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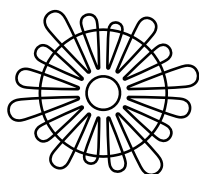
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B. Marijanović

Osamnaesti svezak časopisa *Archaeologia Adriatica* posvećen je profesoru emeritusu Brunislavu Marijanoviću u znak zahvalnosti za sve što je učinio za Odjel za arheologiju, Sveučilište u Zadru i arheologiju općenito.

The eighteenth volume of the journal *Archaeologia Adriatica* is dedicated to professor emeritus Brunislav Marijanović, as an expression of gratitude for everything he has done for the Department of Archaeology, University of Zadar and archaeology in general.

REZULTATI PROBNOGA ARHEOLOŠKOG ISTRAŽIVANJA NEOLITIČKOG NALAZIŠTA POD JARUGOM

RESULTS OF ARCHAEOLOGICAL TRIAL EXCAVATIONS OF THE NEOLITHIC SITE POD JARUGOM

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KLJUČNE RIJEČI:

Pod Jarugom, srednji
neolitik, danilski ukrasni
stil, probno arheološko
istraživanje

Probno arheološko istraživanje neolitičkog nalazišta Pod Jarugom u Podgrađu provedeno je u ožujku 2022. godine. Istraživanje je provedeno s ciljem utvrđivanja stratigrafskih i kulturnih odnosa na nalazištu, kronometrijskog datiranja nalazišta, te utvrđivanja potencijala za buduća sustavna arheološka istraživanja. Istražena je jedna probna sonda površine 3 m². Nalazište je pripisano srednjem neolitiku, odnosno danilskom ukrasnom stilu.

KEY WORDS:

Pod Jarugom, the Middle
Neolithic, the Danilo
decorative style,
archaeological trial
excavations

In March 2022, archaeological trial excavations of the Neolithic site Pod Jarugom in Podgrade were conducted. The aim of the excavations was to determine the stratigraphic and cultural relations at the site, its dating, and its potential for future systematic archaeological excavations. One trial trench with a surface area of 3 m² was dug. The site was dated to the Middle Neolithic, that is to say the Danilo decorative style.

UVOD

Neolitičko nalazište Pod Jarugom ili Lisičić, kako ga je nazvao Š. Batović,¹ u arheološkoj se literaturi spominje već nekoliko desetljeća. Riječ je o nalazištu koje je do probnih arheoloških istraživanja provedenih u ožujku 2022. godine bilo poznato samo po površinski prikupljenim nalazima, na osnovi kojih je to nalazište pripisano srednjem i kasnom neolitiku.² Probno istraživanje provedeno je s ciljem utvrđivanja stratigrafskih i kulturnih odnosa na nalazištu, kronometrijskog datiranja nalazišta te utvrđivanja potencijala nalazišta za buduća sustavna arheološka istraživanja.³

SMJEŠTAJ NALAZIŠTA I POZNATI PODATCI O NALAZIŠTU

Neolitičko nalazište Pod Jarugom nalazi se oko 4 kilometra jugoistočno od grada Benkovca, odnosno oko 700 metara jugozapadno od kuća Čerina, smještenih uz cestu koja iz Benkovca vodi prema Šibeniku (sl. 1). Riječ je o položaju smještenom na jugozapadnom rubu velike udoline koja se pruža između Perušićke i Bukovičke kose.

¹ Nalazište je Š. Batović nazvao Lisičić prema katastarskoj općini na čijem je rubnom dijelu nalazište pozicionirano. Kako je današnje naselje Lisičić prilično daleko od samog nalazišta, koje je i sam Š. Batović dodatno povezao s toponimom Pod Jarugom kao prostorno preciznijom odrednicom, naziv nalazišta primjerenije je povezati upravo s tim toponimom.

² Valja napomenuti da u bilješkama iz muzejske dokumentacije, danas pohranjene u Zavičajnom muzeju Benkovac, stoji podatak Š. Batovića da nalazište Pod Jarugom pripada jednoj fazi neolitika – srednjem neolitiku. U svim kasnijim objavama (BATOVIĆ 1979: 484; 1990: 28), isti autor nalazište pripisuje srednjem i kasnom neolitiku. Pregledom keramičkih nalaza pohranjenih u Zavičajnom muzeju Benkovac, nalazište je moguće pripisati srednjem i kasnom neolitiku.

³ Iskopavanje je primarno financirala potpora za unaprjeđenje istraživanja doktorske disertacije National Science Foundation Doctoral Dissertation Research Improvement Grant, pod brojem dodjele 2131489. Sva mišljenja, nalazi i zaključci ili preporuke izraženi u ovom materijalu pripadaju autorima i ne odražavaju nužno stavove Nacionalne zaklade za znanost.

INTRODUCTION

The Neolithic site Pod Jarugom (or Lisičić, as it was named by Š. Batović),¹ has been mentioned in the archaeological literature for several decades. The site was known only for its surface finds until March 2022, when archaeological trial excavations were conducted and the site was attributed to the Middle and Late Neolithic.² The trial excavations were conducted with the aim of determining the stratigraphic and cultural relations at the site, its dating, and its potential for future systematic archaeological excavations.³

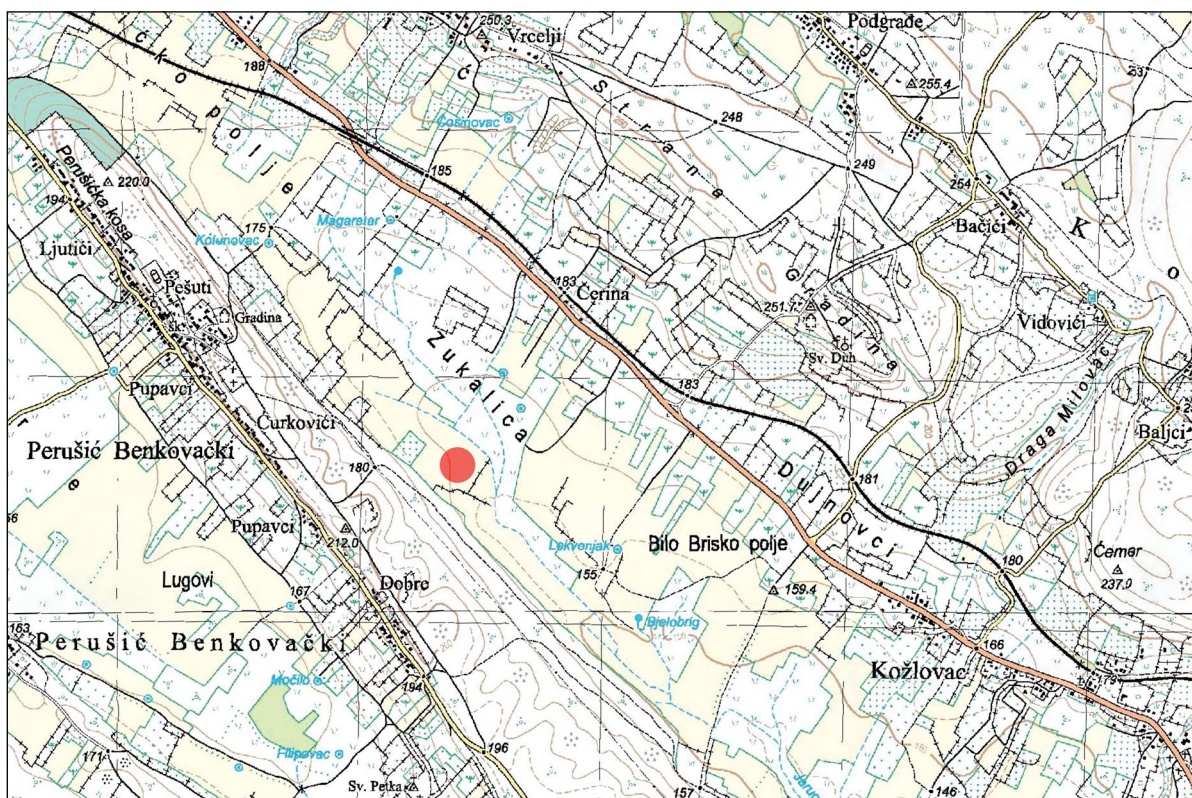
SITE LOCATION AND KNOWN INFORMATION ABOUT THE SITE

The Neolithic site Pod Jarugom is located about 4 kilometres southeast of the town of Benkovac, and about 700 metres southwest of the houses of Čerina, located along the road that leads from Benkovac to Šibenik (Fig. 1). It is positioned on the southwestern edge of a large valley stretching between Perušićka Kosa and Bukovička Kosa.

¹ Š. Batović named the site after the cadastral municipality of Lisičić, on whose periphery the site is located. Given that the present-day settlement of Lisičić is rather distant from the site and that Š. Batović himself additionally referred to it as Pod Jarugom (a more precise spatial determinant), it is more appropriate to associate the site with this latter toponym.

² It should be remarked that in the museum documentation notes, currently stored at the Benkovac Local History Museum, Š. Batović mentioned that the Pod Jarugom site was to be attributed to one Neolithic phase – the Middle Neolithic. Nevertheless, in all subsequent publications (BATOVIĆ 1979: 484; 1990: 28), he attributed the site to both the Middle and the Late Neolithic periods. A review of the ceramic finds stored in the Benkovac Local History Museum attributes the site to the Middle and the Late Neolithic.

³ The excavation was funded primarily from the National Science Foundation Doctoral Dissertation Research Improvement Grant (award number 2131489). All opinions, findings and conclusions, or recommendations expressed in this paper belong to the authors and do not necessarily reflect the views of the National Science Foundation.



SLIKA 1. Topografska karta s naznačenim položajem nalazišta Pod Jarugom (preuzeto s www.geoportal.hr)

FIGURE 1 Topographic map with the location of the Pod Jarugom site (downloaded from www.geoportal.hr)

Na tom području, koje upravno pripada selu Podgrađu, a katastarski Općini Lisičić, otkriveno je nekoliko vrlo važnih arheoloških nalazišta. Neolitičkom nalazištu s južne strane najbliži su prapovijesni tumuli pozicionirani na južnim obroncima Perušićke kose i srednjovjekovna utvrda Perušić, a sa sjeverne strane arheološka nalazišta Asseria i Polje niže Vrcelja. Broj i značenje nalazišta otkrivenih u krugu od samo dva kilometra od nalazišta Pod Jarugom, te dug vremenski period koji ona pokrivaju, neupitan su dokaz dugotrajnog i intenzivnog života na ovom području, ali i velikog arheološkog potencijala koji taj kraj skriva.

Odgovor na pitanje zašto su neolitičke, a poslije i druge prapovijesne i povijesne zajednice odabrale ovaj prostor za život, svakako mora biti povezan s lokalnim prirodno-geografskim uvjetima. Prema osnovnoj geološkoj karti,⁴ eocenske i holocenske naslage predstavljaju glavne geološke naslage udoline u kojoj je

In this area, which belongs administratively to the village of Podgrađe (and cadastral municipality of Lisičić) several very important archaeological sites have been discovered. To the south, the closest to the Neolithic site are prehistoric tumuli (located on the southern slopes of Perušićka Kosa) and the Perušić medieval fortress, and to the north, the archaeological sites of Asseria and Polje niže Vrcelja. The number and significance of sites discovered within just two kilometres of the Pod Jarugom site and the long duration of the period they represent are undeniable proof of the long and intensive habitation of the area, but also of its great archaeological potential.

The answer to the question of why the Neolithic (and later also other prehistoric and historical) communities chose to live in this area is certainly related to the local natural and geographical conditions. According to the basic geological map,⁴ the main geological de-

⁴ IVANOVIĆ et al. 1973.

⁴ IVANOVIĆ et al. 1973.

smješteno neolitičko nalazište. Zahvaljujući navedenim naslagama, udolina obiluje vrijednim agrarnim zonama, presudnim pri odabiru smještaja za osnivanje i razvoj neolitičkih naselja. Osim toga, fliš i aluvij zbog mogućnosti zadržavanja vode obiluju hidrološkim pojavama, koje su se po historijsko-geografskom razvoju i vrednovanju iskazale kao glavni oslonac za razvoj stalnih naselja od prapovijesnih do suvremenih vremena.⁵

Neolitičko nalazište Pod Jarugom otkrio je 1976. godine Š. Batović⁶ pri obilasku izoranih parcela podno Perušičke kose, u polju Zukalica. Ime nalazišta povezano je s toponimom Ispod Jaruge, koji se odnosi na parcele smještene na zapadnom dijelu polja Zukalice. Riječ je o pojasu 200 – 250 metara širine smještenom između toka Jaruge i Perušičke kose, od koje teren blago pada prema sredini polja, odnosno toku Jaruge. Glavni izvor vode spomenutog polja, kao i većeg dijela udoline predstavlja nekoliko kilometara duga rječica Jaruga (sl. 2). Ona izvire u blizini nalazišta, a protječe najnižom nadmorskom visinom udoline u smjeru jugoistoka. Njezino je korito na sjeverozapadnom dijelu veći dio godine suho, dok se na prostoru Vukšića pretvara u stalni tok. Jarugu po čitavoj dužini prati nekoliko izvora i manjih lokva. Neolitičkom nalazištu danas je najbliža lokva pozicionirana oko 70 metara jugoistočno, te izvor Polača koji se nalazi oko 100 metara istočno od nalazišta.

Aktivnost Jaruge, ali i ulogu u organizaciji neolitičkog života na ovoj mikrolokaciji, sugeriraju površinski nalazi. Naime, Š. Batović navodi da je najviše nalaza prikupljeno 10-ak metara južno od Jaruge, te na pozicijama gdje je Jaruga presjekla kulturni sloj. Udaljavanjem prema jugu, odnosno Perušičkoj kosi, broj se nalaza smanjuje, a na oko 70 metara udaljeno-

posits of the valley in which the Neolithic site originate are from the Eocene and Holocene. Thanks to these deposits, the valley abounds in valuable agricultural zones, crucial for the selection of locations for the establishment and development of Neolithic settlements. In addition, due to their water retention ability, the flysch and alluvium are abundant in hydrological features that from prehistoric to modern times have proved to be the best basis for the development of permanent settlements in terms of historical and geographical development and evaluation.⁵

The Neolithic site Pod Jarugom was discovered in 1976 by Š. Batović⁶ when he was surveying the ploughed plots at the foot of Perušička Kosa, in Zukalica field. The name of the site is associated with the toponym Ispod Jaruge ('under the ravine'), which refers to plots located in the western part of the Zukalica field. It is a 200–250-metre-wide belt located between the Jaruga rivulet and Perušička Kosa, from which the terrain gently descends towards the Jaruga, which runs through the centre of the field. The most important source of water, supplying not only the field, but also most of the valley, is the Jaruga, which is several kilometres long. (Fig. 2). It rises near the site, its flow running along the valley (at sea-level at the lowest point) in the direction of the southeast. Its northwestern section is dry for most of the year, while around Vukšić it turns into a permanent waterflow. Along its entire flow, the Jaruga features several springs and smaller pools. Today, the pool nearest to the Neolithic site is located approximately 70 metres southeast, and the spring Polača is approximately 100 metres east of the site.

Surface finds suggest the activity of the Jaruga, but also its role in the organisation of Neolithic life at this microlocation. Name-

⁵ BLAČE 2014: 137–139.

⁶ Tekst je preuzet iz muzejske dokumentacije. Na mogućnostima uvida arheološke građe i muzejske dokumentacije zahvaljujemo Marinu Čurkoviću, kustosu i ravnatelju Zavičajnog muzeja u Benkovcu.

⁵ BLAČE 2014: 137–139.

⁶ The text has been taken from the museum documentation. I would like to thank Marin Čurković, curator and director of the Benkovac Local History Museum, for giving us access to the archaeological material and museum documentation.



