appeared, such positions can be viewed as an integral part of the sacred landscape and places of special significance in the social memory and religious practices of the island population.

MARGINALITY, RESOURCES AND USAGE PATTERNS OF THE SMALL ADRIATIC ISLANDS

The landscape of the island is a geographically homogenous, socially constructed, dynamic medium in which the islanders lived, created their social relations and everyday material practices.[63] The effects of cultural and environmental processes are more obvi-

59 BLEČIĆ KAVUR, KOMŠO 2015: 94.
60 For example, in Kapljica pit on the northern Velebit (GLAVAŠ 2018: 89).
61 HAUCK 1910: 168.
62 VIGATO 2015: 60.
63 DAWSON 2014: 22-23.

Rezultati terenskog istraživanja već sada ocrtavaju nekoliko preliminarnih zaključaka o obrascima naseljavanja otoka Ista u prošlosti. Usprkos bliskoj povezanosti s kopnom i drugim otocima, prostorna je okupacija sporadična i limitirana na određena razdoblja koja su dobro posvjedočena količinom arheoloških izvora. Skromni uvjeti prirodno-geografske osnove i oskudni resursi predstavljali su glavni ograničavajući faktor za kontinuitet dugog naseljavanja i osiguranje samoodrživosti otočnih zajednica tijekom prošlosti. Osobito je naglašen problem nedostatka vode jer osim umjetnih akumulacija (lokvi), ovisnih o padalinama i bočatih studenaca, ograničene upotrebe, otok nema drugih mogućnosti vodoopskrbe.

Sporadičnu, a vjerojatno i ciljanu naseljenost, primjetnu kroz intenziviranje ljudskih aktivnosti u prostoru, treba povezati s partikularnim društvenim, gospodarskim i okolišnim okolnostima u širem (regionalnom) kontekstu koji su potaknuli naseljavanje i/ili eksploataciju ograničenih resursa marginalnih prostora, uključujući i male otoke poput Ista.[64] U takvim trenutcima kada su prednosti malih otoka došle do izražaja više nego njihovi nedostatci, modalitet ljudskih aktivnosti na otoku ovisio je o dostupnim kapacitetima agrikulturne ili pastoralne ekonomije ili mogućnostima iskorištavanja drugih, uglavnom skromnih otočnih resursa. Rezultati istraživanja pokazuju da su na obrazac naseljenosti na Istu posebno utjecale korelacije s različitim varijablama: geografsko-okolišnim značajkama (obradiva zemlja, pašnjaci, zaštićene uvale), pristupom vodi i blizinom/mogućnostima povezivanja s većim susjednim otokom. Značenje spomenutih varijabli može se osobito pratiti

[64] Bass ističe da će otok biti trajno naseljen ako sadrži dovoljno prirodnih resursa (BASS 1998). Veća površina otoka može nužno značiti i veću različitost i dostupnost resursa, pa će time veći otoci biti i prije naseljeni. S druge strane, mala površina može implicirati nedostatak resursa, pa se zaključuje da mali otoci neće rano ili uopće privući trajne naseljenike (FORENBAHER 2008: 224).

ous on the islands than on the mainland. The limited island space and its physical landscape determined numerous aspects of life and development of human communities on the island, and the influence of insularity can be felt to a certain extent through all elements of the habitat. For this reason, small islands such as Ist can be considered exceptional testing sites for landscape archaeology, which in the specific environment and ecosystem of the island can study the traces that were created as a result of the long-term and complex interaction of man - the islander and his environment during the past. The research potential derives from the extraordinary possibility of monitoring the interaction in both directions - the way in which the marginal island space and its resources motivate or limit the behaviour of people and communities, but also the way in which island populations cause its transformation through their social and material practices.

The results of the field survey already outline several preliminary conclusions about the settlement patterns of the island of Ist throughout the past. Despite the close connection with the mainland and other islands, spatial occupation is sporadic and limited to certain periods that are well attested by the amount of archaeological sources. The modest conditions of the natural-geographical basis and scarce resources were the main limiting factor for the continuity of long settlement and ensuring the self-sustainability of island communities in the past. The problem of lack of water is particularly emphasized because apart from artificial reservoirs (ponds), dependent on rainfall and brackish wells, of limited use, the island has no other water supply options.

Sporadic and probably targeted settlement, noticeable through the intensification of human activities in space, should therefore be linked to particular social, economic and environmental circumstances in a wider (regional) context that encouraged the settlement and/

kroz arheološke tragove kasnoprapovijesne i antičke naseljenosti, koji su koncentrirani na jugoistočnoj strani otoka. Plodna udolina s visokim agrarnim potencijalom, pristup vodi na lokvi Jezeru i zaštićena uvala Mljake ističu se kao potencijalno ključni faktori koji su uvjetovali ciljane odabire pojedinih položaja za naseljavanje – gradina centraliziranih na vrhovima najvišeg otočnog hrpta i rustične vile smještene u samom središtu polja.

Korelacija s blizinom većeg (satelitskog) otoka također se ističe kao jedna od važnijih pretpostavki za naseljavanje ili kontinuiranu upotrebu malih otoka, posebice onih nenaseljenih, koji su mogli biti korišteni kao izdvojeni satelitski teritoriji pod vlasništvom zajednica s većih otoka u njihovoj blizini. U tom svjetlu fokus prostornih aktivnosti na jugoistočnoj strani otoka moguće je promatrati i kroz vezu sa susjednim i nedaleko udaljenim otokom Molatom, ponajprije zbog povoljnih maritimnih značajki uvale Mljaka koja gravitira Molatu i omogućuje najkraći most između Ista i susjednog Zapuntela. Takav odnos malog i većeg (satelitskog) otoka često može rezultirati i dijeljenjem zajedničke dinamike razvoja. Poveznica Ista i Molata osobito je naglašena tijekom srednjeg vijeka kada se dva otoka najčešće promatraju i spominju kao jedna cjelina. Kroz sličnu prizmu moguće je promatrati i relacije između Ista i malih nenaseljenih otočića išćunskog arhipelaga koji su tradicionalno u vlasništvu išćunskog stanovništva (*Tramerka*, *Obljak*, *Maslinjak*, *Vodenjak*, *Dužac*, *Kamenjak* itd.), a sve donedavno imali su i gospodarsko značenje, dominantno kao pašnjaci za slobodnu ispašu sitne stoke.[65] Maritimne značajke mogle su biti i ključan faktor u preferiranju specifičnih lokacija, poput zaštićene uvale Mavrele s izvorima vode koja bi se mogla do-

[65] Drvenim brodovima stoka sitnog zuba (koze i ovce) periodično se vozila na otok, ondje najčešće ostavljala i puštala na slobodnu ispašu tijekom zimskih mjeseci (usmena kazivanja).

or exploitation of limited resources of marginal areas, including small islands like Ist.[64] In such moments, when the advantages of small islands came to the fore more than their disadvantages, the modality of human activities on the island depended on the available capacities of the agricultural or pastoral economy or the possibilities of exploiting other, mostly modest, island resources. The results of the research indicate that the population pattern on Ist was particularly affected by correlations with different variables: geographical-environmental features (arable land, pastures, protected coves), access to water and proximity/possibility of connection with a larger neighbouring island. The meaning of the mentioned variables can be traced through the archaeological traces of late prehistoric and ancient settlements, which are concentrated on the southeastern side of the island. A fertile valley with high agricultural potential, access to water at Jezero pond and the protected Mljake cove stand out as potentially crucial factors that determined the targeted selection of individual locations for settlement - hillforts centralized on the summits of the island's highest ridge and *villae rusticae* located in the very center of the field.

The correlation with the proximity of a larger (satellite) island is also mentioned as one of the more important assumptions for the settlement or continuous use of small islands, especially uninhabited ones, which could have been used as separate satellite territories in possession of communities from larger islands in their vicinity. In this light, the focus of spatial activities on the southeastern side of the island can also be observed through the connection with the neighbouring and near island of Mo-

[64] Bass points out that an island will be permanently inhabited if it contains enough natural resources (BASS 1998). A larger area of an island can necessarily mean greater diversity and availability of resources, so larger islands will be populated earlier. On the other hand, a small area may imply a lack of resources, so the conclusion is that small islands will not attract permanent settlers early or at all (FORENBAHER 2008: 224).

vesti u vezu s pomorskim prometom, moguće zbog ostvarivanja lokalnih veza sa susjednim otocima (Škarda) ili kao mjesto sidrišta i privremenog boravka brodova uključenih u dužjadranski pomorski promet, u kojem je i Ist mogao participirati zahvaljujući svojem geografskom položaju i povoljnim značajkama obale.

Posebnu pozornost izaziva problem izostanka nalaza iz pojedinih razdoblja, poput mlađeg željeznog doba ili ranog srednjeg vijeka, koji bi mogli sugerirati napuštanje, depopulaciju ili prekide u naseljenosti otoka. Međutim, konstatacija poziva na oprez jer to ne isključuje mogućnost da takvi nalazi još nisu evidentirani. U razdobljima nenastanjenosti moglo je biti povremenih posjeta ribara ili putnika, premda oni redovito ne ostavljaju vidljive arheološke tragove.[66] S druge strane, efemerne prakse poput sječe šuma ili stočarstva, posvjedočene povijesnim i etnografskim izvorima, mogle su biti povremeno prakticirane bez potrebe za stalnim naseljavanjem. Kroz uzorke površinskih nalaza izvan nalazišta (NIN) raspršene u čitavom krajoliku otoka moguće je promatrati dokaze o različitim nenaseobinskim (ili povremenim) aktivnostima (karta 4), među kojima su primarno mjesto možda imale upravo stočarske prakse.

Iako otok pruža mogućnosti ograničene agrikulture, najveći gospodarski potencijal primarno je naglašen kroz stočarsku funkciju, što ponajbolje posvjedočuje dominantna i gotovo isključiva uloga otoka kao pašnjaka tijekom srednjeg vijeka. Gledajući u cjelini, otoci malih površina i oskudnih obradivih površina pogodniji su za stočarstvo koje, u odnosu na poljoprivredu, traži manje radne snage, manju ovisnost o vodi, a omogućuje brže stvaranje viškova i iskorištavanje mnogo većih površina za ispašu pa najmanje otoke koji su služili kao pašnjaci za slobodnu ispašu zbog fizičkog okruženja morem nije

[66] FORENBAHER 2008: 224.

lat, primarily due to the favourable maritime features of Mljake cove, which gravitates to Molat and enables the shortest bridge between Ist and neighbouring Zapuntel. Such a relationship between a small and a larger (satellite) island can often result in the sharing of common development dynamics. The connection between Ist and Molat was particularly emphasized during the Middle Ages, when the two islands were most often seen and mentioned as one unit. Through a similar prism, it is possible to observe the relations between Ist and the small uninhabited islands of the Ist archipelago that are traditionally owned by the population of Ist (Tramerka, Obljak, Maslinjak, Vodenjak, Dužac, Kamenjak, etc.), and until recently they also had an economic significance, dominantly as pastures for free grazing of small livestock.[65] Maritime features could also be a key factor in the preference of specific locations, such as the protected Mavrela cove with water sources that could be connected to maritime traffic, possibly due to local connections with neighbouring islands (Škarda) or as a place of anchorage and temporary stay of ships included in maritime transport along the Adriatic, in which Ist also could have participated thanks to its geographical position and favourable features of the coast.

There is also a problem of the absence of finds from certain periods, such as the early Iron Age or the early Middle Ages, which could suggest abandonment, depopulation or interruptions in the settlement of the island. However, one should keep in mind the possibility that such finds have not been recorded yet. In periods when the island was uninhabited, there could have been occasional visits by fishermen or travellers, although they do not regularly leave visible archaeological traces.[66] On the other hand, ephemeral practices such

[65] Small livestock (goats and sheep) were periodically transported to the island in wooden boats, where they were usually left and released to graze freely during the winter months (oral accounts).

[66] FORENBAHER 2008: 224.

bilo ni potrebno ograđivati. Mnogi nenaseljeni jadranski otoci, poput onog najvećeg, Prvića kod Krka, tijekom prošlosti kontinuirano su korišteni kao pašnjaci za cjelogodišnju ili sezonsku ispašu sitne stoke u vlasništvu zajednica s kopna ili obližnjih, najčešće većih otoka. Sličnih primjera ima i drugdje na Mediteranu, poput Polyaigosa, najvećeg nenaseljenog egejskog otoka čije ime otkriva i dominantnu gospodarsku ulogu (grč. *poly aigi*, 'mnogo koza').[67] Slični obrasci gospodarskog iskorištavanja prostora otoka mogu se pretpostaviti i za otok Ist, ne samo tijekom srednjeg vijeka već i u ranijim razdobljima, a nije moguće isključiti da su potencijali stočarske privrede privukli i njegove najranije stanovnike.

Pri razmatranju načina korištenja malih otoka tijekom prošlosti, uz ulogu pašnjaka za slobodnu ispašu, nije moguće zanemariti i niz drugih različitih funkcija – od svetišta, groblja, pomorskih utvrda do odskočnih točaka (*stepping stones*) pri dalekosežnim pomorskim interakcijama, poput Palagruže i drugih pučinskih otoka Jadrana i njihove istaknute važnosti u ostvarivanju najranijih transjadranskih veza.[68] Braudelov opis jadranskih otoka kao „konvoja kamenih brodova"[69] izvrsno oslikava još jednu moguću funkciju jadranskih otoka koji su zbog svojih specifičnih geografskih postavki i načina pružanja u bilo kojem razdoblju mogli predstavljati sigurnu odstupnicu pri nestabilnim i nesigurnim okolnostima na kopnu, ali i ulogu obrambenih izvidnica i promatračnica u trenutcima kada je opasnost prijetila s otvorenog mora. U svjetlu takve „selektivne marginalnosti" otoka dovoljno odvojenih da mogu uvijek iskoristiti tu prednost, a dovoljno povezanih da sudjeluju u širim sustavima,[70] moguće je promatrati i

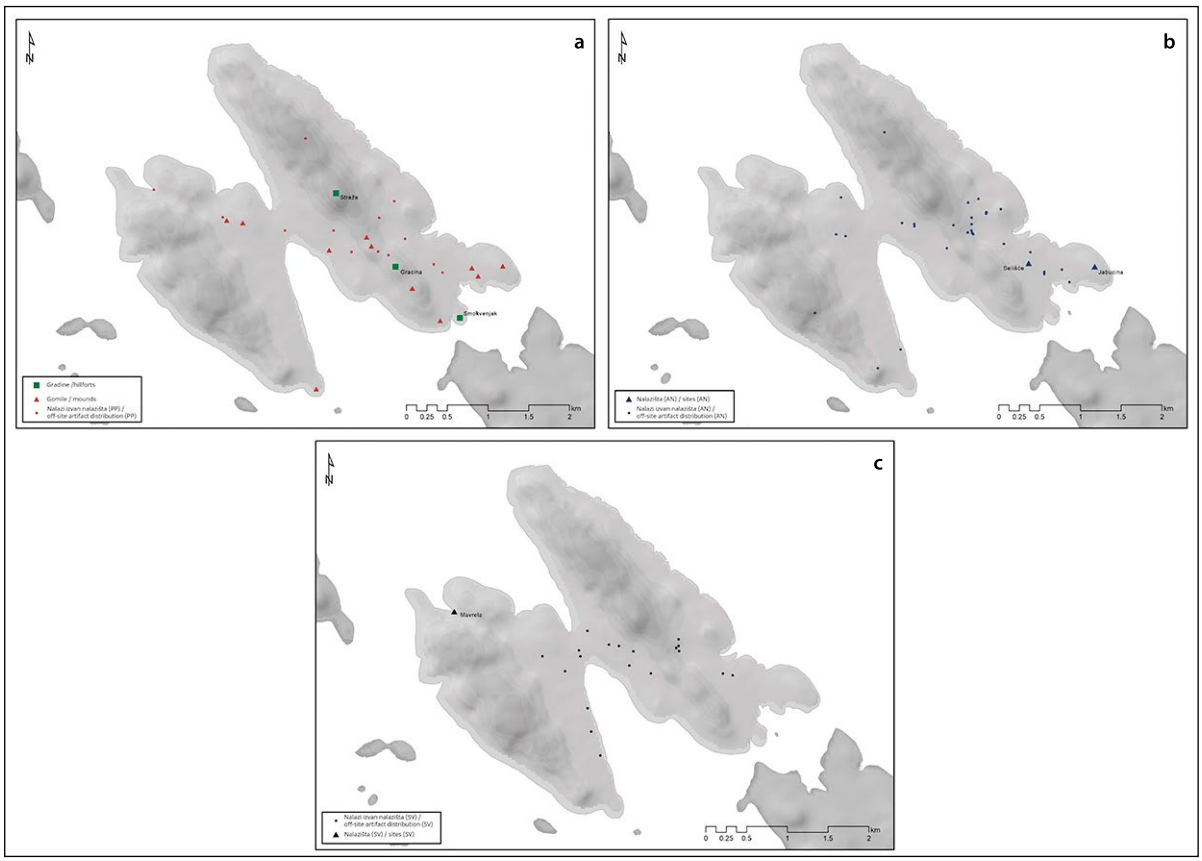
[67] Za više usp. CONSTANTAKOPOULOU 2007: 211; BEVAN, CONOLLY 2013: 184.
[68] FORENBAHER 2008; 2009.
[69] BRAUDEL 1997.
[70] KNODELL et al. 2022: 503.

as forest cutting or animal husbandry, attested by historical and ethnographic sources, could be occasionally practiced without the need for permanent settlement. Through samples of off-site surface finds (NIN) scattered throughout the landscape of the island, it is possible to observe evidence of various non-settlement (or occasional) activities (Map 4), among which livestock practices may have had a leading role.

Although the island offers limited agricultural possibilities, the greatest economic potential is primarily manifested through the animal husbandry function, which is best evidenced by the dominant and almost exclusive role of the island as a pasture during the Middle Ages. Looking at it as a whole, islands with small areas and scarce arable land are more suitable for animal husbandry, which, compared to agriculture, requires less labour, less dependence on water, and enables faster creation of surpluses and utilization of much larger areas for grazing. Thus, the smallest islands that served as pastures for free grazing needed not be enclosed since the sea was a physical barrier. Many uninhabited Adriatic islands, such as the largest one Prvić near Krk, were continuously used in the past as pastures for year-round or seasonal grazing of small livestock owned by communities from the mainland or nearby, usually larger islands. There are similar examples elsewhere in the Mediterranean, such as Polyaigos, the largest uninhabited Aegean island whose name also reveals its dominant economic role (Greek *poly aigi* many goats).[67] Similar patterns of economic exploitation of the island's space can be assumed for the island of Ist, not only during the Middle Ages but also in earlier periods, and we cannot rule out the possibility that the potential of livestock farming attracted its earliest inhabitants as well.

When considering the way small islands were used in the past, in addition to the role of pas-

[67] More about this in CONSTANTAKOPOULOU 2007: 211; BEVAN, CONOLLY 2013: 184.



Karta 4. *Dijakronijski uvid u transformaciju otočnog krajolika: a) prapovijest, b) antika, c) srednji i rani novi vijek* (izradio: P. Domines Peter)
Map 4 *Diachronic insight into the transformation of the island landscape: a) prehistory, b) antiquity, c) Middle Ages and early Modern Age* (made by P. Domines Peter)

otok Ist, smješten na obodu arhipelaga, dovoljno udaljen od kopna, a dovoljno blizak (većim) otocima da otočne populacije kroz kontakte sa susjednim zajednicama mogu smanjiti rizik vlastite samoodrživosti. Karakteristike odvojenosti i distanciranosti posebice dolaze do izražaja u nesigurnim okolnostima pa Hood predlaže model „otoka kao refugija" koji implicira ulogu otoka kao mjesta povlačenja stanovništva u kriznim trenutcima.[71] Korištenje izoliranih i zaštićenih položaja, poput Jabucine, moguće tijekom kraćeg razdoblja kasne antike, moglo bi se povezati upravo s takvom teorijom. Naposljetku, ne može se zanemariti da su mali otoci imali i značenje markera u terestričkoj navigaciji, služili su i kao mjesta odmora i privremenog zaustavljanja za brodove, dok

[71] HOOD 1970.

tures for free grazing, one should not ignore a number of other different functions - from sanctuaries, cemeteries, naval forts to stepping stones for far-reaching maritime interactions, such as Palagruža and other offshore islands of the Adriatic and their prominent importance in the realization of the earliest trans-Adriatic connections.[68] Braudel's description of the Adriatic islands as a "convoy of stone ships"[69] perfectly illustrates another possible function of the Adriatic islands, which, due to their specific geographical settings and their layout in any period, could represent a safe retreat during unstable and uncertain circumstances on the mainland, but also the role of defensive control points and observation posts in moments when danger threatened from the

[68] FORENBAHER 2008; 2009.
[69] BRAUDEL 1997.

su pojedine ciljano raspoređene strukture u prostoru, poput gradina ili gomila, mogle predstavljati i dodatne orijentire i oznake pri plovidbi.[72]

More, kao najefikasniji medij mobilnosti djeluje kao most koji tvori aktivni životni prostor otočana, sudjeluje u stvaranju društvenog iskustva i omogućuje putovanje ljudi i širenje novih roba, ideja i znanja.[73] Koliko god skromni prirodni resursi ograničavali mogućnosti održivosti otočnih zajednica i upućivali na intenzifikaciju korištenja i eksploatacije „dostupnog" prostora i resursa, potreba za vanjskim interakcijama bila je neizbježna. Geografske postavke istočne obale Jadrana pružaju izvrsnu podlogu za ostvarivanje veza između malih otoka, velikih otoka i kopna. To je posebice vidljivo u zadarskom otočju, usitnjenoj i fragmentiranoj otočnoj skupini s brojnim bliskim otocima i otočićima koje povezuje plovidba koja u optimalnim uvjetima ne traje više od nekoliko sati. U takvom prostornom kontekstu treba promatrati i geografski položaj Ista koji mu omogućuje snažnu integraciju u regionalnu, a potom i transregionalnu mrežu jadranskih plovidbenih putova i kontakata s bliskim susjednim otocima i kopnom. Smješten između Škarde i Molata, Ist predstavlja sponu u nizu vanjskih otoka (Molat-Ist-Škarda-Premuda-Silba-Ilovik) koji omogućuju optimalan pravac dužjadranskog pomorskog povezivanja sjevernodalmatinskog i kvarnerskog arhipelaga. S druge strane, unatoč činjenici da se za vrijeme bistrog vremena s najvišeg vrha Straže ostvaruje vidljivost sve do suprotne talijanske obale, od koje ga dijeli 121,7 km (ili 65,7 nm), plovidba prema otvorenom moru je opasna, nepredvidiva i nije imala veliko značenje u nedavnoj prošlosti otoka. U pojedinim razdobljima veze otok-kopno ili otok-otoci bile su izraženi-

[72] BORGNA, CASSOLA GUIDA 2009: 89–104; ČUČKOVIĆ 2017.

[73] HORDEN, PURCELL 2000: 123–132.

open sea. This "selective marginality" of islands separated enough to always use this advantage, and connected enough to participate in wider systems,[70] could also be applied to the island of Ist, located on the edge of the archipelago, far enough from the mainland, and close enough to the (larger) islands so that island populations could reduce the risk of their own self-sustainability through contacts with neighbouring communities. The characteristics of separation and distance especially come to the fore in uncertain circumstances, so Hood proposes the "island as a refuge" model, which implies the role of the island as a place of retreat for the population in moments of crisis.[71] Such theory could correspond to the use of isolated and protected positions, such as Jabucina, possibly during a shorter period of Late Antiquity. Finally, it cannot be ignored that the small islands also had the meaning of markers in terrestrial navigation, serving as resting places and temporary stops for ships, while certain purposefully arranged structures in space, such as forts or mounds, could also represent additional landmarks and guideposts during navigation.[72]

Sea, as the most efficient medium of mobility, acts as a bridge that forms the active living space of the islanders, participates in the creation of social experience and enables the travel of people and the spread of new goods, ideas and knowledge.[73] As much as the modest natural resources limited the possibilities of sustainability of the island communities and pointed to the intensification of the use and exploitation of the "available" space and resources, the need for external interactions was inevitable. The geographical characteristics of the eastern coast of the Adriatic provide an excellent basis for establishing connections between small islands, large islands

[70] KNODELL et al. 2022: 503.

[71] HOOD 1970.

[72] BORGNA, CASSOLA GUIDA 2009: 89-104; ČUČKOVIĆ 2017.

[73] HORDEN, PURCELL 2000: 123-132.

je, stoga ih je i u arheološkom kontekstu moguće lakše pratiti kroz prisustvo roba ili predmeta kakvi se na otoku nisu mogli pronaći. Za razliku od prapovijesti, kada još nemamo dovoljno (importiranih) dokaza da bismo pouzdano raspravljali o intenzitetu vanjskih kontakata, antičko razdoblje označava prvu snažnu integraciju otoka u široku mrežu mediteranskog svijeta koja je omogućila akviziciju stranih roba i predmeta (npr. keramičkih amfora, žrvnjeva, stolne keramike). Tijekom srednjeg vijeka dodatan izvor podataka za razumijevanje međuotočnih interakcija nude pisani izvori koji govore o mobilnosti pastirskog stanovništva između različitih otoka, komunalnih i onih privatnih.[74]

ZAKLJUČAK

Preliminarni rezultati prve faze projekta „Arheološki krajolik otoka Ista – Archaeo. IST" otvaraju novi pogled na arheološke potencijale malih sjevernodalmatinskih otoka i omogućuju korak dalje u razumijevanju odnosa ljudskih zajednica s marginalnim otočnim okolišem. U kontekstima fizičke odvojenosti i društvene izolacije otočni stanovnici razvili su specifičan odnos s prostorom. Istraživanje je pokazalo da mali jadranski otoci, poput Ista, predstavljaju partikularne mikrookoliše u kojima su se odvijale različite ljudske aktivnosti koje se mogu pratiti kroz arheološke dokaze, pritom razlikujući naseobinske aktivnosti često povezane s formiranjem nalazišta i nenaseobinske prakse poput stočarstva, o kojima može svjedočiti raširenost površinskih nalaza izvan nalazišta.

Prirodne karakteristike malog otoka nisu definirane samo malom površinom, već i oskudnim prirodnim resursima koji su imali presudan utjecaj na karakter naseljenosti i osiguranje održivosti otočnih populacija.

[74] JURAN 2010: 232.

and the mainland. This is particularly visible in the Zadar archipelago, a small and fragmented island group with numerous nearby islands and islets connected by sailing that, under optimal conditions, takes no more than a few hours. The geographical position of Ist should be observed in such a spatial context which enables it to be strongly integrated into the regional and then transregional network of Adriatic navigation routes and contacts with nearby neighbouring islands and the mainland. Located between Škarda and Molat, Ist represents a link in a row of outer islands (Molat-Ist-Škarda-Premuda-Silba-Ilovik) that provide an optimal route along the Adriatic maritime connection of the northern Dalmatian and Kvarner archipelago. On the other hand, despite the fact that during clear weather, visibility is achieved from the highest summit of Straža all the way to the opposite Italian coast, from which it is separated by 121.7 km (or 65.7 nm), sailing towards the open sea is dangerous, unpredictable and without great significance in the island's recent past. In certain periods, connections island-mainland or island-island were more pronounced, and therefore, even in the archaeological context, it is possible to trace them more easily through the presence of goods or objects that could not be found on the island. Unlike prehistory, when we still do not have enough (imported) evidence to reliably discuss the intensity of external contacts, the ancient period marks the first strong integration of the island into the wide network of the Mediterranean world, which enabled the acquisition of foreign goods and objects (e.g. ceramic amphorae, querns, ceramic tableware). In the Middle Ages, an additional source of data for understanding inter-island interactions is offered by written sources that illustrate the mobility of shepherd populations between different islands, communal and private.[74]

[74] JURAN 2010: 232.

Premda modaliteti ljudskih aktivnosti variraju u razdoblju i intenzitetu, u korelaciji između raširenosti obradivih tla, izvora vode i gustoće arheoloških nalaza i nalazišta na jugoistočnoj strani otoka, jasno se mogu prepoznati obrasci okupacije prostora koji su neodvojivo povezani s pojavom otočnih resursa. Ipak, najvažniji gospodarski resurs otoka Ista jesu pašnjaci pa su njegova uloga i način upotrebe u prošlosti, osobito tijekom srednjeg vijeka, a vrlo vjerojatno i prije, usko povezani sa stočarskom ekonomijom.

Arheološki tragovi pokazuju da je intenzivnija upotreba otoka limitirana na određena razdoblja, međutim, arheološki dokazi ne idu u prilog dugotrajnoj, kontinuiranoj okupaciji. Preliminarni rezultati upućuju na visoki intenzitet ljudskih aktivnosti u kreiranju i rekreiranju kompleksnog prapovijesnog krajolika, ali i znatno manju razinu strukturiranih intervencija u prostoru tijekom ostalih razdoblja. Nedostatak materijalnih dokaza za pojedina razdoblja mogao bi upućivati na diskontinuitet, praznine u naseljavanje ili napuštanje otoka, no pritom se ne može zanemariti i uloga povremenih ljudskih aktivnosti koje ostavljaju malo vidljivih tragova u površinskom kontekstu.

Naposljetku, za razliku od prethodnih selektivnih ili parcijalnih pristupa, sustavni istraživački pristupi pružaju niz mogućnosti u vrednovanju arheološke baštine malih otoka, posebice u kontekstu teško pristupačnih područja gdje, usprkos svim novijim mogućnostima digitalnih tehnologija, jedino detaljna terenska istraživanja mogu ponuditi najpotpuniju sliku korištenja prostora i omogućiti cjelovite podatke o slojevitosti distinktivnih otočnih krajolika.

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CONCLUSION

The preliminary results of the first phase of the project “Archaeological landscape of the island of Ist - Archaeo.IST” open a new perspective on the archaeological potential of the small northern Dalmatian islands and enable a step forward in understanding the relationship between human communities and the marginal island environment. In contexts of physical separation and social isolation, islanders have developed a specific relationship with space. Research has shown that small Adriatic islands, such as Ist, represent particular micro-environments in which different human activities took place that can be traced through archaeological evidence, while distinguishing settlement activities often associated with the formation of sites, and non-settlement practices such as animal husbandry, which can be associated with the spread of surface finds outside the site.

The natural characteristics of the small island are not defined only by the small area, but also by the scarce natural resources that had a decisive influence on the settling characteristics and on ensuring the sustainability of the island population. Although the modalities of human activities vary in period and intensity, patterns of space occupation that are inextricably linked to the appearance of island resources can be clearly recognized in the correlation between the spreading of arable land, water sources and the density of archaeological finds and sites on the south-eastern side of the island. Nevertheless, the most important economic resource of the island of Ist is the pastures, so its role and the way of use throughout the past, especially during the Middle Ages, and very likely even earlier, are closely related to the livestock economy.

Archaeological traces show that more intensive use of the island was limited to certain periods, but however, archaeological evidence does not support long-term, continuous occupation. Preliminary results indicate high intensity of human activities in the creation and

Sveučilište u Zadru (voditelj: Pio Domines Peter). Zahvaljujemo kolegama Domagoju Maurinu, Juri Mustaću, Domagoju Knezu, Luki Žarkoviću, Dominiku Kelavi i Karli Gendi na sudjelovanju u terenskim istraživanjima. Za pomoć u atribuciji dokumentirane arheološke građe zahvalnost dugujemo Ani Konestri, Igoru Borziću, Karli Gusar, Draženu Maršiću, Marini Ugarković i Mariju Bodrožiću. Na podatcima o nalazištu Straža zahvale upućujemo Urošu Koširu, a informacijama u vezi s rezultatima studentske ekspedicije na Istu 1989. godine Miroslavu Katiću. Na susretljivosti u prikupljanju usmenih kazivanja dužni smo zahvaliti Išćanima Anti Genariju, Mati Kozuliću, Mili Kozuliću i Leu Bonicioliju.

recreation of a complex prehistoric landscape, but also a significantly lower level of structured interventions in space in other periods. The lack of material evidence for certain periods could indicate discontinuity, gaps in settlement or abandonment of the island, but the role of occasional human activities that leave few visible traces in the surface context cannot be ignored.

Finally, in contrast to the previous selective or partial approaches, systematic research approaches provide a number of possibilities in the evaluation of the archaeological heritage of small islands, especially in the context of hard-to-reach areas where, despite all the modern possibilities of digital technologies, only detailed field survey can offer the most complete picture of the use of space and provide complete data on the complexity of distinctive island landscapes.

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Translation: Marija Kostić

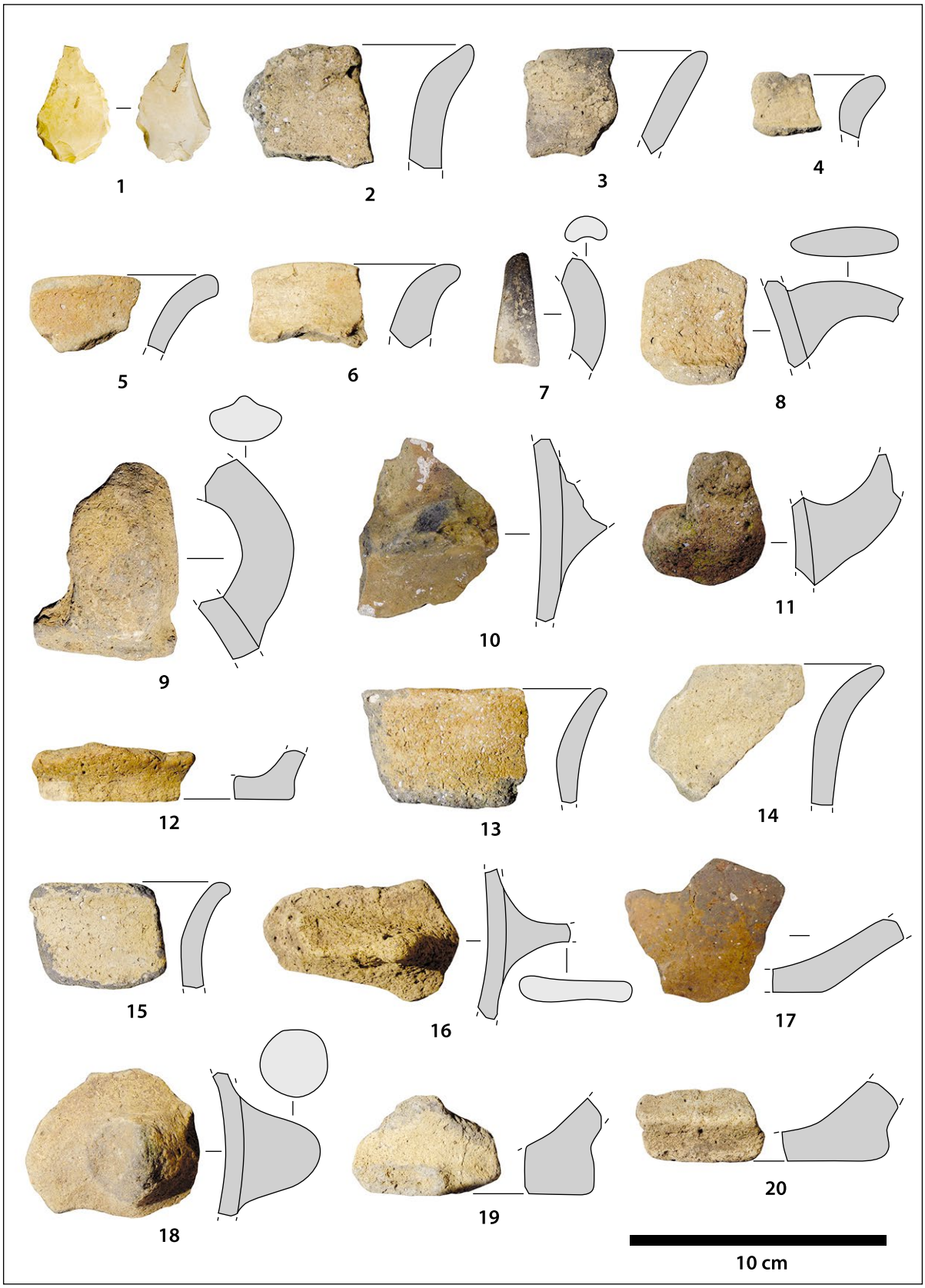

Tabla 1. *Selekcija prapovijesnih nalaza: 1. Mljake, Ogradica (NIN), 2-12. Straža, 13-15. Gracina, 16-20. Smokvenjak (NNN)* (izradio: P. Domines Peter)
Plate 1 *Selection of prehistoric finds:1. Mljake, Ogradica (NIN), 2-12. Straža, 13-15. Gracina, 16-20. Smokvenjak (NNN) (made by P. Domines Peter)*

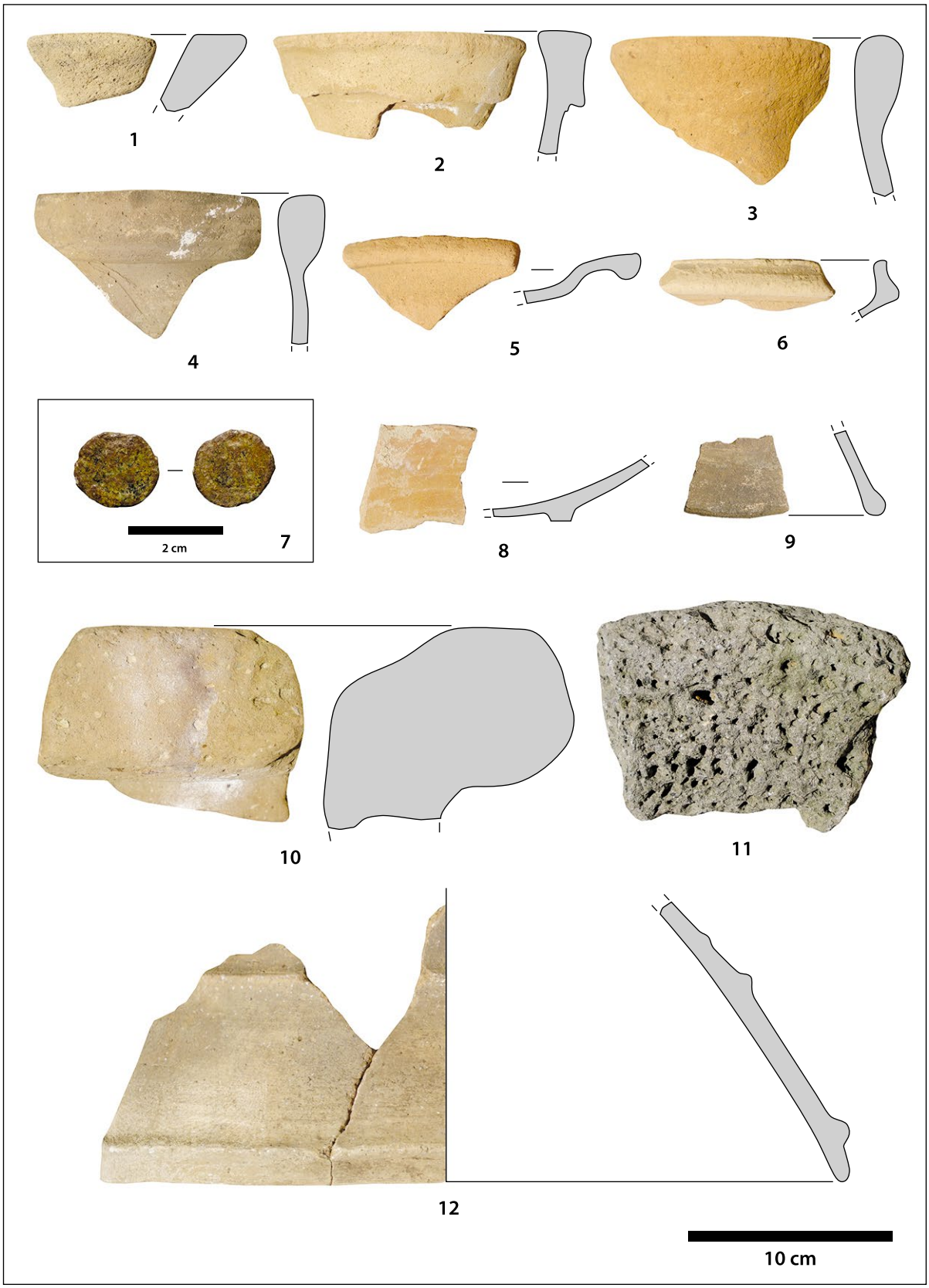

Tabla 2. *Selekcija antičkih i srednjovjekovnih/ranonovjekovnih nalaza: 1. Varh Gore (NIN), 2-11. Selišće, 12. Mavrela (NNN)* (izradio: P. Domines Peter)
Plate 2 *Selection of ancient and medieval/early Modern Age finds: 1. Varh Gore (NIN), 2-11. Selišće, 12. Mavrela (NNN)* (made by P. Domines Peter)

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NADIN – GRADINA: RAZVOJ GRADA[1]

NADIN – GRADINA: THE EVOLUTION OF THE CITY

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Tijekom 2015. godine, u suradnji Sveučilišta u Zadru i Sveučilišta u Maineu (SAD), započela su sustavna istraživanja Gradine u Nadinu. Pet probnih sondi istraženo je na različitim položajima unutar areala naselja definiranog tzv. megalitskim bedemom da bi se omogućilo razumijevanje dubine depozita, kronološka sekvencija i integritet arheološkog zapisa. Preliminarni rezultati pokazuju složenu kulturnu stratigrafiju koja u pojedinim sondama prelazi 2 m dubine i potvrđuju intenzivan razvoj zajednice koja je obitavala na Gradini u Nadinu tijekom željeznog i rimskog doba. Naselje starijeg željeznog doba još uvijek nije potvrđeno, iako je ono, sudeći po istraženom dijelu pripadajuće nekropole na ravnom, moralo egzistirati. U mlađem željeznom dobu iskorišten je širi prostor koji, čini se, uglavnom odgovara antičkim gabaritima naselja. Najvažnija fizička transformacija naseobinskog tkiva povezuje se s nastupom rimske faze nadinske povijesti kada Nedinum stječe status municipija. Na izmaku kasne antike položaj je napušten da bi ponovno zadobio važnost tijekom kasnog srednjeg, odnosno novog vijeka. Tada se na Gradini gradi utvrda u sustavu obrane Mlečana, a zatim i Osmanlija, čiji ostatci sačuvani do visine od nekoliko metara dominiraju današnjom vizurom lokaliteta.

[1] Izlaganje o ovoj temi održano je na Međunarodnom znanstvenom skupu posvećenom Mati Suiću *Antiquitatis sollemnia antidoron Mate Suić*, Zagreb – Zadar, 3. – 6. studenoga 2015. Tijekom 2017. godine tekst je predan za objavu u planiranom zborniku radova s navedenog skupa. Kako se od tiskanja zbornika odustalo tijekom 2022. godine, članak se u originalnoj verziji objavljuje na ovom mjestu. Iako su u međuvremenu istraživanja na lokalitetu nastavljena i u mnogočemu proširila i nadopunila spoznaje o kronologiji i planimetriji i naselja na nadinskoj Gradini i pripadajuće nekropole na ravnom (usp. ČELHAR 2016; ČELHAR, ZARO 2016; 2017; ZARO, ČELHAR 2018; BORZIĆ et al. 2018; KUKOČ, ČELHAR 2019; ZARO, GUSAR, ČELHAR 2020; ČELHAR, UGARKOVIĆ 2021; LOEWEN, NYSTROM, ČELHAR 2021; TOYNE, ČELHAR, NYSTROM 2021; ČELHAR, BORZIĆ, ZARO 2023), odlučeno je da se ne zadire u izvorni tekst s obzirom na to da je tematski povezan s početnim probnim istraživanjima provedenim tijekom 2015. godine.

Key words:
Nadin-Gradina, Liburnia, urbanization, Iron Age, Antiquity, Late Middle Ages, Early Modern Age

In 2015, the University of Zadar and the University of Maine (USA) launched a systematic program of research at the Nadin-Gradina site. Five test probes were initially scattered within the area of the settlement defined by the so-called megalithic rampart to document depth, chronological sequence, and integrity of the archaeological record. Preliminary results demonstrate a complex cultural stratigraphy that, in some probes, exceeds 2 meters in depth and confirms the intense development of an urban community that occupied Nadin-Gradina during the Iron Age and Roman era. The investigated portion of the flat necropolis suggests the presence of an Early Iron Age settlement although its archaeological confirmation is still missing. In the Late Iron Age, a wider area of the settlement was used, which seems to mostly correspond to the ancient dimensions of the settlement. The most significant physical transformation of the settlement is associated with the onset of the Roman phase of Nadin's history, when it acquired the status of the Roman municipium Nedinum. At the end of Late Antiquity, the settlement was abandoned, only to regain importance during the Late Middle Ages and Early Modern Era. At this time, a fort was built on the summit area, which fell under the authority of the Venetians, and subsequently the Ottomans. Its ruins are preserved up to a height of several meters and dominate the present-day view of the site.

Zahvaljujući ponajprije antičkim izvorima[2] i epigrafičkoj građi[3], ali i ostatcima monumentalne arhitekture, dimenzijama perimetra kao i pojedinačnim slučajnim nalazima, Gradina u Nadinu (ant. *Nedinum*) zarana je prepoznata i uvrštena u red najvećih i najistaknutijih liburnskih naselja u željezno i u antičko vrijeme. Prosperitetan razvoj zajednice koja je ovdje obitavala nesumnjivo je proizlazio i iz samog položaja naselja, odnosno zadanih prirodnih okvira koji su pružali resurse za akumulaciju sredstava. Riječ je o jednom od najplodnijih teritorija na prostoru Liburnije s dijelovima krških teritorija pogodnih za stočarstvo koje je kao privredna grana najvjerojatnije i omogućavalo proizvodne viškove.[4] Takva su sredstva, zahvaljujući izrazitom prometnom potencijalu zbog smještaja na glavnom magistralnom pravcu koji je povezivao more s unutrašnjošću,[5] morala biti i dodatno kapitalizirana. Izrazito strateško značenje lokacije naglašeno je i dominantnim položajem u krajoliku, na vrhu i padinama najviše glavice nadinske bore (265 m n. v.), omogućivši već od prapovijesnih vremena vizualni nadzor i kontrolu nad širim teritorijem i samom prometnicom.

Nakon napuštanja položaja s izmakom kasne antike kada na širem prostoru dolazi do izraženih kulturnih (i populacijskih) promjena koje su uočljive i u topičkom diskontinuitetu, strateška važnost položaja iznova se potvrđuje tijekom kasnog srednjeg i novog vijeka u kontekstu turbulentnih povijesnih

[2] Plin., N. h. 3, 130; Ptol. 2, 16, 6; Tabula Peutingeriana; Ravenat IV, 16. Usp. kod: SUIĆ 2003: 419 i d.

[3] Na samoj Gradini, u neposrednom okruženju, kao i na širem teritoriju općine nađen je veći broj epigrafičkih spomenika. Usp. CIL III 1902: 2857–2879, 9957–9966, 13258–13262, 14000–14003, 15042–15045; ILIug 1963: 208–209; ILIug 1978: 870–871, 1033; ILIug 1986: 2866, 2871, 2873–2878; KURILIĆ 1999: Spom. AK 1312, 1309–1318, 1887–1888, 1890–1891, 1994, 2046, 2100, 2253, 2256–2263, 2400, 2402, 2404–2406, 2462–2465, 2488–2489, 2584–2588, 2619, 2644–2645, 2690, 2737, 2877, 2881, 2896, 2908, 2829, 2873.

[4] Detaljniji osvrt o stočarstvu kod Liburna kod: ČAČE 1985: 451–454; 2007: 41 i d.

[5] MILETIĆ 1993: 129–132, sl. 1.

Owing primarily to ancient sources[2] and epigraphic evidence[3], as well as to the remains of monumental architecture, the dimensions of the perimeter, and isolated finds, Nadin-Gradina (Roman-era *Nedinum*) was recognized early on to be among the largest and most prominent Liburnian settlements, both during the Iron Age and in Antiquity. The prosperity of the community that lived there undoubtedly stemmed from its geographic location, which provided an abundant natural resource base for the accumulation of wealth. It lies in one of the most fertile regions of Liburnia, whose karstic territories were suitable for animal husbandry as an economic activity, enabling a surplus production.[4] Such wealth, thanks to the potential for significant traffic given its location on the main link connecting the sea with the interior,[5] had to be additionally capitalized. Its strategic importance is also linked to its dominant position atop and on the slopes of the highest peak of the Nadin ridge (265 masl), offering wide visibility and territorial control not only over the immediate road network but also the wider region since the prehistoric era.

Pronounced cultural (and demographic) changes, noticeable also in topical discontinuity, took place in Late Antiquity when the site was abandoned. However, its strategic location was confirmed once again during the Late Middle Ages and Early Modern Era with the arrival of a new political force, Ottoman Empire.[6] For

[2] Plin., N. h. 3, 130; Ptol. 2, 16, 6; Tabula Peutingeriana; Ravenat IV, 16. Cf. in: SUIĆ 2003: 419 ff.

[3] A large number of epigraphic monuments were found in Nadin-Gradina itself, in the immediate surroundings, as well as in the wider territory of the municipality. Cf. CIL III 1902: 2857–2879, 9957–9966, 13258–13262, 14000–14003, 15042–15045; ILIug 1963: 208–209; ILIug 1978: 870–871, 1033; ILIug 1986: 2866, 2871, 2873–2878; KURILIĆ 1999: Note. AK 1312, 1309–1318, 1887–1888, 1890–1891, 1994, 2046, 2100, 2253, 2256–2263, 2400, 2402, 2404–2406, 2462–2465, 2488–2489, 2 584–2588, 2619, 2644 –2645, 2690, 2737, 2877, 2881, 2896, 2908, 2829, 2873.

[4] A more detailed overview of animal husbandry in Liburnia in: ČAČE 1985: 451-454; 2007: 41 ff..

[5] MILETIĆ 1993: 129-132, fig. 1.

[6] ČELEBI 1967: 160; KLAIĆ, PETRICIOLI 1976: 159, 220, 537; RAUKAR et al. 1987: 183, 188, 190, 195-196, 207, 210, 234; MAYHEW 2008: 24, 39, 77, 89-90; BIANCHI 2011: 107-108, 308.

previranja prouzročenih pojavom nove povijesne sile na ovom prostoru, Osmanskog Carstva.[6] Tada se obnavlja život na istom položaju, a dinamičnost i nesigurnost mletačko-osmanske granice arhitektonski je artikulirana gradnjom utvrde čiji ostatci sačuvani do visine od nekoliko metara, uz tzv. megalitske bedeme, dominiraju današnjom vizurom lokaliteta.

Sve navedene okolnosti pružale su povoljne uvjete za razvoj kompleksnije zajednice čije naselje, vjerojatno već i tijekom starijeg željeznog doba, a svakako tijekom kasnoliburnskog razdoblja, stječe status jedne od najvećih liburnskih aglomeracija, što je tijekom 1. st. po Kr., unutar novog rimskog državnog poretka, formalizirano stjecanjem statusa municipija.[7] Time *Nedinum* i *de iure* postaje pravi grad, zadržavajući prevagu domaćih obitelji.[8]

Sam proces urbanizacije kojem se pripisuje dominantna uloga u oblikovanju krajolika i resursa[9] nije ni približno dovoljno rasvijetljen na prostoru istočnog Jadrana. Na prostoru sjeverne Dalmacije urbani život traje više od dva tisućljeća, ponegdje s neprekinutim kontinuitetom. Antička Liburnija (od Raše do Krke), a napose pak predio Ravnih kotara, najurbaniziranija je regija na istočnom Jadranu,[10] prekrivena teritorijalnom mrežom pojedinih kolonija i municipija. Iako su u sklopu hrvatske antičke arheologije djelomično istraženi pojedini važniji gradovi, još uvijek nema cjelovito istraženih/publiciranih

6 ĆELEBI 1967: 160; KLAIĆ, PETRICIOLI 1976: 159, 220, 537; RAUKAR et al. 1987: 183, 188, 190, 195–196, 207, 210, 234; MAYHEW 2008: 24, 39, 77, 89–90; BIANCHI 2011: 107–108, 308.

