INVENTAR NALAZA I VIŠEFAZNO GROBLJE UZ UTVRDU SOKOL U KONAVLIMA

INVENTORY OF FINDS AND MULTIPHASE CEMETERY BY FORT SOKOL IN KONAVLE

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Izneseni su rezultati arheoloških istraživanja provedenih uz utvrdu Sokol u Konavlima 2012. i 2013. godine, te rezultati antropološke analize i analize radioaktivnim ugljikom ^{14}C. Lokalitet Sokol ima dugi kontinuitet u naseljavanju počevši od prapovijesti do ranog novog vijeka. Istraživanje prostora uz utvrdu podijeljeno je na četiri velike sonde od kojih je najkompleksnija ona uz njezinu južnu stranu. Višefazno groblje smješteno je uz južnu i istočnu stranu utvrde s manjim brojem grobova uz njezinu sjevernu stranu. U svim sondama pronađeni su duboki slojevi formirani potresima koji su bili česti na dubrovačkom području. Ti slojevi su osim grobova i ostataka arhitekture sadržavali i kamene gromade koje su se urušile s utvrde tijekom potresa te mnoštvo raznovrsnih nalaza širokog vremenskog raspona, od prapovijesti do novog vijeka. Utvrda je napuštena 1672. godine. Antropološkom analizom obuhvaćeni su svi pronađeni

kosturni ostaci iz bolje i slabije sačuvanih grobnih cjelina, čime su definirani ostaci 92 osobe, od čega 57 odraslih i 35 djece. Pregledom osteološkog materijala također su dokumentirane patološke promjene nastale za života osoba. Određivanje starosti kosturnih ostataka provedeno je metodom ^{14}C. Određena je starost kostura u rasponu od 5. do 19. stoljeća. Istom metodom provedeno je i mjerenje starosti karboniziranih badema koji su datirani u starije željezno doba (750. – 400. cal BC).

Key words:
radiocarbon (^{14}C) dating, antiquity, anthropological analysis, archaeological finds, archaeological research, Dunave, Konavle, Modern Period, prehistory, Middle Ages, Fort Sokol, multiphase cemetery

This paper presents the results of the archaeological excavations conducted next to Fort Sokol in Konavle in 2012 and 2013, as well as the results of the anthropological analysis and radiocarbon (^{14}C) dating. The site of Sokol has a long occupation continuity starting from prehistory until the Early Modern Period. The excavation of the area adjoining the fort was divided into four big probes, the one next to its southern side being the most complex. Multiphase cemetery is located along the southern and eastern side of the fort, with a smaller number of graves along its northern side. All probes revealed deep layers formed in earthquakes that were common in the Dubrovnik region. In addition to graves and architecture remains, these layers contained stone boulders that fell off the fort in earthquakes and an abundance of diverse finds dating to a broad time span, from prehistory to the Modern Period. The fort was deserted in 1672. Anthropological analysis encompassed all recovered skeletal remains from preserved grave units regardless of the state of preservation, whereby the remains of 92 individuals were identified, of which 57 adults and 35 children. Analysis of osteological material also documented pathological changes developed antemortem. Radiocarbon (^{14}C) dating was applied on skeletal remains resulting in chronological range from the 5th to the 19th century. The same method was used for dating carbonized almonds that were dated to the Early Iron Age (750 – 400 cal BC).

UVOD I POVIJESNI OKVIR

Utvrda Sokol ili Soko-grad nalazi se u selu Dunavama u Konavlima (Sl. 1-3). Strateška važnost tog položaja poznata je još iz prapovijesnog razdoblja, kada je tu postojala gradina i podgrađe s naseljem.[1] Vjerojatno je riječ o gradini sa suhozidnim bedemima, uobičajenoj za taj period. Ta prirodna klisura služila je kao utvrđenje Ilira (plemena Plereja), Grka i Rimljana. U ranijem rekognosciranju terena pronađeni su nalazi koji svjedoče o životu na Sokolu. Tada su pronađeni ulomci prapovijesne keramike (eneolitičke, brončanodobne, željeznodobne).[2] Prvo naselje uz prirodnu klisuru može se prema keramičkim nalazima datirati u kasni eneolitik/rano brončano doba. Najbrojnija je keramika karakteristična za nositelje cetinske kulture, koji su se nastanili na širem području istočnog Jadrana.[3]

Tijekom prve polovice 1. tisućljeća pr. Kr. ilirska plemena dominirala su nad pomorskom trgovinom na Jadranu, a osobitu ulogu u talasokraciji imali su Liburni. Oni se sukobljavaju s Grcima koji su težili osigurati pravo plovidbe prema sjevernom Jadranu ploveći uz istočnojadransku obalu. Grcima je plovidba Jadranom značila i otvoren put prema srednjoj Europi i Panoniji. Zbog sukoba s ratobornim Ilirima, Grci nisu bili u prilici odmah osnivati svoje naseobine i emporije na Jadranu, nego to čine kad opada vojna moć Liburna nakon 5. st. pr. Kr.[4] Iliri su se pokušavali obraniti od grčkih kolonista početkom 4. st. pr. Kr., no bili su odbijeni.[5] Ardijejci su tijekom 4. st. pr. Kr. bili jedno od najmoćnijih ilirskih plemena koji su naseljavali područje južnog Jadrana (od neretvanskog područja do središnje Albanije). Šire se iz donjeg toka Neretve, a koristeći se malim

1 Š. BATOVIĆ, 1988a, 56; Š. BATOVIĆ, 1988b, 37; I. BOJANOVSKI, 1992, 176.
2 L. BERITIĆ, 1966, 104; Š. BATOVIĆ, 1988b, 37, 64, 67; I. BOJANOVSKI, 1992, 176.
3 S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 175.
4 A. STIPČEVIĆ, 1991, 31–32.
5 A. STIPČEVIĆ, 1991, 34.

INTRODUCTION AND HISTORICAL FRAMEWORK

Fort Sokol or Soko-grad is situated in the village of Dunave in Konavle (Fig. 1-3). Strategic importance of this position has been known back from prehistoric time, when a hillfort and a suburbium with a settlement were located here.[1] Probably it was a hillfort with drystone walls, common for the period. This natural cliff was used as a fortification of the Illyrians (the tribe of Plerei), Greeks and Romans. Finds testifying to settling of Sokol have been recovered in the earlier field survey, such as prehistoric pottery sherds (dating to the Eneolithic, Bronze and Iron Ages). The first settlement next to the natural cliff can be dated to the Late Eneolithic/Early Bronze Age on the basis of pottery finds.[2] The most abundant pottery is characteristic of the Cetina culture population, which occupied the wider eastern Adriatic region.[3]

In the first half of the 1st millennium BC, Illyrian tribes dominated the maritime trade in the Adriatic, and the Liburnians were especially important in the thalassocracy. Their opponents were the Greeks who tried to ensure naval route towards the northern Adriatic sailing along the eastern Adriatic coast. The Greeks could reach central Europe and Pannonia via Adriatic naval routes. Due to conflicts with belligerent Illyrians, the Greeks could not found their settlements and emporia in the Adriatic, but they only did it when the military power of the Liburnians started to decrease in the 5th century BC.[4] The Illyrians tried unsuccessfully to fight off the Greek colonists at the beginning of the 4th century BC.[5] The Ardiaei, who occupied the southern Adriatic area (from the Neretva region to central Albania), were one of the most powerful Illyr-

1 Š. BATOVIĆ, 1988a, 56; Š. BATOVIĆ, 1988b, 37; I. BOJANOVSKI, 1992, 176.
2 L. BERITIĆ, 1966, 104; Š. BATOVIĆ, 1988b, 37, 64, 67; I. BOJANOVSKI, 1992, 176.
3 S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 175.
4 A. STIPČEVIĆ, 1991, 31-32.
5 A. STIPČEVIĆ, 1991, 34.

Slika 1. *Pogled na utvrdu Sokol u Dunavama u Konavlima (JZ-SI), 2013.* (foto: N. Topić).
Figure 1 *View of the fort Sokol in Dunave in Konavle (SW-NI), 2013* (photo: N. Topić).

Slika 2. *Pogled s utvrde Sokol u Konavlima, 2013.* (foto: N. Topić).
Figure 2 *View from the fort Sokol in Konavle, 2013* (photo: N. Topić).

Slika 3. *Zračna snimka utvrde Sokol u Konavlima* (N. KAPETANIĆ, 2013, 80).
Figure 3 *Aerial view of the fort Sokol in Konavle* (N. KAPETANIĆ, 2013, 80).

brzim brodovima lako pokoravaju ostala susjedna ilirska plemena i nameću svoju dominaciju. Plereji se pridružuju Ardijejcima oko 250. pr. Kr., za vrijeme Agrona. Teritorij Plereja pokrivao je područje od Pelješca do Boke Kotorske, ili od Epidaura do Skadra. Plereji s Ardijejcima sudjeluju u ratovima protiv Etolaca 231. pr. Kr., a s kraljicom Teutom oko 230. pr. Kr. osvajaju Drač i Krf, te doživljavaju poraz od Rimljana 228. pr. Kr. Plereji vjerojatno ratuju i u službi posljednjeg ilirskog kralja Gencija (180. – 168. pr. Kr.). Ilirskoj državi iznimno je jake udarce zadao rimski konzul i vojskovođa Servije Fulvije Flak 135. pr. Kr. No, bilo je još povremenih nemira, a zadnji pokušaj pobune Ilira – Batonov ustanak – dogodio se između 6. i 9. godine. Zatim na tom području dolazi do osnivanja rimske provincije Dalmacije.[6] Tada je osnovan *Epidaurum* (Cavtat) kao središte iz kojeg se upravljalo južnim dijelom novoosnovane provincije. Pored onih na obali, paralelno se razvijaju naselja i utvrđenja u unutrašnjosti tog područja, što potvrđuju rimski nalazi raznovrsnog karaktera. Jedno od njih je i utvrda Sokol uz koju su pronađeni ulomci grčko-italskih i italskih amfora koje su služile za transport vina i različitih prehrambenih namirnica. Rimsku prisutnost na Sokolu osobito potvrđuje posljednje istraživanje u kojem je pronađen velik broj ulomaka tegula (*tegulae*) i kanalica (*imbrices*) (koje su također nađene u ranijim rekognosciranjima lokaliteta[7]), ostali pokretni nalazi te arhitektura i grobovi.

Prema pronađenim nalazima utvrda Sokol tijekom ranorimskog perioda nije bila osobito važna, kao što je to u kasnijem rimskom razdoblju kada strateška važnost utvrde opet dolazi do izražaja. Naseljavanje u kasnoantičkom razdoblju bilo je vrlo šaroliko jer je došlo do izmjene stanovništva naseljenih mjesta, a najveći uzlet doseglo je u Justinijanovo doba (527. – 565.). Tada je Ilirik postao središte vojnih

ian tribes in the 4th century BC. They spread from the lower course of Neretva, using small fast boats, easily subjugating neighbouring Illyrian tribes and imposing their dominance. The Plerei joined the Ardiaei ca. 250 BC, during the reign of Agron. The Plerei ruled the area from Pelješac to Boka Kotorska, or from Epidaurus to Scodra. The Plerei joined the Ardiaei in wars against Aetolians in 231 BC, and under queen Teuta they conquered Durrës and Corfu around 230 BC. They were defeated by the Romans in 228 BC. The Plerei probably fought in the service of the last Illyrian king Gentius (180-168 BC). Roman consul and army leader Servius Fulvius Flaccus was very successfull in battles against the Illyrian state in 135 BC. However, there were still occasional riots, and the last attempt of the Illyrian uprising - Bato's rebellion - happened between 6 and 9 AD. Finally the Roman province of Dalmatia was established in this region,[6] when Epidaurum (Cavtat) was founded as a center to govern the southern part of the newly established province. Settlements and fortifications in the hinterland of this region developed parallell with the coastal part, as evidenced by various Roman finds. One of them is Fort Sokol, next to which fragments of Greco-Italic and Italic amphorae were found, used for transporting wine and viands. Roman presence at Sokol is attested in particular by the last excavation that yielded a number of fragments of tegulae and imbrices (that were also found in earlier field surveys of the site[7]), other movable finds, architectural remains and graves.

Judging from the finds, Fort Sokol was not particularly important in the early Roman period, but the strategic importance of the fort increased in the later Roman period. Settlement process in late antique period was very dynamic since the population in settlements changed. This process was most intense in the Justinian's era (527-565). That is when Illyricum became the center

6 I. BOJANOVSKI, 1985, 8–9; A. STIPČEVIĆ, 1991, 39-51.
7 L. BERITIĆ, 1966, 104; Š. BATOVIĆ, 1988b, 37–38, 64, 100; I. BOJANOVSKI, 1992, 176.

6 I. BOJANOVSKI, 1985, 8-9; A. STIPČEVIĆ, 1991, 39-51.
7 L. BERITIĆ, 1966, 104; Š. BATOVIĆ, 1988b, 37-38, 64, 100; I. BOJANOVSKI, 1992, 176.

događanja, te je bio izložen barbarskim upadima.[8] U ranobizantsko doba, prema Prokopijevu djelu *De aedificiis* (*O gradnjama*), učestale su obnove utvrda i gradova u sklopu limesa, u svrhu učvršćivanja bizantske vlasti na Jadranu.[9] Te obnove obuhvatile su i utvrdu Sokol (tada je vjerojatno izgrađena od drva) koja se nalazila u sklopu Justinijanova kopnenog limesa koji se protezao istočnojadranskim obalnim zaleđem, te otocima i obalom. Osim obnovljenih utvrda, u limes su uključeni i novosagrađeni objekti.[10] Danas su na utvrdi Sokol vidljivi ostaci uklesanih stubišta i rupa koje su korištene za usađivanje baza drvene konstrukcije koja je bila prilagođena zatečenoj stjenovitoj konfiguraciji. O važnosti utvrde svjedoče brojni i raznovrsni nalazi, od građevinskog materijala (tegule, kanalice), metalnih predmeta, preko staklenih i keramičkih posuda (sjevernoafričkih, istočnomediteranskih amfora).

Kasnoantički grad znatno se razlikovao od ranijih rimskih gradova, jer sada do izražaja dolazi obrambena arhitektura. Nije se uvijek moglo jasno razlikovati veće utvrđenje od manjeg grada. Taj novi utvrđeni oblik gradova u ranobizantsko doba formira se zbog učestalih upada barbara, a neki autori pretpostavljaju da se to događa i prije 6. stoljeća.[11] No, da bi se dobila predodžba o naselju uz utvrdu Sokol, istraživanje bi u budućim kampanjama trebalo proširiti na okolno područje. Realno je pretpostaviti postojanje kasnoantičke/ranobizantske naseobine uza samu utvrdu, jer su osim muških grobova pronađeni ženski i dječji što upućuje na to da lokalitet nije bio samo vojnog karaktera.[12] Tomu u prilog ide i naziv Soko-grad, koji svjedoči i o urbanom karakteru lokaliteta. Stanovništvo se u opasnim trenutcima skrivalo na utvrdi, gdje je postojao refugij namijenjen za takve situacije.

[8] M. SUIĆ, 2003, 341–342, 347–349; S. CIGLENEČKI, 2009, 205.
[9] S. CIGLENEČKI, 2009, 205.
[10] Ž. TOMIČIĆ, 1990, 139–162; S. CIGLENEČKI, 2009, 213–215.
[11] M. SUIĆ, 2003, 356–357; S. CIGLENEČKI, 2009, 206.
[12] M. ŠLAUS et al., 2014; I. KRAJCAR BRONIĆ et al., 2015.

of military events, and was exposed to barbaric raids.[8] In the early Byzantine period, according to Procopius' work *De aedificiis* (*On Buildings*), forts and cities on limes were renewed with the aim of consolidating the Byzantine power in the Adriatic.[9] Fort Sokol was one of such forts (back then it was probably built of wood) since it was a part of the Justinian's land limes spreading along the eastern Adriatic coastal hinterland, on the islands and the littoral. Except for renovated forts, some newly built structures were incorporated in the limes.[10] Presently in Fort Sokol we can find the remains of staircase carved in stone and holes used for inserting bases of wooden construction that was adapted to rocky terrain configuration. Importance of the fort is evidenced by numerous and diverse finds, from building material (tegulae, imbrices), metal objects, to glass and ceramic vessels (north African, eastern Mediterranean amphorae).

Late antique town differed significantly from the earlier Roman towns, since defensive architecture became more prominent. A larger fortification could not always be easily distinguished from a smaller town. This new fortified form of cities in the early Byzantine perod was formed due to frequent barbaric raids, and some authors assume it happened even before the 6th century.[11] However to get a clearer view of the settlement next to Fort Sokol, future excavations should spread to the surrounding area. It is reasonable to assume presence of late antique / early Byzantine settlement next to the fort, since graves of women and children were found in addition to male graves suggesting that the site was not only military post.[12] In perilous times the population would hide in the fort where a refugium was organized for such situations.

Konavle was mentioned by the Byzantine emperor and writer Constantine Porphyrogeni-

[8] M. SUIĆ, 2003, 341-342, 347-349; S. CIGLENEČKI, 2009, 205.
[9] S. CIGLENEČKI, 2009, 205.
[10] Ž. TOMIČIĆ, 1990, 139-162; S. CIGLENEČKI, 2009, 213-215.
[11] M. SUIĆ, 2003, 356-357; S. CIGLENEČKI, 2009, 206.
[12] M. ŠLAUS et al., 2014; I. KRAJCAR BRONIĆ et al., 2015.

Konavle spominje bizantski car-pisac Konstantin Porfirogenet u djelu *De Administrando Imperio* (10. st.). Povijest Konavala nije dobro poznata do 12. stoljeća, a vjerojatno su bile pod jakim bizantskim utjecajem. Postoji nekoliko podataka o vladarima u Konavlima tijekom 12. stoljeća. U prvim desetljećima 13. stoljeća, kad opada bizantska vlast na Jadranu, Konavle su bile pod vlašću Raške, a ostaju posjed Nemanjića do 1371. godine. Sačuvana su imena nekih vazalnih kneževa i župana koji su upravljali Konavlima u ime svojih feudalnih gospodara. U trećoj četvrtini 14. stoljeća vlast nad Konavlima prešla je u ruke humskog kneza, zatim u ruke Altomanovića i Balšića. Godine 1378. Konavle padaju pod vlast bosanskog kralja Tvrtka. Knez Pavle Radonić dolazi u posjed ovog kraja 1389., a zahumska vlastela Sankovići 1391. postaju gospodari Konavala. Iste godine poklanjaju Konavle Dubrovčanima, a upravo u toj darovnici spominje se Sokol-grad. Knez Pavle ubrzo ponovno osvaja Konavle koje dijeli s Vlatkom Vukovićem koji mu je pomogao u borbi. Pavlovim dijelom upravljali su njegovi sinovi Petar i Radosav, a Vlatkovim njegov nećak Sandalj Hranić. Dubrovčani su s upraviteljima Konavala 1419. uspjeli postići dogovor o kupnji tog njima važnog posjeda. No, nije se sve jednostavno odvijalo jer su se Konavljani bunili protiv novih gospodara. Dubrovčani ipak uspijevaju doći u posjed Konavala 1420. godine, kada postavljaju prvog zapovjednika na utvrdi, popravljaju zidine i snabdjevaju utvrdu posadom i oružjem. Dogodile su se i nesuglasice između bivših upravitelja od kojih su Dubrovčani preuzeli posjed. Sandalj Hranić zatražio je natrag posjed zbog straha od Turaka, a Dubrovčani su morali primiti nekoliko njegovih vojnika na Sokol. Na kratko vrijeme Dubrovčani su napustili Sokol, ali su ubrzo počeli s pregovorima da povrate te posjede. Godine 1423. od Sandalja Hranića uspjeli su dobiti Sokol-grad, a konačnu predaju, tj. prodaju posjeda Dubrovčanima, učinio je Radosav 1426. godine.[13]

[13] M. GRUJIĆ, 1926, 3–15; D. ŽIVANOVIĆ, D. VUKOVIĆ,

tus in his work *De Administrando Imperio* (10th century). History of Konavle is poorly known for the period until the 12th century, but probably it was marked by strong Byzantine influence. There is some information about rulers in Konavle in the 12th century. In the first decades of the 13th century, with the decline in the Byzantine power in the Adriatic, Konavle were ruled by Raška, and remained the estate of the Nemanjić dynasty until the year 1371. Names of certain vassal princes and dukes who governed Konavle on behalf of their suzerains have been preserved. In the third quarter of the 14th century, the duke of Hum took control over Konavle, and finally the families of Altomanović and Balšić were feudal lords in this region. In the year 1378 Konavle was conquered by the Bosnian king Tvrtko. Duke Pavle Radonić took over in 1389, and the noble family of Stanković from Zahumlje became lords of Konavle in 1391. The same year they donated Konavle to Dubrovnik, and Sokol grad is mentioned in the deed of donation. Duke Pavle soon reconquered Konavle, sharing rule with Vlatko Vuković who helped him in the battles. Pavle's sons Petar and Radosav governed his part, and Vlatko's part was governed by his nephew Sandalj Hranić. In 1419 the city of Dubrovnik managed to make an agreement with the rulers of Konavle about purchasing this important estate. However, not everything went smoothly, since the population of Konavle rebelled against new masters. Still Dubrovnik managed to come into possession of Konavle in 1420 when they appointed the first commander in the fort, repaired the walls and stationed an armed garrison there. Former estate owners also had some claims so that Sandalj Hranić demanded the estate back because of the Ottoman danger. Dubrovnik had to accept a few of his soldiers on Fort Sokol. Dubrovnik left the fort but only for a short while, and soon started negotiations for bringing back the estate. Finally in 1423 they reclaimed Sokol-grad from Sandalj Hranić, and final handover or selling of the estate to Dubrovnik was carried out by

Konavle su od davnina bile važne Dubrovčanima zbog strateškog položaja, plodne zemlje i jeftine radne snage. Okolnosti izgradnje srednjovjekovne utvrde Sokol nisu sasvim poznate, a prvi zapisi datiraju iz 1373. godine kad se spominje utvrda i knez (kastelan, kaštelan) Dubravac te 1391. godine u povelji kojom braća Sankovići Dubrovčanima poklanjaju Konavle. Pod dubrovačkom vlašću utvrda dobiva konačan oblik.[14]

Zapovjednike su uvijek birali iz redova vlastele, a nazivi su im bili *Castellanus de Sochol*, *Conte*, *Conde*, *Praefectus Capitaneus* i dr. Veliko vijeće je 1423. godine donijelo propise o stražarskoj službi u gradu te izmjene i dopune 1425. i 1449. godine. Tako doznajemo da je na utvrdi boravio kaštelan koji je imao dva mladića za pomoćnu službu i osam stražara, među kojima tri strijelca i jednog trubača, koji su birani isključivo među pouzdanim ljudima. Svi su živjeli u utvrdi i nisu je smjeli napuštati osim u posebnim slučajevima, i to na dva do tri dana. Od polovice 16. stoljeća ne bira se kaštelan za utvrdu Sokol, a tamo su postojale samo razvaline. Utvrda se 1634. godine povezivala s nemoralnim životom vlastelina i sluškinja.[15] Sokol se u zaključcima Vijeća ne spominje nakon što je napušten 1672. godine,[16] dakle ubrzo nakon Velikog potresa koji se zbio 1667. godine.

Utvrda Sokol izvrsno se uklapa u pejsaž jer je kamen dobio patinu prirodne stijene, a tvrđava se nalazi u podnožju brda. Utvrda se sastoji od citadele i obrambenih zidova, a pristup je vrlo težak i opasan za napadače.[17] Osim utvrde Sokol u Konavlima, na geografskom području na kojem se prije prostiralo srednjovjekovno Bosansko Kraljevstvo smještene su još tri utvrde istoga imena, a nalaze se na Plivi, u Usori i Međurječju. Zajedničko im je to što se izvrsno uklapaju u ambijent i dominiraju okolnim područjem, a sam naziv Sokol izvrsno dočarava Radosav in 1426.[13]

Dubrovnik had been interested in Konavle for quite a while due to its strategic position, fertile land and cheap labour force. The circumstances of construction of the medieval Fort Sokol are rather poorly known. The first records date to 1373 when a fort and a duke (castellan) Dubravac were mentioned, and in 1391 when the Sanković brothers donated Konavle to Dubrovnik. The fort attained its final form under the authority of the city of Dubrovnik.[14]

The commanders were always members of the gentry, and their titles were *Castellanus de Sochol*, *Conte*, *Conde*, *Praefectus Capitaneus* etc. The Major Council issued regulations on guard service in the city and amendments in 1425 and 1449. In that way we learn that a castellan was stationed in the fort with two men for auxiliary service and eight guards, including three archers and a trumpeter, who were chosen among highly reliable men. They all lived in the fort and were not permitted to leave it, except in special circumstances, only for two or three days. The elections of the Fort Sokol castellan stopped from the mid-16th century, since only ruins were left. In 1634 the fort was associated with immoral life of noblemen and maids.[15] Sokol was not mentioned in the Council acts after it had been deserted in 1672[16], meaning shortly after the great earthquake of 1667.

Fort Sokol blends with the landscape since stone has taken a patina of natural rock and the fort is at the foot of a hill. It consists of a citadel and defensive walls, and the access is very difficult and dangerous in case of attack.[17] Except for Fort Sokol in Konavle, three forts with identical name were located in the same region of the former medieval Kingdom of Bosnia: in Pliva, Usora and Međurječje. They all fit into the environment exceptionally well and dominate the

13 M. GRUJIĆ, 1926, 3-15; D. ŽIVANOVIĆ, D. VUKOVIĆ, 1954, 375-376; L. BERITIĆ, 1966, 104–108.
14 D. ŽIVANOVIĆ, D. VUKOVIĆ, 1954, 375, 378.
15 D. ŽIVANOVIĆ, D. VUKOVIĆ, 1954, 378, 380.
16 L. BERITIĆ, 1966, 131–132.
17 D. ŽIVANOVIĆ, D. VUKOVIĆ, 1954, 380.

tu dominaciju nad prostorom aludirajući na pticu[18] (Sl. 2).

Pored klisure podno utvrde nalaze se ostaci nekadašnje srednjovjekovne crkve iz 15. stoljeća. Oko nje se nalazila nekropola sa stećcima. Srednjovjekovna kapelica bila je porušena 1885., a izgradila se nova seoska crkva pri čemu je dio nekropole sa stećcima uništen. Zavjetna crkvica izgrađena je 1904. pod utvrdom.[19] Glagoljski natpis na mramoru pronađen je pri obnovi crkve Male Gospe 1979. uz utvrdu Sokol.[20]

Slijedi kratki prikaz prethodnih istraživanja, nakon kojeg se iznose rezultati arheoloških istraživanja 2012./2013. s antropološkom analizom pri čemu se rabe i rezultati ^{14}C datiranja. Zatim se donose opće antropološke značajke groblja, nakon kojih slijedi detaljniji prikaz ^{14}C datiranja kostura i karboniziranih badema. U drugom dijelu članka donosi se opći pregled materijala koji obuhvaća kremene, kamene, koštane, keramičke nalaze, krovni crijep, metalne, metalurške, numizmatičke te staklene nalaze.

PRETHODNA ISTRAŽIVANJA

Utvrda Sokol i područje oko nje rijetko su istraživani i publicirani. Arthur J. Evans istraživao je groblje na Sokolu, po svoj prilici na gradini u Dunavama. Ne donosi potpune rezultate, ali spominje nalaze neslavenskih lubanja.[21] Sedamdesetih godina prošloga stoljeća Dubravka Beritić i Patricija Veramenta istražile su gornju utvrdu sa cisternom. U istraživanju su pronađeni različiti nalazi: vršci za samostrele (veretoni), pločice oklopa, ulomci stakla, fibula, stotinjak kamenih kugli (koje su poslije pokradene jer su stajale na utvrdi).[22] Šime Batović obišao je arheološke lokalitete po Konavlima, među njima i Sokol, te izvr-

[18] E. KURTOVIĆ, E. O. FILIPOVIĆ, 2011, 201–222.
[19] J. BRAUTOVIĆ, M. BRAUTOVIĆ, 2005, 212.
[20] B. FUČIĆ, N. KAPETANIĆ, 1997, 7–10; N. KAPETANIĆ, M. ŽAGAR, 2001, 9–48; G. TOMOVIĆ, 2005, 23–32.
[21] Š. BATOVIĆ, 1988b, 14, 37–38.
[22] Sačuvani nalazi smješteni su u depou Arheološkog muzeja Dubrovačkih muzeja.

surrounding region, as suggested by the name Sokol (*falcon*) alluding to the bird (Fig. 2).[18]

Remains of the former 15th-century medieval church are located next to the cliff at the foot of the fort, surrounded by a necropolis with medieval tombstones (*stećci*). Medieval chapel was torn down in 1885 in order to build a new village church whereby a part of the necropolis with *stećci* was destroyed. Votive church was built under the fort in 1904.[19] Glagolitic inscription on marble was found when the church of Our Lady next to Fort Sokol was renewed in 1979.[20]

A short overview of the previous research will be presented henceforth, followed by the results of the archaeological excavations in 2012/2013 with anthropological analysis and radiocarbon dating results. General anthropological characteristics of the cemetery are provided, and then a more detailed presentation of the radiocarbon dating of skeletons and carbonized almonds. The second part of the article brings a general overview of the material including finds of flint, stone and ceramics; roof tiles; metal; metallurgic, numismatic and glass finds.

PREVIOUS RESEARCH

Fort Sokol and the surrounding area have been scarcely explored and published. Arthur J. Evans excavated the cemetery in Sokol, in all likelihood on hillfort in Dunave. He did not publish the complete results, but only mentioned the find of non-Slavic skulls.[21] In the 1970s Dubravka Beritić and Patricija Veramenta explored upper fort with a cistern. The excavation yielded diverse finds: crossbow bolts ("veretons"), armor plaques, glass pieces, a fibula, about a hundred stone balls (later stolen as they were left on the

[18] E. KURTOVIĆ, E. O. FILIPOVIĆ, 2011, 201-222.
[19] J. BRAUTOVIĆ, M. BRAUTOVIĆ, 2005, 212.
[20] B. FUČIĆ, N. KAPETANIĆ, 1997, 7-10; N. KAPETANIĆ, M. ŽAGAR, 2001, 9-48; G. TOMOVIĆ, 2005, 23-32.
[21] Š. BATOVIĆ, 1988b, 14, 37-38.

šio rekognosciranje. Spominje nalaze s utvrde Sokol i oko nje, gdje je pronašao ulomke ilirske i rimske keramike (ulomke amfora), te rimske krovne cigle (tegule i imbrekse). Također spominje nalaze srednjovjekovne i novovjekovne keramike.[23] Dubrovački muzeji su pod vodstvom Zdenka Žeravice i Romane Menalo proveli istraživanje srednjovjekovnih stećaka uz utvrdu Sokol. Pritom je otkriveno da su grobovi izrađeni korištenjem kamena živca, klesanih kamenih blokova i neobrađenog kamena. Zdenko Žeravica interpretirao ih je kao obiteljske grobnice feudalaca, vlasnika srednjovjekovnog Sokola, koje su poslije u srednjem i novom vijeku korištene i kao kosturnice. Pronađeno je 16 metalnih igala (s pozlatom ili glavicama od muranskog stakla), srebrna pozlaćena muška naušnica, brončani prsten, zrna od neprozirnog stakla, fragmenti ogrlica, nožića, medalje s likom sv. Bernarda na aversu i Krista na reversu.[24]

ARHEOLOŠKO ISTRAŽIVANJE 2012./2013. I ANTROPOLOŠKA ANALIZA

Arheološko istraživanje koje je provedeno 2012. i 2013. godine[25] obuhvatilo je područ-

[23] Š. BATOVIĆ, 1988b, 37–38, 64, 67, 100, sl. 7/1–2, 13.

[24] Z. ŽERAVICA, 2004, 296–297, 310-315, 325, sl. 44–56, Pl. 17–18.