SLIKA 2. Pogled na Jarugu 80-ih godina 20. stoljeća (izvor: fotodokumentacija Zavičajnog muzeja Benkovac)
 FIGURE 2 View of the Jaruga in the 1980s (source: Benkovac Local History Museum, photo-documentation)

sti od Jaruge nalazi nestaju.

Zanimljiv je i podatak o neravnomjernoj pojavi površinskih nalaza, odnosno njihovoj grupaciji u zonama tamne i masne zemlje, u kojima je zamijećen veći stupanj fragmentiranosti nalaza u odnosu na okolne pozicije.⁷ Slični obrisi i/ili grupacije nalaza nisu evidentirani tijekom prvog posjeta nalazištu 2017. godine, niti uoči probnih istraživanja 2022. godine. Također, nisu uočeni ni na zračnim ni na satelitskim snimkama. Sjeverno od Jaruge nalazi nisu prikupljeni, što je Š. Batovića navelo na zaključak da Jaruga predstavlja sjevernu granicu nalazišta. Do istog se zaključka došlo i 2022. godine. I tada su površinski nalazi prikupljeni isključivo na parcelama južno od Jaruge, u dužini od oko 50 metara, dok u tada suhom koritu Jaruge nalaza nije bilo, kao ni naznaka kulturnog sloja, odnosno jamskih objekata. Gledano u širinu, Š. Batović navodi podatak o prikupljanju površinskih arheološ-

ly, Š. Batović states that the most finds were collected about 10 metres south of the Jaruga and at spots where the Jaruga cut the cultural layer. Further south, closer to Perušićka Kosa, the number of finds decreases, and at about 70 metres from the Jaruga, no more findspots have been detected.

Another interesting fact is that surface finds appear unevenly, being grouped in zones of dark and sticky soil, in which a higher degree of fragmentation of the finds was observed in comparison with the surrounding positions.⁷ No similar contours and/or groups of finds were recorded in the course of the first site surveying in 2017, nor prior to trial excavations in 2022. Neither were they identified in aerial or satellite images. North of the Jaruga, no finds were collected, which led Š. Batović to the conclusion that the Jaruga represented the site's northern border. The same conclusion was reached also in 2022, as the surface

⁷ Usporediti bilješku 6.

⁷ Cf. note 6.

kih nalaza na oko 40 metara, dok je tijekom 2022. godine vrlo skroman broj nalaza evidentiran na oko 80 metara širokoj površini.⁸ Imajući u vidu formacijske procese, koji su posljedica dugotrajnog djelovanja prirodnih procesa, u ovom slučaju erozije i akumulacije s Perušičke kose, te dugotrajnog iskorištavanja zemljišta u poljoprivredne svrhe, distribucija površinskih nalaza ne mora biti odraz njihova primarnog taloženja. Stoga je bez konkretnijih istraživanja moguće jedino pretpostaviti kako je riječ o manjem neolitičkom nalazištu, kojem sjevernu granicu predstavlja Jaruga.

Zahvaljujući (ne)sretnoj činjenici da je Jaruga 70-ih godina 20. stoljeća presjekla kulturni sloj, Š. Batović bio je u mogućnosti dobiti uvid u dio stratigrafske slike nalazišta. Tako je u zonama presjeka kulturnog sloja utvrdio dva sloja, od kojih je gornji sloj do relativne dubine od 50 centimetara djelomično oštećen ratarskom aktivnošću, dok je donji sloj intaktan do 70 centimetara duboke zdravice (ilovače). Jedino mjesto na kojem je relativna dubina kulturnog sloja prelazila 70 centimetara jest mjesto na kojem je evidentirana jedna jama ukopana u zdravicu. Početna relativna dubina ukapanja jame utvrđena je na 40 centimetara, dok je ukupna dubina jame širine 2,7 metara iznosila oko 1 metar. Depozit jame osim po boji, od ostatka kulturnog sloja izdvajao se po konzistenciji, te kvantiteti prikupljenih nalaza (ulomci keramičkih posuda, alatke od rožnjaka, životinjske kosti, dagnje i manje amorfnog kamenje),

finds were collected solely on the plots south of the Jaruga, over a distance of approximately 50 metres. The bed of the Jaruga was dry and yielded no finds or indications of cultural layers or pit structures. When it comes to the width of the surface area that yielded archaeological surface finds, Š. Batović reported that finds were collected over approximately 40 metres, while in 2022 a very modest number of finds were recorded over a width of approximately 80 metres.⁸ Bearing in mind the formations resulting from long-term natural processes (firstly, erosion as well as accumulation from Perušička Kosa and, secondly, long-term exploitation of land for agricultural purposes), the distribution of surface finds does not necessarily reflect their primary deposition. Without further excavations it is therefore possible only to assume a smaller Neolithic site, its northern border being the Jaruga.

(Un)fortunately, the Jaruga cut the cultural layer in the 1970s, which allowed Batović to gain a partial insight into the site's stratigraphy. Thus, in the zones where the cultural layers intersected, he identified two layers. The upper layer, with a relative depth of 50 centimetres, had been partially damaged by agricultural activities, while the lower layer was intact up to 70 centimetres of deep sterile soil (clay). The only place where the relative depth of the cultural layer exceeded 70 centimetres was the point at which one pit was buried in sterile soil. The initial relative depth of the pit was 40 centimetres, while the total depth of the 2.7-metre-wide pit was approximately 1 me-

⁸ Treba napomenuti da je na fotografijama snimljenima dronom 2022. godine, kao i na satelitskim snimkama (www.geoportal.dgu.hr), jugozapadno od nalazišta vidljiv taman, izduženi obris 15-ak metara širine. Na tom mjestu, pozicioniranom neposredno uz Perušičku kosu, odnosno oko 180 metara južno od Jaruge, površinski nalazi nisu evidentirani. Obris nalikuje na one s neolitičkih nalazišta u Smilčiću (MARIJANOVIĆ 2022: 102) i Islamu Grčkom (HORVAT OŠTRIĆ, TRIOZZI 2022b), gdje su iskopavanjima evidentirani rovovi iz vremena neolitika. Bez iskopavanja, u slučaju nalazišta Pod Jarugom nije moguće utvrditi je li riječ o rovu, nekome drugom ukopanom objektu ili prirodnoj formaciji.

⁸ It should be noted that drone footage from 2022, as well as satellite images (www.geoportal.dgu.hr) indicate a dark, elongated, 15-metre-wide shape southwest of the site. At that point, positioned directly next to Perušička Kosa, or about 180 metres south of the Jaruga, no surface finds have been recorded. The outline resembles those from the Neolithic sites in Smilčić (MARIJANOVIĆ 2022: 102) and Islam Grčki (HORVAT OŠTRIĆ, TRIOZZI 2022b), where excavations yielded trenches from the Neolithic period. In the case of the Pod Jarugom site, without excavations it is not possible to determine whether it was once a trench, another buried structure, or a natural formation.

uz koje su zabilježeni i ostatci pepela. Drugi objekti nisu utvrđeni.

Od površinskog materijala koji je prikupio Š. Batović, a poslije i M. Savić, nekadašnji kustos Zavičajnog muzeja Benkovac, valja izdvojiti kamene žrvnjeve, bruseve, sjekire (kalupaste i trapezaste) i kugle, strelice i sječiva od rožnjaka, životinjske kosti i ulomke keramičkih posuda.⁹ Riječ je o nalazima od kojih su dosad objavljeni ulomak jedne keramičke posude i jedna kamena strelica u radu Š. Batovića,¹⁰ te nekoliko keramičkih i kamenih nalaza u sklopu doktorske disertacije voditeljice probnih iskopavanja.¹¹ Valja napomenuti da je za potrebe iste disertacije makroskopski pregledan manji dio litičkih artefakata radi utvrđivanja podrijetla kamene sirovine,¹² te je provedena analiza životinjskih kostiju u svrhu utvrđivanja zastupljenih vrsta.¹³ Analizama je utvrđeno da su litički artefakti izrađeni od zamjenskoga (metasomatskog) nodularnog rožnjaka podrijetlom s Gargana, a da životinjske kosti pripadaju svinji, ovikapridima i govedu.¹⁴

Prije probnog istraživanja 2022. godine po površini nalazišta prikupljeno je 20-ak ulomaka keramičkih posuda, među kojima je od dijagnostičkih nalaza moguće izdvojiti jednu visoku prstenastu nogu i ulomak oboda posude ukrašene urezivanjem (T. II/1). Osim toga, prikupljeni su i malobrojni nalazi od rožnjaka, među kojima se posebno izdvaja u cijelosti sačuvana listolika strelica.¹⁵

The pit's deposit stood out from the rest of the cultural layer by its colour and texture, as well as the quantity of the collected finds (ceramic vessel fragments, chert tools, animal bones, mussels and small amorphous stones), alongside which remains of ash were also recorded. No other structures have been identified.

Among the surface finds collected by Š. Batović and later also M. Savić, former curator of the Benkovac Local History Museum, worth mentioning are: grindstones; whetstones; shoe-last and trapezoidal axes; chert nodules, arrows and blades; animal bones; and ceramic vessel fragments.⁹ Of these finds, a ceramic vessel fragment and a stone arrow have been published in papers by Š. Batović,¹⁰ and several ceramic and stone finds in the dissertation written by the Head of the Trial Excavations.¹¹ For the purposes of this dissertation, an examination of a minority of the lithic artefacts was made, to determine the origin of the stone raw material,¹² and an analysis of the animal bones was conducted to identify the represented species.¹³ The analyses showed that the lithic artefacts were made from a nodular chert originating from Gargan that was formed by metasomatic replacement, and that the animal bones were of pigs, ovicaprids and cattle.¹⁴

Before the trial excavations of 2022, approximately 20 surface finds of ceramic vessel fragments were collected at the site, among which a high ring-shaped foot and a rim fragment of a vessel decorated with incising stand out as diagnostic finds (Pl. II/1). In addition, a small number of chert finds were collected, among which a completely preserved leaf-shaped arrow is particularly worthy of mention.¹⁵

⁹ Nalazi su pohranjeni u Zavičajnom muzeju Benkovac.

¹⁰ BATOVIĆ 1990: sl. 12; 4, 5.

¹¹ HORVAT 2017: 70, T. XII.

¹² Ekspertizu benkovačke litike obavio je dr. sc. Zlatko Perhoč, kojem zahvaljujemo na pomoći.

¹³ Analizu je provela Mija Koščak, kojoj zahvaljujemo na pomoći.

¹⁴ HORVAT 2017: 70.

¹⁵ HORVAT OŠTRIĆ, TRIOZZI 2022a: 75.

⁹ The finds are stored in the Benkovac Local History Museum.

¹⁰ BATOVIĆ 1990: Fig. 12; 4, 5.

¹¹ HORVAT 2017: 70, Pl. XII.

¹² We would like to thank to Zlatko Perhoč, PhD for providing expertise on the Benkovac lithics.

¹³ We express gratitude to Mija Koščak for conducting the analysis.

¹⁴ HORVAT 2017: 70.

¹⁵ HORVAT OŠTRIĆ, TRIOZZI 2022a: 75.

ISTRAŽENA POVRŠINA I STRATIGRAFSKA SLIKA

Probno arheološko iskopavanje provedeno je u razdoblju od 21. do 29. ožujka 2022. godine.¹⁶ Otvorena je jedna sonda (sonda A) dimenzija 1 x 3 metra.¹⁷ Sonda je bila orijentirana u smjeru sjeveroistok-jugoza-pad. Primijenjena je metoda stratigrafskog iskopavanja, uz prikupljanje sedimenta za flotaciju (ukupno oko 120 litra). Iskopani sediment suho je prosijavan uz uporabu sita s mrežom otvora 1 cm na samom nalazištu, s iznimkom površinskog sloja (SJ 1) koji nije prosijavan.

Stratigrafska slika istraženog dijela nalazišta prilično je jednostavna. Depozit je koherentan i bez stratigrafskih cezura. Ispod poljoprivrednim radovima poremećenog površinskog (SJ 1) i potpovršinskog sloja (SJ 2), u kojima je pronađen manji broj keramičkih nalaza danilskih karakteristika (T. II/2–7), otkriven je prvi intaktni kulturni sloj (SJ 3). Taj sloj ima lagani nagib od juga prema sjeveru, u skladu s prirodnim padom terena od Perušićke kose prema toku Jaruge. Na jugozapadnom dijelu sonde otkriven je na relativnoj dubini od 25 centimetara, dok je na sjeveroistočnom dijelu otkriven na relativnoj dubini od 40 centimetara. U tom sloju svjetlosmeđe boje, s dosta gareži i povećanom gustoćom nalaza, evidentirana je jedna jama (SJ 4), i to u sjeveroistočnom dijelu sonde (sl. 3), na relativnoj dubini od 57 centimetara. Ona je ulazila u profil sonde, zbog čega je istražen tek dio njezina volumena. Zapuna jame duboke 10 centimetara

EXCAVATED SURFACE AREA AND STRATIGRAPHIC PICTURE

From 21 to 29 March 2022, archaeological trial excavations were conducted.¹⁶ Trial trench A, measuring 1 x 3 metres, was dug,¹⁷ oriented northeast–southwest. Applying the stratigraphic excavation method, sediment samples for flotation (in total about 120 litres) were taken. The excavated sediment was dry-sieved at the site using a wire mesh with 1-centimetre-wide openings; the surface layer (SU 1) was exempted from the sieving.

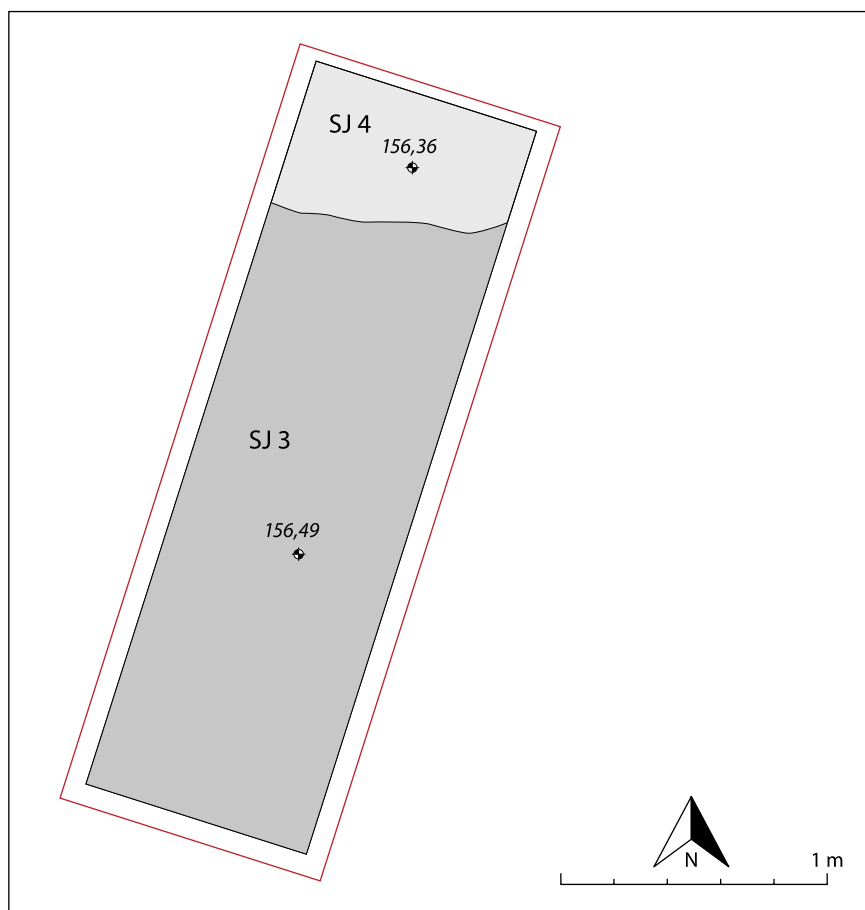
The stratigraphic picture of the investigated part of the site is rather simple. The deposit is coherent and without stratigraphic gaps. The surface (SU 1) and subsurface (SU 2) layers, yielding a small number of ceramic finds with features of the Danilo culture (Pl. II/2–7), had been disturbed by agricultural works. Uncovered beneath them was the first intact cultural layer (SU 3). This layer has a mild slope from south to north, in accordance with the natural slope of the terrain from Perušićka Kosa to the course of the Jaruga. On the southwestern side of the trial trench, SU 3 was reached at a relative depth of 25 centimetres, and on the northeastern side at a relative depth of 40 centimetres. In this layer – of light brown colour with quite a lot of soot and an increased density of finds – a pit (SU 4) was recorded in the northeastern part of the trial trench (Fig. 3), at a relative depth of 57 centimetres. It entered the trial-trench profile, which is why only part of its volume has been investigated. The 10-centimetre-deep pit was filled with a dark brown sediment, in which, apart from several sporadic finds, an intercala-

¹⁶ Voditeljica istraživanja bila je doc. dr. sc. Kristina Horvat Oštrić, a zamjenica voditeljice dipl. arh. Marina Šimičić. U stručnom timu bili su Nicholas Triozzi, tada doktorand s Department od Anthropology, University of California Santa Barbara i studenti studija arheologije sa Sveučilišta u Zadru: Martin Keretić, Marijan Aničić, Enzo Gabrijele. Suradnicima i studentima zahvaljujem na njihovu doprinosu uspješnoj provedbi istraživanja.