7 Uvođenje municipalne uprave okvirno se povezuje s razdobljem od vladavine cara Tiberija do vladavine Flavijevaca (WILKES: 1969, 212–213; ČAČE 1993: 31). Kako je Nedinum, baš kao i Aserija i Varvarija, bio upisan u tribus Klaudija, neki smatraju opravdanim mišljenje da su upravo za tog cara građani ovih naselja dobili civitet (FADIĆ 2001: 69).

8 WILKES 1969: 213; ČAČE 1985: 740; KURILIĆ 1999: 217 i d.

9 REDMAN 1999.

10 MEDINI 1969; WILKES 1969: 203; SUIĆ 2003: 66.

a short period of time, life at Nadin was renewed, and the dynamic and uncertainty of the Venetian-Ottoman border is architecturally reflected in the construction of a fort. Along with the so-called megalithic ramparts, its remains, preserved up to a height of several meters, dominate the present-day view of the site.

The historical and geographic circumstances surrounding Nadin provided favorable conditions for the development of a more complex community that, perhaps already during the Early Iron Age but certainly by the late Liburnian period, acquired the status of one of the largest Liburnian centers. By the 1st century AD, within the new Roman state order, Nadin had been formally granted municipium status.[7] Thus, *Nedinum* had become a recognized town *de jure*, maintaining the predominance of local families.[8]

The process of urbanization, which played a prominent role in shaping the landscape and its resources,[9] is not adequately understood in the eastern Adriatic. In the area of northern Dalmatia, urban life has evolved over the course of more than two millennia, and in some places with uninterrupted continuity. Ancient Liburnia (from Raša to Krka), and particularly the region of Ravni Kotari, was the most urbanized region on the eastern Adriatic,[10] characterized by a territorial network of individual colonies and municipia. Although some important cities have been partially explored within the field of Classical archaeology in Croatia, there are still no integrally explored/published urban settlements. Furthermore, of the archaeological studies that have been conducted, few were directed toward urban development more broadly; rather, the

7 The introduction of municipal administration is tentatively linked to the period from the reign of Emperor Tiberius to the reign of the Flavians (WILKES : 1969, 212-213; ČAČE 1993: 31). As Nedinum, just like Asseria and Varvaria, was enrolled in the tribus Claudia, some researchers believe that the citizens of these settlements received citizenship during the reign this emperor (FADIĆ 2001: 69).

8 WILKES 1969: 213; ČAČE 1985: 740; KURILIĆ 1999: 217 ff.

9 REDMAN 1999.

10 MEDINI 1969; WILKES 1969: 203; SUIĆ 2003: 66.

urbanih cjelina. Također, sam fokus rijetko je bio usmjeren k razvoju urbanih središta u cjelini. Interes istraživača uglavnom je počivao na pojedinačnim spomenicima, odnosno arhitektonskim sklopovima pretežno religijskog ili sepulkralnog karaktera, uz veći interes za pojedine monumentalne građevine javnog značenja (amfiteatri, teatri, akvedukti, forumi i sl.). Arhitektura profanog karaktera ostaje, uz rijetke iznimke, slabo poznata,[11] a time i potpunije razumijevanje promjena unutar gradskog tkiva, odnosno stupnja složenosti urbanog planiranja. Situacija je još nepovoljnija kad se razmatra preobrazba urbanih središta tijekom kasne antike i idućih povijesnih razdoblja.[12]

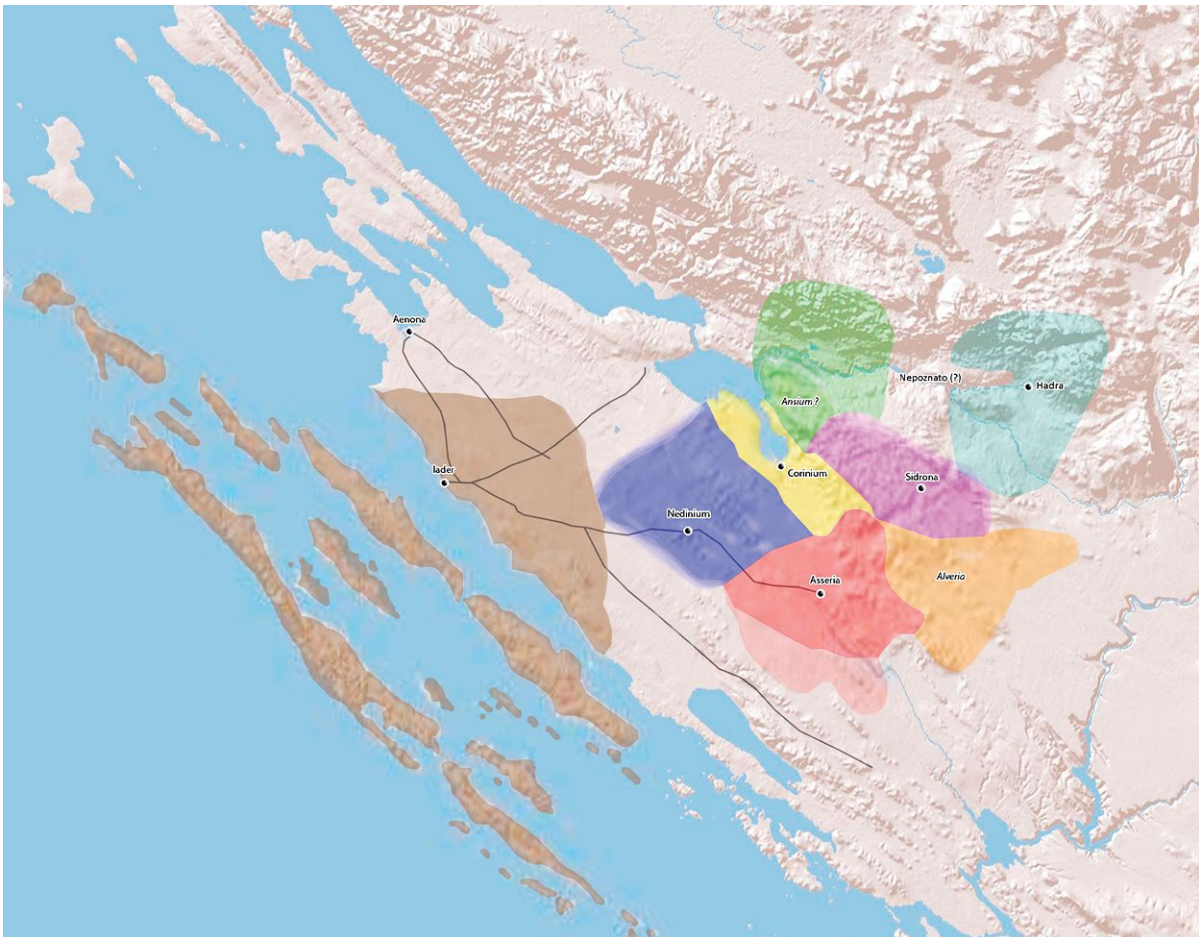
Za razumijevanje procesa poleogeneze svakako je ključno poznavanje prethodnog razvoja naselja koja prerastaju u urbane cjeline kao i prepoznavanje da pojedina naselja i regije mogu doživjeti razdoblja procvata, opadanja, napuštanja i ponovnog zaposjedanja. Pojam urbanizacija odnosi se na povećanje i koncentraciju niza različitih funkcija u pojedinom naselju, a u kontekstu šire okolice,[13] što dovodi do povećanja gustoće populacije, šireg raspona arhitektonskih formi, veće koncentracije dobra i usluga, intenzivnijeg gospodarskog iskorištavanja resursa, složenije društvene i gospodarske organizacije i, općenito, dominantnije uloge u oblikovanju lokalnog i regionalnog krajolika. Pojava „pravih" gradova na prostoru sjeverne Dalmacije povezuje se s vremenom kada prostor Liburnije postaje sastavnim dijelom rimske provincije, a pojedina važnija naselja i formalno i pravno zadobivaju status gradskog središta, bilo kolonije, bilo municipija. Takve gradove odlikuje viši stupanj urbanog planiranja i standardizacija urbanih formi u više ili manje izraženom ortogonalnom rasporedu karakterističnom za klasične civili-

[11] SUIĆ 2003: 33–43, 270–276; KIRCHHOFFER, KURILIĆ 2011: 333–334.
[12] SUIĆ 2003: 341 i d.; JOVIĆ GAZIĆ 2010.
[13] SMITH 2007: 4.

majority of research was centered on individual monuments, that is, architectural complexes of predominantly religious or sepulchral character, or on monumental buildings of public importance (amphitheatres, theaters, aqueducts, forums, etc.). Vernacular or more mundane architecture, with rare exceptions, is less known.[11] Consequently, a more complete understanding of the changes within the urban settlement, i.e., the degree of complexity of urban planning, is poorly understood. The situation is even more complicated when considering the transformation of urban centers during Late Antiquity and subsequent historical periods.[12]

To understand the process of urbanization, it is essential to understand the proto-urban histories of settlements as well as to recognize that individual settlements and regions can experience complicated trajectories of prosperity, decline, abandonment, and redevelopment. The term urbanization refers to the increase and concentration of a number of different functions in an individual settlement, particularly in the context of its wider surroundings.[13] Urbanization often results in an increase in population density, a wider range of architectural forms, a greater concentration of goods and services, economic intensification, more complex social and economic structures, and, in general, more dominant roles in shaping the local and regional landscape. The appearance of what are most commonly referred to as "cities" in the area of northern Dalmatia is linked to the period when Liburnia became an integral part of the Roman province. During this period, some settlements acquired the status of urban centers, formally and legally, either as Roman colonies or municipia. Such cities are characterized by a higher level of urban planning and standardization of urban forms. This includes a more or less pronounced orthogonal arrangement that was common among classical civilizations of

[11] SUIĆ 2003: 33-43, 270-276; KIRCHHOFFER, KURILIĆ 2011: 333-334.
[12] SUIĆ 2003: 341 ff.; JOVIĆ GAZIĆ 2010.
[13] SMITH 2007: 4.



Slika 1. *Pretpostavljeni teritoriji nekih liburnskih općina kojima se granice mogu preciznije rekonstruirati* (prema: ČAČE 2006: Map 3, 6–7; Glavaš 2009: karta 3; Vrkić 2015: sl. 10; doradio: D. Vujević)
Figure 1 *Assumed territories of some Liburnian municipalities whose borders can be more precisely reconstructed* (according to: ČAČE 2006: Map 3, 6-7; Glavaš 2009: map 3; Vrkić 2015: fig. 10; edited by: D. Vujević)

zacije sredozemnog svijeta, što je popraćeno monumentalizacijom koja promiče raznolike ideološke poruke.[14] Međutim, sustav liburnskih municipija nastao je na predrimskim naseobinskim osnovama. On, dakle, odražava i neke aspekte prapovijesne liburnske naseobinske mreže, osobito one iz posljednjih stoljeća liburnske kulture. Tijekom zadnje faze liburnske kulture, osobito tijekom 2. i 1. st. pr. Kr., već postoje predrimska utvrđena liburnska središta s brojnim urbanim oznakama koja, bilo u gospodarskom, upravnom i/ili religijskom pogledu, utječu na šire zaleđe. Među njih nesumnjivo treba uvrstiti i Gradinu u Nadinu čije značenje, među ostalim, potvrđuje uloga središta jedne od najve-

[14] O urbanom planiranju više kod: SMITH 2007.

the Mediterranean world, accompanied also by monumental architecture to promote diverse ideological messages.[14] However, the system of Liburnian municipia was created on the basis of pre-Roman settlements. Therefore, urban form also reflects some aspects of the prehistoric Liburnian settlement network, especially those from the final centuries of Liburnian culture. During the last phase of Liburnian culture, especially during the 2nd and 1st centuries BC, there had already been fortified Liburnian centers that had influenced the wider hinterland, either in economic, administrative, and/or religious terms. Nadin-Gradina should undoubtedly be included among them, the significance of which is confirmed by, among other

[14] More about urban planning in: SMITH 2007.

ćih liburnskih općina (*civitas*) (sl. 1).[15]

Unatoč znatnom interesu znanstvenika za ovaj lokalitet, kao i čestom spominjanju u stručnoj literaturi, dosadašnja konkretna istraživačka djelatnost usmjerena na ovo naselje bila je skromnog obujma. Uz brojne slučajne nalaze poznate još od 19. stoljeća, veća količina građe otkrivena je godine 1968., kada su u dva navrata obavljena istraživanja dvaju grobova helenističke vrste.[16] Bitan iskorak u istraživanju Nadina učinjen je 80-ih godina 20. stoljeća kada je u sklopu projekta *Neotermalna Dalmacija* sustavno rekognoscirano šire nadinsko područje[17] te godine 1986. obavljeno pokusno istraživanje na samoj nadinskoj Gradini. Tada je istraženo šest sondi ukupne površine 44 m^2 (od toga 25,56 m^2 unutar i 18,40 m^2 izvan bedema na padinama)[18] koje su zbog relativno male zahvaćene površine dale vrijedne, ali ipak u mnogočemu ograničene podatke o samom naselju. Međutim, ustanovljena je okvirna kronologija života naselja koja, s povremenim prekidima, obuhvaća vrijeme od željeznog doba pa sve do 17. stoljeća.

Zahvaljujući recentnim sustavnim istraživanjima znatno je poznatiji sepulkralni aspekt nadinske zajednice. Istraženi dio nekropole pod humcima[19] i kompleksne nekropole na ravnom na sjeverozapadnoj padini Gradine[20] pružili su posebno vrijedne spoznaje o pokapanju, a osobito o složenoj strukturi i pla-

things, its role as the center of one of the largest Liburnian municipalities (*civitas*) (Fig. 1).[15]

Despite the considerable scholarly interest in this region, as well as its frequent mention in the professional literature, archaeological work centered on Nadin-Gradina has thus far been fairly modest in scope. Along with numerous accidental finds known since the 19th century, a larger amount of material was discovered in 1968, when two Hellenistic graves were excavated on separate occasions.[16] A significant step forward in research on Nadin occurred in the 1980s when, as part of the *Neothermal Dalmatia Project*, the wider Nadin area was systematically surveyed,[17] and in 1986, an experimental survey was carried out at Nadin-Gradina itself. At that time, six probes with a total area of 44 m^2 were investigated (of which 25.56 m^2 were located inside the ramparts whereas 18.40 m^2 were located outside on the slopes).[18] Although valuable, the relatively small area of excavation provided only limited data about the settlement itself. Nevertheless, these early investigations produced an approximate chronology of the site that suggested, with occasional interruptions, an occupational history spanning from the Iron Age to the 17th century.

Owing to recent systematic research, the sepulchral aspect of the Nadin community is much better known. A portion of the mound necropolis[19] and the flat necropolis on the northwestern slope of the hillfort[20] provided

15 ČAČE 1993; 2006: 70 i d.
16 BATOVIĆ, BATOVIĆ 2013.
17 BATOVIĆ 1984: 26–27; 1984a: 41; 1990: 16; BATOVIĆ, CHAPMAN 1985: 186; 1986: 204 i d.; 1986a: 33 i d.; 1987: 38 i d.; 1987c: 176–177; CHAPMAN, SHIEL, BATOVIĆ 1996: 116 i d.
18 BATOVIĆ, CHAPMAN 1987a; 1987b; CHAPMAN, SHIEL, BATOVIĆ 1996: 116 i d.
19 Istraživanja tijekom 2002. i 2003. godine vodio je Arheološki muzej u Zadru, dok je ona iz 2004. godine proveo Odjel za arheologiju, Sveučilišta u Zadru (BATOVIĆ, ČONDIĆ 2005; KUKOČ 2005; 2009: 17–50; KUKOČ, BATOVIĆ 2005).
20 Istraživanja je vodio Odjel za arheologiju, Sveučilišta u Zadru tijekom 2005., 2009., 2013. i 2015. godine (KUKOČ 2006; 2009: 52 i d.; KUKOČ, BATOVIĆ 2006; KUKOČ, ČELHAR 2010).

15 ČAČE 1993; 2006: 70 ff.
16 BATOVIĆ, BATOVIĆ 2013.
17 BATOVIĆ 1984: 26-27; 1984a: 41; 1990: 16; BATOVIĆ, CHAPMAN 1985: 186; 1986: 204 ff; 1986a: 33 ff; 1987: 38 ff.; 1987c: 176-177; CHAPMAN, SHIEL, BATOVIĆ 1996: 116 ff.
18 BATOVIĆ, CHAPMAN 1987a; 1987b; CHAPMAN, SHIEL, BATOVIĆ 1996: 116 ff.
19 Research in 2002 and 2003 was led by the Archaeological Museum in Zadar, while those in 2004 were carried out by the Department of Archaeology, University of Zadar (BATOVIĆ, ČONDIĆ 2005; KUKOČ 2005; 2009: 17-50; KUKOČ, BATOVIĆ 2005).
20 Research was conducted by the Department of Archeology of the University of Zadar in 2005, 2009, 2013 and 2015 (KUKOČ 2006; 2009: 52 ff; KUKOČ, BATOVIĆ 2006; KUKOČ, ČELHAR 2010).

Slika 2. *Zračna fotografija Gradine u Nadinu s označenom pozicijom istraženih sondi* (snimila: V. Glavaš; doradio: D. Vujević)
Figure 2 *Aerial photograph of Nadin-Gradina with the positions of the investigated probes marked* (photo by V. Glavaš; edited by D. Vujević)

Slika 3. *Sonda B: ortofoto* (izradio: G. Zaro)
Figure 3 *Probe B: orthophoto* (made by G. Zaro)

nimetriji liburnskih groblja na ravnom. Na nadinskoj nekropoli na ravnom ustanovljene su dvije osnovne kulturno-vremenske faze – liburnska i rimska, jer je rimska nekropola bila podignuta nad liburnskom iz željeznog doba. Najveći doprinos tog istraživanja jest otkriće liburnske parcelacije i arhitektonske artikulacije grobnih areala koja prethodi onoj rimskoj, pojave koja do sada nije bila poznata na tlu Liburnije, a koja upućuje na ranu plansku organizaciju prostora i stanovitu monumentalizaciju.

Tijekom 2015. godine, u suradnji Sveučilišta u Zadru i Sveučilišta u Maineu (SAD), započela su nova istraživanja Gradine u Nadinu, koja je većim dijelom financiralo *Društvo National Geographic*. Pet[21] probnih sondi istraženo je na različitim položajima unutar perimetra naselja (sl. 2) da bi se omogućilo razumijevanje dubine depozita, kronološka sekvencija i integritet arheološkog zapisa. Preliminarni rezultati sugeriraju da pojedini dijelovi gradine nisu bili korišteni, ili pak arhitektonski definirani, tijekom starijeg željeznog doba, dok je u mlađem željeznom dobu iskorišten širi prostor koji, čini se, uglavnom odgovara antičkim gabaritima naselja. Evidentno je da je snažan građevni zamah koji je uslijedio u antičkom vremenu djelomično, a ponegdje, čini se, čak i u potpunosti negirao ili uništio starije arhitektonske ostatke.[22] Predrimska arhitektura tako je djelomično očuvana tek unutar jedne sonde (sonda B) na sjevernom dijelu gradine (sl. 3).

Riječ je o objektu izgrađenom od velikih okomito postavljenih kamenih blokova,[23] negiranim i djelomično uništenim izgradnjom ranorimske građevine, o kojem je teško

[21] Sonde su označene slovima od A do F, s tim da sonde E i F predstavljaju jedinstvenu cjelinu pri čemu je slovom F označeno naknadno proširenje sonde E koje je diktirala zatečena situacija na terenu.

[22] Istraženi ostatci rimske arhitekture koji se mogu datirati u ranocarsko razdoblje svojim temeljnim stopama dosežu razinu matične stijene.

[23] Trenutačno su vidljiva dva zida koja se spajaju pod pravim kutom.

particularly important information about burial treatment, and especially about the complex structure and planimetry of the Liburnian flat cemeteries. Two basic cultural-temporal phases were identified in the Nadin necropolis – Liburnian and Roman – with the Roman necropolis constructed over that of the Liburnian Iron Age. The most important contribution of research on the necropolis was the discovery of architecturally delineated subdivisions within the Liburnian cemetery prior to Roman settlement. This phenomenon was previously unknown within the territory of Liburnia but points to early spatial planning and a sort of monumentalization.

In 2015, with support from the *National Geographic Society*, the University of Zadar and the University of Maine (USA) launched a new collaborative archaeological exploration of Nadin-Gradina. Five[21] test probes were excavated in various locations throughout the intramural portion of the settlement (Fig. 2) to determine depth of the deposits, chronological sequence, and the integrity of the archaeological record. Preliminary results suggest that some parts of the hillfort were not in use, or rather not architecturally developed, during the Early Iron Age, while during the Late Iron Age a wider area was used, corresponding mostly to the dimensions of the Roman-era settlement. Clearly, the strong momentum of construction that occurred during Roman Antiquity either partially, or in some cases entirely, destroyed older Iron Age architectural remains.[22] Consequently, pre-Roman architecture is only partially preserved within one of the five probes (probe B) in the northern part of the hillfort (Fig. 3).

This pre-Roman structure is built of large vertically placed stone blocks,[23] negated and par-

[21] The probes are marked with the letters A to F, noting also that probes E and F represent a single entity, with the letter F indicating the subsequent expansion of probe E, which was dictated by the situation on the ground.

[22] The explored remains of Roman architecture, which can be dated to the early imperial period, reach the level of the bedrock with their foundations.

[23] Currently, two walls are visible that meet at right angles.

Slika 4. *Stambena arhitektura na gradini Jerebinjak u Brgudu* (snimila: M. Čelhar)
Figure 4 *Residential architecture at the Jerebinjak hillfort in Brgud* (photo by M. Čelhar)

izvoditi konkretnije zaključke (funkcija, dimenzije) tek na osnovi istraženog segmenta. Ono što je na prvi pogled jasno jest da nije riječ o klasičnom suhozidu kakvi su otkriveni na nizu liburnskih gradina (npr. u Ninu,[24] na Beretinovoj gradini u Radovinu[25] itd.), a zbog svojih dimenzija, konkretno širine, ovi „zidovi" nisu bili pogodni kao osnova za neku višu kamenu nadgradnju. Stoga se može pretpostaviti zidni plašt od organskog materijala.[26] Načinom gradnje, slaganjem u nizu okomito postavljenih masivnih kamenih blokova, ova arhitektonska situacija podsjeća na gradnju pojedinih ograda liburnskih grobnih parcela na pripadajućoj nekropoli na ravnom, ali i na brojne objekte vidljive na površini pojedinih gradina u sjevernoj Dalmaciji (Jerebinjak (sl. 4), Lergova gradina...).[27]

Samu gradnju teško je preciznije kronološki odrediti. Zbog kasnije intenzivne graditeljske aktivnosti pri kojoj su zidovi mlađeg objekta presjekli ovaj stariji gotovo dosegnuvši razinu matične stijene (sl. 5), očekivano je, što je neminovnost u urbanoj arheologiji, da se ne može govoriti o kronološki „čistom" materijalu u slojevima istraženim unutar njegovih gabarita. Ipak, preliminarni pregled keramičke građe pokazuje da se u slojevima javlja materijal koji se može odrediti u vrijeme od 4./3. st. pr. Kr. do u 1. st. po Kr., a navedeni kronološki okvir dodatno potvrđuju tri radi-

[24] BATOVIĆ 1970: 36, sl. 1–6, T. I–III; 1987: 109–110; KOLEGA 1996: 48; 2001: 94–95; 2013: 279–282, Prilog 2–4.

[25] BATOVIĆ 1968: 59, T. VI, IX–XV; 1987: 110–115.

[26] Nažalost, nisu evidentirani ostatci koji bi nedvosmisleno poduprli ovu pretpostavku, u prvom redu očekivane jame za stupove. Moguće je da su one uništene naknadnom gradnjom. Otvorena ostaje i uvjetna mogućnost da je, s obzirom na izraženu zaravnjenost gornjih ploha kamenih blokova i njihovu relativno pravilnu nivelaciju, gornji dio izveden pomoću vodoravno položenih drvenih greda. Situaciju dodatno otežava još uvijek nedovoljno jasna situacija uz južnu stranu objekta uz koju se proteže kameno popločanje za koje nije jasno korelira li vremenski s predrimskom ili idućom rimskom fazom. Širenje istražene površine tijekom sljedećih istraživačkih kampanja, nadamo se, možda će ponuditi konkretnije odgovore na ova pitanja.

[27] Usp. BRUSIĆ 2000: 138–139, sl. 27.

tially destroyed by the construction of an early Roman building, whose function and dimensions remain unknown on the basis of the investigated portion. What is clear at first glance, however, is that the pre-Roman structure is not a classic dry-stone wall, such as those discovered on a number of Liburnian hillforts (e.g., in Nin,[24] at Beretinova gradina in Radovin,[25] etc.). Furthermore, given the dimensions of these stone alignments, specifically their widths, these "walls" were not suitable as a foundation for a higher stone superstructure. Consequently, a wall covering of organic material seems possible.[26] The alignment of these vertically placed massive stone blocks is reminiscent of the construction of enclosure walls around Liburnian burial plots on the associated flat necropolis, as well as of numerous features visible on the surface of other hillforts in northern Dalmatia (Jerebinjak (Fig. 4), Lergova gradina...).[27]

The chronology of the construction itself is difficult to determine more precisely. Due to subsequent periods of intense construction activity, during which the walls of the younger building cut through the older one to nearly reach the level of bedrock (Fig. 5), as anticipated and inevitable in urban archaeology, one cannot expect chronologically „clear" material in deposits within the frame of the older structure. A preliminary examination of the ceramic fragments from these deposits reflects material ranging from the

[24] BATOVIĆ 1970: 36, figs. 1-6, T. I-III; 1987: 109-110; KOLEGA 1996: 48; 2001: 94-95; 2013: 279-282, Appendix 2-4.

[25] BATOVIĆ 1968: 59, T. VI, IX-XV; 1987: 110-115.

[26] Unfortunately, no remains were recorded that would unequivocally support this assumption, like, for example, associated post holes. It is possible that they were destroyed by subsequent construction. The possibility remains open that, given the pronounced flatness of the upper surfaces of the stone blocks and their relatively regular leveling, the upper part was constructed using horizontally laid wooden beams. The situation is further complicated by the still unclear situation on the southern side of the building, along which stone paving extends. It remains uclear whether this paving correlates with the pre-Roman or subsequent Roman phase. Expanding the excavation in future research campaigns should offer more specific answers to these questions.

[27] Cf. BRUSIĆ 2000: 138-139, fig. 27.

Slika 5. *Sonda B: predrimska arhitektura negirana izgradnjom rimskog objekta* (snimila: M. Čelhar)
Figure 5 *Probe B: pre-Roman architecture impacted by the construction of a Roman building* (photo by M. Čelhar)

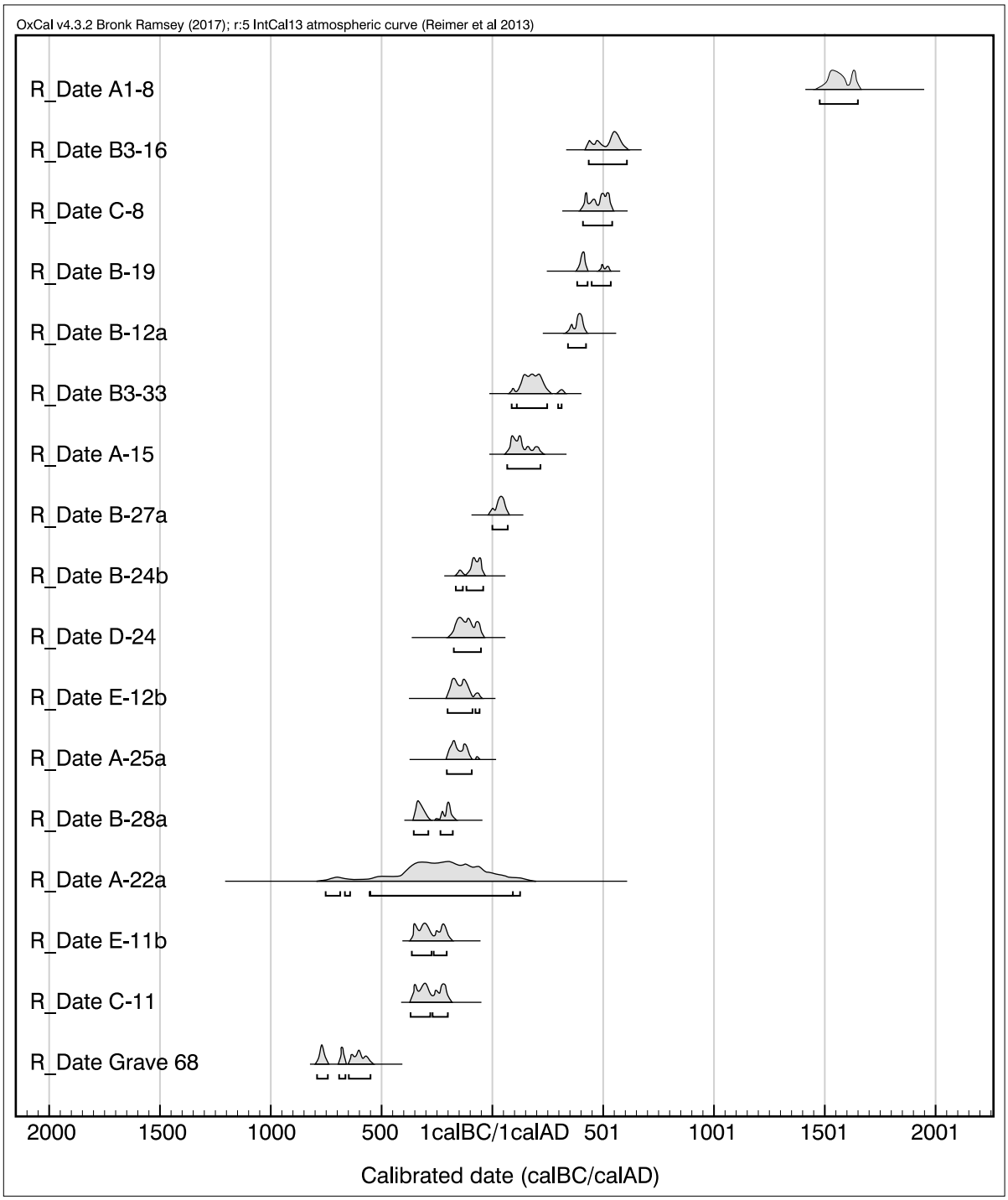
okarbonska datuma iz uzoraka prikupljenih iz triju različitih slojeva unutar građevine (sl. 6: B28a, B27a, B24b). To je ujedno i okvirni vremenski raspon gradnje ove strukture. Međutim, svakako ga treba podrazumijevati u kontekstu ranijem od 1. st. po Kr. kada se datira gradnja mlađeg objekta sa zidovima građenim klasičnim rimskim principom od manjeg, dobro uslojenog klesanog kamenja s obilnom uporabom žbuke, koji ga je negirao.

Premda se konkretnim položajem, a vjerojatno i gabaritima, predrimska gradnja ne podudara s onom ranorimskom, niti pak kasnoantičkom otkrivenom na istoj poziciji, odnosno nije riječ o sukcesivnoj gradnji na identičnoj poziciji, primjetna je sličnost u osnovnoj orijentaciji objekata. To može biti posljedica ponavljanja prostornog rasporeda vidljivih starijih objekata, ali i samog oblika terase.

Pokretna materijalna građa koja se može

4th/3rd century BC to the 1st century AD, which is further confirmed by three radiocarbon dates from samples collected from three separate layers from within the structure (Fig. 6: B28a, B27a, B24b). This is also the approximate time frame for the construction of this structure. However, this should be interpreted in the context of the period prior to the 1st century AD, since the construction technique of the younger building, overlying the older structure, reflects classical Roman principles of using smaller, cut stones with a heavy application of mortar.

Although the pre-Roman construction does not align perfectly with or conform to the exact dimensions of the early Roman or late antique architecture discovered at the same location, (that is, the structures were not successively built in identical positions), the similarity in the basic orientation of the



Slika 6. *Apsolutne datacije s nalazišta Nadin-Gradina* (izradio: G. Zaro)
Figure 6 *Absolute dating from the Nadin-Gradina site* (made by G. Zaro)

povezati sa željeznim dobom pronađena je i u sondama na sjeveroistočnoj (sonda C) i jugozapadnoj strani gradine (sonda A),[28] me-

[28] Uglavnom je riječ o keramičkim nalazima, dok su oni metalni zastupljeni tek iznimno. Osim grube keramike zastupljena je i ona finija, strane provenijencije, i to ponajprije helenistička keramika (crno- i sivopremazana). Pronađe-

buildings is notable. This may be a consequence of repeating the spatial layout of visibly older buildings, or perhaps of the shape of the terrace itself.

Artifacts associated with the Iron Age were also found in the probes on the northeastern (probe C) and southwestern (probe A) side of

đutim, bez arhitektonskih ostataka koji bi se mogli pripisati predrimskom razdoblju, pri čemu svakako treba uzeti u obzir i ograničenu istraženu površinu. Naime, sonde A i D su, zbog kompleksnih ostataka arhitekture, tek u manjem dijelu istražene do matične stijene. Zanimljivo je da je u sondi na jugoistočnom dijelu naselja (sonda D), u kojoj se duž gotovo cijele površine proteže rimska ulica izgrađena gotovo neposredno iznad matične stijene, u potpunosti izostao predrimski materijal, što može upućivati na to da ovaj dio naselja nije bio intenzivnije korišten u predrimsko doba. Međutim, bez istraživanja šire površine ostaje otvoreno pitanje što se događalo s okolnim prostorom na kojem je vidljiv niz terasa koje se spuštaju u pravcu megalitskog bedema, a koji je zbog povoljne orijentacije i zaštićenosti od nepovoljnih vremenskih prilika, ponajprije jake bure, svakako bio izrazito povoljan za život.

Veća količina prapovijesne keramike pronađena je unutar sonde koja je postavljena na mjestu sjevernog ulaza u sklopu megalitskog bedema (sonda E-F). Zbog vidljivih masivnih vapnenačkih blokova u donjem dijelu zida kasnije utvrde koji se nadovezuje na megalitski bedem, a pored kojeg se proteže suvremen pristupni put u gradinu, pretpostavljen je mogući kontinuitet korištenja starije, (pred)rimske pristupne ceste i ulaza. Međutim, čišćenjem kamenog urušenja uz bazu zida utvrde utvrđeno je da masivni kameni blokovi u korpusu zida utvrde nisu *in situ*, odnosno da ne predstavljaju zapadno lice ulaza. Oni su ujedno međusobno povezani obilnom količinom žbuke, koja u isto vrijeme nije primjetna na originalnom potezu megalitskog bedema otkrivenom na suprotnoj strani sonde.

Pristupna cesta koja je vodila do ulaza u sklopu megalitskih bedema se, dakle, samo

no je i nekoliko fragmenata daunijske mat slikane keramike s geometrijskim motivima, međutim, njihova slaba očuvanost ne dopušta preciznije tipološko-kronološko određenje.

the hillfort.[28] However, while it is also necessary to take into account the limited area of exploration, no architectural remains were identified that could be attributed to the pre-Roman period. Furthermore, given the complex remains of architectural features, probes A and D were only partially explored to bedrock. Interestingly, in the southeastern part of the settlement (probe D) where a Roman street was constructed almost immediately above bedrock, pre-Roman material was completely absent. This may indicate that this part of the settlement was less intensively used during the pre-Roman period. However, without investigating the wider area, the question remains open as to how this intramural part of the site was used. A series of terraces are visible as the landscape slopes down toward the megalithic rampart. Given its favorable orientation and protection from adverse weather conditions, especially strong bora wind, this part of the hillfort would certainly offer quite favorable living conditions.

A large amount of prehistoric pottery was recovered from a probe placed at the northern entrance through the megalithic rampart (probe E-F). The presence of massive limestone blocks visible in the lower part of a wall associated with the medieval fort, which adjoins the megalithic rampart adjacent to the modern access road into the fort, suggests possible continuity in use of the older, (pre)Roman access road and entrance. However, by clearing away the collapsed stones at the base of the medieval wall, it was determined that the massive stone blocks in the body of the medieval wall are not *in situ* and do not represent the western face of the entrance as originally thought. Rather, they exhibit a heavy application of mortar, which is not the case opposite the access road on an original stretch of

[28] These are mainly ceramic finds, while metal ones are represented only rarely. In addition to coarse pottery, there is also fine imported pottery, primarily Hellenistic (black- and gray-coated). A few fragments of Daunian matt painted pottery with geometric motifs were also found, but their poor preservation does not allow for a more precise typological and chronological determination.

Slika 7. *Pristupna cesta i sjeverni ulaz u sklopu tzv. megalitskog bedema uz recentni put u Gradinu (označen crvenom bojom) i zid utvrde s inkorporiranim masivnim kamenim blokovima* (snimio: G. Zaro; doradila: M. Čelhar)
Figure 7 *Access road and northern entrance within the so-called megalithic rampart along the recent road to the hillfort (marked in red) and the fort wall with incorporated massive stone blocks* (photo by G. Zaro; edited by M. Čelhar)

djelomično preklapa s recentnim, vjerojatno i kasnosrednjovjekovnim/novovjekovnim pristupnim putom (sl. 7). Naime, istraživanjem je utvrđeno da sjeverni ulaz u sklopu megalitskog bedema nije korišten nakon antičkog razdoblja, a sudeći prema pokretnoj građi u sloju urušenja kojim je taj ulaz zatrpan, čini se da je izgubio funkciju i nešto prije vremena prestanka života ovog naselja s izmakom kasne antike.[29] Dio megalitskog bedema na potezu od zapadne strane ulaza prema zidu utvrde je naknadno srušen, moguće pri gradnji utvrde, pri čemu je iskorišten dio njegove kamene građe što se jasno vidi, kako je već spomenuto, u njezinu zidnom plaštu.

Na ovom dijelu recentnog puta gdje dio megalitskog bedema nedostaje istraživanjem je utvrđeno da se netom ispod humusnog sloja nalazi velika količina lomljenog kamenja s manjom količinom zemlje i pojedinim „džepovima" zraka među nakupinom kamenja. Takva situacija vidljiva je do gotovo 2 m u dubinu, nakon čega je zbog sigurnosnih razloga iskopavanje prekinuto. Važno je napomenuti da se taj nasip proteže i ispod masivnih kamenih blokova koji su na zapadnoj strani flankirali ulaz. Objasniti ovakvu stratigrafsku situaciju može se dvojako. S jedne se strane, može pomišljati na izvedbu svojevrsne artificijelne podloge za gradnju megalitskog bedema, dok se s druge strane može pomišljati i na prethodno postojeći stariji bedem kao ishodište za gradnju novog. U prilog ovoj potonjoj tvrdnji ide i keramika pronađena unutar nasipa s jasnim prapovijesnim karakteristikama i bez pojave importirane keramičke građe ili mlađeg rimskog materijala, a koja je tu vjerojatno dospjela tijekom njegove gradnje s neke obližnje pozicije unutar naselja.[30]

[29] Najmlađa građa iz sloja urušenja datirana je u 3. st. po Kr. Međutim, takva potencijalno rana datacija prestanka korištenja ovog ulaza možda je i posljedica relativno malene površine na kojoj je istražen sloj urušenja.

[30] Istraživanjima iz 1986. godine u sondi 3 smještenoj u blizini sjevernog ulaza, a neposredno uz sjeverni potez bedema utvrđena je moćna stratigrafija predrimskog perioda s velikom količinom željeznodobne „liburnske" keramike (BATOVIĆ, CHAPMAN 1987a: 29–30; 1987b: 73–74, sl. 3–4).

the megalithic rampart discovered during excavation.

The access road that led to the entrance as part of the megalithic ramparts therefore only partially overlaps with the recent, probably late medieval/modern access road (Fig. 7). Investigation in this area determined that the northern entrance as part of the defensive megalithic rampart was no longer used after antiquity. Judging by the artifact assemblage in the debris overlying the entrance, it likely ceased to function as a gate some time prior to the site's abandonment near the end of Late Antiquity.[29] Part of the megalithic rampart on the western side of this entrance to the hillfort was subsequently demolished, possibly during the construction of the medieval fort, with a portion of its stone material utilized for the fort's outer cladding.

On this section of the more recent access road, where part of the megalithic rampart is missing, excavation just below the humus layer uncovered a large amount of mostly dry cobble fill with smaller amounts of soil and occasional air „pockets" among the cobbles. This deposit was documented up to nearly two meters in depth, after which the excavation was stopped for safety reasons. It is important to note that this embankment also extends under the massive stone blocks that flanked the entrance on the western side. This stratigraphic situation can be explained in one of two ways. On the one hand, this may have constituted the construction of a kind of artificial base for the megalithic rampart. Alternatively, this may have been part of a previously existing older rampart that was subsequently utilized as a starting point for the construction of the new one. This latter possibility is also supported by pottery found inside the embankment with clear prehistoric characteristics and without any imported ceramic material or younger Ro-

[29] The youngest material from the collapse layer is dated to the 3rd century AD. However, such a potentially early dating of the cessation of use of this entrance may also be a consequence of the relatively small area on which the collapse layer was investigated.

S obzirom na veličinu naselja[31] i relativno skroman broj ulaza,[32] može se pretpostaviti da su oni bili planski uklopljeni u gradnju bedema,[33] odnosno da se gradnja bedema kronološki može korelirati s gradnjom ulaza i povezanih prometnica. Preliminarni podatci upućuju na to da izgradnju sjevernog ulaza treba smjestiti u vrijeme 2. ili 1. st. pr. Kr.[34] Naime, do ulaza je vodila pristupna popločana cesta širine 150 do 160 cm koja na prostoru samih vrata[35] prelazi u šljunčani naboj (sl. 8).[36] S obzirom na radiokarbonske datume[37] i pokretnu građu pronađenu

[31] Lokalitet s podgrađem i nekropolom zauzima površinu od oko 32 ha, od kojih gotovo četvrtina otpada na središnji naseobinski prostor omeđen megalitskim bedemom (CHAPMAN, SHIEL, BATOVIĆ 1996: 117, Fig. 84).

[32] Poznata su tri ulaza, dok je četvrti pretpostavljen. Usporedbe radi, na tlocrtno znatno izduženijoj Aseriji je poznat znatno veći broj ulaza, njih čak sedam (FADIĆ 2001: 69). Opširna studija o aserijatskim fortifikacijama, s rezultatima najnovijih istraživanja kod: FADIĆ, ŠTEFANAC 2014.

[33] Gradnja megalitskih bedema, kao zahtjevniji graditeljski pothvat koji je vjerojatno obuhvaćao i specijaliziranu radnu snagu, nesumnjivo je zahtijevala određenu razinu planiranja i vodstvo. Usp. predložene modele i procjene o radnoj snazi i vremenu potrebnom za izgradnju megalitskog bedema u Nadinu kod: CHAPMAN, SHIEL, BATOVIĆ 1996: 172–174.

[34] Usp. i prethodna promišljanja o kronološkom određenju megalitskih bedema na Gradini u Nadinu kod: FABER 1976: 244; CHAPMAN, SHIEL, BATOVIĆ 1996: 250.

[35] O postojanju vrata svjedoči kamenje sačuvano *in situ* s utorima za mehanizam vrata.

[36] Riječ je o naboju od mješavine šljunka, sitnog kamenja, pijeska i glinaste žuto-svjetlosmeđe zemlje. Sloj koji se nalazi neposredno ispod tog gornjeg naboja je tamnije smeđe boje, nije toliko jako nabijen, iako je sastavom dosta sličan. Izgledno je da su oba ova sloja nastala istovremeno i da zajedno tvore podlogu i kompaktnu površinu ulice.

[37] Uzeta su dva uzorka za analizu, jedan iz podloge ulice (E12b) i drugi iz kompaktne hodne površine iznad (E11b) (sl. 6). Uočljivo je da sloj koji je stratigrafski superponiran ima veću starost u apsolutno kronološkim relacijama (sredina 4. st. pr. Kr. – kraj 3. st. pr. Kr.) od donjeg sloja koji je datiran u širi vremenski period od prijelaza 3. na 2. st. pr. Kr. do prvih desetljeća ili same sredine 1. st. pr. Kr. No, kako je izvjesno da oba sloja pripadaju jedinstvenoj strukturi nastaloj u vremenski jedinstvenom okviru, nerazmjer datacija može se lako objasniti time da je tijekom njezine izgradnje u njezinu strukturu mogla dospjeti i kronološki starija arheološka pokretna građa, kao i ona organska (sitni fragmenti ugljena) na kraju izdvojena za radiokarbonske analize. Tomu u prilog ide i istrošena kartaška kovanica pronađena u gornjem sloju koja predstavlja *terminus post quem*.

man material. This pottery probably arrived there from some nearby position within the settlement during the rampart's construction.[30]

Given the size of the settlement[31] and the relatively modest number of entrances,[32] it can be assumed that they were planned features in the construction of the ramparts,[33] that is, that the construction of the ramparts can be chronologically correlated with the construction of the entrances and connected roads. Preliminary data suggest that the construction of the northern entrance should be placed in the 2nd or 1st century BC.[34] The access road leading to this entrance was paved in a width of 150 to 160 cm. In the area of the doorway,[35] the paved surface turns into compacted gravel (Fig. 8).[36] Considering radiocarbon dates[37]

[30] Research from 1986 in probe 3, located near the northern entrance, and immediately next to the northern part of the rampart, established a clear stratigraphy of the pre-Roman period with a large amount of the Iron Age "Liburnian" pottery (BATOVIĆ, CHAPMAN 1987a: 29-30; 1987b: 73-74, fig. 3 -4).

[31] The site with its lower part and necropolis covers an area of about 32 ha, almost a quarter of which belongs to the central settlement area bordered by a megalithic rampart (CHAPMAN, SHIEL, BATOVIĆ 1996: 117, Fig. 84).

[32] Three entrances are known, while the fourth is assumed. For the sake of comparison, Asseria, which is much more elongated in plan, has as many as seven entrances (FADIĆ 2001: 69). An extensive study of Asserian fortifications, with the most recent research results in FADIĆ, ŠTEFANAC 2014.

[33] The construction of megalithic ramparts, as a more demanding construction requirement that probably included specialized labor, undoubtedly required a certain level of planning and leadership. Cf. proposed models and estimates of manpower and time required for the construction of the megalithic rampart in Nadin in CHAPMAN, SHIEL, BATOVIĆ 1996: 172-174.

[34] Cf. also previous reflections on the chronological determination of megalithic ramparts in Nadin-Gradina in FABER 1976: 244; CHAPMAN, SHIEL, BATOVIĆ 1996: 250.

[35] The existence of the door is evidenced by stones preserved *in situ* with grooves for the door mechanism.

[36] It is a fill made of a mixture of gravel, small stones, sand and clayey yellow-light brown soil. The layer located directly below that upper fill is darker brown in color, not as strongly rammed, although its composition is quite similar. It seems that both of these layers were created at the same time and that together they form the base and the compact surface of the street.

[37] Two samples were taken for analysis, one from the street surface (E12b) and the other from the compact walking surface above (E11b) (Fig. 6). It is noticeable that the stra-

Slika 8. *3D model istraženog dijela sjevernog ulaza u Gradinu u Nadinu* (izradio: G. Zaro)
Figure 8 *3D model of the explored part of the northern entrance to Nadin-Gradina* (made by G. Zaro)

unutar ove strukture,[38] među kojom se kao najmlađi dijagnostički nalaz izdvaja kartaška moneta kovana u periodu između 200. i 146. g. pr. Kr.,[39] gradnja ulice koja je vodila od sjevernih vrata u unutrašnjost naselja, a time i gradnja samog megalitskog bedema, može se okvirno smjestiti u vrijeme posljednjih dvaju stoljeća prije Krista. Za utvrđivanje preciznijeg vremenskog okvira ove fortifikacijske faze u Nadinu mogu nam poslužiti analogije s obližnjom Aserijom te Varvarijom, uz *Nedinum* dva najvažnija središta u unutrašnjosti Liburnije sa sličnim razvojem i općim uvjetovanostima. Na Aseriji je gradnja megalitskih bedema datirana u sredinu 1.

and artifacts found within this structure,[38] the youngest of which being a diagnostic Carthaginian coin minted in the period between 200 and 146 BC,[39] the construction of the street that led from the northern gate into the inte-

[38] Riječ je o predrimskom materijalu među kojim se kao dijagnostički u donjem sloju naboja ulice izdvajaju fragment grčko-italske amfore i crnopremazanog skifa koji se mogu datirati u 4./3. st. pr. Kr., no bez nalaza građe koja se može ubrojiti u klasičan rimski materijal, a koju nalazimo u višim slojevima iznad same prometnice.

[39] Sačuvana je polovica kovanice koja na aversu ima prikazanu glavu božice Tanit, okrenutu ulijevo, a na reversu prikaz konja okrenutog udesno (SNG Cop: 409–413; SNG Ita Milano XIV: 43–50). Očita istrošenost kovanice pokazuje da je duže vrijeme bila u optjecaju. Na ovom mjestu zahvaljujemo M. Ilkiću na pomoći pri determinaciji kovanice.

tigraphically superimposed layer is older in absolute chronological terms (middle of the 4th century BC - end of the 3rd century BC) than the lower layer, which is dated to a longer period of time from the turn of the 3rd century BC until the first decades or the middle of the 1st century BC. However, as it is certain that both layers belong to a single structure created in a homogeneous time frame, the disparity of dates can be easily explained by the fact that during its construction, chronologically older archaeological artifacts, as well as organic material (small fragments of coal) could have reached it. This organic material was eventually separated for radiocarbon analyses. This is supported by the worn Carthage coin found in the upper layer, which represents the *terminus post quem*.

[38] It is pre-Roman material, among which a fragment of a Greco-Italian amphora and a black-coated skyphos dated to the 4th/3rd century BC can be identified as diagnostic in the lower layer of the street embankment, but without finds that can be interpreted as classic Roman material, which we find in the higher layers above the road itself.

[39] A half of the coin has been preserved, which on the obverse depicts the head of the goddess Tanit, turned to the left, and the reverse bears a depiction of a horse turned to the right (SNG Cop *:* 409-413; SNG Ita Milano XIV: 43-50). The obvious wear of the coin indicates that it was in circulation for a long time. We would like to thank M. Ilkić for his help in determining the coin.

st. pr. Kr.,[40] dakle, u isto vrijeme kada i starija faza bedema Varvarije, dok se završetak izgradnje bedema Varvarije smješta u 23. g. po Kr. na osnovi jednog epigrafičkog nalaza.[41] Shodno navedenom, možemo pretpostaviti da su i bedemi Gradine u Nadinu izgrađeni u bliskom vremenskom okviru, a sve kao rezultat jednog općenitog „modnog" zamaha potaknutog sve izraženijim i vidljivijim utjecajima rimske prisutnosti na istočnoj obali Jadrana, u ovom slučaju manifestiranim na arhitektonskom slogu.

Najbrojniji ostatci arhitekture, pa i same pokretne građe, pripadaju upravo antičkom razdoblju kada je primjetan snažan graditeljski zamah, napose tijekom 1. st. po Kr. Riječ je uglavnom o stambenoj arhitekturi unutar koje se tek pojedini konteksti iz prostora sonde A mogu i preciznije funkcionalno odrediti. S obzirom na nalaz žrvnja koji je očuvan *in situ* na podnici od žbuke s podlogom od nabijene gline i pjeskulje (sl. 9) te nalaz kuhinjske peći (sl. 10) u susjednoj prostoriji, evidentno je kako je riječ o kuhinjskim ambijentima. Osnova peći je kvadratnog oblika s rubom izvedenim od djelomično obrađenog kamenja. Nad njime se uzdiže tek dijelom očuvan kupolast svod od zapečene zemlje,[42] s vanjske strane obložen velikim fragmentima tegula, amfora i kamenih ploča. Unutar kamenog okvira[43] dno peći je bilo popločano rimskim krovnim crijepom i kamenim pločama iznad kojeg se nalazio kompaktan sloj zapečene zemlje debljine oko 5 cm.[44] Prema stratigrafskoj poziciji i pratećoj pokretnoj građi, ova dva konteksta nisu bila istovremeno u funkciji. Podnica se preliminarno može

40 FADIĆ 2001: 73 i d.; FADIĆ, ŠTEFANAC 2014: 50, 113.

41 Prema tome, gradnja bedema na Varvariji trajala je oko 80 godina (SUIĆ 1980: 36–37; Usp. i: BRUSIĆ 2000: 141. Drukčije viđenje kronološkog okvira kod: FABER 1976: 244; 2000: 168, sl. 45).