[25] Voditeljica arheološkog istraživanja bila je Nikolina Topić, zamjenica voditeljice Nikolina Drašković Vlašić, u istraživanju su također sudjelovali Antonio Džaja i Jelena Beželj, tada apsolventica arheologije. Istraživanje je provela tvrtka Omega engineering d.o.o. iz Dubrovnika. Konzervatorski nadzor proveo je Konzervatorski odjel u Dubrovniku. U arheološkim radovima sudjelovali su radnici iz tvrtke Troja d.o.o. iz Cavtata. Investitor arheološkog istraživanja je bilo Društvo prijatelja dubrovačke starine, koje je financiralo i antropološku analizu, analizu radioaktivnim ugljikom ^{14}C, restauraciju nalaza i obnovu utvrde. Nalazi s lokaliteta Sokol u Konavlima pronađeni izvan arheoloških istraživanja, te iz arheoloških istraživanja 2012. i 2013. godine (121 radni dan), oni iz naknadnog istraživanja 2015. (15 radnih dana), te iz posljednjeg istraživanja 2018. godine (10 radnih dana) koje je vodio Miroslav Katić, nalaze se na trajnoj pohrani na Odjelu za arheologiju i spomeničku baštinu Muzeja i galerija Konavala u Pridvorju te u stalnom postavu utvrde Sokol.

fort).[22] Šime Batović conducted a field survey at the archaeological sites in Konavle, including Sokol. He mentioned finds from Fort Sokol and the nearby area, such as fragments of Illyrian and Roman pottery (amphorae fragments), Roman tegulae and imbrices, as well as medieval and postmedieval pottery sherds.[23] Zdenko Žeravica and Romana Menalo from the Dubrovnik Museums explored the medieval tombstones near Fort Sokol. The research results indicated that the graves were made by using bedrock, dressed stone blocks or undressed stone. Z. Žeravica interpreted them as family tombs of feudal lords of medieval Sokol, that were used as ossuaries in medieval and postmedival period. Sixteen metal pins were found (gilt or with heads of Murano glass), silver gilt male earring, bronze ring, pieces of necklaces and knives, medal with St Bernard figure on the obverse and Christ on the reverse.[24]

ARCHAEOLOGICAL RESEARCH IN 2012/2013 AND ANTHROPOLOGICAL ANALYSIS

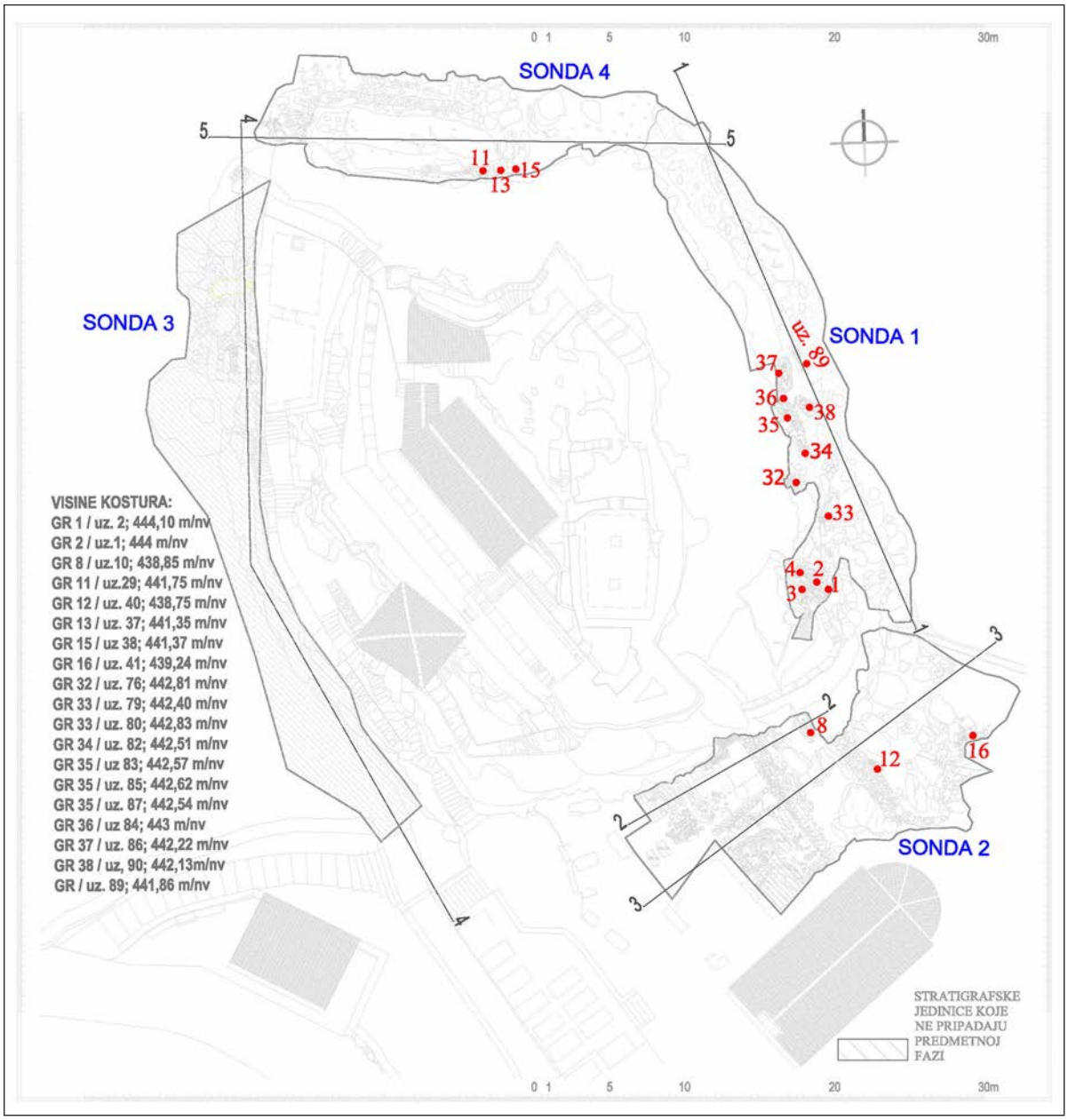
Archaeological excavations conducted in the years 2012 and 2013[25] encompassed the area

[22] These finds are kept in the depot of the Archaeological Museum of the Dubrovnik Museums.

[23] Š. BATOVIĆ, 1988b, 37-38, 64, 67, 100, fig. 7/1-2, 13.

[24] Z. ŽERAVICA, 2004, 296-297, 310-315, 325, fig. 44-56, Pl. 17-18.

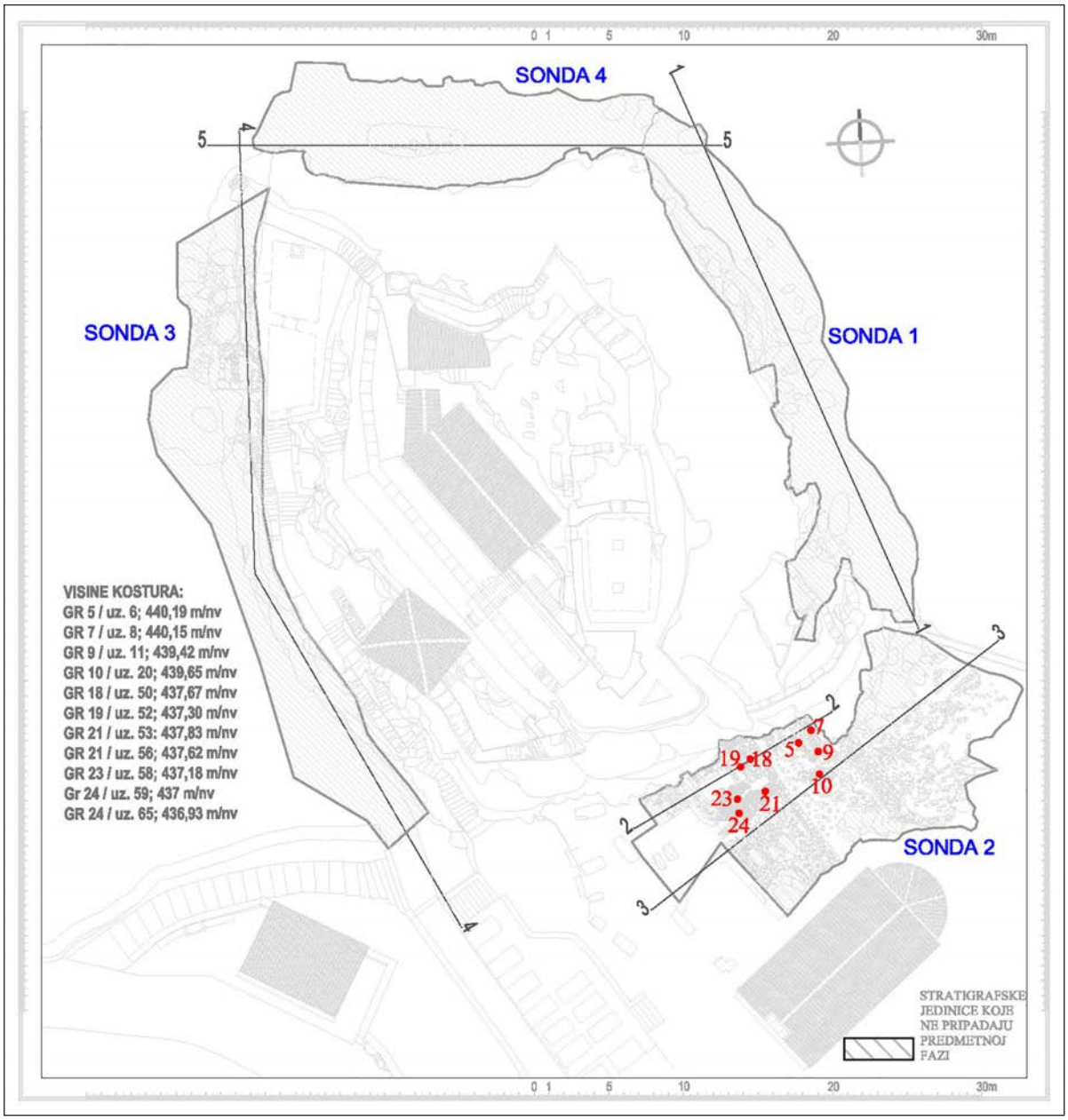
[25] Leader of the archaeological excavation was Nikolina Topić, deputy leader was Nikolina Drašković Vlašić, and other participants were Antonio Džaja and Jelena Beželj, senior undergraduate student at the time. The exacavation was conducted by the Omega engineering d.o.o. firm from Dubrovnik. Conservation supervision was carried out by the Conservation Department from Dubrovnik. Workers of the Troja d.o.o. firm from Cavtat participated in the works. The Society of Friends of the Dubrovnik Antiquities was the investor of the archaeological research, also funding the anthropological analysis, radiocarbon analysis, restoration of finds and renovation of the fort. Finds from Fort Sokol in Konavle (found before the archaeological excavations, and the ones from the 2012 and 2013 excavations (121 working days), as well as the finds from subsequent research in 2015 (15 working days), and the last research in 2018 (10 working days) led by Miroslav Katić, are permanently deposited at the Department of Archaeology and Monument Heritage of the Museums and Galleries of Konavle in Pridvorje, and in the permanent display in Fort Sokol.



Tlocrt 1. *Kasna antika/rani srednji vijek; naznačene pozicije grobova* (tlocrt sondi: N. Topić, N. Drašković Vlašić, D. Deranja, A. Radonić, Omega engineering d.o.o. Dubrovnik).
Ground Plan 1 *Late Roman/early medieval period; position of the graves* (probes ground plans: N. Topić, N. Drašković Vlašić, D. Deranja, A. Radonić, Omega engineering d.o.o. Dubrovnik).

je uza samu utvrdu Sokol, a podijeljeno je na četiri velike sonde (Tlocrti 1-3; Presjeci 1-5; Sl. 4-12). Prije nego što se pristupilo arheološkom istraživanju, tijekom sanacije i konzervacije utvrde te drugih građevinskih aktivnosti, pronađen je veći broj raznolikih nalaza. Izvorni srednjovjekovni i novovjekovni slojevi oko utvrde su već prije arheološkog istraživanja jednim dijelom uklonjeni tijekom građevinskih radova.

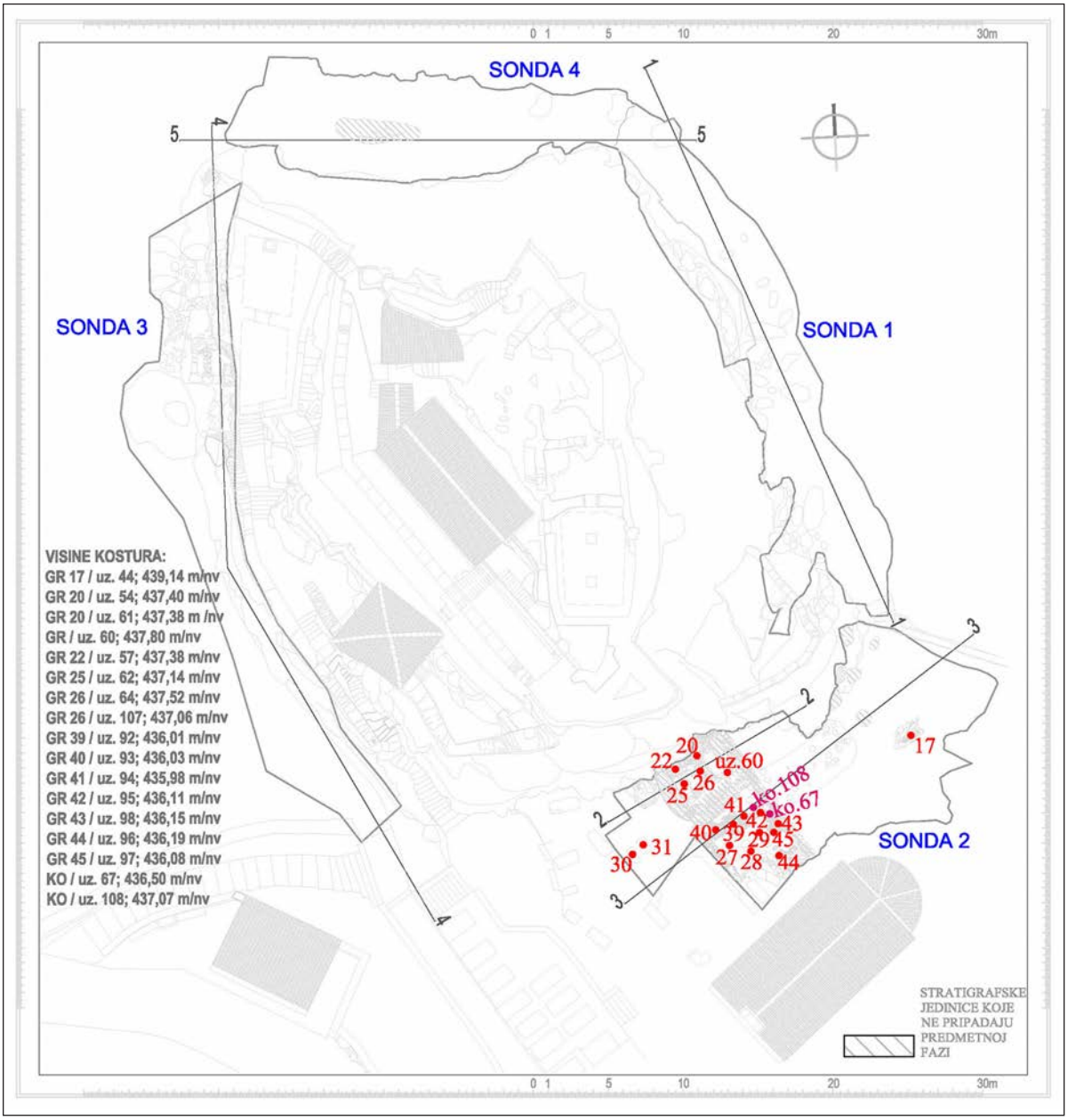
next to Fort Sokol, that was divided in four large probes (Ground plans 1-3; Cross-sections 1-5; Figs. 4-12). A number of interesting finds were unearthed during the recovery and conservation of the fort and other construction activities, before the archaeological excavation commenced. The original medieval and postmedieval layers around the fort had been partially removed in construction works before the archaeological excavation began.



Tlocrt 2. *Razvijeni srednji vijek; naznačene pozicije grobova* (tlocrt sondi: N. Topić, N. Drašković Vlašić, D. Deranja, A. Radonić, Omega engineering d.o.o. Dubrovnik).
Ground Plan 2 *High medieval period; position of the graves* (probes ground plans: N. Topić, N. Drašković Vlašić, D. Deranja, A. Radonić, Omega engineering d.o.o. Dubrovnik).

Grobovi (T. I-XI; Tlocrti 1-3; Presjeci 1-3) su pretežno smješteni uz južnu stranu utvrde, više grobova nalazi se uz istočnu stranu, manji broj uza sjevernu dok na zapadnoj strani nisu dokumentirani. Pronađeni grobovi upućuju na kontinuitet ukopavanja oko utvrde od antike do novog vijeka, dok se prapovijesni ukopi nisu sačuvali. Većina je kosturnih nalaza datirana metodom ^{14}C, a starosti su izražene kao raspon kalibriranih datuma za 1σ, što čini 68,2 % vje-

Graves (T. I-XI; Ground plans 1-3; Cross-sections 1-3) are mostly situated along the southern side of the fort, several graves are next to the eastern side, and only a small number along the northern side. Graves were not documented on the western side. Recovered graves suggest continuity of burials around the fort from antiquity to the Modern Period, while prehistoric burials have not been preserved. Most skeletal remains were dated by



Tlocrt 3. *Kasni srednji vijek/novi vijek; naznačene pozicije grobova* (tlocrt sondi: N. Topić, N. Drašković Vlašić, D. Deranja, A. Radonić, Omega engineering d.o.o. Dubrovnik).
Ground Plan 3 *Late medieval period/early postmedieval period; position of the graves* (probes ground plans: N. Topić, N. Drašković Vlašić, D. Deranja, A. Radonić, Omega engineering d.o.o. Dubrovnik).

rojatnosti nalaženja rezultata u tom rasponu, te medijana raspona kalibriranih datuma (Tablica 1, Sl. 17).

Nalazi su raznovrsni, a zastupljeni su kremeni artefakti, kameni, koštani, keramički, metalni, metalurški i stakleni nalazi koji obuhvaćaju razdoblje od neolitika/eneolitika do ranog novog vijeka (T. XII-XXIX). Nisu pronađeni grobni prilozi, osim jedne korodirane kovanice u grobu 11. No, unutar grobova dokumentirani su

using the radiocarbon method, and their age was expressed in a range of calibrated dates for 1σ, representing 68.2 % probablity of finding results in that range, and median range of calibrated dates (Table 1; Fig. 17).

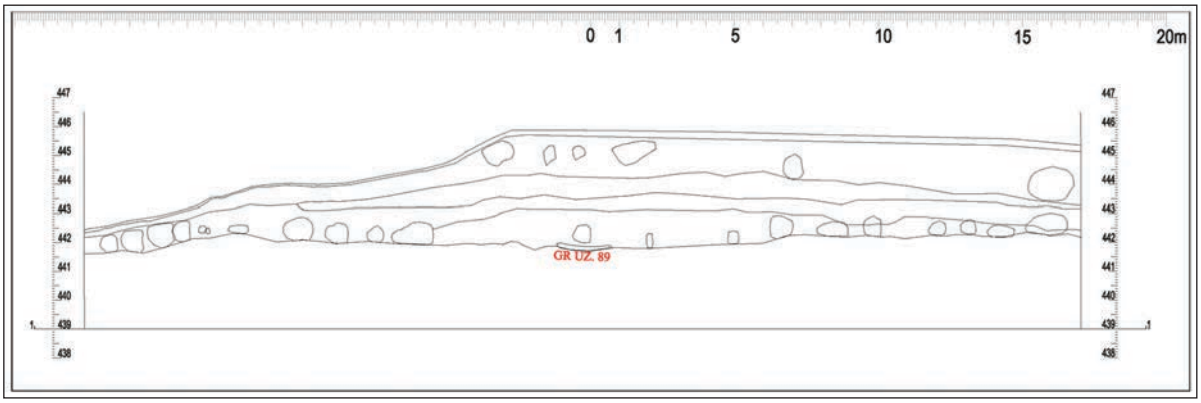
The graves are diverse, containing artifacts made of flint, stone, bone, ceramics, metal, glass and metallurgic finds dating to a time span from the Neolithic/Eneolithic to the Early Modern Period (T. XII-XXIX). Grave goods

ulomci metala, stakla, keramike, kosti koji su tu dospjeli u kontekstu zasipa grobova, dakle skupa sa zemljom. Isti materijal također je nađen u slojevima u kojima su ukopani grobovi.

Sonda 1 (Sl. 4; Tlocrti 1-3; Presjek 1) smještena je uz istočnu stranu utvrde. Prekrivali su je nasuti slojevi s ranonovovjekovnim i kasnosrednjovjekovnim materijalom. Pronađene su velike kamene gromade koje su se urušile s prirodne stijene utvrde pri potresu koji se zbio u kasnosrednjovjekovnom razdoblju. Gromade su uklonjene radi daljnjeg istraživanja. Ispod su ustanovljeni kasnoantički slojevi koji su prekrili prostor na kojem se prije zbio potres o čemu također svjedoči veliki broj urušenih gromada s utvrde. Materijal iz slojeva koji zasipaju gromade datira se u prijelazni period kasne antike u rani srednji vijek, što upućuje da se potres u kojem je došlo do urušavanja gromada zbio krajem antike ili nešto prije. Slojevi često sadrže izmiješani materijal iz različitih razdoblja što je posljedica potresa velikih razmjera. Osim poremećaja u stratigrafiji koje su uzrokovali potresi, mogli su se dogoditi i oni nastali ljudskim djelovanjem u prošlosti. Kad novi gospodari zauzimaju utvrdu, rade preuredbe na njoj i izbacuju ranije slojeve na područje oko utvrde. Na kasnoantičkoj razini isprepliću se smeđi nasipni sloj i smeđocrni zemljani sloj. Ispod tih slojeva nalazi se žućkastosmeđi pješčano-zemljani sloj koji je gotovo bez nalaza (moguće da je riječ o građevinskom materijalu), s malo

were not found, except for one corroded coin in grave 11. However the graves yielded fragments of metal, glass, pottery and bone that ended up in graves in context of grave filling, together with the soil. The same material was found in layers into which graves were dug.

Probe 1 (Fig. 4; Ground plans 1-3; Cross-section 1) was located next to the eastern side of the fort. It was covered by filled layers with early postmedieval and late medieval material. Large stone boulders were found, that collapsed from a natural rock of the fort in a late medieval earthquake. Boulders were removed in order to continue the excavation. Late antique layers were found beneath them, covering the area where the earthquake happened, as testified by a number of collapsed boulders from the fort. Finds from the layers that covered the boulders date to the transition period from Late Antiquity to the Early Middle Ages, suggesting that the earthquake in question happened by the end of antiquity or somewhat earlier. Layers often contain mixed material from different periods as a consequence of strong earthquake. Disturbed stratigraphy could also be a consequence of human activity in the past, and not only earthquakes. When new masters conquered the fort, they rearranged it and threw earlier layers out, to the area around the fort. Brown fill layer and brown-black earth layer mix at the late antique level. Under these layers is a yellowish-brown



Presjek 1. *Uzdužni presjek kroz sondu 1, SZ-JI* (izradila: N. Topić, Omega engineering d.o.o. Dubrovnik).
Cross-Section 1 *Longitudinal cross-section through probe 1, NW-SE* (made by: N. Topić, Omega engineering d.o.o. Dubrovnik).

Slika 4. *Pogled na sondu 1; gromade upale tijekom potresa, 2013.* (foto: N. Topić, Omega engineering d.o.o. Dubrovnik).
Figure 4 *View of probe 1; boulders that fell in earthquake in 2013* (photo: N. Topić, Omega engineering d.o.o. Dubrovnik).

ulomaka keramike i tegula, vjerojatno propalih iz gornjih slojeva. Na toj razini zaustavljeno je istraživanje uz istočnu stranu utvrde.

U prvoj fazi iskopavanja sonde 1 istraženo je područje uvučenog dijela pod stijenom (JI strana prirodne stijene utvrde), dok je u drugoj fazi istraženo područje duž istočne strane utvrde, a zatim su ta dva segmenta spojena u cjelinu. Grobovi (GR 1-4) pronađeni u uvučenom prostoru pod stijenom su djelomično sačuvani. **Grob 1** (GR 1, uz. 2)[26] (T. I, 1) građen je od nepravilnih kamenih poklopnica, obložnica (jednu stranicu groba zatvara stijena utvrde) i ploča nepravilnog oblika koje čine dno groba. Orijentacija groba je JZo—SI. Kostur djeteta (5,5 – 6,5 godina) bio je u opruženom položaju na leđima ali dijelom poremećen.[27] Zabilježen je blagi aktivni periostitis na unutrašnjoj strani donje čeljusti. Upala periosteuma, odnosno periostitis najblaža je manifestacija zarazne bolesti na kosti. Može biti posljedica više čim-

sandy-earth layer that contained virtually no finds (possibly it was construction material), with few fragments of pottery and tegulae, that probably fell through the upper layers. Excavation along the eastern side of the fort was stopped at that level.

In the first research phase of probe 1, the area of a recessed part under the rock was excavated (SE side of the natural rock of the fort), while the excavation in the second phase encompassed the area along the eastern side of the fort. Finally, these two segments were joined. Graves (**GR 1-4**) found in the recessed area under the rock were partially preserved. Grave 1 (**GR 1**, s. 2)[26] (T. I, 1) was built of irregular stones that constitute the sides (natural rock encloses one side), cover and the base of the grave. Grave orientation is SW – NE. Skeleton of a child (5.5-6.5 years) was in an extended position on the back, but partly disturbed.[27] Mild active periostitis was recorded

[26] Oznaka **GR** označava grob, **uz.** uzorak a **KO** kosturnicu.
[27] N. TOPIĆ et al., 2014a; N. TOPIĆ, 2014b, 667-674.

[26] Mark **GR** stands for grave, **uz.** for sample, **KO** for ossuary.
[27] N. TOPIĆ et al., 2014a; N. TOPIĆ, 2014b, 667-674.

benika među koje spadaju: nespecifične bakterijske infekcije, specifične zarazne bolesti koje se hematogenim putem prošire na kost (na primjer sifilisa), lokalizirane traume, venozne insuficijencije, metaboličke bolesti kao što je na primjer skorbut i brojni drugi čimbenci.[28] Generalizirani periostitis obično je posljedica nespecifičnih ili specifičnih zaraznih bolesti, dok je lokalizirani periostitis najčešće sekundarna posljedica trauma ili kroničnih gnojnih čireva. Periostitis na unutarnjoj strani donje čeljusti može biti indikativna manifestacija nedostatka vitamina C, odnosno skorbuta.[29] Nažalost, u ovom slučaju to nije moguće sa sigurnošću ustvrditi zbog nedostatka ostalih skeletnih elemenata koji bi mogli dati sigurniju dijagnozu. Nisu nađeni prilozi. Određena je kalibrirana starost cal AD 585. – 639., medijan cal AD 608.

GR 2 (uz. 1) (T. I, 2) zidani je grob od poluobrađenog kamena u sloju morta žućkastobijele boje. Grob je bio prekriven tegulama koje su ukrašene koncentričnim polukrugovima i petljama. Tegule su uklonjene prije arheološkog istraživanja pri dizanju nasipnog sloja. Konstrukcija groba je zatečena oštećena, a orijentacija groba je JZo—SI. Kostur žene (25 – 30 godina) zatečen je djelomično sačuvan u položaju na leđima. Na kosturu ove osobe uočeno je nekoliko patoloških promjena: blaga zarasla *cribra orbitalia* prisutna je u orbitama. *Cribra orbitalia* se morfološki očituje po pojavi šupljikave kosti na gornjim svodovima orbita, a smatra se posljedicom anemije uzrokovane nedostatkom željeza.[30] Blagi degenerativni osteoartritis prisutan je na 12. prsnom kralješku. Degenerativni osteoartritis karakterizira progresivna pojava osteofita oko rubova zglobnih ploština. U uznapredovalim oblicima inače glatka zglobna površina razvija koštane nodule, porozitet ili eburnaciju. Ove promjene rezultat

[28] R. W. MANN, S. P. MURPHY, 1990; D. J. ORTNER, 2003.
[29] S. MAYS, 2014, 55-62.
[30] R. HUSS-ASHMORE, A. H. GOODMAN, G. J. ARMELAGOS, 1982, 395-474.

on the inner side of the lower jaw. Inflammation of the periosteum, that is periostitis is the mildest manifestation of an infectious disease on a bone. It can be a consequence of several factors such as: non-specific bacterial infections, specific infectious diseases that spread to bone hematogenously (e. g. syphilis), localized traumas, venous insufficiencies, metabolic diseases such as scurvy, and many other factors.[28] Generalized periostitis is usually a consequence of non-specific or specific infectious diseases, while localized periostitis is most frequently a secondary consequence of traumas or chronic purulent ulcers. Periostitis on the inner side of the lower jaw can often be an indicative manifestation of vitamin C deficiency, i.e. scurvy.[29] Unfortunately in this case we cannot determine the exact cause due to lack of other skeletal elements that might offer a more reliable diagnosis. Grave goods were not found. Calibrated age was determined: cal AD 585 – 639, median cal AD 608.

GR 2 (uz. 1) (T. I, 2) is a stone-built grave made of semi-dressed stone in a layer of yellowish-white mortar. The grave was covered with tegulae decorated with concentrical semicircles and loops. Tegulae were removed with the fill layer before the archaeological excavation began. Grave construction was found damaged. Orientation of the grave is SW-NE. Skelton of a woman (25-30 years) was found partially preserved, in a supine position. Several pathological changes have been noticed on this skeleton: mild, healed *cribra orbitalia* preserved in orbits. *Cribra orbitalia* is morphologically exhibited in a porous bone on the upper arches of eye sockets, and it is considered to be a consequence of anaemia caused by iron deficiency.[30] Slightly degenerative osteoarthritis is present on the 12th thoracic vertebra. Degenerative osteoarthritis is characterized by

[28] R. W. MANN, S. P. MURPHY, 1990; D. J. ORTNER, 2003.
[29] S. MAYS, 2014, 55-62.
[30] R. HUSS-ASHMORE, A. H. GOODMAN, G. J. ARMELAGOS, 1982, 395-474.

su mikrotrauma koje su posljedica svakodnevnih aktivnosti i razlikuju se od traumatskog artritisa koji nastaje kao posljedica prekida normalnog biomehaničkog funkcioniranja zgloba. Schmorlovi defekti su prisutni na 10., 11. i 12. prsnom, te 2., 3. i 5. slabinskom kralješku. Schmorlovi defekti nastaju uslijed prolapsa intervertebralnog diska u tijela susjednih kralježaka.[31] Njihova prisutnost može biti idiopatska ili povezana s nizom uzročnika među kojima je najčešći prekomjerni, kontinuirani fizički rad.

Na superiornoj strani tijela 4. slabinskog kralješka prisutna je lezija nepravilnog oblika i poroznog dna. Na zubima su prisutni hipoplastični defekti. Ovi defekti morfološki se očituju kao plitki vodoravni utori koji opasuju krunu zuba. Njihova prisutnost veže se uz pojavu jakih avitaminoza, neonatalne žutice, anemije, zaraznih bolesti ili kronične neishranjenosti.[32] Nije sasvim poznato je li grob imao priloge, jer je zatečen otvoren i vrlo poremećen. Određena je kalibrirana starost cal AD 535. – 598., medijan cal AD 553.

GR 3 djelomično je sačuvan, a dno mu je bilo načinjeno od tegula. **GR 4 (?)** također se loše sačuvao, a pronađen je dio konstrukcije koja je možda služila kao dječji grob prema dimenzijama. Dno je izrađeno od sitnih kamenčića nabijenih u zemlju. Kosturni ostaci nisu pronađeni. Orijentacija je JI-SZ. Nakon što su grobne konstrukcije (GR 1-4) razložene, utvrđeno je da su bile formirane na nasipu od zemlje i kamenih gromada koje svjedoče o potresu koji je prethodio gradnji grobova koji su ^{14}C metodom datirani u 6. i 7. stoljeće.

Pri istraživanju gornjih slojeva duž istočne strane utvrde nisu ustanovljeni grobovi, dok je više njih pronađeno pri istraživanju kasnoantičke/ranosrednjovjekovne razine. Dio grobova (GR 32, 33, 34, 36) ukopan je u smeđi i crnosmeđi sloj u kojima je nađen kasnoantički materijal. Ostali grobovi (GR 35, 37, 38, 46) bili su ukopani u žućkasti pješčano-zemljani antič-

progressive emergence of osteophyte around the edges of joint surfaces. In advanced forms, smooth joint surface develops bone nodules, porosity or eburnation. These changes result from microtraumas that are a consequence of everyday activities and are different from traumatic arthritis resulting from a cessation in normal biomechanical functioning of a joint. Schmorl's nodes are present on the 10th, 11th and 12th thoracic vertebrae, and 2nd, 3rd and 5th lumbar vertebrae. Schmorl's nodes are caused by the prolapse of the intervertebral disc in the body of the adjacent vertebra.[31] Their presence can be idiopathic or related to a number of factors, most commonly excessive, continuous physical work.

On the superior side of the body of the 4th lumbar vertebra is a lesion, irregular in form, with a porous base. Hypoplastic defects are present on the teeth. These defects are morphologically exhibited as shallow horizontal grooves encircling the tooth crown. Their presence is associated with severe deficiency diseases, neonatal jaundice, anaemia, infectious diseases or chronic malnutrition.[32] The grave was found open and heavily disturbed so it is unknown if there were any grave goods. Calibrated age was determined: cal AD 535 – 598, median cal AD 553.

GR 3 is partially preserved. Its base was made of tegulae. **GR 4** (?) is also poorly preserved. A part of construction was found that might have served as a child's grave, judging from the dimensions. The base was made of tiny stones packed into soil. Skeletal remains were not found. Orientation is SE-NW. After grave constructions were dismantled (**GR 1-4**), it was determined that they were formed on a fill of earth and stone boulders testifying to an earthquake that preceded construction of graves dated to the 6th and 7th centuries using the ^{14}C method.

New graves were not found in upper layers

[31] G. SCHMORL, H. JUNGHANNS, 1971.
[32] A. H. GOODMAN, 1988, 781-791.