¹⁷ Sonda je bila smještena na zemljišnoj čestici 1195/2, k. o. 300560 Lisičić.

¹⁶ The excavations were led by Kristina Horvat Oštrić, PhD, and her deputy was Marina Šimičić, mag. archaeol. The expert team included Nicholas Triozzi, at that time a PhD student at the Department of Anthropology of the University of California in Santa Barbara (UCSB) and three archaeology students at the University of Zadar: Martin Keretić, Marijan Aničić and Enzo Gabrijele. We would like to thank my colleagues and students for their contribution to the successful execution of the excavations.

¹⁷ The trial trench was dug at cadastral plot 1195/2, cadastral municipality 300560 Lisičić.



SLIKA 3. Tlocrt razine SJ 3 s ukopanom jamom SJ 4 (crtež: M. Šimičić)

FIGURE 3 Ground-plan of the level of SU 3 with the buried pit SU 4 (illustration by M. Šimičić)

sastojala se od tamnosmeđeg sedimenta, u kojem je osim nekoliko sporadičnih nalaza utvrđen i proslojak pepela uz sjeveroistočni kut sonde.

Ispod opisanoga kulturnog sloja, čije je iskopavanje provedeno prema standardima arbitrarnog pristupa s otkopnim slojevima debljine 20 cm, na relativnoj dubini od 85 centimetara na jugozapadnoj, odnosno oko 100 centimetara na sjeveroistočnoj strani sonde, otkriven je novi rahli sloj sive boje (SJ 5) s primjetno većom količinom gara, osobito na sjeveroistočnom dijelu sonde. U tom sloju otkrivena je i veća količina amorfnog kamenja (SJ 3/5), koje je zapunilo 10-ak centimetara dubok usjek smjera pružanja sjever-jug (sl. 4). Je li riječ o dijelu neke konstrukcije, odnosno substrukciji koja predstavlja zapunu kanala, nije moguće utvrditi zbog male površine istraživanja. Također, ostaje upitno i je li riječ o kanalu nastalom prirodnim ili antropogenim putem.

tion of ash was found along the northeastern corner of the trial trench.

The described cultural layer was excavated using the arbitrary level method, with 20-centimetre-thick spits. Below it, at a relative depth of 85 centimetres on the southwestern and about 100 centimetres on the northeastern side of the trial trench, a new, loose layer of a grey colour (SU 5) with a noticeably larger amount of soot, especially on the northeastern side of the trial trench. Also uncovered in this layer were a large amount of amorphous stones (SU 3/5), which filled the approximately 10-centimetre-deep cutting oriented north-south (Fig. 4). Due to the small surface area covered by the excavations, it is not possible to determine whether it is a part of a construction, or a substructure filling the channel. It also remains in question whether it is a natural or an anthropogenic channel.

At a relative depth of approximately 90 centimetres on the southwest, or approximately

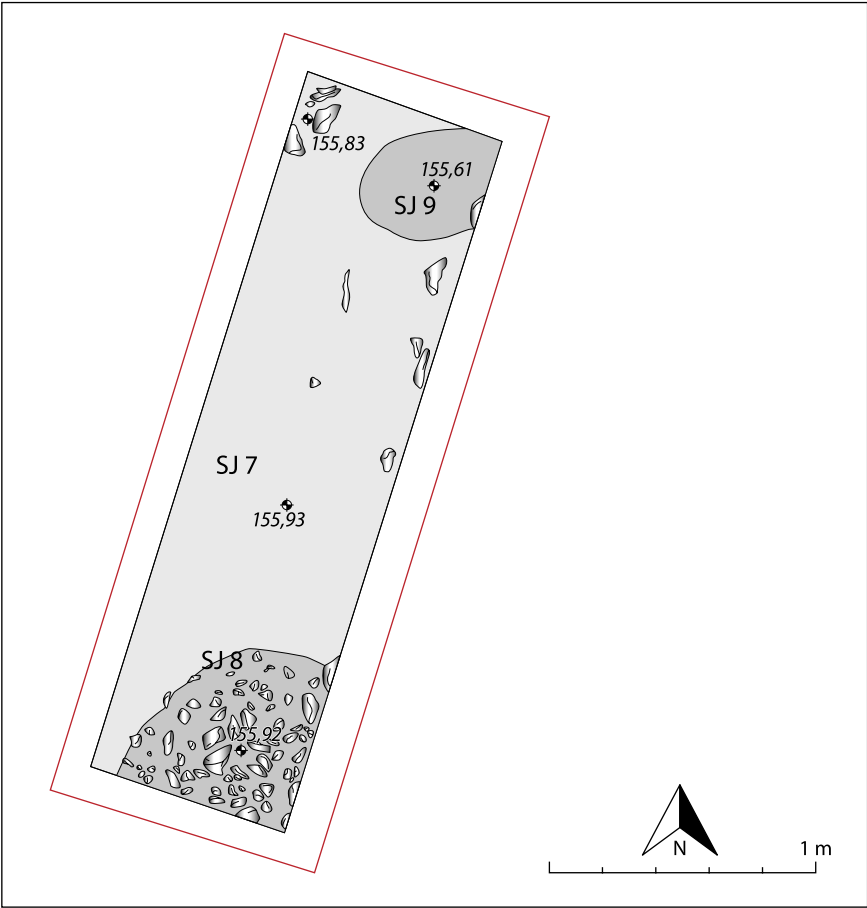
SLIKA 4. *Tlocrt usjeka (SJ 3/5) i amorfno kamenja*
(crtež: M. Šimičić)

FIGURE 4 *Ground-plan of the cutting (SU 3/5) and the amorphous stones*
(illustration by M. Šimičić)

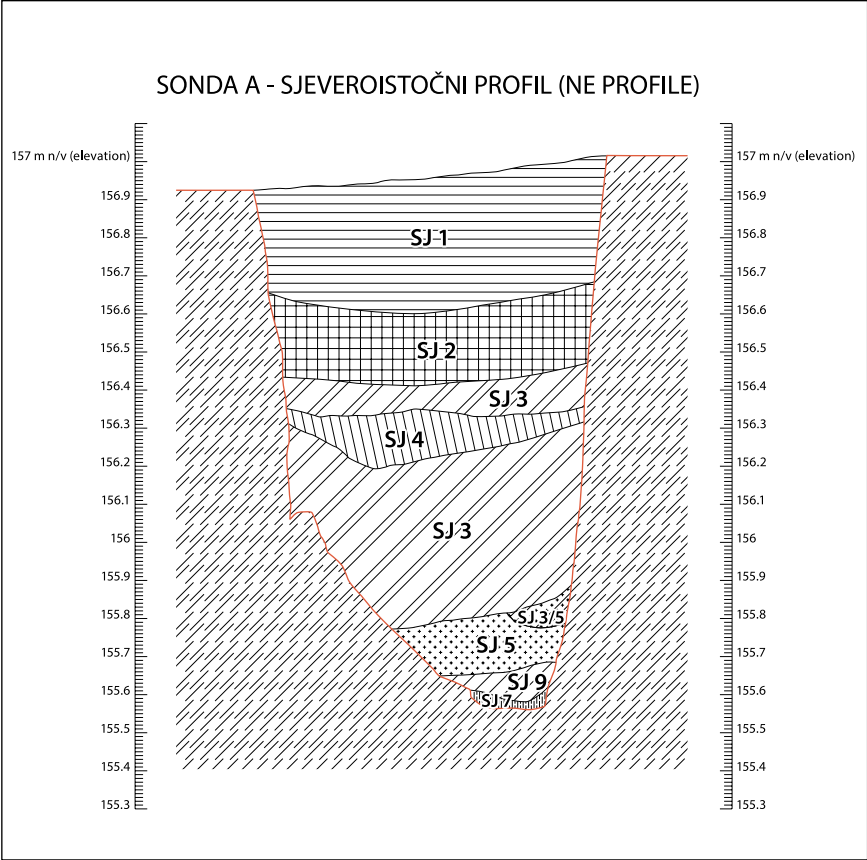


Na relativnoj dubini od oko 90 centimetra na jugozapadnoj, odnosno oko 110 centimetara na sjeveroistočnoj strani sonde, otkrivena je zdravica (SJ 7). Riječ je o ilovastoj, kompaktnoj i vodonepropusnoj podlozi oker boje. U njoj su evidentirane nakupine vrlo sitnih kamenčića, vjerojatno povezane s djelovanjem potpovršinskih voda, koje su uz sjeveroistočni profil sonde izbijale od relativne dubine 140 centimetara. U zdravlični sloj ukopane su dvije strukture (sl. 5). U sjeveroistočnom dijelu sonde riječ je o jami u kojoj je zabilježena veća količina garenje (SJ 9). Ona je definirana na relativnoj dubini od oko 140 centimetara te je ulazila u profile SI kuta sonde (sl. 6), u kojem je zbog prodiranja potpovršinskih voda bilo otežano iskopavanje. Dubina jame iznosila je 15 centimetara. Istražen je dio njezina volumena, do profila. U zapuni jame pronađeno je svega nekoliko nalaza bez ukrasa (T. VIII/2–3, 6). U jugozapadnom dijelu

110 centimetres on the northeastern side of the trial trench, sterile soil was uncovered (SU 7). It is a compact and impervious clay substratum of ochre colour. In it, clusters of very small stones were recorded, probably related to the activity of subsurface waters, which, along the northeastern profile of the trial trench, flowed from a relative depth of 140 centimetres. Two structures are buried in the sterile soil layer (Fig. 5). One of them was a pit on the northeastern side of the trial trench with a large amount of soot (SU 9). It was defined at a relative depth of about 140 centimetres and entered the profiles of the southeastern corner of the trial trench, in which excavations were made difficult due to the penetration of subsurface water. The depth of the pit was approximately 15 centimetres. A part of its volume up to its profile was excavated. In the pit fill, only a few finds (without any ornaments) were found (Pl. VIII/2-3, 6). In the southwestern part of the trial trench,



SLIKA 5. Tlocrt vrha zdravice (SJ 7) s ukopanom jamom (SJ 9) i strukturom od amorfnoog kamenja (SJ 8) (crtež: M. Šimičić)
FIGURE 5 Ground-plan of the top of the sterile soil (SU 7) with a buried pit (SU 9) and a structure of amorphous stones (SU 8) (illustration by M. Šimičić)



SLIKA 6. Sonda A – sjeveroistočni profil (crtež: M. Šimičić)
FIGURE 6 Trench A - northeastern cross-section (illustration: M. Šimičić)

TABLICA 1. Radiokarbonski datum s nalazišta Pod Jarugom (izradila: K. Horvat Oštrić)**TABLE 1** Radiocarbon date from the Pod Jarugom site (made by K. Horvat Oštrić)

Laboratorijski broj uzorka Lab. sample nr.	Nalazište, broj uzorka (materijal), arheološki kontekst Site, sample nr. (material), archaeol. context	Starost prije sadašnjosti Date BP	Starost pr. Kr. (kalibrirani raspon 2σ) 2σ cal BC 95.4% confidence
UCIAMS 271164	LS-A-3-A (charred wood), sonda A, sj 3	6185 ± 20	5214-5051 cal BC

sonde, u zdravici je otkrivena kružna struktura od složenoga amorfno kamenja (SJ 8). Pri vrhu te strukture nalazilo se manje, a pri dnu strukture veliko amorfno kamenje. Između i unutar kamenja evidentirani su ulomci keramičkih posuda, životinjske kosti te manji komadi drva (sl. 5). Struktura je istražena do relativne dubine od 135 centimetara jer je kamenje ulazilo u jugozapadni i jugoistočni profil sonde koji bi daljnjim iskopavanjem bili urušeni. Riječ je o strukturi koja je nastala na samom početku korištenja ove lokacije. Promjer strukture kao i njezina funkcija ostaju nepoznati do opsežnijih iskopavanja.

Iz probne sonde A radiokarbonski je analiziran jedan uzorak iz prvoga intaktnog sloja (SJ 3) (tab. 1).¹⁸ Dobiveni kalibrirani¹⁹ vremenski raspon iznosi oko 5200 do 5050 BC.

a circular structure of arranged amorphous stones was discovered in sterile soil (SU 8). At the top of this structure were smaller, and at its bottom larger amorphous stones. Recorded between and among the stones were ceramic vessel fragments, animal bones and smaller pieces of wood (Fig. 5). The structure was excavated to a relative depth of 135 centimetres because the stones were entering the southwestern and southeastern profiles of the trial trench (Fig. 6), which would have collapsed if further dug. It is a structure that was created at the very beginning of the use of the site. The diameter of the structure as well as its function will remain unknown until more extensive excavations are carried out.

From trial trench A, one sample from the first intact layer (SU 3) was carbon dated (Tab. 1).¹⁸ The calibrated¹⁹ time range obtained was approximately 5200 to 5050 BC.

¹⁸ Analiza je provedena na sljedećim institucijama; UCSB Paleoecology and AMS Radiocarbon Research Facility (pretreatments), Yale Analytical and Stable Isotope Center (analiza isotopa), UCI W. M. Keck Carbon Cycle Accelerator Mass Spectrometry Laboratory (AMS radiocarbon date). Posebnu zahvalu dugujemo N. Triozziju i dr. Richardu Georgeu sa Sveučilišta UCSB.

¹⁹ Jedan uzorak pougljenjenog drva (UCIAMS-271164) prethodno je tretiran kiselinsko-bazno-kiselinom postupkom za uklanjanje kontaminanata uz ponavljnje dok kiselina otopina nije postala bistra. Uzorak je sušen na termostatu preko noći na 100°C i spaljen s CuO i Ag žicom na 900°C u vakuumski zatvorenim kvarcnim cijevima, te poslan u KCCAMS na analizu. Datum je kalibriran u odnosu na kalibracijsku krivulju IntCal20 u OxCal 4.1 (BRONK RAMSEY et al. 2009; REIMER et al. 2020).