42 Debljina mu iznosi oko 20 do 25 cm.

43 Vanjske dimenzije kamenog okvira iznose 105 x 105 cm, dok dimenzije dna peći unutar kamenog okvira iznose 78 x 78 cm.

44 Slična peć otkrivena je u Ninu, no bez očuvanog kupolastog svoda (KOLEGA 2005: 23).

rior of the settlement can roughly be dated to the last two centuries BC. By extension, the construction of the megalithic rampart itself also likely dates to the last two centuries BC. To establish a more precise time frame for the construction of fortifications in Nadin, we can draw from the nearby sites of Asseria and Varvaria. Beyond Roman Nadin, or *Nedinum*, these were the two most important centers in the interior of Liburnia with similar cultural developments and historical conditions. In Asseria, the construction of megalithic ramparts is dated to the middle of the 1st century BC,[40] and approximately at the same time as the older phase of the ramparts of Varvaria, while the completion of the construction of the ramparts of Varvaria is placed in 23 AD on the basis of epigraphic findings.[41] Following the above, we can assume that the ramparts of Nadin-Gradina were built within a similar time frame, primarily resulting from the increasingly pronounced and visible influence of Roman presence in the eastern Adriatic, in this case manifested in the architectural style.

The most numerous architectural remains, and other finds, correspond to antiquity, marked by a strong building momentum, especially during the 1st century AD. This includes residential architecture, within which only certain contexts in probe A offers clues as to specific functional aspects. For instance, a grinding wheel preserved *in situ* on a plaster floor with a base of packed clay and sand (Fig. 9) along with a stove or furnace (Fig. 10) in an adjacent room provides some indication for a kitchen environment. The base of the furnace is square in shape with a perimeter defined of partially dressed stones. Above it rises a partially preserved domed vault made of baked earth,[42] covered on the outside with large frag-

40 FADIĆ 2001: 73 ff.; FADIĆ, ŠTEFANAC 2014: 50, 113.

41 Accordingly, the construction of the ramparts on Varvaria lasted about 80 years (SUIĆ 1980: 36-37). Cf. also BRUSIĆ 2000: 141. A different view of the chronological framework in: FABER 1976: 244; 2000: 168, fig. 45.

42 Its thickness is about 20 to 25 cm.

Slika 9. *Sonda A: podnica unutar rimskog objekta* (snimila: M. Čelhar)
Figure 9 *Probe A: floor inside the Roman building* (photo by M. Čelhar)

odrediti u vrijeme prve polovice 1. st., dok građa povezana s kuhinjskom pećи odgovara drugoj polovici 1. i ranom 2. stoljeću.[45]

U svim sondama s antičkom stambenom arhitekturom (sonde A, B, C i D) otkriveni su zidovi od dobro uslojenog obrađenog kamenja povezanog žbukom koji su, sudeći prema brojnim fragmentima pronalaženim u slojevima urušenja, izvorno bili ukrašeni freskama. Osim gline i žbuke, za izvedbu podova rabili su se i mozaici, iako oni još nisu nađeni *in situ*.[46] Uz korištenje klasičnog materijala za pokrivanje krovova (tegule, imbreksi), pronađena je i veća količina tankih kamenih ploča u urušenjima objekata koje su, pretpostavlja se, služile za istu svrhu u pojedinim fazama naselja (sl. 11). Slične ploče utvrđene su i u susjednoj Aseriji pri istraživanju rimske stambene arhitekture na položaju kod Malih vrata.[47] Korištenje kamenih

[45] Pokretnu je građu preliminarno analizirao Igor Borzić na čemu mu na ovom mjestu zahvaljujemo.

[46] Zabilježena je veća količina rasutih kockica mozaika bijele boje.

[47] Usmena komunikacija s prof. dr. sc. Ž. Miletićem na kojoj mu ovim putem zahvaljujemo. S obzirom na to da je riječ o tankim pločama koje su nakon urušavanja očuvane u fragmentiranoj formi u sklopu slojeva urušenja, vjerojatno

ments of tegulae, amphorae and stone slabs. Inside the stone frame,[43] the bottom of the furnace was paved with Roman roof tiles and stone slabs, above which there was a compact layer of baked earth about 5 cm thick.[44] According to the stratigraphic position and accompanying archaeological material, these two contexts do not appear to have been in operation at the same time. The floor can be tentatively tied to the first half of the 1st century AD, while the finds connected to the furnace correspond to the second half of the 1st and early 2nd centuries AD.[45]

In all probes with ancient residential architecture (probes A, B, C, and D), walls of well-layered dressed stones with an application of mortar were identified, which, judging by the numerous fragments found in the collapse layers, were originally decorated with frescoes. In addition to clay and mortar, mosaic tiles were also used for floors, although they have not yet

[43] The external dimensions of the stone frame are 105 x 105 cm, while the dimensions of the furnace bottom inside the stone frame are 78 x 78 cm.

[44] A similar furnace was discovered in Nin, but without the preserved domed vault (KOLEGA 2005: 23).

[45] Small finds were preliminarily analyzed by Igor Borzić, for which we thank him.

Slika 10. *Sonda A: rimska kuhinjska peć* (snimila: M. Čelhar; izradio: D. Vujević)
Figure 10 *Probe A: Roman kitchen furnace* (photo by M. Čelhar; made by D. Vujević)

Slika 11. *Sonda C: sloj urušenja s tankim kamenim pločama* (snimila: M. Čelhar)
Figure 11 *Probe C: collapse layer with thin stone slabs* (photo by M. Čelhar)

ploča za izradu krovova nije nepoznanica u rimskom svijetu[48] i prakticiralo se tamo gdje su postojali prirodni preduvjeti, odnosno u onim predjelima gdje se vapnenac mogao lako odvajati u tanke ploče, što je svakako evidentno za šire benkovačko područje koje je i danas poznato po lomljenom pločastom kamenu i gdje se do nedavno prakticirala ista tradicionalna tehnika izvedbe krovnih konstrukcija. Međutim, još uvijek ostaje nejasnim je li se takva tehnika upotrebljavala tijekom cijelog antičkog razdoblja. Sudeći prema stratigrafskoj situaciji u sondama A, B i C, čini se da krovne konstrukcije od kamenih ploča ipak ponajprije treba povezati s kasnoantičkim razdobljem.[49]

Cjelokupna istražena situacija upućuje na viši stupanj urbanog planiranja i stanovitu forma-

je njihova uporaba bila češća nego što je danas evidentno prema dostupnoj literaturi. Usp. npr: SUIĆ 2003: 183.

48 ADAM 2005: 439.

49 Veća količina tankih kamenih ploča zabilježena je i tijekom istraživanja 1986. godine, no interpretirane su kao ostatci krovova srednjovjekovnih kuća (BATOVIĆ, CHAPMAN 1987b: 74).

been found *in situ*.[46] Classic material for covering roofs (tegulae, imbrices) as well as a large number of thin stone slabs was also found in the collapse rubble of buildings, which probably served the same roofing purposes in particular phases of the settlement (Fig. 11). Similar slabs were found in neighboring Asseria when residential architecture near the Small Gate was investigated.[47] The use of stone slabs for the construction of roofs was not unknown in the Roman world[48] and was practiced where there were natural substitutes, i.e., in those areas where the limestone could be easily fractured into thin slabs. This is certainly evident for the wider Benkovac area today, where the same traditional slab-stone roofing technique

46 A larger quantity of loose white mosaic cubes was recorded.

47 Oral communication with professor Ž. Miletić, PhD, for which we hereby thank him. Given that these are thin plates that were preserved in a fragmented form after the collapse as part of the collapse layers, their use was probably more frequent than is evident today according to the available literature. Cf. e.g.: SUIĆ 2003: 183.

48 ADAM 2005: 439.

Slika 12. *Sonda D: ulica i stambena arhitektura rimskog i kasnosrednjovjekovnog/novovjekovnog razdoblja* (snimila: M. Čelhar)
Figure 12 *Probe D: street and residential architecture of the Roman and late medieval/post-medieval period* (photo by M. Čelhar)

lizaciju tijekom antičkog perioda, a svakako i monumentalizaciju arhitektonskih formi koja je posebno dobro uočljiva na jugoistočnom dijelu gradine (sonda D) gdje je istražen dio popločane ulice flankirane zidovima koji vjerojatno pripadaju stambenoj arhitekturi (sl. 12). Širina joj iznosi 2,78 m, od čega oko 1,73 m otpada na kolnik, a ostatak na neznatno povišene nogostupe. Građena je od obrađenog kamenja[50] polirane površine, pri čemu je kamenje nogostupa veće i pravilnije.[51] Ovaj infrastrukturni zahvat može se putem popratne arheološke građe povezati s ranim razdobljem rimske faze na lokalitetu, odnosno s periodom 1. st. po Kr.

Iako najobilnija pokretna arheološka građa odgovara vremenu od 1. do 3. stoljeća, naselje aktivno živi i tijekom kasne antike. Takvo stanje potvrđuju i ostatci arhitekture. Prem-

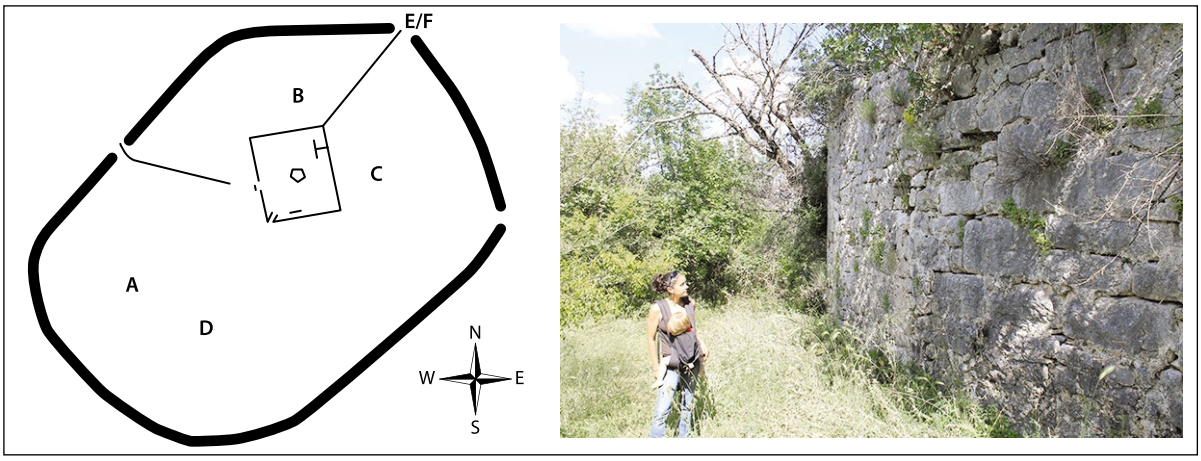
had been practiced until recently. However, it still remains unclear whether such a technique was used throughout antiquity. Judging by the stratigraphy in probes A, B, and C, roof constructions made of stone slabs are most likely or most often associated with Late Antiquity.[49]

Although preliminary, the overall record points to a higher level of urban planning and a certain formalization during antiquity, and certainly to the monumentalization of architectural forms. This is particularly well noted in the southeastern part of the hillfort (probe D) where a portion of a paved street was flanked by walls that were probably associated with residential architecture (Fig. 12). This street's width is 2.78 m, of which about 1.73 m constitutes the pavement, with the rest on slightly raised sidewalks or curbs. It was con-

[50] Dimenzije kamenja variraju od većeg (cca 80 x 43 cm) do manjeg (cca 14 x 13 cm).

[51] S obzirom na pravilnost slaganja, čini se da su prvo postavljeni nogostupi, a zatim popločan prostor između njih.

[49] A larger amount of thin stone slabs was also recorded during the research in 1986, but they were interpreted as the remains of the roofs of medieval houses (BATOVIĆ, CHAPMAN 1987b: 74).



Slika 13. *Tlocrt mletačke/osmanske utvrde unutar perimetra megalitskog bedema s označenom pozicijom istraženih sondi i danas vidljiv zid utvrde* (izradio: G. Zaro)
Figure 13 *Floor plan of the Venetian/Ottoman fort within the perimeter of the megalithic rampart. The locations of the probes are marked, along with the visible portion of the fortress wall* (made by G. Zaro)

da je riječ o parcijalnim podatcima, odnosno o tek pojedinim zidovima koji ne dopuštaju konkretniju rekonstrukciju izgleda objekata, njihov izgled i stratigrafska pozicija smještaju ih upravo u ovu građevnu fazu. Najjasnija je situacija u sondi na sjevernom dijelu gradine (sonda B) gdje je kasniji zid sa žbukom, znatno slabije uslojenosti i obrade samog kamenja, djelomično preslojio zid ranorimskog objekta.

Najmlađa, kasnosrednjovjekovna/ranonovovjekovna građevna faza na lokalitetu najbolje se prati prema jasno vidljivim ostatcima utvrde koja zauzima sjeverozapadnu četvrtinu površine naselja, i to njegova najvišeg dijela (sl. 13). Osnovni dio četverokutnog je oblika sa središnjom kulom od kojeg se zidovi nastavljaju prema megalitskom bedemu koji inkorporiraju u svoj perimetar zatvarajući površinu nepravilna, lepezasta tlocrta. Upravo unutar ovog potonjeg prostora nalazi se i istražena sonda B u kojoj, međutim, izuzev ostataka kasnosrednjovjekovne/ranonovovjekovne pokretne arheološke građe,[52] nisu ustanovljeni arhitektonski ostatci koji korespondiraju ovoj fazi. Kako su unutar središnjeg četverokutnog dijela utvrde, danas

[52] Riječ je o domaćem grubom posuđu i importiranoj glaziranoj keramici iz Italije te uglavnom utilitarnim metalnim predmetima. Pokretnu je građu preliminarno analizirala Karla Gusar na čemu joj na ovom mjestu zahvaljujemo.

structed from dressed or cut stones[50] with a polished surface, with larger and more regular curb stones.[51] This infrastructural investment can be linked to the early Roman period of the site, or to the 1st century AD, through the accompanying archaeological materials.

Although the majority of small archaeological finds correspond to the time from the 1st to the 3rd century AD, the settlement was also active during Late Antiquity, which is also reflected in the architecture. The limited amount of architecture exposed through excavation renders difficult any attempts to reconstruct the appearance of buildings. However, their stylistic appearance and stratigraphic position strongly suggest they are late antique constructions. The clearest evidence comes from probe B in the northern part of the hillfort, where a late-phase wall constructed with a greater mix of regularly and irregularly shaped stones and a light application of mortar partially overlay the wall of an early Roman building.

The youngest construction phase on the site, presumably late medieval/Early Modern Era, is best evinced by the clearly visible remains of

[50] The dimensions of the stones vary from larger (approx. 80 x 43 cm) to smaller (approx. 14 x 13 cm).
[51] Considering the regularity of the stacking, it seems that the sidewalks were laid first, and then the space between them was paved.

Slika 14. *Grafika Nadina tiskana 1704. godine* (prema Blaeu 1704, LX; snimio: I. Čurković)
Figure 14 *Print of Nadin dating to 1704* (according to Blaeu 1704, LX; photo by I. Čurković)

gotovo potpuno zaraslog u gustu vegetaciju, vidljivi brojni zidovi ili barem njihova urušenja, moguće je da je ovaj „vanjski" dio utvrde imao gospodarsku svrhu, odnosno da je služio za smještaj konja, stoke ili sl.[53]

Ostale istražene sonde nalaze se izvan perimetra utvrde i uglavnom pokazuju sličnu situaciju što se pokretne građe tiče, dok je ipak u nekim dijelovima naselja (sonda A i D) djelomično istražena suhozidna arhitektura slabije kvalitete gradnje koju treba povezati s ovim razdobljem, a kojoj zbog ograničene površine nije moguće odrediti funkciju. Vjerojatno je riječ o naselju koje se razvilo izvan

[53] Na to upućuje i prisustvo većeg broja potkova, kao i nalaz ostruge.

a medieval fort, which occupies the nothwestern quarter of the settlement's surface on its highest terrain (Fig. 13). The main structure of the fort is quadrangular in shape with a central tower. Several auxiliary walls extend outward toward the megalithic rampart, which is partially incorporated into its plan, closing the perimeter of the overall irregular, fan-shaped ground plan. It is within this latter space that probe B is located. However, with the exception of late medieval/early Modern Era archaeological finds recovered during its excavation,[52] no architectural remains corresponding to this

[52] These were domestic coarse pottery and imported glazed pottery from Italy, and mostly utilitarian metal objects. The small finds were preliminarily analyzed by Karla Gusar, for which we thank her.

utvrde, a koje je prikazano i na povijesnom prikazu, grafici[54] (sl. 14) koja prikazuje Gradinu u Nadinu u vrijeme kad je potpadala pod vlast Osmanskog Carstva. Zanimljivo je da se ta povijesna realnost zasad ne očituje u arheološkoj građi: jasni markeri istočnog importa još uvijek nisu ustanovljeni.[55]

Sondažna istraživanja 2015. godine, sa stratigrafijom koja u većini sondi premašuje dubinu od 2 m, nedvosmisleno su potvrdila intenzivan razvoj zajednice koja je obitavala na Gradini u Nadinu tijekom željeznog i rimskog doba. Zasad izostaju konkretniji nalazi starijeg željeznog doba kada je naselje zasigurno, sudeći prema pripadajućoj nekropoli, već egzistiralo. Sondažno istraživanje iz 1986. godine utvrdilo je najvažniju stratigrafiju željeznog doba na prostoru neposredno uz megalitski bedem.[56] S obzirom na pojedine analogije, npr. situaciju na Beretinovoj gradini u Radovinu gdje je najstarija faza naselja utvrđena na užem pojasu neposredno uz bedem,[57] moguće je da je i ovdje situacija slična. Naravno, uz uvjet da je megalitski bedem više-manje pratio pružanje pretpostavljene starije faze fortifikacija na što bi mogla upućivati situacija unutar sonde E. Sve istražene sonde iz 2015. godine (osim sonde E-F) udaljene su od bedema prema unutrašnjosti gradine 30-ak ili više metara. Kako gotovo sve sadrže pokretnu građu ili arhitekturu datiranu u mlađe željezno doba, potencijalno svjedoče o povećanju iskorištenog naseobinskog areala u to vrijeme i vjerojatnom porastu populacije, trendu koji će osobito doći do izražaja u rimsko doba.[58]

Najvažnija fizička transformacija naseo-

[54] BLAEU 1704: LX; CHAPMAN, SHIEL, BATOVIĆ 1996: 125, Fig. 95.

[55] Slična situacija zamijećena je i tijekom istraživanja obližnje Gradine u Zemuniku Donjem, važnoj utvrdi u sustavima obrane Mlečana i Osmanlija. Usp.: GUSAR, VUJEVIĆ 2016: 42.

[56] BATOVIĆ, CHAPMAN 1987a; 1987b.

[57] BATOVIĆ 1968: 56, 59.

[58] Usp. pretpostavke o veličini populacije na Gradini u Nadinu tijekom mlađeg željeznog i rimskog doba kod: CHAPMAN, SHIEL, BATOVIĆ 1996: 123.

phase were identified. The ruins of numerous walls and collapse debris are visible within the central quadrangular portion of the fort, which is almost entirely overgrown with thick vegetation. It is possible that the "outer" portion of the fort (where probe B is located) had an economic purpose, i.e., that it was used to house horses, cattle, etc.[53]

The other probes are located outside the perimeter of the medieval/Early Modern Era fort (e.g., outside the space defined by the central fort, auxiliary walls, and adjacent portion of the megalithic wall) but mostly reflect a similar pattern as far as the artifactual record is concerned. In some parts of the settlement (probes A and D), dry-wall architecture of lower construction quality was also partially investigated and probably associated with this period. However, given its limited area, it is not possible to determine its function. A settlement likely developed outside the fort, which is depicted in a historical illustration[54] (Fig. 14) that shows Nadin-Gradina under Ottoman rule. Interestingly, this historical reality is not yet reflected in the archaeological material: clear markers of eastern imports have not yet been recovered.[55]

Excavation probes in 2015, with stratigraphy exceeding depths of 2 meters in most cases, unequivocally confirmed the intense development of a community at Nadin-Gradina during the Iron and Roman ages. Thus far, there are no certain finds from the Early Iron Age, when the settlement had most certainly already been established based on evidence recovered from the associated necropolis. Test probes from 1986 provided significant Iron Age stratigraphic information in the area immediately adjacent to

[53] This is indicated by the presence of a large number of horseshoes, as well as the finding of a spur.

[54] BLAEU 1704: LX; CHAPMAN, SHIEL, BATOVIĆ 1996: 125, Fig. 95.

[55] A similar situation was observed during the research of the nearby Gradina in Zemunik Donji, an important fort in the defense systems of both the Venetians and the Ottomans. Cf.: GUSAR, VUJEVIĆ 2016: 42.

binskog tkiva povezuje se s nastupom rimske faze nadinske povijesti. Implementiranje rimskog principa života i postupna transformacija vizure grada zasad se ponajprije očituju uvođenjem novih civilizacijskih tekovina (građevnih oblika, materijala i tehnika, pisma...), dakle višom kvalitetom života, ali i višim stupnjem organizacije i urbanog planiranja. Uklapanje u nov politički okvir i porast populacije neizbježno su uzrokovali pritisak na dostupne resurse i promjene u gospodarskim strategijama zajednice koje su ostavile traga u lokalnom krajoliku. U tom pogledu indikativni su dobro dokumentirani sukobi s graničnom zajednicom čije je središte bilo na Gradini Miodrag u Karinu (ant. *Corinium*) zbog pograničnih krških teritorija,[59] kao i intenzivnije iskorištavanje dostupnih resursa popraćeno krčenjem teritorija o čemu svjedoče rezultati provedenih analiza polena u široj okolici.[60]

Potpuno otvorenim ostaje pitanje što se događa s populacijom koja je ovdje obitavala na izmaku kasne antike i koja je nova lokacija izabrana nakon napuštanja ove pozicije? Unatoč pojedinim podatcima da Gradina postaje važno ranohrvatsko središte,[61] izostaju materijalni dokazi o korištenju Gradine tijekom većeg dijela srednjeg vijeka. No, život se nastavlja, čini se, u neposrednoj blizini, sudeći po izvorima koji bilježe selo/mjesto Podnadin.[62] Strateške prednosti pozicije zadobivaju ponovno na važnosti tek nakon gotovo tisućljetnog prekida života, u vrijeme prodora Osmanlija kada se ponovno zaposjedaju i mnoge druge strateški važne pozicije

[59] ČAČE 2006: 74 i d.

[60] Usp. GRÜGER 1996: 34–35.

[61] Usp. BATOVIĆ, CHAPMAN 1987a: 28; 1987b: 72; BIANCHI 2011: 107–108. U literaturi je bilo prisutno i mišljenje da se središte županije *Nina*, koju spominje Konstantin Porfirogenet u 30. poglavlju *Da administrando imperio*, a koja od druge polovice 11. st. mijenja naziv u lučku županiju, nalazilo na današnjoj Nadinskoj glavici (SKOK 1954: 46; SMILJANIĆ 1990: 95 i d.). Međutim, u novijim radovima takvo je mišljenje odbačeno (LOMA 1999/2000: 100; SMILJANIĆ 2010: 25).

[62] MAJNARIĆ 2006: 6, bilj. 31.

the megalithic rampart.[56] Considering certain analogies, like that at Beretinova gradina in Radovin where the oldest phase of the settlement was established on a narrow strip immediately adjacent to the rampart,[57] the situation might be quite similar in the case of Nadin-Gradina. Of course, this assumes also that the megalithic rampart more or less accompanied the spreading of the assumed older phase of fortification, which could be indicated by the situation inside probe E. All probes from 2015 (except probe E-F) are positioned some distance from the rampart toward the interior, at least 30 meters or more. As almost all of them contain small finds or architecture dated to the Late Iron Age, they potentially indicate an increase in settlement area at that time, and a probable increase in the population, a trend that became especially apparent in the Roman era.[58]

The most significant physical transformation of the urban settlement is connected to the onset of the Roman phase of Nadin's history. The implementation of Roman ways of life and the gradual physical transformation of the city are primarily manifested by the introduction of new elements (building forms, materials and techniques, writing,...), and thus a higher quality of life, but also a higher degree of organization and urban planning. A new political framework coupled with population growth inevitably strained resource availability, while subsequent changes in community economic strategies left their mark on the local landscape. In this respect, it is worth mentioning the well-documented conflicts with the border community, whose center was at Miodrag-Gradina in Karin (Roman-era *Corinium*) due to border karst territories,[59] as well as the more intensive exploitation of available resources accompanied by land clearing with-

[56] BATOVIĆ, CHAPMAN 1987a; 1987b.

[57] BATOVIĆ 1968: 56, 59.

[58] Cf. assumptions about the size of the population in Nadin-Gradina during the Late Iron and Roman Ages in: CHAPMAN, SHIEL, BATOVIĆ 1996: 123.

[59] ČAČE 2006: 74 ff.

koje su prethodno bile napuštene.

Ovi preliminarni podatci, zajedno s rezultatima istraživanja nekropole, potvrđuju da Gradina u Nadinu spada u red najvažnijih liburnskih naselja, s iznimnim potencijalom nalazišta za rješavanje mnogih otvorenih pitanja u vezi s razvojem liburnskih naselja, njihovom transformacijom i urbanizacijom i procesom tranzicije iz protopovijesnog u povijesni svijet, kao i za istraživanje odnosa između pojedinih faza urbanog rasta i opadanja te širih promjena krajolika i okoliša.

in the territory, as evidenced by the results of pollen analyses in the wider area.[60]

Major questions persist: what happened to the resident population at the end of Late Antiquity, and what new location was chosen after abandoning this position? Despite some evidence that Nadin became an important early Croatian center,[61] there is no material evidence of the use of the site during most of the Middle Ages. However, life continued in the immediate vicinity, judging by sources that document the village/settlement of Podnadin.[62] The advantages of its strategic location regained their importance only after a nearly one-thousand-year period of abandonment, at the time of the invasion of the Ottomans, when many other strategically important positions that were previously abandoned were reoccupied.

These preliminary data, together with the results from the necropolis, confirm that Gradina in Nadin belongs to the most significant Liburnian settlements with an exceptional site potential for resolving many open questions, such as those related to the development of Liburnian settlements, their transformation and subsequent urbanization, and the process of transition from the prehistoric to the historical world. There is also great potential for investigating the relationship between individual phases of urban growth and decline and broader changes in landscape and environment.

Translation: Gregory Zaro

60 Cf. GRÜGER 1996: 34-35.

61 Cf. BATOVIĆ, CHAPMAN 1987a: 28; 1987b: 72; BIANCHI 2011: 107-108. In the literature, there was also the opinion that the center of the county of Nin , mentioned by Constantine Porphyrogenitus in the 30th chapter of *De administrando imperio*, which changed its name to the *Lučka* county from the second half of the 11th century, was located on today's Nadinska glavica (SKOK 1954: 46 ; SMILJANIĆ 1990: 95 ff.). However, in recent works, such an opinion has been rejected (LOMA 1999/2000: 100; SMILJANIĆ 2010: 25).

62 MAJNARIĆ 2006: 6, note 31.

Kratice / Abbreviations

CIL *Corpus Inscriptionum Latinarum*. Berlin, Accademia litterarum regia Borussica.

ILIug Šašel, A., Šašel J., *Inscriptiones latinae quae in Iugoslavia inter annos MCMXL et MCMLX repertae et editae sunt* (Situla 5, Ljubljana, 1963); *Inscriptiones latinae quae in Iugoslavia inter annos MCMLX et MCMLXX repertae et editae sunt* (Situla 19, Ljubljana, 1978); *Inscriptiones latinae quae in Iugoslavia inter annos MCMII et MCMXL repertae et editae sunt* (Situla 25, Ljubljana, 1986).

SNG Cop = SNG Denmark, 1981, *Sylloge nummorum graecorum. The Royal collection of Coins and Medals Danish National Museum, 1. Italy – Sicily*, (urd. W. Schwabacher, W., Breitenstin, N. (ur./eds.), New Jersey.

SNG Ita = SNG Italia, XIV, 1989, *Sylloge nummorum graecorum, Italia. Milano, Civiche Raccolte Numismatiche, Vol. XIV, Cyrenaica-Mauretania*, Martini, R. (ur./ ed.), Milano.

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OD ESENCIJE LJEPOTE DO ZAGONETKE SMRTI: RIMSKI PALJEVINSKI GROB NA PREDJELU GOVEJA U GRADU VISU

FROM THE ESSENCE OF BEAUTY TO A RIDDLE OF DEATH: A ROMAN INCINERATION GRAVE IN THE AREA OF GOVEJA IN THE TOWN OF VIS

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Ključne riječi:
Vis, antička Isa, rimski paljevinski grob, pontska keramika, reljefni prikaz Artemide/Dijane, stakleni unguentarij, rimski pogrebni obred

U radu se donose nalazi otkriveni na predjelu Goveja u gradu Visu na istoimenom otoku, čiji karakter i opisani kontekst pronalaska upućuju na zaključak da je riječ o materijalnim ostatcima antičkog paljevinskog groba. Među njima se posebno ističe unikatna keramička posuda, u ovom kontekstu korištena kao urna, za koju se prema tipičnom morfološkom modelu skifa s barbottine *ukrasom predlaže izradba u nekoj od radionica koje su grupirane unutar klase Pontske sigilate, odnosno u nekom od crnomorskih/istočnomediteranskih proizvodnih središta. Njezina posebnost ogleda se u dodanom elaboriranom reljefu, koji svojim prikazom uvelike podsjeća na ukrasne detalje s drugih uporabnih predmeta – aplike s fulkruma klina – a koji se interpretira kao prikaz Artemide/Dijane. Detaljna analiza i kontekstualizacija ovdje predstavljenih grobnih nalaza produbljuje naše spoznaje o izradi i potražnji stolnog posuđa kasnog 1. odnosno 2. stoljeća te otvara nova pitanja o izgledu i rasprostranjenosti isejskih pogrebnih krajolika, kao i o specifičnim odlikama isejskog pogrebnog obreda.*

Key words:
Vis, Roman Issa, Roman incineration grave, Pontic pottery, relief depiction of Artemis/Diana, glass unguentarium, Roman funeral rite

The paper presents finds discovered in the the area of Goveja in the town of Vis on the island of the same name. The characteristics and the context of the finds suggest that they might have belonged to a Roman incineration grave. Prominent among the finds is a unique ceramic vessel, in the described context used as an urn. Its typical morphological model – a skyphos with a barbotine decoration – suggests that the vessel was manufactured in a Pontic sigillata workshop, that is in one of the Black Sea or Eastern Mediterranean production centres. Its uniqueness is reflected in the elaborate relief added to it, very reminiscent of decorative details found in other objects – appliqués from a fulcrum of a cline – that have been interpreted as a depiction of Artemis/Diana. The detailed analysis and contextualisation of grave finds presented in this paper shed further light on the manufacture of and demand for late 1st century and 2nd century tableware, and open new questions as to the appearance and distribution of Issaean burial landscapes, as well as the specific features of the Issaean funerary rite.

O OTKRIĆU

Pri provedbi prve kampanje novih zaštitnih arheoloških istraživanja nekropole Vlaška njiva na otoku Visu[1] tijekom lipnja 2022. godine, istraživačkoj ekipi obratio se lokalni stanovnik Visa, gospodin V. L. R. s namjerom da arheolozima ustupi jednu manju kutiju s arheološkim nalazima koje je slučajno pronašao prije nekoliko godina.[2] U kutiji se nalazilo nekoliko predmeta koji su već na prvi pogled izazvali sumnju da bi mogli pripadati devastiranom antičkom grobu, a posebnu pozornost privuklo je nekoliko većih ulomaka keramičke posude s reljefnim prikazom ženskog poprsja. Tragom takve pretpostavke pokušalo se doznati i zabilježiti što više podataka o mjestu i okolnostima otkrića. Prema svjedočanstvu nalaznika, svi su predmeti pronađeni zajedno 2019. godine na predjelu Goveja u južnom dijelu grada Visa (Karta 1).

Pozornost nalaznika privukla je ukrašena keramička posuda koju je slučajno zamijetio u iskopanom profilu na čestici gdje su se tada odvijali građevinski radovi. U okomitom profilu iskopane padine jasno se isticala fragmentirana posuda koja je bila položena u dublju kamenu škrapu poklopljenu većim pločastim kamenom. Prema riječima nalaznika, u posudi se nalazio „crni sloj paljevine sastavljen od sitnih nagorenih kostiju pomiješanih s većim brojem pužića, nekoliko željeznih čavala te mala staklena bočica". Pod prijetnjom da se predmeti nepovratno unište neposrednim naletom građevinskih strojeva, nalaznik je brzo reagirao i skupio dio nalaza (keramičku posudu, nekoliko željeznih predmeta, nekoliko puževa, stakleni balzamarij i ulomak rastaljenog

[1] Zaštitna arheološka istraživanja kao preduvjet radova na obnovi i rekonstrukciji hotela Issa prva su istraživanja lokaliteta Vlaška njiva nakon 1983. godine (KIRIGIN 1983). Provode ih Institut za arheologiju i arheološka tvrtka Kantharos d. o. o. Ovaj je rad sufinancirala Hrvatska zaklada za znanost pod projektom AdriaCos (UIP–2020-02-2419).

[2] Najljepše zahvaljujemo g. V. L. R.-u što nam je ustupio otkrivene nalaze na obradu.

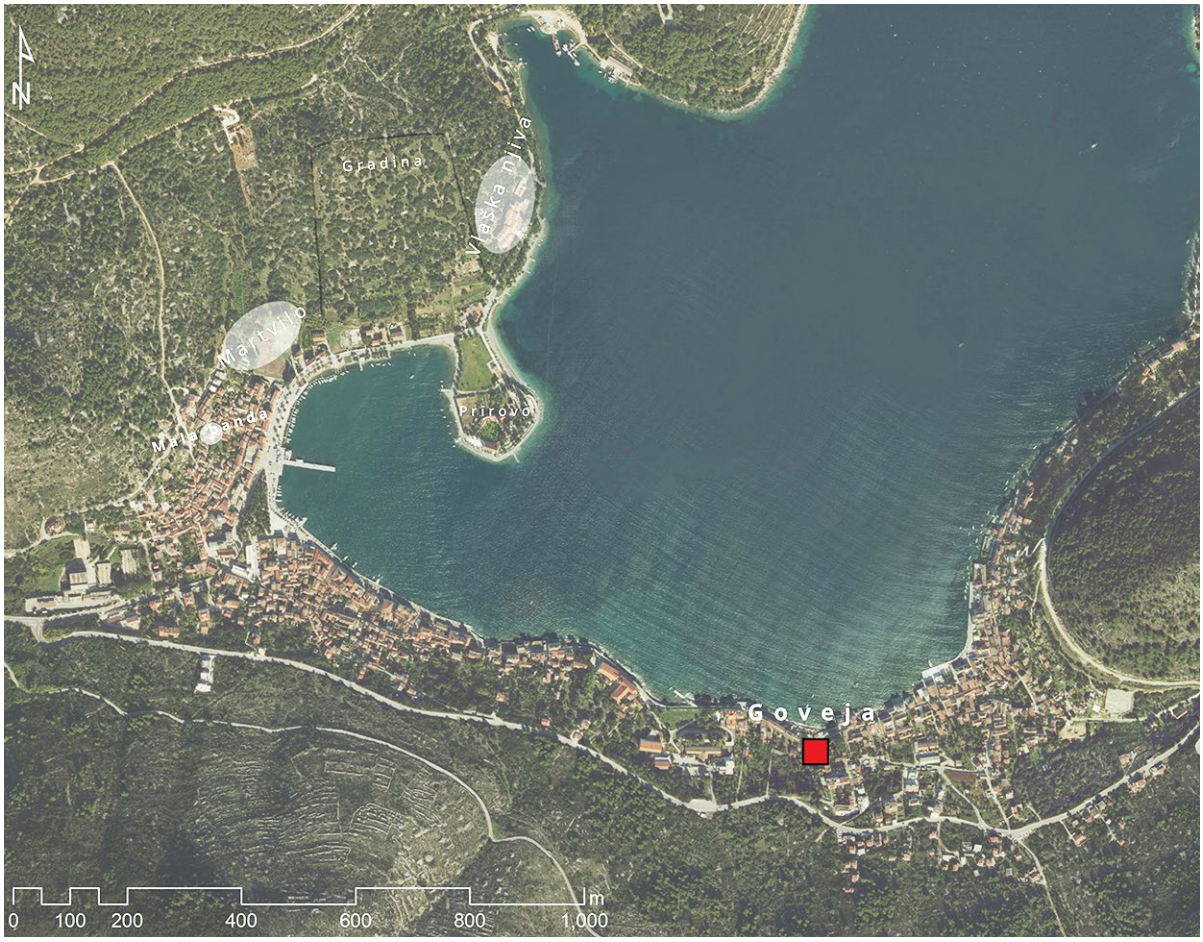
ABOUT THE DISCOVERY

While the first campaign of new protective archaeological excavations at the Vlaška Njiva necropolis on the island of Vis[1] was being carried out in June 2022, a local resident, Mr V. L. R., approached the excavation team with the intention of handing over to the archaeologists a small box containing archaeological finds he had chanced upon several years before.[2] The box contained a number of artefacts that immediately suggested a (destroyed) Roman grave. Particularly indicative were several larger fragments of a ceramic vessel with a relief of a woman's bust. This assumption led to further enquiries about the location and circumstances of the discovery and recording of the gathered information. According to the finder, all the artefacts had been unearthed together in 2019 in the area of Goveja, in the south of the town of Vis (Map 1).

The finder's attention was drawn to a decorated ceramic vessel that he spotted by chance in an excavated profile on a plot where construction works were then taking place. In the vertical profile of the excavated slope, a fragmented vessel clearly stood out, which had been placed in a deeper crack in the stone, covered by a larger stone slab. According to the finder, the vessel contained "a black layer of incineration remains composed of small burnt bones mixed with a larger number of snails, several iron nails and a small glass bottle." Given the risk that the artefacts would be irreversibly destroyed by the construction machinery, the finder quickly collected a part of the finds (a ceramic vessel, several iron artefacts, sever-

[1] The archaeological rescue excavations commissioned prior to the restoration and reconstruction of the Issa Hotel were the first excavations at the Vlaška Njiva site since 1983 (KIRIGIN 1983). They were conducted by the Institute of Archaeology and the archaeological company Kantharos d.o.o. This paper was co-financed by the Croatian Science Foundation under the AdriaCos project (UIP-2020-02-2419).

[2] We would like to thank Mr V. L. R. for handing us the unearthed finds for processing.



Karta 1. *Položaj otkrivenog groba u odnosu na isejske nekropole* (podloga: DGU – DOF 2014–2016, izradio: P. Domines Peter)
Map 1 *Location of the discovered grave in relation to the Issaean necropolises* (source: DGU – DOF 2014–2016, made by: P. Domines Peter)

stakla) te ih do daljnjeg sačuvao u svojem vlasništvu. Na širem području predjela Goveja, ali i obližnjeg Smidereva ranije su zabilježeni arheološki nalazi[3] iz rimskog razdoblja. Prema tome, razmatrajući u kontekstu toga i ovdje objavljene i analizirane artefakte, moguće da se radi o još jednoj široj arheološkoj zoni antičke Ise.

al snails, a glass balsamarium and a fragment of melted glass) and kept them for the time being. In the wider area of Goveja, as well as nearby Smiderevo, roman finds have previously been recorded.[3] Accordingly, together with the artifacts presented here, it might indicate another wider archaeological zone of ancient Issa.

[3] Među registriranim lokalitetima navode se: Smiderovo, ulomak antičke tegule (BILIČIĆ, RADIĆ 1989: br. 62; KIRIGIN et al. 2006: 40, VS 1109;), antička cisterna u temeljima kuće „Kula Božanić" uz koncentraciju ulomaka amfora, pitosa i tegula (BILIČIĆ, RADIĆ 1989: br. 60; KIRIGIN et al. 2006: 32, VS 1076–1076.01) i „Valica povar Goveje", koncentracija ulomaka amfora i pitosa na južnim padinama brda (BILIČIĆ, RADIĆ 1989: br. 61; KIRIGIN et al. 2006: 32, VS 1077).

[3] Among the registered sites are: Smiderovo, a fragment of an ancient tegula (BILIČIĆ, RADIĆ 1989: No. 62; KIRIGIN et al. 2006: 40, VS 1109); an ancient cistern in the foundations of the Kula Božanić house, a concentration of fragments of amphorae, pithoi and tegulae (BILIČIĆ, RADIĆ 1989: No. 60; KIRIGIN et al. 2006: 32, VS 1076-1076.01); and Valica povar Goveje, a concentration of fragments of amphorae and pithoi on the southern hill slopes (BILIČIĆ, RADIĆ 1989: No. 61; KIRIGIN et al. 2006: 32, VS 1077).

KERAMIČKA POSUDA

Posuda je pronađena izrazito fragmentirana, no bilo ju je moguće gotovo u potpunosti sastaviti, pa je oblik cjelovito rekonstruiran i posve čitljiv (sl. 1a–1b).[4] Riječ je o posudi jednostavnog, valjkastog oblika s konveksnim stijenkama, odnosno najveći promjer posude nalazi se pri sredini tijela. Dimenzije posude su: promjer ruba: 18,5 – 18,7 cm; visina: 11,6 cm; promjer dna: 8,9 cm; debljina stijene: 0,3 – 0,5 cm. Rub je pri vrhu stanjen i zakošen prema unutrašnjosti gdje je na spoju sa stijenkama zadebljan, tvoreći trokutasti profil. Tijelo se u donjem dijelu naglo lomi, pa se stijenke koso spuštaju prema dnu, koje je istaknuto niskom prstenastom nogom kružnog profila. Dvije trakaste ručke kružnog profila smještene su u središnjem dijelu posude, ipak bliže rubu nego dnu. Iznad ručki nalazi se reljefno oblikovani vodoravni „dodatak" – jezičac – čija je funkcija po svoj prilici ukrasna, a ne funkcionalna, iako se katkad takvi dodatci nazivaju palčanim ručkicama (sl. 2).[5] Oblik tijela, a posebno ručki posude, odgovara nizu sličnih recipijenata izrađenih u različitim keramičkim klasama, fajansi, staklu i metalu,[6] stoga

[4] Konzervacija i restauracija keramičke posude i ostalih pronađenih predmeta obavljena je na Umjetničkoj akademiji u Splitu. Obavila ju je Petra Kuzmanić, koja o provedenim radovima piše diplomski rad, pod mentorstvom doc. dr. sc. Mione Miliše. Najljepše zahvaljujemo kolegici Mioni Miliši na suradnji te svoj pomoći i susretljivosti, kao i studentici Petri Kuzmanić na trudu i zalaganju te korištenju njezina crteža u ovoj publikaciji.

[5] Usp. HAYES 1985: 93; POCHMARSKI, POROD 2008: 28.

[6] Analogije za opći oblik posude sežu u crnopremazanu produkciju (npr. BRECCIAROLI TABORELLI 1996–1997 [1998] 163–164, fig. 88/ 354–355, 357), slične se posude javljaju i u keramici tankih stijenki (MARABINI MOEVS 1973: 88–89, Tip XXIX, s datacijom u republikansko razdoblje; RICCI 1985: 295–296, T. XCIV/ 13–15), olovno glaziranoj (GREENE 2007: 653, fig. 2), dok odgovara i obliku Isings 39 u staklenoj produkciji (ISINGS 1957: 55–56; vidi i WABERSICH 2014: 219, T. 9) odnosno onoj metalnih skifa poput primjeraka iz Giubiasca, Alesie i Grünaua (POCHMARSKI, POROD 2008; PERNET 2006: 170, fig. 5.2, T. 18/ 9; WABERSICH 2014: 219, T. 9), koja je moguće i prototip barem nekim od navedenih keramičkih produkcija (usp. WALTON, TITE 2009: 733 s ranijom literaturom; općenito o odnosu dviju produkcija POBLOME 1997: 450; WABERSICH 2014). Indikativno je da se u me-

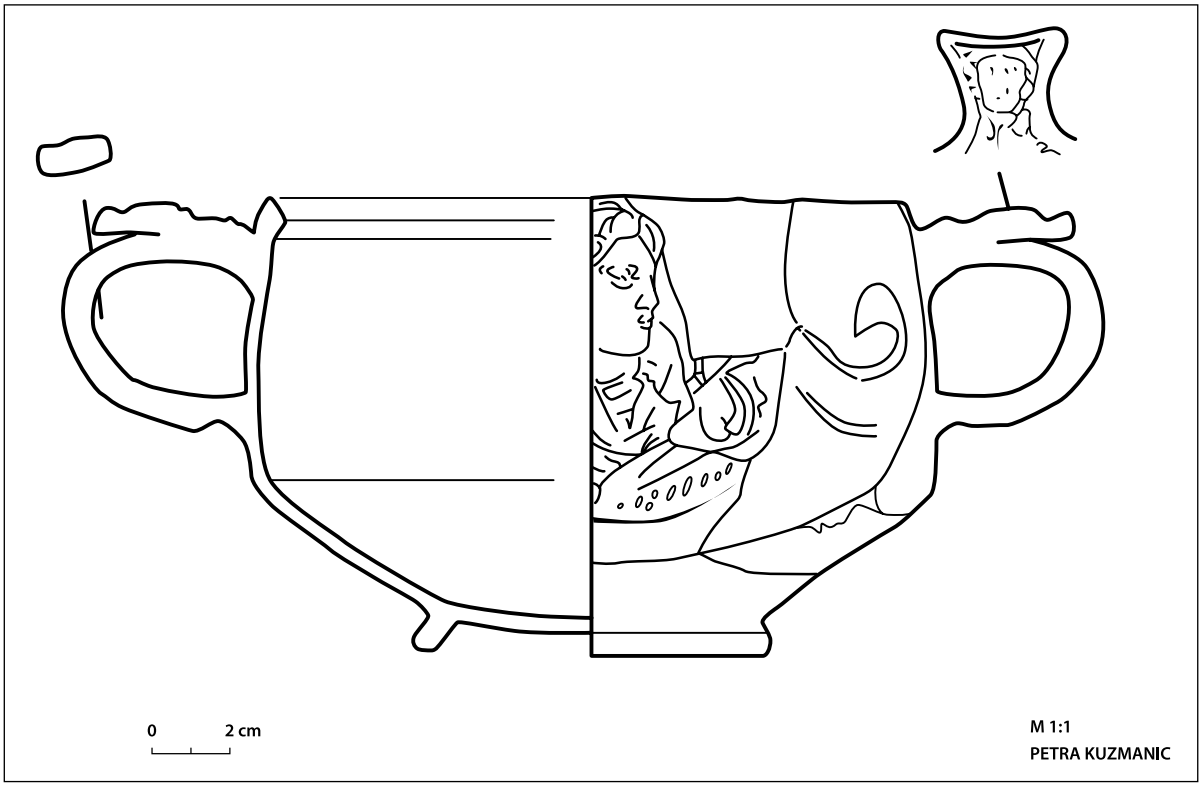
THE CERAMIC VESSEL

When unearthed, the vessel was extremely fragmented; however, it was possible to assemble it almost entirely, enabling its complete reconstruction and interpretation (Figs. 1a-1b).[4] The vessel has a simple cylindrical shape with convex walls; the vessel's largest diameter is near the centre of the body. The vessel size is: rim diameter: 18.5 – 18.7 cm; height: 11.6 cm; bottom diameter: 8.9 cm; wall thickness: 0.3 – 0.5 cm. The rim is thin at the top and bevelled towards the inside, where it is thickened at the junction with the walls, forming a triangular profile. The body breaks abruptly in the lower part, so the walls descend diagonally towards the bottom, which is highlighted by a low ring-shaped leg with a circular profile. In the central part of the vessel, rather closer to the rim than the bottom, are two strap handles with a circular profile. Above the handles is a relief decorated horizontal attachment – a tongue – which most likely had a decorative function, although sometimes such accessories are called thumb handles (Fig. 2).[5] The shape of the body, and in particular of the handles, correspond to a number of similar vessels found in various pottery categories, as well as in faience, glass, and metal,[6] thus suggesting –

[4] The conservation and restoration of the ceramic vessel and of other finds was carried out at the Academy of Arts in Split by Petra Kuzmanić as part of her graduate thesis under the mentorship of Associate Professor Miona Miliša, PhD. We would like to thank our colleagues: Miona Miliša for her cooperation, help and kindness, and Petra Kuzmanić for her efforts and commitment, as well as for letting us use her drawing in this paper.

[5] Cf. HAYES 1985: 93; POCHMARSKI, POROD 2008: 28.

[6] Analogies for the general shape of the vessel go back to black-coated ware (for example BRECCIAROLI TABORELLI 1996-1997 (1998): 163-164, Fig. 88, Nos. 354-355, 357); similar vessels also appear in thin-walled pottery (MARABINI MOEVS 1973: 88-89, Type XXIX, dated to the Republican period; RICCI 1985, 295-296, T. XCIV/ 13-15), as well as in lead-glazed pottery (GREENE 2007: 653, Fig. 2). The shape also corresponds to Isings Form 39 glassware (ISINGS 1957: 55-56; see also WABERSICH 2014: 219, T. 9) or to that of metal skyphos specimens from Giubiasco, Alesia and Grünau (POCHMARSKI, POROD 2008; PERNET 2006: 170, Fig. 5.2, Pl. 18/ 9; WABERSICH 2014: 219, Pl. 9). Possibly the latter served as a



Slika 1a. *Crtež posude s lokaliteta Goveja u Visu* (izradila: P. Kuzmanić)
Figure 1a *Drawing of a vessel from the site of Goveja in Vis* (made by: P. Kuzmanić)

Slika 1b. *Posuda s lokaliteta Goveja u Visu – strana sa sačuvanim reljefom* (snimila: M. Miliša; doradila: A. Konestra)
Figure 1b *Vessel from the site of Goveja in Vis – side with preserved relief* (photo by: M. Miliša; edited by: A. Konestra)

Slika 2. *Posuda s lokaliteta Goveja u Visu – pogled odozgo i detalji jezičaca / palčanih ručkica* (snimila: A. Konestra)
Figure 2 *Vessel from the site of Goveja in Vis – top view and details of the tongues / thumb handles* (photo by: A. Konestra)

je, unatoč neuobičajeno velikim dimenzijama, zasigurno riječ o obliku posude za piće, odnosno skifu.[7]

Keramika je ružičasto-narančaste boje, kompaktna i dobro pečena. Premaz, koji je nanesen na većinu tijela posude, no nedostaje na donjoj površini dna, općenito je dosta loše sačuvan. U unutrašnjosti posude i na stijenkama koje se spuštaju prema dnu premaz je smećkaste boje (sl. 3), što je primijećeno i na području ruba, dok je drugdje premaz narančast, vrlo sličan boji keramike. Takav bikromitet po svoj je prilici nastao zbog pečenja, odnosno mogao bi sugerirati da su posude unutar peći bile složene jedna na drugoj, što je ograničilo dotok kisika do pojedinih dijelova posude.

Najkarakterističniji dio posude svakako je njezin ukras. Na središnjem dijelu stijenki nalazi se nježni *barbottine* ukras vitica s pupoljcima i listićima, izveden iznimno tankim i plitkim nanosom gline. Ukras se proteže vodoravno približno sredinom stijenke, tvoreći svojevrsnu ukrasnu traku. U središnjem dijelu posude, s obiju strana, nalazi se reljefna aplikacija – protoma – u obliku ženskog torza (sl. 1a–b). S jedne je strane gotovo u potpunosti sačuvana, odnosno oštećena je samo s desne

talnoj produkciji skifa oni s reljefnim ukrasom javljaju od augustejskog doba (PERNET 2006: 170).

7 Za definiciju oblika vidi npr. GREEN 2007: 653; WABERSICH 2014: 219.

despite its unusually large dimensions – that it is a drinking vessel, more precisely a skyphos.[7]

The fabric is of a pinkish-orange colour, compact and well fired. The slip, applied to most of the vessel's body but missing on the lower surface of the base, is generally quite poorly preserved. The slip in the vessel's interior and on its walls towards the bottom is brownish (Fig. 3), as in the rim area, while elsewhere it is orange, very similar to the pottery colour. Such bichromicity was most likely caused by firing and suggests that the vessels in the furnace may have been stacked on top of each other, thus limiting the flow of oxygen to certain parts of the vessel.