[31] G. SCHMORL, H. JUNGHANNS, 1971.
[32] A. H. GOODMAN, 1988, 781-791.

ki građevinski sloj. Grobovi su bili smješteni uz utvrdu da bi bili što bolje zaštićeni. Samo dva groba pronađena su po sredini sonde. Njihove konstrukcije izrađene su od poluobrađenog kamena bez vezivnog sredstva i od ulomaka manjih gromada upalih pri potresu, s malo sačuvanih tegula koje su vjerojatno činile pokrov grobova. Samo jedan grob nema konstrukciju, a s obzirom na to da je položen u žućkasto smeđi zemljano-pješčani sloj skelet se dosta dobro sačuvao. Nisu sadržavali priloge. ^{14}C analizom datirani su u 5. i 6. stoljeće.[33] Na toj razini zaustavljeno je istraživanje sonde 1.

GR 32 (uz. 76) (T. VII, 4) smješten je u zaštićenom dijelu sonde uz utvrdu. Jednim dijelom kao stranice groba koristi utvrdu dok su ostale stranice zatvorene nepravilnim kamenjem. Kostur žene (45 – 50 godina) presječen je u donjem dijelu nogu tijekom radova koji su prethodili arheološkima. Na kosturu su prisutne četiri antemortalne frakture (na rebrima, na distalnoj desnoj palčanoj kosti, na srednjoj trećini dijafize lijeve lakatne kosti). Blagi degenerativni osteoartritis prisutan je u lijevom ramenu, 5. vratnom te 6. i 7. slabinskom kralješku. Jaki degenerativni osteoartritis prisutan je na 4. vratnom kralješku. Blagi aktivni periostitis prisutan je na anteriornoj strani obiju lopatica, na objema bedrenim kostima i lijevoj goljeničnoj kosti. Na zubima su prisutni hipoplastični defekti. U uzorku je pronađena i desna bedrena kost fetusa. Orijentacija groba je Jo—S. Određena je kalibrirana starost cal AD 431. – 550., medijan cal AD 484.

GR 33 (uz. 78-80) (T. VIII, 1-2) također kao jedno lice koristi utvrdu dok je s ostalih strana zatvoren gromadama urušenima u potresu. Grob ima dvije razine ukopavanja, a vjerojatno je riječ o obiteljskoj grobnici, kao što je već dokumentirano na groblju uz crkvu sv. Đurđa u obližnjoj Župi dubrovačkoj.[34] Na gornjoj razini dokumentiran je trojni ukop: jedan stariji

[33] I. KRAJCAR BRONIĆ, N. HORVATINČIĆ, 2014; I. KRAJCAR BRONIĆ, 2015.

[34] M. PERKIĆ, 2008, 74.

along the eastern side of the fort, but several graves were hit at the late antique / early medieval level. Some graves (**GR 32, 33, 34, 36**) were dug into brown and black-brown layer in which late antique material was found. The remaining graves (**GR 35, 37, 38, 46**) were dug into a yellowish, sandy-earth construction layer from antiquity. Graves were located next to the fort for the sake of protection. Only two graves were found in the middle of the probe. Their constructions consist of semi-dressed stones without any bonding agent, and of fragments of smaller boulders collapsed in the earthquake, with few tegulae that probably formed the grave cover. Only one grave has no construction, and since it was laid in the yellowish-brown earthy-sandy layer, the skeleton was rather well preserved. There were no grave goods. ^{14}C analysis dated them to the 5th and 6th centuries.[33] Excavation of probe 1 was stopped at that level.

GR 32 (uz. 76) (T. VII, 4) is located in the protected part of the probe next to the fort. Fort is used as one side of the grave while irregular stones delineate the rest of its sides. Skeleton of a woman (45-50 years) was cut in the lower part of legs during the works that preceded the archaeological excavations. Four antemortem fractures are present on the skeleton (on ribs, on right distal radius, in the middle third of diaphysis of left ulna). Mild degenerative osteoarthritis is present on the left shoulder, 5th cervical vertebra and the 6th and 7th lumbar vertebrae. Severe degenerative osteoarthritis was found on the 4th cervical vertebra. Mild active periostitis is present on the anterior side of both scapulae, on both femurs and left tibia. Hypoplastic defects are present on the teeth. The sample also contained right femur of a foetus. Orientation of the grave is S-N. Calibrated age was determined: cal AD 431 – 550, median cal AD 484.

GR 33 (uz. 78-80) (T. VIII, 1-2) also uses

[33] I. KRAJCAR BRONIĆ, N. HORVATINČIĆ, 2014; I. KRAJCAR BRONIĆ, 2015.

ženski kostur (45 – 50 godina) i dva dječja (3 – 5 i 14 – 16 godina). Kod starijeg djeteta prisutna je blaga zarasla ektokranijalna poroznost na svodu lubanje. Ektokranijalna se poroznost ponekad još naziva „kost u obliku narančine kore" jer se morfološki očituje po prisutnosti plitkih rupica oko bregme, sagitalnog šava i na zatiljnoj kosti (općenito pri vrhu svoda lubanje). Ektokranijalna poroznost prvi je put opisana kod mladih američkih vojnika koji su umrli kao ratni zarobljenici tijekom rata u Koreji.[35] Kod tih osoba, pojava ektokranijalne poroznosti povezana je s dugotrajnim i sustavnim izgladnjivanjem. Visoke učestalosti uočene su i kod američkih vojnika koji su poginuli tijekom opsade utvrde Snake Hill u ratu iz 1812., a za koje također postoje povijesni dokumenti koji svjedoče o neadekvatnoj prehrani.[36] Litički defekt prisutan je na zglobnoj plohi lijeve lopatice. Na distalnoj zglobnoj plohi lijeve goljenične kosti također su prisutna dva mala litička defekta. Schmorlovi defekti prisutni su na prsnim kralješcima. Blagi aktivni lokalizirani periostitis prisutan je na lijevoj bedrenoj kosti i na dvjema kostima desnog stopala. Kod mlađeg djeteta prisutan je jaki aktivni *osteomijelitis* na desnoj goljeničnoj i lisnoj kosti. Osteomijelitis je infekcija kostiju koju najčešće uzrokuju bakterije, a ponekad i gljivice. Kosti koje su obično dobro zaštićene od infekcije, mogu se inficirati na tri načina: krvotokom, direktnim prodorom ili od infekcija iz okolnog mekog tkiva.

Ispod njih ukopana je mlađa žena (25 – 30 godina) kod koje je na lijevoj strani donje čeljusti ispod drugog kutnjaka prisutan blagi aktivni periostitis. Na desnoj ključnoj kosti prisutna je naglašena *rhomboidna fossa*. Ovu pojavu karakteriziraju kortikalni defekti na hvatištu kostoklavkularnog ligamenta, te kao i svi kortikalni defekti upućuju na intenzivnu fizičku aktivnost, koju su u ovom slučaju provodili mišići ramenog obruča. Na prvim me-

[35] T. W. MCKERN, T. D. STEWART, 1957.
[36] D. W. OWSLEY, R. W. MANN, S. P. MURPHY, 1991, 198–226.

the fort as one side while other sides are closed by boulders collapsed in the earthquake. The grave has two levels of burying, and probably it was a family tomb, as already documented in the cemetery near the church of St George in nearby Župa dubrovačka.[34] Triple burial was documented on the upper level: an older female skeleton (45-59 years) and two child's skeletons (3-5 and 14-16 years). Mild healed ectocranial porosity is noticeable on the older child's skull. Ectocranial porosity is sometimes referred to as "orange peel bone" as it is morphologically exhibited in the presence of shallow holes around bregma, sagittal suture and on the occipital bone (generally near the cranium). Ectocranial porosity was first described in young American soldiers who died as prisoners of war during the Korean War.[35] In these cases, presence of ectocranial porosity was related to lengthy and systematic starvation. High frequencies were also noticed in American soldiers who died during the siege of Fort Snake Hill in the war of 1812, that are also associated with inadequate diet, according to historical documents.[36] Lithic defect is present on the joint surface of the left scapula. Two small lithic defects are present on the distal joint surface of the left tibia. Schmorl's nodes are present on the thoracic vertebrae. Mild active localized periostitis is present on the left femur and two bones of the right foot. Severe active osteomyelitis is present on the younger child, on the right tibia and fibula. Osteomyelitis is an infection of bones usually caused by bacteria, or sometimes fungi. Bones are usually well protected from the infection, and can be infected in three ways: through bloodstream, direct penetration or from infections from the surrounding soft tissue.

A young woman (25-30 years) was buried under them. Mild active periostitis was found on the left side of her lower jaw under second

[34] M. PERKIĆ, 2008, 74.
[35] T. W. MCKERN, T. D. STEWART, 1957.
[36] D. W. OWSLEY, R. W. MANN, S. P. MURPHY, 1991, 198-226.

tatarzalnim kostima stopala – palca, prisutne su litičke lezije zaobljenih rubova. Također, na starijem ženskom kosturu zabilježen je blagi degenerativni osteoartritis na pojedinim kralješcima. Na zubima su prisutni hipoplastični defekti. Orijentacija gornjih kostura je So–J s malim otklonom, dok je pokojnica ispod njih obrnuto orijentirana: Jo–S s malim otklonom. Određena je kalibrirana starost cal AD 543. – 592., medijan cal AD 564. (uz. 79, starije dijete, 14 – 16 godina, s gornje razine groba); cal AD 538. – 597., medijan cal AD 558. (uz. 80, mlađa žena s donje razine groba).

GR 34 (uz. 82) (T. VIII, 3) formiran je od nepravilnog manjeg i većeg kamenja. Zapadna stranica groba dijelom koristi stijene utvrde kao dio konstrukcije. Na krajevima groba vertikalno su postavljene tegule, dok pokrov nije sačuvan. Upotreba starijeg građevinskog materijala očekivana je na ovakvim lokalitetima. Primjer upotrebe tegula za srednjovjekovne grobne konstrukcije nalazimo u obližnjoj Župi dubrovačkoj.[37]

Na ženskom kosturu (45 – 55 godina) blagi degenerativni osteoartritis (osteofiti) prisutan je u kukovima i na 6. prsnom kralješku. Umjereni degenerativni osteoartritis (osteofiti) prisutan je na pojedinim vratnim i prsnim kralješcima. Na falangi šake prisutna je fraktura. Skelet je orijentacije Jo–S.

Grobna konstrukcija **GR 35** (uz. 83, 85, 87) (T. VIII, 4; T. IX, 1) formirana je od poluobrađenog i neobrađenog kamena, s malo sačuvanih tegula po vrhu groba te na krajevima. Kao zapadno lice koristi utvrdu. Grob je poremećen u potresima i/ili pljačkama. Uzorak 83 predstavlja skeletne ostatke djeteta (13 – 14,5 godina), a nalazio se na sjevernoj strani groba. Kosti su dislocirane, djelomično su sačuvane kosti ruku, zdjelice i nogu. Blagi aktivni periostitis prisutan je na lijevoj goljeničnoj kosti. Skelet uz. 85 (mlada žena, 15,5 – 17,5 godina) nalazio se na južnoj strani groba. Pokojnica je u opruženom položaju na leđima,

[37] M. PERKIĆ, 2008, 72.

molar. A severe rhomboid fossa is present on the right clavicle. This phenomenon is characterized by cortical defects on the attachment of costoclavicular ligament. As all cortical defects, it suggests strenuous physical exertion, in this case performed by shoulder muscles. Lithic lesions with rounded edges are visible on the first metatarsal bones of the foot – the big toe. Mild degenerative ostearthritis is recognizable on some vertebare of the older female skeleton. Hypoplastic defects are present on the teeth. Orientation of the upper skeletons is NS with a slight deviation, while the female skeleton underneath is in the opposite S-N direction with a slight deviation. Calibrated age is cal AD 543 – 592, median cal AD 564 (uz. 79, older child (14-16 years) from the upper level of the grave); cal AD 538 – 597, median cal AD 558 (uz. 80, younger woman from the lower level of the grave).

GR 34 (uz. 82) (T. VIII, 3) is formed of irregular stones of different sizes. Western side of the grave partly uses rocks of the fort as a part of the construction. At the grave ends are tegulae placed vertically, while the cover was not preserved. Use of older construction material is expected at sites like this. An example of use of tegulae in medieval grave constructions is attested in nearby Župa dubrovačka.[37]

On a female skeleton (45-55 years) mild degenerative osteoarthritis (osteophytes) is present on hips and the 6th thoracic vertebra. Moderate degenerative osteoarthritis (osteophytes) is recorded on certain cervical and thoracic vertebrae. A fracture was recognized on the fist phalanx. Orientation of the skeleton is NS.

Grave construction **GR 35** (uz. 83, 85, 87) (T. VIII, 4; T. IX, 1) was formed of semidressed and undressed stones, with few preserved tegulae on the top of the grave and at the ends. Fort is used as the western face. The grave was disturbed in earthquakes and/or robberies. Sample 83 consists of subadult

[37] M. PERKIĆ, 2008, 72.

ruke su prekrižene na trbuhu, noge izlaze izvan konstrukcije. Određena je kalibrirana starost cal AD 435. – 574. cal AD, medijan cal AD 539. Uzorak 87 (muškarac, 25 – 30 godina) posljednji je pokojnik u ovom grobu koji je višekratno korišten. Bolje mu je sačuvan gornji dio skeleta, pokopan je na leđima, lubanja je napuknuta, kralješci i rebra su u lošem stanju, lijeva ruka opružena, a desna savijena u laktu i vjerojatno prislonjena na zdjelicu, dok su noge djelomično sačuvane. Patološke promjene uočene kod ove osobe uključuju antemortalnu dobro zaraslu frakturu na zglobnoj ploštini lijeve lopatice, kostoklavikularno romboidno udubljenje (*rhomboid fossa*) na desnoj ključnoj kosti te Schmorlove defekte na 6. i 7. prsnom kralješku. Skelet je orijentacije SZo—JI. Određena je kalibrirana starost cal AD 435. – 576., medijan cal AD 539.

Sjeverno uz GR 35 nalazi se **GR 36** (uz. 84) (T. IX, 2) koji ima loše sačuvanu konstrukciju, formiranu od manjeg kamena i tegula. Skelet djeteta (1 – 1,5 godine) također je loše sačuvan: lubanja je prislonjena uz stijenu, djelomično su sačuvane kosti ruku, nogu i pojedine sitne kosti. Patološke promjene nisu prisutne. Orijentacija mu je So—J. Sjeverno se pruža **GR 37** (uz. 86) (T. IX, 3) koji ima relativno dobro sačuvanu konstrukciju u formi vijenca, formiranu od nepravilnog kamena, a kao zapadno lice dodatno koristi stijenu utvrde. U grobu su nađene dvije tegule u predjelu nogu, a tvorile su dio pokrova groba koji nije sačuvan. Skelet muškarca (40 – 55 godina) dobro je sačuvan, u opruženom položaju na leđima, desna ruka na zdjelici. Uočeno je nekoliko patoloških promjena: blaga zarasla ektokranijalna poroznost prisutna je na svodu lubanje. Blagi degenerativni osteoartritis prisutan je na laktovima i desnom koljenu te slabinskim kralješcima. Schmorlovi defekti prisutni su na pojedinim kralješcima. Na 5. slabinskom kralješku prisutna je spondiloliza, odnosno prirođeni koštani defekt luka kralješka. Blagi aktivni i zarasli periostitis prisutan je na lijevoj lisnoj kosti, dok je blagi zarasli periostitis prisutan na desnoj lisnoj kosti. Orijentacija

skeletal remains (13-14.5 years), and it was located on the northern side of the grave. Partially preserved bones of arms, pelvis and legs were dislocated. Mild active peiostitis is present on the left tibia. Skeleton sample 85 (young woman 15.5-17.5 years) was located on the southern side of the grave. The deceased woman was in an extended position, supine, arms crossed on the lower abdomen, legs protruding out of the construction. Calibrated age is cal AD 435 – 574 cal AD, median cal AD 539. Sample 87 (man, 25-30 years) is the last person to have been buried in this grave that was used repeatedly. Upper part of the skeleton is better preserved, the skull is cracked, vertebrae and ribs are in a poor condition, the left arm is stretched, and the right arm is bent in the elbow, probably leaning on the pelvis, while legs are partially preserved. Pathological changes noticed on this skeleton include well-healed antemortem fracture on the joint surface of the left scapula, costoclavicular rhomboid fossa on the right clavicle, and Schmorl's nodes on the 6th and 7th thoracic vertebrae. Orientation of the skeleton is NW-SE. Calibrated age is cal AD 435 – 576, median cal AD 539.

North of GR 35 is **GR 36** (uz. 84) (T. IX, 2) with a poorly preserved construction, made of small stones and tegulae. Skeleton of a child (1-1.5 years) is also poorly preserved: the skull leans against the rock, bones of arms, legs and certain small bones are partially preserved. There are no pathological changes. Grave orientation is NS. To the north is **GR 37** (sample 86) (T. IX, 3) with a relatively well preserved construction in form of a wreath, formed of irregular stones, using the rock of the fort as the western face. Two tegulae which formed the unpreserved grave cover, were found in the leg area. Skeleton of a man (40-45 years) is well preserved, in an extended position, supine, right hand on the pelvis. Several pathological changes were noticed: mild healed ectocranial porosity on the cranium; mild degenerative osteoarthritis on the elbows, right knee and

je So—J.

Osim grobova koji su smješteni uza samu utvrdu, nađena su i dva koja su udaljena od nje i time manje zaštićena. **GR 38** (uz. 90) (T. IX, 4) ima konstrukciju građenu od manjeg i većeg poluobrađenog i neobrađenog kamena koja je na donjem dijelu presječena pri građevinskim radovima. Kostur muškarca (30 – 35 godina) u relativno je dobrom stanju, osim što mu je presječen donji dio nogu. Kod ove osobe prisutna je blaga zarasla ektokranijalna poroznost na svodu lubanje. Na zubima su prisutni hipoplastični defekti. Orijentacija je Zo—I. Drugi grob (**GR/,** uz. 89) (T. X, 1) smješten je po sredini sonde, nema grobnu konstrukciju i ukopan je u žućkasti pješčani sloj u kojem je formirana grobna raka. Kostur muškarca (20 – 25 godina) vrlo dobro se sačuvao zahvaljujući sastavu sloja koji vjerojatno predstavlja građevinski materijal (pijesak u svojem sastavu ima kalcij, filtrira se i brzo propušta vodu). Pokojnik je na leđima, ruke su položene uz tijelo, desna ruka je na zdjelici. Uočen je niz patoloških promjena. Naglašena *rhomboidna fossa* prisutna je na objema ključnim kostima, dok je benigni kortikalni defekt prisutan na hvatištu mišića *teres maior* desne nadlaktične kosti. Na desnom iveru prisutan je veliki *vastus notch* (u osnovi „usjek“ na superiorno-lateralnoj površini ivera i najčešće se smatra normalnom varijacijom) dok je na lijevom manji. Schmorlovi defekti prisutni su na pojedinim prsnim i 1. slabinskom kralješku. Orijentacija je So–J. Određena je kalibrirana starost cal AD 540. – 590., medijan cal AD 558.

Istraživanje je zaustavljeno na razini pješčano-zemljanog sloja, grobne konstrukcije su razložene, a gromade urušene u potresu koje dijelom zasipa pješčano zemljani sloj u ovoj fazi istraživanja nisu uklonjene.

Sonda 2 (Sl. 5-10; Tlocrti 1-3; Presjeci 2-3) zauzima područje uz južnu stranu utvrde, na padini. Najprije je uklonjen ranonovovjekovni/kasnosrednjovjekovni ostatak nasipa, zatim su uslijedili srednjovjekovni sloj s kamenim nabo-

lumbar vertebrae, Schmorl's nodes on some vertebrae. Spondylosis as a congenital bone defect of the vertebral arch is noticeable on the 5th lumbar vertebra. Mild active and healed periostitis is present on the left fibula, while mild healed periostitis is recognizable on the right fibula. Grave orientation is NS.

Except for graves that are situated next to the fort, two more graves were found at some distance from it, therefore being less protected. **GR 38** (uz. 90) (T. IX, 4) has a construction built of small and large semi-dressed and undressed stones, that was cut off in the lower part in the construction works. Male skeleton (30-35 years) is in a relatively good condition, except lower part of his legs was cut off. Mild healed ectocranial porosity on the cranium is present on this skeleton, as well as the hypoplastic defects on the teeth. Grave orientation is WE. The other grave (**GR/**, uz. 89) (T. X, 1) is located in the middle of the probe, without grave construction, dug into yellowish sandy layer in which grave pit was formed. Male skeleton (20-25 years) is well preserved owing to soil composition, probably consisting of construction material (sand contains calcite, it is filtrated and passes water quickly). The deceased person is on the back, arms are extended along the body, right hand is on the pelvis. A number of pathological changes were noticed. Prounounced rhomboid fossa is present on both clavicles, while a benign cortical defect is visible on the attachment of the *teres maior* muscle of the right humerus. On the right patella is a big *vastus notch* (basically a "notch" on the superior-lateral surface of the patella, usually considered as a normal variation), while it is smaller on the left patella. Schmorl's nodes are present on some thoracic vertebrae and the 1st lumbar vertebra. Grave orientation is NS. Calibrated age is cal AD 540 – 590, median cal AD 558.

The excavation was stopped at the level of sandy-earth layer, grave constructions were dismantled, and boulders collapsed in the earthquake that are partially covered by sandy-

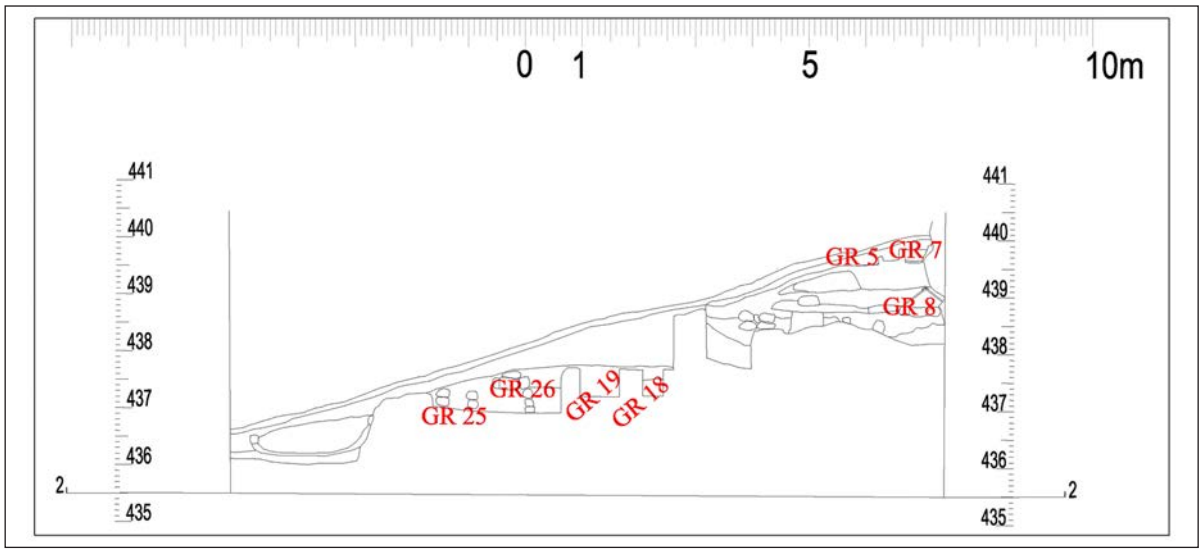
Slika 5. *Pogled na sondu 2, 2013.* (foto: N. Topić, Omega engineering d.o.o. Dubrovnik).
Figure 5 *View of probe 2, 2013* (foto: N. Topić, Omega engineering d.o.o. Dubrovnik).

jem (10. – 11. st.), kasnoantički/ranosrednjovjekovni sloj (5. – 6. st.), te sloj s izmiješanim prapovijesnim nalazima. Dva kasnoantička zida dijele sondu na tri dijela.

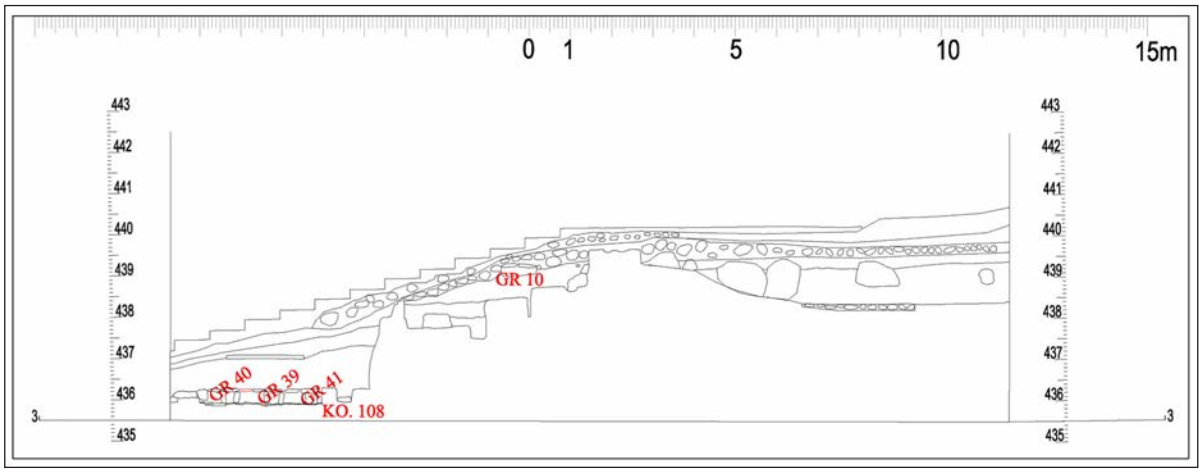
U kasnosrednjovjekovnom/ranonovovjekovnom nasipu nađeni su ulomci glazirane keramike, fragmenti metala, stakla, cigle, kamene

earth layer have not been removed in this research phase.

Probe 2 (Fig. 5-10; Ground plans 1-3; Cross-sections 2-3) takes the area along the southern side of the fort, on the slope. Early postmedieval / late medieval fill remains were



Presjek 2. *Kraći uzdužni presjek kroz sondu 2, SI-JZ* (izradila: N. Topić, Omega engineering d.o.o. Dubrovnik).
Cross-Section 2 *Shorter longitudinal cross-section through probe 2, NE-SW* (made by: N. Topić, Omega engineering d.o.o. Dubrovnik).



Presjek 3. *Duži uzdužni presjek kroz sondu 2, SI-JZ* (izradila: N. Topić, Omega engineering d.o.o. Dubrovnik).
Cross-Section 3 *Longer longitudinal cross-section through probe 2, NE-SW* (made by: N. Topić, Omega engineering d.o.o. Dubrovnik).

kugle, veretoni (vrhovi strelica), fragmenti oklopa sa zakovicama (T. XIII, 8; T. XIX-XX; T. XXIV-XXV; T. XXVIII-XXIX). U tom sloju bilo je i većih kamenih gromada koje su se odlomile s prirodne stijene utvrde. Gromade urušene tijekom potresa su postajale više vidljive uklanjanjem sloja koji je uglavnom sadržavao kasnorimski/ranokršćanski materijal, a koji se nalazio pod kamenim nabojem. Uslijedio je duboki prapovijesni sloj crne zemlje s uglavnom manjim kamenjem te kamenim gromadama koje su uništile prapovijesno naselje. Materijal iz prapovijesnog sloja je dosta izmiješan: pri vrhu sloja pronađeni su kasnoeneolitička/ranobrončanodobna keramika (T. XV, 2) te ulomak neolitičkog/eneolitičkog kremenog sječiva za srp (T. XII, 1). Među nalazima su vrlo brojni ulomci prapovijesne keramike, uglavnom grube bez ukrasa i dosta usitnjene, ali ima i sačuvanih karakterističnih ručki i ukrašenih ulomaka (T. XIV, 4-9; T. XV). Velika količina prapovijesne keramike i kućnog lijepa upućuje na kontinuitet života na gradini od eneolitika, preko brončanog do željeznog doba.

Na istočnom dijelu sonde pronađena je prapovijesna podnica od nabijenih kamenčića koja je možda služila kao dvorište ispred kuće. Na tom dijelu sonde ustanovljena je još jedna podnica te uz nju veće kamenje (ostatci ilirske kuće?). Nije bilo moguće ustanoviti tip kuće

removed first, followed by a medieval layer with a stone fill (10th – 11th cent.), late antique / early medieval layer (5th – 6th cent.), and a layer with mixed prehistoric finds. Two late antique walls divide the probe into three parts.

The late medieval / early postmedieval fill yielded finds of glazed pottery, fragments of metal, glass, brick, stone balls, veretons (arrowtips), fragments of armor with rivets (T. XIII, 8; T. XIX-XX; T. XXIV-XXV; T. XXVIII-XXIX). This layer also contained bigger stone boulders that broke off the natural rock of the fort. Boulders that fell off in the earthquake were becoming more visible during removing of the layer containing mostly the late Roman / early Christian material, that was under the stone fill. A deep prehistoric layer of black soil came next, containing mostly smaller stones and stone boulders that destroyed prehistoric settlement. Material from prehistoric layer is quite mixed: late Eneolithic / Early Bronze Age pottery was found at the top of the layer (T. XV, 2) as well as a fragment of the Neolithic / Eneolithic flint blade of a sickle (T. XII, 1). Prehistoric pottery sherds are abundant, mostly in coarse fabric, unornamented and quite fragmented, but some characteristic handles and decorated sherds were also preserved (T. XIV, 4-9; T. XV). Large amount of prehistoric pottery and daub suggests continu-

zbog malog područja koje je istraženo na rubnom dijelu sonde (koje bi trebalo proširiti u budućim istraživanjima), te zbog upalih kamenih gromada koje su onemogućavale potpuno istraživanje i interpretaciju tog prostora. Ispred te konstrukcije nalazi se vatrište s kamenom podlogom (Sl. 6). Dosta ulomaka kućnog lijepa nađeno je na istočnoj strani sonde, u prapovijesnom sloju s mješovitim nalazima, što također svjedoči o načinu gradnje i naseljenosti ovog područja. Na tom dijelu sonde također su pronađeni karbonizirani bademi (T. XIV, 2) koji su ^{14}C analizom datirani u 7. st. pr. Kr. (cal BC 756. – 543., medijan cal BC 637.; cal BC 787. – 567., medijan cal BC 649.). Uz njih je nađeno i dosta razbijenog grubog keramičkog posuđa, pa možemo pretpostaviti da su bademi bili uskladišteni u tim posudama (vjerojatno pitosima) unutar spremišta kuće. Razbijeni pitosi s karboniziranim zrnjem također su pronađeni u istraživanju ilirskog utvrđenog naselja Rosuje na SI Albanije, u prostoriji koja je slu-

ity of life on the hillfort from the Eneolithic over the Bronze and Iron Ages.

A prehistoric floor made of small packed stones was found in the eastern part of the probe, that might have been a courtyard in front of the house. Another floor was found in that part of the probe, and large stones next to it (remains of an Illyrian house?). The type of the house could not be determined due to a small area excavated in the peripheral part of the probe, and also because collapsed stone boulders prevented complete research and interpretation of the area. A fireplace with a stone base is in front of this construction (Fig. 6). A lot of daub pieces were found on the eastern side of the probe, in the prehistoric layer with mixed finds, testifying to the manner of construction and settlement patterns of this area. Carbonized almonds were also found in this part of the probe (T. XIV, 2), dated to the 7th century BC by ^{14}C dating. (cal BC 756 – 543, median cal BC 637; cal BC 787 – 567,

Slika 6. *Istočni, povišeni dio sonde 2 – željeznodobni ilirski sloj (ostatci kuće, nastambi, vatrište), 2013.* (foto: N. Topić, Omega engineering d.o.o. Dubrovnik).
Figure 6 *Elevated eastern part of probe 2 – Iron age, Illyrian layer (remains of a house, buildings, fireplace), 2013* (photo: N. Topić, Omega engineering d.o.o. Dubrovnik).

Slika 7. *Pogled na istočni, povišeni dio sonde 2, 2013.* (foto: N. Topić).
Figure 7 *View of elevated eastern part of probe 2, 2013* (photo: N. Topić).

žila kao spremište.[38] Ostaci struktura i nalazi uz utvrdu Sokol sličnog su konteksta kao albanski nalazi. Također je nađena veća količina životinjskih kostiju, ali nije izvršena zoološka osteološka analiza. Svi ti nalazi upućuju na to da su se tadašnji stanovnici na ovom području bavili zemljoradnjom i stočarstvom u starijem željeznom dobu. Sterilni žućkasti sloj s većim i manjim kamenom ustanovljen je dizanjem podnice s nabojem po sredini istočnog dijela sonde, a istraživanje je zaustavljeno na toj razini.

Istočni dio sonde od središnjeg dijeli kasnoantički zid građen od priklesanog kamena i cigle u sloju vapnenog morta koji je većim dijelom uništen korijenjem (Sl. 5, 7). Zid na južnom dijelu mijenja smjer prema kamenoj gromadi upaloj u nekom od razornih potresa prije ili tijekom kasnorimskog perioda. Budući da se taj zid u vidu luka nastavlja prema velikoj gromadi (tj. prema istoku, a ne u smjeru juga), a drugi zid na nižem dijelu sonde također mi-

median cal BC 649). A lot of broken coarse pottery was found next to them, allowing an assumption that the almonds were stored in these vessels (probably pithoi) within a house depository. Broken pithoi with carbonized seeds were also found in the excavation of the Illyrian fortified site Rosuje in NE Albania, in a room used for storage.[38] Remains of structures and finds next to Fort Sokol provide a similar context as the Albanian finds. A considerable amount of animal bones was found as well, but osteological analysis was not carried out. All these finds suggest that the inhabitants of this area practiced agriculture and animal husbandry in the Early Iron Age. Sterile yellowish layer with stones of different sizes was found after removing a floor with a fill in the middle of the eastern part of the probe, and the research was stopped at that level.