¹⁸ The analysis was conducted by the following institutions: UCSB Paleoecology and AMS Radiocarbon Research Facility (pretreatments), Yale Analytical and Stable Isotope Center (isotope analysis), UCI W. M. Keck Carbon Cycle Accelerator Mass Spectrometry Laboratory (AMS radiocarbon date). We owe special thanks to N. Triozzi and Richard George, PhD, of the UCSB.

¹⁹ One charred wood sample (UCIAMS-271164) was pretreated using the acid-base-acid procedure to remove contaminants and repeated until the acid solution was clear. The sample was dried on a heat block overnight at 100° C and combusted with CuO and Ag wire at 900° C in vacuum-sealed quartz tubes, and sent to KCCAMS for analysis. The date was calibrated with reference to the IntCal20 calibration curve in OxCal 4.1 (BRONK RAMSEY et al. 2009; REIMER et al. 2020).

POKRETNİ NALAZI

Prikupljena pokretna arheološka građa pripada uobičajenim kategorijama neolitičkih nalaza – ulomcima keramičkih posuda, izrađevinama od lomljenog kamena i životinjskih kostiju. Ostatak prikupljenih nalaza pripada skupini prehrambenih ostataka koju sačinjavaju životinjske kosti, biljne sjemenke i nekoliko ljuštura školjkaša.

Lončarija

Prikupljena su sveukupno 842 ulomka lončarije, od kojih najviše u SJ 3 (62 %). Iako je riječ o količinski gledano skromnom uzorku, što je svakako uvjetovano i malim dimenzijama probne sonde, statistička analiza prikupljenih nalaza pruža uvid u osnovne tehnološke, tipološke i ukrasne aspekte lončarske produkcije neolitičkih zajednica nalazišta Pod Jarugom.

Na osnovi tehnoloških karakteristika i obrade površine, keramičke nalaze moguće je podijeliti u četiri skupine: grubu, finu ili glačanu, metličastu i slikanu (tzv. *figulinu*) keramiku. Gruboj keramici pripada 6,5 %, finoj glačanoj 90 %, metličastoj 0,8 %, a slikanoj 2,7 % keramičkih nalaza. Gruba, fina i metličasta keramika izrađene su od pročišćene gline s primjesama zrnaca vapnenca i kalcita, jasno vidljivih u presjeku i na površini stijenke posude. Distinkcija između grube, fine i metličaste keramike napravljena je na temelju obrade stijenke posuda. Tako su u kategoriju grube keramike ubrojeni oni ulomci čija je površina samo poravnana, bez dodatne obrade stijenke. Kod ulomaka ubrojenih u ovu skupinu glina uglavnom sadrži nešto veću količinu utrusaka vapnenca koji su lako uočljivi i opipljivi na neravnim stijenkama posuda. U kategoriju fine keramike ubrojeni su ulomci posuda glačanih stijenki. U toj kategoriji moguće je izdvojiti primjerke s nemarno glačanim površinama (oko 30 %), primjerke s umjereno zaglačanom površinom

SMALL FINDS

The collected movable archaeological material has been attributed to the usual categories of Neolithic finds: ceramic vessel fragments, knapped stone and animal bone artefacts. The rest of the collected finds have been classified as belonging to the food residue group, consisting of animal bones, plant seeds and several shellfish shells.

Pottery

A total of 842 pottery fragments were collected, most of which (62%) were in SU 3. Although in terms of quantity the sample is rather modest (certainly also as a result of the small size of the trial trench), a statistical analysis of the collected finds provides insight into the basic technological, typological and decorative aspects of the pottery production of Neolithic communities at the Pod Jarugom site.

Based on technological characteristics and surface workmanship, the ceramic finds can be divided into four groups: coarse ware, fine or smoothed ware, brushed ware, and painted (*figulina*) ware. Coarse ware makes up 6.5%, fine smoothed ware 90%, brushed ware 0.8%, and painted ware 2.7% of the pottery finds. Coarse, fine and brushed wares are made of purified clay with limestone and calcite grain tempering, clearly visible in the cross-section and on the surface of the vessel wall. The distinctions between coarse, fine and brushed ware were made based on the workmanship of the vessel walls. Thus, the fragments whose surface was only flattened without additional working of the walls were classified as coarse ware. The clay from which fragments attributed to this group were made mainly contained a slightly larger amount of limestone phenocrysts, which are easily visible and tangible on the uneven walls of the vessels. Fragments of the vessels with smoothed walls were classified as fine ware. In this category, it is possible to distinguish specimens with a casually smoothed sur-

(oko 30 %) i primjerke s izrazito zbijenom i fino uglačanom površinom (oko 40 %). Kod potonjih, sitne glinene čestice zbog intenzivnog glačanja dopijevaju na površinu u zaseban sloj koji nalikuje na premaz. Kod metličaste keramike, vanjska je stijenka poravnana i prevučena metlicom ili nekim sličnim predmetom po još vlažnoj površini posude. Na temelju sedam sačuvanih ulomaka pripisanih ovoj kategoriji (T. III/9–10), čini se da je cijela vanjska stijenka bila prevučena metlicom, kao što je to slučaj s metličastom keramikom i s drugih neolitičkih nalazišta istočnog Jadrana s kojih potječe ova kategorija keramičkih nalaza.²⁰

Prema boji stijenci, evidentno je da su posude pečene redukcijski i oksidacijski, kao i kombinacijom tih uvjeta. Kod nekih posuda kombinacija redukcijskih i oksidacijskih uvjeta pečenja do izražaja dolazi na vanjskoj stijenci koja varira u nijansama iste boje (T. II/3–4; VI/2–3), dok se kod drugih očituje u distinkciji boje unutarne i vanjske stijenske. Većina je ulomaka svjetlosmeđe ili tamnosmeđe boje (oko 90 %), dok su manje učestale posude pečene u nijansama tamnosive, crne, oker i crvenkaste boje.

Na temelju dijagnostičkih ulomaka (ulomci oboda, dna i ručaka, ukrašeni ulomci posuda) kojima pripada oko 15 % prikupljenih keramičkih nalaza, u kategoriji grube, fine i metličaste keramike moguće je izdvojiti sljedeće oblike posuda: zdjele, zdjelice, lonce, plitice (tanjure) i šalice (čaše).

Najzastupljeniji i tipološki najraznovrsniji oblik na nalazištu Pod Jarugom predstavljaju zdjele, među kojima je moguće izdvojiti nekoliko varijanti: polukuglaste zdjele (T. II/2), duboke zdjele uvučenog otvora (T. III/1–3; VII/1–2, 4; V/2), zdjele široka otvora (T. VI/3), bikonične zdjele (T. IV/6; VI/3–4; VII/5), zdjele blagog S profila (T. VI/7), te kuglaste zdjele suženog otvora (T. V/4). Lonci

face (approximately 30%), specimens with a moderately smoothed surface (approximately 30%) and specimens with a highly compacted and finely smoothed surface (approximately 40%). In the latter, due to intensive smoothing, fine clay particles reach the surface in a separate coating-like layer. In brushed pottery, the outer wall was flattened and swept with a brush or a similar item over the still-damp surface of the vessel. Based on seven preserved fragments that were attributed to this category (Pl. III/9–10), the entire outside wall appears to have been swept by a brush, as is the case with brushed pottery from other Neolithic sites of the eastern Adriatic, from which this category of ceramic finds originates.²⁰

The colour of the walls makes it evident that both reduction and oxidation firing (as well as a combination of the two firing methods) were used to produce the vessels. In some, the combination of reduction and oxidation firing is evident on the outer walls, with variations in shades of the same colour (Pl. II/3–4; VI/2–3), while in others it is manifested in the colour distinction between the inner and outer walls. Most fragments are light brown or dark brown (about 90%), while vessels fired in shades of dark grey, black, ochre and reddish are less frequent.

Based on diagnostic fragments (rim, bottom and handle fragments, decorated potsherds) to which about 15% of the collected pottery finds belong, the following vessel shapes can be classified as coarse, fine and brushed ware: bowls, small bowls, pots, saucers (plates) and cups (beakers).

The most common and typologically most diverse form from the Pod Jarugom site are bowls, among which several variants can be discerned: hemispherical bowls (Pl. II/2), deep bowls with a recessed opening (Pl. III/1–3; VII/1–2, 4; V/2), bowls with a wide opening (Pl. VI/3), biconic bowls (Pl. IV/6; VI/3–

²⁰ FORENBAHER, VRANJICAN 1985: 8; ČUKA 2014: 19–21; FORENBAHER, RADIĆ, MIRACLE 2020: 23, 28.

²⁰ FORENBAHER, VRANJICAN 1985: 8; ČUKA 2014: 19–21; FORENBAHER, RADIĆ, MIRACLE 2020: 23, 28.

suženog otvora (T. II/1), polukuglaste zdjelice suženog otvora (T. III/4), plitice (T. V/5) i šalice (T. VIII/6) zastupljene su sporadično. Obod posuda kod većine je posuda blago zaobljen i neprofiliran (T. II/2; IV/1–6). Rjeđe su u pitanju prstenasto zadebljani obod (T. VI/5; VII/1–2; VIII/1).

Iako malobrojne, visoke i niske prstenaste noge kao izrazita pojava jadranskoga srednjeg neolitika i na ovom su nalazištu najzastupljeniji oblik (T. VI/6) (ukupno 6 primjeraka). Osim njih, pronađeno je jedno nisko ravno dno, te jedno konkavno dno. Jednostruke i dvostruke bradavičaste aplikacije evidentirane su na ukupno šest ulomaka, od kojih jedan pripada skupini metličaste keramike (T. III/9). Perforacije su evidentirane na ukupno tri ulomka. Kod svih primjeraka pozicionirane su ispod oboda posude (T. VI/2).

Ukras je izveden na ukupno 44 ulomaka, odnosno 5,2 % keramičkih nalaza u kategoriji grube i fine keramike. Izuzev ukrasa u vidu bradavičastih aplikacija, nalazi su ukrašeni tehnikom urezivanja, koja je na tri ulomka fine keramike upotpunjena crvenom (T. II/5), a na tri ulomka bijelom inkrustacijom (T. II/7). Svi ukrašeni ulomci pripadaju poznatomu i prepoznatljivomu danilskom stilu. Ukras je uglavnom izveden na gornjem dijelu posude, ispod oboda. Na mnogim je ulomcima izvedena samo jedna vodoravna urezana linija uz obod posude. Na ostalim keramičkim posudama pojavljuju se viseći trokuti ispunjeni kosim paralelnim ili mrežasto kombiniranim linijama (T. II/1), koncentrične kružnice (T. II/7; VIII/8), paralelne linije, kombinacija paralelnih vodoravnih i cik-cak linija (T. VIII/10), te složenije kombinacije pravocrtnih i krivocrtnih motiva (T. II/5–6).

Od tipičnoga danilskog repertoara tipološki i stilski u manjoj mjeri odskaču dva ulomka, za koje nije isključivo da pripadaju kasnom neolitu. Riječ je o ulomku polukuglaste zdjele svjetlosmeđe boje ukrašenom jedva primjet-

4; VII/5), bowls with a gentle S-profile (Pl. VI/7), and spherical bowls with a narrowed opening (Pl. V/4). Pots with a narrowed opening (Pl. II/1), hemispherical little bowls with a narrowed opening (Pl. III/4), saucers (Pl. V/5) and cups (Pl. VIII/6) are represented sporadically. Most vessels had a slightly rounded and unprofiled rim (Pl. II/2; IV/1–6). Less frequent are those with a ring-shaped thickened rim (Pl. VI/5; VII/1–2; VIII/1).

Although few in numbers, the high and low ring-shaped feet as a distinct phenomenon of the Adriatic Middle Neolithic, are the most common form (Pl. VI/6), represented by a total of six specimens. In addition, one low flat bottom and one concave bottom were found. Single and double knob-shaped appliques were recorded on a total of six fragments, one of which belongs to the group of brushed pottery (Pl. III/9). Perforations were recorded on three fragments. In all specimens, they are positioned below the vessel rim (Pl. VI/2).

A total of 44 fragments, or 5.2% of the ceramic finds from the coarse and fine ware categories, were decorated. Apart from the decorations in the form of knob-shaped appliques, the finds were decorated applying the incising technique: in three fragments of fine ware (Pl. II/5) complemented with red, and on three fragments with white incrustation (Pl. II/7). All decorated fragments belong to the known and recognisable Danilo style. The decoration was mainly performed on the upper part of the bowl, under the rim. On many fragments, only one horizontally cut line was made along the vessel rim. On other ceramic vessels, hanging triangles filled with oblique parallel or combined meshed lines (Pl. II/1), concentric circles (Pl. II/7; VIII/8), parallel lines, a combination of parallel horizontal and zigzag lines (Pl. VIII/10), as well as more complex combinations of rectilinear and curvilinear motifs (Pl. II/5–6) appear.

A slight deviation from the typical Danilo repertoire in terms of typology and style is embodied in two fragments, for which a Late

nim, plitko urezanim linijama (T. IX/6). Na tom ulomku dvije linije izvedene su ispod oboda, dvije na trbuhu posude te jedna na donjem dijelu ulomka. Drugi je ulomak oboda i visokoga, cilindričnog vrata posude tamnosmeđe boje, također s izvedenim višestrukim urezanim, paralelnim linijama (T. IX/1). Ako na umu imamo površinski prikupljene keramičke nalaze spomenute u uvodnom dijelu rada, koje je Š. Batović opredijelio u kasni neolitik, nije isključeno da uz srednji neolitik na nalazištu postoji i kasnoneolitička faza. Kao takvo, nalazište bi bilo blisko brojnim neolitičkim nalazištima sjeverne Dalmacije na kojima su potvrđene dvije neolitičke faze (npr. rani i srednji neolitik na Sikovo – Koinki,²¹ Gradini u Zemunik Donjem,²² Pokrovniku²³ ili srednji i kasni neolitik na Graduša – Lokvama u Islamu Grčkom,²⁴ Brgudu²⁵ i Lepurima – Brigovima²⁶ itd.).

U kategoriju fine keramike moguće je ubrojiti i četiri ulomka posuda na četiri noge, odnosno dijelove dva ritona. Dva ulomka pripadaju bogato ukrašenoj ručki ritona (T. IX/4). Ručka je s unutarnje strane ukrašena crvenim premazom nanesenim nakon pečenja (tzv. crusted slikanje), a s vanjske strane tipičnim danilskim ukrasnim stilom izvedenim kombinacijom urezivanja i crvene inkrustacije. Ukras sačinjavaju koncentrično formirani trokuti i trake s kraćim kosim linijama ispunjeni crvenom inkrustacijom. Druga dva ulomka pripadaju ručki i dijelu otvora ritona (T. IX/1, 3). Oni su ukrašeni debelim nanosom crvene pastozne boje. Na isti je način ukrašen i ulomak s naglašnim rebrastim zadebljanjem (T. IX/2), za koji nije moguće sa sigurnošću utvrditi pripada li dijelu nekog ritona ili manjoj posudi.

Svi ulomci slikane keramike (T. V/6–10)

Neolithic origin cannot be excluded. One is a light brown hemispherical bowl decorated with barely noticeable, shallowly incised lines (Pl. IX/6). On this fragment, two lines were incised under the rim, two on the belly of the vessel, and one on the fragment's lower part. The second fragment is that of the rim and the high, cylindrical neck of a dark brown vessel, also with incised multiple parallel lines (Pl. IX/1). Bearing in mind the surface pottery finds mentioned in the introduction, which Š. Batović dated to the Late Neolithic period, it is not excluded that as well as the Middle Neolithic phase at the site there was also a Late Neolithic. As such, the site would be akin to numerous Neolithic sites in northern Dalmatia where two Neolithic phases have been confirmed (such as the Early and the Middle Neolithic at Sikovo – Koinka,²¹ Gradina in Zemunik Donji,²² Pokrovnik;²³ or the Middle and Late Neolithic at Graduša – Lokve in Islam Grčki,²⁴ Brgud,²⁵ and Lepuri – Brigovi²⁶).