The most characteristic part of the vessel is certainly its decoration. In the central part of the walls is a delicate barbotine decoration composed of tendrils with buds and small leaves, rendered with an extremely thin and shallow layer of clay. The decoration extends horizontally approximately in the middle of the wall, forming a kind of decorative strip. In the central part of the vessel, on both sides, are relief applications – protomes – in the shape of a female torso (Figs. 1a-b). One

prototype for the mentioned pottery wares (cf. WALTON, TITE 2009: 733 and earlier literature; on the relationship between the two productions in general POBLOME 1997: 450; WABERSICH 2014). It is indicative that in the metal production of skyphoi, those with relief decoration appeared from the Augustan era onwards (PERNET 2006: 170).

7 For a definition of the form see, for example: GREEN 2007: 653; WABERSICH 2014: 219.

Slika 3. *Posuda s lokaliteta Goveja u Visu – dno* (snimila: A. Konestra)
Figure 3 *Vessel from the site of Goveja in Vis – bottom* (photo by: A. Konestra)

strane, dok je na drugoj strani posude sačuvan samo donji dio. Ipak, nekoliko sačuvanih, no nespojivih fragmenata nedvojbeno potvrđuje istovjetnost prikaza (sl. 4a–b). Figura je postavljena frontalno, dok je glava za tri četvrtine okrenuta ulijevo dočaravajući blagi pokret koji dodatno ocrtavaju naglašeni vrat, kao i pogled izgubljen u daljinu. Kosa je podijeljena po sredini, pramenovi su uvijeni i podignuti sa svake strane glave, a s desne se strane očituju naglašeni deblji uvijeni pramenovi, ispod kojih su izvedena tri prema iza začešljana tanja pramena. Prednji dio frizure tvori svojevrsnu krunu, a moguće je pretpostaviti da je sa stražnje strane glave kosa bila skupljena u nisku punđu, koja se možda i naslućuje u zadebljanjima sa stražnje strane glave, no zbog sumarno izvedenih detalja nije moguće razabrati sve pojedenosti. Nejasno je nalaze li se na ramenima

protome has been preserved almost completely, with a damaged right side; only the lower part of the other has been preserved. However, several preserved sherds, although they could not be joined back together, still undoubtedly point to an identical motif (Figs. 4a-b). The figure is placed frontally, while the head is turned to the left by three quarters, evoking a gentle movement that is further outlined by an accentuated neck, as well as the gaze looking at the distance. The hair is parted in the middle, with strands twisted and raised at both sides of the head; on the right side thicker strands are visible, below which three backwards combed thinner strands can be notices. On the front, the hairstyle forms a kind of crown. Presumably, on the back of the head the hair formed a low bun, as suggested by the thickening there, but due to the imprecise styling, it is not possible to make out all the details. It is

Slika 4a. *Posuda s lokaliteta Goveja u Visu – ulomci „drugog" reljefa* (snimila: A. Konestra)
Figure 4a *Vessel from the site of Goveja in Vis – fragments of the "second" relief* (photo by: A. Konestra)

Slika 4b. *Posuda s lokaliteta Goveja u Visu – strana s tek neznatno sačuvanim reljefom* (snimila: A. Konestra)
Figure 4b *Vessel from the site of Goveja in Vis – side with only slightly preserved relief* (photo by: A. Konestra)

valoviti pramenovi kose ili dio odjeće, iako je prva opcija vjerojatnija. Lice je ovalno, a velike oči gotovo su okrugle, s naglašenim zjenicama. Nos je u profilu ravan i pri dnu širok, a odmah ispod njega smještaju se mala, uska usta, pa je

unclear whether on the shoulders are wavy hair strands or part of clothing; however, the former option is more likely. The face is oval, and the eyes are large and almost round, with accentuated pupils. The nose is flat in profile and wide at

okruglasta brada dosta visoka. Na dugačkom vratu vidljivo je nekoliko nabora čija interpretacija ostaje dvojbena. Ispod glave oblikovan je niz zona s naborima kojima se moguće htjelo dočarati odjeću, pa ako je tako, iznad lijevog ramena mogao bi se razaznati čvor.

Reljef podsjeća na medaljon, gotovo tondo, s obzirom na to da je aplika okruglastog oblika. Zahvaljujući oštećenju, odnosno nedostatku dijela reljefa, moguće je primijetiti kako on nije izrađen zajedno s posudom, odnosno, posuda je oblikovana na kolu, ukrašena *barbottine* ukrasom te je potom na nju „nalijepljen" reljefni ukras, zasigurno izrađen u kalupu, što dodatno potvrđuje istovjetnost drugog, lošije sačuvanog reljefa (sl. 4a, 5).

U kalupu su oblikovani i „dodatci" na ručthe base. Right below it is a small, narrow mouth, and the round chin is quite high. Several folds are visible on the long neck, which are hard to interpret. Formed below the head is a series of zones with folds, possibly intended to evoke clothing, with a knot above the left shoulder.

The relief resembles a medallion: almost a tondo, since the appliqué is round in shape. Thanks to the damage, that is lack of part of the relief it was possible to observe that is was not made together with the vessel, but rather that the vessel was thrown on a wheel and barbotined, and subsequently a relief decoration was "glued" onto it, certainly made in a mould, which further confirms the sameness of the other, less preserved relief (Figs. 4a, 5).

The "accessories" on the handles were also

Slika 5. *Posuda s lokaliteta Goveja u Visu – Detalj apliciranog reljefa* (snimila: A. Konestra)
Figure 5 *Vessel from the site of Goveja in Vis – detail of applied relief* (photo by: A. Konestra)

kama (sl. 2). Na potonjima se također nalazi antropomorfni ukras, iako znatno teže interpretacije, ponajprije zbog slabije razlučivosti, koja je dijelom uzrokovana plitkoćom reljefa, a dijelom izlizanošću materijala, što je posebno vidljivo na jednom od dvaju jezičaca. Ipak, moguće je pretpostaviti da je i u ovom slučaju riječ o prikazu ženske figure, no u plošnom frontalnom prikazu s licem okruženim bujnom valovitom kosom. Slični su prikazi, također na ručkama, u sigilatnoj produkciji Sagalassosa interpretirani kao Meduze – Gorgone,[8] no u našem je slučaju vrlo teško predložiti imalo utemeljenu interpretaciju.

Opisana je posuda po mnogočemu iznimno specifična. Morfološki bi se mogla smjestiti unutar tipologije Pontske sigilate, kako je definira J. W. Hayes[9] u *Atlante delle forme ceramiche II* enciklopedije klasične umjetnosti. Posebno se ističu oblik, koji bi odgovarao Formi Atlante Xb/ Tiritaka 3 iz prve polovice 1. stoljeća,[10] *barbottine* ukras i jezičci na ručkama, za koje se smatra da su tipični za ovo crvenopremazano posuđe te da bi mogli potjecati iz metalnih prototipa.[11] Dok bi i keramička struktura mogla odgovarati ovom posuđu, kao i nepremazano dno, bikromija premaza nije dosad uočena, dok se, recimo, javlja na ciparskoj sigilati.[12] Dimenzije viške posude ipak su znatno veće od prototipova oblika Atlante Xb Pontske sigilate i općenito su znatno veće od tipičnih dimenzija keramičkih posuda za piće. Svojim se dimenzijama viška posuda može usporediti, primjerice, s posudom s dvjema ručkama i ukrasom utisnutim kotačićem koja je pronađena u kontekstu brodoloma kod Ilovika te moguće pripada glaziranoj produkciji (M. Orlić spominje premaz lakom (?)).[13] Usporediva je i s posudom iz groba 207 isejske nekropole na Vlaškoj njivi (vidi niže). Također, ni aplici-

[8] POBLOME 1997: 441, kat. br. 1–5.
[9] HAYES 1985: 92–93.
[10] HAYES 1985: 94, T. XXIII/11.
[11] HAYES 1985: 92.
[12] HAYES 1985: 92.
[13] ORLIĆ 1982, 158; 1986, 29, sl. 22.

moulded (Fig. 2). They also contain an anthropomorphic decoration, which is much more difficult to interpret, primarily due to its lower resolution, resulting from both the shallowness of the relief as well as the wear of the material, in particular on one of the two tongues. Nevertheless, it can also be interpreted as a representation of a female figure in a flat frontal view, the face surrounded by thick wavy hair. Similar representations (also on the handles) in Sagalassos Red Slip Ware have been interpreted as Medusas – Gorgons,[8] but in this case it is very difficult to propose any well-founded interpretation.

The described vessel is extremely specific in many respects. In terms of morphology, it could be placed within the Pontic sigillata typology, as defined by J. W. Hayes[9] in *Atlante delle forme ceramiche II*, of the Encyclopaedia of classical art. Particularly noteworthy are its shape (which corresponds to the Atlanta Xb / Tiritaka 3 form from the first half of the 1st century),[10] the barbotine decoration and the applications on the handles, (which are considered typical for this red slip ware and might originate from metal prototypes).[11] While the fabric might also correspond to this ware, as might the uncoated bottom, no slip bichromicity has been observed so far, while it occurs, for example, on the Cypriot sigillata.[12] The dimensions of the vessel from Vis are, however, significantly larger than the Atlante Xb Pontic sigillata prototypes and are generally significantly larger than typical ceramic drinking vessels. By its size, the vessel from Vis can be compared, for example, with the two-handled vessel with a rouletted decoration that was found in the context of the shipwreck off Ilovik and which possibly belongs to glazed ware (M. Orlić mentions a varnish coating (?)).[13] It is also compa-

[8] POBLOME 1997: 441, Cat. No. 1-5.
[9] HAYES 1985: 92-93.
[10] HAYES 1985: 94, T. XXIII/11.
[11] HAYES 1985: 92.
[12] HAYES 1985: 92.
[13] ORLIĆ 1982: 158; 1986, 29, Fig. 22

rana ženska protoma (ni, što se toga tiče, neka druga slična aplika) ne javlja se na posudama Pontske sigilate, a nije pronađen ni jedan analogno ukrašeni keramički predmet, stoga se ova vrsta ukrasa može smatrati atipičnom ne samo za pontsku produkciju nego i šire. Iako keramika kao medij nije najprikladnija za ovu vrstu dekoracije koja zahtijeva izvedbu niza sitnih detalja (npr. pramenovi kose, nabori odjeće), majstor je ipak uspio izvesti ne samo pojedine detalje već i kroz izraz lica dočarati osjećaj sjetnosti prikazane figure.

Keramika s apliciranim, zasebno izrađenim reljefima, javlja se u nekoliko produkcija, od kojih se neke smještaju i na područje moguće proizvodnje Pontske sigilate, to jest šire područje Crnog mora, donjeg toka Dunava odnosno istočnog Balkana. Posude s apliciranim dekoracijama proizvodile su se, na primjer, na području Bugarske u keramičarskoj radionici u Nicopolis ad Istrumu, na lokalitetu Varbovski livadi ili na širem području u okolici Pavlikenija, no u ovom je slučaju uglavnom riječ o standardiziranim glavama Silena, Herakla i bukranijima, koje se obično nalaze na kraterima, zajedno s motivom zmije ili nekih drugih životinja.[14] No kod ovih primjera ne možemo govoriti o zasebnom dekorativnom motivu, već o ciklusu ili nizu motiva koji zahvaćaju veći dio posude i više podsjećaju na ukrase na nekim istočnomediteranskim[15] i zapadnomediteranskim[16] sigilatama. Međutim, na keramici s navedenog područja javlja se i *barbottine* ukras.[17] Druga vrsta ukrasa izrađenih u kalupu i potom apliciranih na keramičko posuđe, no koju također možemo *a priori* odbaciti, ona je s apliciranim ukrasnim medaljonima, koja se javlja na već spomenutom području,[18] ali i drugdje

[14] DIMITROV IVANOV 2022: 81–82, kat. br. 410, 417–419, 427, 429.
[15] DIMITROV IVANOV 2022: 81; POBLOME 1999: 104–105, fig. 46, type 1B260.
[16] Npr. pojedinim produkcijama afričkog crvenopremazanog posuđa (npr. MACKENSEN 2006).
[17] DIMITROV IVANOV 2022: 80–81.
[18] DIMITROV IVANOV 2022: 80–87.

rable to the vessel from grave 207 of the Issaean necropolis on Vlaška Njiva (see below). In addition, on Pontic sigillata vessels, neither do applied female protomes (nor, for that matter, any other similar appliqués) occur, nor have any similarly decorated ceramic artefacts been found. This type of decoration can therefore be considered atypical: not only of Pontic production, but also more widely. Although pottery is not the most suitable medium for this decoration type, which requires the execution of a series of meticulous details (such as hair strands and clothing folds), the artist still managed to execute not only individual details, but also, through facial expression, to evoke a sense of thoughtfulness in the depicted figure.

Applied, separately moulded reliefs are found in several wares, some of which might also originate from the possible production area of Pontic sigillata, that is, the wider area of the Black Sea and the lower course of the Danube (in other words the Eastern Balkans). Vessels with applied decorations were produced, for example, in Bulgaria in the pottery workshop in Nicopolis ad Istrum, at the Varbovski Livadi site or in the wider area of Pavlikeni, but they mostly contained standardised heads of Silenus or Heracles, or bucrania, which are usually found in kraters together with the motif of a snake or some other animal.[14] However, these examples definitively do not contain an individual decorative motif, but rather a series of motifs covering a large part of the vessel and reminiscent of decorations found in some eastern[15] and western[16] Mediterranean sigillatas. However, ceramics from the area in question also feature barbotine decoration.[17] Another decoration type made in a mould and then applied on pottery vessels, that is applied decorative medallions, though occurring in this area[18]

[14] DIMITROV IVANOV 2022: 81-82, Cat. No. 410, 417-419, 427, 429.
[15] DIMITROV IVANOV 2022: 81; POBLOME 1999: 104-105, Fig. 46, type 1B260.
[16] For example some productions of African red slip ware (for example MACKENSEN 2006).
[17] DIMITROV IVANOV 2022: 80-81.
[18] DIMITROV IVANOV 2022: 80-87.

u rimskom svijetu, na primjer na području Galije ili Pisidije (Sagalassos).[19] U tom je slučaju riječ o plitkim kružnim reljefima koji prikazuju različite, često erotske ili mitološke scene, dok se na keramici proizvedenoj u Sagalassosu javljaju i prikazi pojedinih božanstava, na primjer *Felicitas* i Silvan, egipatska božanstva izidijačkog kruga, dionizijski prikazi i dr.[20] Aplike u obliku protome poznate su i u drugim produkcijama, poput lokalne proizvodnje kućanske keramike u Knosu gdje se, uglavnom u augustejskom razdoblju i izrađeni na temelju helenističke tradicije, javljaju vrčevi s apliciranom protomom na spoju ruba i ručke.[21] Slično oblikovane protome javljaju se, međutim, već u Gnathia produkciji, i italskoj i viškoj.[22] Upravo iz helenističkog razdoblja potječe niz produkcija s apliciranim reljefima, poput etrurske *ceramiche argentate* ili reljefne keramike proizvedene u Calesu u Kampaniji, unutar kojih se, između ostalog, javljaju i tanjuri s izrazito reljefnim medaljonima u sredini dna.[23] Valja svakako spomenuti i knidsku reljefnu produkciju, međutim, osim što je njezin repertoar uglavnom ograničen na enofore, vrčeve i posude u punoj plastici, ovo je posuđe izrađivano u dvodijelnom kalupu, čime su sama posuda i njezin reljefni ukras izrađivani jednim istovjetnim postupkom.[24] Možemo još spomenuti i italsku glaziranu keramiku u kojoj se javljaju reljefni prikazi, često božanstava, poput Dionisa i Herakla.[25]

Sumarno navedeni primjeri reljefno izvedenih ukrasa na keramici ipak ne pomažu u interpretaciji, dataciji ili određivanju podrijetla viške posude. Stoga se pokazalo potrebnim

but also elsewhere in the Roman world, for example in the area of Gaul or Pisidia (Sagalassos), should also be a *priori* rejected.[19] This pottery has shallow circular reliefs depicting different, often erotic or mythological, scenes, while the production from Sagalassos also has depictions of individual deities, such as Felicitas and Silvanus, Egyptian deities of the Isis circle, Dionysian depictions, and the like.[20] Protome appliqués have also been recorded in other productions, such as in local common ware from Knossos where, mainly in the Augustan period and made following the Hellenistic tradition, jugs with an appliquéd protome at the joint of the rim and the handle occurred.[21] However, a similar protome form had already appeared among both Italian and Vis Gnathia ware.[22] A number of wares with applied reliefs originate particularly from the Hellenistic period, as is the case with Etruscan *ceramica argentata*, or relief ceramics produced in Cales in Campania, among which are also found plates with highly embossed medallions in the middle of the bottom.[23] Certainly, Knidian relief ware should also be mentioned. However, apart from the fact that its repertoire is mostly limited to oinophoroi, jugs and vessels with in-the-round depictions, these were made in a two-part mould, whereby the vessel and its decorative relief were made as part of a single work process.[24] Italian glazed pottery may also be mentioned, which also feature relief depictions, often of deities such as Dionysus and Heracles.[25]

However, the summarily listed examples of relief decorations on pottery do not help when it comes to the interpretation, dating or determination of the origin of the vessel from Vis. Hence, it has been necessary to look at other types of materials, primarily different metal artefacts. Ac-

19 DESBAT, SAVAY-GUERRAZ (ur.) 2011; TALLOEN, POBLOME 2005.
20 TALLOEN, POBLOME 2005: 57–62, fig. 1, 2, 4, 5 i dr.
21 SACKETT 1992: 161–162, T. 125/3–4; FORSTER 2001: 153, Fig. 48/b, Pl. 41/a–b. Slične se posude javljaju i u toreutici.
22 MIŠE 2015: 32 i dr.
23 Ups. npr. MICHETTI 2005: fig. 9; PALOMBI 1992.
24 TORTORICI 1981: 233; BRUSIĆ 1999–2000: 83–84.
25 Npr. MARTINI 2015.

19 DESBAT, SAVAY-GUERRAZ (eds.) 2011; TALLOEN, POBLOME 2005.
20 TALLOEN, POBLOME 2005: 57-62, Figs. 1, 2, 4,-5 ff.
21 SACKETT 1992: 161-162, T. 125/3- 4; FORSTER 2001: 153, Fig. 48/b, Pl. 41/a-b. Similar vessels also appear in toreutics.
22 MIŠE 2015: 32ff.
23 Cf. eg. MICHETTI 2005: Fig. 9; PALOMBI 1992.
24 TORTORICI 1981: 233; BRUSIĆ 1999-2000: 83-84.
25 Eg. MARTINI 2015.

sagledati i druge vrste materijala, prije svega različite metalne predmete. Ako se izdvoji aplicirana protoma, ona nalazi dosta dobre analogije u seriji aplika s kasnohelenističkih i rimskih fulkruma. Niz je takvih prikaza koji bi odgovarali viškomu,[26] no sličnošću se izdvaja aplika koja po svoj prilici prikazuje Artemidu[27] s brodoloma Antichythera koji se čuva u Muzeju u Ateni.[28] Naime, prikaz na tom predmetu u mnogočemu odgovara viškoj protomi: isti su položaj tijela i glave, frizura, pogled u daljinu, mogući čvor na lijevom ramenu. Predmet je prema formi fulkruma datiran u 2. st. pr. Kr.[29] U helenističko razdoblje datira i sličan reljef, također s fulkruma, pronađen na brodolomu Mahdia potonulom nedaleko od obala Tunisa.[30] Ovdje je Artemida također okrenuta ulijevo, no čvor kojim je osigurana odjeća nalazi se iznad desnog ramena. Iza istog ramena nazire se cilindrični predmet, moguće tobolac, što je karakterizira kao lovkinju.[31] Potonja se aplika u literaturi često uspoređuje sa sličnom aplikom s brodoloma Fourmigue C (Golfe-Juan, između Cannes i Antibes) te se, unatoč pojedinim razlikama (npr. frizura) pretpostavlja da su oba fulkruma proizvedena u istom proizvodnom središtu, odnosno u Delu.[32] Uz njih se smješta i aplika fulkruma iz Kyparissije na Pe-

26 Npr. LAFLI 2015/2016: 121, Pl. 5a–b (Dijana).

27 Pojedini autori dvoje u interpretaciji prikaza kao Artemide, s obzirom na to da liku nedostaju neki od njezinih tipičnih atributa, poput tobolca. Predlagala se stoga mogućnost da je na aplici s Antikythere prikazana Arsinoë III (BARR–SHARRAR 1985), međutim, kasniji autori upozoravaju na visoku stilizaciju Ptolomejskih vladarskih prikaza koji često, slijedeći određeni propagandni i ikonografski program, inkorporiraju božanske atribute, odnosno ne prikazuju vladara u svojem stvarnom liku, već je božanstvo prikazano kao posebni zaštitnik vladara, no na takvim se prikazima gotovo uvijek javljaju vladarski atributi (dijadema, veo, žezlo i dr.) (usp. MÜLLER 2008: 142–143, 147, 153–154 s ranijom literaturom).

28 LIMC, 683, Artemis 817; SVORONOS 1908: T. IX/2; PALAIOKRASSA 2012: 123, sl. 69.

29 LIMC, 683, Artemis 817; PALAIOKRASSA 2012: 123, sl. 69.

30 BARR–SHARRAR 1998: 189, Fig. 6.

31 Usp. BAUDOIN, LIOU, LONG 1994: 57 s ranijom literaturom.

32 BARR-SHARRAR 1998: 188, 191–192.

cordingly, quite useful analogies to the applied protome are found in a series of appliqués from late Hellenistic and Roman fulcrums. There are a number of such depictions that would correspond to that of Vis,[26] but the appliqué from the Antikhythera shipwreck kept at the Museum in Athens, most probably representing Artemis,[27] stands out.[28] Namely, the depiction on that artefact corresponds in many respects to the Vis protome: the body and head position, the hairstyle, the gaze into the distance, and a possible knot on the left shoulder are the same. Based on the fulcrum form, the artefact is dated to the 2nd century BC.[29] A similar relief, also from a fulcrum, found among artefacts from the Mahdia shipwreck off the coast of Tunisia, dates back to the Hellenistic period as well.[30] Here, Artemis is also turned to the left, but the knot with which the clothes are secured is above her right shoulder. Behind the same shoulder is a cylindrical artefact, possibly a quiver, which characterises her as a huntress.[31] In the literature, the latter appliqué is often compared with a similar one from the Fourmigue C shipwreck (Golfe-Juan, between Cannes and Antibes) and it is assumed that, despite some differences (such as the hairstyle), both fulcrums were produced in the same production centre: Delos.[32] The fulcrum appliqué from Kyparissia in the Peloponnese is placed next to them.[33] According to

26 For example LAFLI 2015/2016: 121, Pl. 5a-b (Diana).

27 Some authors are ambivalent about the interpretation of the depiction as Artemis, given that the figure lacks some of her typical attributes, such as a quiver. Thus, it was proposed that possibly the appliqué from Antikythera depicted Arsinoë III (BARR-SHARRAR 1985). However, later authors pointed out the highly stylised depictions of Ptolemaic rulers, which often follow a certain propaganda and iconographic programme, and incorporate divine attributes: they do not render the ruler's real figure, but rather represent a deity as a special protector of the ruler. Such depictions regularly show the ruler's attributes: diadem, veil, sceptre and the like (cf. MÜLLER 2008: 142-143, 147, 153-154 with earlier literature).

28 LIMC, 683, Artemis 817; SVORONOS 1908: T. IX/2; PALAIOKRASSA 2012: 123, Fig. 69.

29 LIMC, 683, Artemis 817; PALAIOKRASSA 2012: 123, Fig. 69.

30 BARR-SHARRAR 1998: 189, Fig. 6.

31 Cf. BAUDOIN, LIOU, LONG 1994: 57 with earlier literature.

32 BARR-SHARRAR 1998: 188, 191-192.

33 BAUDOIN, LIOU, LONG 1994: 57.

loponezu.[33] Prema pojedinim autorima, iako sve navedene aplike potječu iz 1. st. pr. Kr., njihovi bi prototipi mogli biti znatno raniji, odnosno iz 3. st. pr. Kr.[34] S druge strane, slični bi predmeti mogli biti datirani i kasnije, u 1. i 2. st. po. Kr.[35]

Navedene analogije, koje oblikovno posve odgovaraju protomi s viške posude mogle bi upućivati na podrijetlo motiva s istočnog Mediterana i helenističkog razdoblja, te njegova preuzimanja u keramičarsku proizvodnju iz metalne produkcije. Motiv je očito bio dosta popularan, sudeći prema broju primjera samo na fulkrumima, a javlja se i na nekim drugim metalnim predmetima te se očigledno zadržao u uporabi i u rimskom razdoblju.[36] Osim toga, ako prihvatimo analogije, po svemu je sudeći i na viškoj posudi prikazana Artemida – Dijana. To bi moglo olakšati interpretaciju detalja reljefa smještenih iza glave figure, dio kojih bi, kako je rečeno, mogao pripadati punđi, dok bi dio mogao upućivati na tobolac. Slični su prikazi Dijane prisutni i u kamenoj plastici i drugim medijima, pa i kada je božica prikazana u cijeloj figuri, promatrajući samo torzo, uočava se istovjetni ikonografski obrazac.[37] Kada se promatraju druge mogućnosti u božanskoj sferi, posebno prema istovjetnosti frizure, dolazila bi u obzir i Afrodita – Venera, no ona je obično prikazana s pognutom glavom[38] i gotovo uvijek obnažena, što viška figura po svoj prilici nije. Ostaje dakako mogućnost da je riječ o nekom anonimnom prikazu ili, recimo, nekoj osobi iz carske obitelji,[39] no većina autora koja

[33] BAUDOIN, LIOU, LONG 1994: 57.

[34] BAUDOIN, LIOU, LONG 1994: 58, osim ondje navedenih analogija vidi i LIMC, Artemis 759 (datirana u helenističko-rimsko razdoblje).

[35] LAFLI 2015/2016: 121, Pl. 5a–b.

[36] Uz one već navedene vidi i LIMC, Artemis, 756, medaljon s pokrivala za glavu.

[37] Na primjer na području provincije Dalmacije: reljef iz Salone, keramička antefiksa iz Narone (GLUČINA 2011: kat. br. 27, 46, T. 14, 22).

[38] CAMBI 2002: 306.

[39] Usp. npr. MÜLLER 2008, 156; ETEROVIĆ BORZIĆ, BORZIĆ 2019.

some authors, although all the mentioned appliqués originate from the 1st century BC, their prototypes could be of a significantly earlier origin, that is, from the 3rd century BC.[34] On the other hand, similar artefacts might also be dated to a later period, the 1st and 2nd centuries AD.[35]

The above-mentioned analogies, which completely correspond to the protome from the Vis vessel in terms of shape, might point to the origin of the motif from the Eastern Mediterranean and the Hellenistic period, and its adoption into pottery production from metalworking. Given the number of examples only on fulcrums, the motif was apparently quite popular. It appears also on some other metal artefacts, and it apparently remained in use in the Roman period as well.[36] In addition, if we accept the analogies, obviously the Vis vessel also presents a depiction of Artemis – Diana. Possibly this makes it easier to interpret the relief details behind the figure's head as partly belonging to a bun, as mentioned previously, and partly to a quiver. Similar depictions of Diana are also present in stone and other media, and even when the goddess is shown in full-figure, the torso alone suggests the same iconographic pattern.[37] When assessing the possibility that another of the deities may be depicted, in particular regarding the similarity of their hairstyles, Aphrodite/Venus might also be taken into consideration. However, she is usually depicted with a bowed head[38] and almost always naked, which is obviously not the case with the figure from Vis. Of course, there remains the possibility that it is an anonymous representation or that of an imperial family member.[39] Nevertheless, most authors who dealt with the mentioned analogies have no

[34] BAUDOIN, LIOU, LONG 1994: 58, apart from the analogies mentioned there see also LIMC, Artemis 759 (dated to the Hellenistic-Roman period).

[35] LAFLI 2015/2016: 121, Pl. 5a-b.

[36] In addition to those already mentioned, see also LIMC, Artemis, 756, medallion from a headdress.

[37] For example, in the area of the province of Dalmatia: a relief from Salona, a ceramic antefix from Narona (GLUČINA 2011: Cat. Nos. 27, 46, Pl. 14, 22).

[38] CAMBI 2002: 306.

[39] Cf. eg. MÜLLER 2008, 156; ETEROVIĆ BORZIĆ, BORZIĆ 2019.

se bavila navedenim analogijama ne dvoji u atribuciji, posebno u slučaju kada se na figuri raspoznaju nebrida i tobolac.

Mogli bismo stoga zaključiti kako je posuda pronađena u destruiranom grobu u Visu izrađena u nekoj od radionica koje su grupirane unutar klase Pontske sigilate,[40] odnosno u nekom od crnomorskih proizvodnih središta, prema tipičnom morfološkom modelu skifa s *barbottine* ukrasom Atlante Xb tipa. Ostaje, dakako, otvorena i mogućnost proizvodnje u nekom keramičarskom središtu istočnog Mediterana, s obzirom na to da se slične posude javljaju i u Knidskoj ili produkciji Sagalassosa,[41] no prema dostupnim analogijama posuda zasigurno ne potječe sa zapadnog Mediterana. U ovom je slučaju, međutim, majstor keramičar odlučio izraditi posudu znatno većih dimenzija te na nju dodati elaborirani reljef, koji svojim prikazom uvelike podsjeća na ukrasne detalje s drugih uporabnih predmeta – aplike s fulkruma klina – a koji su očigledno bili dobro poznati u njegovu zanatskom krugu te su se mogli preuzeti za izradu specifičnog reljefnog prikaza.[42] Za kraj, datacija posude ostaje spekulativna kao i njezino podrijetlo, no u tome mogu pomoći ostali predmeti koji su uz nju pronađeni i ipak neke od predloženih analogija. Stoga predlažemo dataciju od kraja 1. do početka 3. stoljeća, iako je vjerojatnije da posuda nije proizvedena nakon kraja 2. stoljeća.

[40] O tome HAYES 1985: 91–95; o Pontskoj sigilati vidi i ZHURAVLEV 2002; KÜHNELT 2009. Pojava Pontske sigilate na istočnom Jadranu dosta je sporadična te je do sada zabilježena u Naroni sa zdjelicom Forme IV (kraj 1.–početak 2. st.) te tanjurom produkcije B (TOPIĆ 2002: 192), Trogiru gdje se ističe zdjelica forme Kühnelt form S 5a kasnog 2. i prve polovice 3. st. te se predlaže pontska imitacija ESB formi 60 i 80 (PARAMAN et al. 2020: 403, 407, K 7–12, fig. 23, K 35–37, fig. 26.) i Aseriji, gdje je prisutna s jednim primjerkom Hayes I tipa iz druge pol. 1. –2. st. (BORZIĆ, ETEROVIĆ BORZIĆ 2015: 40–41). Nekoliko je primjeraka poznato i iz Nadina, Zatona te Bakra (BORZIĆ, ETEROVIĆ BORZIĆ 2015: 41), a moguće je da je nekoliko zdjelica prepoznato i na zadarskoj nekropoli u Ulici fra Ivana Zadranina (MARTINOV 2017: T. 10.).

[41] POBLOME 1999: 104–105, fig. 46, type 1B260.

[42] Za takvu praksu usporedi POBLOME 1997: 450–451.

doubts as to the attribution, in particular when the figure has a recognisable nebris and a quiver.

We could therefore conclude that the vessel found in the destroyed grave in Vis was made in one of the workshops classified as Pontic sigillata,[40] that is, in one of the Black Sea production centres, on the basis of the typical morphological model of a skyphos with barbotine decoration of the Atlante Xb type. Of course, the possibility of production in an eastern Mediterranean pottery production centre still remains open, given that similar vessels also occur in Knidian or Sagalassos wares;[41] however, available analogies suggest that the vessel certainly does not originate from the western Mediterranean. In this case, nevertheless, the potter decided to make a significantly larger vessel and to attach to it an elaborate relief, its representation reminiscent of decorative details from other everyday objects – appliqués from a cline fulcrum – that were apparently well-known in his professional circle and could be adopted to create a specific relief display.[42] Finally, the dating of the vessel as well as its origin remain a matter of speculation, but other artefacts unearthed along with it (and possibly also some of the proposed analogies) can be useful. Thus, we propose dating the vessel from the end of the 1st to the beginning of the 3rd century, although it is more likely that the vessel was not produced after the end of the 2nd century.

[40] Regarding this, HAYES 1985: 91-95; on Pontic sigillata see also ZHURAVLEV 2002; KÜHNELT 2009. The occurrence of Pontic sigillata in the eastern Adriatic is quite sporadic and has so far been recorded in Narona, represented by a Form IV bowl (end of the 1st - beginning of the 2nd century) and a B ware plate (TOPIĆ 2002: 192); Trogir, with a Kühnelt form S 5a bowl of the late 2nd and first half of the 3rd century, and Pontic imitations of ESB forms 60 and 80 is proposed (PARAMAN ET AL. 2020: 403, 407, K 7-12, Fig. 23, K 35-37, Fig. 26); and Aseria, represented by a Hayes I type specimen dated from the second half of the 1st century to the 2nd century (BORZIĆ, ETEROVIĆ, BORZIĆ 2015: 40–41). Several specimens are also known from Nadin, Zaton and Bakar (BORZIĆ, ETEROVIĆ, BORZIĆ 2015: 41), and it is possible that several bowls were also recognised at the Zadar necropolis in Fra Ivana Zadranina Street (MARTINOV 2017: T. 10.).

[41] POBLOME 1999: 104-105, Fig. 46, type 1B260.

[42] For such a practice, cf. POBLOME 1997: 450-451.

STAKLENI PREDMETI

Uz ulomke opisane keramičke posude predana su i dva staklena predmeta – balzamarij sačuvan do gornjeg dijela vrata i ulomak rastaljenog stakla (sl. 6).

THE GLASS ARTEFACTS

Along with fragments of the described ceramic vessels, two glass artefacts were also handed over – a balsamarium preserved up to the upper part of the neck and a fragment of melted glass (Fig. 6).

Slika 6. *Stakleni predmeti pronađeni uz posudu na lokalitetu Goveja u Visu: balzamarij i ulomak rastaljenog stakla* (snimila: A. Konestra)
Figure 6 *Glass artefacts found next to the vessel at the site of Goveja in Vis: balsamarium and a fragment of melted glass* (photo by: A. Konestra)

Riječ je o balzamariju izrađenom od plavozelenog prozirnog stakla s koničnim tijelom konkavne stijenke, i stisnutim prijelazom na dugi i uski vrat, dok je rub po svoj prilici bio ljevkasto savijen. Oblikovno bi odgovarao jednoj od varijanti izrazito raširenog tipa koničnih balzamarija (Isings 28b, 82A1/De Tommaso tip 33, 34, grupa/tip 43, tip 46 i 48/Lazar a 8.6.5-7, 8.6.10-11/Buljević IX[43]), i to onoj s konkavnom stijenkom tijela (Buljević, balzamariji tip IX.1), koji pojedini autori smještaju od Flavijevaca do Antonina (druga polovica 1.

The balsamarium is made of blue-green transparent glass, with a conical body, a concave wall, and a compressed transition to a long and narrow neck, while the rim was probably funnel-shaped. The shape would correspond to one of the variants of the extremely widespread type of conical balsamaria (Isings 28b, 82A1/De Tommaso types 33, 34, group/type 43, types 46 and 48/Lazar a 8.6.5–7, 8.6.10–11/Buljević IX),[43] namely the variant with a concave body wall (Buljević, balsamarium type IX.1), which some authors have dated from the Flavians to

[43] ISINGS 1957: 42–43; DE TOMMASO 1990: 59–60, 66–67, 69–70; LAZAR 2003: 196; BULJEVIĆ 2016: 214, kat. br. 677–679.

[43] ISINGS 1957: 42-43; DE TOMMASO 1990: 59-60, 66-67, 69-70; LAZAR 2003: 196; BULJEVIĆ 2016: 214, Cat. No. 677-679.

i 2. stoljeće), iako nalazi s ptujske i salonitanske nekropole potvrđuju i kasniju pojavnost oblika, odnosno do 3. stoljeća.[44] Na Visu su dokumentirana dva primjerka iste varijante staklenih balzamarija s koničnim tijelom, a nađeni su u grobovima na istočnoj isejskoj nekropoli na Vlaškoj njivi (neobjavljeno),[45] a osim iz Salone poznati su analogni primjerci i iz Splita (nekropola Lora).[46]

Drugi stakleni ulomak posve je rastaljen, stoga je jedino moguće zaključiti kako je prvotni predmet također bio izrađen od plavo-zelenog stakla, no oblik nije moguće rekonstruirati.

Metalni predmeti

Dio pretpostavljenog grobnog ansambla mogla su biti i tri željezna predmeta. Riječ je o čavlu s iglom četvrtastog (?) presjeka i zadebljanom glavom, svijenom željeznom limu (?) i zakrivljenoj željeznoj igli. Brončani ili željezni čavli mogu se pronaći u asocijaciji s isejskim rimskim paljevinskim grobovima (npr. grob 67 ili 74 s Vlaške njive, neobjavljeno).

Puževi

Iako je sačuvano samo nekoliko primjeraka po svemu sudeći kopnenog puža, za koje kazivač navodi da su bili znatno brojniji, a koji su se nalazili u urni s ostatcima spaljenog pokojnika i grobnim prilozima, oni bi mogli indicirati na njihovo korištenje u pogrebnom ritualu. Tomu u prilog govorili bi zabilježeni aspekti koji se povezuju s korištenjem različitih vrsta školjki i puževa u isejskom pogrebnom obredu, a koji su prethodno zabilježeni u helenističkim i rimskim grobovima.[47]

[44] BULJEVIĆ 2002: 405; BULJEVIĆ 2016: 198; LAZAR 2003: 196.
[45] Riječ je o grobovima 125–126 i 222.
[46] BULJEVIĆ 2010: 109–110, grob 8, br. 2; BULJEVIĆ 2016: 214, kat. br. 677–679.
[47] UGARKOVIĆ 2019: 153–154, 181–182, 198.

the Antonines (second half of the 1st century and 2nd century), although finds from the Ptuj and Salonitan necropolises also confirmed the later occurrence of the form, until the 3rd century.[44] On Vis, two specimens of the same variant of glass balsamarium with a conical body have been documented, unearthed in graves at the eastern Issaean necropolis on Vlaška Njiva (unpublished),[45] and in addition to Salona, analogous specimens have also been recognised from Split (Lora necropolis).[46]

The second glass fragment is completely melted, so it is only possible to conclude that the original artefact was also made of blue-green glass, but the shape cannot be reconstructed.

The metal artefacts

Part of the presumed grave assemblage could also have been the following three iron artefacts: a nail with a rectangular (?) section needle and a thickened head, a rolled iron sheet (?) and a curved iron needle. Bronze or iron nails can be found in association with Issaean Roman incineration graves (for example grave 67 or 74 from Vlaška Njiva, unpublished).

Snails

Although presumed to have been much larger in number, only a few specimens of aparently land snail have been preserved, which were in the urn along with the remains of the incinerated deceased person and grave goods; still, the shells could have been used in the funeral rite. This might be confirmed by the recorded aspects associated with the use of various shell and snail types in the Issaean funeral rite, previously recorded in Hellenistic and Roman graves.[47]

[44] BULJEVIĆ 2002: 405; BULJEVIĆ 2016: 198; LAZAR 2003: 196.
[45] These are graves 125-126 and 222.
[46] BULJEVIĆ 2010: 109, 110, grave 8, no. 2; BULJEVIĆ 2016: 214, Cat. No. 677-679.
[47] UGARKOVIĆ 2019: 153, 154, 181, 182, 198.

O ASPEKTIMA ISEJSKOG POGREBNOG OBREDA I KULTU ARTEMIDE/DIJANE

Karakter otkrivenih predmeta i opisani kontekst pronalaska nedvojbeno upućuju na zaključak da je riječ o inventaru antičkog paljevinskog groba. Načinom pokapanja slijedi primjere brojnih jednostavnih ukopa paljevinskih grobova u živoj stijeni koja može biti djelomično priklesana za potrebe grobne arhitekture, a katkad i (dijelom) zatvorena većim kamenom koji služi kao poklopac ili ograda grobnog prostora.[48] Uz sloj gareži i usitnjenih kostiju spaljenog/ih pokojnika, koji su pronađeni unutar urne položene u škrapi matične stijene, takvu determinaciju dodatno potvrđuju nalazi spaljenog stakla i staklenog balzamarija, uobičajenog priloga koji prati rimske (isejske)[49] paljevinske grobove, ali i brojni puževi. S obzirom na to da rimski horizont isejskih nekropola još uvijek nije detaljno obrađen i publiciran, do sada u literaturi nisu izdvojeni grobovi s urnom u škrapi, već samo u kamenoj grobnici. Ipak, već preliminarni uvid u postojeće materijalne ostatke donosi analogije spomenutoj grobnoj arhitekturi, ali i drugim aspektima obreda. Kao primjer grobne arhitekture navodimo dvojni grob 1–2 otkriven 2022. godine na Vlaškoj njivi, a upravo je riječ o keramičkim urnama, položenim u škrapu stijene, također s priloženim puževima (sl. 7).[50] Također, postojanje neke vrste kamene ogradne arhitekture uz keramičku urnu,

[48] Grobovi u plićoj ili dubljoj kamenoj škrapi nisu neuobičajena pojava, posebice u krškom krajoliku (usp. npr.: Velika Mrdakovica, BRAJKOVIĆ 2018). Evidentirani su u helenističkim i rimskih horizontima pokapanja na Vlaškoj njivi i na Martvilu (CAMBI, KIRIGIN, MARIN 1980: tip V; ČARGO 2009: tip V i VI; UGARKOVIĆ 2019: tip V). Pokop u keramičkim posudama izdvojen je kao zasebni tip grobne arhitekture: ČARGO 2009: tip VIIIB; UGARKOVIĆ 2019: tip VI.

[49] NIKOLANCI 1952.

[50] Materijal iz groba je u procesu konzervacije i analize, no čini se da je riječ o nešto ranijem grobu, najkasnije iz prve polovice 1. st., s kojim se kao nalazi mogu povezati željezni strigil i sivopremazana keramička posuda.

ON ASPECTS OF ISSAEAN FUNERAL RITES AND THE CULT OF ARTEMIS/DIANA

The character of the unearthed artefacts and the described find context undoubtedly suggest the inventory of a Roman incineration grave. The pratice follows the example of numerous simple incineration burials in the bedrock, which could be partially cut for the needs of grave architecture, and sometimes (partially) closed with a larger stone that served as a grave cover or fence.[48] In addition to the layer of soot and crushed bones of the burned deceased found inside the urn laid in a crack of the bedrock, the classification is also confirmed by the finds of burnt glass and a glass balsamarium – a common grave good in Roman (Issaean)[49] incineration graves, along with numerous snails. Given that the Roman horizon of Issaean necropolises has not yet been studied and published in detail, no graves with an urn in a crack have so far been categorised in the literature, but only in a stone tomb. Nevertheless, even a cursory inspection of the existing material remains evokes analogies to the described grave architecture, as well as other aspects of the rite. As an example of grave architecture, the dual grave 1–2 unearthed in 2022 in Vlaška Njiva may be mentioned; it contained ceramic urns laid in a bedrock crack, also with deposited snails (Fig. 7).[50] Also, some kind of stone enclosure next to a ceramic urn, sometimes with a stone slab

[48] Graves in shallower or deeper rock crevices are not an uncommon phenomenon, especially in the karst landscape (cf. for example Velika Mrdakovica, BRAJKOVIĆ 2018). They have been recorded in the Hellenistic and Roman burial horizons at Vlaška Njiva and Martvilo (CAMBI, KIRIGIN, MARIN 1980: type V; ČARGO 2009: types V and VI; UGARKOVIĆ 2019: type V). Burial in ceramic vessels was singled out as a separate type of grave architecture: ČARGO 2009: type VIIIB; UGARKOVIĆ 2019: type VI.

[49] NIKOLANCI 1952.

[50] The material from the grave is still in the process of conservation and analysis, but it seems that it is a somewhat earlier grave, from the first half of the 1st century at the latest, with which finds of an iron strigil and a grey-coated ceramic vessel can be associated.

Slika 7. *Grob 1–2 s nekropole na Vlaškoj njivi u Visu (kampanja 2022. g.)* (snimio: P. Domines Peter)
Figure 7 *Grave 1–2 from the Vlaška Njiva necropolis in Vis (2022 campaign)* (photo by: P. Domines Peter)

katkad kao u grobu s Goveje s kamenom pločom koja je postavljena poviše nje, zabilježeno je nizom primjera na Vlaškoj njivi (npr. grob 192 s kamenom pločom).[51] Štoviše, preliminarna analiza keramičkih urni koje su pronađene na istočnoj isejskoj nekopoli pokazuje da je u tu svrhu korišten različit spektar oblika i vrsta posuđa, od kojih su neke zastupljene samo jednim primjerkom. Posebno je to evidentno u ranorimskom periodu, što bi sugeriralo da tada nije postojala neka striktna društvena praksa po pitanju izbora keramičke posude koja će poslužiti kao urna, već je na taj aspekt obreda utjecala pojedinačna odluka.[52] Iako je većinom riječ o loncima i pokojem vrču, analogiju prakse polaganja ljudskih ostataka u posudu koja bi najbliže odgovarala posudi za ispijanje većih

placed above it (as in the Goveja grave), has been recorded in a number of examples from Vlaška Njiva, such as grave 192 with a stone slab.[51] Moreover, a preliminary analysis of ceramic urns found at the eastern Issaean necropolis indicates that a different spectrum of vessel shapes and classes was used for this purpose, some of which are represented by only one specimen. This is especially evident in the early Roman period, which might suggest that at that time there was no strict social practice regarding the selection of the ceramic vessel that was to serve as an urn, but rather that aspect of the rite was determined by individual decisions.[52] Although vessels mostly included pots and some jugs, an analogy with the practice of placing human remains in a container that would most closely correspond to a larger

[51] Neobjavljeno, uvid u materijal i dokumentaciju.
[52] Određena standardizacija zamjećuje se tek tijekom 2. st., kada su se kao urne većinom rabili egejski lonci.

[51] Insight into material and documentation, as yet unpublished.
[52] A certain standardisation can be observed only in the 2nd century, when Aegean pots became generally used as urns.

Slika 8. *Posuda – urna iz groba 207 na Vlaškoj njivi u Visu (kampanja 1983. g.)* (snimio: T. Seser, Arheološki muzej u Splitu)
Figure 8 *Vessel – urn from grave 207 in Vlaška Njiva in Vis (1983 campaign)* (pjhoto by: T. Seser, Archaeological Museum in Split)

dimenzija, kao što je slučaj groba s Goveje, nalazimo, npr. u grobu 207 s Vlaške njive (sl. 8).[53] Prema nalazu Trajanova srebrnog denara koji je pronađen ispod urne groba 207, te drugim grobnim nalazima, ukop je moguće datirati najranije u razdoblje 98. – 117. godine,[54] odnosno u drugu polovicu 2. stoljeća.

S obzirom na posebnost posude, pogotovo kada se uzme u obzir reljef, možemo se zapitati je li kroz to izrečena i neka simbolička poruka i može li se ona povezati sa samim pogrebom? Nema sumnje da je u Isi postojao kult Artemide, što je posvjedočeno nizom arheoloških nalaza,[55] no trenutačno

[53] Materijal iz rimskih grobova otkrivenih 1983. godine trenutačno je u pripremi za objavu te zahvaljujemo Arheološkom muzeju u Splitu na suradnji. Za analogiju posude, odnosno urne groba 207 vidi HAYES 1973: 462–463, br. 197–198, T. 90, koji navodi da su posude iz Korinta moguće proizvedene u Patrasu, pa iako su znatno manjih dimenzija, morfološko-dekorativne, ali i fakturalne značajke gotovo posve odgovaraju posudi s Vlaške njive.
[54] BONAČIĆ MANDINIĆ 2014.
[55] KIRIGIN 1996: 107; CAMBI 2002.

drinking vessel, as is the case with the Goveja grave, is found in grave 207 at Vlaška Njiva (Fig. 8), for example.[53] Based on the find of a Trajan silver denarius under the urn in grave 207 and other grave finds, the burial can be dated at the earliest to the period 98 – 117 AD,[54] that is, the second half of the 2nd century.

Given the particularity of the vessel, and especially the relief, we may ask ourselves whether it conveys a symbolic message that can be associated with the funeral rite. There is no doubt that there was a cult of Artemis in Issa, as evidenced by a series of archaeological finds,[55] but currently there are no indications that

[53] Artefacts from Roman graves discovered in 1983 are currently being studied, and we thank the Archaeological Museum in Split for their cooperation. For an analogy of the vessel used as urn of grave 207, see HAYES 1973: 462-463, Nos. 197-198, T. 90, stating that the vessels from Corinth might have been produced in Patras, so although they are considerably smaller in size, their morphological and decorative (as well as textural) features almost entirely correspond to that of the Vlaška Njiva vessel.
[54] BONAČIĆ MANDINIĆ 2014.
[55] KIRIGIN 1996: 107; CAMBI 2002.

ne postoje indicije koje bi upućivale na koji bi način spomenuti kult mogao biti povezan s pogrebnim obredom. S druge strane, ovaj nalaz te kip Dijane koji je u 18. stoljeću zabilježio opat Fefella,[56] mogli bi upućivati na kontinuitet štovanja Artemide – Dijane iz helenističkog u rimsko doba. Ipak, treba uzeti u obzir da je posuda u Isi tek pribavljena i korištena, pa bi njezinu eventualnu simboličko-kultnu funkciju trebalo sagledati i u kontekstu njezina podrijetla, odnosno proizvodnje. U tom bi se smislu mogla predložiti paralela s već spomenutom produkcijom reljefno ukrašenih posuda s prikazom božanstava iz Sagalassosa. Te su posude, a posebno s obzirom na kontinuitet proizvodnje i primijećenu promjenu ukrasnih motiva tijekom vremena (od onih poganskih do onih kršćanskih, a što nije isključivo povezano s tom produkcijom), interpretirane kao ideološki prikaz određenog trenutka te, radije nego indicirati na kultne funkcije,[57] mogu uputiti na sveprisutni religijski simbolizam u rimskodobnoj svakodnevici, odnosno na lokalni simbolički sustav njihovih proizvođača i korisnika.[58] Je li posuda zadržala tu, ideološko-religijsku funkciju i tijekom svojeg „života" u Isi, postajući i ovdje refleks lokalnog simboličkog sustava, ostaje otvorenim, no s obzirom na značenje religije u rimskom svakodnevnom životu, ali i već spomenuto štovanje Artemide – Dijane u Isi, i ta je mogućnost posve izvjesna.

Položaj antičkog paljevinskog groba na predjelu Goveja na južnom dijelu Visa (Karta 1), koji je znatnije udaljen od dosad evidentiranih koncentracija antičkih grobova na nekropolama Vlaška njiva, Martvilo i Mala banda otvara nova pitanja o izgledu i rasprostranjenosti isejskih pogrebnih kra-

the cult could in any way have been connected with the funeral rite. On the other hand, this find, and the statue of Diana recorded in the 18th century by Abbot Fefella[56] might point to the continuity of the worship of Artemis/Diana from the Hellenistic into the Roman era. However, it should be taken into account that the vessel in Issa had just been acquired and used, so its possible symbolic and cult function should be seen in the context of its origin or production. In this sense, a parallel might be proposed with the already mentioned Sagalassos relief ware depicting deities. With particular regard to the continuity of production and the observed change of decorative motifs over time (from pagan to Christian motifs, and not exclusively connected with that ware), these vessels have been interpreted as an ideological representation of a certain moment. Rather than indicating cult functions,[57] they might suggest the ubiquitous religious symbolism in everyday life during the Roman period, that is, a local symbolic system familiar to both the producers and users of the ware.[58] Whether the vessel retained this ideological-religious function during its "life" in Issa, having again become a reflection of the local symbol system, remains open. However, bearing in mind the significance of religion in everyday life during Roman times, as well as the worship of Artemis/Diana in Issa already mentioned, that possibility is also absolutely realistic.