Eastern part of the probe is divided from the central part by a late antique wall made of trimmed stone and brick in a layer of lime

[38] A. STIPČEVIĆ, 1991, 107.

[38] A. STIPČEVIĆ, 1991, 107.

jenja smjer na jednak način, ali prema zapadu, možemo pretpostaviti da je i prije njihove gradnje (prije kasne antike) na području današnje crkve postojala neka građevina, moguće sakralni objekt.

Uz taj zid na istočnom dijelu sonde nađen je dječji grob – **GR 12** (uz. 28=40) (T. II, 3) – koji je kao pokrov imao tegule iznad kamene konstrukcije pravokutne forme, koja na jugozapadnoj strani koristi spomenuti zid da bi zatvorila svoje gabarite. Grob je djelomično ukopan u prapovijesni sloj. Orijentacija groba je SZo–JI. Dijete (7,5 – 8,5 godina) opruženo je na leđima, ruke su uz tijelo, šake na zdjelici. Na kosturu su uočene sljedeće patološke promjene: blaga zarasla *cribra orbitalia* prisutna je u desnoj orbiti. Benigni kortikalni defekt prisutan je na hvatištima *biceps brachii* mišića obiju palčanih kosti, dimenzija 15 × 5 × 3 mm što sugerira iznimnu fizičku aktivnost odnosno napore. Na tijelima od 8. do 12. prsnog kralješka prisutne su lezije, a makroporozitet je prisutan na križnoj kosti te od 1. do 5. slabinskog kralješka. Blagi aktivni periostitis prisutan je na lijevoj bedrenoj i objema goljeničnim kostima. Na zubima su prisutni hipoplastični defekti. Određena je kalibrirana starost cal AD 435. – 571., med cal AD 536. Zid je izgrađen prije tog datuma jer je grob prislonjen uz njega.

Na istočnom dijelu sonde 2 ustanovljeni su još **GR 16** i **GR 17**. **Grobu 16** (uz. 41) (T. III, 2) jednu stranicu čini stijena (upala gromada), a ostale veće i manje priklesano i neobrađeno kamenje. Pokrov groba činio je naboj od kamenčića. Grob je orijentacije Jo—S. Kostur žene (30 – 35 godina) na leđima je, glava blago nagnuta prema prsima, ruke izbačene van u laktovima, kralježnica i rebra na mjestu, noge zakošene. Položaj kostura prilagođen je stjenovitoj škrapi koja je upotrijebljena kao grob. Što se tiče patoloških promjena, blaga zarasla ektokranijalna poroznost prisutna je na svodu lubanje. Blagi degenerativni osteoartritis prisutan je na 4. i 5. prsnom kralješku. Koštana ankiloza (spajanje dviju kosti) prisutna je između dviju falanga stopala; vjerojatno je riječ o loše zaramortar that was destroyed by roots for the most part (Figs. 5, 7). In the southern part the wall changes direction towards a stone boulder fallen off in some of destructive earthquakes before or during the Roman period. Since this wall continues towards the big boulder (eastwards, not southwards) in shape of an arch, and the other wall in the lower part of the probe also changes direction in a similar way, but towards the west, we can assume that even before they were built (before late antiquity), a certain building, possibly a sacral structure, preceded present-day church at the same spot.

Child's grave **GR 12** (uz. 28=40) (T. II, 3) was found next to this wall, in the eastern side of the probe. It had a cover made of tegulae over a stone construction in rectangular form, that uses mentioned wall on south-western side to close its form. The grave is partially dug into the prehistoric layer. Grave orientation is NW-SE. Child (7.5-8.5 years) is extended on the back, arms are along the body, hands on the pelvis. Following pathological changes were noticed on the skeleton: mild healed *cribra orbitalia* on the right orbit; benign cortical defect on attacments of *biceps brachii* muscles of both thumb bones, with dimension 15×5×3mm, suggesting strenuous physical exertion. Lesions are visible on the bodies of the 8th to 12th thoracic vertebrae, and macroporosity is present on the sacrum, and from the 1st to 5th lumbar vertebrae. Mild active periostitis is present on the left femur and both tibiae. Hypoplastic defects are noticeable on the teeth. Calibrated age is cal AD 435 – 571, med cal AD 536. The wall was built before that date as the grave was leaning against it.

GR 16 and **GR 17** were also found in the eastern part of probe 2. A stone (collapsed boulder) constituted one side of **grave 16** (uz. 41) (T. III, 2), and trimmed or undressed stones defined the rest of its shape. Grave cover consisted of stone fill. Grave orientation is WE. Female skeleton (30-35 years) is in the supine position, head is slightly bent towards the chest, arms are protruding outwards in the

sloj frakturi koja je rezultirala preklopom kosti i angulacijom. Na zubima su prisutni hipoplastični defekti. Određena je kalibrirana starost cal AD 431. – 547., medijan cal AD 483.

Grob 17 (uz. 44) (T. III, 3) novovjekovnog je datuma, a ukopan je u prapovijesni sloj, među upalim kamenim gromadama. Konstrukciju mu čine neobrađeni kamen i stijene. Grob je bio zatvoren žbukanim pokrovom, a pokojnik (mlađi muškarac, 16 – 17 godina) prekriven daskom. Orijentacija groba je JZo—SI. Pokojnik je opružen na leđima, ruke uz tijelo, šake uz zdjelicu. Uz glavu je nađeno nekoliko nalaza: fragment metalnog privjeska i ulomak keramičkog pršljena koji su tu dospjeli iz prapovijesnog sloja u koji je pokojnik ukopan te recentno dugme, vjerojatno s pokojnikove odjeće. Uočen je niz patoloških promjena: blaga zarasla ektokranijalna poroznost prisutna je na svodu lubanje. Benigni kortikalni defekt prisutan je na hvatištu *latissimus dorsi* obiju nadlaktičnih kosti. Na distalnom zglobu desne nadlaktične kosti prisutan je *osteochondritis dissecans* (odvajanje hrskavice i subhondralne kosti u obliku sekvestra zbog učestalih mikrotrauma). Najčešće se pojavljuje kod adolescenata i mlađih odraslih osoba s većom učestalošću kod muškaraca. Na 5. slabinskom kralješku prisutna je spondiloliza. Blagi zarasli periostitis prisutan je na bedrenim i goljeničnim kostima. Lezija zaobljenih rubova i nepravilnog oblika prisutna je na kosti prsta desnog stopala. Na objema skočnim kostima prisutne su lezije zaobljenih rubova i sklerotičnog dna. Na zubima su prisutni hipoplastični defekti. Određena je kalibrirana starost cal AD 1706. – 1914., medijan cal AD 1881. Pokojnik je naknadno ukopan, u vrijeme kada utvrda više nije u funkciji.

Na središnjem dijelu sonde uklonjeni su gornji slojevi tijekom građevinskih radova, prije arheološkog istraživanja, pa se pri istraživanju ubrzo došlo do oštećenih grobova iz vremena zrelog srednjeg vijeka. Na površini je zatečen žuti recentni pješčani nasip, koji se protezao velikim dijelom središnjeg i donjeg dijela sonde. Nakon tog recentnog nasipa i kasnosrednjo-

elbows, spine and ribs are in place, legs slanted. Position of the skeleton is adjusted to a rock fissure that was used as a grave. As for the pathological changes, mild healed ectocranial porosity is present on the cranium and mild degenerative osteoarthritis is noticeable on the 4th and 5th vertebrae. Bony ankylosis (adhesion of two bones) is recognizable on two phalanges of the foot; probably it is a poorly healed fracture resulting in an overlap of fracture elements and angulation. Hypoplastic defects are visible on the teeth. Calibrated age is cal AD 431 – 547, median cal AD 483.

Grave 17 (uz. 44) (T. III, 3) dates to the Modern Period, and it was dug into a prehistoric layer, between the collapsed stone boulders. Its construction consists of undressed stones and rocks. The grave was closed with a mortared cover, and the deceased person (younger male, 16-17 years) covered with a plank. Grave orientation is SW-NE. The deceased person is extended on his back, arms along the body, hands along the pelvis. Several artifacts were found next to the head: fragment of a metal pendant and a fragment of ceramic whorl that got there from the prehistoric layer into which the grave was dug, and a recent button, probably from the deceased person's clothes. A series of pathological changes have been noticed: mild healed ectoranial porosity present on the cranium; benign cortical defect is visible on the attachment of *latissimus dorsi* of both humeri. *Osteochondritis dissecans* (separation of cartilage from subchondral bone in form of sequestrum due to frequent microtraumas) is visible on the distal joint of the right humerus. It is most common in adolescents and young adults, predominantly male. Spondylosis was noticed on the 5th lumbar vertebra. Mild healed periostitis is present on femurs and tibiae. Lesion with rounded edges and irregular form is present on the toe bone of the right foot. Lesions with rounded edges and sclerotic bases are noticeable on both ankle bones. Hypoplastic defects are present on the teeth. Calibrated age is cal AD 1706

vjekovnog/ranonovovjekovnog ostatka nasipa uslijedio je kameni naboj te nekoliko grobova koji pripadaju 10. – 11. stoljeću (**GR 5, GR 7, GR 9, GR 10**). Ispod se nalazio kasnorimski/ranosrednjovjekovni sloj s grobom iz 5. stoljeća (**GR 8**). Budući da su taj grob i ostale rimske strukture prilagođene slobodnom prostoru oko gromada urušenih u potresu, znamo da se potres dogodio u kasnoj antici ili nešto prije.

Veliki odvodni kasnoantički kanal prislonjen je uz utvrdu i na tom je dijelu kvalitetnije građen, zatim se blagim padom nastavlja prema donjem dijelu koji je građen od kamenih ploča koso postavljenih uza zid. Proteže se uza zid koji dijeli središnji od zapadnog dijela sonde. Ispod kasnorimske/ranosrednjovjekovne faze uslijedio je crnosmeđi sloj (nabijen u škrape) koji sadrži raniji rimski, helenistički, brončanodobni/eneolitički materijal. Da bi se u potpunosti istražilo to područje bilo bi potrebno ukloniti kamene gromade upale pri potresu što bi zbog njihove veličine bilo kompleksno, a time bi se poremetile i kasnoantičke strukture.

Grob 5 (uz. 6) (T. I, 3) zatečen je poremećen građevinskim radovima koji su prethodili arheološkim, a bio je formiran od obložnica postavljenih na nož oko kojih je postavljeno poluobrađeno kamenje. Poklopnice groba nisu sačuvane, dno su činile kamene ploče debljine cca 2 – 3 cm. Orijentacija groba je So–J s otklonom od 30° prema zapadu. Pokojnik (muškarac star više od 45 godina) u opruženom je položaju na leđima. Pronađen je nagnječeni manji dio zdjelice i kosti nogu koje su nagnječene obložnicama. Kod ovog pokojnika zabilježen je blagi degenerativni osteoartritis na koljenima. Blagi zarasli periostitis prisutan je na lijevoj goljeničnoj kosti. Ostatak grobne konstrukcije je razložen radi daljnjeg istraživanja slojeva. Određena je kalibrirana starost cal AD 903. – 1014., medijan cal AD 979.

Grob 7 (uz. 8) (T. I, 4) ima konstrukciju koja se sastoji od poluobrađenog i neobrađenog kamena bez vezivnog sredstva. Ispunu groba čini tamnosmeđi zemljani sloj s manjim kamenom, ulomcima tegula, fragmentima kasnoantičke/

– 1914, median cal AD 1881. The deceased person was buried when the fort was no longer functional.

Upper layers were removed in the central part of the probe during construction works, before the archaeological excavation, so damaged graves dating to the High Middle Ages were hit soon after the beginning of the research. Recent yellow sandy fill was found on the surface that spread over a big part of the central and lower part of the probe. After this recent fill and the remaining late medieval / early postmedieval fill, there was a stone layer and several graves dating to the 10th-11th centuries (**GR 5, GR 7, GR 9, GR 10**). Late Roman / early medieval layer with a 5th-century grave was underneath (**GR 8**). Since this grave and the remaining Roman structures were adjusted to the free space around the boulders collapsed in the earthquake, we know that it happened in Late Antiquity or somewhat earlier.

Big late antique drainage ditch was leaned against the fort and it was built better in this part, then in slopes gently towards the lower part that is built of stone slabs placed obliquely along the wall. It spreads along the wall dividing the central from the western part of the probe. Under the late Roman / early medieval phase was a black-brown layer (packed into cracks) containing earlier Roman, Hellenistic, and Bronze Age / Eneolithic material. In order to fully explore this area, it would be necessary to remove stone boulders collapsed in the earthquake which would be quite demanding due to their size, and it would disrupt late antique structures.

Grave 5 (uz. 6) (T. I, 3) was disturbed in construction works that preceded the archaeological excavation, and it was made of slabs placed vertically and surrounded by semi-dressed stones. Grave cover was not preserved, and the base consisted of stone slabs ca. 2-3cm thick. Grave orientation is NS with a deviation of 30° westwards. The deceased person (man over 45 years of age) was in an extended position on his back. A small smashed part of the

ranobizantske keramike, stakla. Orijentacija groba je So—J s otklonom od 30° prema zapadu. Sačuvan je kostur (muškarac, 55 – 60 godina) u opruženom položaju na leđima, ruke su preklopljene na trbuhu. Bio je prekriven većim kamenjem, lubanja je nagnječena, a ostale kosti su dobro sačuvane. Dokumentirano je više patoloških promjena na kosturu. Blaga zarasla ektokranijalna poroznost prisutna je na svodu lubanje. Blaga *hiperostozis frontalis interna* prisutna je na endokranijalnoj strani čeone kosti. *Hiperostozis frontalis interna* je učestalo, benigno zadebljanje na unutrašnjoj strani čeone kosti lubanje. Najčešće se pojavljuje kod žena nakon menopauze i uglavnom je asimptomatičnog karaktera. Blaga zarasla *cribra orbitalia* prisutna je u orbitama. Na desnoj sljepoočnoj kosti (endokranijalno) prisutan je otok sklerotične kosti. Litičke lezije prisutne su na zglobnoj ploštini obiju lopatica. Benigni kortikalni defekt prisutan je na hvatištu *teres* i *pectoralis maior* lijeve nadlaktične kosti, te *biceps brachii* lijeve palčane kosti. Blagi degenerativni osteoartritis prisutan je u ramenima, laktovima, koljenima i 1. prsnom kralješku. Umjereni degenerativni osteoartritis prisutan je u kukovima, na pojedinim prsnim te slabinskim kralješcima. Jaki degenerativni osteoartritis prisutan je na pojedinim vratnim (Sl. 11), prsnim i slabinskim kralješcima te na kostima šake. Lezije su prisutne u periartikularnom dijelu kukova, lijevog ramena, lakta, desnog lakta, lijevog koljena te na kosti desne šake. Moguće je da je riječ o reumatoidnom artritisu. Reumatoidni artritis kronična je upalna bolest vezivnog tkiva, nepoznatog uzroka, koja najjače pogađa lokomotorni sustav. Karakterističan je patološki nalaz ove bolesti trajna upala sinovijske ovojnice perifernih zglobova, koja je uz to simetrično distribuirana. Bolest se može iskazivati blagom kliničkom slikom u kojoj su zahvaćeni tek pojedini zglobovi ili kao teži oblik bolesti s jakim deformitetima. Najčešća je varijanta bolesti umjerene jakosti. Prema epidemiološkim podatcima, bolest zahvaća otprilike 1% populacije, s tim da je ovaj poremećaj češći kod žena

pelvis was found as well as leg bones, pressed by lateral stone slabs. Mild degenerative osteoarthritis on the knees was recorded on this skeleton. The rest of grave construction was dismantled for further excavation of the layers. Calibrated age is cal AD 903 – 1014, median cal AD 979.

Grave 7 (uz. 8) (T. I, 4) has a construction consisting of semi-dressed and undressed stones without bonding agent. The grave is filled with dark brown earth layer with smaller stones, tegulae fragments, sherds of late antique / early Byzantine pottery, glass. Grave orientation is NS with a deviation of 30° westwards. A skeleton was preserved (male, 55-60 years) in an extended position on the back, arms crossed on the lower abdomen. He was covered with big stones, the skull is damaged, other bones are well preserved. Several pathological changes were documented on the skeleton. Mild healed ectocranial porosity was present on the cranium. Mild *hyperostosis frontalis interna* is present on the endocranial side of the forehead bone. *Hyperostosis frontalis interna* is a common, benign thickening on the inner side of the frontal bone of the skull. Most commonly it occurs in women after menopause, it is usually asymptomatic. Mild healed *cribra orbitalia* is present on the orbits. On the right temporal bone (endocranially) is a swelling of a sclerotic bone. Lithic lesions are present on joint surface of both scapulae. Benign cortical defect is present on the attachment of *teres* and *pectoralis maior* of the left humerus, and *biceps brachii* of the left thumb bone. Mild degenerative osteoarthritis is present on the shoulders, elbows, knees and the first thoracic vertebra. Mild degenerative osteoarthritis is recognizable on the hips, and on certain thoracic and lumbar vertebrae. Strong degenerative osteoarthritis is recognizable on certain cervical (Fig. 11), thoracic and lumbar vertebrae and hand bones. Lesions are present in periarticular part of the hips, left shoulder, elbow, right shoulder, left knee and bones of the right hand. Possibly it could be rheumatoid arthritis which is

i do četiri puta u odnosu na mušku populaciju. Bolest najčešće počinje u 4. ili 5. desetljeću života. Neke obiteljske studije uputile su na genetsku predisponiranost za bolest.[39] Na zubima su prisutni hipoplastični defekti. Određena je kalibrirana starost cal AD 897. – 985., medijan cal AD 946. Grobna konstrukcija razložena je radi daljnjeg istraživanja slojeva.

Grob 8 (uz. 10) (T. I, 5) ima konstrukciju od poluobrađenih kamenih blokova koji su postavljeni kao njegove obložnice, dijelom u sloju morta. Pokrov je bio u formi krova na dvije vode koji su činile tegule te na vrhu kanalice (*imbrices*), a cijela konstrukcija je dosta oštećena i nagnječena. Takav način pokapanja povezuje se s kasnoantičkim razdobljem. Tegule su uglavnom ukrašene petljama i koncentričnim polukrugovima (T. XXI, 1-2), neke nemaju oznaku, dok je nađeno više ulomaka s ostatcima pečata (T. XXI, 4-6). Ispunu groba čini zemljani sloj s kamenjem, ulomcima tegula, imbreksa te fragmenata keramike i stakla. Orijentacija groba je SZo—JI. Sačuvan je kostur muškarca (25 – 35 godina) u opruženom položaju na leđima, u lošem je stanju, osobito zdjelica, lopatice, rebra i kralješci. Glava je okrenuta udesno, ruke su prekrižene na zdjelici, noge su također prekrižene. Patološke promjene uključuju blagu zaraslu ektokranijalnu poroznost te hipoplastične defekte na zubima. Određena je kalibrirana starost cal AD 433. – 533., medijan cal AD 483. Grobna konstrukcija je razložena, a utvrđeno je da je grob ležao na nasipu od zemlje i kamenih gromada koji je sadržavao i grubu keramiku te manju količinu tegula.

Grob 9 (uz. 11) (T. I, 6) kamena je konstrukcija od poluobrađenog kamena različitih dimenzija. Grob je imao poklopnicu od kamena lošije kvalitete koja je napukla, obložnice su od iste vrste kamena (vapnenac) i postavljene su na nož, uz njih je poslagano kamenje, a dno čini napukla ploča. Grob je jednom kraćom stranicom prislonjem uz utvrdu i leži na nasipu. Orijentacija mu je JZo—SI. Skelet muškarca (45

[39] C. A. ROBERTS, K. MANCHESTER, 2005.

a chronic inflammatory disease of connective tissue, of unknown etiology, damaging musculoskeletal system most severely. Characteristic pathological finding of this disease is a chronic inflammation of synovial lining of peripheral joints, that is symmetrically distributed. The disease can be manifested with mild clinical symptoms with only few joints affected or in a more severe form with pronounced deformities. Moderately strong disease is most common. According to epidemiological information, the disease affects approximately 1% of the population. Women are affected 4 times as frequently as men. Onset is most frequent in the fourth or fifth decade of life. Some family studies suggested genetic predisposition to this disease.[39] Hypoplastic defects are noticeable on the teeth. Calibrated age is cal AD 897 – 985, median cal AD 946. Grave construction was dismantled for further excavation of the layers.

Grave 8 (uz. 10) (T. I, 5) has a construction of semi-dressed stone blocks placed as its lining, partially in a mortar layer. The cover was in a form of a double-pitched roof consisting of tegulae and imbrices at the top. Entire construction was quite damaged and crushed. Such burial manner is characteristic of Late Antiquity. Tegulae were mostly decorated with loops and concentrical semicircles (T. XXI, 1-2), some do not have a stamp, but there are several stamped examples (T. XXI, 4-6). Grave fill consists of a layer with stones, fragments of tegulae and imbrices as well as glass pieces and pottery sherds. Grave orientation is NW-SE. Male skeleton was preserved (25-35 years) in an extended position on the back, in a poor condition, in particular the pelvis, scapulae, ribs and vertebrae. The head is turned to the right, arms are crossed on the pelvis, legs are also crossed. Pathological changes include mild healed ectocranial porosity and hypoplastic defects on the teeth. Calibrated age is cal AD 433 – 533, median cal AD 483. Grave construction was dismantled, and it was deter-

[39] C. A. ROBERTS, K. MANCHESTER, 2005.

– 50 godina) bočno je položen, ruke su uz tijelo i prekrižene na trbuhu, noge su prekrižene. Patološke promjene: blagi degenerativni osteoartritis prisutan je u lijevom laktu, kukovima i križnoj kosti. Blagi zarasli periostitis prisutan je na desnoj goljeničnoj kosti te objema lisnim kostima. Na zubima su prisutni hipoplastični defekti. Određena je kalibrirana starost cal AD 992. – 1019., medijan cal AD 1004.

Na središnjem dijelu sonde otkriven je i **GR 10** (uz. 20) (T. II, 1). Grobnu konstrukciju čine ploče poklopnice, obložnice na nož koje su okružene kamenim vijencem, a dno je formirano od nekoliko ploča. Grob je relativno dobro sačuvan, a kosti su u dosta lošem stanju (proželo ih je korijenje, nagnječile obložnice, a vjerojatno su utjecaj imali i potresi). Grob je ukopan u sloj koji sadrži kasnoantičke/ranosrednjovjekovne nalaze. U predjelu lubanje presječen je kamenom strukturom. Grob je orijentacije Zo—I s otklonom od cca 30° prema jugu. Utvrđeno je da je riječ o kosturu žene (25 – 35 godina) opružene na leđima. Sačuvana joj je donja čeljust, lijeva ruka je opružena, desna savijena i naslonjena na trbuh, noge opružene. Na fragmentu desnog rebra prisutna je dobro zarasla fraktura koja se očituje po dobro remodeliranom kalusu. Određena je kalibrirana starost cal AD 1045. – 1155., medijan cal AD 1097.

Na zapadnom dijelu sonde (Sl. 8-10) definirani su gabariti prostorije koja je sagrađena u rimsko doba. No, u srednjem vijeku prenamijenjena je u groblje što je učinjeno dodavanjem nekoliko pregradnih zidova. Dva groba kvalitetnije su građena i fino žbukana dok su drugi lošije izvedeni te su u raspadajućem stanju. Neki od tih improviziranih grobova upotrijebljeni su za višefazno ukopavanje. Također je i druga prostorija koja se nalazi niže (zbog prilagodbe terenu) prenamijenjena u dječje groblje koje je probilo njezinu žbukanu podnicu. Ta prostorija imala je peć, vjerojatno krušnu, pa je mogla služiti kao neka vrsta pekare/kuhinje u kasnoantičko doba. Groblje je u novom vijeku dijelom prekopano i poništeno da bi se formimined that the grave lay on a fill of earth and stone boulders containing coarse pottery and a smaller amount of tegulae.

Grave 9 (uz. 11) (T. I, 6) is a stone construction made of semi-dressed stone of different sizes. The grave had a cover of poor quality stone that cracked, lining slabs were made of the same stone type (limestone) and placed vertically, stones were arranged next to them, and a cracked slab constitutes the base. The grave leans against the fort with its shorter side and lies on the fill. Its orientation is SW-NE. Skeleton of a man (45-50 years) is laid on the side, arms along the body, crossed on the lower abdomen, legs crossed. Pathological changes include: mild degenerative osteoarthritis of the left elbow, hips and sacrum. Mild healed periostitis is present on the right tibia and both fibulae. Hypoplastic defects are present on the teeth. Calibrated date is cal AD 992 – 1019, median cal AD 1004.

GR 10 (uz. 20) (T. II, 1) was discovered in the central part of the probe. Grave construction consists of cover slabs, vertical lining slabs surrounded by a stone wreath, and base made of several slabs. The grave is relatively well preserved, and the bones are in quite poor condition (penetrated by roots, crushed by lining slabs, earthquakes also probably had adverse effect). The grave is dug into a layer containing late antique / early medieval finds. It was cut by a stone structure in the skull area. Grave orientation is WE with a deviation of 30° southwards. It was determined as a female skeleon (25-35 years) extended on the back. Her mandible was preserved, left arm is outstretched, right arm bent and placed on the lower abdomen, legs extended. Well healed fracture recognizable after well remodelled callus is visible on the fragment of the right rib. Calibrated age is cal AD 1045 – 1155, median cal AD 1097.

In the western part of the probe (Figs. 8-10) dimensions of a room built in the Roman period were defined. However, in the Middle Ages it was reutilized as a cemetery, by add-

ralo novo groblje, pa su tada vjerojatno stradali i neki od grobova puno ranijeg datuma. Istraženi grobovi nisu imali priloge, a ^{14}C analizom datirani su od 9. do 14. stoljeća.

Osim dječjih grobova, u donjoj prostoriji po njezinom središnjem dijelu smješteni su i grobovi s monolitnim poklopnicama (**GR 27-29**) (Sl. 8-9) koji su vjerojatno ukopani početkom novog vijeka. Uza zid koji dijeli središnji od zapadnog dijela sonde, u nižoj prostoriji, također je početkom novog vijeka ukopana kosturnica (**KO**, uz. 66-67) (T. VII, 1) koja sadrži kosture odraslih osoba.

Dva groba su žbukana i nalaze se u višoj prostoriji. **Grob 18** (uz. 50) (T. III, 4) zidana je grobnica, ožbukana s unutrašnje strane. Pokojnik (muškarac, 40 – 45 godina) na leđima je, kosti glave su napuknute i razbacane, ruke uz tijelo, prsti na zdjelici (desna ruka) i uza zdjeing several partition walls. Two graves exhibit more quality craftsmanship and good quality mortar, unlike the rest that are in decay. Some of these improvised graves were used for multiphase burials. Another room that is located somewhat lower (owing to terrain configuration) was reused as a children's cemetery that penetrated its mortared floor. This room had an oven, probably bread oven, so it might have been used as a sort of bakery / kitchen in Late Antiquity. The cemetery was dug over and obliterated in order to form a new cemetery. It is more than likely that some much earlier graves were destroyed on that occasion. Excavated graves contained no grave goods, and they were dated by radiocarbon analysis to the period from the 9th to 14th century.

Except for children's graves, in the lower room were graves with monolithic covers

Slika 8. *Pogled na središnji i donji dio sonde 2, 2013.* (foto: N. Topić, A. Džaja, Omega engineering d.o.o. Dubrovnik).
Figure 8 *View of the central and lower part of probe 2, 2013* (photo: N. Topić, A. Džaja, Omega engineering d.o.o. Dubrovnik).

Slika 9. *Pogled na središnji i donji dio sonde 2 (SI-JZ), 2013.* (foto: N. Topić, A. Džaja, Omega engineering d.o.o. Dubrovnik).
Figure 9 *View of middle and lower part of probe 2 (NE-SW), 2013* (photo: N. Topić, A. Džaja, Omega engineering d.o.o. Dubrovnik).

Slika 10. *Pogled prema donjem dijelu sonde 2 – prostorije koje su poslije prenamijenjene u groblje (JZ-SI), 2013.* (foto: N. Topić, Omega engineering d.o.o. Dubrovnik).
Figure 10 *View towards lower part of probe 2 – rooms that were later used for burials (SW-NI), 2013* (photo: N. Topić, Omega engineering d.o.o. Dubrovnik).

Slika 11. *Jaki degenerativni osteoartritis na vratnim kralješcima* (foto: V. Vyroubal).
Figure 11 *Severe degenerative osteoarthritis on cervical vertebra* (photo: V. Vyroubal).

licu (lijeva ruka), noge opružene. Patološke promjene nisu prisutne. Orijentacija groba je SZo—JI. Određena je kalibrirana starost cal AD 778. – 891., medijan cal AD 845.

Grob 19 (uz. 52, 55) (T. IV, 1) zidana je grobnica, žbukana s unutrašnje strane. Orijentacija groba je SZo—JI. Kosti glave su loše sačuvane, zatečene su pod kamenom, sačuvana je mandibula, ruke su uz tijelo, a noge su ravno položene. Skupina kostiju pronađena je na dijelu groba uz lubanju, a taj uzorak predstavlja ostatke najmanje četiriju osoba (dviju odraslih i dvoje djece) na temelju četiriju čeonih kostiju.

Grob 20 (uz. 54, 61) (T. IV, 2-3) konstrukcija je koja na sjevernoj strani koristi lice zida prislonjenog uz utvrdu, uz to ima i obložnice od nepravilnih ploča, a zidovi sa suprotne strane graniče s konstrukcijama GR 18, GR 19 i GR 22. Nađene su poremećene kosti više pokojnika. U uzorku 54 prisutne su najmanje četiri osobe (tri odrasle i jedno dijete) na temelju četiriju lijevih lopatica. Moguće je identificirati dijete (8 – 10 godina) kod kojeg su dokumen-

(**GR 27-29**) (Figs. 8-9), probably dug at the beginning of the Modern Period. An ossuary (**KO**, s. 66-67) (T. VII, 1) containing adult skeletons was also dug at the beginning of the Modern Period, in the lower room, next to the wall dividing central from the western part of the probe.

Two mortared graves are located in the higher room. **Grave 18** (uz. 50) (T. III, 4) is a stone-built tomb, mortared on the inner side. The deceased person (male, 40-45 years) is on the back, head bones are cracked and scattered, arms along the body, fingers on the pelvis (right hand) and along the pelvis (left hand), legs extended. Calibrated age is cal AD 778 – 891, median cal AD 845.

Grave 19 (uz. 52, 55) (T. IV, 1) is a stone-built tomb, mortared on the inner side. Grave orientation is NW-SE. Head bones are poorly preserved, found under the rock. Mandible is preserved, arms are along the body, and legs are laid straightly. A heap of bones was found in the grave area next to skull, and this sample

tirane sljedeće patološke promjene: blagi zarasli periostitis prisutan je na objema goljeničnim kostima. Na zubima su prisutni hipoplastični defekti. Drugi kostur je pripadao muškarcu (35 – 45 godina), a zabilježene su sljedeće patološke promjene: blagi degenerativni osteoartritis prisutan je u kukovima. Na zubima su prisutni hipoplastični defekti. Jedan uzorak (muškarac, 18 – 25 godina) bolje je sačuvan i većim je dijelom *in situ* (uz. 61). Blagi aktivni periostitis prisutan je na objema goljeničnim kostima. Orijentacija je JZo—SI. Određena je kalibrirana starost za uz. 61 cal AD 1306. – 1397., medijan cal AD 1346.

GR 21 (uz. 53, 56) (T. IV, 4; T. V, 1) formiran je tako što su za dulje stranice upotrijebljeni zidovi pored kojih su i obložnice s unutrašnje strane, a korišten je za višekratno ukopavanje, možda kao obiteljski grob. Orijentacija groba je JZo—SI. U 1. fazi (uz. 53) kosti su izmiješane i u dosta su lošem stanju. Bilo je moguće izdvojiti samo jednu osobu (žena, 30 – 40 godina, bez patoloških promjena) iz ovog uzorka. Ostale kosti pripadaju najmanje jednoj odrasloj osobi i jednom djetetu. 2. faza (uz. 56): glava nije sačuvana, rebra su u vrlo lošem raspadajućem stanju, ruke su djelomično sačuvane i preklopljene obložnicama, zdjelica je u vrlo lošem stanju, noge su bolje sačuvane (desna je opružena, a lijeva iskrivljena i ulazi pod zid). Ustanovljeno je da je riječ o kosturu muškarca (30 – 40 godina), s blagim zaraslim periostitisom prisutnim na desnoj goljeničnoj kosti. Određena je kalibrirana starost za uz. 56/F2 cal AD 1040. – 1152., medijan cal AD 1098.

Grob 22 (uz. 57) (T. V, 2) smješten je uza samu utvrdu, a građen je od priklesanog manjeg kamena. Orijentacija groba je SIo—JZ. Riječ je o dječjem (7 – 9 godina) grobu. Lubanja je oštećena, ruke su uz tijelo i savinute u laktu, prstići su na zdjelici koja je vrlo slabo sačuvana, rebra su u lošem stanju, a lijeva noga je djelomično sačuvana. Patološke promjene nisu prisutne. Određena je kalibrirana starost cal AD 1320. – 1408., medijan cal AD 1346.