Categorised as fine ware are four fragments of four-footed vessels – parts of two rhytons. Two fragments belong to a richly decorated rhyton handle (Pl. IX/4). The handle inside is crusted red-painted, while its outside bears typical Danilo decorations worked by a combination of incising and red incrustation. The decoration consists of concentric triangles and ribbons with shorter oblique lines filled with red incrustation. The remaining two fragments belong to a rhyton handle and part of its mouth (Pl. IX/1, 3). They are decorated with a thick coat of red paste colour. Decorated in the same way is also a fragment with a pronounced ribbed thickening (Pl. IX/2); it is not possible to determine with certainty whether this was part of a rhyton or of a smaller vessel.

²¹ ČONDIĆ 2012/2013.

²² MARIJANOVIĆ, HORVAT 2016.

²³ BRUSIĆ 2008; VUJEVIĆ, HORVAT 2017.

²⁴ BATOVIĆ 1987: 24–31; HORVAT OŠTRIĆ, TRIOZZI 2022b.

²⁵ HORVAT 2017: 71–74.

²⁶ Isti: 75–76.

²¹ ČONDIĆ 2012/2013.

²² MARIJANOVIĆ, HORVAT 2016.

²³ BRUSIĆ 2008; VUJEVIĆ, HORVAT 2017.

²⁴ BATOVIĆ 1987: 24–31; HORVAT OŠTRIĆ, TRIOZZI 2022b.

²⁵ HORVAT 2017: 71–74.

²⁶ Ibid: 75–76.

pronađeni su u SJ 3. Ta je keramika izrađena od potpuno pročišćene glinene mase, ravnomjerno pečene. Na svim ulomcima naziru se tragovi premaza nanieseni i s unutarnje i s vanjske strane stijenke posude. Riječ je o premazu sjajne bijelo-sive boje, na koji su prije pečenja posude nanieseni slikani ornamenti. Na svim ulomcima na kojima je slikani ornament sačuvan, ukras se nazire samo na vanjskoj strani stijenke. Na šest ulomaka slikanje je izvedeno sivom bojom (T. V/7), dok je na jednom ulomku riječ o kombinaciji crvene i crne boje (T.V/10). U ukrasnom sustavu slikane keramike prepoznatljivi su snopovi paralelnih linija. Od dijagnostičkih ulomaka, među finom keramikom moguće je izdvojiti samo jednu trakastu ručku (T. V/6), koje nisu uobičajene u kategoriji slikane keramike.²⁷

Po pitanju materijalne kulture, odnosno nalaza prikupljenih u istraženoj probnoj sondi A, ovo se nalazište također dobro uklapa među poznata danilska nalazišta,²⁸ iako prema zastupljenosti i bogatstvu ukrasa daleko zaostaje za ostalim istovremenim nalazištima.²⁹

Izrađevine od kamena

Prikupljeno je ukupno trinaest izrađevina od lomljenog rožnjaka i jedan ulomak nodule rožnjaka. Većina nalaza potječe iz prvoga intaktnog kulturnog sloja (SJ 3). U tehnološkom smislu, u litičkom skupu najzastupljenija su sječiva (ukupno pet komada, od čega samo jedan cjelovito), zatim slijede odbojci (ukupno četiri komada), pločice (ukupno tri komada) i nekoliko neodredivih komada. Tipološki, osim ulomka sječiva s mogućim dubilom (T. I/4), na jedan od četiri fragmenta sječiva (1 proksimalni, 1 distalni i 2 medijalna) evidentirani su mogući tragovi uporabe, ali i alatka – grebalo formirano na distalnom rubu sječi-

All painted pottery shards (Pl. V/6-10) were found in SU 3. The pottery was made of completely purified, evenly fired clay mass. All fragments display traces of coating applied on both the inside and outside of the vessel wall. The coating is of a glossy white-grey colour, on which, before firing, ornaments were painted. In all fragments with preserved painted ornamentation, the decoration is visible only on the wall outside. Six fragments have grey painting (Pl. V/7), while one fragment has a combination of red and black (Pl. V/10). Identified in the decorative system of painted pottery are bundles of parallel lines. Among the fine ware, only a single ribbon handle (Pl. V/6), uncommon in the painted ware category, could be categorised as a diagnostic fragment.²⁷

The site accords with other known Danilo sites²⁸ also in terms of material culture (finds collected in the excavated trial trench A), although based on the share of decorations and their opulence it lags far behind other contemporary sites.²⁹

Stone artefacts

A total of 13 knapped chert artefacts and a fragment of a chert nodule were collected. Most of the finds were recovered from the first intact cultural layer (SU 3). In the lithic assemblage, the most common items in terms of technology are blades (five pieces, of which only one is complete), followed by flakes (four pieces), bladelets (three pieces), and several indeterminate pieces. In terms of typology, in addition to a fragment of a blade possibly with a burin (Pl. I/4), recorded in one out of four blade fragments (one proximal, one distal and two medial parts) were possible traces of use, but also a tool – an endscraper formed on the distal edge of

²⁷ KOROŠEC 1958: 45; BATOVIĆ 1979: 545–546.

²⁸ KOROŠEC 1958; 1964; BATOVIĆ 1979; BRUSIĆ 2008; FORENBAHER, KAISER, MIRACLE 2013.

²⁹ KOROŠEC 1958; 1964; BATOVIĆ 1979: 540–548; VUJEVIĆ, HORVAT 2012; 2017.

²⁷ KOROŠEC 1958: 45; BATOVIĆ 1979: 545–546.

²⁸ KOROŠEC 1958; 1964; BATOVIĆ 1979; BRUSIĆ 2008; FORENBAHER, KAISER, MIRACLE 2013.

²⁹ KOROŠEC 1958; 1964; BATOVIĆ 1979: 540–548; VUJEVIĆ, HORVAT 2012; 2017.

va (T. I/12). Oruđima treba pridodati i jedan fragment vrha strelice (T. I/7). Predmeti od glačanog kamena zastupljeni su samo s jednim oštećenim kamenim oblukom kruškolikog oblika (T. I/2), koji je s jedne strane zaravnan i uglačan, a s druge strane prekriven patinom te predstavlja neku vrstu kamenog brusa.

Ostali nalazi izrađevina

U potpovršinskom sloju (SJ 2) pronađena je 1 koštana plosnata perla (T. I/1). U prvome intaktnom kulturnom sloju (SJ 3) pronađen je 1 glačani koštani predmet (igla/ubadalo?) (T. I/3). Na jednom je kraju stanjen i završava polukružno, dok je na dugom kraju zašiljen. Slični predmeti poznati su s daniških nalazišta,³⁰ a njihova namjena mogla je biti različita.³¹

Analiza biljnih ostataka

Tijekom terenske sezone 2022. prikupljeno je ukupno 10 sedimenata taložina iz 4 kulturna sloja. Uzorci su obrađeni strojnom flotacijom, osim polovice uzorka 6 koji je flotiran s pomoću sita. Sitna frakcija skupljena je uz korištenje otvora od 300 µm, dok je teška frakcija prosijana kroz mrežice s otvorima od 1 mm. Svi biljni ostatci su karbonizirani i identificirani pomoću stereo zoom mikroskopa s povećanjem od 7× do 45×. Materijal veći od 1 mm je 100 % razvrstan i identificiran, dok je materijal manji od 1 mm poduzorkovan (1/2 uzoraka 1, 2, 3, 4, 5 i 9, 1/4 uzoraka 6, 8 i 11, uzorak 7 je 100 % razvrstan). Ukupan broj nalaza u pregledanim poduzorcima zatim je pomnožen uzimajući u obzir veličinu frakcije (tj. ostatci od 1/4 frakcije < 1 mm se množe s 4 da se postigne procijenjeni ukupni broj). Identifikacija je napravljena korištenjem suvremene referentne zbirke i referencije na Jacomet.³²

the blade (Pl. I/12). Among the tools was also an arrowhead fragment (Pl. I/7). Smoothed stone objects are represented only by a single, damaged, pear-shaped stone pebble (Pl. I/2), which on one side is flattened and smoothed, while on the other side it is covered with a patina and represents a sort of whetstone.

Other artefact finds

In the subsurface layer (SU 2), one flat bead made of bone (Pl. I/1) was found. In the first intact cultural layer (SU 3), a smoothed bone item (a needle/burin?) was found (Pl. I/3). At one end, the item is thinned and ends in a semicircle, while at the other end it is pointed. Similar objects are known from Danilo sites,³⁰ and with varying functions.³¹

Archaeobotanical remains

A total of 10 environmental samples were collected during the 2022 field season from four contexts. Samples were processed through machine flotation, except half of sample 6 which was floated via bucket flotation. The flot was collected within a 300 µm mesh, while the heavy residue was sieved to 1mm. All plant remains were carbonised and were identified using a stereo zoom microscope with 7 × to 45 × magnification. Material over 1mm was 100% sorted and identified, while material below 1mm was subsampled (1/2 of samples 1, 2, 3, 4, 5, and 9, 1/4 of samples 6, 8 and 11, sample 7 was 100% sorted). The total number of items in the scanned subsamples was then multiplied by considering the fraction size (i.e., remains from 1/4 of <1mm fraction is multiplied by 4 to reach the estimated total number). Identifications were made using a modern reference collection and reference to Jacomet.³² The nomenclature of scientific

³⁰ VUJEVIĆ, HORVAT 2017: 48.

³¹ BATOVIĆ 1979: 538.

³² JACOMET 2006.

³⁰ VUJEVIĆ, HORVAT 2017: 48.

³¹ BATOVIĆ 1979: 538.

³² JACOMET 2006.

Nomenklatura znanstvenih naziva biljaka slijedi Zohary i Hopf³³ za kultivirane biljke i bazu podataka Flora Croatica³⁴ za divlje biljke. Korištena je standardizirana metoda brojenja, pri čemu se svako zrno računa kao jedno, a minimalni broj jedinki (MNI) procijenjen je za fragmente zrna. Fragmenti baze pljeve brojeni su kao jedan, osim ako je jasno da predstavljaju dio nekoga drugog fragmenta, dok su cijeli viličasti djelovi klasa računani kao dvije baze pljeve. Sjeme voća i korova računalo se kao jedno, čak i kad je pronađen samo fragment. Gustoća biljnih ostataka uključuje fragmentirana zrna identificirana na razini roda i fragmente žitarica, a isključuje neodređene fragmente.

Pougljenjeni biljni makrofosili bili su prisutni u svih 10 sedimenata taložina, a rezultati su prikazani u tablici 2. Očuvanost je bila loša, a mnoga su zrna bila ili fragmentirana ili jako nabubrena, deformirana ili istrošena. Gustoće su općenito bile niske, iako su uzorci 6, 8 i 9 sadržavali veliki broj ostataka pljeve, tj. ostataka ovojnice pšenice. Najveći dio zrna žitarica evidentiran je u dvama uzorcima (6 i 9). Tu su pronađeni dvozna pšenica (*Triticum dicoccum*), jednozna pšenica (*Triticum monococcum*), kao i nekoliko zrna obične pšenice (*Triticum aestivum/durum*) i ječma (*Hordeum sp.*). Zrna tetraploidne (*Triticum turgidum/durum*) i heksaploidne obične (*Triticum aestivum/compactum*) pšenice nisu razlikovana unutar uzoraka zbog morfoloških sličnosti zrna i odsustva dijagnostičkih dijelova stabljike. Zbog loše očuvanosti nekoliko je zrna identificirano samo kao moguća pšenica (*Triticum sp.*) ili fragment zrna žitarice (*Cerealia*).

Iz uzoraka 1, 6 i 9 identificirane su tri leće (*Lens culinaris*), kao i jedno zrno slanutka (*Cicer arietinum*) iz uzorka 6. Divljim travama pripisano je pet nalaza (od toga je

plant names follows Zohary and Hopf³³ for cultivars and the Flora Croatica Database³⁴ for wild plants. A standardised counting method was used, whereby each grain counts as one and minimum number of individuals (MNI) was estimated for fragments of grains. Glume base fragments were counted as one unless clearly representing part of another fragment, while whole spikelet forks were counted as two glume bases. The fruit and weed seeds were counted as one, even when only a fragment was found. Density of the plant remains include fragmented grains identified to genus level and *Cerealia* fragments but excluded indeterminate fragments.

Charred plant macrofossils were present in all 10 samples and the results are presented in Table 2. Preservation was poor with many of the grains being either fragmented or severely puffed, distorted or worn. Densities were generally low, although sample 6, 8 and 9 contained high numbers of glume wheat glume bases. Most of the cereal grain was recovered from samples 6, a pit, and sample 9, a general layer. This included emmer (*Triticum dicoccum*), einkorn (*Triticum monococcum*), as well as a few grains of free-threshing wheat (*Triticum aestivum/durum*) and barley (*Hordeum sp.*). The free-threshing tetraploid (*Triticum turgidum/durum*) and hexaploid (*Triticum aestivum/compactum*) wheat grains were not distinguished within the samples due to morphological similarities in the grains and absence of diagnostic rachis fragments. Due to poor preservation several grains were identified only as possible wheat (*Triticum sp.*) or a fragment of cereal grain (*Cerealia*).

Three lentils (*Lens culinaris*) were identified from samples 1, 6 and 9, as well as one chickpea (*Cicer arietinum*) from sample 6. One seed of dwarf elder (*Sambucus ebulus*) was identified from sample 9 and only three

³³ ZOHARY, HOPF 2012.

³⁴ NIKOLIĆ 2018.

³³ ZOHARY, HOPF 2012.

³⁴ NIKOLIĆ 2018.

TABLICA 2. Rezultati makrofosila pougljenjenih biljaka, Pod Jarugom, sonda A po uzorku. * Označava vrijednosti izračunane iz poduzoraka (izradile: K. Reed i D. Vidas)
TABLE 2 Results of macrofossils of charred plants, Pod Jarugom, trial trench A, per sample. * Indicates values obtained from subsamples (made by K. Reed and D. Vidas)

Stratigraphic unit (SJ)	SJ3	SJ3	SJ3	SJ3	SJ3	SJ3	SJ3	SJ3	SJ3/5	SJ3/5	SJ4	SJ5	SJ9	Total
Level	3	3	1	2	2	2								
Sample no.	3	8	4	11	11	9	1	2	1	2	6	5	7	
Volume (L)	10	11	14	11	11	11	11	15	11	15	13	15	10	
Context	General layer	General layer	General layer	General layer	General layer	General layer	General layer	General layer	General layer	General layer	Pit	General layer	Pit	Total
Density	0.4	7.1	0.6	2.3	5.1	0.3	0.1	8.0	0.3	0.3			0.3	
Cereals														
Plant part														
Grain					1			2						3
Grain					3			8		1				12
Triticum dicoccum														12
Triticum cf. dicoccum				3	7			2						3
Triticum monococcum					2			4						6
Triticum monococcum		3			1									4
Triticum monococcum (basal)					2									2
Triticum mono./dicoccum				1				4						5
Triticum aestivum/durum			1		3									4
Triticum spp. fragment	3				1			13						17
Triticum spp.		62*	4*	20*	34*	2*	2*	46*		2*			2	172
Cerealia fragments	1	12	3	1				18			3	1	1	39
Pulses														
Lens culinaris					1	1		1						3
Cicer arietinum								1						1
Wild Taxa														
Poaceae (large)								2						2
Poaceae (millet)		1												1
Sambucus ebulus					1									1
Indeterminate fragments	5*	54*	4*	1	58	2	194*							318

jedna pripisana vrsti *Poaceae*), bazgi (*Sambucus ebulus*) jedna sjemenka iz uzorka 9, a sjemenu tipa prosa dvije sjemenke, jedna iz uzorka 6 i jedna iz uzorka 8.