The location of the Roman incineration grave in Goveja in the southern part of Vis (Map 1), which is significantly distant from the previously recorded concentrations of Roman graves in the Vlaška Njiva, Martvilo and Mala Banda necropolises, prompts new questions as to the appearance and distribution

56 KIRIGIN 1996: 107.

57 U pojedinim se kontekstima posude s religijskim prikazima ipak mogu interpretirati i u funkciji kulta, posebno kada su pronađene u sklopu svetišta ili, recimo, u radionicama koje su funkcionirale uz njih (MARTINI 2015: 66–67).

58 TALLOEN, POBLOME 2005: 78.

56 KIRIGIN 1996: 107.

57 In certain contexts, vessels with religious representations can, nevertheless, be interpreted as having a cult function, especially if they were unearthed within a shrine or, for example, in workshops that functioned alongside a shrine (MARTINI 2015: 66-67).

58 TALLOEN, POBLOME 2005: 78.

jolika.[59] Vlaška njiva i Martvilo, istočna i jugozapadna isejska nekropola, na kojima su zabilježeni kontinuiteti ukapanja iz helenističkog u antičko razdoblje, nalaze se gotovo na suprotnom dijelu duboke viške uvale.[60] Grob je teško prostorno povezati i s nekropolom Mala banda, udaljenom oko 1 km zapadnije od prostora Goveje, smještenom na donjim padinama brda Bandirice, u neposrednoj blizini Martvila, gdje dominiraju skeletni ukopi, dijelom u amforama, koji se datiraju od 3. do 7. stoljeća.[61] Pri interpretaciji prostornog konteksta ne pomaže podatak da na predmetnom položaju dosad nisu bili evidentirani arheološki nalazi. Pojava izoliranog groba može se katkad dovesti u kontekst društvene odluke kojom je pojedincu uskraćen dio formalnog obreda.[62] Ipak, iako je možda riječ o izdvojenom, pojedinačnom ukopu, ne može se isključiti ni mogućnost da je u neposrednoj blizini postojalo još antičkih grobova koji tom prigodom nisu zamijećeni ili su potpuno uništeni strojnim iskopima, a govorili bi u prilog postojanju još jednog rimskog groblja, zauvijek izgubljenog višestoljetnom izgradnjom. Razmatrajući njegov prostorni

[59] Osim Vlaške njive, Martvila i Male bande, više rimskih grobova spominje se i na poluotoku Prirovu (KIRIGIN 1999: 410; KIRIGIN et al. 2006: 73, VS 1215.00) kao i na sjevernoj padini Gradine (KIRIGIN et al. 2006: 63, VS 1193.42), no s obzirom na to da je riječ o starijim istraživanjima, nisu poznate sve okolnosti njihova pronalaska. Grobovi izvan konteksta nekropola vrlo su rijetki. Pojedinačni grobovi iz helenističkog razdoblja zabilježeni su iznad uvale Stonca (RAPANIĆ 1960: 42) i na položaju Stagna u središtu Visa (CAMBI, KIRIGIN, MARIN 1980: 66). Jedini pojedinačni rimski grob (u amfori) pronađen je na položaju rimskih termi krajem 19. stoljeća (KIRIGIN 1999: 416). Nasuprot tomu, više rimskih grobova zabilježeno je i izvan grada Ise gdje se povezuju s ruralnim gospodarstvima i naseljima u unutrašnjosti otoka (usp. KIRIGIN et al. 2006: VS 1193.42, VS 1087.00, VS 1113.01, VS 1010.01, VS 1095.01, VS 1093.01, VS 1035.01, VS 1042.01, VS 1053.01; IVČEVIĆ (ur.) 2021: br. 11.1, br. 100.1, br. 86, br. 110, br. 10, br. 94, br. 92, br. 36, br. 101, br. 43, br. 54 na popisu lokaliteta).

[60] Za Vlašku njivu vidi KIRIGIN 1983; UGARKOVIĆ 2019. Za Martvilo vidi ČARGO 2009; CAMBI, KIRIGIN, MARIN 1980; ABRAMIĆ 1949: 14; NIKOLANCI 1969: 64.

[61] ČARGO 2010.

[62] UGARKOVIĆ 2019: 202.

of Issa's burial landscapes.[59] Vlaška Njiva and Martvilo, the eastern and southwestern Issaean necropolises, where the continuity of burials from the Hellenistic to the Roman periods has been recorded, are located almost on the opposite side of the deep cove of Vis.[60] It is difficult to spatially connect the grave with the Mala Banda necropolis, located about 1 km west of Goveja, which lies on the lower slopes of the Bandirica hill, in the immediate vicinity of Martvilo, where skeletal burials prevail, partly in amphorae, dated from the 3rd to the 7th centuries.[61] When interpreting the spatial context, the fact that no archaeological finds have been recorded at the Goveja site is not helpful. The appearance of an isolated grave can sometimes be brought into the context of a social decision by which an individual was (partly) denied a formal ceremony.[62] However, even though it might be a separate, individual burial, the possibility cannot be excluded that there were other Roman graves in the immediate vicinity that remained unnoticed (or were completely destroyed by mechanical excavations), and that these would have confirmed another Roman necropolis, but were forever

[59] In addition to Vlaška Njiva, Martvilo and Mala Banda, several Roman graves have also been mentioned on the Prirovo peninsula (KIRIGIN 1999: 410; KIRIGIN et al. 2006: 73, VS 1215.00), as well as on the northern slope of Gradina (KIRIGIN et al. 2006: 63, VS 1193.42). However, given that these stem from older excavations, not all the circumstances of their discovery are known. Graves outside the context of necropolises are very rare. Individual graves from the Hellenistic period have been recorded above the Stonca cove (RAPANIĆ 1960: 42) and at the Stagna site in the centre of Vis (CAMBI, KIRIGIN, MARIN 1980: 66). The only single Roman grave (in an amphora) was found at the site of the Roman baths at the end of the 19th century (KIRIGIN 1999: 416). In contrast, several Roman graves were also recorded outside the town of Issa, where they are associated with farms and rural settlements in the interior of the island (cf. KIRIGIN et al. 2006: VS 1193.42, VS 1087.00, VS 1113.01, VS 1010.01, VS 1095.01, VS 1093.01, VS 1035.01, VS 1042.01, VS 1053.01; IVČEVIĆ (ed.) 2021: No. 11.1, No. 100.1, No. 86, No. 110, No. 10, No. 94, No. 92, No. 36, No. 101, No. 43, No. 54 in the list of sites).

[60] For Vlaška Njiva, see KIRIGIN 1983; UGARKOVIĆ 2019. For Martvilo, see ČARGO 2009; CAMBI, KIRIGIN, MARIN 1980; ABRAMIC 1949: 14; NIKOLANCI 1969: 64.

[61] ČARGO 2010.

[62] UGARKOVIĆ 2019: 202.

kontekst, položaj grob(lj)a možda je moguće povezati s postojanjem periurbanog rimskog sklopa koji se prostirao na području Goveje.[63] S druge strane, slijedom ustaljenih obrazaca pokapanja uz prigradske komunikacije, moguće je da je odabir lokacije ukopa uvjetovan i trasom potencijalnog antičkog puta koji je iz Ise i više uvale preko predjela Kuta, prateći konfiguraciju padina okolnih brda, vodio prema Zlopolju i ruralnim gospodarskim imanjima smještenima u plodnoj unutrašnjosti otoka.

ZAKLJUČAK

Položaj pronađenih predmeta, koji doista usmjeravaju na njihovo korištenje u grobnom ritualu, upućuje na izolirani grobni nalaz ili pak na još jedno moguće isejsko rimskodobno groblje moguće smješteno uz periurbani naseobinski sklop, što u svakom slučaju otvara nove spoznaje o pogrebnoj topografiji antičke Ise. Iako se pretpostavljena grobna cjelina dijelom uklapa u svojevrsni standardni isejski grobni ansambl rimskog razdoblja, ona dodatno potvrđuje pojedine lokalne specifičnosti samog obreda, što se očituje u korištenju skifa kao urne. Ako posuda, koja zbog svojih dimenzija te iznimnog ukrasa za sada ne nalazi precizne analogije, zaista potječe iz neke pontske ili istočnomediteranske radionice, ona potvrđuje intenziviranje jadranskih kontakta s tim područjem od 2. stoljeća nadalje, i to ne samo kroz import široko rasprostranjenih keramičkih vrsta (poput ES B ili u manjoj mjeri Çandarli posuđem)[64] već i specifičnih predmeta čija, moguće ciljana, akvizicija reflektira specifične želje i/ili potrebe kupca, a koje su, moguće, dijelom reflektirane i kroz njezino korištenje unutar pogrebnog obre-

[63] BILIČIĆ, RADIĆ 1989: br. 60–62; KIRIGIN et al. 2006: 32, 40, VS 1076–1077.

[64] Usp. BORZIĆ, ETEROVIĆ BORZIĆ 2015: 41, posebno za predloženu metodu dopreme.

lost by centuries of construction. Considering its spatial context, the position of the grave (or necropolis) can be associated with the existence of a peri-urban Roman complex that may have stretched over the area of Goveja.[63] On the other hand, following the established patterns of burials along suburban roads, it is possible that the choice of a burial site was conditioned also by the route of a potential antique road that led from Issa and the cove of Vis through Kuta, following the topography of the slopes of the surrounding hills, towards Zlopolje and the rural landholdings located in the fertile interior of the island.

CONCLUSION

The position of unearthed artefacts, which do indeed indicate their use in a burial rite, suggests an isolated grave find, or another possible Issaean Roman necropolis, possibly located next to a peri-urban settlement complex, which in any case enables new understanding of the funerary topography of Roman Issa. Although the assumed burial context partly fits into a kind of standard Issaean burial assemblage of the Roman period, it additionally confirms certain local specificities of the rite itself, which is reflected in the use of a skyphos as an urn. If the vessel, for which no precise analogies have so far been provided, given its size and an exceptional decoration, really originates from a Pontic or an eastern Mediterranean workshop, it testifies to the intensification of Adriatic contacts with that area from the 2nd century onwards, and thus not only through the import of widespread ceramic types (such as ES B or, to a lesser extent, Çandarli ware),[64] but also of specific artefacts, the possibly targeted acquisition of which reflected

[63] BILIČIĆ, RADIĆ 1989: Nos. 60-62; KIRIGIN et al. 2006: 32, 40, VS 1076-1077.

[64] Cf. BORZIĆ, ETEROVIĆ BORZIĆ 2015: 41, especially for the proposed delivery method.

da. S druge strane, njezina posebnost koja se najvećim dijelom očituje kroz reljefni figuralni ukras, mogla bi, za sada, naravno, vrlo oprezno, upućivati na kontinuitet štovanja Artemide/Dijane u Isi.

the specific wishes and/or needs of the buyer, partly reflected in the use of the vessel in the funeral rite. On the other hand, its uniqueness, mostly manifested through the relief figural decoration, might suggest, for now very tentatively, the continuity of the worship of Artemis/Diana in Issa.

Translation and proof-reading: ETNOtrend d.o.o

Kratice / Abbreviations:

LIMC = Kahil, L. 1984, Artémis, in *Lexicon Iconographicum Mythologiae Classicae*, II, 1 (618−753), 2 (442−563), Artemis Velag, Zürich – München.

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INDEKS TJELESNE MASE POPULACIJA ISTOČNE OBALE JADRANA OD ANTIKE DO NOVOG VIJEKA

BODY MASS INDEX IN THE POPULATIONS OF THE EASTERN ADRIATIC COAST FROM ANTIQUITY TO THE MODERN PERIOD

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Indeks tjelesne mase arheoloških populacija dobar je indikator nutritivnog opterećenja organizma te može uputiti na kvalitetu života i zdravlje pojedine populacije i služiti kao usporedba među populacijama. U radu su analizirani koštani ostatci s arheoloških nalazišta s područja istočne obale Jadrana datirani u razdoblja od antike do novog vijeka. Iako je riječ o relativno malom uzorku, rezultati istraživanja pokazali su smanjenje kvalitete života, odnosno tjelesne mase u muškaraca, i to u razdobljima razvijenog i kasnog srednjeg vijeka, a što je u skladu s prethodnim istraživanjima hrvatske populacije. Žene su tijekom svih razdoblja imale sličnu, konstantnu tjelesnu masu, što se osim raspodjelom rada i dostupnosti hrane može objasniti i hormonskim utjecajima te drukčijim metabolizmom masti. Indeks tjelesne mase pokazao se kao dobar indikator za dopunu spoznaja o kvaliteti života i zdravlju arheoloških populacija.

Key words:
body mass index, eastern coast of the Adriatic, antiquity, Middle Ages, Modern Period, quality of life

Body mass index in archaeological populations is a good indicator of the nutritional load of the organism. It can suggest the quality of life and health of a certain population, or it can be used for comparing populations. Bone remains from archaeological sites on the eastern coast of the Adriatic, dated to the period from antiquity to the Modern Period, were analyzed in the paper. Although it is a relatively small sample, the results of the research showed a decrease in the quality of life, that is, body mass for males, in the periods of the High and Late Middle Ages, which is in line with previous research into Croatian population. During all periods, females had similar, constant body mass, which can be explained not only by the division of labor and availability of food, but also by hormonal influences and different fat metabolism. Body mass index proved to be a good indicator for supplementing knowledge about the quality of life and health of archaeological populations.

UVOD

Razvoj metoda za izračun tjelesne mase (TM) te samim time i indeksa tjelesne mase (ITM) iz koštanih ostataka arheoloških populacija omogućio je nove vrste analiza iz kojih se može doznati više o kvaliteti života i zdravlju povijesnih populacija. Ovakve analize dopuna su grobnim prilozima i načinima ukopa u spoznajama o društvenom statusu pojedinca i populacije jer se smatra da je ITM dobar indikator nutritivnog opterećenja.[1]

Kako bi se procijenio utjecaj životnog stila na kostur i zube, antropolozi se služe brojnim indikatorima, poput izraženosti mišićnih hvatišta, osteoartritisa, bolesti zuba i alveola, pokazatelja subadultnog stresa, patoloških promjena i sl., no jedan od važnih indikatora je i tjelesna masa jer je upravo ona jedna od sila koje djeluju na kostur i utječu na njegove promjene. Na povećanje ili smanjenje tjelesne mase utječu ishrana, aktivnosti i ponašanje čovjeka.[2] Većina istraživača smatra da tjelesna masa utječe više na kostur donjih udova nego gornjih,[3] te da su dimenzije zglobnih ploha bolji indikator promjena u tjelesnoj masi od drugih mjera kostiju, poput širine dijafiza dugih kostiju.[4] U skladu s Wolffovim zakonom[5] kost će se tijekom života remodelirati kao odgovor na sile koje na nju utječu, a među te sile mogu se ubrojiti tjelesna težina, duljina kosti, aktivnosti i sl.[6]

Istraživanja TM-a i ITM-a na arheološkim populacijama u svijetu su brojna. Sva istraživanja proizlaze iz postojećih metoda te brojnih evaluacijskih metoda postojećih formula za izračun navedenih vrijednosti. Tako su istraživanja pokazala da okrugliji oblik bedrene i goljenične kosti na razini hranidbenog otvo-

1 COLE 1991: 83–111; FERRO-LUZZI et al. 1992: 173–186.
2 DANESHVARI 2011: 26.
3 AIELLO, DEAN 1994: 257–268; RUFF 2000: 269–290.
4 RUFF 1991: 81–105; RUFF, TRINKAUS, HOLLIDAY 1997: 173–176; TRINKAUS, CHURCHILL, RUFF 1994: 1–34.
5 WOLF 1870: 389–453.
6 DAMUTH, MACFADDEN 1990: 1–10; DANESHVARI 2011: 26.

INTRODUCTION

The development of methods for calculating body mass (BM) and thus also body mass index (BMI) from the bone remains of archaeological populations has enabled new types of analysis revealing more about the quality of life and health of historical populations. Such analyses complement the grave goods and methods of burial regarding the knowledge about the social status of an individual and population, because it is considered that BMI is a good indicator of nutritional load.[1]

In order to assess the influence of lifestyle on the skeleton and teeth, anthropologists use numerous indicators, such as the characteristics of muscle attachment sites, osteoarthritis, diseases of the teeth and alveoli, indicators of subadult stress, pathological changes, etc., but one of the important indicators is body mass because it is one of the forces that act on the skeleton and influence its changes. The increase or decrease in body weight is influenced by diet, activities and human behavior.[2] Most researchers believe that body mass affects the skeleton of the lower limbs more than the upper ones,[3] and that the dimensions of the joint surfaces are a better indicator of changes in body mass than other bone measurements, such as the width of the diaphyses of long bones.[4] According to Wolff's law,[5] bone will be remodeled over time in response to the forces affecting it, and these forces can include body weight, bone length, activities, etc.[6]

There are numerous studies of BM and BMI in archaeological populations in the world. All the research stems from the existing methods and numerous evaluation methods of existing formulas for calculating the specified values. Thus, research has shown that the rounder shape of the femur and

1 COLE 1991: 83–111; FERRO-LUZZI et al. 1992: 173-186.
2 DANESHVARI 2011: 26.
3 AIELLO, DEAN 1994: 257-268; RUFF 2000: 269-290.
4 RUFF 1991: 81-105; RUFF, TRINKAUS, HOLLIDAY 1997: 173-176; TRINKAUS, CHURCHILL, RUFF 1994: 1–34.
5 WOLF 1870: 389-453.
6 DAMUTH, MACFADDEN 1990: 1-10; DANESHVARI 2011: 26.

ra upućuje na povećanje mehaničkog stresa, a koje Bennett[7] povezuje s povećanjem tjelesne mase pri prelasku na poljoprivredu. Ova teorija nije općeprihvaćena jer su neki istraživači[8] zamijetili upravo suprotan učinak, odnosno da se okrugliji oblik kosti javlja u osoba koje su izložene nižem mehaničkom stresu. Larsen[9] je zamijetio da se u vrijeme prelaska na poljoprivredu smanjuje prosječna tjelesna visina zbog većeg nutricionalnog stresa, a u korelaciji s većim fiziološkim stresom i nekvalitetnijom prehranom zamijetio je i povećanje broja karioznih lezija, veću učestalost periostitisa i osteoartritisa. Kao kod Larsena, i kod Williamsona[10] zamijećena je veća količina osteoartritisa u pred-poljoprivrednim društvima nego nakon prelaska na poljoprivredu, što upućuje na fizički znatno zahtjevniji život lovaca – sakupljača.[11] Isto tako, zamijećen je i pad prosječne tjelesne visine, i to više u žena, odnosno manje dimenzije postkranijalnog kostura kod poljoprivrednih društava za razliku od pred-poljoprivrednih.[12]

Larsen[13] smatra da su čimbenici koji su utjecali na smanjenje dimenzija postkranijalnog kostura te posljedično pad prosječne tjelesne visine: niži mehanički stres (što objašnjava i zamijećeno smanjenje osteoartritisa) te povećani nutricionalni stres. Niži mehanički stres na organizam utječe na smanjenje prosječne tjelesne visine i smanjenje robusnosti kosti. Nutricionalni stres najvjerojatnije je posljedica povećanja prehrane temeljene na uglikohidratima te smanjenja unosa proteina koji utječu na metabolizam i razvoj kostura.[14] S povećanjem gustoće populacije koja je pratila poljoprivredna društva povećava se i izloženost uzročnicima bolesti te kombinacija svih navedenih stresora doprinosi smanjenju prosječne

tibia at the level of the nutrient foramen indicates an increase in mechanical stress, which Bennett[7] associates with an increase in body weight when transition to agriculture happened. This theory is not generally accepted because some researchers[8] have noticed the exact opposite effect, namely that a rounder bone shape occurs in persons who are exposed to lower mechanical stress. Larsen[9] noticed that at the time of the transition to agriculture, the average body height decreased due to higher nutritional stress, and in correlation with higher physiological stress and poorer nutrition, he also noticed an increase in the number of carious lesions, a higher incidence of periostitis and osteoarthritis. As with Larsen and Williamson,[10] higher incidence of osteoarthritis was observed in pre-agricultural societies than after the transition to agriculture, suggesting much more physically demanding life of hunter-gatherers.[11] Likewise, a drop in average body height was observed, more so in females, that is, smaller dimensions of the postcranial skeleton in agricultural societies, as opposed to pre-agricultural ones.[12]

Larsen[13] believes that factors that influenced the reduction of the dimensions of the postcranial skeleton and the consequent drop in average body height are: lower mechanical stress (which also explains the observed decrease in osteoarthritis) and increased nutritional stress. Lower mechanical stress affects the reduction of the average body height and the reduction of bone robustness. Nutritional stress is most likely the result of an increase in carbohydrate-based diet and a decrease in protein intake, which affect metabolism and skeletal development.[14] With the increase in population density that accompanied agricultural societies, the exposure to disease-causing agents also increased, and the combination of all the above-mentioned stressors contributed to a

7 DANESHVARI 2011: 148 *prema* BENNETT 1973.
8 LOVEJOY, TRINKAUS 1980: 465–470.
9 LARSEN 1982: 241–245.
10 WILLIAMSON 2000: 890–900.
11 DANESHVARI 2011: 26, 148.
12 LARSEN 1982: 241–245.
13 LARSEN 1982: 241–245.
14 STINI 1969: 417–426; FRISANCHO et al. 1973: 255–262.

7 DANESHVARI 2011: 148 according to BENNETT 1973.
8 LOVEJOY, TRINKAUS 1980: 465-470.
9 LARSEN 1982: 241-245.
10 WILLIAMSON 2000: 890-900.
11 DANESHVARI 2011: 26, 148.
12 LARSEN 1982: 241-245.
13 LARSEN 1982: 241-245.
14 STINI 1969: 417-426; FRISANCHO et al. 1973: 255-262.

tjelesne visine.[15]

Kada se promotre istraživanja na hrvatskim populacijama, zamjetno je da prelazak na poljoprivredu odnosno povećanje unosa ugljikohidrata utječe na zdravlje populacije, osobito na žene, koje su jele više ugljikohidratnih obroka dnevno, dok su muškarci jeli manje obroka, ali bogatijih proteinima, što je izravno utjecalo na pojavnost pojedinih bolesti, poput zubnog karijesa.[16]

S prijelazom na poljoprivredu postojala je mogućnost prikupljanja i pohrane namirnica, što je omogućilo dostupnost hrane tijekom cijele godine te smanjilo oscilacije u težini i pridonijelo povećanju tjelesne mase. Nadalje, to je pridonijelo i stratifikaciji stanovništva na one koji su imali više zaliha hrane i bolju dostupnost od drugih u istoj zajednici,[17] a što se očitovalo i u tjelesnoj masi.[18]

No, nije samo vrsta prehrane utjecala na promjene u tjelesnoj masi i tjelesnoj visini, na njih su utjecale i dostupnost i količina hrane, te je moguće općenito kazati da nedostupnost hrane utječe na smanjenje tjelesne težine, a dostupnost na njezino povećanje.[19] U jednom je istraživanju pokazano kako se ženama prelaskom na prehranu temeljenu većinom na ugljikohidratima povećala tjelesna masa (u istraživanju je zamijećen veći broj žena s ITM > 30), a također je zamijećeno povećanje zubnog karijesa, što oboje može upućivati na veću dostupnost ugljikohidrata.[20]

Do sada u hrvatskoj populaciji nisu rađena istraživanja ITM-a ni na jednom arheološkom nalazištu, niti su ona uspoređena uzevši u obzir prostorno-vremenske okolnosti. No, s druge su se strane brojna istraživanja bavila kvalitetom života i zdravljem hrvatskih populacija, te čine vrijedan izvor spoznaja o životima naših predaka. Tako istraživači zamjećuju

[15] LARSEN 1982: 241–245.
[16] ŠLAUS 2006: 110–117; ANTERIĆ 2014: 259–286.
[17] DANESHVARI 2011: 11–12.
[18] DANFORTH 1999: 10–15.
[19] LARSEN 1982: 241–245.
[20] LARSEN 1982: 241–245; DANESHVARI 2011: 159.

decrease in average body height.[15]

When looking at research into Croatian populations, it is noticeable that the transition to agriculture, i.e. the increase in carbohydrate intake, affects the health of the population, especially women, who ate more carbohydrate meals per day, while men ate fewer meals, but more protein-rich, which directly affected incidence of certain diseases, such as dental caries.[16]

With the transition to agriculture, there was the possibility of collecting and storing food, which enabled the availability of food throughout the year and reduced fluctuations in weight and also contributed to an increase in body mass. Furthermore, this contributed to the stratification of the population into those who had more food supplies and better food availability than others in the same community,[17] which was also reflected in body mass.[18]

However, not only the type of diet influenced changes in body weight and body height, they were also influenced by the availability and quantity of food, and it is possible to say in general that the unavailability of food affects the reduction of body weight, while the food availability increases it.[19] One study showed that when women switched to a diet based mostly on carbohydrates, their body mass increased (in the study, a greater number of women with a BMI>30 were observed), and an increase in dental caries was also observed, which both may indicate a greater availability of carbohydrates.[20]

Until now, there have been no studies of BMI in the Croatian population at archaeological sites, nor have they been compared taking into account the spatial and chronological circumstances. However, on the other hand, numerous studies have dealt with the quality of life and health of the Croatian populations, and constitute a valuable source of knowledge about the

[15] LARSEN 1982: 241-245.
[16] ŠLAUS 2006: 110-117; ANTERIĆ 2014: 259-286.
[17] DANESHVARI 2011: 11-12.
[18] DANFORTH 1999: 10-15.
[19] LARSEN 1982: 241-245.
[20] LARSEN 1982: 241-245; DANESHVARI 2011: 159.

veću pojavnost zubnog karijesa i drugih zubnih oboljenja u srednjem vijeku u odnosu na antiku, veću zastupljenost hipoplazije zubne cakline i *cribra orbitalia* u kasnoantičkom i kasnosrednjovjekovnom uzorku nego u starohrvatskome, veću zastupljenost periostitisa u kasnosrednjovjekovnom razdoblju u odnosu na kasnoantički i starohrvatsku populaciju te veću smrtnost u kasnosrednjovjekovnom razdoblju nego u starohrvatskom razdoblju.[21] Kako bi se ova istraživanja upotpunila i uputilo na mogućnost uporabe još jedne varijable u proučavanju arheoloških populacija, cilj je ovog istraživanja upotpuniti dosadašnje spoznaje o životu hrvatskih populacija, sagledavajući promjene među populacijama s pomoću indeksa tjelesne mase.

MATERIJALI I METODE

Materijali

U istraživanje su uključeni nalazi sa sljedećih lokaliteta iz antike: Dominisova 5,[22] Slano,[23] Solin EVN, Solin – Smiljanovac[24] i Solin – Sv. Duje cesta.[25] Iz ranosrednjovjekovnog razdoblja analizirani su koštani ostatci s nalazišta Donja Rupotina – Vlačine,[26] Trogir – Trpimirova, Otres,[27] Rižinice,[28] Svećurje – Žestinj,[29] Ostrovica – Greblje[30] i Bijaći – Stombrate.[31] Groblja koja su dijelom svojom datacijom zahvaćala i rani i kasni srednji vijek, ali su pretežito bila u razvijenom srednjem vijeku, za potrebe ovog rada svrstana su u razvijeni srednji vijek: Jagnilo Greblje, Strožanac – Gospa u Siti[32] i

lives of our ancestors. Thus, the researchers note a higher incidence of dental caries and other dental diseases in the Middle Ages compared to antiquity, a higher prevalence of tooth enamel hypoplasia and *cribra orbitalia* in the late antique and late medieval sample than in the old Croatian one, a higher prevalence of periostitis in the late medieval period compared to the late antique and old Croatian population and higher mortality in the late medieval period than in the old Croatian period.[21] In order to complete this research and point to the possibility of using another variable in the study of archaeological populations, the goal of this research is to complement the previous knowledge about the life of Croatian populations, observing the changes between populations reflected in body mass index.

MATERIALS AND METHODS

Materials

The research included finds from the following sites dating to antiquity: Dominisova 5,[22] Slano,[23] Solin EVN, Solin-Smiljanovac[24] and Solin-Sv. Duje road.[25] Bone remains from the early medieval period were analyzed from the sites of Donja Rupotina-Vlačine,[26] Trogir-Trpimirova, Otres,[27] Rižinice,[28] Svećurje-Žestinj,[29] Ostrovica-Greblje[30] and Bijaći-Stombrate.[31] The cemeteries, which in part date to the Early and Late Middle Ages, but predominantly belong to the High Middle Ages, for the purposes of this paper were classified into the High Middle Ages: Jagnilo Greblje, Strožanac-Gospa u Siti[32] and

21 ŠLAUS 2006: 98–107, 110–117, 135–138; ANTERIĆ 2014: 259–286.
22 KATUNARIĆ KIRJAKOV 2018.
23 MAROVIĆ 1956: 9–30.
24 GALIOT 2011.
25 KATAVIĆ, JERONČIĆ 2014: 81–112.
26 JELOVINA 1976.
27 ZEKAN 1983: 33–34.
28 GUDELJ 2014: 573–574.
29 BURIĆ 2015: 165–208.
30 ANTERIĆ et al. 2015: 14.
31 BURIĆ 1992: 55–57.
32 BLAŽEVIĆ 2017.

21 ŠLAUS 2006: 98-107, 110-117, 135-138; ANTERIĆ 2014: 259-286.
22 KATUNARIĆ KIRJAKOV 2018.
23 MAROVIĆ 1956: 9-30.
24 GALIOT 2011.
25 KATAVIĆ JERONČIĆ 2014: 81-112.
26 JELOVINA 1976.
27 ZEKAN 1983: 33-34.
28 GUDELJ 2014: 573-574.
29 BURIĆ 2015: 165-208.
30 ANTERIĆ et al. 2015: 14.
31 BURIĆ 1992: 55-57.
32 BLAŽEVIĆ 2017.

Solin Rupotine – Crkvine.[33] U kasni srednji vijek svrstani su: Martinovići – Velika Gospa,[34] Gornji Koljani – Crkvina,[35] Šopot Benkovac[36] i Kamenmost – Kaldrma.[37] U rani novi vijek svrstani su: Otok – Vuletina Rupa Grebčine[38] i Dominikanski samostan svete Katarine. U kasni novi vijek svrstana je Bračević Kapelica. Naknadno su zbog malog uzorka spojeni ranonovovjekovni i kasnonovovjekovni lokaliteti.

Metode

Koštani ostatci oprani su, postavljeni u anatomski položaj, izmjereni standardnim osteološkim mjerama te su im procijenjeni spol, dob, patološke i traumatske promjene.[39] U analizu su uvršteni kosturi koji su završili rast, koji su bili izvrsno očuvani te im je bilo moguće procijeniti spol i izmjeriti mjere bedrene kosti. Također su za ovo istraživanje odabrani samo kosturi bez patoloških i traumatskih promjena koje bi mogle utjecati na mjerenja i procjenu spola.

Mjere kostiju u centimetrima (duljina bedrene kosti i promjer glave bedrene kosti), uvrštene su u jednadžbe za izračun TM-a, odnosno prosječne tjelesne visine te ITM-a. ITM je korišten kao heuristički postupak za proučavanje razlika u težini s obzirom na prosječnu tjelesnu visinu. Tjelesna masa izračunana je na temelju promjera glave bedrene kosti prema Ruffovoj metodi, kako slijedi:

Tjelesna masa žene =
2,18 x promjer bedrene kosti – 35,8

Tjelesna masa muškarci =
2,18 x promjer bedrene kosti – 66,7[40]

Solin Rupotine-Crkvine.[33] The following sites were classified into the Late Middle Ages: Martinovići-Velika Gospa,[34] Gornji Koljani-Crkvina,[35] Šopot Benkovac[36] and Kamenmost-Kaldrma.[37] The following sites were classified into the Early Modern Period: Otok-Vuletina Rupa Grebčine[38] and the Dominican monastery of St. Catherine. Bračević Kapelica is dated to the Late Modern Period. Subsequently, Early and Late Modern Period sites were joined due to the small sample.

Methods

Bone remains were washed, placed in anatomical position, measured according to osteological standards, and their sex, age, pathological and traumatic changes were assessed.[39] The analysis included skeletons that had completed growth, were excellently preserved, and it was possible to assess their sex and measure the femur measurements. Also, only skeletons without pathological and traumatic changes that could affect measurements and sex assessment were selected for this research.

Bone measurements in centimeters (femur length and diameter of the femoral head) were included in the equations for calculating BM, that is, average body height and BMI. BMI was used as a heuristic procedure to study differences in weight with respect to average body height. Body mass was calculated based on the femoral head diameter according to Ruff's method, as follows:

Body mass, females =
2.18 x femoral head diameter – 35.8

Body mass, males =
2.8 x femoral head diameter – 66.7[40]

33 ŠARIĆ 1992: 118–120.
34 PERKIĆ, PERKIĆ 1998.
35 JURČEVIĆ 2008: 135–150.
36 BURIĆ 1994: 45–50.
37 ANĐELINOVIĆ et al. 2009.
38 LIBRENJAK 2012.
39 AUFDERHEIDE, RODRÍGUEZ-MARTÍN, LANGSJOEN 1998; ISCAN, STEYN 2013.
40 RUFF et al. 2012: 11.

33 ŠARIĆ 1992: 118-120.
34 PERKIĆ, PERKIĆ 1998.
35 JURČEVIĆ 2008:135-150.
36 BURIĆ 1994: 45-50.
37 ANĐELINOVIĆ et al. 2009.
38 LIBRENJAK 2012.
39 AUFDERHEIDE, RODRÍGUEZ-MARTÍN, LANGSJOEN 1998; ISCAN, STEYN 2013.
40 RUFF et al. 2012: 11.

Prosječna tjelesna visina također je izračunana prema Ruffovim jednadžbama:[41]

Prosječna tjelesna visina muškaraca =
2,72 x duljina bedrene kosti + 42,85 ± 3,21

Prosječna tjelesna visina žena =
2,69 x duljina bedrene kosti + 43,56 ± 2,92

Navedene su jednadžbe za izračun prosječne tjelesne visine odabrane jer je Ruff svoje istraživanje temeljio na europskim populacijama u širem vremenskom razdoblju od mezolitika do 20. stoljeća[42] te za razliku od ostalih jednadžbi, ne procjenjuju prosječnu tjelesnu visinu. S druge strane, često primjenjivane formule Trottera i Glessera[43] napravljene su za američku bjelačku populaciju, te se smatra da su zamijećene pogreške u izračunu visine rezultat drukčijih proporcija među udovima i visinom.[44] Slično je i s jednadžbama Sjøvolda[45] te Formicola i Franceschija[46] koji su radili na europskoj neolitičkoj populaciji.[47]

Indeks tjelesne mase izračunan je prema formuli dostupnoj na stranici Svjetske zdravstvene organizacije (WHO), kako slijedi:[48]

$$ITM = \frac{tjelesna\ težina\ (kg)}{(tjelesna\ težina\ (m))^2}$$

Ne uzimajući u obzir spol i dob, ITM može se podijeliti u sljedeće kategorije: < 18,5 pothranjenost, 18,5 – 24,9 normalna (idealna) tjelesna težina, 25,0 – 29,9 prekomjerna tjelesna težina, 30,0 – 34,9 pretilost tipa I, 35,0 – 39,9 pretilost tipa II, > 40 pretilost tipa III.

Za utvrđivanje razlika među pojedinim gru-

Average body height was also calculated according to Ruff's equations:[41]

Average height, males =
2.72 x femur length + 42.85 ± 3.21

Average height, females =
2.69 x femur length + 43.56 ± 2.92

The above equations for calculating the average body height were chosen because Ruff based his research on European populations in a wider time span from the Mesolithic to the 20th century, [42] and unlike other equations, they do not overestimate the average body height. On the other hand, the frequently applied formulas of Trotter and Glesser[43] were made for the American white population, and it is considered that the observed errors in height calculation are the result of different proportions between limbs and height.[44] It is similar with the equations of Sjøvold[45] or Formicolo and Franceschi[46] who worked on the European Neolithic population.[47]

Body mass index was calculated according to the formula available on the World Health Organization (WHO) website, as follows:[48]

$$BMI = \frac{body\ weight\ (kg)}{(body\ height\ (m))^2}$$

Without considering sex and age, BMI can be divided into the following categories: <18.5 underweight, 18.5 – 24.9 normal (ideal) body weight, 25.0 – 29.9 overweight, 30.0 – 34.9 type I obesity, 35.0 –39.9 type II obesity, > 40 type III obesity.

Analysis of variance (ANOVA) was used

41 RUFF et al. 2012: 6.
42 RUFF et al. 2012: 1–17.
43 TROTTER, GLESER 1952: 463–514.
44 FORMICOLA 1993: 351–358.
45 SJØVOLD 1990: 431–447.
46 FORMICOLA, FRANCESCHI 1996: 83–88.
47 RUFF et al. 2012: 6–7.
48 WHO 2023.

41 RUFF et al. 2012: 6.
42 RUFF et al. 2012: 1-17.
43 TROTTER, GLESER 1952: 463-514.
44 FORMICOLA 1993: 351-358.
45 SJØVOLD 1990: 431-447.
46 FORMICOLA, FRANCESCHI 1996: 83-88.
47 RUFF et al. 2012: 6-7.
48 WHO 2023.

pama (spol i razdoblje) korištena je analiza varijance (ANOVA). Razina statističke značajnosti postavljena je na $P \leq 0,05$.

to determine differences between individual groups (sex and period). The level of statistical significance was set at $P \leq 0.05$.

REZULTATI

U tablici 1 prikazani su podatci o indeksu tjelesne mase po razdobljima.

RESULTS

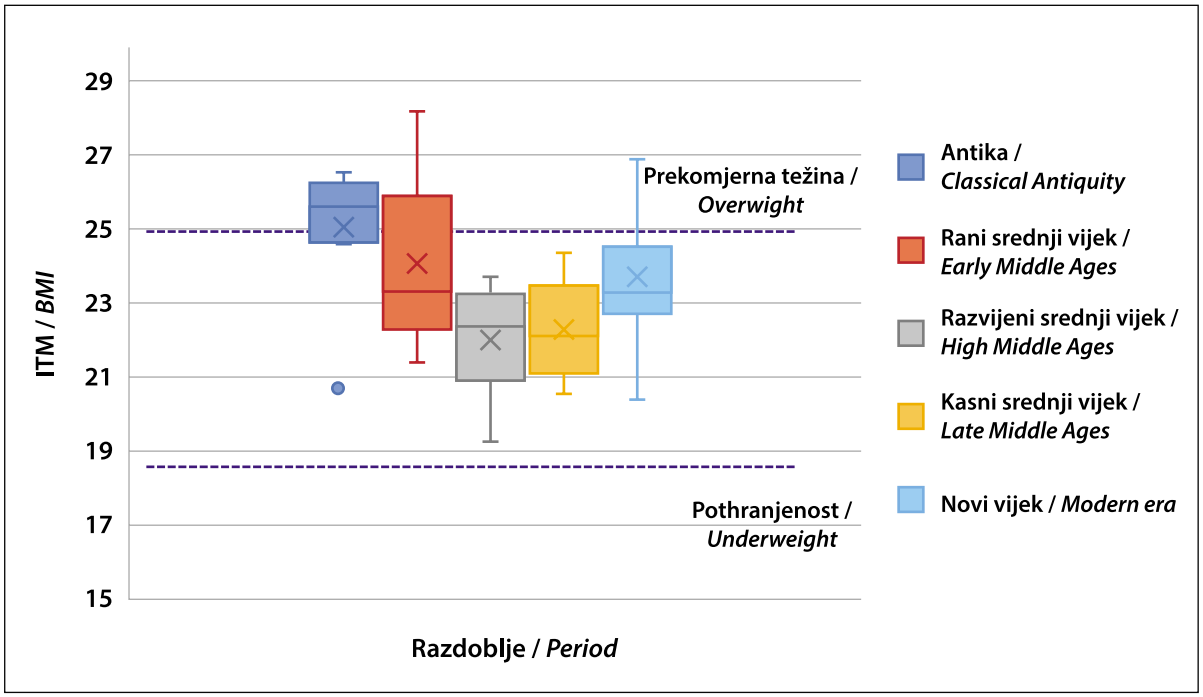
Table 1 shows data on body mass index by period.

TABLICA 1. *Indeks tjelesne mase od antike do novog vijeka* (izradila: Ž. Bašić)
TABLE 1 *Body mass index from antiquity to the Modern Period* (made by: Ž. Bašić)

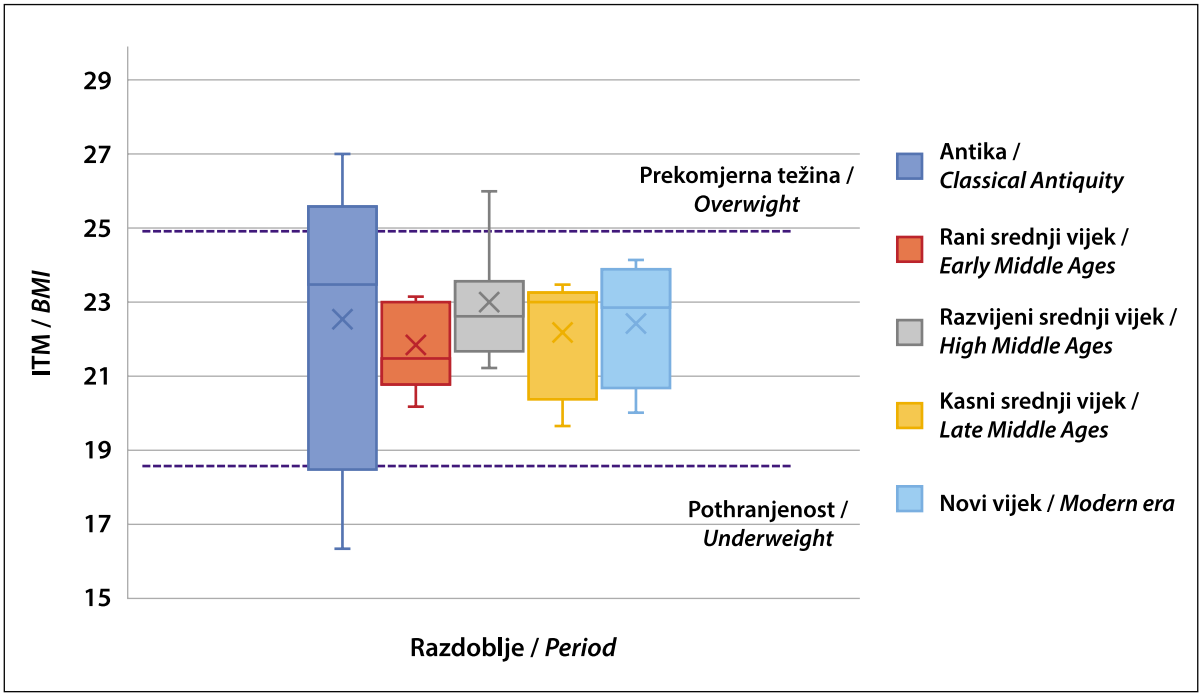
Razdoblje / *Period*	**Medijan ITM muškarci (raspon); n / *Median BMI men (range); n***	**Medijan ITM žene (raspon); n / *Median BMI women (range); n***	**Medijan ITM ukupno (raspon); n / *Median BMI total (range); n***
Antika / *Classical Antiquity*	26,2 (21,7–27,9); 10	22,1 (16,5–27,5); 5	25 (16,5–27,9); 15
Rani srednji vijek / *Early Middle Ages*	25,1 (21,8–29,4); 16	22,1 (20,5–23,8); 9	24 (20,5–29,4); 25
Razvijeni srednji vijek / *High Middle Ages*	22,7 (19,7–24,6); 10	23,2 (21,6–26,6); 9	22,9 (19,7–26,6); 19
Kasni srednji vijek / *Late Middle Ages*	23,0 (21,4–24,8); 8	22,4 (19,9–24,0); 5	22,8 (19,9–24,8); 13
Novi vijek / *Modern era*	24,5 (2,74–28,4); 11	22,8 (20,3–24,6); 4	24,0 (20,3–28,4); 15

Grafički su prikazane promjene u indeksu tjelesne mase u promatranim razdobljima (Sl. 1 i 2).

Changes in body mass index in the observed periods are shown graphically (Fig. 1 and 2).



SLIKA 1. *Indeks tjelesne mase muškaraca od antike do novog vijeka* (izradila: Ž. Bašić)
FIGURE 1 *Body mass index for males from antiquity to the Modern Period* (made by: Ž. Bašić)



Slika 2. *Indeks tjelesne mase žena od antike do novog vijeka* (izradila: Ž. Bašić)
Figure 2 *Body mass index for females from antiquity to the Modern Period* (made by: Ž. Bašić)

Vidljiva je statistički značajna razlika u ITM-u za muškarce među razdobljima antike i razvijenog i kasnog srednjeg vijeka (F = 5,282, P = 0,001) (tab. 2).

A statistically significant difference in BMI for males is visible between the periods of antiquity and the High and Late Middle Ages (F = 5.282, P = 0.001) (Tab. 2).

Tablica 2. *Rezultati Post Hoc Tukey testa za muškarce u različitim razdobljima* (izradila: Ž. Bašić)
Table 2 *Post Hoc Tukey test results for males in different periods* (made by: Ž. Bašić)

Usporedba po parovima (medijan) / *Pairwise comparison (median)*		**$HSD_{0,05}$ = 2,469 $HSD_{0,01}$ = 2,999**	**$Q_{0,05}$ =4,002 $Q_{0,01}$ = 4,862**
Antika: Rani srednji vijek / *Classical Antiquity: Early Middle Ages*	M_{Antika} / $M_{Classical\ Antiquity}$ = 26,20 $M_{Rani\ srednji\ vijek}$ / $M_{Early\ Middle\ Ages}$ = 25,07	1,13	Q = 1,83 (*P* = 0,695)
Antika: Razvijeni srednji vijek / *Classical Antiquity: High Middle Ages*	M_{Antika} / $M_{Classical\ Antiquity}$ = 26,20 $M_{Razvijeni\ srednji\ vijek}$ / $M_{High\ Middle\ Ages}$ = 22,73	3,47	Q = 5,62 (*P* = 0,002)*
Antika: Kasni srednji vijek / *Classical Antiquity: Late Middle Ages*	M_{Antika} / $M_{Classical\ Antiquity}$ = 26,20 $M_{Kasni\ srednji\ vijek}$ / $M_{Late\ Middle\ Ages}$ = 22,96	3,24	Q = 5,25 (*P* = 0,005)*
Antika: Novi vijek / *Classical Antiquity: Modern era*	M_{Antika} / $M_{Classical\ Antiquity}$ = 26,20 $M_{Novi\ vijek}$ / $M_{Modern\ era}$ = 24,51	1,69	Q = 2,74 (*P* = 0,311)
Rani srednji vijek: Razvijeni srednji vijek / *Early Middle Ages: High Middle Ages*	$M_{Rani\ srednji\ vijek}$ / $M_{Early\ Middle\ Ages}$ = 25,07 $M_{Razvijeni\ srednji\ vijek}$ / $M_{High\ Middle\ Ages}$ = 22,73	2,34	Q = 3,79 (*P* = 0,071)
Rani srednji vijek: Kasni srednji vijek / *Early Middle Ages: Late Middle Ages*	$M_{Rani\ srednji\ vijek}$ / $M_{Early\ Middle\ Ages}$ = 25,07 $M_{Kasni\ srednji\ vijek}$ / $M_{Late\ Middle\ Ages}$ = 22,96	2,11	Q = 3,41 (*P* = 0,128)
Rani srednji vijek: Novi vijek / *Early Middle Ages: Modern era*	$M_{Rani\ srednji\ vijek}$ / $M_{Early\ Middle\ Ages}$ = 25,07 $M_{Novi\ vijek}$ / $M_{Modern\ era}$ = 24,51	0,56	Q = 0,91 (*P* = 0,967)
Razvijeni srednji vijek: Kasni srednji vijek / *High Middle Ages: Late Middle Ages*	$M_{Razvijeni\ srednji\ vijek}$ / $M_{High\ Middle\ Ages}$ = 22,73 $M_{Kasni\ srednji\ vijek}$ / $M_{Late\ Middle\ Ages}$ = 22,96	0,23	Q = 0,38 (*P* = 0,999)
Razvijeni srednji vijek: Novi vijek / *High Middle Ages: Modern era*	$M_{Razvijeni\ srednji\ vijek}$ / $M_{High\ Middle\ Ages}$ = 22,73 $M_{Novi\ vijek}$ / $M_{Modern\ era}$ = 24,51	1.78	Q = 2,88 (*P* = 0,263)
Kasni srednji vijek: Novi vijek / *Late Middle Ages: Modern era*	$M_{Kasni\ srednji\ vijek}$ / $M_{Late\ Middle\ Ages}$ = 22,96 $M_{Novi\ vijek}$ / $M_{Modern\ era}$ = 24,51	1,55	Q = 2,51 (*P* = 0,401)

tablica 3. *Rezultati Post Hoc Tukey testa za žene u različitim razdobljima* (izradila: Ž. Bašić)
table 3 *Post Hoc Tukey test results for females in different periods* (made by: Ž. Bašić)

Usporedba po parovima / *Pairwise comparison (median)*		**$HSD_{0,05}$ = 2,215 $HSD_{0,01}$ = 2,672**	**$Q_{0,05}$ =3,945 $Q_{0,01}$ = 4,759**
Antika: Rani srednji vijek / *Classical Antiquity: Early Middle Ages*	M_{Antika} / $M_{Classical\ Antiquity}$ = 25,00 $M_{Rani\ srednji\ vijek}$ / $M_{Early\ Middle\ Ages}$ = 23,98	1,02	Q = 1,81 (*P* = 0,704)
Antika: Razvijeni srednji vijek / *Classical Antiquity: High Middle Ages*	M_{Antika} / $M_{Classical\ Antiquity}$ = 25,00 $M_{Razvijeni\ srednji\ vijek}$ / $M_{High\ Middle\ Ages}$ = 22,94	2,06	Q = 3,67 (*P* = 0,080)
Antika: Kasni srednji vijek / *Classical Antiquity: Late Middle Ages*	M_{Antika} / $M_{Classical\ Antiquity}$ = 25,00 $M_{Kasni\ srednji\ vijek}$ / $M_{Late\ Middle\ Ages}$ = 22,76	2,24	Q = 3,99 (*P* = 0,046)*
Antika: Novi vijek / *Classical Antiquity: Modern era*	M_{Antika} / $M_{Classical\ Antiquity}$ = 25,00 $M_{Novi\ vijek}$ / $M_{Modern\ era}$ = 24,06	0,94	Q = 1,67 (*P* = 0,760)
Rani srednji vijek: Razvijeni srednji vijek / *Early Middle Ages: High Middle Ages*	$M_{Rani\ srednji\ vijek}$ / $M_{Early\ Middle\ Ages}$ = 23,98 $M_{Razvijeni\ srednji\ vijek}$ / $M_{High\ Middle\ Ages}$ = 22,94	1,05	Q = 1,86 (*P* = 0,680)
Rani srednji vijek: Kasni srednji vijek / *Early Middle Ages: Late Middle Ages*	$M_{Rani\ srednji\ vijek}$ / $M_{Early\ Middle\ Ages}$ = 23,98 $M_{Kasni\ srednji\ vijek}$ / $M_{Late\ Middle\ Ages}$ = 22,76	1,22	Q = 2,18 (*P* = 0,540)
Rani srednji vijek: Novi vijek / *Early Middle Ages: Modern era*	$M_{Rani\ srednji\ vijek}$ / $M_{Early\ Middle\ Ages}$ = 23,98 $M_{Novi\ vijek}$ / $M_{Modern\ era}$ = 24,06	0,08	Q = 0,14 (*P* = 0,999)
Razvijeni srednji vijek: Kasni srednji vijek / *High Middle Ages: Late Middle Ages*	$M_{Razvijeni\ srednji\ vijek}$ / $M_{High\ Middle\ Ages}$ = 22,94 $M_{Kasni\ srednji\ vijek}$ / $M_{Late\ Middle\ Ages}$ = 22,76	0,18	Q = 0,31 (*P* = 0,999)
Razvijeni srednji vijek: Novi vijek / *High Middle Ages: Modern era*	$M_{Razvijeni\ srednji\ vijek}$ / $M_{High\ Middle\ Ages}$ = 22,94 $M_{Novi\ vijek}$ / $M_{Modern\ era}$ = 24,06	1,12	Q = 2,00 (*P* = 0,620)
Kasni srednji vijek: Novi vijek / *Late Middle Ages: Modern era*	$M_{Kasni\ srednji\ vijek}$ / $M_{Late\ Middle\ Ages}$ = 22,76 $M_{Novi\ vijek}$ / $M_{Modern\ era}$ = 24,06	1,30	Q = 2,31 (*P* = 0,480)

Kod žena nije bila vidljiva razlika u ITM-u među razdobljima (F = 2,474, P = 0,051) osim između antike i kasnog srednjeg vijeka, gdje je vidljiva nešto manja, ali još uvijek statistički značajna razlika (p = 0,046) (tab. 3).