Slično je formiran i **GR 23** (uz. 58) (T. V, 3)

contains the remains of at least four persons (two adults and two children) on the basis of four frontal bones.

Grave 20 (uz. 54, 61) (T. IV, 2-3) is a construction that uses the wall face leaning against the fort on the northern side. It is lined with irregular slabs, and walls on the opposite sides border with constructions **GR 18, GR 19** and **GR 22.** Disturbed bones of several skeletons were found. In sample 54 there were at least four skeletons (three adults and one child) on the basis of four left scapulae. It was possible to identify a child (8-10 years) with the following pathological changes: mild healed periostitis on both tibiae, hypoplastic defects on the teeth. The second skeleton belonged to a man (35-45 years), and following pathological changes were documented: mild degenerative osteoarthritis on the hips, and hypoplastic defects on the teeth. One sample (man, 18-25 years) is better preserved and mostly *in situ* (uz. 61). Mild active periostitis is present on both tibiae. Orientation is SW-NE. Calibrated age of sample 61 is AD 1306 – 1397, median cal AD 1346.

GR 21 (uz. 53, 56) (T. IV, 4; T. V, 1) consists of used walls lined with slabs on inner side that constitute longer sides. It was used for repeated burials, perhaps as a family tomb. Grave orientation is SW-NE. In the 1st phase (uz. 53) bones were mixed and they are poorly preserved. Only one individual could be singled out from this sample (female, 30-40 years, without pathological changes). The remaining bones belong to at least one adult and one subadult. The second phase (uz. 56): head was not preserved, ribs are in poor, decaying condition, legs are somewhat better preserved (right leg extended, left crooked, partly under the wall). It was determined it was a skeleton of a man (30-40 years), with mild healed periostitis present on right tibia. Calibrated age of sample 56/F2 is cal AD 1040 – 1152, median cal AD 1098.

Grave 22 (uz. 57) (T. V, 2) is located next to the fort. It was made of trimmed smaller

koji je smješten između zidova koji mu služe kao dulje stranice. Pored zidova također ima i obložnice s unutrašnje strane. Orijentacija groba je JZo—SI. Riječ je o kosturu odraslog muškarca. Kostur je opružen na leđima, lubanja nedostaje, sačuvana je desna ruka položena uz tijelo, noge su opružene. Patološke promjene nisu prisutne. Određena je kalibrirana starost cal AD 1026. – 1148., medijan cal AD 1097.

Grob 24 (uz. 59, 65) (T. V, 4; T. VI, 1) također je improvizacijski formiran, slično grobu 21. Orijentacija groba je JZo—SI. 1. faza (uz. 59) obuhvaća oštećene ljudske kosti među kojima su identificirane tri osobe: jedna mlađa ženska osoba (15 – 17 godina) kod koje je benigni kortikalni defekt prisutan na hvatištu mišića *teres maior* lijeve nadlaktične kosti i dvoje djece (12 – 15 i 7 – 10 godina) kod kojih nisu definirane patološke promjene. Iz 2. faze (uz. 65) sačuvane su kosti ruku i nogu koje su pripadale muškarcu (30 – 45 godina). Blagi zarasli periostitis prisutan je na lijevoj goljeničnoj i lisnoj kosti. Određena je kalibrirana starost za uzorak 65/F2 cal AD 1023. – 1147., medijan cal AD 1093.

Kosti nogu i dijelomično sačuvana zdjelica (**GR /**, uz. 60**)** (T. VI, 2) pronađeni su na zidu u kasnoantičkoj povišenoj prostoriji. Kostur odrasle osobe (45 – 60 godina) protezao se u smjeru SZ–JI, a njegov nesačuvani dio vjerojatno je presječen u prekopavanjima ovog dijela terena u bližoj prošlosti jer se nađeni dio kostura nalazio blizu površine sonde. Utvrđeno je da je velik dio groblja prekopavan prije zbog čega su neki grobovi oštećeni, a neki možda i potpuno uništeni. Ostali kosturi bolje su sačuvani jer su ukopani dublje. Patološke promjene uočene na kosturu odrasle osobe uključuju: litičke lezije prisutne su na zglobnim plohama obiju lopatica. Blagi degenerativni osteoartritis prisutan je u kukovima. Umjereni degenerativni osteoartritis prisutan je na dvama prsnim kralješcima.

Grob 25 poremećen je (kosti u lošem stanju, bez lubanje), a građen je od priklesanog kamena sa zemljom i mortom. **Grob 26** (uz. 64, stones. Grave orientation is NE-SW. It is a child's (7-9 years) grave. The skull is damaged, arms are along the body and bent in the elbow, fingers are on poorly preserved pelvis, ribs in poor condition, left leg partially preserved. There are no pathological changes. Calibrated age is cal AD 1320 – 1408, median cal AD 1346.

GR 23 (uz. 58) (T. V, 3) was formed in a similar way, located between the walls used as longer sides. Lining slabs are on the inner side, next to walls. Grave orientation is SW-NE. It is a skeleton of an adult male. Skeleton is extended on the back, the skull is missing, right arm is along the body, legs extended. There are no pathological changes. Calibrated age is cal AD 1026 – 1148, median cal AD 1097.

Grave 24 (uz. 59, 65) (T. V, 4; T. VI, 1) was also formed in an improvisation, like grave 21. Grave orientation is SW-NE. The first phase (s. 59) comprises damaged human bones among which three persons were identified: a younger female person (15-17 years) with a benign cortical defect on the attachment of the muscle *teres maior* of the left humerus, and two subadults (12-15 and 7-10 years) without pathological changes noticed. Of the second phase (s. 65) bones of arms and legs were preserved belonging to a man (30-45 years). Mild healed periostitis is present on the left tibia and fibula. Calibrated age of sample 65/F2 is cal AD 1023 – 1147, median cal AD 1093.

Leg bones and partially preserved pelvis (**GR /** uz. 60**)** (T. VI, 2) were found in the wall in late antique elevated room. Skeleton of an adult person (45 to 60 years) was in NW-SE direction, and its unpreserved part was probably cut in digs in this area in the recent past as the recovered part of the skeleton was found close to the surface of the probe. It was determined that a large part of the cemetery was dug over earlier whereby some graves were damaged, and some possibly completely destroyed. Other skeletons are better preserved since they were not so close to the surface. Pathological

107) (T. VI, 3-4) dijeli žbukani zid s GR 19. Orijentacija mu je Jo–S. Grob je dva puta korišten za ukopavanje, a moguće je da je i ovdje riječ o obiteljskoj grobnici. Na prvoj razini nađen je kostur muškarca (starijeg od 35 godina). Kosti ruku i nogu su opružene i u lošem stanju. Patološke promjene nisu prisutne. Ispod je nađen još jedan pokojnik (uz. 107) čiji spol nije odrediv (40 – 55 godina), a smješten je na samoj podnici kasnoantičke prostorije u opruženom položaju. Blagi degenerativni osteoartritis prisutan je u ramenima, kukovima i na 4. vratnom kralješku. Određena je kalibrirana starost uz. 107/F2 cal AD 1276. – 1297., medijan cal AD 1288.

Slijede grobovi (Sl. 8) iz prostorije koja je bliža crkvi i smještena je na nižoj visini. Najprije je utvrđeno postojanje kosturnice s pretežno odraslim kosturima (KO, uz. 66, 67) (T. VII, 1) koja je ukopana u novovjekovnu podnicu. Na vrhu kosturnice bilo je izmiješanih ljudskih i životinjskih kostiju, zatim su uslijedile samo ljudske kosti: kratke, plosnate i duge kosti, a lubanje su bile poslagane ispod njih. Kosti su posložene na ovaj način kako bi stale u raku, a prebačene su iz okolnih grobova da bi se dobio prostor za nove ukope. Moguće je da nisu svi pokojnici istovremeni. Ispod kosturnice pronađeno je dječje groblje. U uzorku kosturnice (uz. 66-67) prisutne su najmanje 23 osobe (20 odraslih i troje djece) na temelju 23 lijeve bedrene kosti i 23 desne nadlaktične kosti. U ovom uzorku bilo je moguće sigurno izdvojiti jednu osobu (muškarac, 45 – 55 godina) i to zato što je bila teško bolesna – bolovala je od tercijarnog (ili krajnjeg stadija) sifilisa koji je zahvatio gotovo sve kosti: u središnjem dijelu čeone kosti, ali i na objema tjemenim kostima prisutna su udubljenja te stanjene stjenke lubanje; porozitet na čeonoj kosti, gornjoj čeljusti i jagodičnim kostima; čitava unutrašnja strana nosnih kostiju, tvrdog nepca, maksilarnih sinusa u potpunosti je resorbirana i remodelirana uz prisutnost porozne, sklerotične kosti i lezija. Na inferiornom dijelu desne nosne kosti prisutna je lezija dimenzija 18 × 10 mm koja se

changes noticed on the skeleton of an adult include: lithic lesions on joint surfaces of both scapulae, mild degenerative osteoarthritis on the hips, and moderate degenerative osteoarthritis on two thoracic vertebrae.

Grave 25 is disturbed (bones in poor condition, skull missing), and it was made of trimmed stones with earth and mortar. **Grave 26** (uz. 64, 107) (T. VI, 3-4) shares mortared wall with GR 19. Its orientation is NW-SE. The grave was used twice for burials, and possibly this might be a family tomb. Male skeleton (over 35 years) was found at the first level. Poorly preserved bones of arms and legs are in an extended position. There are no pathological changes. Another skeleton (uz. 107) was found underneath whose sex could not be determined (40-55 years), located on the floor of the late antique room, in an extended position. Mild degenerative osteoarthritis is visible on the shoulders, hips and the 4th cervical vertebra. Calibrated age of sample 107/F2 is cal AD 1276 – 1297, median cal AD 1288.

The following group of graves (Fig. 8) includes examples from the room closest to the church, located at a lower altitude. Presence of ossuary was determined first, containing mostly adult skeletons (**KO**, uz. 66, 67) (T. VII, 1), dug into a postmedieval floor. Human and animal bones were mixed at the top of the ossuary, followed by only human bones: short, flat and long bones, and skulls were arranged next to them. Bones were arranged in this way to fit into the pit, and they were transferred from the surrounding graves to obtain space for new burials. It is possible that not all burials were synchronous. Children's cemetery was found under the ossuary. In the ossuary sample (uz. 66-67) at least 23 persons were identified (20 adults and three subadults) on the basis of 23 left femurs and 23 right humeri. One person could be singled out in this sample (man, 45-55 years), because he was gravely ill – suffering from tertiary (the last stage) syphilis that spread to almost all bones: in the central part

proširila na alveolarnu kost (Sl. 12). Na svim dugim kostima prisutno je zadebljanje kosti, jaki aktivni periostitis te *cloace* (otvori u kosti kroz koje istječe gnoj) (Sl. 13). Najteže su promjene evidentirane na lijevoj nadlaktičnoj i lakatnoj kosti, objema bedrenim kostima i lijevoj goljeničnoj kosti. Na ovom su kosturu evidentirane i ostale patološke promjene: blaga zarasla *cribra orbitalia* te blagi degenerativni osteoartritis u desnom laktu i koljenu. Tragovi sifilisa, samo u nešto blažem obliku, zamijećeni su na još najmanje šest osoba (na temelju patoloških promjena na šest lijevih goljeničnih kostiju). Jedan muškarac (35 – 55 godina) zanimljiv je po tome što ima jasno vidljive tragove griženja na unutrašnjoj (endokranijalnoj) strani zatiljne kosti lubanje odmah do *foramen magnuma*. Tragovi se očituju kao plitki, uski, paralelni utori koje je sasvim izvjesno ostavio neki glodavac. Određena je kalibrirana starost za uz. 67 (muškarac s tercijalnim sifilisom) cal AD 1491. – 1631., medijan cal AD 1565.

Grobovi 27 – 29 (T. VII, 2) imaju monolitne poklopnice, a može ih se smjestiti u novi

of the frontal bone, and on both parietal bones are cavities and thinned skull walls, porosity on the frontal bone, upper jaw and cheek bones; entire inner part of nasal bones, hard palate, maxillary sinuses is completely resorbed and remodeled, with presence of porous, sclerotic bone and lesions. On the inferior part of the right nasal bone is a lesion with dimensions of 18×10mm that spread to alveolar bone (Fig. 12). Bone thickening can be recognized on all other bones, as well as strong active periostitis and *cloacae* (openings in bone allowing drainage of purulent material) (Fig. 13). The most severe changes were documented on the left humerus and ulna, both femurs and left tibia. Some other pathological changes were recognized on this skeleton: mild healed *cribra orbitalia* and mild degenerative osteoarthritis on the right elbow and knee. Traces of syphilis, in somewhat milder form, were noticed on at least 6 persons (on the basis of pathological changes on six tibiae). One man (35-55 years) is particularly interesting because clearly visible traces of biting were recognized on the inner (endocranial) side of occipital bone of skull next to *foramen magnum*. These traces look like shallow, narrow, parallel grooves definitely left by some rodent. Calibrated age of sample 67 (man with tertiary syphilis) is cal AD 1491 – 1631, median cal AD 1565.

Graves 27-29 (T. VII, 2) have monolithic covers, and they can be dated to the Modern Period. They are located at the level of other tombstones in front of

Slika 12. *Remodeliran i proširen nosni otvor s lezijom na desnoj strani te perimortalna trauma na desnoj strani čeone kosti* (foto: V. Vyroubal).
Figure 12 *Remodeled and resorbed nasal bone with a lesion on the right side and perimortem trauma on the right side of the frontal bone* (photo: V. Vyroubal).

Slika 13. *Lijeva ulna zahvaćena upalnim procesom (jaki aktivni periostitis, zadebljanje kosti i dvije cloace)* (foto: V. Vyroubal).
Figure 13 *Left ulna with inflamatory process (strong active periostitis, bone thickening and two cloacae)* (photo: V. Vyroubal).

vijek. Nalaze se u razini ostalih nadgrobnih ploča pred novom crkvom (sagrađenom 1904. godine). Slične su izrade što upućuje na to da je riječ o groblju koje pripada približno istom periodu. Grobovi 27 – 29 bili su prekriveni novovjekovnom podnicom od bijelog vapna. Iznad te podnice dokumentirani su novovjekovni sloj i sterilni nasip s velikom količinom kamena i pijeska. Podno grobova, uz utvrdu, pronađena je manja klačara koja potječe iz novog vijeka, a vjerojatno je poslužila za pravljenje morta koji čini podnicu. **Grobovi 30** i **31** (T. VII, 2) sastavni su dio groblja koje se nalazi uokolo crkve, na istoj su razini kao i ostali grobovi pod kamenim monolitnim poklopnicama (GR 27 – 29). Prekrivao ih je smeđi nasipni sloj nastao u novom vijeku. Ti grobovi nisu otvarani.

Na zapadnom dijelu sonde 2 smješteni su i dječji grobovi (**GR 39 – 45**) (Sl. 8; T. X, 2-4; T. XI, 1-3), građeni od kamenih poklopnica i obložnica postavljenih na nož. Grobovi su probili žbukanu podnicu kasnoantičke prostorije,

the new church (built in 1904). They exhibit similar craftsmanship suggesting that the cemetery belongs roughly to the same period. Graves 27-29 were covered with postmedieval floor made of white mortar. Postmedieval layer and sterile fill with a large amount of stone and sand were documented above this floor. A smaller lime kiln dating to the Modern Period was found under the graves, next to the fort. Probably it was used for producing mortar for the floor. **Graves 30 and 31** (T. VII, 2) belong to the cemetery surrounding the church. They are at the same level as the remaning graves under the stone monolithic covers (GR 27-29). Postmedieval brown fill layer covered them. These graves have not been opened.

Children's graves were found in the western part of probe 2 (**GR 39-45**) (Fig. 8; T. X, 2-4; T. XI, 1-3), built of stone covers and lining slabs placed vertically. Graves penetrated mortared floor of the late antique room, and their base consists of small packed stones.

a dno im čini naboj od kamenčića. Skeleti su u opruženom položaju i dobro su sačuvani. Dijete (6 – 7 godina) iz **GR 39** nije imalo patološke promjene. Određena je kalibrirana starost (uz 92/GR 39) cal AD 1291. – 1386., medijan cal AD 1358. Kod djeteta (2,5 – 3,5 godine) iz **GR 40** zabilježen je blagi aktivni periostitis na goljeničnim kostima. Iste dobi je bilo dijete (2,5 – 3,5 godine) iz **GR 41**, kod kojeg je zabilježeno više patoloških promjena: jaka aktivna *cribra orbitalia* prisutna je u objema orbitama. Generalizirani aktivni periostitis prisutan je na lubanji i svim dugim kostima. S unutrašnje strane lubanje prisutne su digitalne impresije, aktivni periostitis te okrugle kavitacije (Sl. 14). Makroporozitet je prisutan na klinastim, jagodičnim kostima, gornjoj i donjoj čeljusti te na objema lopaticama. Metafize na distalnim bedrenim te proksimalnim goljeničnim kostima su proširene. Ovakav raspored i intenzitet patologija upućuje na skorbut. Na desnoj tjemenoj kosti prisutna je plitka depresijska fraktura promjera 7 mm. U **GR 42** ukopana je beba (0,5 – 1 godine) kod koje nisu zabilježene patološke promjene. Dijete (3,5 – 4,5 godine) iz **GR 43** ima na lijevoj tjemenoj kosti leziju dimenzija 3 × 2 × 2 mm, uzdignutog i zaobljenog ruba. Starije dijete (11 – 13 godina) bilo je pokopano u **GR 44**, kod kojeg su na zubima prisutni hipoplastični defekti. U **GR 45** bilo je pokopano manje dijete (3 do 4 godine). Uočene su sljedeće patološke promjene: jaka aktivna *cribra orbitalia* prisutna je u objema orbitama. Generalizirani aktivni periostitis prisutan je na lubanji i na goljeničnim kostima. Porozitet je prisutan na jagodičnim kostima. Ovakav raspored i intenzitet patologija upućuju na skorbut.

Pri iskopavanju dječjeg groblja utvrđeno je i postojanje dječje kosturnice (**KO**, uz. 108) (T. XI, 4), ukopane ispred peći i pod njom. Dio strukture (moguće je da je riječ o antičkoj krušnoj peći) uništen je radi ukopavanja dječje kosturnice i groba 42. Dio kosturnice ostao je neistražen u profilu peći. U uzorku je prisutno najmanje devetero djece na temelju devet

Skeletons are in an extended position and well preserved. The child's skeleton (6-7 years) from **GR 39** had no pathological changes. Calibrated age of sample 92 **(GR 39)** is cal AD 1291 – 1386, median cal AD 1358. The child (2.5-3.5 years) from **GR 40** had mild active periostitis on the tibiae. The child from **GR 41** was the same age (2.5-3.5 years), on whose skeleton following pathological changes were recorded: strong active *cribra orbitalia* on both orbits; generalized active periostitis on the skull and all other bones; digital impressions, active periostitis and round cavitations on the inner side of the skull (Fig. 14). Macroporosity is present on the sphenoid, cheek bones, upper and lower jaw and both scapulae. Metaphyses on distal femurs and proximal tibiae are expanded. Such distribution and intensity of pathologies suggest scurvy. A shallow depressed fracture with diameter of 7mm is visible on the right parietal bone. A baby (0.5-1 year) was buried in **GR 42**. There were no pathological changes on the infant skeleton. Child (3.5 to 4.5 years) from **GR 43** has a lesion with dimensions of 3×2×2mm with raised and rounded edge, on the left parietal bone. Older child (11 to 13 years) was buried in **GR 44**. Hypoplastic defects were noticed on the teeth. A smaller child (3 to 4 years) was buried in **GR 45**. Following pathological changes were noticed: strong active *cribra orbitalia* on both orbits, generalized active periostitis on the skull and tibiae; porosity on the cheek bones. Such distribution and intensity of pathologies suggest scurvy.

A children's ossuary (**KO**, uz. 108) (T. XI, 4) was found during the excavation of the children's cemetery. It was buried in front of the oven and underneath it. Part of the structure (possibly it was an ancient bread oven) was destroyed when children's ossuary and grave 42 were dug in. Part of the ossuary remained unexplored in the oven profile. At least 9 children were identified in the sample on the basis of 9 right femurs. All children died from their birth to the age of 1.5.

Slika 14. *Digitalne impresije, aktivni periostitis i okrugle kavitacije promjera 3-4 mm na unutrašnjoj strani lubanje* (foto: V. Vyroubal).
Figure 14 *Digital impressions, active periostitis and round cavitations (3-4mm in diametar) on the inner side of the skull* (photo: V. Vyroubal).

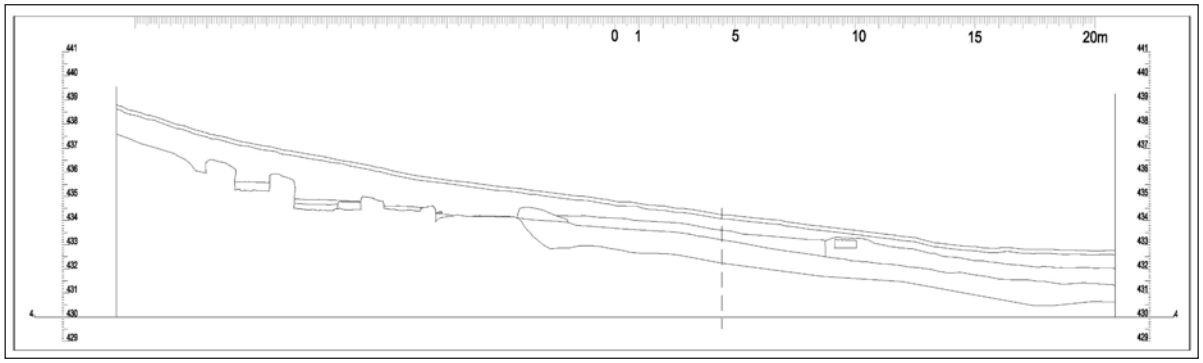
desnih bedrenih kostiju. Sva su djeca umrla u rasponu između rođenja i 1,5 godine života.

Sonda 3 (Tlocrti 1-3; Presjek 4) nalazi se duž zapadne strane utvrde. Prekrivali su je ranonovovjekovni i kasnosrednjovjekovni nasuti slojevi. Na južnom dijelu sonde ustanovljeno je više slojeva dok strukture nisu pronađene, osim recentne međe koja je uklonjena u istraživanju. Na sjevernom dijelu ustanovljeno je da su se tijekom potresa urušile kamene gromade, od kojih su neke upotrijebljene kao pregrade „prostorija“ uz peć (Sl. 15) koja je vjerojatno izgrađena u kasnom srednjom vijeku. Peć (Sl. 15) je većih dimenzija (2,80 x 2 m), zidana je od priklesanog krupnijeg i sitnijeg kamena, cigle i crepova u sloju vapnenog morta. Iznutra je polukružna, izvana pravokutna, a unutar nje nalazi se pregradni zid. Funkcija peći nije sasvim utvrđena, a moguće je da je riječ o krušnoj peći. Uz peć je pronađena drozga među kojom je bilo i staklaste drozge što svjedoči o

Probe 3 (Ground plans 1-3; Cross-section 4) is located along the western side of the fort. It was covered with early postmedieval and late medieval fill layers. Several layers were found in the southern part of the probe. There were no structures, except for a recent one that was removed in the excavation. Stone boulders collapsed in the earthquake in the northern part, and some of them were used as partitions of “rooms” next to the oven (Fig. 15) that was probably built in the Late Middle Ages. Oven (Fig. 15) is rather big (2.80x2 m), built of trimmed stone of different sizes, bricks and tiles in a layer of lime mortar. It is semicircular on the inner side, and rectangular on the outside, with a partition wall inside. Function of the oven has not been fully defined, possibly it was a bread oven. Slag was found near the oven, including glass slag testifying to high temperatures reached. This was confirmed by a partially preserved iron melting pot (T. XXV, 7) that could sustain high temperatures. Raw

postizanju vrlo visokih temperatura. To je potvrdio i nalaz djelomično sačuvane željezne talioničke posude (T. XXV, 7) koja je mogla podnijeti visoke temperature. Sirovine za taljenje nabavljali su iz zaleđa, a mogli su topiti željezo, broncu, olovo. Slojevi ispod peći i ostatka tog kompleksa nisu istraženi radi prezentacije te cijeline kao kasnosrednjovjekovne zone u sklo-

material for melting was procured from the hinterland, and they could melt iron, bronze, lead. Layers under the oven and remains of the complex were not excavated due to presentation of this whole as a late medieval zone within an archaeological park. The exacavation was stopped at the same level in the southern part of the probe. Fragments of late medieval / ear-



Presjek 4. *Uzdužni presjek kroz sondu 3 (S-J)* (izradile: N. Topić, N. Drašković Vlašić, Omega engineering d.o.o. Dubrovnik).
Cross-Section 4 *Longitudinal cross-section through probe 3 (N-S)* (made by: N. Topić, N. Drašković Vlašić, Omega engineering d.o.o. Dubrovnik).

Slika 15. *Peć u sondi 3, 2013. (JZ-SI)* (foto: N. Topić, N. Drašković Vlašić, Omega engineering d.o.o. Dubrovnik).
Figure 15 *Fireplace in probe 3, 2013 (SW-NE)* (photo: N. Topić, N. Drašković Vlašić, Omega engineering d.o.o. Dubrovnik).

pu arheološkog parka. Na južnom dijelu sonde također je zaustavljeno istraživanje na istoj razini. U istraženim slojevima su nađeni ulomci kasnosrednjovjekovog/ranonovovjekovnog stakla, keramike, metala.[40]

Sonda 4 (Sl. 16; Tlocrti 1-3; Presjek 5) obuhvaća sjeverno područje uz utvrdu. Na tom dijelu je pronađen grob pri građevinskim radovima, koji su se izvodili radi izgradnje septičke jame. Uklonjeni su novovjekovni i kasnosrednjovjekovni slojevi ispod kojih su uslijedili slojevi koji pripadaju ranijem srednjovjekovnom ili kasnoantičkom periodu. U tim slojevima pronađeno je mnoštvo različitih nalaza (keramike, tegula, metala, stakla, životinjskih kostiju). U kasnosrednjovjekovnom sloju također je nađeno dosta kovačke drozge (T. XXV, 9) koja je bacana sa sjevernog dijela utvrde gdje se nalazila kovačnica.

Po sredini sonde nalazi se gromada upala s prirodne stijene utvrde u potresu, a proteže se velikim dijelom sonde. Istočno od nje ustanovljen je sloj s dosta tegula, a ispod njega nasip s manjom količinom sličnih nalaza. U razini sloja s tegulama pronađeni su grobovi (**GR 11, 13, 15**) za čije konstrukcije su korištene stijene utvrde te manje i veće neobrađeno kamenje, a leže na nasipnom sloju. U zapunama grobova pronađeni su ulomci keramike, tegula, stakla. Jedini grob u kojem je nađen prilog (korodiran novčić) jest GR 11. ^{14}C analizom grobovi su datirani u 6. stoljeće.

GR 11 (T. II, 2) konstrukcija je formirana od poluobrađenog kamena bez vezivnog sredstva. Korištena je kao trojni grob za dvojicu muškaraca i dijete. Kosturi su zatečeni poremećeni. Južni dio groba omeđuje prirodna stijena utvrde, na sjevernoj strani je kamena gromada velikih dimenzija, zapadno je manja gromada i manje kamenje, a istočnu granicu groba omeđuje veće kamenje. Uz. 27 kostur je muškarca (20 – 30 godina). Blaga zarasla ektokranijalna poroznost prisutna je na svodu lubanje. Litička

[40] N. TOPIĆ, N. DRAŠKOVIĆ VLAŠIĆ, 2015, 7–9, Fig. 4.

ly postmedieval glass, pottery and metal were found in the excavated layers.[40]

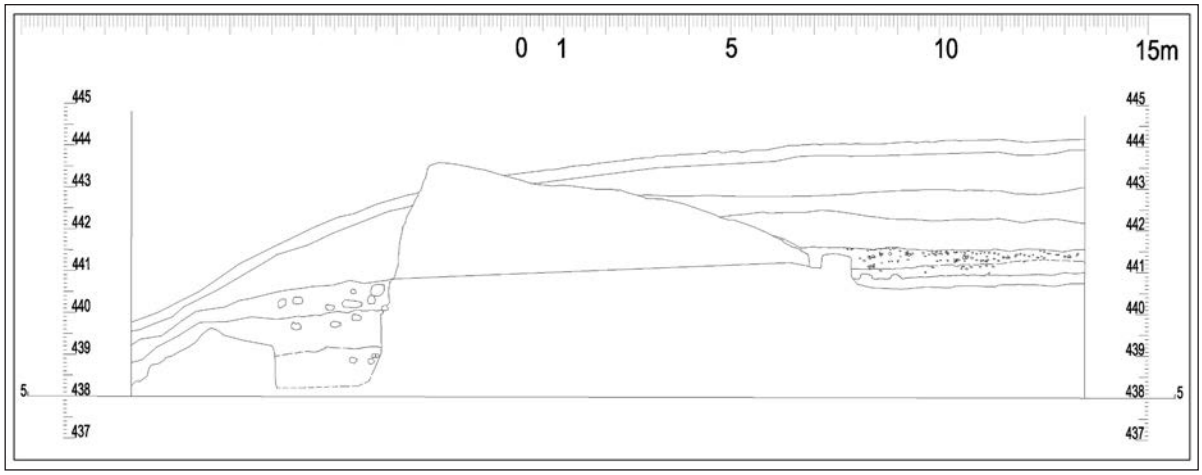
Probe 4 (Fig. 16; Ground plans 1-3; Cross-section 5) encompassed northern area near the fort. A grave was found here during construction works on a sewer. Late medieval and postmedieval layers were removed revealing layers dating to the earlier medieval or late antique period. Abundance of diverse finds (pottery, tegulae, metal, glass, animal bones) were recovered from these layers. A lot of smithing slag (T. XXV, 9) was found in the late medieval layer that was thrown from the northern part of the fort where a forge was situated.

In the middle of the probe is a boulder fallen from the natural rock of the fort in the earthquake. A layer with a lot of tegulae was found east of the boulder. Under it was a fill with small amount of similar finds. At the level of the layer with tegulae, graves (**GR 11, 13, 15**) were found whose constructions consisted of fort rocks and undressed stones of different sizes. They lay on the fill layer. Fragments of pottery, tegulae and glass were found in grave fills. The only grave with grave goods (corroded coin) was **GR 11**. ^{14}C analysis dated the graves to the 6th century.

GR 11 (T. II, 2) is a construction formed of semi-dressed stones without bonding agent. It was used as a triple grave for two men and a child. The skeletons were disturbed. Southern side of the grave is bordered by the natural rock of the fort, on the northern side is a big stone boulder while smaller boulder and smaller stones are on the western side. Large stones border the eastern side of the grave. Sample 27 is a male skeleton (20-30 years). Mild healed ectocranial porosity is present on the cranium. Star-shaped lithic lesion in irregular form is present on the inner side of the left nasal bone. Sample 29 is a male skeleton (20-30 years), without pathological changes.

[40] N. TOPIĆ, N. DRAŠKOVIĆ VLAŠIĆ, 2015, 7-9, Fig. 4.

Slika 16. *Pogled na sondu 4; temelj južnog zida moguće obrambene kule, 2013.* (foto: N. Topić, Omega engineering d.o.o. Dubrovnik).
Figure 16 *View of probe 4; the foundation of the southern wall of possible defensive tower, 2013* (photo: N. Topić, Omega engineering d.o.o. Dubrovnik).



Presjek 5. *Uzdužni presjek kroz sondu 4 (I-Z)* (izradile: N. Topić, N. Drašković Vlašić, Omega engineering d.o.o. Dubrovnik).
Cross-Section 5 *Longitudinal cross-section through probe 4 (E-W)* (made by: N. Topić, N. Drašković Vlašić, Omega engineering d.o.o. Dubrovnikk).

lezija zvjezdastog i nepravilnog oblika prisutna je na unutrašnjoj strani lijeve nosne kosti. Uz. 29 kostur je muškarca (20 – 30 godina). Patološke promjene nisu prisutne. Orijentacija groba je Jo–S. U ovom grobu nađen je novac kralja Baleja (T. XXVI, 2). No, određena je kaGrave orientation is SN. Coin of king Ballaios was found in this grave (T. XXVI, 2). However calibrated age is cal AD 552 – 599, median cal AD 576. Sample 31 is a subadult (4.5-5.5 years), without pathological changes.

GR 13 (T. II, 4) is a construction consist-

librirana starost cal AD 552. – 599., medijan cal AD 576. Uz. 31 je dijete (4,5 – 5,5 godina). Patološke promjene nisu prisutne.