Općenito je prihvaćeno da je osam primarno domesticiranih kultura: jednozrna pšenica (*Triticum monococcum*), dvozrna pšenica (*Triticum dicoccum*), ječam (*Hordeum vulgare*), grašak (*Pisum sativum*), leća (*Lens culinaris*), slanutak (*Cicer arietinum*), lećasta grahorica (*Vicia ervilia*) i lan (*Linum usitatissimum*). Njihova pojava, širenje i korištenje diljem jugozapadne Azije, Anatolije i Europe ovisili su o mnogim faktorima.³⁵ Te rane kultivirane biljke čine osnovu neolitičkog uzgoja, iako istraživanja sugeriraju da se potpuni „paket usjeva“ nije u cijelosti proširio jugoistočnom i središnjom Europom.³⁶

Po pronalasku ječma, jednozrne i dvozrne pšenice, nalazište Pod Jarugom ne odskakće od dosad otkrivenih kultiviranih vrsta s obližnjih neolitičkih nalazišta.³⁷ Iako obična pšenica nije okarakterizirana kao „osnovna kultura“, prisutna je od ranog neolitika diljem Europe, iako u manjim količinama, što sugerira da je bila ili manje važna kultura ili žitni korov. Ograničen broj žitarica pronađenih na nalazištu Pod Jarugom onemogućuje raspravu o tome koje su se žitarice primarno uzgajale na nalazištu. U usporedbi s drugim nalazištima u Dalmaciji,³⁸ vjerojatno je da ječam, jednozrna i dvozrna pšenica predstavljaju glavnu vrstu biljne hrane na ovom nalazištu. Međutim, važno je napomenuti da spaljeni makrofosili predstavljaju samo mali i pristrani uzorak jestivih biljaka koje su vjerojatno korištene u neolitičkim naseljima.³⁹

Pronalazak jednog slanutka na nalazištu Pod Jarugom, nažalost, ostaje upitan, s ob-

Poaceae, two fragments of large grass seeds and one millet type seed, were recovered from sample 6 and 8.

It is commonly acknowledged that eight 'founder crops': einkorn (*Triticum monococcum*), emmer (*Triticum dicoccum*), barley (*Hordeum vulgare*), pea (*Pisum sativum*), lentil (*Lens culinaris*), chickpea (*Cicer arietinum*), bitter vetch (*Vicia ervilia*) and flax (*Linum usitatissimum*), were introduced in varying degrees across southwest Asia, Anatolia and Europe³⁵. These early domesticates form the basis of Neolithic farming, although research suggests that the complete 'crop package' did not spread in its entirety throughout southeast and central Europe.³⁶

At Pod Jarugom the identification of barley, emmer and einkorn is consistent with the arrival of these founder crops into Dalmatia during the early Neolithic and are consistently found at other nearby Neolithic sites.³⁷ Although naked wheat is not characterised as a 'founder crop' it is present from the early Neolithic across Europe, although in smaller quantities, suggesting it was either a minor crop or a cereal weed. The limited number of grains found at Pod Jarugom restricts any interpretation of which cereals were primarily grown at the settlement. Compared to other sites at Dalmatia³⁸ it is likely that barley, emmer and einkorn form the main staple at the site. However, it is important to note that the charred macrofossils represent only a small and biased sample of the edible plants likely utilised by the early Neolithic settlements.³⁹

The recovery of one chickpea from the site requires further investigation, including carbon dating. This is due to the rare nature of this find in the region. Finds of chickpea in southeast Europe are only identified

³⁵ ZOHARY, HOPF 2012.

³⁶ COLLEDGE, CONOLLY 2014.

³⁷ REED, PODRUG 2016.

³⁸ REED 2015; REED, COLLEDGE 2016.

³⁹ COLLEDGE, CONOLLY 2014: 193.

³⁵ ZOHARY, HOPF 2012.

³⁶ COLLEDGE, CONOLLY 2014.

³⁷ REED, PODRUG 2016.

³⁸ REED 2015; REED, COLLEDGE 2016.

³⁹ COLLEDGE, CONOLLY 2014: 193.

zirom na to da je uzorak bio loše očuvan i da nije uključivao dovoljno ugljika za pouzdano kronometrijsko datiranje kojem je podvrgnut. Nalazi slanutka u jugoistočnoj Europi dosad su identificirani samo u Bugarskoj,⁴⁰ Grčkoj i nedavno na neolitičkim nalazištima u Can Sadurní na južnoj obali Španjolske⁴¹. Pronalazak slanutka na nalazištu Pod Jarugom stoga nije nemoguć, ali bez karbonskog datiranja na nalaz treba gledati s oprezom.

Analiza životinjskih ostataka

Na neolitičkom lokalitetu Pod Jarugom, u sondi A pronađeno je ukupno 1268 fragmenata kostiju i zuba težine 2205,08 g. Ostatci faune prikupljeni su izravno iz sloja i sita, te sedimenata taložina iz četiriju kulturnih slojeva koji su flotirani (teška frakcija). Životinjske kosti i zubi analizirani su u Mediterranean Prehistory and Paleoecology Laboratory, the Department of Anthropology, University of California, Santa Barbara. Taksonomska pripadnost uzoraka određena je prema komparativnom materijalu laboratorija te s pomoću odgovarajuće literature.⁴² Fragmenti kostiju i zuba određeni su taksonomski i anatomske, izbrojeni i izvagani, makroskopski su utvrđeni tragovi rezanja, gorenja, antropogenih i prirodnih procesa. Gdje je bilo primjenjivo, fragmenti su izmjereni pomoću Fowlere digitalne pomične mjerke prema standardiziranim mjerama Von den Driesch⁴³ i McClure et al.⁴⁴. Procjena starosti jedinki u trenutku smrti temeljena je prema stupnju sraštenosti epifiza za sve identificirane vrste, te na izbijanju i stupnju istrošenosti zuba ovce, koze i goveda prema Payne,⁴⁵ Grant⁴⁶ i

at Neolithic sites in Bulgaria⁴⁰ and Greece, although chickpea was recently identified at the Neolithic site of Can Sadurní Cave on the southern coast of Spain⁴¹. The discovery of chickpea at Pod Jarugom is therefore not impossible, but until carbon dated the find should be viewed with caution.

Archaeofaunal remains

A total of 1268 bone and teeth fragments weighing 2205.08g were recovered from Sonda A at the Neolithic site of Pod Jarugom. All soil was screened in 10mm mesh and faunal remains were collected both directly from the unit and from the screens. In addition, 10 soil samples were collected from four contexts and processed through flotation. The heavy fraction of the flotation residue was sorted and faunal remains were collected. Animal bone and teeth were analyzed at the Mediterranean Prehistory and Paleoecology Laboratory in the Department of Anthropology at the University of California, Santa Barbara. Taxonomic identifications are based on comparative skeletal material housed in the laboratory with additional assistance from published comparative works.⁴² Bone and teeth fragments were identified to element and taxon, counted and weighed, assessed macro-visually for cut marks, burning, or other human or non-human modifications, and, where applicable, measured using a Fowler digital caliper following standardized measurements in von den Driesch⁴³ and McClure et al.⁴⁴ Age estimations were based on epiphyseal fusion for all identifiable species, and on dental eruption and wear for sheep, goats, and cattle following Payne⁴⁵, Grant⁴⁶,

⁴⁰ MARINOVA, POPOVA 2008.

⁴¹ ANTOLÍN, SCHÄFER 2024.

⁴² SCHMID 1972; HILLSON 2005.

⁴³ DRIESCH 1976.

⁴⁴ MCCLURE et al. 2022.

⁴⁵ PAYNE 1973.

⁴⁶ GRANT 1982.

⁴⁰ MARINOVA, POPOVA 2008.

⁴¹ ANTOLÍN, SCHÄFER 2024.

⁴² SCHMID 1972; HILLSON 2005.

⁴³ DRIESCH 1976.

⁴⁴ MCCLURE et al. 2022.

⁴⁵ PAYNE 1973.

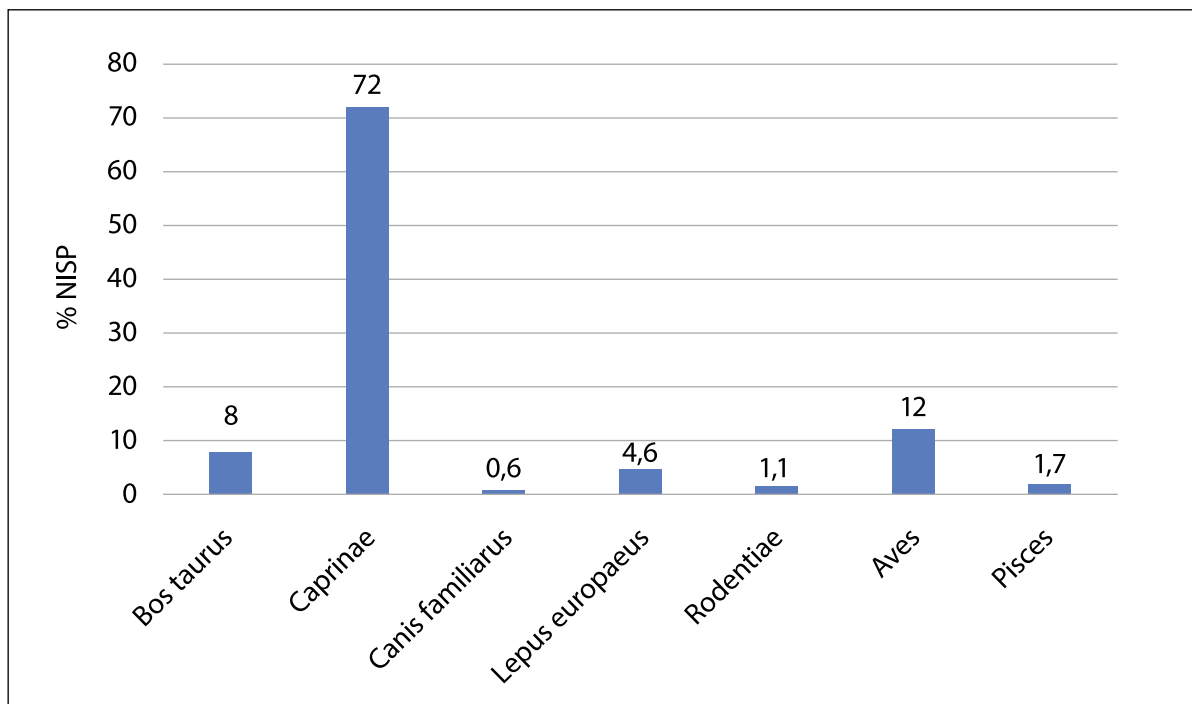
⁴⁶ GRANT 1982.

Zeder⁴⁷. Broj fragmenata (NF) odnosi se na sve fragmente kostiju i zuba u uzorku, dok se broj odredivih uzoraka (NISP) odnosi na fragmente kostiju i zuba koji su određeni na temelju morfoloških karakteristika, na taksonomskoj razini roda ili vrste, zahtijevajući prethodno određivanje skeletnog elementa.⁴⁸ Razlikovanje ovce od koze određeno je prema kriterijima navedenim u Zeder i Lapham⁴⁹ te Zeder i Pilaar⁵⁰. Tamo gdje nije bilo moguće odrediti je li riječ o ovci ili kozi, primjerak je klasificiran kao „ovikapid“. Za svaku svojtu procijenjen je minimalni broj jedinki (MNI).

Skup životinjskih kostiju pronađenih Pod Jarugom vrlo je fragmentiran. Za ukupno 151 ulomak kostiju i zuba (NISP) određena je pripadost razredu sisavaca, što čini 12 % ukupnog uzorka (tab. 3). Stupanj fragmentiranosti je visok, s prosječnom težinom od 1,74 g/ulomku. Valja napomenuti da je uzorak fragmentiraniji u odnosu na većinu

and Zeder⁴⁷. The Number of Fragments (NF) refers to the all the bone and tooth fragments in the assemblage, whereas the Number of Identified Specimens (NISP) refers to bone and tooth fragments that were identified on a firm morphological basis to a taxonomic level of genus or species, requiring the prior identification of the skeletal element.⁴⁸ Differentiation between sheep and goat is difficult and species were conservatively identified following criteria outlined in Zeder and Lapham⁴⁹ and Zeder and Pilaar⁵⁰. Where identification to either sheep or goat was not possible, a specimen was classified as ‘caprine’. The minimum number of individuals (MNI) was estimated for each taxon.

The animal bone assemblage from Pod Jarugom is highly fragmented, and a total of 151 bone and tooth fragments (NISP) were identifiable to mammal species, representing 12% of the assemblage (Table 3). The degree of fragmentation is high, with an



SLIKA 7. Relativni postotak NISP-a po taksonomskoj skupini. Podatci sažeti iz tablice 3 (izradila: S. B. McClure)
FIGURE 7 Percentage of NISP per taxonomic groups. Data summarised from Table 3 (made by S. B. McClure)

⁴⁷ ZEDER 2006.

⁴⁸ LYMAN 1994.

⁴⁹ ZEDER, LAPHAM 2010.

⁵⁰ ZEDER, PILAR 2010.

⁴⁷ ZEDER 2006.

⁴⁸ LYMAN 1994.

⁴⁹ ZEDER, LAPHAM 2010.

⁵⁰ ZEDER, PILAR 2010.