U antici je jedan muškarac s normalnom tjelesnom težinom, a deset s prekomjernom; u ranom srednjem vijeku deset s normalnom i šest s prekomjernom, u razvijenom srednjem vijeku deset s normalnom, u kasnom srednjem vijeku osam s normalnom, a u novom vijeku osam s normalnom i tri s prekomjernom. Od žena u antici tri su imale normalnu, a po jedna prekomjernu tjelesnu težinu i pothranjenost, a u svim ostalim razdobljima sve su žene imale normalnu tjelesnu težinu (devet u ranom, osam u razvijenom, pet u kasnom srednjem vijeku, te četiri u novom vijeku) (sl. 1 i 2).

There was no visible difference in BMI for females, between the periods (F = 2.474, P = 0.051), except between antiquity and the Late Middle Ages, where a slightly smaller, but still statistically significant difference was visible (p = 0.046) (Tab. 3).

In the antiquity sample, there was one male with a normal body weight, and ten were overweight; in the Early Middle Ages sample ten males had normal weight and six were overweight, in the High Middle Ages ten had normal weight, in the Late Middle Ages eight had normal weight, and in the Modern Period eight had normal weight and three were overweight. Of the females in the antiquity sample, three had normal weight, and one each was overweight and underweight, and in all other periods all females had normal body weight (9 in the Early Middle Ages, 8 in the High Middle Ages, 5 in the Late Middle Ages, and four in the Modern Period) (Figs. 1 and 2).

RASPRAVA

Ovo je istraživanje, iako preliminarno u smislu veličine uzorka, pokazalo važnost izračuna prosječne tjelesne mase s ciljem sagledavanja kvalitete života i zdravlja arheoloških populacija. Istraživanje je pokazalo statistički značajne razlike između muškaraca u antici i muškaraca u razvijenom i u kasnom srednjem vijeku. Naime, indeks tjelesne mase muškaraca statistički se značajno smanjio u razvijenom i kasnom srednjem vijeku u odnosu na antiku. Ovaj rezultat nije očekivan s obzirom na to da je došlo do promjene u indeksu tjelesne mase dolaskom novih populacija na ove prostore na prijelazu iz antike u rani srednji vijek, a isto tako i smanjenjem životnog standarda i gubitkom pojedinih civilizacijskih dosega. Razdoblje antike u Dalmaciji bilo je razdoblje relativnog mira i prosperiteta što se mijenja tijekom kasne antike dolaskom Avara i Slavena. Istraživanje prehrambenih navika antičke i ranosrednjovjekovne populacije pokazalo je kako antička populacija uvodi u svoju prehranu ribu (pod utjecajem rimskog načina života), dok se tijekom ranog srednjeg vijeka ta navika gubi, a uvodi se učestala konzumacija prosa. Općenito, smanjuje se konzumacija proteina, a povećava konzumacija ugljikohidrata.[49] No, čini se da se pad indeksa tjelesne mase zamjećuje tek u razvijenom i kasnom srednjem vijeku, dok se indeks tjelesne mase nije statistički značajno promijenio u antici i ranom srednjem vijeku. Uz iznimku ovih dvaju razdoblja, vidljivo je da se tjelesna masa u ostalim trima promatranim razdobljima nije značajno mijenjala. Ovo je u skladu s nekim rezultatima prethodnih istraživanja, pa je, primjerice, M. Šlaus zamijetio da je u kasnosrednjovjekovnom razdoblju povećana količina periostitisa te veća smrtnost nego u kasnoantičkoj i starohrvatskoj

[49] LIGHTFOOT, ŠLAUS, O'CONNELL 2012: 534, 544, 549–552.

DISCUSSION

This research, although preliminary in terms of sample size, showed the importance of calculating the average body mass with the aim of assessing the quality of life and health of archaeological populations. The research showed statistically significant differences between males in antiquity and males in the High and Late Middle Ages. Namely, body mass index for males statistically significantly decreased in the High and Late Middle Ages compared to antiquity. This result was not expected considering that a change in body mass index would have been expected at the transition from antiquity to the Early Middle Ages due to the arrival of new populations in these areas, as well as a decrease in the standard of living and the loss of certain civilizational achievements. The period of antiquity in Dalmatia was a period of relative peace and prosperity, which changed during late antiquity with the arrival of the Avars and Slavs. Research into the dietary habits of the ancient and early medieval population showed that the ancient population introduced fish into their diet (under the influence of the Roman way of life), while during the Early Middle Ages this habit was lost and frequent consumption of millet was introduced. In general, the consumption of proteins decreases and the consumption of carbohydrates increases.[49] However, it seems that the decline of body mass index is noticed only in the High and Late Middle Ages, while body mass index did not change with statistical significance in antiquity and the Early Middle Ages. With the exception of these two periods, it is evident that body mass did not change significantly in the other three observed periods. This is in accordance with some results of previous research, for example, M. Šlaus noticed that in the late medieval period, the frequency of periostitis as well as the

[49] LIGHTFOOT, ŠLAUS, O'CONNELL 2012: 534, 544, 549-552.

populaciji. Istraživači zamjećuju veću pojavnost zubnog karijesa i drugih zubnih oboljenja u srednjem vijeku u odnosu na antiku,[50] veću zastupljenost hipoplazije zubne cakline i *cribra orbitalia* u kasnoantičkom i kasnosrednjovjekovnom uzorku, nego u starohrvatskom, veću zastupljenost periostitisa u kasnosrednjovjekovnom razdoblju u odnosu na kasnoantičku i starohrvatsku populaciju, te veću smrtnost u kasnosrednjovjekovnom razdoblju nego u starohrvatskom razdoblju.[51] To se može objasniti mnogim čimbenicima. Naime, kako je prethodno istaknuto, riječ je o relativno malom uzorku. To je, nažalost, čest slučaj kada je riječ o arheološkim populacijama gdje su koštani ostatci često loše očuvani te je samo dio pronađenih osoba dostupan za analize i mjerenje. Tako se gubi dio uzorka i teže je donositi zaključke koji bi se mogli poopćiti na čitavo razdoblje srednjeg vijeka. No, s druge strane, upravo i nalazi drugih istraživanja[52] pokazuju da je došlo do značajnog pogoršanja dijela pokazatelja kvalitete života u kasnosrednjovjekovnom razdoblju, a to su periostitis i smrtnost. Ovakvi se rezultati mogu objasniti i političkim i gospodarskim prilikama odnosno širenjem stanovništva s istočne obale Jadrana u druge krajeve, što je sasvim sigurno utjecalo i na stanovništvo koje kreće u osvajanje novih krajeva, ali i na stanovništvo koje ostaje u svojem habitusu. Moguće je da dolazi do smanjenja dostupnosti hrane jer se smanjuje i dostupna radna snaga, što izravno, uz ljudske gubitke u sukobima, dovodi i do povećanog broja infekcija i veće smrtnosti. Upravo je i Šlaus pokazao da je, u njegovu slučaju, u kontinentalnoj Hrvatskoj došlo do smanjenja kvalitete života što se ogledalo kroz povećanje pokazatelja zaraznih bolesti, teškog fizičkog rada i trauma, a osobito se to od-

mortality rate were higher than in the late antique and old Croatian population. Thus, the researchers note a higher incidence of dental caries and other dental diseases in the Middle Ages compared to antiquity,[50] a higher prevalence of tooth enamel hypoplasia and *cribra orbitalia* in the late antique and late medieval sample than in the old Croatian one, a higher prevalence of periostitis in the late medieval period compared to the late antique and old Croatian population, and higher mortality in the late medieval period than in the old Croatian period.[51] This can be explained by many factors. Namely, as previously emphasized, this is a relatively small sample. Unfortunately, this is often the case when it comes to archaeological populations where bone remains are frequently poorly preserved and only a part of the individuals found is available for analysis and measurement. Thus, part of the sample is lost and it is more difficult to draw conclusions that could be generalized to the entire period of the Middle Ages. But, on the other hand, the findings of other researchers[52] also show that there was a significant deterioration of some indicators of the quality of life in the late medieval period, namely periostitis and mortality. Such results can be explained by political and economic conditions, i.e. the expansion of the population from the eastern coast of the Adriatic to other regions, which most certainly affected the population that sets out to conquer new regions, but also the population that remains in its habitus. It is possible that there is a decrease in the food availability because the available labor force also decreases, which directly, in addition to human losses in conflicts, leads to an increased number of infections and higher mortality. In one of his studies, M. Šlaus showed that there was a decrease in the quality of life in continental Croatia, which was reflected in the increase in the

[50] ŠLAUS et al. 2011: 588.
[51] ŠLAUS 2006: 103–106, 116–117, 121–123, 126 –128, 136–137; ŠLAUS, KOLLMANN, NOVAK, NOVAK 2002: 603.
[52] ŠLAUS 2006: 106, 107, 127, 164, 214.

[50] ŠLAUS et al. 2011: 588.
[51] ŠLAUS 2006: 103-106, 116-117, 121-123, 126-128, 136-137; ŠLAUS, KOLLMANN, NOVAK, NOVAK 2002: 603.
[52] ŠLAUS 2006: 106, 107, 127, 164, 214.

nosilo na muškarce,[53] što je slučaj i u ovom istraživanju.

S druge strane, u žena je nađena mala, ali statistički značajna razlika, i to samo između dvaju razdoblja, između antike i kasnog srednjeg vijeka. S obzirom na veličinu uzorka, moguće je da je ovaj nalaz na razini pogreške, te se može zaključiti da su žene od antike do novog vijeka imale relativno nepromijenjen indeks tjelesne mase. Razlozi mogu biti mnogobrojni, a jedan od mogućih razloga je i drukčiji životni stil žena. Naime, žene su i u drugim istraživanjima imale tendenciju zadržavanja ili povećavanja tjelesne mase, i to iz mnogih razloga: povećane količine fizičkog rada i/ili promjene u podjeli rada (koji utječe na povećanje mišićnih hvatišta), veće dostupnosti hrane temeljene na ugljikohidratima te većeg broja obroka i, naposljetku, smanjenja prosječne tjelesne visine, a zadržavanja slične ili iste tjelesne mase.[54] Istraživanje ranosrednjovjekovne hrvatske populacije koje je bilo usmjereno na socioekonomske razlike promatrane kroz razlike u grobnoj arhitekturi pokazalo je da te razlike nisu vidljive i u pokazateljima fiziološkog stresa, dok su bile vidljive među spolovima, neovisno o socioekonomskom statusu, što je najvjerojatnije posljedica razlika u prehrani.[55] Isto tako, u jednom je istraživanju zamijećeno da postoji veći broj žena s indeksom tjelesne mase većim od prosjeka (> 30) te iako razlike nisu bile statistički značajne, taj je nalaz objašnjen povećanim unosom hrane bazirane na ugljikohidratima.[56] I genetska istraživanja također podupiru ove nalaze; naime, utvrđeno je da su žene (u mezolitiku i neolitiku) imale veći broj reproduktivno sposobnih jedinki (engl. *effective population size*) što se objašnjava društvenim čimbenicima, sjedilačkim načinom života te

[53] ŠLAUS 2006: 107.
[54] LARSEN 1982: 241–245.
[55] VYROUBAL et al. 2020: 92.
[56] DANESHVARI 2011: 180.

indicators of infectious diseases, hard physical work and trauma, and this particularly applied to men,[53] which is also the case in this study.

On the other hand, a small but statistically significant difference was found in females, and only between two periods, between antiquity and the Late Middle Ages. Considering the size of the sample, it is possible that this finding is on the margin of error, and it can be concluded that females from antiquity to the Modern Period had a relatively unchanged body mass index. There can be many reasons, and one of the possible reasons is the different lifestyle of women. Namely, in other studies, women also had a tendency to maintain or increase their body mass, for many reasons: increased amount of physical work and/or changes in the division of labor (which affects the enlargement of muscle attachment sites), greater availability of food based on carbohydrates and a greater number of meals, and finally, reducing the average body height, while maintaining a similar or the same body mass.[54] A study of the early medieval Croatian population that was focused on socioeconomic differences observed through differences in grave architecture showed that these differences were not visible in indicators of physiological stress, while they were visible between the sexes, regardless of socioeconomic status, which is most likely a consequence of differences in nutrition.[55] Likewise, in one study, it was noticed that there is a greater number of females with body mass index higher than average (>30), and although the differences were not statistically significant, this finding was explained by the increased intake of food based on carbohydrates.[56] Genetic research also supports these findings, namely it was determined that there was a larger effective population size among women (in the Mesolithic and Neolithic), which is explained by social factors, a sedentary lifestyle, monogamy and patrilocali-

[53] ŠLAUS 2006: 107.
[54] LARSEN 1982: 241-245.
[55] VYROUBAL et al. 2020: 92.
[56] DANESHVARI 2011: 180.

monogamijom i patrilokalnošću.[57] Zanimljiv je i podatak iz istraživanja moderne populacije; naime, žene tijekom reproduktivnog razdoblja bolje održavaju tjelesnu masnoću od muškaraca. Moguće objašnjenje leži u tome da žene inicijalno imaju veći postotak tjelesne masnoće od muškaraca, a zbog djelovanja estrogena nakon obroka se energija lakše pretvara u masti, a osobito tijekom trudnoće. Ženama se u prvom tromjesečju trudnoće povećava tjelesna masa, čak i bez unosa dodatne energije ili smanjenja fizičke aktivnosti.[58] Također, pokazano je da žene troše manje masti od muškaraca, kada su u sličnom energetskom deficitu. To im tijekom vježbanja daje više energije, a u vremenu neaktivnosti omogućava da uspješnije skladište masno tkivo.[59]

Zanimljivo je i da su žene tijekom svih razdoblja u većini slučajeva imale normalnu tjelesnu težinu, dok su muškarci u razvijenom i kasnom srednjem vijeku imali statistički značajno manje osoba prekomjerne težine nego što su to imali u prethodnim i idućim razdobljima. Nadalje, iako se moglo očekivati da će biti znatno veći broj osoba u uzorku koje su pothranjene, to nije bio slučaj. Samo je jedna žena, u antici, imala ITM koji se može svrstati u pothranjenost (ITM = 16,5). Ovaj rezultat treba uzeti s oprezom s obzirom na to da je riječ o relativno malom uzorku, no isto tako važno je napomenuti da i povećana količina fizičkog rada ipak može utjecati i na mjere dijafiza kostiju,[60] te da veća količina mišićne mase može svrstati osobu i u kategoriju prekomjerne tjelesne težine, unatoč izgledu prosječne (normalne) tjelesne težine.[61] Kao što je prethodno rečeno, ITM se na koštanim ostatcima ne bi trebao gledati pojedinačno za osobu, već se poopćavati za

ty.[57] The information from the research of the modern population is also interesting, namely that women during the reproductive period maintain body fat better than men. A possible explanation lies in the fact that women initially have a higher percentage of body fat than men, and due to the effect of estrogen after a meal, energy is more easily converted into fat, especially during pregnancy. Women gain weight in the first trimester of pregnancy, even without consuming additional energy or reducing physical activity.[58] Also, it has been shown that women use less fat than men when they are in a similar energy deficit. This gives them more energy during exercise, and allows them to store fat tissue more successfully during periods of inactivity.[59]

It is interesting that females during all periods in most cases had a normal body weight, while in the High and Late Middle Ages the number of overweight individuals among males was statistically significantly smaller than in the previous and subsequent periods. Furthermore, although it could have been expected that there would be a significantly higher number of persons in the sample who were underweight, this was not the case. Only one woman, in the antiquity sample, had a BMI that could be classified as underweight (BMI=16.5). This result should be interpreted with caution considering that it is a relatively small sample, but it is also important to note that an increased amount of physical work can still affect the measurements of the bone diaphyses,[60] and that a larger amount of muscle mass can place a person in the overweight category, despite the appearance of average (normal) body weight.[61] As previously stated, BMI on bone remains should not be viewed individually for a person, but should

57 SZÉCSÉNYI-NAGY et al. 2015: 7.
58 WU, O'SULLIVAN 2011: 2–4.
59 CORTRIGHT et al. 1998: 108–110; WU, O'SULLIVAN 2011: 2.
60 AGOSTINI, HOLT, RELETHFORD 2018: 720.
61 ETCHISON et al. 2011: 250.

57 SZÉCSÉNYI-NAGY et al. 2015: 7.
58 WU, O'SULLIVAN 2011: 2-4.
59 CORTRIGHT et al. 1998: 108-110; WU, O'SULLIVAN 2011: 2.
60 AGOSTINI, HOLT, RELETHFORD 2018: 720.
61 ETCHISON et al. 2011: 250.

populaciju jer se tada moguće greške u procjeni ITM-a smanjuju. Ovo je istraživanje pokazalo da je u žena indeks tjelesne mase konstantan tijekom svih promatranih razdoblja, dok se u muškaraca on smanjio u dvama razdobljima srednjeg vijeka, a ove nalaze podupiru i druga istraživanja[62] na ovim prostorima koja pokazuju pad kvalitete života, i to osobito muškaraca, u kasnom srednjem vijeku.

Sagledavajući nalaze istraživanja u povijesnom i arheološkom kontekstu, indeks tjelesne mase pokazao se kao dobar pokazatelj kvalitete života i može se rabiti kao dodatna metoda u proučavanju života arheoloških populacija. Pri tome se trebaju holistički sagledati povijesni događaji, arheološki nalazi, karakteristike ukopa, te svi ostali pokazatelji zdravlja i kvalitete života, kako bi se mogli donijeti precizniji zaključci o pojedinim populacijama.

[62] ŠLAUS 2006: 98–107, 110–117, 135–138.

be generalized to the population because then possible errors in BMI estimation are reduced. This research showed that body mass index for females was constant during all observed periods, while for males it decreased in two periods of the Middle Ages, and these findings are supported by other research[62] in these regions that show a decline in the quality of life, especially for males, in the Late Middle Ages.

Considering the research results in the historical and archaeological context, body mass index proved to be a good indicator of quality of life and can be used as an additional method in the study of life of archaeological populations. Historical events, archaeological finds, characteristics of burials, and all other indicators of health and quality of life should be looked at holistically, in order to be able to draw more precise conclusions about certain populations.

Translation: Marija Kostić

[62] ŠLAUS 2006: 98-107, 110-117, 135-138.

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SUBADULTNI STRES U KUMULATIVNOM UZORKU SREDNJOVJEKOVNE I NOVOVJEKOVNE DALMACIJE

SUBADULT STRESS IN A CUMULATIVE SAMPLE OF MEDIEVAL AND MODERN-ERA DALMATIA

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Ključne riječi:
Dalmacija, subadultni stres, cribra orbitalia, hipoplazija zubne cakline, periostitis

U radu su prikazani rezultati antropološke analize srednjovjekovnog i novovjekovnog kumulativnog uzorka s područja Dalmacije. Analizirani su pokazatelji subadultnog stresa cribra orbitalia i hipoplazija zubne cakline te njihova međusobna korelacija, kao i korelacija s doživljenom dobi i pokazateljem nespecifičih zaraznih bolesti – periostitisom. Rezultati rada doprinose razumijevanju životnih uvjeta djece na arheološkim lokalitetima Dalmacije, te njihovoj usporedbi s uvjetima života djece u kontinentalnoj Hrvatskoj i okruženju. Analiza je pokazala nešto bolje životne uvjete u Dalmaciji nego u kontinentalnoj Hrvatskoj, no količina stresa kojoj su bila izložena djeca na obama uzorcima iznimno je visoka, a šansa za preživljavanje do odrasle dobi mala.

Key words:
Dalmatia, subadult stress, cribra orbitalia, dental enamel hypoplasia, periostitis

The paper presents the results of an anthropological analysis of a medieval and modern cumulative sample from the area of Dalmatia. The indicators of subadult stress cribra orbitalia and dental enamel hypoplasia (and their mutual correlation) were analysed, as well as their correlation with lifespan and with periostitis as an indicator of non-specific infectious diseases. The results of the work contribute to understanding of the historical living conditions of children at Dalmatia's archaeological sites, as well as to their comparison with the living conditions of children in continental Croatia and the wider region. The analysis showed slightly better living conditions in Dalmatia compared to continental Croatia, but in both samples the amount of stress to which the children were exposed was extremely high, and the chance of surviving to adulthood was low.

UVOD

Od druge polovice 20. stoljeća zanimanje bioarheologa i bioloških antropologa za životne uvjete i zdravlje djece na arheološkim lokalitetima kontinuirano se povećava. Pionir ovih istraživanja je Francis Johnstone[1] koji je proučavao rast i razvoj te smrtnost djece. S aspekta biološke antropologije djeca u arheologiji se proučavaju kroz prizmu rasta, paleopatologije i smrtnosti. Od patoloških promjena najviše se proučavaju tzv. pokazatelji subadultnog stresa (*cribra orbitalia (CO)* i hipoplazija zubne cakline (HZC)) koji su se pokazali kao najbolji indikatori zdravlja i količine stresa kojoj su izložena djeca tijekom rasta i razvoja, osobito ako se navedeni pokazatelji ne gledaju pojedinačno već kumulativno. Ovakva istraživanja na hrvatskim srednjovjekovnim i novovjekovnim lokalitetima nešto su rjeđa, odnosno postoji svega nekoliko radova o analizi subadultnog stresa, poput rada koji donosi podatke o populaciji s Dugopolja[2] (*cribra orbitalia*) te kumulativni uzorak kontinentalne Hrvatske[3] i sl. S druge strane, postoje brojni razlozi zašto je važno istraživati djecu u arheološkim populacijama. Zdravlje djece, njihova smrtnost kao i opći životni uvjeti iznimno su važni za razumijevanje zajednica u prošlosti koje uključuje poznavanje uloge žene u društvu, podjelu poslova u zajednici, zajedničku brigu o djeci i bolesnima, poznavanje medicinske skrbi i sl., kao i razumijevanje evolucijske antropologije. Za razliku od primata odgoj ljudske djece zahtijeva znatno veću količinu energije, odnosno znanja i sposobnosti čitave zajednice. Ljudska djeca rađaju se s najmanjim omjerom veličine mozga u odnosu na odraslu dob, također najmanje su pokretna i nezrela su te jedina zahtijevaju nošenje u rukama, što ih čini iznimno ranjivim i ovisnim.[4] Također, važno je naglasiti kako djeca (osobito ona najmanja) imaju ne-

[1] JOHNSTONE 1962: 249–254.
[2] NOVAK, ŠLAUS 2007: 451–475.
[3] NOVAK, ŠLAUS, PASARIĆ 2009: 247–270.
[4] HALCROW et al. 2020.

INTRODUCTION

Since the second half of the 20th century, the interest of bioarchaeologists and biological anthropologists in historical living conditions and health of children at archaeological sites has continuously grown. The pioneer of this research was Francis Johnstone,[1] who studied the growth and development as well as mortality of children. From the point of view of biological anthropology, in archaeology, children are studied through the prism of growth, paleopathology and mortality. The pathological changes most studied are the subadult stress indicators (*cribra orbitalia* (*CO*) and dental enamel hypoplasia (*DEH*) which have proved to be the best indicators of both children's health and the amount of stress to which they were exposed during growth and development, especially if these indicators are not viewed individually, but cumulatively. Such research at Croatia's medieval and modern-era sites is rather rare: there are only a few papers analysing subadult stress, such as a paper on *cribra orbitalia* in the Dugopolje population[2], and a continental Croatia cumulative sample[3]. Conversely, there are many reasons why it is important to research children in archaeological populations. The health of children, their mortality and general living conditions are extremely important to an understanding of communities in the past, including the role of women in society, the division of labour in a community, joint care of children and the sick, knowledge of medical care and the like, as well as the understanding of evolutionary anthropology. The reason for this is that the raising of human children, in comparison to those of other primates, requires a significantly greater amount of energy, including the knowledge and abilities of the entire community. Human children are born with the smallest ratio of brain size compared to that of adulthood. In addition, they are the least mobile and imma-

[1] JOHNSTONE: 1962, 249–254
[2] NOVAK, ŠLAUS 2007: 451–475.
[3] NOVAK, ŠLAUS, PASARIĆ 2009: 247–270.

razvijeni imunosni sustav koji zajedno s potrebom za brzim rastom i razvojem čini veliku ranjivost djece na okolišni stres. Upravo iz tog razloga pokazatelji subadultnog stresa direktno nas informiraju o količini okolišnog stresa ponajprije onog povezanog s nedostatnom i neadekvatnom hranom. Jer, iako pojedine zajednice mogu imati dovoljnu količinu hrane na raspolaganju, ta hrana često je bila, nutricionistički gledano, neadekvatna odnosno jednolična i s nezastupljenim svim nužnim nutrijentima. *Cribra orbitalia* jedan je od pokazatelja koji su usko povezani s nedostatkom željeza u krvi. Uzroci nedostatka željeza mogu biti mnogostruki, no najčešće su povezani s neadekvatnom prehranom, brojnim bolestima koje dovode do dijareje, poput zaraze parazitima gdje organizam eliminira željezo kao esencijalnu supstanciju za reproduktivni razvoj parazita ili drugih gastrointestinalnih infekcija i sl. S obzirom na višestruku etimologiju, *cribra orbitalia* uvijek se proučava s drugim čimbenicima, poput hipoplazije zubne cakline i sl., kako bi dala pouzdanije podatke. Hipoplazija zubne cakline, iako može biti povezana s traumama i nekim genetičkim čimbenicima, većinom je povezana s okolišnim stresom, poput izgladnjivanja, dugotrajne metaboličke bolesti, zarazne bolesti i sl. Cilj je ovog rada doprinijeti razumijevanju životnih uvjeta djece na arheološkim lokalitetima Dalmacije, te njihova usporedba s uvjetima života djece u kontinentalnoj Hrvatskoj i okruženju.

MATERIJAL I METODE

U ovom radu analiziran je koštani materijal s osam lokaliteta s područja Dalmacije, i to: Bijaći – Stombrate (9. – 10. st.), Svećurje – Žestinj (9. – 11. st.), Sv. Mihovil – Kučiće (12. – 14. st.), Koljani Gornji – Crkvina (14. st.), Kamen Most – Kaldrma (14. – 15. st.), Sv. Mavar – Žedno (13. – 17. st.), Dominikanski samostan sv. Katarine (16. – 19. st.) i Otok Vuletina rupa – Grebčine (17. – 18. st.) (tab. 1).

ture, being the only member of the species that needs to be carried. All this makes them extremely vulnerable and dependent.[4] It should also be emphasised that children (and especially infants) have an underdeveloped immune system. Combined with their rapid growth and development, this makes children highly vulnerable to environmental stress. This is why subadult stress indicators provide direct information regarding levels of environmental stress, primarily that associated with insufficient and inadequate food. Namely, even though certain communities may have had a satisfactory amount of food at their disposal, this was often inadequate in terms of its nutritional value, with a rather limited menu choice and lacking necessary nutrients. *Cribra orbitalia* is an indicator closely related to iron deficiency in blood. The causes of iron deficiency can be manifold: most frequently, they are associated with inadequate diet, as well as various diseases causing diarrhoea, such as infection with parasites (where the body eliminates iron as an essential substance for the reproductive development of parasites), or other gastrointestinal infections. Given its multiple etymology, *cribra orbitalia* is always studied in combination with other factors, such as dental enamel hypoplasia, in order to provide data which are more reliable. Although it can be related to trauma and some genetic factors, dental enamel hypoplasia is mostly associated with environmental stress such as starvation, long-term metabolic, and infectious disease. The aim of this paper is to contribute to the understanding of the historical living conditions of children at Dalmatia's archaeological sites and to their comparison with the living conditions of children in continental Croatia and the wider region at the time.

MATERIALS AND METHODS

In this paper, bone material from eight sites in Dalmatia is analysed, namely: Bijaći – Stom-

[4] HALCROW et al. 2020.

tablica 1. *Popis arheoloških lokaliteta s datacijom i veličinom uzorka*
table 1 *List of archaeological sites with datings and sample sizes*

Lokalitet / *Site*	**Datacija / *Dating***	**Veličina uzorka / *Sample size***
Bijaći – Stombrate	9. – 10. st. / *9th – 10th c.*	56
Svećurje – Žestinj	9. – 11. st. / *9th – 11th c.*	43
Sv. Mihovil – Kučiće	12. – 14. st. / *12th – 14th c.*	47
Koljani Gornji – Crkvina	14. st. / *14th c.*	55
Kamen Most – Kaldrma	14. – 15. st. / *14th – 15th c.*	31
Žedno – Sv. Mavar	13. – 17. st. / *13th – 17th c.*	9
Dominikanski samostan sv. Katarine u Splitu / *Dominican Monastery of Saint Katharine in Split*	16. – 19. st. / *16th – 19th c.*	83
Otok Vuletina rupa – Grebčine	17. – 18. st. / *17th – 18th c.*	44
UKUPNO / TOTAL	**9. – 19. st. / *9th – 19th c.***	**269**

Na lokalitetu Bijaći otkriveno je cjelovito groblje s 54 groba datirana u rani srednji vijek. Riječ je o tipičnom naseobinskom groblju na redove bez sakralnog objekta. Grobna arhitektura izrađena je većinom od kamena vapnenca u obliku nepravilnih ploča i tesanaca vezana glinom. Pokojnici su položeni na leđa, s pogledom prema istoku. Od nalaza najzastupljeniji je nakit, većinom obične karike i jednojagodne naušnice te malo importiranog nakita karantansko-ketlaške skupine i bizantskog podrijetla.[5]

Na lokalitetu Svećurje – Žestinj istraženo je groblje s 48 grobova. Riječ je o naseobinskom groblju na redove bez sakralnog objekta. Krajem 12. stoljeća gradi se crkvica 100-tinjak metara sjevernije i oko nje se formira novo groblje. Prevladavaju pojedinačni ukopi, pokojnici su položeni na leđa s ispruženim rukama u smjeru istok-zapad. Kod polovice grobova pronađeni su nalazi (većinom je riječ o nakitu). Od nakita prevladavaju različiti tipovi naušnica te prstenje, no posebno je zanimljiv nalaz dviju ogrlica. Jedna je rađena od staklene paste (grob 22), a druga (grob 32) od bikoničnih glatkih jagoda.[6]

Na lokalitetu Sv. Mihovil – Kučiće groblje je bilo u funkciji od kraja 12. do kraja 14. stoljebrate (9th – 10th c.), Svećurje – Žestinj (9th – 11th c.), Sveti Mihovil – Kučiće (12th – 14th c.), Koljani Gornji – Crkvina (14th c.), Kamen Most – Kaldrma (14th – 15th c.), Sveti Mavar – Žedno (13th – 17th c.), Dominican Monastery of Saint Katharine (16th – 19th c.) and Otok Vuletina Rupa – Grebčine (17th – 18th c.) (Table 1).

At the Bijaći site, a complete burial ground with 54 graves dated to the early Middle Ages was discovered. It is a typical settlement cemetery with burials in rows, and without a sacred structure. Grave structures are mostly made of irregular limestone slabs and hewn stones, bound with clay. The deceased were laid on their backs, facing east. The best represented find is jewellery, mostly ordinary circlets and single-beaded earrings, as well as some imports from the Carantanian-Köttlach group, and of Byzantine origin.[5]

A cemetery with 48 graves at the Svećurje – Žestinj site was excavated. It is a settlement cemetery with burials in rows, without a sacred structure. At the end of the 12th century, a small church was built about 100 metres to the north, and a new cemetery was formed around it. Burials are mostly individual. The deceased are laid on their backs with arms stretching in an east-west direction. Finds (mostly jewellery) were unearthed from half of the graves. Of the jewellery, different types of earrings and rings prevail, but

[5] KAMENJARIN 2009: 85–97.
[6] BURIĆ 2008.

[5] KAMENJARIN 2009: 85–97.

ća. Istraživanja je vodila arheologinja Vedrana Delonga i istražila je 57 grobova. Orijentacija grobova standardna je za to razdoblje, smjer istok-zapad, u starijem dijelu groblja pokojnici su položeni s rukama uz tijelo, dok su u mlađem dijelu groblja pokojnicima ruke prekrižene na području zdjelice. Dovoljno očuvanih koštanih ostataka s ovog lokaliteta je 47[7].

Koljani Gornji – Crkvina nalazi se u zaseoku Bodružićima, lokalitet je istraživala arheologinja Maja Petrinec (Muzej hrvatskih arheoloških spomenika) tijekom 2007. godine. Ukupno su istražena 52 groba (većinom je riječ o pojedinačnim ukopima uz iznimke dvojnog i višestrukog ukopa). Nije istraženo cijelo groblje koje se tijekom zime nalazi pod vodom. Na temelju nalaza naušnice s tri jagode, naroskane naušnice, karičice s koljencima, prstenja, te nalaza novca ispod zdjelice pokojnika u jednom od grobova (ukupno 9, svi iz sredine i druge polovice 14. stoljeća) grobovi se datiraju u kasni srednji vijek.[8]

Kamen Most – Kaldrma nalazi se pokraj Imotskog, 2008. godine provedeno je istraživanje ovog lokaliteta i tom prigodom istraženo je 25 grobova koji se datiraju u razdoblje 14. i 15. stoljeća. Manji dio grobova obzidan je kamenom arhitekturom, dok je većina pokojnika bila položena u grobnu raku. *In situ* je pronađen stećak s prikazom oranta raskriljenih ruku i nogu savijenih u koljenima. Grobovi su sadržavali po jednog ili više pokojnika orijentacije sjeverozapad-jugoistok. Grobna mjesta bila su označena nadzemnim biljezima, od kojih je sačuvan jedan stećak *in situ*, nad grobom 6. Riječ je o masivnom bloku domaćeg vapnenca oblikovanom kao kuća, s prikazom oranta raskriljenih ruku i nogu savijenih u koljenima. Za potrebe ovog rada u kumulativni uzorak uključen je 31 koštani ostatak koji je dovoljno očuvan.[9]

Žedno – Sv. Mavar, riječ je o malom groparticularly interesting is the find of two necklaces. One is made of glass paste (Grave 22), and the other (Grave 32) of biconical smooth beads.[6]

The cemetery at the Sveti Mihovil – Kučiće site was in operation from the late 12th to late 14th century. The excavation campaign, during which 57 graves were unearthed, was led by archaeologist Vedrana Delonga. The east-west orientation of graves is standard for the period. In the earlier part of the cemetery, the deceased were laid with their arms next to their bodies, while in the later part their hands were crossed above their pelvises. There are 47 bone remains from this site that have been sufficiently preserved[7].

The Koljani Gornji – Crkvina site, located in the hamlet of Bodružići, was excavated in 2007 by archaeologist Maja Petrinec (Museum of Croatian Archaeological Monuments). A total of 52 graves were excavated. Most of them are individual burials, with occasional double and multiple burials. The entire cemetery has not been thoroughly explored, as the site is under water through the winter. On the basis of the finds of a three-beaded earring, a loop-and-knot earring, a plaited circlet, finger-rings, and coins under the pelvis of the deceased in one of the nine unearthed graves (all from the mid- and late-14th century), the graves are dated to the late Middle Ages.[8]

Kamen Most – Kaldrma is located near the town of Imotski. The site was excavated in 2008, and unearthed in the campaign were 25 graves dated to the 14th and 15th centuries. A minority of graves had stone structures around them; however, most of the deceased had been laid in a pit. *In situ*, a medieval tombstone (*stećak*) was uncovered, with a depiction of an orant with outstretched arms, legs bent at the knees. The graves contained one or more deceased individuals, their bodies oriented northwest-southeast. The burial places had above-ground markers, of which the *stećak*

7 DELONGA 2000.
8 JURČEVIĆ 2008: 135–150.
9 GUDELJ 2010: 441–449.

6 BURIĆ 2008.
7 DELONGA 2000.
8 JURČEVIĆ 2008: 135–150.

blju koje se nalazi na otoku Čiovu, datira se od 13. do 17. stoljeća. Izgradnjom romaničke župne crkve sv. Mavra počinje se formirati i groblje oko nje, i to u dvjema fazama, jedna je suvremena samoj crkvi i pripada razvijenom srednjem vijeku, a gornji sloj nastaje u kasnom srednjem vijeku i početku novog vijeka.[10] S ovog lokaliteta ukupno je očuvano i uključeno u ovu studiju 9 osoba.

Tijekom 2007. i 2008. godine provedena su zaštitna istraživanja na lokalitetu Dominikanski samostan. Tom prigodom istražena je sonda 9, koja predstavlja kosturnicu s većim brojem kostura. Helga Zglav-Martinac dijeli lokalitet na dvije faze, na predsamostansko razdoblje i samostansko razdoblje. Predsamostansko razdoblje (do sredine 16. stoljeća) obilježava nalaz 16 kasnoantičkih grobova. Samostansko pak razdoblje dijeli na tri faze: vrijeme I. samostana (od sredine 13. do sredine 17. stoljeća) vrijeme II. samostana (od sredine 17. stoljeća) te treće razdoblje (od vremena francuske uprave krajem 18. stoljeća do 2005. godine). Na ovom groblju pokapani su članovi samostanske zajednice kao i članovi bratovštine povezane sa samostanom. Naime, 1533. godine osnovana je Bratovština sv. rozarija ili sv. krunica koja je s kraćim prekidima djelovala do nedavno u sklopu samostana. Riječ je o zajedničkim ukopima velikog broja osoba (više od 100), različitog uzrasta i spola.[11]

Muzej Cetinske krajine 2011. godine proveo je zaštitna arheološka istraživanja na lokalitetu Otok Vuletina rupa te je istraženo ukupno 45 grobova koji se datiraju u 17./18. stoljeće. Većina pokopa bila je pojedinačna, pokojnici su polagani u zemljanu raku bez kamene arhitekture na leđima i ispruženih ruku. Orijentacija grobova je sjeverozapad-jugoistok. U grobovima su otkriveni sljedeći arheološki nalazi: brončane i željezne igle, kopče i puce za odjeću i par polukružnih potkova za obuću. Prema pronađenim pokretnim nalazima koji su glav-

[10] BURIĆ 2000: 9–14.
[11] ZGLAV-MARTINAC 2011.

above Grave 6 has been preserved *in situ*. It is a massive block of local limestone, shaped like a house, with a depiction of an orant with arms outstretched and legs bent at the knees. For the purposes of this work, 31 substantially preserved bone remains have been included in the cumulative sample.[9]

Žedno – Saint Maurus, a small cemetery located on the island of Čiovo, is dated from the 13th to the 17th century. After the construction of the Romanesque Parish Church of St. Maurus, the cemetery began to form around it. It has two burial layers: the lower (contemporary with the church) originating from the high medieval period, and the upper, created in the late medieval period / early modern era.[10] From this site, the remains of nine deceased individuals have been preserved and included in the study.

In the course of 2007 and 2008, protective excavation campaigns were conducted at the Dominican Monastery site. On this occasion, Trial Trench 9 was excavated, revealing an ossuary containing a significant number of skeletons. Helga Zglav-Martinac divided the site into two phases: the pre-monastery period and the monastery period. The pre-monastery period (until the mid-16th century) is represented by the discovery of 16 late antique graves. The monastery period is divided into three stages: the 1st monastery period (from the mid-13th to mid-17th century); the 2nd monastery period (from the mid-17th century) and the 3rd period (from the time of the French administration at the end of the 18th century until 2005). Buried in this cemetery are members of the monastic community as well as members of the brotherhood associated with the monastery. In 1533, the Confraternity of the Holy Rosary was established, which, with short interruptions, was continuously active within the monastery until recently. These are joint burials of a large number of individuals (over 100) of different ages and both sexes.[11]

[9] GUDELJ 2010: 441–449.
[10] BURIĆ 2000: 9–14.
[11] ZGLAV-MARTINAC 2011.

ni oslonac datiranja, groblje možemo okvirno vremenski odrediti u novovjekovno razdoblje 17. i 18. stoljeća, tim više što su na grobovima otkriveni kameni vijenci izrađeni od sitnijeg neobrađenog kamenja postavljeni oko grobne rake te se mogu povezati sa stanovništvom doseljenim iz unutrašnjosti Bosne krajem 17. i u 18. stoljeću.[12]

Antropološka analiza koštanog materijala provedena je u Laboratoriju za biološku i forenzičku antropologiju Sveučilišta u Splitu. Koštani je materijal opran nad sitom laganim mlazom vode i mekanim četkicama te ostavljen na zraku minimalno 24 sata da se osuši. Nakon sušenja posložen je u anatomski položaj, opisan i izmjeren te je za svaki kostur određen biološki profil osobe. Biološki profil osobe uključuje procjenu spola, doživljene dobi u trenutku smrti, procjenu prosječne tjelesne visine, podrijetla osobe, te su bilježeni znakovi patoloških i traumatskih promjena i habitualnih radnji te uzrok smrti. Spol se utvrdio na temelju morfoloških i osteometrijskih pokazatelja. Od morfoloških pokazatelja promatrale su se prije svega karakteristike lubanje i zdjelice, ali i ostale postkranijalne kosti, osobito u situacijama kada lubanja i zdjelica nisu očuvane.[13] Spolni dimorfizam na lubanji očituje se u pogledu: veličine, gracilnosti, izgleda čeone kosti i nadočnih lukova, veličine mastoidnih nastavaka i izraženosti sulkusa, naglašenosti nuhalnih linija na zatiljnoj kosti, veličine i gracilnosti donje čeljusti, kutom koji zatvara tijelo i grana donje čeljusti i veličina zglobnih nastavaka.[14] Na zdjeličnim su kostima pregledane sljedeće značajke: veličina i širina velikog sjednog ureza, aurikularna zglobna ploha, acetabulum, duljina tijela preponske kosti, postojanje ventralnog grebena i subpubične konkavnosti, izgled donje grane preponske kosti te

[12] LIBRENJAK 2012.

[13] PHENICE 1969: 297–301; MEINDL et al. 1985: 79–85; KROGMAN, ISÇAN 1986.

[14] KROGMAN, ISÇAN 1986; BASS 1995: 200–206; ŠLAUS 2006; WHITE, BLACK, FOLKNES 2012.

In 2011, the Museum of Cetinska Krajina Region conducted archaeological rescue excavations at the Otok Vuletina Rupa site. A total of 45 graves dated to the 17th and 18th centuries were excavated. Most burials were individual. The deceased were laid on their backs with stretched arms, and buried in earthen pits without stone structures. The orientation of the graves is northwest-southeast. The following archaeological finds were unearthed from the graves: bronze and iron pins, buckles, a clothes button, and a pair of semi-circular heel-irons for shoes. The movable finds would suggest dating the cemetery to the post-medieval period of the 17th and 18th centuries, in particular since stone wreaths unearthed on the graves were made of smaller, unworked stones placed around them, which can be associated with the population that immigrated from the Bosnian interior at the end of the 17th and during the 18th century.[12]

An anthropological analysis of the bone material was conducted in the Forensic and Biological Anthropology Laboratory at the University of Split. The bone material was washed over a sieve with a light stream of water and soft brushes and left in the air to dry for a minimum of 24 hours. After drying, it was arranged in an anatomical position, described and measured. After the skeleton had been washed and dried, it was placed in the anatomical position, and for each skeleton, the individual's biological profile was determined. Such a profile includes an assessment of sex, age of death, average height, and origin; in addition, any signs of pathological and traumatic changes and habitual actions, and the cause of death are recorded. Sex was determined based on morphological and osteometric indicators. The first observed morphological indicators were skull and pelvic characteristics, but other postcranial bones were examined, especially in situations where the skull and pelvis had not been preserved.[13] Sexual dimorphism on the

[12] LIBRENJAK 2012.

[13] PHENICE 1969: 297–301; KROGMAN, ISÇAN 1986;

postojanje predaurikularnog sulkusa.[15] Procjena spola morfološkim metodama važan je dio svake antropološke analize, no zbog svojih nedostataka, prije svega subjektivnosti metode, rabe se i druge metode, poput osteometrijskih metoda od kojih se najviše ističe diskriminantna funkcijska analiza koja se pokazala najpouzdanija za određivanje spola odraslih osoba.[16] Biološka dob osobe određivala se na temelju stupnja rasta i razvoja kod djece (duljina dijafize dugih kostiju, stupnja sraštavanja epifiza i dijafiza, te nicanja mliječnih i trajnih zuba), dok se kod odraslih osoba većinom temelji na stupnju propadanja, poput promjena na zglobovima (artroza, osteoartritis, promjene na pubičnoj simfizi), istrošenosti zuba i zglobova i sl.[17] Dob kod odraslih osoba procijenjena je u rasponu od minimalno pet godina, dok je za djecu procjena spola zbog dinamičnih promjena davana u znatno kraćim rasponima, i to od svega nekoliko mjeseci.

Jedan od najvažnijih pokazatelja subadultnog stresa jest *cribra orbitalia* (CO). *Cribra orbitalia* očituje se manjim lezijama koje su smještene na krovu očnih orbita, najčešće na anterolateralnoj strani, i kod 90 % slučajeva su bilateralne. Makroskopski se definira kao pojava malih, rupičastih lezija na svodovima orbita koje mogu biti promjera manjeg od 1 mm do većih otvora koji se djelomično spajaju. Može biti u aktivnoj fazi (sl. 1) i fazi sanacije. U aktivnoj fazi pojavljuje se za vrijeme djetinjstva i očituje se novoformiranom šupljikavom kosti, dok se u odrasloj fazi može zateći samo u fazi sanacije, kada na istom mjestu (gornjim svodovima orbite) ostanu prisutne male udubine u istoj razini s okolnom kosti. Navedeni proces može se kod djece uočiti i na svodu lubanje, i to najčešće na tjemenim kostima i zatiljnoj kosti. Uzrok *cribrae orbitaliae* najčešće

skull is manifested in terms of size, gracility, appearance of the frontal bone and brow ridges, the size of the mastoid processes and the expression of the sulcus, the size of nuchal lines on the occipital bone, the size and gracility of the mandible, the gonible angle and the size of the articular processes.[14] The following pelvic bone features were examined: greater sciatic notch size and width, auricular articular surface, acetabulum, pubic bone body length, the presence of a ventral ridge and subpubic concavity, the appearance of the inferior ramus of the pubic bone, and the presence of the preauricular sulcus.[15] Sex estimation based on morphology is an important part of any anthropological analysis. However, it has its shortcomings: in the first place its subjectivity. As a result, other methods are also applied, including the osteometric approach, and in particular the discriminant function analysis, which proved to be the most reliable for determining the sex of adults.[16] Children's biological age is determined on the basis of growth, and development stage (long bone diaphysis length, epiphysis and diaphysis fusion stage, and primary and permanent teeth eruption), while in adults it is mostly based on the degree of deterioration, such as changes in the joints (arthrosis/osteoarthritis, alterations to the pubic symphysis), or wear and tear of teeth and joints.[17] The estimated age of adult individuals covers a span of at least five years, while the dynamic changes in children enabled their age estimation in significantly shorter spans, of only a few months.

One of the most significant indicators of subadult stress is *Cribra orbitalia* (CO). *Cribra orbitalia* is manifested in smaller lesions of the orbital

[15] ACSÁDI, NEMESKÉRI 1970; KROGMAN, ISÇAN 1986; WHITE, BLACK, FOLKNES 2012.

[16] ŠLAUS 1997: 167–175; ŠLAUS, TOMIČIĆ 2005: 147–152; VODANOVIĆ et al. 2006: 263–77; BAŠIĆ et al. 2013: 272–278; BAŠIĆ 2015.

[17] BASS 1995: 200–206; UBELAKER 1999: 52–60.

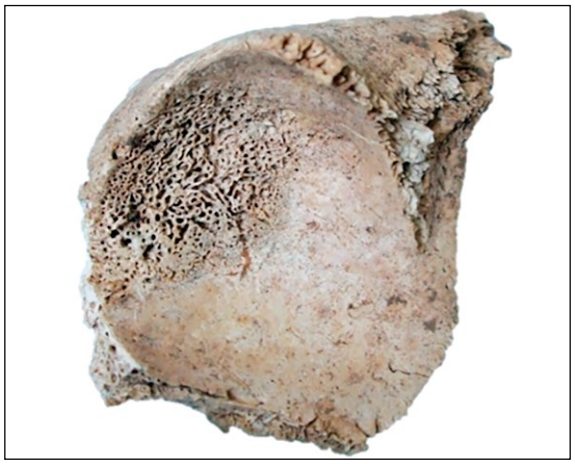
MEINDL et al. 1985: 79–85.

[14] KROGMAN, ISÇAN 1986; BASS 1995: 200–206; ŠLAUS 2006; WHITE, BLACK, FOLKNES 2012.

[15] ACSÁDI, NEMESKÉRI 1970; KROGMAN, ISÇAN 1986; WHITE, BLACK, FOLKNES 2012.

[16] ŠLAUS 1997: 167–175; ŠLAUS, TOMIČIĆ 2005: 147–152; VODANOVIĆ et al. 2006: 263–77; BAŠIĆ et al. 2013: 272–278; BAŠIĆ 2015.

[17] BASS 1995: 200–206; UBELAKER 1999: 52–60.



Slika 1. *Cribra orbitalia u aktivnoj fazi* (snimila: I. Kružić)
Figure 1 *Cribra orbitalia in its active stage* (photo by: I. Kružić)

se povezuje s anemijom uzrokovanom nedostatkom željeza,[18] do koje dolazi u povijesnim populacijama zbog parazita (odgovor organizma kojim smanjuje hemoglobin potreban za reprodukciju patogena),[19] zbog neadekvatne (jednolične) i nedostatne prehrane, trovanja olovom, kao i zbog niskog higijenskog standarda.[20]

Učestalost *cribrae orbitaliae* određivala se na način da se prvo bilježila očuvanost orbita, potom se bilježila pojavnost *cribrae orbitaliae* kao i faza u kojoj je (aktivna ili sanacija), po kriterijima koje su predložili Mittler i Van Gerven[21] te Mensforth i sur.[22]

Sljedeći pokazatelj subadultnog stresa povezan je s rastom, odnosno zastojem u rastu trajnih zuba. Riječ je o hipoplaziji zubne cakline koja je vidljiva u obliku vodoravnih linija nastalih zbog smanjenja debljine cakline, najčešće na bukalnoj i prednjoj strani zuba (sl. 2). Hipoplazija zubne cakline jest zastoj u rastu nastao u najvećoj mjeri kao posljedica metaboličkog stresa, dok se u manjem postotku pojavljuje kao posljedica traume ili zbog

[18] CARLSON, ARMELAGOS, VAN GERVEN 1974: 405–410; STUART-MACADAM 1985; 1991.
[19] HENGEN 1971: 57–75.
[20] MENSFORTH 1990: 81–99; ROBERTS, MANCHESTER 2007: 225–226.
[21] MITTLER, VAN GERVEN 1994: 287–297.
[22] MENSFORTH et al. 1978: 1–59.

roof, mostly its anterolateral part, and in 90 % of cases these are bilateral. It is identified macroscopically as the appearance of small, perforated orbital arch lesions (whose diameter can be smaller than 1 mm) to larger, partially merged apertures. It can be in the active stage (Fig. 1) or the healed stage. The active stage occurs during childhood and is manifested as newly formed porous bone, while in adults it is found only in the healed stage as small depressions in the supraorbital ridge, at the level of the surrounding bone. In children, the process can also be observed on the calvaria, most often on the parietal bones and the occipital bone. The cause of *cribra orbitalia* is most often associated with anaemia caused by iron deficiency[18] which occurs in historical populations due to parasites (the organism's response being to reduce the haemoglobin needed for pathogen reproduction)[19], inadequate (uniform) and insufficient nutrition, lead poisoning, as well as low hygiene standards.[20]

The frequency of *cribra orbitalia* was determined by first recording the orbit preservation grade and then the occurrence of *cribra orbitalia*, including its stage (active or healed), according to the criteria proposed by Mittler and Van Gerven[21] as well as Mensforth et al.[22]

The next indicator of subadult stress, related to permanent tooth growth or growth stop, is dental enamel hypoplasia, evident as linear horizontal defects caused by a reduction in enamel thickness, most frequently on the buccal and front sides of the teeth (Fig. 2). Dental enamel hypoplasia is a result of stunted growth as a result, primarily, of metabolic stress, and somewhat less frequently of trauma or genetic factors.[23] Various factors can slow down or com-

[18] CARLSON, ARMELAGOS, VAN GERVEN 1974: 405–410 STUART-MACADAM 1985; 1991.
[19] HENGEN 1971: 57–75.
[20] MENSFORT 1990: 81–99; ROBERTS, MANCHESTER 2007: 225–226.
[21] MITTLER, VAN GERVEN 1994: 287–297.
[22] MENSFORTH et al. 1978: 1–59.
[23] GOODMAN, ARMELAGOS, ROSE 1980: 515–528; PINDBORG 1982: 123–134; GOODMAN, ROSE 1991, 279–294.

genetskih čimbenika.[23] Razni faktori mogu usporiti ili potpuno zaustaviti proces mineralizacije cakline. Kako zubna caklina nema sposobnost remodeliranja, kao na primjer kost, tako će hipoplazija zubne cakline ostati vidljiva sve dok se zahvaćeni dio krune ne uništi abrazijom zuba. U arheološkim populacijama hipoplastični defekti najčešće su posljedica neadekvatne i nedovoljne prehrane, patoloških stanja i sugeriraju na stres i loše zdravstveno stanje kod djece. U uzorku je izrađen zubni karton za svaku osobu te je bilježena prisutnost hipoplazije zubne cakline.