GR 13 (T. II, 4) konstrukcija je koja se sastoji od neobrađenog kamena bez vezivnog sredstva, a s južne strane granicu groba čini prirodna stijena utvrde. Grob ima dvije zapune: prvu čini sivkastosmeđa zemlja puna tegula, sitnijeg i krupnijeg kamena, a druga je tamnosmeđi zemljani sloj pun gara u kojem su nađene sitne nagorjele kosti (uz. 33). Dno je formirano od nabijene zemlje i kamenčića. Pronađene su noge *in situ*, (uz. 37), a pokojnik (muškarac, 25 – 40 godina) bio je presječen pregradnjom grobne konstrukcije. Kod pokojnika pokopanog u ovom grobu uočen je niz patoloških promjena: blagi zarasli periostitis prisutan je na desnoj goljeničnoj kosti i lijevoj lisnoj kosti. Na objema distalnim goljeničnim kostima prisutne su „fasete savinutog zgloba". Ove promjene na distalnim goljeničnim kostima kostura nastaju zbog kontakta dvije kosti u položaju hiperdorzifleksije (kad je jedna kost previše savinuta prema gore), a veže se uz markere koji indiciraju da je osoba učestalo čučala.[41] Određena je kalibrirana starost cal AD 543. – 594., medijan cal AD 564. GR 13 u produžetku je s GR 15 tvorio cjelinu prije nego što je grob pregrađen i izbačen gornji dio kostura, da bi na to mjesto bilo pokopano dijete.

Južnu stranu **GR 15** (T. III, 1) čini stijena utvrde, a ostale tri su od poslaganog krupnijeg kamenja. Grob je vjerojatno u kasnijoj fazi prenamjenjen u dječji, čime je poremećen/presječen prethodni ukop (GR 13, uz. 37). U grobu je nađena lubanja malog djeteta (2 – 3 godine) i sitnije kosti. Patološke promjene nisu prisutne. Ispod tih ostataka nisu nađene druge kosti koje bi pripadale ranijem pokojniku iz GR 13 (uz. 37). Kamenje koje čini konstrukciju sa zapadne strane ista je pregrada kao i za GR 13. Stratigrafija ispod grobova nije u potpunosti istražena. Istočno od grobova su slojevi s dosta kamena i ulomaka tegula, žbuke i pijeska, a ising of undressed stone without bonding agent. Natural rock of the fort constitutes the southern border of the grave. The grave has two fills; the first one consists of greyish-brown soil full of tegulae, small and bigger stones; and the other one is dark brown layer full of soot that contained tiny burnt bones (uz. 33). Base is made of rammed earth and small stones. Legs were found *in situ* (uz. 37), and the deceased person (male, 25-40 years) was cut in an adaptation of the grave construction. A number of pathological changes were noticed on this skeleton: mild healed periostitis present on the right tibia and left fibula. "Squatting facets" are present on both distal tibiae. These changes on the distal tibiae happen because of the contact of two bones in the position of hyperdorsiflexion (when one bone is bent upwards too strongly), and they are associated with markers indicating that the person often squated.[41] Calibrated age is cal AD 543 – 594, median cal AD 564.

GR 13 was joined with **GR 15** before it was adapted when upper part of the skeleton was thrown out, to bury a child there.

Southern side of **GR 15** (T. III, 1) consists of the rock of the fort, and the remaining three sides were built of arranged larger stones. In the last phase the grave was probably reused as a child's grave whereby earlier burial was disturbed/cut (GR 13, uz. 37). Skull of a little child (2-3 years) and small bones were found in the grave. Pathological changes were not noticed. Bones that might have belonged to the earlier skeleton from GR 13 (uz. 37) were not found under these remains. Stones that constitute the construction on the western side are the same partition as on GR 13. Stratigraphy under the graves was not fully explored. East of the graves are layers with a lot of stones and tegulae pieces, mortar and sand, and underneath them is a layer with large and smaller stones and stone boulders.

Late antiqe wall was found at the foot of a

[41] E.-L. BOULLE, 1998, 50–56.

[41] E.-L. BOULLE, 1998, 50-56.

pod njih sloj s krupnijim i sitnijim kamenom te kamenim gromadama.

U podnožju velike urušene gromade pronađen je kasnoantički zid koji je nalijepljen na nju, što upućuje na to da se potres u kojem se gromada urušila morao zbiti u kasnoj antici ili nešto prije. Zid se proteže u smjeru I–Z, a činio je južni zid neke prostorije (moguće obrambene kule) kojoj su definirani JZ i JI ugao. Ostatak te prostorije ostao je nedefiniran jer gabariti sonde staju na tom dijelu. Zid se u vidu luka nastavlja na SZ uglu i veže se na utvrdu. Na tom dijelu iznad njega vjerojatno je bila izgrađena drvena konstrukcija/skela koja se, osim na zid i nasip, oslanjala na kružne utore izvedene na zapadnom dijelu gromade. Dakle, osim današnjeg ulaza na JZ dijelu koji je vjerojatno nastao u srednjem vijeku, postojao je raniji ulaz koji je nastao u kasnoj antici na sjevernoj strani utvrde.[42] To se podudara s kasnijim navodom da je utvrda Sokol bila u dvojnom vlasništvu u srednjem vijeku,[43] pa je za očekivati i da je imala dva ulaza.

Zapadno od velike urušene stijene, nakon uklanjanja nasipa, pojavio se sloj tamnije smeđe zemlje pomiješane sa sitnijim i krupnijim kamenom. Taj sloj zasuo je manje gromade, a također i sloj sivkastosmeđe zemlje pune sitnijeg i krupnijeg kamena. Ispod tog sloja ustanovljen je crni masni sloj s velikim kamenim gromadama za koje možemo pretpostaviti da su posljedica nekog ranijeg potresa koji se mogao zbiti na prijelazu era ili početkom rimskog razdoblja. Taj sloj oskudan je nalazima, ali nađeno je nekoliko ulomaka amfora (T. XVII, 2-4).

Analiza radioaktivnim ugljikom ^{14}C kosturnih ostataka rezultirala je vrlo širokim vremenskim rasponom (5. – 19. st.) koji upućuje na kontinuitet pokapanja uz utvrdu od kasne antike do novog vijeka. Grobni prilozi su izostali, osim u GR 11 uza sjevernu stranu utvrde, tako

[42] N. TOPIĆ et. al., 2014.
[43] L. BERITIĆ, 1966, 105–106.

collapsed boulder, leaning against it, suggesting that the earthquake when it collapsed had to happen in Late Antiquity or somewhat earlier. The wall spreads in EW direction, and it constituted the southern wall of a certain room (possibly a defensive tower) whose two corners (SW and SE) had been defined. The rest of the room remained undefined since the probe did not extend any further. The wall continues in shape of an arch on NW corner and connects with the fort. In this part probably a wooden construction / ferry was built over it, that rested not only on the wall and fill, but also on round grooves made on the western part of the boulder. Except for the present-day entrance in the SW part that was probably made in the Middle Ages, there was an earlier entrance on the northern side of the fort dating to Late Antiquity.[42] This corresponds to the later claim that Fort Sokol was in dual ownership in the Middle Ages,[43] so it is not surprising that it had two entrances.

A layer of dark brown earth mixed with stones of different sizes emerged after removing the fill, west of the big collapsed stone. This layer covered smaller boulders, as well as the layer of greyish brown soil full of stones of different sizes. Under this layer was a black greasy layer with big stone boulders that were probably a consequence of some earlier earthquake that might have happened at the transition of eras or at the beginning of the Roman period. Finds are scarce in this layer, but there were several fragments of amphorae (T. XVII, 2-4).

Radiocarbon analysis of skeletal remains resulted in a very broad chronological span (5th-19th cent.) suggesting continuity of burials next to the fort from Late Antiquity to the Modern Period. Grave goods were missing, except in GR 11 next to the northern side of the fort, so that precise dating on the basis of grave

[42] N. TOPIĆ et. al., 2014.
[43] L. BERITIĆ, 1966, 105-106.

da na temelju arheoloških nalaza nije bilo moguće precizno odrediti datum grobova. Grobovi su formirani na različite načine: u kombinaciji kamena i tegula (forma krova na dvije vode), rijetko kao zidane konstrukcije, većinom s kamenim obložnicama, poluobrađenim i neobrađenim kamenom uz korištenje utvrde za zatvaranje jedne strane groba, te u običnim zemljanim rakama kao pojedinačni ukopi. Kosturnice su ukopane u raku i/ili uz neku strukturu. Osim grobova s pojedinačnim ukopima dokumentirani su i grobovi koji su korišteni kao obiteljske grobnice s višestrukim ukopima, tijekom kasnoantičkog i srednjovjekovnog razdoblja. Grobovi su ponajviše formirani na način da je najprije polagan pokojnik, a zatim je izrađivan grob. Neki od grobova s obložnicama imali su dno od kamenih ploča (zreli srednji vijek) dok je većina bila položena na zemlju ili dno od nabijene zemlje, kamenčića i cigle (kasnoantički/ranosrednjovjekovni, kasnosrednjovjekovni). Pokojnici su u obližnjoj Župi dubrovačkoj (uz. crkvu sv. Đurđa) također u srednjem vijeku polagani u zemljane rake i oblagani neobrađenim kamenim pločama bez veziva, ali za razliku od sokolskih nalaza nisu imali dna od kamenih ploča ili kamenčića.[44] Pokopani su na leđima, a orijentirani su najviše na zapad i sjever s manjim odstupanjima, što je uobičajeno i za ostala srednjovjekovna konavoska groblja[45] i župsko groblje uz crkvu sv. Đurđa.[46] Grobovi su vjerojatno imali vanjske oznake jer su neki bili višestruko korišteni, pri čemu su sačuvani raniji ukopi.

OPĆE ANTROPOLOŠKE ZNAČAJKE GROBLJA

Razvoj modernih antropoloških, odnosno bioarheoloških metoda u svijetu započeo je sedamdesetih godina prošlog stoljeća. Tada se

[44] M. PERKIĆ, 2008, 72–73, sl. 6.
[45] Z. ŽERAVICA, 2004, 302.
[46] M. PERKIĆ, 1998, 76–80.

goods was not possible. Graves were formed in a number of ways: in combination of stones and tegulae (double-pitched roof form), rarely as stone-built constructions, mostly with lining slabs, semi-dressed and undressed stone, using the fort for closing one side of the grave, or in simple earthen pits as individual burials. Ossuaries were dug into the pit and/or next to a certain structure. Except for graves with individual burials, there were also graves used as family tombs with multiple burials, in Late Antiquity and the Middle Ages. Graves were usually formed by laying the deceased person first, and constructing the grave subsequently. Some graves with lining slabs had a base of stone slabs (High Middle Ages) while the majority were laid out on earth or base of rammed earth, stones and bricks (late antique / early medieval, late medieval). In the Middle Ages, the deceased persons in nearby Župa dubrovačka (next to the church of St George) were also laid in earthen pits and lined with undressed stone slabs without a binder, but as opposed to the finds from Sokol they did not have bases of stone slabs or small stones.[44] They were buried supine, directed mostly to the west and north with minor deviations, which is common for the rest of the medieval cemeteries in Konavle,[45] including the parish cemetery near the church of St George.[46] Graves probably had outer markers as some were used repeatedly, preserving thereby earlier burials.

GENERAL ANTHROPOLOGICAL CHARACTERISTICS OF THE CEMETERY

The development of modern anthropological, or bioarchaeological methods in the world started in the 1970s. That is when reliable and

[44] M. PERKIĆ, 2008, 72-73, fig. 6.
[45] Z. ŽERAVICA, 2004, 302.
[46] M. PERKIĆ, 1998, 76-80.

razvijaju i prihvaćaju pouzdane i standardne metode za određivanje spola i doživljene starosti, povećava se dostupnost velikih, dobro dokumentiranih osteoloških zbirki s arheoloških nalazišta, razvijaju se multivarijatne statističke metode za pouzdano i objektivno određivanje spola koje se potom masovno primjenjuju u bioarheološkim analizama.

Sve do polovice 20. stoljeća biološka antropologija je pružala samo dodatne materijale arheološkim istraživanjima u vidu anatomsko orijentiranih opisa osteološkog materijala i iščitavanja eventualnih patoloških stanja. U drugoj polovici 20. stoljeća uvođenjem analitičkih metoda istraživanja razvijaju se i novi pristupi i teorije koje se temelje na proučavanju utjecaja bioloških, sociokulturnih i klimatskih faktora na čovjeka. Osteološki materijal katkada nam daje odgovore na pitanja o najčešćim bolestima, fiziološkom stresu, povredama, fizičkim aktivnostima i uzrocima smrti. S obzirom na to da osteološki materijal sam za sebe ne dopušta preciznije pretpostavke o životu arheoloških populacija, antropološku je analizu potrebno dopuniti s podatcima iz arhivskih izvora, dostupne literature te arheološkog konteksta.

Iako je ovo istraživanje ograničeno, ono treba poslužiti kao predložak za šira istraživanja. Usporedbom velikog broja različitih izvora moguće je ponuditi odgovore na kompleksnija pitanja, poput zdravlja arheoloških populacija i razlika u dostupnosti medicinske skrbi s obzirom na društveni status. U konačnici, može nam ponuditi odgovor o ograničenjima ovakvih istraživanja i o mogućnostima daljnjeg razumijevanja (inter)subjektivnosti.

Rezultati antropološke analize su pokazali da je u osteološkom uzorku s utvrde Sokol riječ o ukupno 92 osobe. Za njih 49 bilo je moguće odrediti spol i starost (20 muškaraca, 10 žena i 19 djece). Od ostatka uzorka izdvojeno je 16 djece te 27 odraslih osoba kod kojih se u većini slučajeva starost nije mogla odrediti. Na temelju rezultata ^{14}C datacije ukapanje na ovom lokalitetu trajalo je dugi niz stolje-

standard methods for determining sex and age were developed and accepted; availability of big, well documented osteological collections from the archaeological sites was growing; multivariate statististical methods for reliable and objective sex determination were developed and then massively used in bioarchaeological analyses.

Until the mid-20th century biological anthropology offered only additional information to the archaeological research in form of anatomically oriented descriptions of osteological material and recognition of possible pathological conditions. In the second half of the 20th century new analytical methods of research were introduced leading to development of new approaches and theories based on the influence of biological, sociocultural and climatic factors on humans. Osteological material sometimes offers answers to questions about the most common diseases, physiological stress, injuries, physical activities and causes of death. Since osteological material in itself does not allow more precise assumptions about life of archaeological populations, anthropological analysis should be complemented with data from archival sources, available literature and archaeological context.

Although this research is limited in scope, it should be used as a model for more extensive research. Comparison of a number of different sources will enable providing answers to more complex questions, such as the health of archaeological populations and differences in access to healthcare with regard to social status. Finally it can clarify limitations of this kind of research and possibilities of further understanding of (inter)subjectivity.

The results of the anthropological anaylsis indicate that there were 92 persons in the osteological sample from Fort Sokol. Age and sex could be determined for 49 individuals (20 men, 10 women and 19 children). The rest of the sample included 16 subadults and 27 adults whose age could not be determined. The radiocarbon dating results suggest that the site

ća. Upravo zbog toga teško je dati zaključke o ljudima koji su pokopani na ovom mjestu jer razni ekonomski, socijalni, politički, ekološki i drugi čimbenici djeluju na kvalitetu života u određenom razdoblju. Međutim, datiranje velikog broja grobova utjecalo je na mogućnost interpretacije određenih rezultata. Najviše je kostura (16) datirano u kasnoantičko i ranosrednjovjekovno razdoblje (5. do 7. stoljeće). Po demografskoj distribuciji su podjednako raspoređeni: prisutno je šest muškaraca, pet žena i petero djece. Zanimljivo je da žene prosječno žive cca 10 godina dulje od muškaraca (37,0 naprama 27,3 godine) što je dakako utjecalo na patologije koje su ovisne o starijoj životnoj dobi (degenerativne promjene poput osteoartritisa te bolesti zuba). Tako npr. žene imaju učestalost karijesa 22,6 %, dok muškarci samo 5,1 % što je i statistički značajno (χ^2=9,564; P=0,001) i učestalost osteoartritisa na kralješcima 14,8 % dok kod muškaraca on uopće nije evidentiran. Unutar čitavog kasnoantičkog i ranosrednjovjekovnog uzorka učestalosti pokazatelja subadultnog stresa (*cribrae orbitaliae* i nespecifičnog periostitisa) nisu posebno visoke (16,7 % i 28,6 %), dok učestalosti linearne hipoplazije zuba jesu (60 %). U ovom su uzorku na trima kosturima prisutne frakture. Muškarac iz groba 35 (uz. 87) ima frakturu lijeve lopatice, žena iz groba 16 ima frakture na dvjema falangama stopala koje su rezultirale koštanom ankilozom, dok žena iz groba 32 ima frakture na dvama rebrima, na distalnoj desnoj palčanoj kosti te na srednjoj trećini lijeve lakatne kosti. Od svih spomenutih fraktura jedino kod zadnje može biti riječ o posljedici namjernog nasilja, odnosno obrambenoj frakturi. Međutim, namjerno nasilje smatra se sigurnim u slučajevima kada su traume na lakatnim kostima praćene drugim pokazateljima namjernog nasilja, odnosno perimortalnim traumama (nastale u/oko trenutka smrti) ili visokom učestalošću trauma glave[47]

was used for burials for centuries. Therefore it is difficult to offer conclusions about people buried here because various economic, social, politic, ecological and other factors affect life quality in a certain period. However dating of a big number of graves facilitated possibilities of interpretation of certain results. Most skeletons (16) were dated to late antique and early medieval period (5th to 7th centuries). As for the demographic distribution, it is rather equal with six men, five women and five children. It is interesting that women lived ca. 10 years longer than men (37.0 to 27.3 years) which affected pathologies related to older age (degenerative changes such as osteoarthritis and dental diseases). For instance women had caries incidence of 22.6% and men only 5.1%, which is statistically significant (χ^2=9.564; P=0.001), and incidence of osteoarthritis on vertebrae 14.8% while on men it was not documented at all. Incidence of indicators of subadult stress (*cribra orbitailia* and non-specific periostitis) is not particularly high (16,7% and 28,6%) unlike the incidence of linear enamel hypoplasia (60%). Three skeletons had fractures in this sample. Man from grave 35 (uz. 87) had a fracture of left scapula, woman from grave 16 had fractures on two feet phalanges resulting in bony ankylosis, while woman from grave 32 had fractures on two ribs, on right distal thumb bone and in the middle third of the left ulna. Only the last of these fractures can be a consequence of deliberate violence (defensive fracture). However deliberate violence is considered as a definite cause when traumas on ulnae are accompanied by other indicators of deliberate violence, i.e. perimortem traumas (occurring at or near the time of death) or high incidence of head traumas,[47] that are not present in this case. We need to mention osteomyelitis in the child 3 to 5 years old from grave 33. This disease is rarely found on osteological material, it is a bone infection that

[47] M. O. SMITH, 1996, 84–91; M. A. JUDD, C. A. ROBERTS, 1999, 229–243.

[47] M. O. SMITH, 1996, 84-91; M. A. JUDD, C. A. ROBERTS, 1999, 229-243.

što u ovom slučaju nije prisutno. Potrebno je spomenuti primjer osteomijelitisa na djetetu starosti između 3 i 5 godina iz groba 33. Iako je ova bolest relativno rijetko viđena na osteološkom materijalu, riječ je o infekciji kosti koja može biti akutna ili kronična. Bakterije prodiru (npr. iz rane) u krv i uzrokuju upalu koštane moždine koja rezultira obilnim gnojem koji dovodi do vretenastog zadebljanja kosti i u nekim slučajevima koštanih otvora kroz koje gnoj izlazi. Obično je zahvaćen dio kosti pokraj zgloba. Osteomijelitis je najčešći kod djece i javlja se više kod dječaka nego djevojčica.[48] Ovo je razdoblje, koje većinom pripada Justinijanovu dobu, u povijesnom pregledu okarakterizirano izmjenom stanovništva te strateškom važnošću utvrde. Međutim arheolozi zaključuju da nalazište nije imalo samo vojni karakter što dokazuju grobovi ne samo muškaraca nego i žena i djece. Moguće je da su obaveze muškaraca povezane s vojnom službom imale utjecaj na nižu prosječnu doživljenu starost, iako ovo treba reći s oprezom zbog iznimno malog uzorka.

U razdoblje ranog srednjeg vijeka (9. do 11. stoljeće) datirano je ukupno osam kostura (sedam muških i jedan ženski). Za razliku od kasnoantičkog i ranosrednjovjekovnog uzorka, ovdje omjer između spolova nije ravnomjerno raspoređen i u potpunosti nedostaju dječji grobovi. Ovdje muškarci (46 godina) u prosjeku žive mnogo dulje od muškaraca iz kasne antike i ranog srednjeg vijeka. Budući da je riječ o samo jednoj ženi, usporedba sa ženama iz kasnoantičkog perioda nije adekvatna. Učestalosti pokazatelja subadultnog stresa su više (*cribra orbitalia* 33,3 %, nespecifični periostitis 57,1 %, linerana hipoplazija 66,7 %), međutim, treba uzeti u obzir da je riječ o vrlo malom uzorku pa stoga niti nema statistički značajnih razlika između uzoraka. Iz ovog bi uzorka trebalo izdvojiti mogući primjer reumatoidnog artritisa kod muškarca iz groba 7. Takvi slučajevi nisu česti u arheološkim popu-

[48] D. J. ORTNER, 2003, 181.

can be acute or chronic. Bacteria invade blood stream (e.g. through a wound) and cause an inflammation of the bone marrow resulting in abundant pus secretion that leads to a spindle-shaped thickening of the bone, and in certain cases to bone openings through which pus is discharged. Usually bone next to joint is affected. Osteomyelitis is more common in children, affecting more boys than girls.[48] In a historical overview, this period, that mostly overlaps with Justinian's era, is characterized by population changes and strategic importance of the fort. However archaeologists have concluded that the site did not have only military character as testified by graves of women and children, in addition to male graves. It is possible that men's tasks related to military service affected lower average age at the time of death, although this is a tentative assumption based on a very small sample.

Eight skeletons (seven male and one female) were dated to the period of the Early Middle Ages (9th to 11th centuries). In contrast to the late antique and early medieval sample, sex ratio in this period is not evenly distributed, and children's graves are missing altogether. Men lived much longer in this period (46 years) in comparison to men in Late Antiquity and the Early Middle Ages. Since we have only one woman in the sample, comparison with women from late antique sample is not adequate. Incidence of indicators of subadult stress is higher (*cribra orbitalia* 33.3%, non-specific periostitis 57.1%, linear hypoplasia 66.7%), however the sample is very small and therefore there are no statistically significant differences between the samples. A possible example of rheumatoid arthritis should be singled out from this sample, in a man from grave 7. Such cases are not common in archaeological populations, and nowadays they occur in less than 1% of the population.[49] The disease may be manifested with mild clinical symptoms, with

[48] D. J. ORTNER, 2003, 181.
[49] G. FIRESTEIN, 2001, 921.

lacijama, a i u današnjima se javljaju kod otprilike 1 % populacije.[49] Bolest se može iskazivati blagom kliničkom slikom u kojoj su zahvaćeni tek pojedini zglobovi ili kao teži oblik bolesti s jakim deformitetima. U ovom slučaju, s obzirom na to da je na velikom dijelu kralježnice i na pojedinim kostima šaka prisutan jaki ostaoartritis, a promjene su zamijećene na većini velikih zglobova, vjerojatno je bila riječ o težem obliku bolesti.

U razdoblje kasnog srednjeg vijeka i novog vijeka datirano je dvanaest kostura (troje muškaraca, jedna odrasla osoba neodredivog spola i osmero djece). Prosječna doživljena starost odraslih osoba iznosi 42,3 godine, no uzorak je premalen za bilo kakvu usporedbu.

Vjerojatno je najzanimljiviji uzorak 67 datiran u 16. stoljeće, a potječe iz kosturnice (KO, uz. 66,67) u kojoj je najmanji broj prisutnih osoba bio 23. Iz kosturnice je mogao biti izdvojen samo muškarac stariji od 45 godina iz razloga što se razlikovao od drugih. Naime, na čitavom kosturu, na glavi i dugim kostima bile su prisutne jake patološke promjene koje upućuju na tercijarni sifilis. Za ovu spolno prenosivu bolest je iz dokumenata Državnog arhiva u Dubrovniku poznato da je bila prisutna u Dubrovniku tijekom 16. stoljeća.[50] Uzevši u obzir činjenicu da su Konavle pripale Dubrovčanima već u 15. stoljeću (vidi ranije u Uvodu i povijesnom okviru), lako je bilo moguće da se bolest proširila i na utvrdu Sokol. U ovom je kontekstu posebno zanimljiva prije spomenuta činjenica da se utvrda u 17. stoljeću (1634.) povezivala s nemoralnim životom vlastelina i sluškinja (vidi ranije u Uvodu i povijesnom okviru).

Posebnu bi pažnju trebalo dati dječjim kosturima iz kasnosrednjovjekovnog i novovjekovnog razdoblja, ali i čitavog uzorka. Djeca najviše umiru u razdoblju između 2. i 10. godine života (13 od ukupno 19 djece ili 68,4 % kojima je bilo moguće odrediti starost). Kod

[49] G. FIRESTEIN, 2001, 921.
[50] F. GRUBER, 2009, 248.

only some joints affected or in a more difficult form of the disease with severe deformities. In this case, since severe osteoarthritis is present on a big part of the spine and some hand bones, and changes were noticed on the majority of big joints, most likely it was a severe form of the disease.

Twelve skeletons (three men, one adult person of undeterminable sex and eight children) were dated to the Late Middle Ages and the Modern Period. Average age of the adults is 42.3 years, but the sample is too small for any kind of analysis.

Probably the most interesting sample (uz. 67) was dated to the 16th century. It was found in the ossuary (KO uz. 66,67) in which the smallest possible number of skeletons was 23. Only a man over 45 years old could be singled out in the ossuary as his bones were different than the others. Namely, severe pathological changes suggesting tertiary syphilis were present on the entire skeleton, including the skull and other bones. Documents of the State Archives in Dubrovnik prove that this sexually transmitted disease was present in Dubrovnik in the 16th century.[50] Since Konavle came under the authority of the city of Dubrovnik as early as the 15th century (cf. Introduction and Historical framework), it is possible that the disease had spread to Fort Sokol. In this context we should remember previously mentioned fact that the fort was associated with immoral life of noblemen and maids in the 17th century (1634) (cf. Introduction and Historical framework).

Special attention should be paid to subadult skeletons from late medieval and postmedieval period, as well as in the entire sample. Children died mostly when they were 2 to 10 years old (13 of 19 children or 68.4% whose age could be determined). Time of weaning infants from breastfeeding is an especially delicate period as diet based on mother's milk is replaced by food and water full of different

[50] F. GRUBER, 2009, 248.

djece je obično razdoblje nakon prestanka dojenja iznimno osjetljivo jer se prelazi s prehrane temeljene na majčinu mlijeku na prehranu i vodu koje su prepune raznih mikroorganizama koji uzrokuju razne zarazne bolesti praćene dijarejom.[51] Da je to razdoblje bilo osobito teško, dokazuju primjeri skorbuta kod dvoje djece starosti 2 do 4 godine iz grobova 41 i 45 i već spomenuti primjer osteomijelitisa iz groba 33. Skorbut je posljedica nedostatka vitamina C u prehrani, a neki od simptoma koji se pojavljuju su gingivitis, gubitak zuba, naoticanje donjih ekstremiteta, krvarenja.[52] Možemo pretpostaviti da su u razdoblju kasnog srednjeg vijeka i novog vijeka uvjeti života bili posebno teški što se odrazilo na dječje zdravlje i pojavu skorbuta.

Iako je koštani uzorak analiziran u ovom radu relativno velik, nažalost, zbog raspona pokapanja od 5. do 19. stoljeća ne mogu se dati specifični zaključci o populaciji koja je ovdje pokopana. No, unatoč tomu, dobivene su određene informacije o pojedinim razdobljima, kao i pojedinim članovima društva, npr. djeci, a i onima koji su bolovali od specifičnih zaraznih bolesti poput sifilisa.

ODREĐIVANJE STAROSTI KOSTURNIH OSTATAKA I KARBONIZIRANIH BADEMA

Provedena je analiza starosti radiokarbonskom metodom na 27 kosturnih ostataka. Budući da nije bilo grobnih priloga, osim jedne korodirane kovanice kralja Baleja koja je ranija od datuma groba (GR 11), bila je otežana uža datacija grobova. ^{14}C analizom na Institutu „Ruđer Bošković“ određena je starost grobova u rasponu od 5. do 19. stoljeća što upućuje na kontinuitet ukopavanja uz utvrdu Sokol od kasne antike do novoga vijeka (Tablica 1, Sl.

[51] M. G. M. ROWLAND, S. G. J. GOH ROWLAND, T. J. COLE, 1988, 134–138.

[52] J. GEBER, E. MURPHY, 2012, 512–524.

microorganisms causing various infectious diseases accompanied by diarrhea.[51] This statement is proven by examples of scurvy on two children, ages 2 to 4, from graves 41 and 45, as well as the aforementioned example of osteomyelitis from grave 33. Scurvy is a consequence of vitamin C deficiency in diet, and some of the symptoms are gingivitis, tooth loss, swelling of lower extremities, hemorrhages.[52] We can assume that in the Late Middle Ages and Modern Period living conditions were especially difficult which was reflected on children's health and occurrence of scurvy.

Although the bone sample analyzed in this paper is rather large, unfortunately specific conclusions about the population that was buried here cannot be provided due to the time span of burials from the 5th to the 19th century. Nevertheless information on certain periods have been obtained, as well as about certain community members, e.g. children, and individuals who suffered from specfic infectious diseases such as syphilis.

DATING SKELETAL REMAINS AND CARBONIZED ALMONDS

Radiocarbon dating was conducted on 27 skeletal remains. Since there were no grave goods, except for one coin of king Ballaios that was earlier than the grave date (GR 11), more precise dating of the graves was difficult. At the Institute Ruđer Bošković, ^{14}C analysis was used to date graves in the range from the 5th to 19th century, suggesting continuity of burials at Fort Sokol from Late Antiquity to the Modern Period (Table 1, Fig. 17). Dating of carbonized almonds was also conducted (2 samples) resulting in the date of the Early Iron Age.[53]

[51] M. G. M. ROWLAND, S. G. J. GOH ROWLAND, T. J. COLE, 1988, 134-138.

[52] J. GEBER, E. MURPHY, 2012, 512-24.