TABLICA 3. Životinjski ostatci iz sonde A s nalazišta Pod Jarugom po stratigrafskim slojevima (izradila: S. B. McClure)
TABLE 3 Animal remains from trial trench A at the Pod Jarugom site according to stratigraphic layers (made by S. B. McClure)

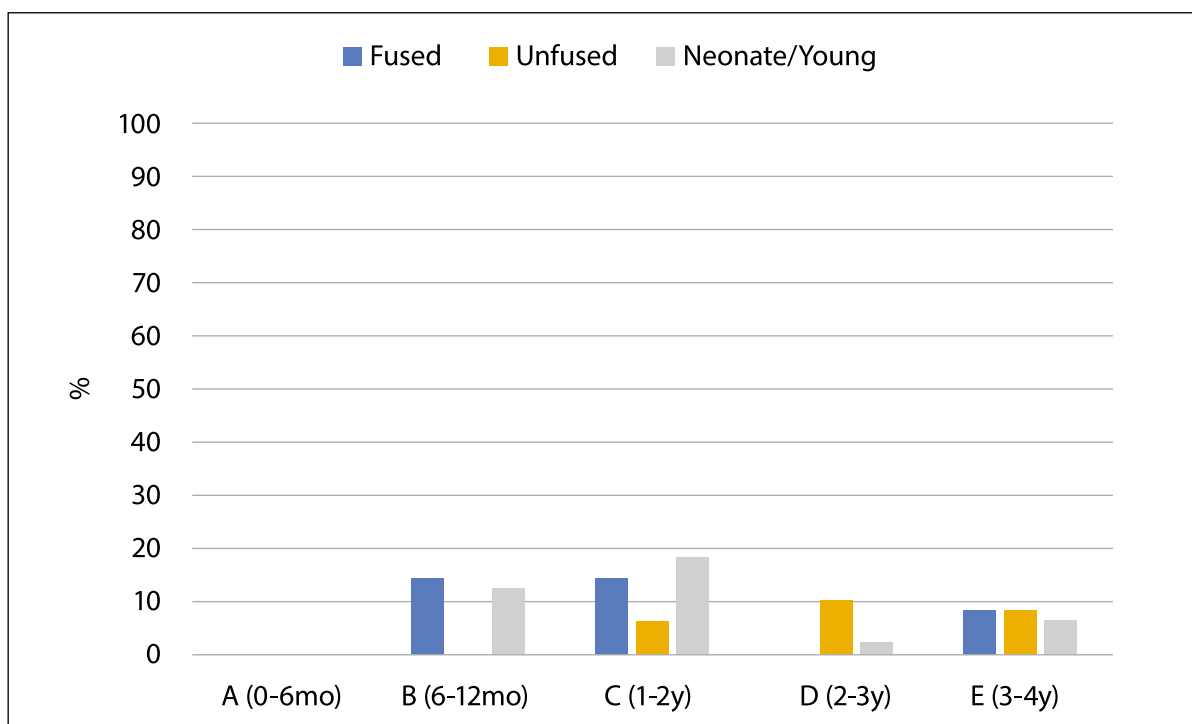
Taxon	Common name	PROFILE	SJ3												Total NISP	Total MNI
			SJ1	SJ2	SJ3_1	SJ3_2	SJ3_3	Total	SJ4	SJ3/5	SJ5	SJ7	SJ8	SJ9		
Bos taurus	Cow			1	2	1	1	4	7	1	1		2	2	14	1
Ovis aries	Sheep	2				1		4	5		1				8	
Capra hircus	Goat	1			1			1	2				1		4	
Caprine	Sheep/															
Goat	7	1	7	4	36	27		67		12	6	1	4	9	114	5
Canis familiaris	Dog	1													1	1
Lepus europaeus	European hare				2	1		2	5	1	2				8	1
Rodentiae	Rodent										1				2	2
Total Number of Identified Specimens (NISP)		11	1	8	9	39		38	86	2	17	6	3	7	10	151
Large Mammal			1	12		14		14	28		11		8	19		79
Medium Mammal		8	4	23	212	187		129	528	30	167	7	9	13	26	815
Small Mammal		5			5	9		13	27	3	1				3	39
Unknown Mam-mal					18	28		35	81	18	34	10			17	160
Bird						3		17	20		1					21
Fish								1	1		1				1	3
Total Number of Fragments (NF)		24	6	43	244	280		247	771	53	232	23	20	39	57	1268

drugih neolitičkih nalazišta u Dalmaciji na kojima je prosijavan sediment⁵¹ (prosječno 2,86 g/ulomku; raspon 1,42 – 4,72). Uzorci nisu pokazali značajne tragove modifikacije. Samo 104 fragmenta sisavaca, kost ptice, metatarzalna kost zeca i lakatna kost goveda (0,08 % NF; 0,01 % NISP) pokazuju znakove gorenja, dok 5 fragmenata kostiju sisavaca srednje veličine, jedan radijus koze i jedan humerus koze (< 0,01 % NF; 0,01 % NISP) imaju tragove ureza.

Glavninu uzorka faune činile su domesticirane vrste (sl. 7). Većina (72 %) odredivih životinjskih kostiju i zuba pripada ovikapidima (ovce i/ili koze), a zatim domesticiranom govedu (8 %). Identificiran je samo jedan primjerak psa, dok domaćih svinja nema. I svinje i psi prilično su rijetki u srednjoneolitičkim uzorcima faune u sjevernoj Dalmaciji.⁵² Minimalni broj jedinki izračunan je na temelju NISP-a za svaku

average weight of 1.74g/fragment, and the assemblage is more fragmented than those from most other Neolithic sites in Dalmatia where assemblages were screened⁵¹ (average 2.86g/fragment; range 1.42-4.72). The assemblage was not heavily modified and only 104 mammal fragments, a bird bone, a hare metatarsal and a cattle ulna (0.08%NF; 0.01% NISP) showed signs of burning and 5 medium mammal bone fragments, one caprine radius and one caprine humerus (<0.01% NF; 0.01% NISP) had cut marks.

The majority of the faunal assemblage consisted of domesticated species (Figure 7). Most (72%) of identified animal bone and teeth were caprines (sheep and/or goat), followed by domesticated cattle (8%). No domestic pig and only one dog specimen were identified. Both pigs and dogs are quite rare in Danilo Neolithic assemblages throughout northern Dalmatia⁵². The Minimum Num-



SLIKA 8. Relativni postotak sraslih, nesraslih i neonatalnih/mladih elemenata u ovaca i koza prema dobnoj kategoriji (izradila: S. B. McClure)

FIGURE 8 Relative percentage of fused, unfused and neonatal/young elements in sheep and goats according to age category (made by S. B. McClure)

⁵¹ McClure et al. 2022.

⁵² Isti.

⁵¹ McClure et al. 2022.

⁵² Ibid.

taksonomsku skupinu (tab. 3): 5 ovaca/koza (predstavljeno distalnim krajem radijusa); 1 pas; 1 zec i 1 govedo. Na temelju MNI-ja, omjer goveda i koza je 1 : 5, slično nalazima na drugim neolitičkim nalazištima istog perioda u regiji.⁵³

Dobni profili koza uglavnom se temelje na sraštenosti epifiza. Ostatci ovikaprda na lokalitetu Pod Jarugom uglavnom potječu od mladih životinja, od čega 38,8 % mladih ili neonatalnih, što upućuje na dob ispod 6 mjeseci. Slika 8 prikazuje relativni postotak sraslih, nesraslih i mladih/neonatalnih elemenata u svakoj dobnoj kategoriji. Iako neki primjerci (n = 4) upućuju na prisutnost jedne ili više životinja starijih od 3 godine, velika većina skupine ovikaprda potječe od životinja mladih od 12 mjeseci. Dvije mandibule sa zubima bilježe prisutnost životinje koja je u vrijeme smrti imala od 12 do 18 mjeseci, dok je druga u vrijeme smrti imala od 2 do 6 mjeseci.

U slučaju goveda, podatci o sraštenosti epifiza dostupni su samo za proksimalni kraj jedne prve falange i jedne druge falange. Budući da su oba spojena i ovi se elementi stapaju rano u razvoju goveda, nisu posebno indikativni za dob u trenutku smrti.

Kada govorimo o uzorcima divljih životinja, najzastupljenije su kosti ptica koje nisu identificirane po vrsti (12 %), zatim slijede europski zečevi (4,6 %), glodavci i ribe. Zanimljivo je da u uzorku nije bilo jelena. To je u suprotnosti s drugim danilskim neolitičkim nalazištima u sjevernoj Dalmaciji, gdje je česta prisutnost kostiju i zuba jelena (osobito srne, *Capreolus capreolus*, ali i običnog jelena, *Cervus elaphus*), koji obično čine 3,5 – 6 % skupa.⁵⁴

Tri riblje kosti (dva kralješka i fragment maksile) identificirane su u uzorku, sve iz ostataka teške frakcije flotacijskih uzoraka. Rijetka je prisutnost ribe u neolitičkim na-

ber of Individuals was calculated based on the NISP for each taxonomic group (Table 3): 5 sheep/goats (represented by the distal end of the radius); 1 dog; 1 European hare and 1 cattle. Based on MNI, the ratio of cattle to caprines is 1:5, similar to findings at other Danilo Neolithic sites in the region.⁵³

Age profiles for caprines are largely based on epiphyseal fusion. The remains of caprines in the Pod Jarugom assemblage mostly come from young animals, with 38.8% young or neonatal, suggesting ages well under 6 months old. Figure 2 shows the relative percentage of the fused, unfused, and young/neonatal elements in each age category. Although some specimens (n=4) indicate the presence of one or more animals over the age of 3 years, the vast majority of the assemblage of caprines come from animals under the age of 12 months. Two mandibles with teeth record the presence of an animal that died at 12-18 months of age, while another died at 2-6 months.

In the case of cattle, epiphyseal fusion data is only available for the proximal end of one first phalanx and one second phalanx. Since both are fused and these elements fuse early in cattle development, they are not particularly indicative of age at death.

Wild animals were primarily represented by bird bone that was not identifiable to species (12%), followed by European hare (4.6%), rodents, and fish. Interestingly, no deer was present in the assemblage. This stands in contrast to other Danilo Neolithic sites in northern Dalmatia, where the presence of deer bone and teeth (particularly roe deer, *Capreolus capreolus*, but also red deer, *Cervus elaphus*) is common, typically contributing 3.5-6% of the assemblage.⁵⁴

Three fish bones (two spines and a maxilla fragment) were identified in the assemblage, all from the heavy fraction residues of the

⁵³ Isti.

⁵⁴ Isti.

⁵³ Ibid.

⁵⁴ Ibid.

seljima, a u Smilčiću je objavljena samo još jedna neidentificirana riblja kost iz vremena ranog neolitika.⁵⁵ To je vjerojatno povezano s kombiniranjem tafonomije i skupljačkih praksi. Flotacija tla i prikupljanje životinjskih kostiju iz teške frakcije mogu povećati identifikaciju ribljih ostataka u neolitiku.

Uzorak životinjskih ostataka s lokaliteta Pod Jarugom pruža određeni uvid u prakse preživljavanja u ovoj neolitičkoj zajednici. Raznolikost vrsta zastupljenih u skupu je niska, a naglasak je na pripitomljenim životinjama, posebice ovčama, kozama i govedu, uz samo nekoliko divljih životinjskih vrsta. Iako je uzorak iz sonde A relativno malen i prilično fragmentiran, u skladu je s drugim danilskim neolitičkim nalazištima u regiji u smislu relativnih udjela ovikaprida, nedostataka svinja i tendencije prema mlađim životinjama među ovikapridima. U odnosu na ostala danilska nalazišta zanimljiv je nedostatak jelena (srna, obični jelen), što može biti i posljedica malog uzorka. Proširivanje uzoraka faune u budućim iskapanjima rasvijetlilo bi ovo pitanje. Konačno, prisutnost kostiju ptica, riba i malih sisavaca uvelike je povećana sustavnim uzorkovanjem tla, flotacijom i čuvanjem teške frakcije za daljnju analizu.

Pod Jarugom – prostorni, vremenski i kulturološki položaj nalazišta u odnosu na druga neolitička nalazišta sjeverne Dalmacije

Tijekom posljednjih triju desetljeća na području sjeverne Dalmacije istražen je velik broj neolitičkih nalazišta i višeslojnih nalazišta na kojima su utvrđeni tragovi života iz razdoblja neolitika: Sikovo – Koinka,⁵⁶ Polje niže Vrcelja,⁵⁷ Barice u Benkovcu,⁵⁸ Pakošta-

flotation samples. The presence of fish is rare in Neolithic settlements, and only one other unidentified Neolithic fish bone has been published from the early Neolithic levels at Smilčić.⁵⁵ This is in part likely due to a combination of taphonomy and collection practices, and more extensive soil flotation and recovery of animal bones from the heavy fraction may increase our identifications of fish remains in the Neolithic.

The archaeofaunal assemblage from Pod Jarugom provides some insight into subsistence practices in this Danilo Neolithic community. The diversity of species represented in this assemblage is low, and emphasis is on domesticated animals, particularly sheep, goat, and cattle, with only few wild animal species. While the assemblage from Sonda A is relatively small and quite fragmented, it is consistent with other Danilo Neolithic sites in the region in terms of the relative proportions of caprines and cattle, the lack of pig, and a tendency towards younger animals among the caprines. It differs in the lack of deer (roe deer, red deer), but it is unclear if this is due to sample bias or if this is indeed a distinction from other sites in the region. Expanding the faunal assemblage in future excavations would illuminate this question. Finally, the presence of bird, fish, and small mammal bone was greatly enhanced through systematic soil sampling, flotation, and reserving the heavy fraction for further analysis.

Pod Jarugom – spatial, temporal and cultural location of the site in relation to other Neolithic sites of northern Dalmatia

Over the past three decades, a large number of Neolithic and multi-layered sites in northern Dalmatia have been explored, at which traces of life from the Neolithic period were

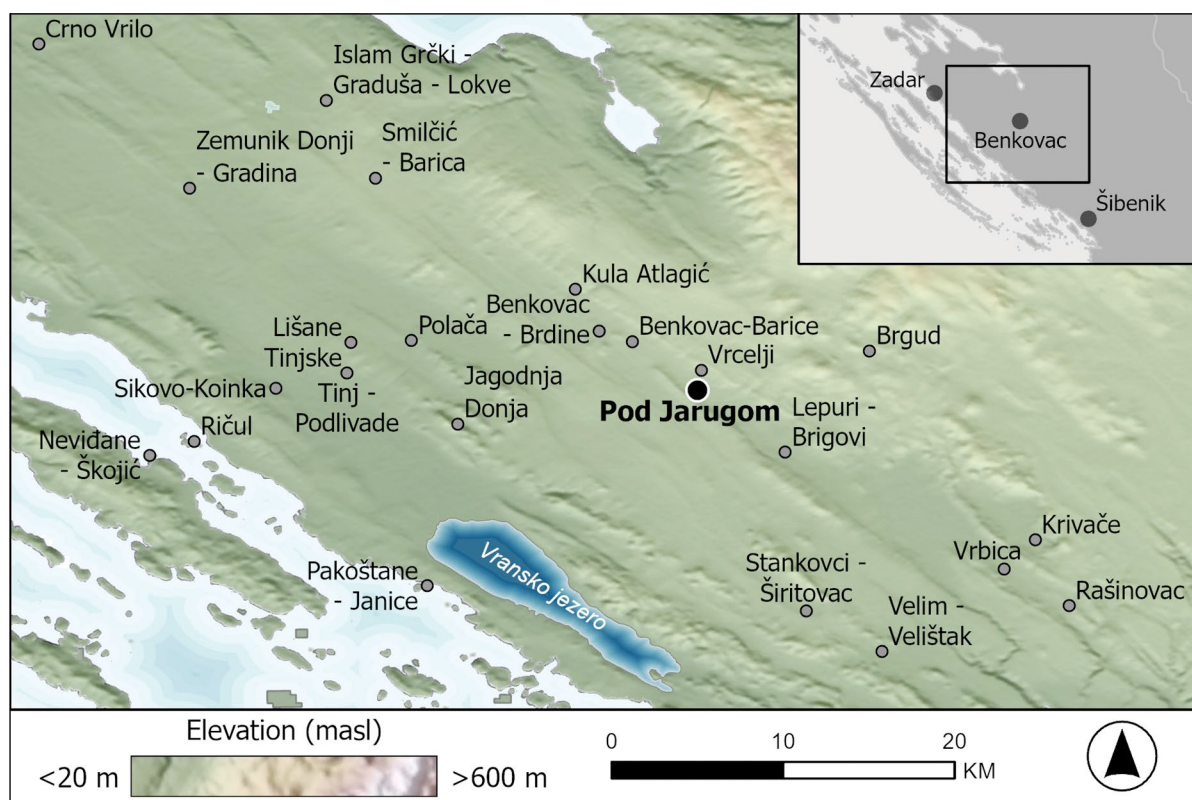
⁵⁵ SCHWARTZ 1988; MCCLURE, PODRUG 2016.

⁵⁶ ČONDIĆ 2012/2013.

⁵⁷ HORVAT 2015.

⁵⁸ MARIJANOVIĆ 2012.

⁵⁵ SCHWARTZ 1988; MCCLURE, PODRUG 2016.