Nespecifična zarazna bolest očituje se i pojavnošću periostitisa, no važno je razlikovati periostitis kao posljedicu nespecifične zarazne bolesti od periostitisa kao posljedicu fiziološkog stresa koji je čest kod djece, a nastaje zbog intenzivnog rasta kosti. Periostitis se očituje promjenama na periostu u obliku poroznosti i stvaranja nove šupljikave kosti. On može biti lokaliziran kada zahvaća samo jednu ili dio jedne kosti ili može biti sustavan kada zahvaća veći broj kostiju. U ovom istraživanju uključen je samo sistemski periostitis koji je najvjerojatnija posljedica nespecifične zaraze, kako bi se možebitnom korelacijom s pokazateljima subadultnog stresa dobio što bolji uvid u kvalitetu života djece.

Većina podataka dobivenih antropološkom analizom nema normalnu distribuciju, pa su za određivanje statističke značajnosti razlika dobivenih rezultata korištene neparametrijske metode. Razlike u prosječnim doživljenim starostima između muškaraca i žena te između uzoraka testirane su pomoću neparametrijskog Mann-Whitneyeva testa. Razlike u učestalosti pokazatelja subadultnog stresa između djece i odraslih te između muškaraca i žena testirane su pomoću hi-kvadrat testa, a u slučajevima kada je to bilo potrebno korištena je Yatesova korekcija. Korelacija između *cribrae orbitaliae*,

[23] GOODMAN, ARMELAGOS, ROSE 1980: 515–528; PINDBORG 1982: 123–134; GOODMAN, ROSE 1991: 279–294.

Slika 2. *Hipoplazija zubne cakline* (snimila: I. Kružić)
Figure 2 *Dental enamel hypoplasia* (photo by: I. Kružić)

pletely stop the enamel mineralisation process. Since dental enamel does not have the ability to remodel, as do bones, dental enamel hypoplasia remains visible until the affected part of the crown is destroyed by tooth abrasion. Hypoplastic defects in archaeological populations are most often the result of inadequate and insufficient nutrition, and of pathological conditions, suggesting stress and poor health in children. In the sample, a dental record was made for each individual, which also included dental enamel hypoplasia occurrence.

Among the consequences of non-specific infectious diseases is also periostitis, which is to be distinguished from periostitis resulting from physiological stress, commonly found in children following intensive bone growth. Periostitis is manifested in alterations in the periosteum such as porosity and periosteal new bone formation. If it affects only one bone or a bone part, it is called localised periostitis, and if it affects several bones, it is called systemic periostitis. In order to obtain the best possible insight into children's quality of life based on a possible correlation with indicators of subadult stress, this study included only systemic periostitis that was most likely the consequence of a non-specific infection.

Most of the data obtained through an anthropological analysis do not have a normal distribution. Hence, non-parametric methods were used to determine the statistical significance of the differences in the obtained results.

TABLICA 2. *Distribucija po spolu i dobi u kompozitnom uzorku*
TABLE 2 *Distribution by sex and age in the composite sample*

Starost u godinama / *Age in years*	**Djeca / *Children***	**Žene / *Women***	**Muškarci / *Men***
>60		10	15
55-59		3	11
50-54		10	10
45-49		7	16
40-44		8	37
35-39		8	15
30-34		13	19
25-29		5	10
20-24		9	5
15-19		10	4
10-14	15		
5-9	30		
2-5	48		
1-2	12		
0-1	51		
Ukupno osoba / *Total persons*	**156**	**83**	**142**
Prosječna starost / Average age	**3,94**	**37,22**	**40,83**

hipoplazije zubne cakline i periostitisa analizirana je pomoću Spearmanova testa. U svim statističkim izračunima i testovima korišten je statistički računalni program SPSS 10.0 for Windows.

REZULTATI

Ukupno je analizirana 381 osoba, 158 djece, 81 žena i 142 muškarca, što čini omjer od 1 : 0,51 : 0,90. Prosječna doživljena dob djece u kompozitnom uzorku iznosi 3,94 godine, prosječna doživljena dob žena je 37,22, dok je muškaraca 40,83, nema statistički značajne razlike u doživljenoj dobi između muškaraca i žena (χ^2 = 0,103; P = 0,75) Distribucija po dobi prikazana je u Tablici 2.

Učestalost i distribucija *cribra orbitalia* u kompozitnom uzorku južne Hrvatske prikazana je u Tablici 3.

O^1 = broj osoba s očuvanim čeonim kostima

Differences of average lived ages between men and women and among the samples were tested using the nonparametric Mann–Whitney *U* test. Differences in the frequency of subadult stress indicators between children and adults, and between men and women, were tested using the chi-squared test, and where necessary, Yates's correction for continuity was applied. The correlation between *cribra orbitalia*, dental enamel hypoplasia and periostitis was analysed using Spearman's correlation coefficient. All statistical calculations and tests were carried out with SPSS 10.0 for Windows software for advanced statistical analysis.

THE RESULTS

A total of 381 persons were analysed, of which 158 were children, 81 women and 142 men, which makes a ratio of 1 : 0.51 : 0.90. The average lived age of children in

tablica 3. *Učestalost i distribucija cribrae orbitaliae u kompozitnom uzorku južne Hrvatske*
table 3 *Cribra orbitalia frequency and distribution in the composite sample of southern Croatia*

Dob/spol ***Age/sex***		**CO u sanaciji** ***Healed CO***			
	O[1]	A1[2]	%	A2[3]	%
0-1	11	0	0	3	27,27
1-2	3	0	0	1	33,33
2-5	16	0	0	10	62,5
6-10	10	2	20	5	50
11-15	3	0	0	2	66,66
Djeca ukupno ***Children total***	43	2	4,65	21	48,84
Žene *Women*	39	6	7,69	0	0
Muškarci *Men*	61	12	19,67	0	0
Odrasli ukupno ***Adults total***	100	18	18	0	0

/ *number of persons with preserved frontal bones*

A1[2] = broj osoba s očuvanim čeonim kostima na kojima su vidljivi tragovi *cribrae orbitaliae* u fazi sanacije / *number of persons with preserved frontal bones, on which traces of cribra orbitalia in the healed stage are visible*

A2[3] = broj osoba s očuvanim čeonim kostima na kojima su vidljivi tragovi *cribrae orbitaliae* u aktivnoj fazi / *number of persons with preserved frontal bones, on which traces of cribra orbitalia in the healed stage are visible*

Kod odraslih osoba uočena je samo *cribra orbitalia* u fazi sanacije, i to u ukupnom postotku od 18 %, bez značajnije razlike između muškaraca i žena (χ^2 = 0,208; P = 0,649). Kod djece najvećim dijelom uočena je u aktivnoj fazi (48,84 %), dok je u fazi sanacije uočena samo kod 4,65 %. Postoji statistički značajna razlika između učestalosti *cribrae orbitaliae* kod djece i odraslih (χ^2 = 9,384; P = 0,002). Najniža učestalost *cribrae orbitaliae* uočena je kod najmanje djece do jedne godine života (27,27 %), potom u nešto veće djece do dvije godine 33,33 %, dok je u svim ostalim dobnim skupinama učestalost viša od 50 %. Uočena je pozitivna korelacija između prisutnosti *cribrae orbitaliae* i doživljene dobi. Prosječna the composite sample was 3.94 years, the average lived age of women was 37.22, while that of men was 40.83. Hence, there is no statistically significant difference between the lived age of men and women (χ^2=0.103; P=0.75). Distribution by age is shown in Table 2.

Cribra orbitalia frequency and distribution in the composite sample of southern Croatia is shown in Table 3.

In adults, only *cribra orbitalia* in the healed stage was observed, with a total percentage of 18 %, and without significant differences between men and women (χ^2=0.208; P=0.649). In children, it was mostly observed in the active stage (48.84 %), and in only 4.65 % in the healed stage. There is a statistically significant difference between the frequency of *cribra orbitalia* in children and adults (χ^2=9.384; P=0.002). The lowest frequency of *cribra orbitalia* was observed in infants up to one year of age (27.27 %), followed by toddlers up to 2 years (33.33 %), while in all other age groups the frequency was higher than 50 %. A positive correlation was observed between the presence of *cribra orbitalia* and lived age. The average age of death in individuals without *cri-*

TABLICA 4. *Učestalost i distribucija hipoplazije zubne cakline u kumulativnom uzorku južne Hrvatske*
TABLE 4 *Dental enamel hypoplasia frequency and distribution in the cumulative sample of southern Croatia*

Lokalitet / *Site*	**Stoljeće / *Century***	**Žene / *Women***			**Muškarci / *Men***			**UKUPNO / *TOTAL***	
		A^1	**A^2**	**%**	**A^1**	**A^2**	**%**	**A^1(ž+m)^1/A^2(ž+m)** ***A^1(f+m)^1/A^2(f+m)***	**%**
Bijaći – Stombrate	9. – 10.	56	0	0	68	2	2,91	124/2	1,61
Svećurje –Žestinj	9. – 11.	27	2	7,41	73	9	12,33	100/11	11
Rižinice	9. – 10.	12	0	0	8	0	0	20/0	0
Sv. Mihovil – Kučiće	12. – 14.	13	4	30,77	51	28	54,9	64/32	50
Koljani Gornji – Crkvina	14.	6	0	0	30	6	20	36/6	16,67
Kamen Most – Kaldrma	14. – 15.	24	0	0	56	0	0	80/0	0
Žedno – Sv. Mavar	13. – 17.	0	0	0	4	0	0	4/0	0
Dominikanski samostan sv. Katarine u Splitu *Dominican Monastery of Saint Katharine in Split*	16. – 19.	18	7	38,89	48	21	43,75	66/28	42,42
Otok Vuletina rupa – Grebčine	17. – 18.	42	0	0	179	12	6,7	221/12	5,43
Ukupno *Total*	9. – 19.	198	13	**6,5**7	517	78	**15,09**	715/91	**12,73**

A^1 = ukupni broj sjekutića i očnjaka / *total number of incisors and canines*
A^2 = broj sjekutića i očnjaka na kojim su vidljivi tragovi hipoplazije zubne cakline / *number of incisors and canines showing traces of dental enamel hypoplasia*

dob u trenutku smrti kod osoba bez *cribrae orbitaliae* viša je za 4,8 godina.

Učestalost i distribucija hipoplazije zubne cakline u kompozitnom uzorku južne Hrvatske prikazana je u Tablici 4. Ukupna učestalost hipoplazije zubne cakline kod odraslih osoba je 12,73 % (kod žena je 6,57 %, a kod muškaraca 15,09 %), postoji statistički značajna razlika između muškaraca i žena (χ^2 = 7,508.; P = 0,006).

Nije uočena pozitivna korelacija između doživljene dobi u trenutku smrti i pojavnosti hipoplazije zubne cakline. Također nije zabilježena značajnija korelacija između osoba koje imaju *cribru orbitaliu* i hipoplaziju zubne cakline (u većini slučajeva osoba ima samo jedan od navedenih pokazatelja subadultnog stresa).

bra orbitalia was 4.8 years higher.

Dental enamel hypoplasia frequency and distribution in the composite sample of southern Croatia is shown in Table 4. While the total frequency of dental enamel hypoplasia in adults is 12.73 % (6.57 % in women and 15.09 % in men), there is a statistically significant difference between men and women (χ^2=7.508; P=0.006).

No positive correlation was observed between the age of death and the incidence of dental enamel hypoplasia. Also, no significant correlation was recorded between individuals with *cribra orbitalia* and dental enamel hypoplasia (in most cases the individual had only one of the mentioned subadult stress indicators). On the other hand, in 38 % of individ-

S druge strane, kod 38 % osoba s *cribrae orbitaliae* uočeni su i znakovi aktivnog generaliziranog periostitisa.

RASPRAVA

Omjer djece, muškaraca i žena nije tipičan u analiziranom kumulativnom uzorku Dalmacije, odnosno žene su nešto podzastupljenije. Razlog takvoj distribuciji vjerojatno se krije u necijelovitoj istraženosti lokaliteta, jer bi očekivani omjer između muškaraca i žena trebao biti 1 : 1, dok se udio djece kreće od jedne do dvije trećine u uzorku.[24] Doživljena dob u trenutku smrti nešto je veća za muškarce (40,83 godine) u odnosu na žene (37,22 godine) vjerojatno kao posljedica visokog rizika kojem su žene izložene tijekom reproduktivnog razdoblja, ali vjerojatno i zbog položaja u društvu. Slična doživljena dob zabilježena je i u kumulativnom uzorku kontinentalne Hrvatske gdje muškarci prosječno dožive 37,2, a žene 33,6 godina, a kraći životni vijek žena zabilježen je na brojnim drugim arheološkim lokalitetima.[25]

Učestalost *cribrae orbitaliae* kod odraslih osoba je 18 %, dok je u kumulativnom uzorku kontinentalne Hrvatske *cribra orbitalia* uočena kod 23,1 % osoba. Kod djece je ukupna učestalost *cribrae orbitaliae* 48,84 %, dok je u kumulativnom uzorku kontinentalne Hrvatske ta učestalost nešto viša 60,8 %. Slične vrijednosti zabilježene su i na arheološkim lokalitetima u Europi, poput nalazišta Cedynia u Poljskoj gdje je ukupna pojavnost *cribrae orbitaliae* 31,4 %,[26] a na nalazištu Kaimas u Litvi rezultati su nešto sličniji Dalmaciji i iznose 19,9 %.[27] U kumulativnom uzorku nema značajne razlike između učestalosti *cribrae orbitaliae* kod muškaraca i žena, dok su, s druge strane, takve razlike pronađene u kuuals with *cribra orbitalia*, signs of generalised active periostitis were also observed.

DISCUSSION

The ratio of children, men and women in the analysed cumulative sample of Dalmatia is not typical: women are slightly under-represented. Such distribution is probably due to incomplete site excavations, because the expected ratio between men and women is usually 1 : 1, while the share of children in the sample ranges from one to two thirds.[24] Age at death is slightly higher in men (40.83 years) compared to women (37.22 years), probably as a consequence of women's high exposure risk during the reproductive period, but probably also due to their position in society. A similar lived age has also been recorded in the cumulative sample of continental Croatia, where men's average lived age was 37.2, and women's 33.6; a shorter life span in women has been recorded at numerous other archaeological sites[25].

Cribra orbitalia frequency in adults is 18 %, while in the cumulative sample of continental Croatia *cribra orbitalia* was observed in 23.1 % of the population. In children, total *cribra orbitalia* frequency is 48.84 %, while in the cumulative sample of continental Croatia, it is somewhat higher, at 60.8 %. Similar values have been recorded at other archaeological sites in Europe such as the Cedynia site in Poland, where *cribra orbitalia* total incidence is 31.4 %[26], while the results at the Kaimas site in Lithuania are rather more similar to those in Dalmatia and amount to 19.9 %.[27] In the cumulative sample, there are no significant differences between *cribra orbitalia* frequency in men and women, while on the other hand such differences were indeed found in the cu-

[24] ŠLAUS 2002: 41; ŠLAUS 2006.
[25] ANGEL 1968: 258–263; BOLDSEN 2000: 233–244; ŠLAUS 2002; NOVAK, ŠLAUS, PASARIĆ 2007: 330.
[26] JERSZYŃSKA 1991: 106; PIONTEK et al. 2001: 175, T. 3.
[27] JANKAUSKAS 1995: 34–45.

[24] ŠLAUS 2002: 41; ŠLAUS 2006.
[25] ANGEL 1968: 258–263; BOLDSEN 2000: 233–244; ŠLAUS 2002; NOVAK, ŠLAUS, PASARIĆ 2007: 330.
[26] JERSZYŃSKA 1991:106; PIONTEK et al. 2001: 175, T. 3.
[27] JANKAUSKAS 1995: 34–45.

mulativnom uzorku kontinentalne Hrvatske.[28] Visoka učestalost *cribrae orbitaliae* kod djece je zabilježena ne samo u Hrvatskoj već i diljem Europe gdje se vrijednosti kreću od 32 % u Litvi (Kaimas) do 63 % u Poljskoj (Cedynia).[29] Najmanja djeca (do 1 godine) imaju najnižu stopu učestalosti *cribrae orbitaliae* što je i očekivano jer tijekom intrauterinog razvoja dijete akumulira dovoljnu razinu željeza, koja mu bude dostatna za prve mjesece života (do pola godine). No ako se dijete, odnosno majka ne hrani adekvatno, vrlo se brzo može pojaviti problem nedostatka željeza. Veliko pogoršanje u prehrani djece nastupa pri prestanku dojenja koje se obično događa između 2. i 5. godine djetetova života, kad se djeca u potpunosti oslanjaju na redovnu prehranu zajednice koja najčešće nije zadovoljavajuća u pogledu količine i u pogledu kakvoće. Majke su djecu pokušavale dojiti što duže jer su im na taj način osiguravale bolju količinu nutrijenata i mikronutrijenata, no zbog čestih trudnoća morale su prestajati. Prestanak dojenja predstavljao je opasnost od parazitskih i zaraznih bolesti, jer su umjesto sterilnog majčina mlijeka djeca počinjala jesti i piti vodu upitne zdravstvene vrijednosti, te su često obolijevala od raznih zaraznih bolesti koje se manifestiraju dijarejom, koja pak smanjuje apetit i doprinosi smanjenju željeza.[30] Upravo u tom razdoblju učestalost *cribrae orbitaliae* iznimno je visoka, više od 60 %, a riječ o aktivnoj *cribrae orbitaliae*, odnosno anemiji koju, a možda i zbog koje, djeca nisu uspjela preboljeti druge bolesti. Rizik neadekvatne prehrane nastavljao se i u sljedeća razdoblja djetinstva, te je zabilježen najveći postotak aktivne *cribrae orbitaliae* kod djece starosti između 11 i15 godina. U kumulativnom uzorku Dalmacije on iznosi 66,7 %, dok u kumulativnom uzorku kontinentalne Hrvatske on iznosi 60 %.[31] Ovaj podatak ne

[28] NOVAK, ŠLAUS, PASARIĆ 2009: 261.
[29] JERSZYŃSKA 1991: 106.
[30] ROWLAND, ROWLAND 1986: 115–119; ROWLAND, ROWLAND, COLE 1988: 134–138.
[31] NOVAK, ŠLAUS, PASARIĆ 2009: 262.

mulative sample of continental Croatia.[28] A high frequency of *cribra orbitalia* in children has been recorded not only in Croatia but also throughout Europe, where values range from 32 % in Lithuania (Kaimas) to 63 % in Poland (Cedynia).[29] Infants (up to 1 year) have the lowest *cribra orbitalia* frequency, which is expected, as during intrauterine development the child accumulates a level of iron sufficient for the first months of life (up to half a year). However, malnutrition in a child (or its mother) can very quickly lead to iron deficiency. A major deterioration in children's nutrition would occur at the cessation of breastfeeding, which usually happened between the ages of 2 and 5, as the children thereafter relied entirely on their community's regular diet, which was usually unsatisfactory both in terms of quantity and quality. Mothers tried to breastfeed their children for as long as possible, because in that way they provided them with a better amount of nutrients and micronutrients, but subsequent (and frequent) pregnancies brought this to a stop. The interruption then presented the risk of parasitic and infectious diseases because, instead of sterile mother's milk, the children began to eat foods and drink water of questionable health value and often fell ill with various infectious diseases manifested in diarrhoea, which in turn reduced appetite and contributed to iron depletion.[30] It is during this period that *cribra orbitalia* frequency was extremely high: more than 60 %. What is more, it was active *cribra orbitalia*, or unhealed anaemia, as a result of which the children presumably did not manage to overcome other diseases. The risk of inadequate nutrition continued into later childhood periods; hence, the highest percentage of active *cribra orbitalia* has been recorded in children aged 11–15 years. In the cumulative sample of Dalmatia it amounts to 66.7 %, and

[28] NOVAK, ŠLAUS, PASARIĆ 2009: 261.
[29] JERSZYŃSKA 1991:106.
[30] ROWLAND, ROWLAND 1986: 115–119; ROWLAND, ROWLAND, COLE 1988: 134–138.

iznenađuje jer djeca u pubertetu doživljavaju snažan rast i razvoj, također gotovo ravnopravno počinju kroz težak rad doprinositi zajednici, a s druge strane njihov društveni položaj i dalje je pri dnu, pa pri podjeli hrane zasigurno ne dobivaju najbolje dijelove. Ovako visoke vrijednosti učestalosti *cribrae orbitaliae* kod djece u odnosu na odrasle osobe zabilježene su i na drugim nalazištima.[32] Kao i u uzorku kontinentalne Hrvatske, i u kumulativnom uzorku Dalmacije uočena je značajna korelacija između doživljene dobi i prisutnosti *cribrae orbitaliae* (uključujući fazu sanacije i aktivnu fazu). Nedostatak željeza utječe na opće stanje organizma, dovodi do smanjene radne sposobnosti, kao i do manje otpornosti organizma, stoga ne iznenađuje da osobe s aktivnom ili zaraslom *cribrae orbitaliae* žive kraće.

S druge strane, kada se sagledaju podatci povezani s pojavnosti hipoplazije zubne cakline, vidljivo je kako se u Dalmaciji navedeni pokazatelj pojavljuje nešto rjeđe, odnosno u kumulativnom uzorku Dalmacije pojavljuje se kod 12,75 % odraslih, dok se u kumulativnom uzorku kontinentalne Hrvatske pojavljuje kod 44,6% osoba. Na arheološkim lokalitetima u Poljskoj hipoplazija zubne cakline pojavljuje se u rasponu od 9,4 %[33] do 35,1 % na nalazištu Dolní Věstonice u Češkoj.[34] Visoke vrijednosti hipoplazije zubne cakline pojavljuju se kod sjedilačkih populacija koje orijentiraju svoju prehranu na biljnom podrijetlu, nasuprot zajednicama koje se pretežito bave lovom. Za razliku od *cribrae orbitaliae* hipoplazija zubne cakline nije utjecala na ukupnu doživljenu starost. Iako neki autori uočavaju povezanost hipoplazije zubne cakline i *cribrae orbitaliae*, u kompozitnom uzorku Dalmacije ona nije uočena kao ni u onom kontinentalne Hrvatske.[35] S druge strane, uočena je snažna korelacija između učestalosti

[32] CYBULSKI 1977: 31–41; STUART-MACADAM, 1985; ROBLEDO et al. 1995: 188; NOVAK, ŠLAUS 2007: 457.
[33] WOŹNIAK et al. 2005.
[34] JAROŠOVÁ 2006: 302–312.
[35] NOVAK, ŠLAUS, PASARIĆ 2009: 265.

in the cumulative sample of continental Croatia, 60 %.[31] This data is not surprising, given that children experienced strong growth and development during puberty, also beginning to contribute to the community through hard work almost equal to that of adults, while on the other hand their social position was still low-status, so when food was distributed, they certainly did not get the best share. Such high values of *cribra orbitalia* frequency in children compared to adults have also been recorded at other sites.[32] As in the sample of continental Croatia and in the cumulative sample of Dalmatia, a significant correlation was observed between lived age and the occurrence of *cribra orbitalia* (including both the healed and the active stages). Lack of iron affects the general condition of the organism, leading to reduced work capacity, as well as a weaker immune system. Therefore, it comes as no surprise that individuals with active or healed *cribra orbitalia* lived shorter lives.

On the other hand, when the data related to the incidence of dental enamel hypoplasia is examined, it is evident that in Dalmatia the mentioned indicator appears somewhat less often: in the cumulative sample of Dalmatia it appears in 12.75 % of adults, while in the cumulative sample of continental Croatia it appears in 44.6 % of individuals. At other European archaeological sites, dental enamel hypoplasia occurs in a range from 9.4 % in Poland[33] to 35.1 % at the Dolní Věstonice site in the Czech Republic.[34] High values of dental enamel hypoplasia appear in sedentary populations that orient their diet on foods of plant origin, as opposed to communities that are predominantly engaged in hunting. In contrast to *cribra orbitalia*, dental enamel hypoplasia did not affect total lived age. Although some authors have observed a connection be-

[31] NOVAK, ŠLAUS, PASARIĆ 2009: 262.
[32] CYBULSKI 1977: 31–41; STUART-MACADAM, 1985; ROBLEDO et al. 1995: 188; NOVAK, ŠLAUS 2007: 457.
[33] WOŹNIAK et al. 2005.
[34] JAROŠOVÁ 2006: 302-312.

cribrae orbitaliae i periostitisa, te osobito kod djece sugerira na visoki stupanj pothranjenosti. Ovakvi podatci dobiveni su i kod drugih autora.[36] Ukupno gledajući, navedeni podatci upućuju na iznimno teške uvjete života djece i njihove male izglede da dožive odraslu dob. Uspoređujući ih s podatcima dobivenim za kumulativni uzorak kontinentalne Hrvatske, može se zaključiti da su životni uvjeti djece u srednjovjekovnoj i novovjekovnoj Dalmaciji bili nešto bolji od uvjeta u kontinentalnoj Hrvatskoj. No djeca su i u Dalmaciji kao i u kontinentalnoj Hrvatskoj, ali i diljem Europe u ovim razdobljima doživljavala znatni stres uzrokovan niskim životnim standardom, lošim higijenskim i zdravstvenim uvjetima. Proučavanje srednjovjekovnog i novovjekovnog kompozitnog uzorka u Dalmaciji potrebno je proširiti i na cijelu istočnu obalu Jadrana kako bi se dobila jasnija slika životnih uvjeta, što je osobito važno za ove populacije koje nemaju ostavljenih pisanih podataka o životu zajednice.

[36] LALLO, ARMELAGOS, MENSFORTH 1977; MENSFORTH et al. 1978: 1–59; LARSEN, HUTCHINSON 1992.

tween dental enamel hypoplasia and *cribra oritalia*, it was neither observed in the composite sample of Dalmatia, nor in that of continental Croatia.[35] On the other hand, a strong correlation was observed between *cribra orbitalia* frequency and periostitis, suggesting a high degree of malnutrition especially in children. The same findings have also been made by other authors.[36] On the whole, the mentioned data suggest extremely difficult living conditions among children and the statistically low chance of them reaching adulthood. A comparison with the data obtained for the cumulative sample of continental Croatia suggests that the living conditions of children in medieval and modern era Dalmatia were somewhat better than those in continental Croatia. However, in these periods, children in both Dalmatia and continental Croatia (and throughout Europe) experienced significant stress caused by low living standards, and poor hygiene and health conditions. The study of the medieval and modern era composite sample in Dalmatia should be extended to the entire eastern Adriatic coast to get a clearer picture of the living conditions, which is particularly important for these populations who have no written information on the life of the community.

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[35] NOVAK, ŠLAUS, PASARIĆ 2009: 265.

[36] LALLO, ARMELAGOS, MENSFORTH 1977; MENSFORTH et al. 1978: 1–59; LARSEN, HUTCHINSON 1992.

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ON THE POSSIBILITY OF LOCATING THE GRAVE OF PJETËR BOGDANI HISTORICAL CONTEXT AND THE MYSTERY OF THE TOMB OF PJETËR BOGDANI (CA. 1630 - 1689)

O MOGUĆNOSTI LOCIRANJA GROBA PJETËRA BOGDANIJA POVIJESNI KONTEKST I ZAGONETKA GROBNICE PJETËRA BOGDANIJA (CCA 1630. – 1689.)

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In this paper (based on processed cranium *fragments) the authors posit that the remains in question may be those of Archbishop Petar Bogdani. Special attention is paid to the general overview of the political situation in the territory of what is present-day Kosovo in the late Middle Ages, where (due to riots and political transition during the Ottoman occupation) persons appeared on the political scene who influenced the formation of a modern ideology. This undoubtedly influenced the consciousness of the population and left traces that, depending on the geopoltical context, do not differ all that greatly from the situation in 20th century Kosovo. The story of Pjetër Bogdani and the mystery of his tomb, presented briefly in this article, should be considered as catalyst for arousing academic research inside and outside of the country—especially for archivists.*

Ključne riječi:
Pjetër Bogdani, Priština, kosti, mjesto ukopa, crkva sv. Franje Ksaverskog

U radu autori zastupaju tezu da su analizirani dijelovi lubanje mogli pripadati nadbiskupu Pjetëru Bogdaniju. Posebna pozornost posvećena je općem prikazu političke situacije na području današnjeg Kosova u kasnom srednjem vijeku, gdje su se zbog nemira i političkih mijena u doba osmanske okupacije na političkoj sceni pojavljivali pojedinci koji su utjecali na formiranje moderne ideologije.
To je nedvojbeno utjecalo na svijest stanovništva i ostavilo tragove koji koji pokazuju sličnosti sa situacijom na Kosovu u 20. stoljeću, ovisno o geopolitičkom kontekstu. Priču o Pjetëru Bogdaniju i zagonetci njegove grobnice, ukratko izloženu u ovom članku, treba smatrati katalizatorom domaćih i međunarodnih znanstvenih istraživanja, posebice za arhiviste.

INTRODUCTION

The medieval history of the Balkans, particularly in regions where geopolitical, socio-economic, and demographic factors resulted in intense conflict, has left behind lingering tensions that continue to reverberate in contemporary politics and often erupt with high intensity. As a result of these conflicts, certain individuals were able to dedicate their entire lives to causes they believed were just. After many centuries, it is evident that their paths of humanism represented a valiant effort towards morality and the preservation of values for their people.

Pjeter Bogdani was precisely this kind of humanist, and thus, the possibility of locating his grave cannot be ignored. Acknowledging the potential significance of such a discovery, this study seeks to elucidate the historical context surrounding Bogdani's life and death. Despite the inherent limitations and uncertainties of this investigation, it is deemed imperative to shed light on the possible whereabouts of his grave, which would otherwise remain unknown to the wider public. Accordingly, this research aims to provide a comprehensive understanding of the life and accomplishments of Pjetër Bogdani, thereby highlighting the potential implications of discovering his remains. Ultimately, this study endeavors to enrich our knowledge of the past and contribute to a more nuanced understanding of the cultural and historical milieu that has shaped our world.

THE HISTORICAL FRAMEWORK OF KOSOVO IN THE 17TH CENTURY:

At the end of the 16th century, the Ottoman government increased its taxation on all Jizya, and was effectively four or five times higher for the Christian population. Despite this agregious imbalance, the government was still not satisfied. The "Avariz" annual tax was added and was made mandatory to be paid in cash.

UVOD

Srednjovjekovna povijest Balkana, osobito u područjima u kojima su geopolitički, socioekonomski i demografski čimbenici rezultirali intenzivnim sukobima, ostavila je iza sebe napetosti koje nastavljaju odjekivati u suvremenoj politici i često izbijaju na površinu s velikim intenzitetom. Kao rezultat tih sukoba, neki su pojedinci mogli posvetiti cijeli život onom za što su vjerovali da je pravedno. Nakon mnogih stoljeća vidljivo je da su njihovi putovi humanizma predstavljali hrabar iskorak prema moralnosti i očuvanju vrijednosti svojeg naroda.

Pjetër Bogdani bio je upravo takav humanist, pa je važno obratiti pozornost na mogućnost lociranja njegova groba. Priznajući potencijalno značenje takvog otkrića, ova studija nastoji razjasniti povijesni kontekst koji okružuje Bogdanijev život i smrt. Unatoč inherentnim ograničenjima i neizvjesnostima ovog istraživanja, smatra se važnim rasvijetliti moguće mjesto gdje se nalazi njegov grob, što bi inače ostalo nepoznato široj javnosti. U skladu s tim, cilj je ovog istraživanja pružiti sveobuhvatno razumijevanje života i postignuća Pjetëra Bogdanija, čime se ističu potencijalne implikacije otkrivanja njegovih ostataka. U konačnici, ova studija nastoji obogatiti naše znanje o prošlosti i pridonijeti boljem razumijevanju kulturnog i povijesnog miljea koji je oblikovao naš svijet.

POVIJESNI OKVIR KOSOVA U 17. STOLJEĆU

Krajem 16. stoljeća osmanska je vlada povećala porez koji je zapravo bio četiri ili pet puta veći za kršćansko stanovništvo. Unatoč ovom nečuvenom nerazmjeru, vlada još uvijek nije bila zadovoljna. Dodan je godišnji porez zvan avariz koji se morao plaćati u gotovini. Zamjena poreza plaćenih robom porezima koji su se plaćali isključivo novcem

Replacing taxes paid with goods by taxes paid explicitly in cash was a progressive step, but paying those heavy taxes was a burden, especially for the Christian population in medieval Kosovo, and thus this situation caused dissatisfaction and incited revolt. In addition to these taxes other measures were added, wherein the Beys were not only authorized to collect local taxes but to also register "Sekban" military troops. This enabled the commanders to plunder the local population for their personal gain.[1]

To cope with this dire situation, at the end of the 16th century, the Catholic Albanians formed a military alliance with armies of the Italian and Spanish states. Mark Gjini, who in 1595, in the project of Plesha and in collaboration with the Bishop of Korçula, was charged with the task of speaking with Bertuç in Ragusa, stands out in this period. A letter sent to the Senate on October 9th from Budva (sender unknown but of Albanian descent) states that Mark Gjini was sent to Rome by the Bishop of Korçula. Gjini asked the Pope to send 300 soldiers to Brindisi in support of the Albanians who at that time wanted to occupy Shkodra. Mark Gjini also asked for assistance from the Kingdom of Naples. [2]

In the summer of 1602, Gjini had gone to Lezha to recruit soldiers, but the exact purpose of why these troops were provided: for the Albanian cause or for the benefit of the Pope of Naples, is not known.[3]

In 1603 an agreement was reached between the knights of Malta and the Albanian rebels. However, when the cavalry from Malta directed their ships and forces to the shores of Albania, a betrayal occurred and thus in 1606, their landing failed. Many of the Albanians who had taken part in organizing this uprising were killed. A captive Albanian priest was enslaved and tortured and his skin, along with his severed head, was sent to Istanbul.[4]

1 INALXHIK 2002: 70, 71.
2 INALXHIK 2002: 143.
3 INALXHIK 2002: 135.
4 ANGELY 1998: 305.

bio je napredan korak, no plaćanje tih teških poreza bilo je teret, posebno za kršćansko stanovništvo srednjovjekovnog Kosova, pa je takvo stanje izazivalo nezadovoljstvo i revolt. Uz ove poreze dodane su i druge mjere, prema kojima su begovi bili ovlašteni ne samo ubirati lokalne poreze već i novačiti vojne jedinice, takozvane sekbane. To je zapovjednicima omogućilo pljačku lokalnog stanovništva za osobnu korist.[1]

Kako bi izašli na kraj s ovom teškom situacijom, krajem 16. stoljeća Albanci katolici oformili su vojni savez s vojskama talijanskih i španjolskih država. U tom se razdoblju ističe Mark Gjini, koji je 1595. godine, u projektu Plesha i u suradnji s korčulanskim biskupom, dobio zadatak da razgovara s Bertuçom u Dubrovniku. U pismu upućenom senatu 9. listopada iz Budve, čiji je pošiljatelj nepoznat, ali albanskog podrijetla, stoji da je Marka Gjinija u Rim poslao korčulanski biskup. Gjini je tražio od pape da pošalje 300 vojnika u Brindisi kao potporu Albancima koji su u to vrijeme namjeravali zauzeti Skadar. Marko Gjini također je zatražio pomoć od Napuljskog Kraljevstva.[2]

U ljeto 1602. Gjini je otišao u Lješ kako bi novačio vojnike, ali ostaje nejasno jesu li se ove jedinice trebale boriti za albansku stvar ili u korist napuljskog pape.[3]

Godine 1603. postignut je sporazum između malteških vitezova i albanskih pobunjenika. Međutim, kad su se malteški brodovi približili albanskoj obali 1606. godine, dogodila se izdaja zbog čega njihovo pristajanje nije uspjelo. Mnogi Albanci koji su sudjelovali u organizaciji ustanka ubijeni su. Zarobljeni albanski svećenik je mučen, a njegova koža, zajedno s odsječenom glavom, poslana je u Istanbul.[4]

Nadalje, 17. svibnja 1606. novi papa Pavao V. pisao je Filipu III., španjolskom kralju

1 INALXHIK 2002: 70, 71.
2 INALXHIK 2002: 143.
3 INALXHIK 2002: 135.
4 ANGELY 1998: 305.

Further, on May 17, 1606, the new Pope Paul V, wrote to Philip III of Spain requesting he receive, "Mark Gjini, commander of Epirus and Anton Nicholas of Budva, Count of Podgorica", and to support their demands as the representatives of Catholics in Macedonia, Albania, and Serbia.[5]

The attempt to expel the Turks from Southern Europe came from two directions: firstly, from Western Europe, where projects were initiated by the Pope, the king of Spain, and the Italian princes. Secondly, from Southeastern Europe by the leaders of the Christian peoples in the Balkans. This also included those who adventured to the Balkans seeking a new fortune in Christian states, as well as those emigrating from Southeastern Europe (who ultimately entered the service of Spain, Naples, and Venice).[6]

As previously mentioned, the heavy "Avariz" tax began being collected in 1636. In opposition, the Albanians of Shkodra blocked the roads to disable the collection of this tax. In response, the Ottoman government appointed Vizier Mehmet Pasha (the governor of Bosnia) to suppress these Albanian insurgents.[7]

The social circumstances created in the seventeenth century caused the number of the Christian population in Albania to decline rapidly. It is estimated that from 1620 to 1650, approximately 300,000 Albanians embraced Islam.[8]

The beginning of the 17th century is also characterized by the spread of Bektashism[9] among Albanians. The liberal nature of Bektashism gained popularity as it introduced a fluid cohesion between the Christian religion and powerful elements of pagan heritage inherited from the prehistoric period.[10]

In one report are listed the names of heads of families who had converted to Christianity through sacrament and baptism. These reports

5 ANGELY 1998: 145.
6 ANGELY 1998: 245.
7 KYLCE 2004: 40.
8 ARNOLD 2004: 176.
9 An Islamic Sufi mystic movement.
10 KORKUTI et al. 2010: 88.

tražeći da primi, „Marka Gjinija, zapovjednika Epira i Antona Nikolasa iz Budve, grofa Podgorice", i da podrži njihove zahtjeve kao predstavnika katolika u Makedoniji, Albaniji i Srbiji.[5]

Pokušaj protjerivanja Turaka iz južne Europe dolazio je iz dvaju smjerova: prvo, iz zapadne Europe, gdje su takve inicijative pokretali papa, španjolski kralj i talijanski prinčevi, i drugo, iz jugoistočne Europe od vođa kršćanskih naroda na Balkanu. Tu su pripadali i svi oni koji su pustolovno dolazili na Balkan u potrazi za bogatstvom u kršćanskim zemljama, kao i oni koji su emigrirali iz jugoistočne Europe, i koji su konačno završavali u službi Španjolske, Napulja ili Venecije.[6]

Kao što je već spomenuto, teški porez avariz počeo se ubirati 1636. godine. Kao izraz nezadovoljstva, Albanci iz Skadra su blokirali ceste kako bi onemogućili naplatu ove dažbine. Osmanska vlada imenovala je vezira Mehmed-Pašu, namjesnika Bosne, da se obračuna s pobunjenicima.[7]

Društvene prilike u 17. stoljeću utjecale su na nagli pad broja kršćanskog stanovništva u Albaniji. Procjenjuje se da je od 1620. do 1650. oko 300 000 Albanaca prhvatilo islam.[8]

Početak 17. stoljeća obilježava i širenje bektašizma među Albancima. Liberalna priroda bektašizma[9] stekla je popularnost jer je uvela fluidnu koheziju između kršćanske religije i izraženih elemenata poganskog nasljeđa iz prapovijesnog razdoblja.[10]

U jednom izvješću navedena su imena glava obitelji koje su se sakramentima i krštenjem obratile na kršćanstvo. Ti izvještaji iz sredine 17. stoljeća sačuvani su u arhivu Kongregacije za širenje vjere (*Congregatio de*

5 ANGELY 1998: 145.
6 ANGELY 1998: 245.
7 KYLCE 2004: 40.
8 ARNOLD 2004: 176.
9 Islamski sufijski mistični pokret.
10 KORKUTI et al. 2010: 88.

(from the mid-seventeeth century) are preserved in the archives of the Congregation for the Evangelization of the Peoples (Propaganda Fide).[11]

As this was a period when the Albanian population had entered the phase of Islamization, there were reactions from the Albanian Catholic clergy and from the Vatican. In a report written in 1610 by the Archbishop of Bar Marin Bici, a great deal of theistic variety was described to be present in Albania.[12]

In order to prevent Albanians from converting to Islam, some Albanian youths attended classes at the "Illyrian College of Fermo" in 1633. These classes were led by Jesuit missionaries. They would then go on to study at the "School of Montoriso" in Rome under the direction of Franciscan missionaries and continue on to schools with curriculums dedicated to the rites of the Basilicas. Distinguished students pursued higher education at the "Urban College of Fide Propaganda".[13] One of these Albanian students was Pjetër Bogdani, born in Gur i Hasit near Prizren around 1630 who, through his work entitled "Çeta e Profetëve" and his lifetime of literary activity, marked a great leap in the development of Old Albanian literature.[14]

Bogdani started primary school in his hometown and continued on in Bulgaria, (Ciprovec).[15] He completed his studies in philosophy and theology at the Propaganda Fide College in Rome, Italy. During his lifetime of scholarship, he served in various ecclesiastical duties: he was head priest in the parish of the Catholic Church in Prizren, Bishop in Shkodra, and was in charge of the administration of the Diocese of Bar, and finally Archbishop in the city of Skopje.[16]

The matters of education and culture were sacred to Pjetër Bogdani. In 1647, Bogdan sent

[11] ARNOLD 2004: 142.
[12] ZEFI 2000b: 139.
[13] BUXHOVI 2012: 207.
[14] BALA et al. 1989: 45.
[15] GJINI 1982: 197.
[16] HISTORIA E POPULLIT SHQIPTAR I 2002: 351.

propaganda fide).[11]

Budući da je u ovom razdoblju albansko stanovništvo bilo izloženo pojačanoj islamizaciji, reakcije albanskog katoličkog klera i Vatikana nisu izostale. U izvješću iz 1610. barski nadbiskup Marin Bici spominje izraženu teističku raznolikost u Albaniji.[12]

Kako bi se spriječilo obraćanje Albanaca na islam, neki su mladi Albanci pohađali Ilirski kolegij u Fermu (1633.) koji su vodili jezuitski misionari. Školovanje su nastavljali u Školi Montoriso u Rimu pod vodstvom franjevačkih misionara, a zatim su išli u škole s programima posvećenim crkvenom nauku. Istaknuti studenti stekli su visoko obrazovanje na Urbanom kolegiju za širenje vjere.[13] Jedan od tih albanskih učenika bio je Pjetër Bogdani, rođen u Gur i Hasitu kod Prizrena oko 1630. godine, koji je svojim djelom pod naslovom *Çeta e Profetëve* i svojim cjeloživotnim književnim djelovanjem označio veliki skok u razvoju staroalbanske književnosti.[14]

Bogdani je osnovnu školu započeo u rodnom mjestu, a nastavio u Bugarskoj (Ciprovec).[15] Završio je studij filozofije i teologije na Kolegiju za širenje vjere u Rimu, u Italiji. Tijekom svoje stipendije obavljao je razne crkvene dužnosti: bio je poglavar u župi Katoličke Crkve u Prizrenu, biskup u Skadru, bio je zadužen za upravu Barske biskupije, te konačno nadbiskup Skoplja.[16]

Pjetër Bogdani posvećivao je posebnu pozornost pitanjima obrazovanja i kulture. Tako je godine 1647. poslao pismo tajniku kongregacije Rimske kurije u kojem je izrazio želju da studira ne samo etiku već i medicinu, kako bi stekao znanja kojima bi se mogao boriti s praznovjerjem koje su poticali Romi.[17] Nakon završetka studija Bogdani se zaredio 1649. godine, a od 1651. do 1654.

[11] ARNOLD 2004: 142.
[12] ZEFI 2000: 139.
[13] BUXHOVI 2012: 207.
[14] BALA et al. 1989: 45.
[15] GJINI 1982: 197.
[16] HISTORIA E POPULLIT SHQIPTAR I 2002: 351.
[17] HISTORIA E POPULLIT SHQIPTAR I 2002: 197.

a letter to the secretary of the Congregation of the Holy Regiment, in which he expressed his desire to study not only morality but also medicine, to gain knowledge that would combat the superstitions raised among the people by the Roma.[17]After finishing his studies, Bogdani was ordained in 1649, and between the years 1651-1654 he was engaged as a missionary in the area of Pulti and Prizren. In 1652, he returned again to Kosovo to serve his religious and educational duties.

In one of his letters, Bogdani outlined his fight against the darkness of ignorance. He constantly sought various literature for missionaries and priests.[18] In his lifetime he published the aforementioned seminal work Cuneus Prophetarum (eng. Prophets Squad). The "Cuneus Prophetarum" is a theological-philosophical polemic that deals with issues of theology, complete biblical history, as well as complex problems of scholasticism, cosmogony, astronomy, etc. Through this work, Bogdani brought to the Albanian culture the Humanist spirit, centering the role of knowledge in human life and culture.[19]

In one report, which Bogdani sends to Propaganda Fide from Shkodra, he mentions various books with which he was familiar that were available in the Albanian language. Bogdani lists the following: the Gospels in the Albanian language and the books of Budi (to mention a few). Bogdani was also familiar with Buzuku's book from the library of the Urban College of Fide Propaganda, where he later discovered Kazazi.[20]

In 1654 Bogdani went to Rome to complete his higher studies, and after two years he returned to his homeland to serve as a doctor of philosophy and theology.[21] In 1656, after the death of the Bishop of Shkodra Gërgur Fransini, the Vatican named Bogdani as his succes-

[17] HISTORIA E POPULLIT SHQIPTAR I 2002: 197.
[18] MERQUET 2016: 20.
[19] HISTORIA E POPULLIT SHQIPTAR I 2002: 352.
[20] SHUTERIQI 1976: 44.
[21] GJINI 1982: 197.

godine bio je misionar na području Pulta i Prizrena. Godine 1652. ponovno se vraća na Kosovo obavljati svoje vjerske i prosvjetne dužnosti.

Bogdani je u jednom od svojih pisama ocrtao svoju borbu protiv tame neznanja. Stalno je tražio raznu literaturu za misionare i svećenike.[18] Za života je objavio već spomenuto kapitalno djelo *Cuneus prophetarum* (*Četa proroka*), teološko-filozofsku raspravu koja se bavi pitanjima teologije, cjelokupne biblijske povijesti, kao i složenim problemima skolastike, kozmogonije, astronomije itd. Svojim je radom Bogdani albansku kuturu priveo humanističkom duhu, dajući znanju središnje mjesto u kulturi i životu čovjeka.[19]

U izvješću koje je Bogdani poslao iz Skadra u sjedište Kongregacije za širenje vjere spominje razne knjige koje su bile dostupne na albanskom jeziku: evanđelja, i knjige autora Budija, da spomenemo samo neke. Bogdani je poznavao i knjigu koju je napisao Buzuku, iz knjižnice Urbanog kolegija za širenje vjere, gdje je naknadno otkrio i Kazazija.[20]

Godine 1654. Bogdani odlazi u Rim završiti studije, a nakon dvije godine vraća se u domovinu kao doktor filozofije i teologije.[21] Godine 1656., nakon smrti biskupa Skadra Gërgura Fransinija, Vatikan je imenovao Bogdanija za njegova nasljednika. Jedno vrijeme bilo mu je povjereno i vodstvo nadbiskupije u Baru. I u vrlo teškim uvjetima Bogdani je vodio Skadarsku biskupiju punih osam godina.[22]

Papa Inocent XI. je 8. studenog 1677. imenovao Pjetëra Bogdanija skopskim biskupom nakon što se Andrea Bogdani, gramatičar i prelat rimske katoličke Crkve, povukao s čela Skopske biskupije. Kada je 1678. godine izabran za skopskog biskupa, pravoslavni patrijarh grada Peći zahtijevao je zatvaranje

[18] MERQUET 2016: 20.
[19] HISTORIA E POPULLIT SHQIPTAR 2002: 352.
[20] SHUTERIQI 1976: 44.
[21] GJINI 1982: 197.
[22] GJINI 1982: 197.

sor. For a time he was also entrusted with the leadership of the Archbishopric of Bar. Even in very difficult conditions Bogdani led the Diocese of Shkodra for full eight years.[22]

At the time when Andrea Bogdani, the grammarian and prelate of the Roman Catholic Church, resigned from the throne of the Bishopric of Skopje, Pope Innocent XI, on November 8, 1677, appointed Pjetër Bogdani as Bishop of Skopje. When he was elected Bishop of Skopje in 1678, the Orthodox patriarch of the city of Peja demanded the closure of Catholic churches, increased taxes for Catholics, and strengthened cooperation with the Ottomans.[23]

The researcher Odette Marquet published her book "Pjetër Bogdani, Letters and Documents", which included 302 written letters outlining the activity of Pjetër Bogdani as a clergyman in Northern Albania.[24] From these letters we gather that on September 15, 1661, and April 2, 1666, Bogdani proposed that Nik Grubesa be elected Bishop of Pult, yet in both instances his proposal was not accepted.[25]

On February 23, 1686, Pjetër Bogdani, (then Bishop of Skopje), proposed to the Holy Seat to appoint his nephew Dom Gjon Bogdani as Bishop of Pulti, but again his request was rejected.

In a letter dated April 25, 1651, it is written that: "Pjetër Bogdani, as a student at the College of Propaganda Fide, announced that he was defending his doctorate". After the defense, Bogdani made another request in writing, "Please send me to Gash, to the Bishopric of Pult, which is under Ottoman rule. There I will dedicate myself to the education of the people and to religious service".[26]As can be deduced, his desire was to protect the Albanian population of Pulti from the assimilation and conversion to Islam. In 1675 Bogdan was continually interested in the protection of ecclesi-

[22] GJINI 1982: 197.
[23] MERQUET 2016: 27.
[24] PALNIKAJ 2017: 18.
[25] PALNIKAJ 2017: 110.
[26] PALNIKAJ 2017: 272.

katoličkih crkava, povećanje poreza za katolike i jačanje suradnje s Osmanlijama.[23]

Autorica Odette Marquet objavila je knjigu *Pjetër Bogdani, pisma i dokumenti*, koja uključuje 302 pisma koja ilustriraju djelovanje Pjetëra Bogdanija kao svećenika u sjevernoj Albaniji.[24] Iz ovih pisama razabiremo da je Bogdani 15. rujna 1661. i 2. travnja 1666. predložio da se Nik Grubesa izabere za biskupa Pulta, ali u oba slučaja njegov je prijedlog odbijen.[25]

Dana 23. veljače 1686. Pjetër Bogdani, tada biskup Skoplja, predložio je Svetoj Stolici da imenuje njegova nećaka Dom Gjona Bogdanija biskupom Pulta, ali je njegov zahtjev ponovno odbijen.