[53] I. KRAJCAR BRONIĆ, N. HORVATINČIĆ, 2013; I. KRAJCAR BRONIĆ, N. HORVATINČIĆ, 2014; I. KRAJ-

Tablica 1. *Rezultati određivanja starosti kostiju i sjemenki badema utvrde Sokol metodom radioaktivnog ugljika ^{14}C. Z-broj je laboratorijski broj uzorka, a A-broj je redni broj pripreme grafita, SUERC-broj je redni broj grafitne mete u Scottish University Environmental Research Centre, Glasgow, UK, UGAMS-broj je redni broj grafitne mete u University of Georgia Centre for Applied Isotope Research. Ostale veličine objašnjene su u tekstu. $\delta^{13}C$ vrijednosti imaju nesigurnost od 0,1 ‰. Konvencijska starost je zaokružena prema preporukama časopisa Radiocarbon. Za kalibraciju je korišten program OxCal v4.3.2 (C. BRONK RAMSEY, 2017) uz kalibracijsku krivulju IntCal13 (P. J. REIMER et al., 2013). Kalibrirani period: raspon povijesnih godina, izražen u kalibriranim godinama (cal BC, cal AD) dan uz 1σ, što je 68,2 % vjerojatnosti nalaženja rezultata. Prikazani su samo rezultati s vjerojatnošću većom od 5 %. Uzorci poredani kako se pojavljuju u tekstu.*

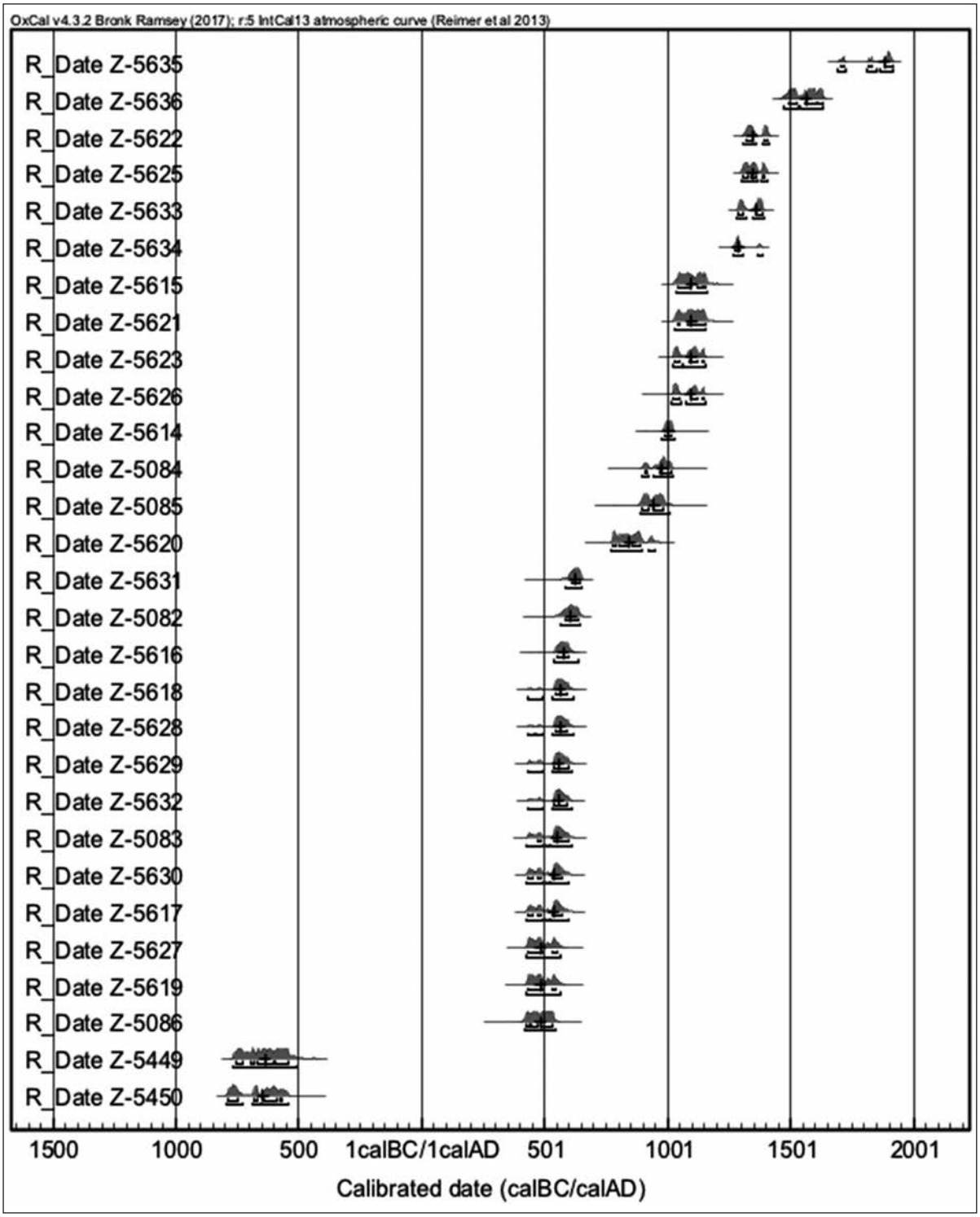
Table 1 *Results of ^{14}C radiocarbon dating on skeletal remains and almonds from the fort Sokol. Z-number is the laboratory number of a sample, and A-number is ordinal number of graphite preparation. SUERC-number is ordinal number of graphite target in Scottish University Environmental Research Centre, Glasgow, UK; UGAMS-number is ordinal number of graphite target in University of Georgia Centre for Applied Isotope Research. Other values are described in the text. $\delta^{13}C$ values have 0.1 ‰ measurement errors. Conventional age is rounded according to the set of parametars outlined in the journal Radiocarbon. OxCal v4.3.2 (C. BRONK RAMSEY, 2017) computer program is used for calibration with IntCal13 (P. J. REIMER et al., 2013) calibration curve. Calibrated age: calendar yers expressed in calibrated dates (cal BC, cal AD) for 1σ, representing 68.2% of probability of finding results. Only the results with probability greater than 5% are shown. The samples are arranged in the order of appearance in the text.*

Lab. br.Z *Lab. No. Z*	Lab. br. A *Lab. No. A*	Br. grafita *Graphite No.*	GR	Uz.	Naziv uzorka *Sample*	$\delta^{13}C$	Konvencijska starost *Conventional age*	Kalibrirani period *Calibrated period*	Medijan *Median* (cal BC/ AD)
5082	578	SUERC-44132	1	2	Kost #1 *Bone #1*	-19,7	1455 ± 25	cal AD 588 – 638 (68,2 %)	cal AD 608
5083	594	SUERC-44151	2	1	Kost #2 *Bone #2*	-20,0	1520 ± 25	cal AD 474 - 485 (6,3 %) cal AD 536 – 596 (61,9 %)	cal AD 550
5627	960	UGAMS-18288	32	76	Kost, kratke kosti #16 *Bone, short bone #6*	-19,9	1550 ± 25	cal AD 430 – 492 (51,9 %) cal AD 530 – 550 (16,3 %)	cal AD 484
5628	964	UGAMS-18290	33	79	Kost #17 *Bone #17*	-18,9	1510 ± 25	cal AD 542 – 592 (68,2 %)	cal AD 564
5629	969	UGAMS-18293	33	80	Kost #18 *Bone #18*	-20,3	1515 ± 25	cal AD 538 – 597 (68,2 %)	cal AD 558
5630	970	UGAMS-18294	35	85	Kost #19 *Bone #19*	-20,0	1530 ± 25	cal AD 435 – 452 (11,5 %) cal AD 470 – 487 (12,5 %) cal AD 534 – 574 (44,5 %)	cal AD 539
5631	966	UGAMS-18551	35	87	Kost #20 *Bone #20*	-20,0	1430 ± 25	cal AD 610 – 645 (68,2 %)	cal AD 625
5632	967	UGAMS-18292	38	89	Kost #21 *Bone #21*	-19,7	1515 ± 25	cal AD 540 – 590 (68,2 %)	cal AD 558
5617	948	UGAMS-18276	12	40 = 28	Kost, kosti lubanje (1/4) #6 *Bone, skull bones (1/4) #6*	-20,0*	1530 ± 25	cal AD 434 – 452 (12,3 %) cal AD 470 – 487 (13,4 %) cal AD 534 – 570 (42,5 %)	cal AD 536

Lab. br.Z *Lab. No. Z*	Lab. br. A *Lab. No. A*	Br. grafita *Graphite No.*	GR	Uz.	Naziv uzorka *Sample*	$\delta^{13}C$	Konvencijska starost *Conventional age*	Kalibrirani period *Calibrated period*	Medijan *Median* (cal BC/ AD)
5619	951	UGAMS-18279	16	41	Kost, duge kosti 2/4 #8 *Bone, long bones 2/4 #8*	-20,6	1550 ± 25	cal AD 430 – 492 (53,8 %) cal AD 530 – 547 (14,4 %)	cal AD 483
5635	973	UGAMS-18552	17	44	Kost #24 *Bone #24*	-15,0	70 ± 20	cal AD 1706 – 1720 (12,8%) cal AD 1820 – 1833 (10,7 %) cal AD 1882 – 1914 (44,6 %)	cal AD 1881
5084	595	SUERC-44151	5	6	Kost #3 *Bone #3*	-19,2	1070 ± 25	cal AD 906 – 914 (7,3 %) cal AD 968 – 1015 (60,9%)	cal AD 979
5085	581	SUERC-44135	7	8	Kost #4 *Bone #4*	-19,2	1100 ± 30	cal AD 898 – 924 (27,9 %) cal AD 944 – 984 (40,3 %)	cal AD 946
5086	579	SUERC-44133	8	10	Kost #5 *Bone #5*	-19,6	1580 ± 25	cal AD 427 – 436 (7,4 %) cal AD 446 – 472 (20,9 %) cal AD 486 – 534 (40,0 %)	cal AD 483
5614	949	UGAMS-18277	9	11	Kost, kosti glave (1/4) #3 *Bone, skull bones (1/4) #3*	-20,6	1035 ± 20	cal AD 992 – 1018 (68,2%)	cal AD 1004
5615	946	UGAMS-18274	10	20	Kost, duge kosti 1/4 #4 *Bone, long bones 1/4 #4*	-18,9	925 ± 25	cal AD 1045 – 1095 (42,5%) cal AD 1120 – 1142 (19,0%) cal AD 1146 – 1154 (6,7%)	cal AD 1097
5620	952	UGAMS-18280	18	50	Kost, plosnata kost 4/4 #9 *Bone, flat bone 4/4 #9*	-18,7	1170 ± 25	cal AD 778 – 792 (12,7 %) cal AD 804 – 842 (28,1 %) cal AD 860 – 891 (27,4 %)	cal AD 845
5625	955	UGAMS-18283	20	61	Kost, kost šake #14 *Bone, fist bone #14*	-19,2	600 ± 20	cal AD 1309 – 1330 (26,9%) cal AD 1339 – 1360 (28,5%) cal AD 1386 – 1396 (12,7%)	cal AD 1346
5621	959	UGAMS-18287	21	56	Kost, duge kosti 1/2 #10 *Bone, long bones* 1/2 #10	-19,1	935 ± 25	cal AD 1040 – 1052 (10,6%) cal AD 1080 – 1152 (57,6%)	cal AD 1098
5622	953	UGAMS-18281	22	57	Kost #11 *Bone #11*	-18,9	575 ± 25	cal AD 1320 – 1350 (44,6%) cal AD 1392 – 1408 (23,6%)	cal AD 1346
5623	954	UGAMS-18282	23	58	Kost #12 *Bone #12*	-19,1	960 ± 25	cal AD 1026 – 1047 (24,1%) cal AD 1089 – 1122 (35,2%) cal AD 1139 – 1148 (8,9%)	cal AD 1097

Lab. br.Z *Lab. No. Z*	Lab. br. A *Lab. No. A*	Br. grafita *Graphite No.*	GR	Uz.	Naziv uzorka *Sample*	$\delta^{13}C$	Konvencijska starost *Conventional age*	Kalibrirani period *Calibrated period*	Medijan *Median* (cal BC/ AD)
5626	956	UGAMS-18284	24	65	Kost #15 *Bone #15*	-19,2	970 ± 25	cal AD 1022 – 1046 (32,3%) cal AD 1094 – 1120 (30,0%) cal AD 1141 – 1147 (5,9%)	cal AD 1093
5634	972	UGAMS-18296	26	107	Kost, Kosti glave 1/4 #23 *Bone, skull bones 1/4 #23*	-19,4	695 ± 20	cal AD 1276 – 1296 (68,2%)	cal AD 1288
5636	974	UGAMS-18553	KO	67	Kost iz kosturnice *Ossuary bones*	-18,9	340 ± 20	cal AD 1490 – 1524 (23,8 %) cal AD 1558 – 1602 (29,7 %) cal AD 1610 – 1631 (14,7 %)	cal AD 1565
5633	971	UGAMS-18295	39	92	Kost #22 *Bone #22*	-19,2	650 ± 20	cal AD 1290 – 1308 (27,3 %) cal AD 1361 – 1386 (40,9 %)	cal AD 1358
5616	974	UGAMS-18275	11	29	Kost #5 *Bone #5*	-20,8	1495 ± 25	cal AD 552 – 598 (68,2 %)	cal AD 576
5618	950	UGAM-18278	13	37	Kost #7 *Bone #7*	-20,2	1510 ± 25	cal AD 542 – 594 (68,2 %)	cal AD 564
5449	905	UGAMS-17773		24	Pougljenjene sjemenke badema #1 *Carbonized almonds #1*	-23,6	2480 ± 25	756 – 728 cal BC (11,7 %) 693 – 680 cal BC (5,7 %) 671 – 605 cal BC (26,2 %) 598 – 542 cal BC (24,6 %)	637 cal BC
5450	906	UGAMS-17774		42	Pougljenjene sjemenke badema #2 *Carbonized almonds #2*	-27,0	2525 ± 30	786 – 749 cal BC (24,0 %) 684 – 667 cal BC (10,7 %) 640 – 588 cal BC (28,3 %) 578 – 566 cal BC (5,3 %)	649 cal BC

*pretpostavljena $\delta^{13}C$ vrijednost / *supposed* $\delta^{13}C$ *value*



Slika 17. *Kalibrirane raspodjele starosti uzoraka iz Tablice 1. Znak + označava medijan raspodjele. Uži rasponi označavaju područje vjerojatnosti nalaženja rezultata od 68,2 % (1σ), a širi rasponi vjerojatnosti nalaženja rezultata od 95,4 % (2σ). Za kalibraciju je korišten program OxCal v4.3.2 (C. BRONK RAMSEY, 2017) uz kalibracijsku krivulju IntCal13 (P. J. REIMER et al., 2013). Uzorci poredani kronološki.*

Figure 17 *Calibrated age of the samples shown in Table 1. "+" sign denotes median. Narrow ranges denote 68.2% (1σ) probability of finding results amd wider ranges denote 95.4% (2σ) probability of finding results. OxCal v4.3.2 (C. BRONK RAMSEY, 2017) computer program is used for calibration with IntCal13 (P. J. REIMER et al., 2013) calibration curve. Samples are arranged in chronological order.*

17). Također je provedeno određivanje starosti karboniziranih badema (dva uzorka), što je rezultiralo datumom starijeg željeznog doba.[53]

^{14}C analiza je provedena tehnikom akceleratorske masene spektrometrije (AMS).[54] Za analizu je potrebno s uzorka odstraniti interferencije (nečistoće) te ugljik iz uzorka prevesti u oblik grafita. Na Institutu „Ruđer Bošković" se iz uzoraka kostiju izolirao kolagen modificiranom metodom Longin,[55] dok su uzorci badema tretirani standardnom A-B-A metodom (engl. *acid-base-acid*, tj. kiselina-baza-kiselina).[56] Iz pripremljenih uzoraka kolagena te badema, ugljik se preveo u CO_2 oksidacijom pomoću bakrova(II)-oksida pri 850 °C u vakuumu. Dio plina CO_2 se odvojio za određivanje koncentracije stabilnog izotopa ^{13}C u ukupnom ugljiku (izražava se kao $\delta^{13}C$ vrijednost) na masenom spektrometru za stabilne izotope (engl. *Isotope Ratio Mass Spectrometer*, IRMS). Iz drugog dijela, CO_2 se prevodio u grafit redukcijom sa cinkom uza željezov katalizator. Grafit je prešan u aluminijski nosač (meta) te se odredio omjer broja atoma izotopa ^{14}C prema ^{13}C ($^{14}C/^{13}C$) na akceleratorskom masenom spektrometru (AMS). Mjerenja $\delta^{13}C$ i $^{14}C/^{13}C$ vrijednosti obavljena su u *Center for Applied Isotope Studies* (CAIS), *University of Georgia, Athens*, SAD, odnosno u *Scottish University Research Centre*, (SUERC) Glasgow, UK.

Vrijednost $\delta^{13}C$ nekog materijala izražava se u promilima i predstavlja relativno odstupanje omjera količine izotopa ^{13}C prema ^{12}C u uzorku prema istom omjeru u referentnom materijalu. Izmjerena $^{14}C/^{13}C$ vrijednost se normalizira s obzirom na izmjerenu $\delta^{13}C$

^{14}C analysis was carried out by using the technique of accelerator mass spectrometry (AMS).[54] It is necessary to remove all interferences (impurities) from the sample for the analysis, and carbon from the sample needs to be converted into graphite. Collagen was extracted from the bone samples by modified Longin method at the Ruđer Bošković Institute,[55] while almonds were treated by standard A-B-A (acid-base-acid) method.[56] From the prepared samples of collagen and almonds, carbon was converted into CO_2 through oxidation with cupric oxide at 850 °C in vacuum. Some CO_2 gas was separated for determining concentration of the stable isotope ^{13}C in total carbon (expressed as $\delta^{13}C$ value) in isotope ratio mass spectrometer, IRMS. From the remaining part, CO_2 was converted into graphite through reduction with zinc and iron catalyst. Graphite was pressed into an aluminum base (target) and the $^{14}C/^{13}C$ ratio of the number of atoms was determined in the accelerator mass spectrometer (AMS). Measurements of $\delta^{13}C$ and $^{14}C/^{13}C$ values were performed in the Center for Applied Isotope Studies (CAIS), University of Georgia, Athens, SAD, and in the Scottish University Research Centre, (SUERC) Glasgow, UK.

$\delta^{13}C$ value of a certain material is expressed in per mill and it represents a relative deviation of the ^{13}C isotope ratio to ^{12}C in the sample in relation to the same ratio in the referential material. Measured $^{14}C/^{13}C$ value is normalized with regard to $\delta^{13}C$ values of the sample at agreed value of -25 ‰, and conventional ^{14}C-age of the sample is calculated by using Libby's ^{14}C halftime of 5568 years.[57] Conventional ^{14}C-age obtained in this way is expressed in years before present (BP), 0 BP =

[53] I. KRAJCAR BRONIĆ, N. HORVATINČIĆ, 2013; I. KRAJCAR BRONIĆ, N. HORVATINČIĆ, 2014; I. KRAJCAR BRONIĆ et. al., 2015.

[54] I. KRAJCAR BRONIĆ et. al., 2010, 943–946; A. SIRONIĆ et. al., 2013, 185–188.

[55] R. LONGIN, 1971, 241–2; F. BROCK et. al., 2010, 103–112.

[56] S. K. GUPTA, H. A. POLACH, 1985; F. BROCK et. al., 2010; E. DUNBAR et. al., 2016, 9–23; A. SIRONIĆ et. al., 2013.

CAR BRONIĆ et. al., 2015.

[54] I. KRAJCAR BRONIĆ et. al., 2010, 943-946; A. SIRONIĆ et. al., 2013, 185-188.

[55] R. LONGIN, 1971, 241-2; F. BROCK et. al., 2010, 103-12.

[56] S. K. GUPTA, H. A. POLACH, 1985; F. BROCK et. al., 2010; E. DUNBAR et. al., 2016, 9-23; A. SIRONIĆ et. al., 2013.

[57] M. STUIVER, H. POLACH, 1977, 355-363.

vrijednosti uzorka na dogovornu vrijednost -25 ‰ te se izračunava konvencijska ^{14}C-starost uzorka koristeći se Libbyjevim vremenom poluraspada ^{14}C (5568 godina).[57] Ovako dobivena konvencijska ^{14}C-starost izražava se u godinama prije sadašnjosti BP (engl. *before present*), 0 BP = AD 1950. Budući da je koncentracija ^{14}C u atmosferskom CO_2 (koji je i primarni izvor ^{14}C u bioti, tj. materijalu koji datiramo) bila promjenjiva zbog utjecaja različitog intenziteta kozmičkog/solarnog zračenja, promjene magnetskog polja i sl. koje utječu na produkciju ^{14}C, potrebno je konvencijsku starost kalibrirati kako bi se starost uzorka mogla izraziti u kalendarskim godinama. Za kalibraciju se rabi krivulja IntCal13 te računalni program OxCal,[58] a rezultat je kalibrirani raspon godina izražen u cal AD, odnosno cal BC, „cal" označava da je kalendarska godina dobivena kalibracijom.

U Tablici 1 prikazani su svi dobiveni rezultati: konvencijska ^{14}C starost (godine BP), δ^{13}C vrijednosti i kalibrirana starost (cal BP, cal AD). U zagradama pored svakog raspona, navedena je vjerojatnost nalaženja rezultata.

Vrijednosti δ^{13}C karakteristične su za pojedini materijal te mogu upućivati na porijeklo materijala. Za pougljenjene sjemenke badema δ^{13}C vrijednosti su u skladu s C_3 biljkama (od -20 do -30 ‰). Za određivanje paleo/arheoprehrane obično se rabe dvokomponentni (^{15}N i δ^{13}C), odnosno trokomponenti (i ^{34}S)[59] sustavi, ali već i sama δ^{13}C vrijednost može upućivati na vrstu prehrane. Korelacijom konvencijske ^{14}C-starosti s δ^{13}C uočava se grupiranje (Sl. 18A) svi uzorci s δ^{13}C između -21 i -19,5 ‰ grupirani su oko 1500 BP (medijan oko cal AD 600.), samo jedan uzorak je mlađi (1036 ± 23 BP, medijan cal AD 1004, uz. 11). U toj skupini se nalaze i svi kosturni ostatci žena. Uzorci viših δ^{13}C vri-

[57] M. STUIVER, H. POLACH, 1977, 355–363.

[58] P. J. REIMER et. al., 2013: 1869–1887; C. BRONK RAMSEY, 2017.

[59] E. LIGHTFOOT et. al., 2014, 375–376; K. L. SAYLE et. al., 2014, 811–821; J. P. R. DURY et. al., 2018, 1561–1685.

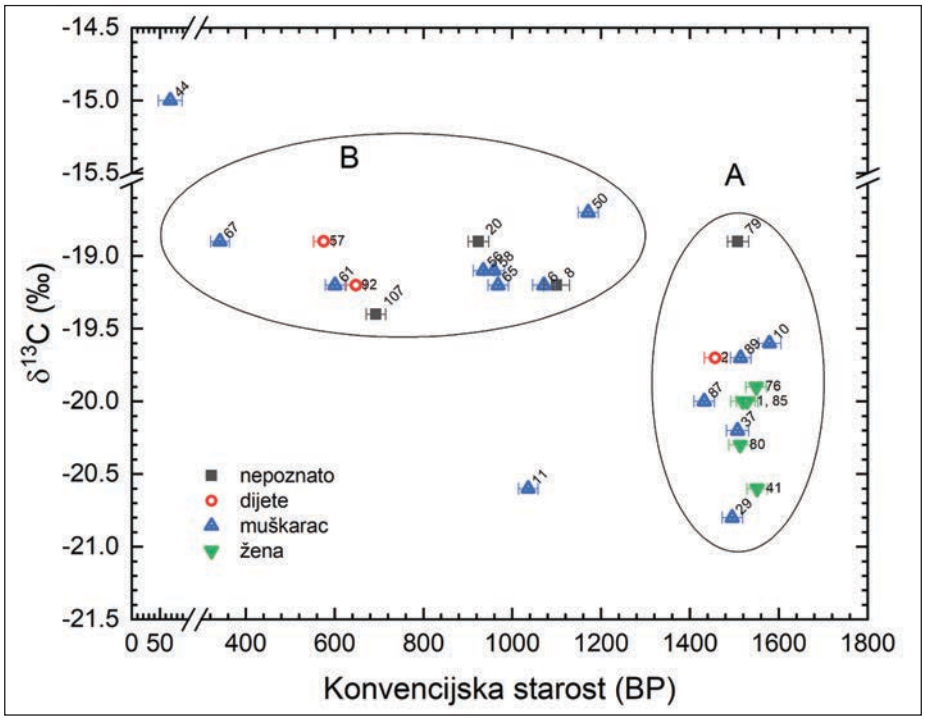
AD 1950. Since concentration of ^{14}C in atmospheric CO_2 (which is the primary source of ^{14}C in biota, or the material we want to date) was changeable due to influence of different intensity of the cosmic/solar radiation, changes in magnetic field etc. that affect ^{14}C production, it is necessary to calibrate the conventional age so that the age of the sample can be expressed in calendar years. Curve IntCal13 is used for calibration, as well as the computer program OxCal,[58] and the result is calibrated range of years expressed in cal AD, or cal BC, "cal" denoting that calendar year was obtained through calibration.

All the results obtained are presented in Table 1: conventional ^{14}C age (years BP), δ^{13}C values and calibrated age (cal BP, cal AD). Probability of finding the results is stated in the parentheses next to every range.

δ^{13}C values are characteristic of certain materials and they can indicate their provenance. δ^{13}C values for carbonized almond seeds are in accordance with C_3 plants (from -20 to -30 ‰). In determining paleo/archaeodiet usually two-component (^{15}N and δ^{13}C), or three-component (and ^{34}S)[59] systems are used, but even only δ^{13}C value can suggest diet type. Correlation between conventional ^{14}C-age and δ^{13}C reveals grouping (Fig. 18A) all samples with δ^{13}C between -21 and -19.5 ‰ are grouped around 1500 BP (median cal ca. AD 600), only one sample is younger (1036 ± 23 BP, median cal AD 1004, sample 11). All skeletal remains of women are in this group. Samples of higher δ^{13}C values, (Fig. 18B) between-19.5 and -18.5 ‰ are younger, covering the range of 1508 ± 24 BP (median cal AD 564, sample 79) to 342 ± 21 BP (median cal AD 1565, sample 67). Sample 44 stands out in both groups, as being the youngest (cal AD 1881) and having the highest δ^{13}C value (-15.0 ‰), but it is irrelevant in this research as it dates to

[58] P. J. REIMER et. al., 2013: 1869-1887; C. BRONK RAMSEY, 2017.

[59] E. LIGHTFOOT et. al., 2014, 375-376; K. L. SAYLE et. al., 2014, 811-821; J. P. R. DURY et. al., 2018, 1561-1685.



Slika 18. *Odnos konvencijske starosti uzoraka kolagena prema njihovoj izmjerenoj ^{13}C vrijednosti. Brojevi pored točaka označavaju broj uzorka.*
Figure 18 *Relation between conventional age of samples and their measured ^{13}C value. Numbers next to the dots are sample numbers.*

jednosti, (Sl. 18B) između -19,5 i -18,5 ‰ su mlađi i pokrivaju područje od 1508 ± 24 BP (medijan cal AD 564, uz. 79) do 342 ± 21 BP (medijan cal AD 1565, uz. 67). Od obiju skupina se izdvaja uz. 44, i po tome da je najmlađi (cal AD 1881) i po najvišoj $\delta^{13}C$ vrijednosti (-15,0 ‰), ali koji nije relevantan u ovom istraživanju jer je datiran u vrijeme nakon napuštanja utvrde Sokol.

Kolagen iz kostiju biljojeda je nižih $\delta^{13}C$ vrijednosti nego kod svejeda, odnosno, mesojeda, odnosno vrijednost $\delta^{13}C$ raste sa stupnjem trofije[60]. Također, kod biljojeda/svejeda ovisi i o biljkama kojima se hrane: biljke fotosintetskog ciklusa C_3 (većina biljaka) imaju $\delta^{13}C$ vrijednosti oko -27 ‰, dok one fotosintetskog ciklusa C_4 (npr. kukuruz, šećerna repa, proso, neke vrte trava) imaju oko -12 ‰. Morska fauna na jednak način reflektira morsku floru, a s obzirom na to da CO_2 otopljen u morskoj vodi ima $\delta^{13}C$ vrijednost višu (oko -1,5 ‰)

[60] M. J. SCHOENINGER, M. J. DE NIRO, H. TAUBER, 1983, 1381–1383.

the period after Fort Sokol was deserted.

Collagen from the bones of herbivores has lower $\delta^{13}C$ values than in the bones of omnivores or carnivores meaning that $\delta^{13}C$ value increases with the trophic level.[60] In herbivores/omnivores it depends on plants they eat: plants of photosynthetic cycle C_3 (most plants) have $\delta^{13}C$ values around -27 ‰, while those of photosynthetic cycle C_4 (e.g. corn, sugar beet, millet, some grass types) have around -12 ‰. Marine fauna reflects marine flora in the same way, and since CO_2 dissolved in sea water has $\delta^{13}C$ value (ca. -1,5 ‰) higher than the atmospheric CO_2 (ca. -7,5 ‰), marine fauna has higher $\delta^{13}C$ value (ca. -16 ‰). Therefore people who consume marine fauna (fish) have higher $\delta^{13}C$ values[61] than the ones eating terrestrial C_3 plants, or fauna. Higher $\delta^{13}C$ values are generally considered to be a result of

[60] M. J. SCHOENINGER, M. J. DE NIRO, H. TAUBER, 1983, 1381-1383.

[61] O. SVERRE JOHANSEN, S. GULLIKSEN, R. NYDAL, 1986, 754-761.; P. L. ASCOUGH et. al., 2007: 947-961; P. L. ASCOUGH et. al., 2012, 2261-2271.

nego atmosferski CO_2 (oko -7,5 ‰), morska fauna ima više $\delta^{13}C$ vrijednosti (oko -16 ‰). Na jednak način, ljudi koji konzumiraju morsku faunu (ribe) imaju više $\delta^{13}C$ vrijednosti[61] od onih koji se hrane kopnenim C_3 biljem, odnosno faunom. Više $\delta^{13}C$ vrijednosti se generalno smatraju rezultatom miješane prehrane C_3 i C_4 biljem te prehrane bazirane na morskoj hrani, pogotovo ako je riječ o primorskim naseljima.[62] Jedina C_4 biljka Starog Kontinenta je proso, koji se u Hrvatskoj konzumira od željeznog doba.[63] Slika 18 implicira da je skupina A (oko 1500 BP, tj. oko cal AD 600.) imala pretežno kopnenu, biljnu C_3 ishranu, dok je skupina B konzumirala ili pretežno mesnu hranu ili djelomično i riblju hranu i/ili djelomično proso. U korist nagle promjene prehrane sa skupine A na skupinu B ide mogućnost povećane konzumacije ribe zbog širenja kršćanstva.[64] Najmlađi uzorak 44 s izrazito visokom $\delta^{13}C$ vrijednosti upućuje ili na gotovo isključivu prehranu prosom, odnosno, vjerojatnije ribom (slične vrijednosti imaju narodi Haida[65]).

KREMENI NALAZI

Nekoliko kremenih artefakata pronađeno je tijekom istraživanja sonde 2 na JI dijelu lokaliteta, u podnožju masivne stijene na kojoj je sagrađena utvrda Sokol. Artefakti su pronađeni u dubokom sloju s prapovijesnim materijalom koji je dosta poremećen potresima. Među nalazima su fragment sječiva za srp (T. XII, 1), sječivo s obradom (T. XII, 3), malo strugalo sa strmom obradom (T. XII, 2), dubilo

[61] O. SVERRE JOHANSEN, S. GULLIKSEN, R. NYDAL, 1986, 754–761; P. L. ASCOUGH et. al., 2007, 947–961; P. L. ASCOUGH et. al., 2012, 2261–2271.

[62] A. FISCHER et. al., 2007, 2125–2150; A. L. LAMB et. al., 2012, 765–777; D. C. SALAZAR-GARCIA et. al., 2014, 231–240.

[63] E. LIGHTFOOT et. al., 2014.

[64] L. J. REITSEMA, D. E. CREWS, M. POLCYN, 2010, 1413–1423.

[65] M. J. SCHOENINGER, K. MOORE, 1992, 247–296.

mixed diet of C_3 and C_4 plants and diet based on marine food, particularly in case of coastal settlements.[62] The only C_4 plant of the Old Continent is millet that has been consumed in Croatia since the Iron Age.[63] Fig. 18 implies group A (ca. 1500 BP, i.e. ca. cal AD 600) had terrestrial, plant-based C_3 diet while group B consumed mostly meat or partially also fish and/or millet. Sudden change of diet from group A to group B might be associated with possible increased consumption of fish related to spreading of Christianity.[64] The youngest sample 44 with exceptionally high $\delta^{13}C$ value suggests either diet based almost only on millet, or, more likely, fish (similar values are found in Haida populations[65]).

FLINT ARTIFACTS

Several flint artifacts were recovered during the excavation of Trench 2 in the southeast sector of the site, at the foot of the massive rock on which the Sokol Fortress was constructed. The artifacts were recovered from a deep level of prehistoric material that had been much disturbed through earthquake activity. The tools consisted of a sickle blade fragment (T. XII, 1), a blade knife (T. XII, 3), a small flake scraper with scalar retouch (T. XII, 2), a single-blow burin on a blade (T. XII, 4) and a stubby arrowhead with rough retouch (T. XII/, 5). An axe made of white flint that was found on the surface may be associated with these artifacts also. The flint from which the blade tools were made was yellowish, fine-grained, and with white inclusions. It appears to have been heat-treated. The arrowhead was made of black flint. A small amount of flint waste was recovered from the same area, indicating that

[62] A. FISCHER et. al., 2007, 2125-2150; A. L. LAMB et. al., 2012, 765-777; D. C. SALAZAR-GARCIA et. al., 2014, 231-240.

[63] E. LIGHTFOOT et. al., 2014.

[64] L. J. REITSEMA, D. E. CREWS, M. POLCYN, 2010, 1413-1423.

[65] M. J. SCHOENINGER, K. MOORE, 1992, 247-296.

na sječivu (T. XII, 4) i zdepasta strelica s grubim retušom (T. XII, 5). Sjekirica izrađena od bijelog kremena, pronađena izvan arheološkog istraživanja, također se može povezati s ovim artefaktima. Kremen od kojeg su izrađena sječiva je žućkast, sitnozrn, s bijelim inkluzijama. Čini se da su nalazi termički obrađeni. Strelica je izrađena od crnog kremena. Mala količina kremenog otpada pronađena je na istom području, što upućuje na to da su bar neke od alatki vjerojatno izrađene na lokalitetu. Vrlo je vjerojatno da kremen također potječe od izvora u blizini.

Sve ove kremene alatke mogle bi biti iz neolitičkog ili moguće iz razdoblja eneolitika, jer su slični skupovi nalaza pronađeni po Dalmaciji na drugim lokalitetima u srednjoneolitičkim i kasnoneolitičkim, te u eneolitičkim slojevima. Primjeri uključuju špilju Nakovanu na sjeverozapadnom kraju poluotoka Pelješca, Gudnju kod Stona,[66] te Grapčevu spilju na otoku Hvaru.[67] Dalje na sjeveru, pronađeni su veliki skupovi sličnih kremenih artefakata na poznatim neolitičkim nalazištima Danilu i Pokrovniku.[68]

Sokol gleda na široku, plodnu i vodom bogatu dolinu Konavoskog polja. Ta je dolina mogla biti vrlo atraktivna neolitičkim poljodjelcima koji su se kretali kroz regiju s udaljenog juga. Stoga, nije iznenađujuće ovdje pronaći dokaz ljudske aktivnosti iz vremena neolitika. Sam lokalitet Sokol, visoko smješten na planini nadgledajući ravnicu u nizini, nalazi se na putu koji vodi do prolaza preko visokog planinskog lanca na istoku. Taj je put jedna od nekoliko ruta koje vode od obale prema Hercegovini. Vrlo je vjerojatno da je ovaj geografski položaj, uz obilje izvora na tom području, učinio lokalitet prikladnim mjestom za logor ili čak kratkotrajno naselje od neolitika prema kasnijem razdoblju.

66 B. MARIJANOVIĆ, 2005a, T. IV, T. XXX; S. FORENBAHER, Z. PERHOČ, 2017, 189–211, Fig. 5.
67 G. NOVAK, 1955, T. CCXXXIX-CCXLII.
68 J. KOROŠEC, 1964, T. 24–30; A. M. T. MOORE et al., 2019, Figure 22.

some of the tools, at least, were probably made on site. It is likely that the flint also came from sources in the vicinity.