SLIKA 9. Neolitička nalazišta na širem benkovačkom području (izradio: N. Triozzi)

FIGURE 9 Neolithic sites in the wider Benkovac area (made by N. Triozzi)

ne – Janice,⁵⁹ Rašinovac,⁶⁰ Velišak,⁶¹ Zemunik Donji – Gradina,⁶² Smilčić – Barica,⁶³ Graduša – Lokve u Islamu Grčkom,⁶⁴ Pod Jarugom u Podgrađu⁶⁵ i Pećina u Ždrilu⁶⁶. Uz to, u zadarskom su akvatoriju pronađena dva potopljena neolitička nalazišta: Neviđane – Škojić kod otoka Pašmana i Ričul kod Turnja.⁶⁷ Ako se tim nalazištima pribroje ostala prije istražena neolitička nalazišta, poput onog u Ninu,⁶⁸ Dračevcu Ninskom (Crno vrilo),⁶⁹ Privlaci,⁷⁰ Tinju,⁷¹

found: Sikovo – Koinka,⁵⁶ Polje Niže Vrcelja,⁵⁷ Barice in Benkovac,⁵⁸ Pakoštane – Janice,⁵⁹ Rašinovac,⁶⁰ Velišak,⁶¹ Zemunik Donji – Gradina,⁶² Smilčić – Barica,⁶³ Graduša – Lokve in Islam Grčki,⁶⁴ Pod Jarugom in Podgrađe⁶⁵ and Pećina in Ždrilo⁶⁶. In addition, two sunken Neolithic sites were found in the waters off Zadar: Neviđane – Školjić near the island of Pašman and Ričul near Turanj.⁶⁷ These and other previously excavated Neolithic sites, such as Nin,⁶⁸ Dračevac Ninski

⁵⁹ BEKIĆ et al. 2015.

⁶⁰ PODRUG et al. 2018.

⁶¹ PODRUG 2010.

⁶² MARIJANOVIĆ, HORVAT 2016.

⁶³ MARIJANOVIĆ 2022.

⁶⁴ HORVAT OŠTRIĆ, TRIOZZI 2022a.

⁶⁵ HORVAT OŠTRIĆ, TRIOZZI 2022b.

⁶⁶ BODRUŽIĆ, VUJEVIĆ 2023.

⁶⁷ PARICA 2021: 29–36.

⁶⁸ BATOVIĆ 1961.

⁶⁹ MARIJANOVIĆ 2009.

⁷⁰ BRUSIĆ 1973.

⁷¹ CHAPMAN, SHIEL, BATOVIĆ 1996.

⁵⁶ ČONDIĆ 2012/2013.

⁵⁷ HORVAT 2015.

⁵⁸ MARIJANOVIĆ 2012.

⁵⁹ BEKIĆ et al. 2015.

⁶⁰ PODRUG et al. 2018.

⁶¹ PODRUG 2010.

⁶² MARIJANOVIĆ, HORVAT 2016.

⁶³ MARIJANOVIĆ 2022.

⁶⁴ HORVAT OŠTRIĆ, TRIOZZI 2022a.

⁶⁵ HORVAT OŠTRIĆ, TRIOZZI 2022b.

⁶⁶ BODRUŽIĆ, VUJEVIĆ 2023.

⁶⁷ PARICA 2021: 29–36.

⁶⁸ BATOVIĆ 1961.

Krkoviću,⁷² Krivačama,⁷³ Konjevratima,⁷⁴ Pokrovniku,⁷⁵ Danilu⁷⁶ i Benkovcu (položaj Brdine),⁷⁷ ali i brojna neistražena neolitička nalazišta,⁷⁸ prostorno se gledano na spomenutom području stvara slika s vrlo gusto raspoređenim neolitičkim nalazištima, međusobno udaljenim tek koji kilometar. Za kraj bogat plodnim i agrarno visoko iskoristivim površinama ta činjenica nimalo ne iznenađuje, pa i broj dosad otkrivenih nalazišta vrlo vjerojatno još nije ni približno konačan.⁷⁹ Potragu za novim neolitičkim nalazištima ponajprije treba orijentirati prema pozicijama nalik na one na kojima su dosad otkrivena nalazišta toga prapovijesnog perioda, najviše uz rubove plodnih ravnokotarskih polja te stalnih izvora pitke vode (sl. 9).

Ako se dosad otkrivena neolitička nalazišta sjeverne Dalmacije usporede vremenski, slika naseljenosti tog prostora tijekom neolitika postaje posebno zanimljiva. Naime, zahvaljujući radiokarbonskom datiranju i prikupljenomu dijagnostičkom keramičkom materijalu, većina spomenutih nalazišta kulturno je i vremenski dobro definirana. Srednjem neolitiku, kojem pripada nalazište Pod Jarugom, pripadaju nalazišta: Graduša – Lokve u Islamu Grčkom, Barice u Benkovcu, Gradina u Zemunik Donjem, Smilčić – Barica, Sikovo – Koinka, Lepuri – Brigovi, neolitički slojevi u Pećini u Ždrilu, Škarinu Samogradu te nalazišta u Privlaci, Vrsima, Brgudu, Pokrovniku, Danilu, Mratovu i Krivačama. Od petnaest nabrojenih nalazišta, radiokarbonski nisu datirani Sikovo – Koinka i Škarin Samograd, te neistražena nalazišta u Privlaci, Vrsima, Lepurima, Brgudu i Mratovu. Radiokarbonski

(Crno Vrilo),⁶⁹ Privlaka,⁷⁰ Tinj,⁷¹ Krković,⁷² Krivače,⁷³ Konjevrate,⁷⁴ Pokrovnik,⁷⁵ Danilo⁷⁶ and Benkovac (Brdine site)⁷⁷, along with numerous unexplored ones,⁷⁸ create a picture of very dense spatial distribution of Neolithic sites only a few kilometres from each other. This comes as no surprise, given the abundance of fertile land easily available for agriculture; the total of sites uncovered so far is therefore probably not even close to final.⁷⁹ Any search for new Neolithic sites should focus primarily on locations similar to the ones that have already been confirmed as such, principally along the edges of fertile fields in Ravni Kotari and by permanent potable water springs (Fig. 9).

A chronological comparison of the Neolithic sites of northern Dalmatia that have been unearthed so far sheds a different light on the perception of the habitation of the region during the Neolithic period. Radiocarbon dating and the collected diagnostic ceramic material has made it possible to categorise with certainty most of the sites in terms of their cultural and chronological affiliation. Affiliated to the Middle Neolithic, to which the Pod Jarugom site has been dated, are the following: Graduša – Lokve in Islam Grčki, Barice in Benkovac, Gradina in Zemunik Donji, Smilčić – Barica, Sikovo – Koinka, Lepuri – Brigovi, Neolithic layers in Pećina in Ždrilo, Škarin Samograd, and the sites in Privlaka, Vrsi, Brgud, Pokrovnik, Danilo, Mratovo i Krivače. Of the fifteen listed sites, no carbon dating has been performed for Sikovo – Koinka and Škarin Samograd, as well as the unexplored sites in

⁷² PODRUG et al. 2018.

⁷³ MCCLURE, PODRUG 2016: 123–125.

⁷⁴ KORIĆ, HORVAT 2018.

⁷⁵ BRUSIĆ 2008; MARIJANOVIĆ 2017; MOORE et al. 2019. KOROŠEC 1958; 1964; MOORE et al. 2019.

⁷⁶ KRIŽ 2015.

⁷⁷ BATOVIĆ 1979: 525.

⁷⁸ HORVAT, BLAČE 2017.

⁶⁹ MARIJANOVIĆ 2009.

⁷⁰ BRUSIĆ 1973.

⁷¹ CHAPMAN, SHIEL, BATOVIĆ 1996.

⁷² PODRUG et al. 2018.

⁷³ MCCLURE, PODRUG 2016: 123–125.

⁷⁴ KORIĆ, HORVAT, 2018.

⁷⁵ BRUSIĆ 2008; MARIJANOVIĆ 2017; MOORE et al. 2019.

⁷⁶ KOROŠEC 1958; 1964; MOORE et al. 2019.

⁷⁷ KRIŽ 2015.

⁷⁸ BATOVIĆ 1979: 525.

⁷⁹ HORVAT, BLAČE 2017.

datumi s ostalih osam spomenutih nalazišta pokrivaju vremenski period od oko 5200 – 5050 BC,⁸⁰ kojem pripada i istražen sloj na nalazištu Pod Jarugom. Taj podatak ne predstavlja samo još jednu potvrdu o gustoći naseljenosti sjeverne Dalmacije u srednjem neolitiku, nego i otvara brojna pitanja u vezi s neolitičkim zajednicama tog prostora. Jesu li i u kojoj mjeri zajednice istovremenih naselja komunicirale i izmjenjivale dobra? Jesu li postojala veća i manja naselja, kakvo je možda bilo baš ono u Podgrađu, bar kako se zasad čini prema prostoru na kojem su otkriveni površinski nalazi? Pitanje je i koja od neistraženih nalazišta sjeverne Dalmacije pripadaju istom periodu? Zašto su se na nekim pozicijama neolitičke zajednice zadržavale duži, a na nekima kraći vremenski period? Jesu li prirodni i/ili ljudski faktori utjecali na dugotrajnost života na svakoj od tih lokacija, odnosno njihovu promjenu? U tom pogledu zanimljivo je osvrnuti se i na neolitičko nalazište u Vrceljima, koje je prostorno najbliže nalazištu Pod Jarugom. Riječ je o nalazištu koje u manjoj mjeri odstupa od „tipičnih“ neolitičkih pozicija smještenih na rubovima polja. To je nalazište smješteno na prilično strmoj padini Bukovičke kose, otprilike 1,5 kilometar dalje od nalazišta Pod Jarugom, do kojeg pogled jasno seže. Prema dostupnim datumima, to nalazište pripada samom kraju ranog neolitika, odnosno periodu od oko 5520 – 5350 BC.⁸¹ Među keramičkim nalazima s tog nalazišta, osim onih tipičnih za rani neolitik, poznati su oni koji su više povezani sa srednjim neolitikom, poput visokih šupljih nogu.⁸² Uz to, među keramičkim materijalom zabilježena je i metličasta keramika, slična onoj s nalazišta Pod Jarugom, koja nije uobičajena pojava među keramičkim nalazima na neolitičkim nalazištima sjeverne Dalmacije. Je

Privlaka, Vrsi, Lepuri, Brgud and Mratovo. Radiocarbon dates from the remaining eight sites cover approximately the period 5200–5050 BC,⁸⁰ to which the excavated layer at the Pod Jarugom site also belongs. This information is not only another confirmation of the dense population of northern Dalmatia in the Middle Neolithic, but also raises numerous questions related to the Neolithic communities in the region. Did the communities communicate and exchange goods, and if so, to what extent? Were there larger and smaller settlements, the one in Podgrađe rather being the latter, as suggested by the surface area from which the surface finds were obtained? Another question is, which of the unexcavated sites of northern Dalmatia belong to the same period? Why did the Neolithic communities remain longer in some positions and for shorter periods at others? Was the longevity of dwelling at, or relocation of the individual sites, influenced by natural and/or human factors? In this regard, it is interesting to look at the Neolithic site in Vrcelji, which is closest in proximity to the Pod Jarugom site. It is a site that, to a lesser extent, deviates from the ‘typical’ Neolithic positions located at the edges of fields. The site is located on a rather steep slope of Bukovička Kosa, about 1.5 kilometres away from the Pod Jarugom site and clearly visible with the naked eye. The site is dated to the end of the Early Neolithic, approximately to 5520–5350 BC.⁸¹ Among pottery finds from the site other than those typical of the Early Neolithic are those rather associated with the Middle Neolithic, such as high, hollow feet.⁸² In addition, among the pottery finds was also brushed pottery, similar to that from the Pod Jarugom site, which is not a common phenomenon among pottery finds at northern Dalmatian Neolithic sites. Can the Ne-

⁸⁰ MARIJANOVIĆ 2012: 27–28; MCCLURE, PODRUG 2016: 121–122; TRIOZZI, N. P. 2024.

⁸¹ HORVAT 2015: 14.

⁸² HORVAT 2015: T. VI, 2.

⁸⁰ MARIJANOVIĆ 2012: 27–28; MCCLURE, PODRUG 2016: 121–122; TRIOZZI, N. P. 2024.

⁸¹ HORVAT 2015: 14.

⁸² HORVAT 2015: Pl. VI/2.

li moguće da neolitička zajednica koja je za životni prostor odabrala padinu Bukovičke kose krajem ranog neolitika taj položaj mijenja i seli se na poziciju na kakvoj istovremeno žive brojne susjedne neolitičke zajednice s kojima dolaze u kontakt? Prema radiokarbonskim datumima i poznatom materijalu, ta ideja ne bi trebala biti isključena, nego uzeta u obzir pri budućim istraživanjima tih nalazišta.

Za stjecanje boljeg uvida u naseobinske i materijalne aspekte nalazišta, potrebna su geofizička istraživanja te potom sustavna arheološka istraživanja uz otvaranje veće istraživačke površine. Geofizička istraživanja u planu su za 2025. godinu. Možda će ona dati odgovor na pitanje koju površinu nalazište Pod Jarugom pokriva.

ZAKLJUČAK

Neolitičko nalazište Pod Jarugom u Podgrađu do probnih je istraživanja provedenih u ožujku 2022. godine bilo jedno od brojnih poznatih, ali neistraženih neolitičkih nalazišta sjeverne Dalmacije. Zahvaljujući probnim arheološkim istraživanjima, danas su poznati podatci o stratigrafskim i kulturnim odnosima na nalazištu, koje zahtijeva i sustavna arheološka istraživanja. Istraženi dio neolitičkog nalazišta pripada srednjem neolitiku, odnosno danilskom ukrasnom stilu. Osim prikupljene materijalne arheološke građe, to potvrđuje i radiokarbonski datum, prema kojem nalazište pripada kraju srednjeg neolitika. Rezultati provedenih zooarheoloških i arheobotničkih analiza, upućuju na prisutnost vrsta uobičajenih za naselja otvorenog tipa, kakvom vjerojatno pripada i Pod Jarugom. Jasno definiranje djelomično otkrivenih struktura pri probnim istraživanjima zahtijeva sustavna iskopavanja nalazišta na većoj istraživačkoj površini. To je jedini način za stjecanje boljeg uvida u naseobinske i druge aspekte života

olitic community that had chosen to live on the slopes of the Bukovička Kosa be presumed to have left that location at the end of the Early Neolithic period and settled at a position similar to those occupied by many contemporary neighbouring Neolithic communities with which they came into contact? Radiocarbon dates and known material do not exclude such an interpretation, but rather suggest a similar conclusion, to be confirmed by future excavations of these sites.

To gain a better insight into the sites' settlement and material aspects, geophysical explorations and subsequent systematic archaeological excavations over a larger surface area are required. Geophysical excavations are planned for 2025. Perhaps they will reveal the surface area covered by the Pod Jarugom site.

CONCLUSION

Before conducting trial excavations in March 2022, the Neolithic site of Pod Jarugom in Podgrađe was one of the many identified but unexplored Neolithic sites of northern Dalmatia. Trial archaeological excavations disclosed the site's stratigraphic and cultural relations, paving the way for systematic archaeological excavations. The excavated part of the Neolithic site belongs to the Middle Neolithic and the Danilo decoration style. This is confirmed, in addition to the collected archaeological material, by the radiocarbon date, according to which the site belongs to the end of the Middle Neolithic. The results of zooarchaeological and archaeobotanical analyses indicate the presence of species common to open settlements, among which the Pod Jarugom site is presumed to have been. In order to be able to clearly define the structures that were partially disclosed in the course of the trial excavations, systematic excavation of sites over a larger surface area is necessary. That is the

zajednica neolitičkog nalazišta Pod Jarugom, kao i njegovih eventualnih veza s obližnjim neolitičkim nalazištem u Vrceljima.

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only way to obtain a better insight into the settlement and other aspects of life of the communities of the Pod Jarugom Neolithic site, as well as its possible links to the nearby Neolithic site in Vrcelji.

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