U pismu od 25. travnja 1651. stoji: „Pjetër Bogdani, student Kolegija za širenje vjere, objavio je da brani svoj doktorat." Nakon obrane, Bogdani je uputio još jedan pismeni zahtjev: „Molim vas da me pošaljete u Gash, u biskupiju Pult, koja je pod osmanskom vlašću. Tamo ću se posvetiti obrazovanju puka i vjerskoj službi."[26] Kako se može zaključiti, njegova je želja bila zaštititi albansko stanovništvo Pulta od asimilacije i prelaska na islam. Godine 1675. Bogdani se neprestano zanimao za zaštitu crkvenog života u Pultskoj biskupiji. Bogdani je poslao niz prijedloga u Rim s nadom da će urediti crkvene prilike u biskupiji.[27]

U posljednjim dvama desetljećima 17. stoljeća Osmansko Carstvo proširilo je bojišta u raznim smjerovima. Nakon poraza osmanske vojske pred vratima Beča 1683. godine, kao i velikih gubitaka osmanske vojske protiv Mlečana u bitci kod Moreje 1684. godine, pritisak na albanske katolike da prijeđu na islam samo se pojačao. Mnoge albanske obitelji preselile su se na sjever kako bi izbjegle pritiske osmanske vlade.

[23] MERQUET 2016: 27.
[24] PALNIKAJ 2017: 18.
[25] PALNIKAJ 2017: 110.
[26] PALNIKAJ 2017: 272.
[27] PALNIKAJ 2017: 282.

astical life in the Diocese of Pult. Bogdani sent a large body of information to Rome in various proposals with the hope to regulate the ecclesiastical situation in the Diocese. [27]

In the last two decades of the seventeenth century, the Ottoman Empire had expanded fronts in various directions. After the defeat of the Ottoman Army at the gates of Vienna in 1683, as well as the great losses for the Ottoman Army against the Venetians at the Battle of Morea in 1684, the pressure on the Catholic Albanians to convert to Islam only increased. Many Albanian families moved north to escape the pressures of the Ottoman government.

After losing the battle at the gates of Vienna in 1684, Austria and Poland formed an alliance which also included Venice. This alliance marked the first phase of losses for the Ottoman Empire.[28] Due to political developments and the military defeats of the Ottoman Empire in Vienna in 1683 and Morea in 1684, as well as ongoing fights with the Habsburg Empire, Poland and later Russia, the Treaty of Karlovac was signed in 1699. According to this treaty, Albanians would establish friendly relations with the Austrio-Hungarian Empire, granting Austria-Hungary the right of the Cult Protectorate over Albanians and Albania (more specifically, an alliance in favor of the Catholic Church). By default, the Austrio-Hungarian Empire became the protector of the linguistic and cultural heritage for Catholic Albanians. This treaty lasted 219 years: from 1699 through to the collapse of the Austro-Hungarian Monarchy in 1918.[29]

When Pikolomin's army had arrived in Prishtina in October 1689, Bogdani (now leader of Albanian uprisings against the Ottoman Army) joined Pikolomin's army with 5000 Christian Albanians in resisting the Ottoman occupation of Prizren. In the city of Prizren, General Piccolomini[30] was triumphantly received by the

Nakon poraza pod Bečom 1684., Austrija, Poljska i Venecija su oformile savez koji je označio prvu fazu gubitaka za Osmansko Carstvo.[28] Mir u Srijemskim Karlovcima sklopljen je 1699. zbog političkih događanja i vojnih poraza Osmanskog Carstva u Beču 1683. i u Moreji 1684., kao i zbog tada još aktualnih bitaka s Habsburškom Monarhijom, Poljskom i poslije Rusijom. Prema ovom sporazumu, Albanci su trebali uspostaviti prijateljske odnose s Austro-Ugarskom koja je trebala dobiti pravo kulturnog protektorata nad Albanijom i Albancima, točnije, savez u korist Katoličke Crkve. Time je Austro-Ugarska Monarhija postala zaštitnicom jezičnog i kulturnog nasljeđa katoličkog stanovništva Albanije. Ovaj sporazum bio je na snazi 219 godina: od 1699. do pada Austro-Ugarske Monarhije 1918. godine.[29]

Kada je Piccolominijeva vojska stigla u Prištinu u listopadu 1689., Bogdani, sada vođa albanskih ustanika protiv osmanske vojske, pridružio se Piccolominijevoj vojsci s 5000 Albanaca kršćana u otporu osmanskoj okupaciji Prizrena gdje su generala Piccolominija[30] slavodobitno dočekali katolički narod i biskup.[31]

Austrijska se vojska 12. listopada 1689. približila Kačaniku čije je stanovništvo bilo pretežno kršćansko, kao i ono okolnog područja. Osmanske su snage bile smještene u gradskoj utvrdi koju su albanski pobunjenici iz ovog kraja već dugo opsjedali. Uz pomoć Albanaca, Piccolominijeva vojska zaposjela je utvrdu bez poteškoća.[32]

[27] PALNIKAJ 2017: 282.
[28] SCHEVILL 2002: 217.
[29] VICKERS 2004: 47.
[30] A Sienese nobleman whose lineage included two popes, and who served in the Habsburg army of Leopold I, Holy

[28] SCHEVILL 2002: 217.
[29] VICKERS 2004: 47.
[30] Sijenski plemić čija je loza uključivala dvojicu papa, a služio je u habsburškoj vojsci Leopolda I., cara Svetog Rimskog Carstva. Poznat je po tome što je vodio pohod protiv Osmanlija u Bosni, Makedoniji i Kosovu 1689. godine, i po paleži Skoplja, današnjeg glavnog grada Republike Sjeverne Makedonije. https://en.wikipedia.org/wiki/Enea_Silvio_Piccolomini_(general)
[31] KARASTOJANOV 2007: 88–89.
[32] TËRNAVA 1995: 43.

Catholic people and the Bishop.[31]

On October 12, 1689, the Austrian army neared Kaçanik. Most of the population in Kaçanik and the surrounding area were Christians. Ottoman forces had been concentrated in the city castle, which had long been under attack by Albanian insurgents in the area. With the help of the Albanians, Piccolomini's army quickly seized the castle without difficulty.[32]

However, upon entry into the city of Skopje, Piccolomini's army was faced with a city ravaged by plague, seeing the dire situation, on October 26, 1689, ordered the burning of Skopje.[33]

In 1685 in Padua Pjetër Bogdani published his book entitled: "Cuneus Probletarum" in Italian and Epirotic. There he also published various lectures in both languages. In addition, Bogdani published another book entitled: "The Infallible Truth of the Catholic Faith, Against Muslims and Heretics". The book was published in 1691 in Venice, indicating a continued correspondence between him and Rome.[34]

During his tenure as Bishop in Skopje, war broke out between the Ottoman Empire and Austria. Catholics from the Skopje Diocese took an active part in the war against the Ottomans.[35]During this crisis between Austria and the Ottoman Empire, Bogdani was settled in Padua (Padova) Italy. In 1685, he looks to return to his Diocese.[36]

At the time he was operating in Albanian territories, Bogdani, due to his active ecclesiastical and patriotic activities, lived under constant surveillance and persecution of the Ottoman invaders. Bogdani's ecclesiastical, literary, and political activity took place on three fronts

Roman Emperor. He is known for leading a campaign against the Ottomans in Bosnia, Macedonia and Kosovo in 1689, and for setting on fire Skopje, the present day capital of the Republic of North Macedonia. https://en.wikipedia.org/wiki/Enea_Silvio_Piccolomini_(general)

31 KARASTOJANOV 2007: 88, 89.
32 TËRNAVA 1995: 43.
33 TËRNAVA 1995: 511.
34 FAVERIAL 2004: 358-359.
35 GJINI 1982: 197.
36 GJINI 1982: 197, 198.

Međutim, nakon ulaska u Skoplje, Piccolominijevu vojsku dočekao je grad pokošen kugom, pa Piccolominiju nije preostalo ništa drugo nego da 26. listopada 1689. izda naredbu da se Skoplje spali.[33]

Pjetër Bogdani 1685. u Padovi je objavio knjigu pod naslovom *Cuneus prophetarum* na talijanskom i epirotskom. U istom je izdanju objavio i različita predavanja na obama jezicima. Objavio je još jednu knjigu *Nepogrešiva istina katoličke vjere nasuprot muslimana i heretika*, godine 1691. u Veneciji što upućuje na neprekinutu korespondenciju koju je održavao s Rimom.[34]

Za vrijeme njegove biskupske službe u Skoplju, izbio je rat između Osmanskog Carstva i Austrije. Katolici Skopske biskupije aktivno su sudjelovali u ratu protiv Osmanlija.[35] Tijekom ove krize između Austrije i Osmanskog Carstva Bogdani je bio u Padovi u Italiji. Godine 1685. nastoji se vratiti u svoju biskupiju.[36]

Dok je bio aktivan na albanskom teritoriju, Bogdani je zbog svojeg vjerskog angažmana i domoljubnih nastojanja, bio pod stalnim nadzorom i prismotrom osmanskih zavojevača. Bogdanijeve vjerske, literarne i političke aktivnosti odvijale su se na trima stranama s ciljem zaštite albanskog stanovništva od triju mogućih asimilacija: osmanske, slavenske i grčke.[37]

Neko se vrijeme skrivao od progona u zabačenim planinskim krajevima među civilima. Pokazao je snažnu osobnost kad se, usprkos patnjama, poteškoćama i progonima koji su ga čekali u domovini, nije oklijevao vratiti. Boravak među narodom pomogao mu je u upoznavanju kulture, običaja, tradicija, folklora itd.[38]

Biografija, život i djelovanje Pjetëra Bog-

33 TËRNAVA 1995: 511.
34 FAVERIAL 2004: 358–359.
35 GJINI 1982: 197.
36 GJINI 1982: 197, 198.
37 HISTORIA E POPULLIT SHQIPTAR I, 2002: 351.
38 HISTORIA E POPULLIT SHQIPTAR I, 2002: 351.

with the aim to protect his population from: Ottoman assimilation, Slavic assimilation, and Greek assimilation.[37]

To escape persecution he hid for a time in remote mountainous regions among civilians. He had a strong personality, however. Despite the sufferings, hardships and persecutions that awaited him in his homeland, he did not hesitate to return. His stay among the people helped him to get acquainted with the culture of the local population; with customs, traditions, folklore, etc.[38]

The biography, life and activities of Pjetër Bogdani, definitely give us a portrait of an Albanian intellectual at the time; one which was formed in relation to the high Catholic clergy. Bogdani was a speaker of the northeastern "Geg", or Kosovar (alb. Kosovarçe) dialect.[39] Old Albanian literature (mid-sixteenth-mid-seventeenth century) was borne of, and developed through, the writing of mainly religious content.[40]

"Cuneus Prophetarum" (or in Albanian "Çeta e Profetëve", as the title was given in its first translation by Justin Rrota), is the most complex work of Old Albanian literature, was published in 1685 in Padua and twice again in Venice in 1691 and 1702- 6 and 11 years after publication respectively.

The last six years of his life were spent in a period of great war and conflict such as the Second Siege of Vienna (July 13 - September 12, 1683) and the beginning of the war between the Holy League of European powers and the Ottoman Empire (1683–1699). He describes the tensions of late December 1683, when he was often forced to seek refuge in the mountains and hide his library in crates and sacks clandestinely locked in basements.

General Piccolomini, the Commander of the Austrian Army, contracted possibly the Great Plague caused by the bacterium Yersinia Pestis[41]

[37] HISTORIA E POPULLIT SHQIPTAR I 2002: 351.
[38] HISTORIA E POPULLIT SHQIPTAR I 2002: 351.
[39] ARAPI 2015.
[40] ARAPI 2015.
[41] Yersinia pestis is a highly virulent Gram-negative bacteri-

danija nesumnjivo nam pružaju portret albanskog intelektualca tog vremena, koji se formirao u odnosu na visoki katolički kler. Bogdani je govorio sjeveroistočnim gegijskim, odnosno kosovskim (alb. Kosovarçe) dijalektom.[39] Staroalbanska književnost (sredina 16. – sredina 17. stoljeća) nastala je i razvila se kroz tekstove religioznog sadržaja.[40]

Cuneus prophetarum ili *Çeta e Profetëve* na albanskom što je naslov koji je dao autor prvog prijevoda Justin Rrota, najsloženije je djelo staroalbanske književnosti, objavljeno 1685. u Padovi i dvaput u Veneciji 1691. i 1702., šest odnosno jedanaest godina nakon objave.

Posljednjih šest godina Bogdanijeva života obilježili su ratovi i sukobi kao što je Druga bitka kod Beča (13. srpnja – 12. rujna 1683.) i početak rata između Svete lige kršćanskih zemalja i Osmanskog Carstva (1683. – 1699.). Bogdani opisuje napetosti iz prosinca 1683., kad je bio prisiljen tražiti utočište u planinama i skrivati svoju knjižnicu u kutijama i vrećama po podrumima.

General Piccolomini, zapovjednik austrijske vojske, vjerojatno se zarazio kugom uzrokovanom bakterijom *Yersinia pestis*[41] koju su širile buhe koje su živjele na štakorima. Nakon Piccolominijeve smrti u Prizrenu 9. studenoga 1689. Bogdani mu je odao posljednju počast na grobu. Međutim, nekoliko dana nakon ovog događaja i sam Bogdani se razbolio. Pokušaji austrijskih liječnika u Prištini da ga izliječe nisu urodili plodom. Umro je 6. prosinca 1689., a pogrebni obred

[39] ARAPI 2015.
[40] ARAPI 2015.
[41] *Yersinia pestis* vrlo je virulentna gram-negativna bakterija odgovorna za razornu epidemiju kuge u 17. stoljeću (bubonska kuga). Epidemija je odnijela veliki broj života što je bitno utjecalo na Europu tijekom tog razdoblja. Godine 1630. izbijanje kuge pogodilo je sjevernu Italiju, a broj umrlih se procjenjuje na 45 000. Slično tomu, 1656. epidemija izbija u Napulju u Italiji, uzrokovana istom bakterijom, s procijenjenim brojem umrlih od 300 000. Bakterija se prije svega širi preko buha koje žive na štakorima, koji zatim svojim ugrizima prenose bolest na ljude BYRNE 2004; SLACK 2018.

which was spread by fleas that lived on rats and eventually passed away in the city of Prizren. Following Piccolomini's demise on November 9, 1689, Bogdani paid his last respects at his grave. However, a few days after this event, Bogdani himself also contracted the illness. Attempts were made to cure him, and he was sent to Austrian doctors in Prishtina. Unfortunately, Bogdani did not survive and passed away on December 6, 1689. The ceremony of his death was performed by a German Jesuit, and he was buried in the courtyard of the Great Mosque in Prishtina. [42]

UNCOVERING THE SECRETS OF PJETËR BOGDANI'S FINAL RESTING PLACE: A JOURNEY THROUGH THE HISTORICAL AND GEOGRAPHICAL CONTEXT

It should be noted that after the arrival of the Austrians in Prishtina, namely during the Austro-Turkish wars at the end of the XVII century, the Great Mosque was turned into a church and dedicated to the Holy Saint Francis Xavier.[43]

In the report he sent to the "Kong Regiment of Propaganda", Pjetër Bogdani's nephew wrote that the Ottomans removed Pjetër Bogdani's body from the grave and threw it in the main square of Prishtina to be dismembered by dogs.[44] This event took place immediately after the defeat of the Austrian Army in 1690, subsequently returning the building to its former function.

um responsible for the devastating outbreaks of the Great Plague, also known as bubonic plague, in the 17th century. The disease had a profound impact on Europe during this period, resulting in significant loss of life. In 1630, an outbreak of bubonic plague struck northern Italy, leading to an estimated 45,000 deaths. Similarly, in 1656, an outbreak in Naples, Italy, caused by the same bacterium, resulted in an estimated 300,000 deaths. The bacterium is primarily spread through fleas that live on rats, which then transmit the disease to humans through their bites, BYRNE 2004; SLACK 2018.

42 MALCOLM 1998: 151.

43 MALCOLM 1998: 157.

44 GJINI 1982: 197.

predvodio je njemački isusovac. Bogdani je pokopan u dvorištu Velike džamije u Prištini.[42]

OTKRIVANJE TAJNI POSLJEDNJEG POČIVALIŠTA PJETRA BOGDANIJA: PUTOVANJE KROZ POVIJESNI I GEOGRAFSKI KONTEKST

Treba napomenuti da je nakon dolaska Austrijanaca u Prištinu, odnosno za vrijeme austrijsko-turskih ratova krajem 17. stoljeća, Velika džamija pretvorena u crkvu i posvećena svetom Franji Ksaverskom.[43]

U izvješću koje je poslao Kongregaciji za širenje vjere, nećak Pjetëra Bogdanija napisao je da su Osmanlije ekshumirali tijelo Pjetëra Bogdanija iz groba i bacili ga psima na glavni trg u Prištini.[44] Taj se događaj zbio neposredno nakon poraza austrijske vojske 1690. godine, čime je objektu vraćena prijašnja funkcija. Frrok Kristaj navodi da je nakon povlačenja Austrijanaca osmanska vojska ušla u Prištinu 20. prosinca.[45]

Točno 319 godina nakon njegove smrti, zagonetka nestanka njegovih posmrtnih ostataka ponovno je aktualna. Ipak, prvo ćemo iznijeti neke podatke o džamiji koja je danas u punoj funkciji.

Džamija sultana Mehmeda II. (Fatiha) u Prištini, popularno poznata kao Kraljeva džamija ili Velika džamija, nalazi se u središtu onoga što je nekada bila stara gradska uprava Prištine u blizini Velikog hamama (15. stoljeće), Sahat kule (19. stoljeće), te zgrade Akademije znanosti i umjetnosti Kosova (19. stoljeće), što su sve spomenici kulturne baštine. Ova je džamija izgrađena po nalogu sultana Mehmeda II. Natpis u šest

42 MALCOLM 1998: 151.

43 MALCOLM 1998: 157.

44 GJINI 1982: 197.

45 KRISTAJ 2015: 109.

Frrok Kristaj writes that after the withdrawal of the Austrians, the Ottoman army entered Prishtina on December 20.[45]

Exactly 319 years after his death, the mystery over the disappearance of his remains once again resurfaces. However first, we will outline some information concerning the Mosque that is in full function today.

The Mosque of Sultan Mehmed II (Fatih) in Prishtina, popularly known as the King's Mosque or the Great Mosque, is located in the center of what was once the old city ordinance of Prishtina near the Great Hammam (15th century), the Clock Tower (XIX century), and the building of the Academy of Sciences and Arts of Kosovo (19th century), all declared monuments of cultural heritage. This Mosque was built by order of Sultan Mehmed II. The inscription of six lines is located above the entrance portal and is written in the Arabic alphabet. Inscribed upon the edifice is also the exact date of construction in the year 1461 (according to the Gregorian calendar).

The whole monument, with auxiliary facilities, occupies an area of 577 m2. In the courtyard of the mosque there is a fountain that was built in 1996. The mosque is constructed of carved yellow sandstone, while the walls on the inside are lined with bonded bricks and plastered with lime mortar.

The thickness of the walls reaches 180 cm. The mosque consists of a rectangular space measuring 14.14 x 14.14 m, a dome with a diameter of 13.50 m erected on four pandatics, a high minaret of 38.20, and a representative portico. In architectural, morphological, spatial, structural and decorative terms, the building retains all its features from the time of original construction. It is a unique and dominant building in the landscape of the city of Prishtina.[46]

[45] KRISTAJ 2015: 109.

[46] Ministry of Culture, Youth and Sports, Database of Cultural Heritage. https://web.archive.org/web/20160304075402/http://dtk.rks-gov.net/tkk_objekti_en.aspx?id=8622

redaka na arapskom pismu nalazi se iznad ulaznog portala, a naveden je i točan datum izgradnje u godini 1461. prema gregorijanskom kalendaru.

Cijela građevina, s pratećim sadržajima, zauzima površinu od 577 m^2. U dvorištu džamije nalazi se šadrvan sagrađen 1996. godine. Džamija je građena od klesanog žutog pješčenjaka, dok su zidovi s unutarnje strane obloženi ciglom i prekriveni vapnenom žbukom.

Debljina zidova doseže 180 cm. Džamija se sastoji od pravokutnog prostora dimenzija 14,14 x 14,14 m, kupole promjera 13,50 m podignute na četirima pandativima, minareta visokog 38,20 m i reprezentativnog trijema. Ova jedinstvena građevina koja dominira pejzažem Prištine zadržala je sva obilježja iz vremena prvotne gradnje, u arhitektonskom, morfološkom, prostornom, konstruktivnom i dekorativnom smislu.[46]

Spomenik se očuvao do danas zahvaljujući popravcima od kojih treba istaknuti restauraciju iz 1682./1683., napravljenu za vrijeme vladavine sultana Mehmeda IV., kao i obnovu 1955. godine nakon potresa.[47] Džamija je bila u lošem stanju i poremećene statike u doba kad ju je Republički zavod za zaštitu spomenika stavio pod zaštitu (1953.). Ova je institucija poduzimala zahvate djelomične obnove između 1955. i 1990. Godine 2004. tim stručnjaka iz Turske izradio je studiju konzervacije i restauracije koju su 2006. prihvatile nadležne institucije za kulturno nasljeđe iz Kosova i Turske.[48]

[46] Ministarstvo kulture, mladeži i sporta, baza podataka o kulturnoj baštini. https://web.archive.org/web/20160304075402/http://dtk.rks-gov.net/tkk_objekti_en.aspx?id=8622

[47] Kulturna baština u jugoistočnoj Europi 2003.: UNESCO-ov ured u Veneciji i Regionalni ured za znanost u Europi (Italija) [11] Kosovo, http://unesdoc.unesco.org/images/0013/001344/134426e.pdf.

[48] TİKA (Turska agencija za suradnju i koordinaciju) radi na očuvanju zajedničkog kulturnog nasljeđa na Balkanu. https://www.tika.gov.tr/en/news/tika_works_to_preserve_common_cultural_heritage_in_balkans-73114

Nowadays, this monument lives on through a series of repairs, among which is worth mentioning the restoration of 1682/83, undergone during the reign of Sultan Mehmed IV, as well as the restorations of 1955 following the earthquake.[47] At the time the monument was declared under protection (1953) by the Provincial Office for the Protection of Monuments, the Mosque was in poor condition and unstable. Thus, between 1955 and 1990, partial reconstructions were carried out by the institution. In 2004, a specialized team from Turkey prepared the Conservation / Restoration Study / Plan, which in 2006 was approved by the cultural heritage authorities of Kosovo and Turkey.[48]

THE POSSIBILITY OF REDISCOVERING THE GRAVESITE OF P. BOGDANI

In 2008, the Ministry of Culture, Youth and Sport, in cooperation with the Turkish NGO "TIKA"[49], formalized a cooperation agreement for the study and conservation of the Mosque of Sultan Mehmet Fatih II in Prishtina.

Initially, conservation work was accompanied by excavations to isolate the building's foundations. During the first phase of excavations, a human skeleton was discovered near the foundations of the Great Mosque. However, the discovery only came to light thanks to the good will of a worker who unofficially informed the

[47] Cultural heritage in South-East Europe 2003: UNESCO Office Venice and Regional Bureau for Science in Europe (Italy) [11] Kosovo, http://unesdoc.unesco.org/images/0013/001344/134426e.pdf.

[48] TİKA Works to Preserve Common Cultural Heritage in Balkans 2022: Turkish Cooperation and Coordination Agency. https://www.tika.gov.tr/en/news/tika_works_to_preserve_common_cultural_heritage_in_balkans-73114

[49] Turkish Cooperation and Coordination Agency, Focusing on development cooperation, TİKA works in more than 150 countries, including the ones where their offices are located. https://www.tika.gov.tr/en

MOGUĆNOST PONOVNOG OTKRIVANJA MJESTA UKOPA P. BOGDANIJA

Ministarstvo kulture, mladeži i sporta je 2008. godine u suradnji s turskim NGO-om „TIKA"[49] formaliziralo sporazum o suradnji za istraživanje i konzervaciju džamije sultana Mehmeda Fatiha II. u Prištini.

U početnim fazama konzervaciju su pratila iskopavanja koja su bila usmjerena na otkrivanje temelja građevine. U prvoj fazi iskopavanja ljudski je kostur nađen u blizini temelja Velike džamije. No, za otkriće se doznalo tek zahvaljujući dobroj volji radnika koji je neslužbeno obavijestio Arheološki institut Kosova. Nejasna ugovorna politika između stranaka, organizacije TIKA i Ministarstva kulture dovela je do ovakve situacije. Zbog nedostatka potpune kontrole od relevantnih lokalnih institucija za kulturnu baštinu, izgubljene su vrlo važne arheološke informacije, posebno u povijesnom kontekstu srednjovjekovnog razdoblja na Kosovu. Štoviše, ugovori između strana ograničavali su mogućnost profesionalnog pristupa proučavanju nalaza. Iako je tim iz Arheološkog instituta Kosova i Instituta za zaštitu spomenika Kosova uložio napore da prouči nalaz, vrata zgrade gotovo su uvijek bila zatvorena.

Međutim, tim se suočio s brojnim izazovima u identificiranju lokacije kosturnih ostataka. Radnici nisu bili voljni ponuditi bilo kakve informacije o pronađenim fragmentima kostiju. Osim nekoliko dijelova koje su strani radnici stavili u običnu plastičnu vrećicu, nedostajao je gotovo cijeli kostur. Jedini ostatci sačuvani u plastičnoj vrećici bili su dijelovi lubanje.

Iako su uloženi napori da se provede sveobuhvatno ispitivanje u skladu s relevantnim forenzičkim propisima i metodologijama,

[49] Turska agencija za suradnju i koordinaciju, fokusirana na razvojnu suradnju radi u više od 150 zemalja, uključujući i one u kojima se nalaze njihovi uredi. https://www.tika.gov.tr/en

Archaeological Institute of Kosovo. The unclear contractual policies between the parties, the TIKA organization and the Ministry of Culture, led to this situation. Due to the lack of a full control approach by relevant local cultural heritage institutions, very important archaeological information was lost, particularly in the historical context of the medieval period in Kosovo. Moreover, the contracts between the parties limited the possibility of a professional approach to study the find. Although a team from the Archaeological Institute of Kosovo and the Institute for the Protection of Monuments of Kosovo made efforts to study the find, the doors of the building were almost always closed.

However, the team faced numerous challenges in identifying the location of the skeletal remains. Workers were reluctant to share any information about the bone fragments found. Except for a few fragments that were put into a simple plastic bag by non-native workers, almost the entire skeleton was missing. The only remains found in the plastic bag were parts of the skull.

Although efforts were made to conduct a comprehensive examination in accordance with relevant forensic regulations and methodologies, time constraints and pressure from employees of the organization in question prevented the full implementation of these procedures. The circumstances and policies of the contracting parties limited the receipt for further treatment of those osteological findings. A standard recording of findings, identification for possible trauma, and a detailed anthropological description with standard methodology were not possible due to the short available time. The substandard photo quality can be attributed to rules and policies put in place by outside companies that prohibit detailed photography within the workspaces. These regulations prohibit the taking or photographing of any possible findings without the express approval of the management of the respective companies. This limitation resulted in only a few poor-quality photographs, (Fig. 1.), overlooking the small possibility for a visual

vremenska ograničenja i pritisak zaposlenika dotične organizacije spriječili su punu provedbu ovih postupaka. Okolnosti i pravila ugovornih strana ograničili su daljnju obradu tih osteoloških nalaza. Standardno snimanje nalaza, identifikacija mogućih trauma i detaljan antropološki opis standardnom metodologijom nisu bili mogući zbog kratkog raspoloživog vremena. Lošija kvaliteta fotografija može se pripisati pristupu i pravilima koje su uspostavile vanjske tvrtke koje zabranjuju detaljno fotografiranje unutar radnih prostora. Ovi propisi zabranjuju snimanje ili fotografiranje bilo kakvih mogućih nalaza bez izričitog odobrenja uprave tih tvrtki. Ovo ograničenje rezultiralo je samo s nekoliko fotografija loše kvalitete (Sl. 1), ostavljajući tek malu mogućnost vizualnog pregleda dokaza.

ANALIZA OSTEOLOŠKIH FRAGMENATA KROZ VIZUALNO PAMĆENJE I FOTOGRAFIJU

Zbog vremenskih ograničenja i konteksta u kojem su fragmenti lubanje otkriveni, samo su dijelovi nalaza bili dostupni za analizu u ovoj studiji. S obzirom na ta ograničenja, provedeno je ubrzano ispitivanje analitičkim metodama kako bi se utvrdio biološki identitet, dob i spol pojedinca. U ovoj analizi korištene su morfološke karakteristike lubanje, počevši od najosnovnijih obilježja. U fizičkoj antropologiji, stupanj obliteracije na lubanji odraslih pojedinaca dugo je služio kao pouzdan pokazatelj dobi u trenutku smrti.[50]

[50] U fizičkoj antropologiji razvijene su različite metode za određivanje spola kosturnih ostataka. To uključuje ispitivanje morfoloških značajki, kao što su veličina i oblik lubanje, zdjelice i dugih kostiju, te tehnike kao što su analiza DNK-a, radiografija i osteometrijska analiza. U literaturi koja se bavi antropološkim istraživanjima, rad Buikstre i Ubelakera (1994.) standardna je referencija koja se upotrebljava za dokumentiranje spolnih razlika na kosturnim ostatcima, BUIKISTRA, UBELAKER 1994: 32–38.

Figure 1 *Part of the skull and various bone fragments* (photo: Luan Gashi dhe Emin Sallahu 15. 7. 2008.)
Slika 1. *Dio lubanje i različiti dijelovi kostiju* (fotografija: Luan Gashi i Emin Sallahu, 15. 7. 2008.)

examination of the evidence.

"Analyzing Osteological Fragments Through Visual Memory and Photography"

Due to time constraints and the context in which the skull fragments were discovered, only partial fragments were available for analysis in this study. Given these limitations, an accelerated examination was conducted using analytical methods to determine the biological identity, age, and gender of the individual. The morphological characteristics of the skull were utilized in this analysis, beginning with the most fundamental traits. The *obliteration* patterns in adult *crania* have long served as a reliable age-at-death indicator in physical anthropology.[50]

Pregledom kosturnih ostataka utvrđena je uznapredovala obliteracija sagitalnog, lambdoidnog i koronarnog šava, koji su bili gotovo zatvoreni. Iako nije bilo vremena za sveobuhvatnije ispitivanje kosturnih ostataka, provedena je ubrzana analiza temeljena na morfološkim karakteristikama. Ova je analiza dala pozitivnu procjenu starosti pojedinca u trenutku smrti, koja je bila relativno visoka, između 56 i 70 godina.[51]

Pri određivanju spola pojedinca oslanjamo se na studije i metode razvijene za ispitivanje *supraorbitalisa* na lubanjama iz antropološke zbirke Sveučilišta u Tübingenu.

Kod muških lubanja dio gornjeg ruba ima ravnomjerno okrugao presjek poput kore, dok kod ženskih lubanja kontinuirana formacija bora ide cijelim tokom prema unutra. Ta su otkrića bila ključna u ovom radu, omogućivši da se točno identificira spol pojedinaca, čak i kad se radi s djelomično sa-

[50] In physical anthropology, a variety of methods have been developed to identify the gender of skeletal remains. These include the examination of morphological features such as the size and shape of the skull, pelvis, and long bones, as well as techniques such as DNA analysis, radiography, and osteometric analysis. In the realm of anthropological research, Buikstra and Ubelaker's (1994) work is the standard reference used for documenting sex differences in skeletal remains, BUIKISTRA, UBELAKER 1994: 32-38.

[51] KHANDARE, BHISE, SHINDE 2015: 192–202.

The examination of the skeletal remains revealed an advanced *obliteration* of the *sagittal, lambdoidal,* and *coronal sutures*, which were nearly closed. Although time constraints prevented a more comprehensive examination of the skeletal remains, an accelerated analysis based on morphological characteristics was conducted. This analysis yielded a positive estimate of the individual's age at the time of death, which was relatively advanced, betwen 56-70 years.[51]

When determining the gender of an individual, I rely on studies and methods developed for examining the *supraorbitalis* in skulls from the anthropological collection of the University of Tübingen.

In male skulls, a portion of the upper edge exhibits a uniformly round and crust-like cross-section, whereas in female skulls, a continuous formation of wrinkles runs along the entire course inward. These findings have been instrumental in this work, enabling me to accurately identify the gender of individuals even when working with partial skulls. Fortunately that the left part of the *supraorbitalis* has been well-preserved. This allowed for the accurate identification of the gender of the individual based on the shape and structure of the *supraorbital* ridge.

After a careful examination of the skull fragments, it can be concluded with absolute certainty that the two *cranial* grooves, often mistaken for fractures, were, in fact, *vascular* grooves of the external skull table caused by the *supraorbital* artery in the frontal region.[52]These grooves, approximately 10 cm in length, were observed on both sides of the *cranium* passing from the *OS frontale* along with the *OS parietale*. It is important to note that these grooves cannot be considered signs of postmortem violence.

In addition, several conical holes with a regular structure were discovered, indicating

[51] KHANDARE, BHISE, SHINDE 2015: 192-202.
[52] SCHUNK, MARUYAMA 1960: 189-192.

čuvanim lubanjama. Na svu sreću, lijevi dio *supraorbitalisa* dobro je očuvan. To je omogućilo točnu identifikaciju spola pojedinca na temelju oblika i strukture supraorbitalnog grebena.

Nakon pažljivog pregleda fragmenata lubanje može se s apsolutnom sigurnošću zaključiti da su dva kranijalna žlijeba, koja se često pogrešno smatraju frakturama, zapravo vaskularni žljebovi na vanjskoj ploči lubanje u vezi sa supraorbitalnom arterijom u frontalnoj regiji.[52] Ovi žljebovi, otprilike 10 cm dugi, uočeni su s obiju strana lubanje prolazeći od čeone kosti uz tjemenu kost. Važno je napomenuti da se ovi žljebovi ne mogu smatrati znakovima postmortalnog nasilja.

Osim toga, otkriveno je nekoliko stožastih rupa pravilne strukture, što upućuje na izravan ugriz na lubanji. Ove strukture upućuju na to da je leš možda bio plijen mesojeda s čeljusti sa snažnim ugrizom. Komparativno su upotrijebljeni tipični postmortalni dokazi koji su rezultat nasilja nad životinjama što je omogućilo identifikaciju životinje odgovorne za tragove ugriza. U ovom slučaju struktura tragova vrlo je slična onima uzrokovanim ugrizom psa.[53] Ne zaboravimo potvrđenu činjenicu o oskvrnuću Bogdanijeva leša od pasa.

Mogući elementi koji pokazuju da bi ostatci kostiju mogli pripadati Pjetëru Bogdaniju su:

- Lokacija: Kosti su pronađene na lokaciji koja je u skladu s povijesnim zapisima o tome gdje je Pjetër Bogdani pokopan.
- Bogdani je sahranjen u dvorištu Velike džamije u Prištini.
- Dob i spol: Kosti pripadaju muškarcu[54] koji je u vrijeme smrti imao otprilike između 60 i 70 godina, što je u skladu s dobi Pjetëra Bogdanija u trenutku smrti.

[52] SCHUNK, MARUYAMA 1960: 189–192.
[53] INDRA et al. 2022.
[54] GRAW, HAFFNER, CZARNETZKI 1997: 121–126.

a direct bite on the skull. These structures suggest that the corpse may have been preyed upon by a carnivore with a specialized biting jaw. The typical postmortem comparative evidence resulting from animal bone violence allowed the identification of the animal responsible for the bite marks. In this case, the structure of the traces is very similar to those caused by a dog bite.[53] Let's not forget the confirmed fact about the desecration of Bogdan's corpse by dogs. It is important to recall the confirmed fact of Bogdan's corpse desecration by dogs.

The possible elements that raise suspicion that the bone remains may belong to Pjetër Bogdani are:

- Location: The bones were found in a location that is consistent with the historical record of where Pjetër Bogdani was buried.
- Bogdani was buried in the courtyard of the Great Mosque in Prishtina
- Age and sex: The bones belong to a male[54] who was approximately between 60 – 70 years old at the time of death, which is consistent with the age of Pjetër Bogdani at the time of his death.
- The Ottoman authorities exhumed the body of Pjetër Bogdani from its original burial site and discarded it in the central square of Prishtina, where it was left to be mutilated by dogs.
- Trauma: The bones show postmortem evidence of trauma, including the conical holes with a regular structure that suggest a carnivore with a specialized biting jaw was responsible, which is consistent with historical accounts of Bogdani's body being desecrated by dogs.
- Based on local folklore, it is believed that following the aforementioned propagandistic action by the Ottomans, the local population or lowest-ranking officials anonymousl

- Osmanske vlasti ekshumirale su tijelo Pjetëra Bogdanija iz prvotnog grobnog mjesta i ostavile ga na središnjem trgu u Prištini psima da ga sakate.
- Trauma: Kosti pokazuju postmortalne tragove traume, uključujući stožaste rupe pravilne strukture koje upućuju na ugriz mesojeda, što je u skladu s povijesnim zapisima o Bogdanijevu tijelu koje su oskvrnuli psi.
- Na temelju lokalne predaje smatra se da je nakon navedenog propagandnog djelovanja Osmanlija osakaćeno tijelo Pjetëra Bogdanija u znak poštovanja ponovno anonimno pokopano od lokalnog stanovništva ili najnižih službenika, negdje u dvorištu džamije.

ZAKLJUČAK

Za razliku od mnogih drugih zaraznih bolesti, poput gube ili tuberkuloze, kuga u većini slučajeva ne ostavlja nikakav trag na kostima ili u njima. Samo molekularno-genetičkim testom, kojim se otkrivaju specifični fragmenti DNK-a, može se identificirati uzročnik nekadašnje bolesti, točnije, varijanta bakterije *Yersinia pestis*.[55] Teško je izdvojiti detaljne antropološko-pravne informacije iz osteoloških nalaza, 14 godina nakon inicijalnog površnog pregleda i uz ograničeno vrijeme za proučavanje. Međutim, uzimajući u obzir sve navedene indicije i oskudne dostupne izvore o kronologiji događanja, vjerojatnije je da je Bogdani ponovno pokopan u dvorištu džamije nego da su njegovi posmrtni ostatci premješteni na drugo mjesto.

Džamija, koja je prvotno pretvorena u crkvu svetog Franje Ksaverskog, a poslije joj je vraćena izvorna funkcija te postaje Carska džamija Murata I. (Fatihova džamija), obnovljena je 1690. godine, godinu dana nakon Bogdanijeve smrti. Važno je napome-

[53] INDRA et al. 2022.
[54] GRAW, HAFFNER, CZARNETZKI 1997: 121-126.
[55] HAENSCH et al. 2013.

reburied the mutilated body of Pjetër Bogdani as a sign of respect, somewhere within the courtyard of the Mosque.

CONCLUSION

Unlike many other infectious diseases such as leprosy or tuberculosis, the plague, in most cases, does not leave any trace on or in the bones. Only a molecular genetic test, which detects specific fragments of DNA, can identify the pathogen of the former mortar, specifically the variant of the bacterium *Yersinia Pestis*.[55] Extracting detailed anthropological-legal information from the osteological findings, 14 years after the initial superficial examination and with limited examination time, is challenging. However, taking into account all the above indications and the scarce sources available on the timeline, it is more probable that Bogdan was reburied in the Mosque courtyard than that his remains were moved elsewhere.

The Mosque, which was initially converted into the Church of St. Francis Xavier and later restored to its original function as the Imperial Mosque of Murat I (Fatih Mosque), underwent restoration in 1690, a year after Bogdan's death. It is noteworthy that the lowest-ranking officials and employees in the Ottoman administration were likely Albanians who held Pjetër Bogdan in high esteem. This assumption aligns with the Albanian tradition of respecting national figures irrespective of religious differences.

It is essential not to overlook the possibility that these officials organized the reburial and concealed the grave's location after the relocation.

The theory that the remains were sent to the courtyard of the church of St. Veneranda, as suggested by some researchers, poses a challenge to our theory. There are no legitimate sources relating the Church of St. Ndout to the reburial of Peter Bogdani. Frok Zefi, in

[55] HARBECK et al. 2013.

nuti da su službenici i zaposlenici najnižeg ranga u osmanskoj administraciji vjerojatno bili Albanci koji su Pjetëra Bogdanija visoko cijenili. Ova je pretpostavka u skladu s albanskom tradicijom poštovanja nacionalnih ličnosti bez obzira na vjerske razlike.

Bitno je uzeti u obzir mogućnost da su ti službenici organizirali ponovni ukop i prikrili lokaciju groba nakon premještanja.

Teorija da su posmrtni ostatci poslani u dvorište crkve sv. Venerande, kako predlažu neki istraživači, dovodi u pitanje našu teoriju. Ne postoje legitimni izvori koji povezuju crkvu sv. Ndouta s ponovnim ukopom Pjetëra Bogdanija. Frok Zefi u svojoj knjizi *Skopsko-prizrenska nadbiskupija u 18. stoljeću* piše da je crkva svete Venerande preživjela Austrijsko-turski rat (1689.) neoštećena, ali da su 1710. godine od crkve svete Venerande ostali samo nosivi zidovi.[56] Međutim, važno je napomenuti da iako se ova crkva spominje u pisanim izvorima tog vremena, njezina je ubikacija nepoznata. Osim toga, ni katoličko svećenstvo ni Katolička Crkva sa sjedištem u Prištini nemaju nikakvih informacija o njezinoj lokaciji. Postoje teorije da se možda nalazila u blizini današnjeg hotela Grand ili na mjestu katoličke crkve sv. Ndouta, također poznate kao crkva „Kisha e Stakajve", ali te teorije također nisu potvrđene. Riječ je o crkvi sagrađenoj 1927. godine koju su Srbi srušili 1957. godine zbog neusklađenosti s urbanističkim planovima grada 50-ih godina prošlog stoljeća.[57]

Nema dokaza o mogućoj građevini ispod temelja spomenute crkve. Fenomen tolerancije i suživota među Albancima različitih vjerskih uvjerenja vrijedan je spomena.

Shyqri Beg Ramadani i drugi islamski velikaši pružili su financijsku pomoć tijekom iz-

[56] ZEFI 2000: 147–148.

[57] ARIFI, 2023: Opinione, Pse regjimi komunist serbo-sllav në vitin 1957 e rrënoi kishën katolike shqiptare në Prishtinë ?! https://dardaniapress.com/pse-regjimi-komunist-serbo-sllav-ne-vitin-1957-e-rrenoi-kishen-katolike-shqiptare-ne-prishtine/

his book "Archbishopric Skopje-Prizren in the 18th century ", writes that the Church of St. Veneranda survived the Austro-Turkish War (1689) unscathed, yet in 1710 of the Church of St. Veneranda only structural walls remained.[56] However, it is important to note that while this church is mentioned in written sources of the time, its location remains unconfirmed. Additionally, neither the Catholic clergy nor the Catholic church based in Pristina has any information about its location. There are some theories that suggest it may have been situated near today's Grand Hotel or on the site of the Catholic Church of "Saint Ndout," also known as the "Kisha e Stakajve" church, but these theories are also unconfirmed. The church in question was built in 1927 and was demolished by the Serbs in 1957 due to its incompatibility with the urban plans of the city in the 1950s.[57]

There is no evidence of any possible construction under the foundations of the church in question. The phenomenon of tolerance and coexistence among Albanians of different religious beliefs is noteworthy.

During the construction of the church of Saint Ndou by Stak Mirdita, Shyqri Beg Ramadani and other Islamic nobles provided financial assistance. It is worth mentioning that until the church's demolition in 1957, Albanian workers who were of the Islamic faith refused to participate in its desecration. As a result, the regime had to resort to employing workers of different faiths and nationalities to carry out its destruction. [58]

Luigj Marlekaj, in his book "Pjetër Bogdani and Albania in His Time", based on authentic sources culled from manuscripts by Pjetër Bogdani's nephew, writes that Bogdani's remains were reburied in the right corner of the Imperial Mosque (or the Church of St. Francis Xavier).[59] Unfortunately, the day of July 2008, during the reconstructions in the Great

[56] ZEFI 2000a: 147-148.
[57] ARIFI 2023.
[58] ARIFI 2023.
[59] MARLEKAJ 2008.

gradnje crkve svetog Ndouta koju je izgradio Stak Mirdita. Vrijedno je spomenuti da su sve do rušenja crkve 1957. albanski radnici islamske vjere odbijali sudjelovati u njezinu oskvrnuću. Kao rezultat toga, režim je morao pribjeći zapošljavanju radnika različitih vjera i nacionalnosti da sruše crkvu.[58]

Luigj Marlekaj u svojoj knjizi *Pjetër Bogdani i Albanija u njegovo doba*, temeljenoj na autentičnim izvorima iz rukopisa nećaka Pjetëra Bogdanija, piše da su Bogdanijevi posmrtni ostatci ponovno pokopani u desnom kutu Carske džamije (ili crkve sv. Franje Ksaverskog).[59] Nažalost, u srpnju 2008. godine, tijekom rekonstrukcije Velike džamije, nije nam bilo dopušteno prenijeti pronađene fragmente u Arheološki institut Kosova na temeljitu analizu (ne isključujući i genetička istraživanja). Nikad nije postignuta formalna koordinacija za vađenje kostiju s turskom organizacijom TIKA, koja je financirala konzervatorske radove na džamiji.

Nakon posjeta radionici glavna vrata džamije još su jednom zatvorena. Kosti su nestale i nikada nisu pronađene. Unatoč službenom zahtjevu, do danas ne postoji ni jedan dokument koji potvrđuje pronalazak ili nestanak ovih kostiju. Unatoč znanstvenim ograničenjima ove studije, kao što su nepotpuni ili netočni povijesni zapisi i rezultati bez odgovarajuće antropološke analize, njezino objavljivanje ima svoje opravdanje. Bez objavljivanja ove informacije, mogućnost pronalaska groba ove važne povijesne osobe bila bi zauvijek izgubljena.

Ovo istraživanje naglašava važnost očuvanja kulturno-povijesne baštine koja može pružiti vrijedne uvide u našu prošlost, oblikovati našu sadašnjost i usmjeriti našu budućnost. Daljnja istraživanja i razvoj smjernica u području baštine, posebice u arhivskom području, mogli bi pomoći u otkrivanju izgubljenih ili zaboravljenih povijesnih detalja u

[58] ARIFI, 2023.
[59] MARLEKAJ 2008.

Mosque, we were not allowed to transfer the found fragments to the Archaeological Institute of Kosovo for advanced research (not excluding genetic research). Formal coordination for the bone extraction with the Turkish organization, TIKA, which funded the conservation work on the Mosque, was never achieved.

After the visit to the workshop, the main gate of the mosque was closed once more. The bones had vanished and were never recovered. Despite an official request, there is still not a single document confirming the discovery or disappearance of these bones to this day. Despite the scientific limitations of this study, such as incomplete or inaccurate historical records and results without proper anthropological examination, its publication serves a critical purpose. Without disseminating this information, the possibility of finding the grave of this important historical figure would be lost forever.

The study emphasizes the importance of preserving cultural and historical heritage, which can provide valuable insights into our past, shape our present, and guide our future. Further research and development of frameworks in the field of heritage, especially in the archival field, can potentially help uncover lost or forgotten historical details in future efforts. However, regardless of the methods used, it is essential to continue efforts to find and preserve historical objects and sites that form the foundation of our shared cultural heritage.

Finally, to emphasize the greatness of Pjetër Bogdani's figure, we can quote Ismail Kadare: "The emptiness of the grave proves his holiness."

budućnosti. Međutim, bez obzira na metode koje se koriste, ključno je nastaviti s naporima za pronalaženje i očuvanje povijesnih objekata i mjesta koji čine temelj naše zajedničke kulturne baštine. Na kraju, da bismo naglasili veličinu lika Pjetëra Bogdanija, citirat ćemo Ismaila Kadarea: „Praznina groba dokazuje njegovu svetost."

Prijevod: Marija Kostić

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Instructions for references

Books

One author

BRUSIĆ, Z. 1999, *Hellenistic and Roman relief pottery in Liburnia: north-east Adriatic*, *Croatia*, British Achaeological Reports International series 817, Oxford: Archaeopress.

Two or more authors

BROGIOLO, G. P., CHAVARRÍA ARNAU, A. 2005, *Aristocrazie e campagne nell'Occidente da Costantino a Carlo Magno*, Firenze: All'insegna del Giglio.

If a book is published in bilingual form, both versions of the title are listed, separated by a slash.

RADIĆ ROSSI, I., BORZIĆ, I. 2022, *Brodolom rimskog trgovačkog broda kod rta Glavata na Mljetu / Shipwreck of a roman merchantman near cape Glavat on the island of Mljet*, Arheologija jadranske plovidbe i brodogradnje / Archaeology of Adriatic Shipbuilding and Seafaring, 3, Zadar: Sveučilište u Zadru.

Edited editions (when there is one editor use the abbreviation "ur./ed."; when there are more, "ur./eds."):

AURIEMMA, R. (ur./ed.) 2018, *Nel mare dell'intimità. L'archaeologia subacquea racconta l'Adriatico*, Catalogo della mostra (Trieste, ex Pescheria - Salone degli Incanti, 17 dicembre 2017 - 1 maggio 2018), Roma: Gangemi Editore.

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RADOVČIĆ, D. 2017, Antropološka analiza / Anthropological analysis, u/in: *Grad mrtvih nad poljem života. Nekropola gradinskog naselja Kopila na otoku Korčuli / The City of the Dead Above the Field of Life. Necropolis of Kopila Hillfort on the Island of Korčula*, Fadić, I., Eterović Borzić, A. (ur./eds.), Zadar: Muzej antičkog stakla u Zadru, 125–137.

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ČAČE, S. 1985, Liburnija u razdoblju od 4. do 1. stoljeća prije nove ere, neobjavljena disertacija / unpublished PhD thesis, Sveučilište u Splitu, Zadar: Filozofski fakultet u Zadru.

Article in a journal

BELOŠEVIĆ, J. 1974, Starohrvatska nekropola uz humak „Materiza" kod Nina, *Diadora*, 6, 221–242.

If the journal has several volumes:

ZARO, G., GUSAR, K., ČELHAR M. 2020, On the edge of empires. Exploring an Ottoman legacy on the Venetian frontier, *Journal of Field Archaeology*, 45(3), 188–208. doi: 10.1080/00934690.2019.1706141.

If an article in a journal is published in bilingual form, both versions of the title are given, separated by a slash:

BARAKA PERICA, J., UGLEŠIĆ, A. 2021, Ulomak pogrebne mense s lokaliteta Galovac – Crkvina / Fragment of a Funerary Mensa from the Site of Galovac – Crkvina, *Archaeologia Adriatica*, 15, 521–539.

If the journal volume is not the same as the year of publication:

BELOŠEVIĆ, J. 1962, Slavenska keramika iz ranosrednjovjekovne nekropole „Materiza" kraj Nina, *Diadora*, 2 (1960–1961), 237–249.

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Article in conference proceedings

PEŠIĆ, M. 2017, Sjevernoafrička tera sigilata s brodoloma kod otočića Babuljaša blizu Pakoštana, u/in: *Rimske keramičarske i staklarske radionice. Proizvodnja i trgovina na jadranskom prostoru*, Zbornik III. Međunarodnog arheološkog kolokvija Crikvenica, 4.–5. studenog 2014., Lipovac Vrkljan G., Šiljeg B., Ožanić Roguljić, I., Konestra, A. (ur./eds.), Institut za arheologiju, Muzej grada Crikvenice, Crikvenica, 419–431.

Newspaper article

BATOVIĆ, Š. 1970, Ostaci života i kulture iz davne prošlosti Ljupča, *Narodni list*, god. XXI(CIX), br. 964, Zadar, 18. travnja, 5.

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Schmidts, T., Seifert, M. (eds.) 2022, *New Approaches to Seaborne Commerce in the Roman Empire: Panel 5.17*, Archaeology and Economy in the Ancient World – Proceedings of the 19th International Congress of Classical Archaeology, Cologne/Bonn 2018, Band 24, Propylaeum, Heidelberg. https://doi.org/10.11588/propylaeum.1038 (17 October 2022)

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