All these flint tools could be Neolithic or possibly Eneolithic/Copper Age in date, as similar assemblages have been found elsewhere in Dalmatia in Middle and Late Neolithic as well as Eneolithic levels at other sites. Examples include the cave sites of Nakovana at the northwest end of the Pelješac Peninsula, Gudnja near Ston[66], and Grapčeva spilja on the island of Hvar[67]. Farther north, large assemblages of similar flint artifacts have been found at the well-known Neolithic sites of Danilo and Pokrovnik.[68]

Sokol overlooks the broad, fertile, and well-watered valley of the Konavosko Polje. The valley would have been highly attractive to Neolithic farmers moving into the region from farther south. It is not surprising, therefore, to find evidence of human activity there dating from the Neolithic. The Sokol site itself, high up on the mountainside overlooking the plain below, is on a path that leads to a pass over the high mountain ridge to the east. This path thus provided one of the few routes from the coast into Hercegovina. It is likely that this geographical location, together with the abundant springs in the area, made it a convenient site for a camp or even short-term settlement, from the Neolithic into later times.

STONE ARTIFACTS

Several stone grinding stones were found in the Sokol Fortress excavations. They all date from the Iron Age and Roman periods. Two rubbing stones were recovered from Iron Age/Illyrian levels in Trench 2. One was trapezoidal (T. XIII, 1) and the other was ovoid in shape

66 B. MARIJANOVIĆ, 2005a, T. IV, T. XXX; S. FORENBAHER, Z. PERHOČ, 2017, 189–211, Fig. 5.
67 G. NOVAK, 1955, T. CCXXXIX-CCXLII.
68 J. KOROŠEC, 1964, T. 24–30; A. M. T. MOORE et. al., 2019, Figure 22.

KAMENI NALAZI

Nekoliko nalaza od abrazivnog kamena pronađeno je u iskopavanjima utvrde Sokol. Svi oni potječu iz željeznog doba i rimskog razdoblja. Dva rastirača pronađena su u željeznodobnim/ilirskim slojevima u sondi 2. Jedan je trapezoidne (T. XIII, 1), a drugi jajolike forme (T. XIII, 2). Oba su izrađena od domaćeg vapnenca i obojena su crvenom bojom zbog dugog taloženja u zemlji crvenici (*terra rossa*). Treći ulomak kamenog oruđa, dio žrvnja (T. XIII, 3), također izrađen od domaćeg vapnenca, pronađen je u istoj sondi. Ovaj nalaz potječe iz rimskog razdoblja. Četvrti predmet je nađen na kasnorimskoj razini uz istočnu stranu utvrde. Također je služio kao rastirač, gotovo pravokutnog je oblika, a izrađen je od vapnenca (T. XIII, 4). Vrlo je vjerojatno da su svi ovi alati korišteni za obradu žitarica i drugih biljaka za hranu.

Ulomak stupa s utorom kojem nedostaje kapitel (T. XIII, 5) nađen je u kasnoantičkom/ranosrednjovjekovnom sloju uz južnu stranu utvrde. Moguće je da potječe iz neke ranokršćanske crkve. Uz taj ulomak nađeno je još nekoliko fragmenata središnjih dijelova stupića. Uz južnu stranu utvrde i danas postoji crkva, a pretpostavlja se, zbog kasnoantičkih zidova koji naglo mijenjaju smjer na toj strani sonde jer se nisu imali kuda pružati zbog već zauzetog prostora, da je u neposrednoj blizini morao biti smješten neki objekt (moguće sakralni) koji je sprječavao njihovo pružanje.

Stupić s dijelom kapitela s reljefnim ornamentom (T. XIII, 6) nađen je s mješovitim materijalom u kasnosrednjovjekovnom/ranonovovjekovnom sloju uz istočnu stranu utvrde.

Ulomak kamena s uklesanom ribom (T. XIII, 7) pronađen je uza sjevernu stranu utvrde u nasipnom sloju s mješovitim, pretežno kasnosrednjovjekovnim materijalom i s nešto tegula.

Dvije veće konzole (cca 60 cm dužine) na-

(T. XIII, 2). Both were made of local limestone and had been colored red by long deposition in *terra rossa* soils. A third stone tool fragment, this time a segment of a rotary quern (T. XIII, 3), also made of local limestone, was recovered from the same trench. This object is Roman in date. The fourth object came from a late Roman level on the eastern side of the fortress. It, too, was a rubbing stone, almost rectangular in shape and made of limestone (T. XIII, 4). It is likely that all these tools were used to prepare grains and other plants for food.

A fragment of a column with utor without captel (T. XIII, 5) was found in late Roman / early Medieval layer next to the southern side of the fort. Iti s possible that it belonged to some early Christian church. Beside that fragment, several other pieces of central parts of small columns have been found. There is a church next to the southern part of the fort and it is supposed, due to late Antique walls that abruptly change direction in that part of the probe, that some building (sacral ?) was in the vicinity.

Small column with fragment of the capitel with relief ornamentation (T. XIII, 6) was unearthed together with mixed material in late Roman / early Medieval layer next to the fort's eastern part.

A stone fragment with depiction of a fish inscribed in it (T. XIII, 7) was found next to the northern side of the fort in a layer with mixed but mostly late Medieval material with some tegulae.

Two larger consoles (cca 60 cm in lenght) were found next to the western side of the fort. They probably got there when one of the buildings on top of the fort collapsed.

Stone balls-projectiles for missile weapons and bombards (T. XII, 8) were often used on the fort Sokol which is attested by the defensive character of the building and an information from 1423 that states that a stonemason was sent to the fort to make 100 stone balls for bombards.[69] Balls that have been found are

[69] L. BERITIĆ, 1966, 108.

đene su uza zapadnu stranu utvrde, a tu su vjerojatno dospjele kad se urušila neka od građevina na vrhu utvrde.

Kamene kugle-projektili za bacačke sprave i bombarde (T. XIII, 8) dosta su korištene na utvrdi Sokol o čemu svjedoče nalazi i sam karakter objekta, kao i podatak iz 1423. godine preko kojeg znamo da je na utvrdu poslan klesar radi izrade 100 kamenih kugli za bombarde.[69] Pronađene kugle različitih su promjera (cca 10 – 40 cm) i kvalitete obrade. Nađene su u nasipnim kasnosrednjovjekovnim/ranonovovjekovnim slojevima uokolo utvrde. Njihova upotreba je bila raširena u to vrijeme, a slične kamene, ali i metalne i sedrene kugle različitih promjera za topove i/ili katapult pronađene su u istraživanju utvrde Sokol na Plivi.[70] Kamene kugle nađene su i na kraljevskoj utvrdi Bobovac u Bosni,[71] utvrdi Kličevici u sjevernodalmatinskom zaleđu,[72] te u Starom Baru u Crnoj Gori.[73]

KOŠTANI NALAZI

Koštani artefakti pronađeni uz utvrdu Sokol nisu brojni, iako je tradicija obrade kosti bila vrlo raširena u ranijim razdobljima (prapovijest, antika) koja su dokumentirana na lokalitetu. Među nalazima se ističu privjesci-amuleti (T. XIV, 1), jelenji rogovi i češljevi (T. XIV, 3). Privjesci su izrađeni od kosti, a probušeni su da bi se mogli nositi kao ukras, amuleti ili su mogli imati apotropejsku funkciju. Nađeni su u dubokom prapovijesnom sloju s mješovitim nalazima. Slični predmeti upotrebljavani su i u ranijim prapovijesnim razdobljima (paleolitik, neolitik).[74]

Dvostrani koštani češljevi pravokutnog

[69] L. BERITIĆ, 1966, 108.
[70] I. BOJANOVSKI, 1972, 58.
[71] P. ANĐELIĆ, 2004, 154.
[72] K. GUSAR, M. ĆURKOVIĆ, 2011, 13, 30, kat. 55.
[73] L. SABBIONESI, 2013, 169–170, Fig. 5,66.
[74] M. MALEZ, 1979, 260, T. XXIV, 20–23; B. MARIJANOVIĆ, 2005a, 61, T. XXXI/10; B. MARIJANOVIĆ, 2005b, 15–16.

of different diametars (cca 10 – 40 cm) and quality. They were found in late Medieval / early postmedieval fill layers around the fort. Their usage was common in those times. Similar stone balls, as well as metal and tufa balls of different diametars for cannons and/or catapults were found during the excavation of the fort Sokol on the river Pliva.[70] Stone balls were found in the regal fort of Bobovac in Bosnia,[71] Kličevica fort in North Dalmatian hinterand[72] and in Stari Bar in Montenegro.[73]

BONE FINDS

Bone artifacts found near Fort Sokol are not numerous though tradition of working bone was very widespread in the earlier prehistoric periods (prehistory, antiquity) that have been documented at the site. Interesting bone finds include pendants-amulets (T. XIV, 1), deer antlers and combs (T. XIV, 3). Pendants made of bone were perforated to be worn as ornaments, amulets, or they might have had apotropaic function. They were found in a deep prehistoric layer with mixed finds. Similar objects were used in the earlier prehistoric periods (Paleolithic, Neolithic).[74]

Double-sided bone combs, rectangular in form, with teeth, are common finds from antiquity. They were also used as hair adornment.[75] On two fragments were iron rivets used to fasten bone plate in the middle of the comb as a reinforcement. Comb fragments were found in late antique layer along the northern side of the fort. One fragment was found in the fill of GR 37 (male grave) along the eastern side of the fort. Finds can be dated to the 5th and 6th centuries in accordance with dat-

[70] I. BOJANOVSKI, 1972, 58.
[71] P. ANĐELIĆ, 2004, 154.
[72] K. GUSAR, M. ĆURKOVIĆ, 2011, 13, 30, kat. 55.
[73] L. SABBIONESI, 2013, 169–170, Fig. 5,66.
[74] M. MALEZ, 1979, 260, T. XXIV, 20-23; B. MARIJANOVIĆ, 2005a, 61, T. XXXI/10; B. MARIJANOVIĆ, 2005b, 15-16.
[75] M. PETRINEC, 2009, 186.

oblika sa zupcima čest su nalaz iz antičkog razdoblja. Korišteni su i kao ornament u kosi.[75] Na dvama ulomcima sačuvane su željezne zakovice koje su fiksirale koštanu letvicu koja se nalazila po sredini kao pojačanje češlja. Jedna strana češljeva gušće je nazubljena tanjim zupcima. Fragmenti češlja pronađeni su u kasnoantičkom sloju uza sjevernu stranu utvrde. Jedan ulomak nađen je u zapuni GR 37 (muški grob) uz istočnu stranu utvrde. Nalazi se mogu datirati u 5. – 6. stoljeće prema dataciji dobivenoj za ostale grobove iz tog sloja. Fragment koštanog češlja nađen je uz poremećene/uništene grobne konstrukcije (GR 1 i 2, dječji i ženski grob) uz JI stranu utvrde pa je moguće da je riječ o grobnom prilogu nekoga od grobova koji su datirani u rasponu od polovice 6. do početka 7. stoljeća, što bi moglo približno datirati i ovaj nalaz. Prema stratigrafskom kontekstu fragmenti se mogu datirati u kasnu antiku ili rani srednji vijek. Ovakvi nalazi su osobito učestali u kasnoantičkim naseljima i nekropolama na širem euroazijskom prostoru. Slične primjere nalazimo na nekropolama sjeverne i srednje Dalmacije. Kronološki su im još bliži nalazi iz istarskih nekropola 7. i 8. stoljeća koji su vrlo brojni, a povezani su s pridošlim Slavenima i romaniziranim starosjediocima.[76] Takvi nalazi poznati su i iz istraživanja crkve sv. Stjepana u Dubrovniku a datirani su u rani srednji vijek.[77]

KERAMIČKI NALAZI

Keramički nalazi vrlo su brojni, a osobito se ističu ulomci keramičkih posuda iz prapovijesnog razdoblja (eneolitik/brončano doba, željezno doba) (T. XIV, 4-11; T. XV; T. XVI, 1-2), grčko-helenističkog doba (T. XVI, 3-9) te rimskog i ranobizantskog razdoblja (T.

[75] M. PETRINEC, 2009, 186.
[76] J. BELOŠEVIĆ, 1980, 124.
[77] N. TOPIĆ et. al., 2019, 92, 131, T. XX/1-3.

ing obtained for other graves from that layer. Fragment of a bone comb was found next to disturbed/destroyed grave constructions (GR 1, 2: child's and female grave) along SE side of the fort so it is possible that it belonged to grave goods from some of the graves that were dated to the range from mid-6th to early 7th century, that might be broad dating for this find as well. On the basis of stratigraphic context, these fragments can be dated to Late Antiquity or the Early Middle Ages. Such finds are particularly common at late antique sites and necropoles in wider Euro-Asian region. Similar examples can be found at necropoles of northern and cental Dalmatia. Numerous finds from Istrian necropoles of the 7th and 8th centuries are even closer to these fragments in terms of chronology. Istrian combs are related to Slavic newcomers and Romanized indigenous population.[76] Such finds are known from the excavations of the church of St Stephen in Dubrovnik dating to the Early Middle Ages.[77]

CERAMIC FINDS

Ceramic finds are numerous, particularly pottery sherds from prehistory (Eneolithic / Bronze Age, Iron Age) (T. XIV, 4-11; T. XV; T. XVI, 1-2), Greek-Hellenistic period (T. XVI, 3-9) and Roman and Early Byzantine period (T. XVII-XVIII). There are also many finds of ceramic vessels dating to the Late Middle Ages and Early Modern Period (T. XIX-XX). Several small weights in different shapes were found (T. XVI, 1). Three miniature vessels are especially interesting (T. XVI, 2). Fragments of a late antique lamp also belong to ceramic inventory of this site (T. XVIII, 4). Most ceramic finds were recovered from layers in very fragmentary condition, while only a small portion of fragments were found in grave fills

[76] J. BELOŠEVIĆ, 1980, 124.
[77] N. TOPIĆ et. al., 2019, 92, 131, T. XX/1-3.

XVII-XVIII). Također su brojni nalazi keramičkih posuda kasnog srednjeg i ranog novog vijeka (T. XIX-XX). Nađeno je više malih utega različitih oblika (T. XVI, 1), a osobito se ističu tri minijaturne posude (T. XVI, 2). Također su nađeni ulomci kasnoantičke svjetiljke (T. XVIII, 4). Keramički nalazi su uglavnom pronađeni kao vrlo fragmentirani nalazi u slojevima, dok je manji broj nađen u zapunama grobova (ne u funkciji grobnih priloga).

Kasnoeneolitička/ranobrončanodobna keramika (T. XIV, 5-7) svjedoči o prijelaznom periodu iz kamenog na metalno doba na području utvrde Sokol. Eneolitik istočne jadranske obale slabije je istražen od razvoja toga razdoblja u unutrašnjosti Balkana.[78] Prijelaz eneolitika na brončano doba na području zaleđa srednjeg i južnog dijela istočnog Jadrana obilježile su dvije kulturne grupe, cetinska (kasni eneolitik/rano brončano doba) i posuška (rano i srednje brončano doba). Iako im područje južnog Jadrana i otoka nije ishodišni prostor, te kulturne grupe sudjelovale su u kreiranju brončanog doba na tom području.[79]

Protonakovanska kultura pojavljuje se na području srednjeg i južnog Jadrana. Manji broj ulomaka (T. XIV, 4) odlikuje se nekim karakteristikama protonakovanske i nakovanske kulture (plitke kratke kanelire duž gornjeg dijela posude, ispod horizontalnih ureza).[80] Eneolitička keramika manje je zastupljena od brončanodobne na Sokolu, ali se na pronađenom materijalu vide eneolitički utjecaji. Badenska kulturna grupa očituje se u načinu ornamentiranja posuda (trokutići s paralelno urezanim linijama, trake ispunjene točkastim ubodima, lažne ručke) (T. XIV, 7; T. XV, 7). Porijeklo te kulturne grupe nije sasvim jasno, no smatra se da je nastala na području južnog Balkana na periferiji kasne vinčanske kulture (but not as grave goods).

Late Eneolithic / Early Bronze Age pottery (T. XIV, 5-7) testifies to the transitional period from the Stone Age to the Metal Ages that happened in the area of Fort Sokol. Eneolithic of the eastern Adriatic coast is poorly explored in comparison with this period in the interior of the Balkans.[78] Transition from the Eneolithic to the Bronze Age in the hinterland area of central and southern part of the eastern Adriatic was marked by two cultural groups: the Cetina culture (Late Eneolithic / Early Bronze Age) and the Posušje culture (Early and Middle Bronze Age). Although the area of the southern Adriatic and islands is not their area of origin, these cultural groups participated in creating the Bronze Age in this region.[79]

Proto-Nakovana culture emerged in the area of the central and southern Adriatic. Small number of sherds (T. XIV, 4) are characterized by some features of the proto-Nakovana and Nakovana cultures (shallow channels along the upper part of the vessel under horizontal incisions).[80] Eneolithic pottery sherds are not as numerous as the Bronze Age fragments in Sokol, but Eneolithic influences can be recognized on the recovered material. The Baden cultural group is manifested in ornamentation of vessels (small triangles with parallelly incised lines, bands filled with dotted pricks, false handles) (T. XIV, 7; T. XV, 7). Origin of this group has not been determined unambiguously, it is assumed that it was created in the southern Balkan region in the periphery of the late Vinča culture under Anadolian influences.[81]

The Lasinja and Vučedol cultures influenced formation of the Cetina culture in the Adriatic region.[82] In the Adriatic zone probably

[78] S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 112–113.
[79] B. MARIJANOVIĆ, 2005b, 17–18.
[80] S. DIMITRIJEVIĆ, 1979a, 371–372, T. XLVIII/3-4, 8-9.

[78] S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 112-113.
[79] B. MARIJANOVIĆ, 2005b, 17-18.
[80] S. DIMITRIJEVIĆ, 1979a, 371-372, T. XLVIII/3-4, 8-9.
[81] S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 122-126.
[82] I. MAROVIĆ, B. ČOVIĆ, 1983, 225-228; S. DIMITRIJEVIĆ, 1979b, 377.

uz anadolske utjecaje.[81]

Na području Jadrana na tvorbu cetinske kulture utjecale su lasinjska i vučedolska.[82] U jadranskoj zoni vjerojatno je postojala kasnovučedolska faza prije formiranja ljubljanske kulturne grupe, tj. prije početka brončanog doba.[83] Utjecaji kasnovučedolskih populacija iz područja južne i zapadne Bosne zamjećuju se na jadranskom području u vrijeme prijelaza eneolitika na brončano doba, nakon nakovanskog razdoblja.[84] Ističe se ulomak otvora posude s ukrasom žigosanih kvadratića (T. XIV, 5), kod kojeg se vide utjecaji vučedolske kulture.[85] Također su nađeni ulomci s ukrasom šrafiranih trokutića od kojih neki sadrže V i M motive (T. XIV, 6), što je uobičajen način dekoracije za rano brončano doba, a tako ukrašene posude nalazimo na području zapadne Hercegovine[86] i prijelazne zone (sjeverna Hercegovina, južna i centralna Bosna, gornji tokovi Neretve, Bosne i Vrbasa).[87] Prijelaznu zonu krajem eneolitika uglavnom su naseljavali nosioci vučedolske kulture, što također svjedoči o mogućim utjecajima, a pristiže i novo stanovništvo.[88] Na nalazima koji su nađeni uz utvrdu Sokol nije sačuvana inkrustacija koja je karakteristična za takvo posuđe. Nekoliko ulomaka ukrašeno je koso šrafiranim uzastopnim trokutima (T. XIV, 7) koji se pojavljuju u kasnoklasičnoj fazi vučedolske kulture,[89] ranom brončanom, ali i kasnom brončanom dobu u prijelaznoj zoni (sjeverna Hercegovina, južna Bosna).[90]

Prijelazni period s kasnog eneolitika na **brončano doba** očituje se u zastupljenosti keramike cetinske kulturne grupe (T. XIV,

[81] S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 122–126.
[82] S. DIMITRIJEVIĆ, 1979b, 377; I. MAROVIĆ, B. ČOVIĆ, 1983, 225–228.
[83] S. DIMITRIJEVIĆ, 1979b, 378.
[84] S. DIMITRIJEVIĆ, 1979b, 370, 378.
[85] S. DIMITRIJEVIĆ, 1979a, 267–341, T. XXVIII/3.
[86] B. ČOVIĆ, 1983a, 151, T. XVIII/2.
[87] B. ČOVIĆ, 1983b, 170, 177, T. XXIV/10, T. XXV/11.
[88] B. ČOVIĆ, 1983b, 182.
[89] S. DIMITRIJEVIĆ, 1979a, 293, T. XXXIII/6.
[90] B. ČOVIĆ, 1983c, 390, 395, sl. 25/4, T. LIX/3-4,9, LXI/10.

late Vučedol phase preceded formation of the Ljubljana cultural group, i.e. beginning of the Bronze Age.[83] Influences of the late Vučedol populations from the regions of southern and western Bosnia can be noticed in the Adriatic region in the period of transition from the Eneolithic to the Bronze Age, after the Nakovana phase.[84] Fragment of a vessel opening decorated with stamped squares (T. XIV, 5) stands out, with obvious influences of the Vučedol culture.[85] There were also fragments decorated with hatched triangles some of which contain V and M motifs (T. XIV, 6), decoration characteristic of the Early Bronze Age. Vessels decorated in this manner can be found in western Herzegovina[86] and in the transition zone (northern Herzegovina, southern and central Bosnia, upper courses of Neretva, Bosna and Vrbas).[87] The transition zone at the end of the Eneolithic was mostly inhabited by the population of the Vučedol culture, testifying to possible influences, and also new population was arriving.[88] Incrustation technique which is characteristic of such vessels was not recorded on the finds recovered near Fort Sokol. Several fragments were decorated with obliquely hatched triangles in a row (T. XIV, 7) characteristic of the late classical phase of the Vučedol culture,[89] Early Bronze, and Late Bronze Ages in the transition zone (northern Herzegovina, southern Bosnia).[90]

Transition period from the Late Eneolithic to the **Bronze Age** is manifested in presence of the Cetina culture pottery (T. XIV, 8-9; T. XV, 1-2, 4-6). Characterized by heterogeneity, it emerged in the Eneolithic of the Adriatic hinterland and coastal area, continuing its development in the Bronze Age, until its middle phase. The first stage represents transition

[83] S. DIMITRIJEVIĆ, 1979b, 378.
[84] S. DIMITRIJEVIĆ, 1979b, 370, 378.
[85] S. DIMITRIJEVIĆ, 1979a, 267-341, T. XXVIII/3.
[86] B. ČOVIĆ, 1983a, 151, T. XVIII/2.
[87] B. ČOVIĆ, 1983b, 170, 177, T. XXIV/10, T. XXV/11.
[88] B. ČOVIĆ, 1983b, 182.
[89] S. DIMITRIJEVIĆ, 1979a, 293, T. XXXIII/6.
[90] B. ČOVIĆ, 1983c, 390, 395, sl. 25/4, T. LIX/3-4,9, LXI/10.

8-9; T. XV, 1-2, 4-6). Ona se odlikuje heterogenošću, pojavljuje se u eneolitiku jadranskog zaleđa i obalnog područja, a nastavlja se razvijati u brončanom dobu, do njegove srednje faze. Prvi stupanj čini prijelazno razdoblje iz kasnog eneolitika u rano brončano doba.[91] U brončanom dobu dolazi do razvoja metalurgije (lijevanje brončanih predmeta), ali se nastavlja i izrada šireg spektra keramičkih posuda.[92] Nalazi pronađeni uz utvrdu Sokol također svjedoče o dominaciji nositelja te kulturne grupe. Nekoliko ulomaka ima aplicirane trake s otiscima prstiju (T. XIV, 8), kakve nalazimo u cetinskoj kulturnoj grupi.[93] Također su tako ukrašene ranobrončanodobne posude nađene u zapadnoj Hercegovini.[94]

Sljedeći ulomci karakteristični su za cetinsku kulturu, a pripadaju tipu Kotorac koji se pojavljuje u prvoj fazi cetinske kulture – ranom brončanom dobu.[95] Sačuvan je ulomak otvora posude s dekoracijom trokuta izvedenih višestrukim urezanim linijama (T. XV, 9). Takav linearni način ukrašavanja karakterističan je za drugu fazu cetinske kulture.[96] Drugi ulomak ukrašen je trokutićima koji su ispunjeni ubodima (T. XV, 1). Ornament izveden urezivanjem i ubadanjem geometrijskih motiva (trokuti) obilježje je rane faze cetinske kulture, a na sličan način su ukrašene posude tipa Kotorac. Za cetinsku kulturu karakteristični su grublji i finiji plastični ukras, udubljivanje, urezivanje, ubodi, žigosanje, tekstilni otisci.[97]

Nađeno je nekoliko ulomaka posuda s valovitim, blago povijenim i zadebljanim otvorom te stijenkom ukrašenom sitnim urezima

[91] I. MAROVIĆ, B. ČOVIĆ, 1983, 194, 196, 218–219, 223–224; S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 174.
[92] S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 167.
[93] I. MAROVIĆ, B. ČOVIĆ, 1983, 195, Sl. 14/6, 211–212, T. XXIX/1.
[94] B. ČOVIĆ, 1983a, 150, T. 16/1, T.21.
[95] I. MAROVIĆ, B. ČOVIĆ, 1983, T. XXXI/5-6; S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 176, sl. 10.
[96] I. MAROVIĆ, B. ČOVIĆ, 1983, T. XXIX/2.
[97] B. ČOVIĆ, 1983a, 150.

period from the Late Eneolithic to the Early Bronze Age.[91] Metallurgy (casting bronze objects) started developing in the Bronze Age, and repertory of ceramic vessels was enriched.[92] Finds recovered from the surroundings of Fort Sokol testify to dominance of the representatives of this cultural group. Several sherds are decorated with applied bands with fingertip impressions (T. XIV, 8), found in the Cetina culture as well.[93] Early Bronze vessels found in western Herzegovina were also decorated in that way.[94]

The following fragments are characteristic of the Cetina culture, belonging to the Kotorac type from the first phase of the Cetina culture – the Early Bronze Age.[95] A fragment of a vessel opening was preserved, decorated with triangles executed with multiple incised lines (T. XV, 9). Such linear decoration is typical of the second phase of the Cetina culture.[96] The other fragment is decorated with triangles filled with pricks (T. XV, 1). Ornament executed by incising and pricking geometric motif (triangles) is characteristic of the early phase of the Cetina culture, and vessels of the Kotorac type were decorated in a similar way. The Cetina culture is characterized by coarse or fine embossed ornaments, impressing, incising, pricking, stamping, textile imprints.[97]

There were also sherds of vessels with wavy, slightly inverted and thickened opening, and wall decorated with small incisions constituting zig-zag motifs that can be single or double (T. XV, 2). Similar manner of incising can be found in the Early Bronze Age in western Her-

[91] I. MAROVIĆ, B. ČOVIĆ, 1983, 194, 196, 218-219, 223-224; S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 174.
[92] S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 167.
[93] I. MAROVIĆ, B. ČOVIĆ, 1983, 195, Sl. 14/6, 211-212, T. XXIX/1.
[94] B. ČOVIĆ, 1983a, 150, T. 16/1, T.21.
[95] I. MAROVIĆ, B. ČOVIĆ, 1983, T. XXXI/5-6; S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 176, fig. 10.
[96] I. MAROVIĆ, B. ČOVIĆ, 1983, T. XXIX/2.
[97] B. ČOVIĆ, 1983a, 150.

koji tvore cik-cak motive koji su jednostruki i dvostruki (T. XV, 2). Sličan način urezivanja nalazimo u ranom brončanom dobu u zapadnoj Hercegovini.[98] Također sličan ornament nalazimo u prijelaznoj zoni (sjeverna Hercegovina, južna i centralna Bosna, gornji tokovi Neretve, Bosne i Vrbasa), na posuđu ukrašenom tehnikom „namotane niti" (*Wickelschnur*) specifičnim cik-cak motivom.[99] Posude s valovitim rubom poznate su u cetinskoj grupi.[100] Slični nizovi udubljenja pojavljuju se na keramici kasnog brončanog doba iz prijelazne zone.[101] Jedan ulomak ima ukras žigosanja na širokom zaravnjenom obodu, što je odlika rane cetinske kulture,[102] a žigosane trokutiće na obodu posude nalazimo i u ranobrončanodobnom sloju Gudnje na Pelješcu, te u srednjoj fazi posuške kulture na gradini u Sovićima.[103] Prije nego što su započela arheološka istraživanja, na lokalitetu su pronađeni i ulomci loptastih posuda s tunelastim ručkama koje pripadaju prvoj fazi cetinske kulture (2100. – 1900. pr. Kr.).[104]

Slijedi nekoliko ručki karakterističnih za brončanodobne posude. Jedna je izrađena od oker gline, a mogla je pripadati peharu, amfori ili amforici iz ranog brončanog doba (T. XV, 3). Slične ručke poznate su iz prijelazne zone.[105] Druga je koljenaste forme (T. XV, 4), vjerojatno je pripadala peharu, a slične primjere nalazimo u zapadnoj Hercegovini.[106] Manja kanelirana ručka sive boje (T. XV, 5) također je karakteristična za rano brončano doba, a paralelne primjere nalazimo u prijelaznoj zoni.[107] Četvrta je trakasta sa žlijebom u sredini i izvučena iznad otvora (T. XV, 6), a

zegovina.[98] Similar ornament is present in the transition zone (western Herzegovina, southern and central Bosnia, upper courses of Neretva, Bosna and Vrbas), on vessels with cord ornaments (*Wickelschnur*) in a specific zig-zag motif.[99] Vessels with wavy rim are known from the Cetina culture.[100] Similar rows of impressions occur on pottery of the Late Bronze Age from the transition zone.[101] One fragment has a stamped decoration on the wide flattened rim, which is characteristic of the Early Cetina culture.[102] Stamped triangles on the vessel rim are also found in the Early Bronze Age layer in Gudnja on Pelješac, and in the middle phase of the Posušje culture on hillfort in Sovići.[103] Fragments of globular vessels with tunnel-shaped handles from the first phase of the Cetina culture were found at the site before the archaeological excavation started (2100-1900 BC).[104]

Pottery finds from Fort Sokol also comprise several handles characteristic of the Bronze Age vessels. One of them was made of ocher clay, and it might have belonged to a goblet, amphora or small amphora dating to the Early Bronze Age (T. XV, 3). Similar handles are known from the transition zone.[105] The second handle has a bent form, resembling a knee (T. XV, 4). Probably it belonged to a goblet, and similar examples can be found in western Herzegovina.[106] Small grey channelled handle (T. XV, 5) is also characteristic of the Early Bronze Age, and parallel examples can be found in the transition zone.[107] The fourth example is a strap handle with a groove in the middle, that surmounts the rim (T. XV, 6), belonging to

98 B. ČOVIĆ, 1983, 151, T. XVIII/4, 6, 9.
99 B. ČOVIĆ, 1983b, 170, 177, T. XXIV/13, T. XXVI/4, 6–9.
100 I. MAROVIĆ, B. ČOVIĆ, 1983, 195, Sl. 14/1.
101 B. ČOVIĆ, 1983c, 402–403, T. VVII/1,1a, 6, 9, T. LVIII/2a, 5, LXI/3, 4a, 5a, 6, 7.
102 I. MAROVIĆ, B. ČOVIĆ, 1983, 199, sl. 15/11, T. XXIX/2a, 12a.
103 B. MARIJANOVIĆ, 2005a, 91, T. LIX/2b.
104 N. KAPETANIĆ, 2013, 9–10.
105 B. ČOVIĆ, 1983b, 176, T. XXII/9.
106 B. ČOVIĆ, 1983a, 149–150, T. XVI/8, XVII/4.
107 B. ČOVIĆ, 1983b, T. XXII/4.

98 B. ČOVIĆ, 1983, 151, T. XVIII/4, 6, 9.
99 B. ČOVIĆ, 1983b, 170, 177, T. XXIV/13, T. XXVI/4, 6-9.
100 I. MAROVIĆ, B. ČOVIĆ, 1983, 195, fig. 14/1.
101 B. ČOVIĆ, 1983c, 402-403, T. VVII/1,1a, 6, 9, T. LVIII/2a, 5, LXI/3, 4a, 5a, 6, 7.
102 I. MAROVIĆ, B. ČOVIĆ, 1983, 199, fig. 15/11, T. XXIX/2a, 12a.
103 B. MARIJANOVIĆ, 2005a, 91, T. LIX/2b.
104 N. KAPETANIĆ, 2013, 9-10.
105 B. ČOVIĆ, 1983b, 176, T. XXII/9.
106 B. ČOVIĆ, 1983a, 149-150, T. XVI/8, XVII/4.
107 B. ČOVIĆ, 1983b, T. XXII/4.

pripada cetinskoj kulturnoj grupi.[108]

Sljedeći ulomci su dijelovi otvora posuda s apliciranom potkovičastom drškom (T. XIV, 7), kakve nalazimo na ranobrončanodobnim posudama u sjevernoj Dalmaciji[109] i Hercegovini.[110] Više ulomaka posuda s takvim ručkama nađeno je u srednjobrončanodobnim slojevima pećine Gudnje na Pelješcu. Takve ručke imaju i posude iz treće faze posuške kulture.[111]

U kasnom brončanom dobu dolazi do dinamičkih kretanja i brojnih trgovačkih kontakata.[112] **Željezno doba** donosi razvoj metalurgije te uznapredovale trgovačke veze s južnim krajevima (grčkim, italskim, etrurskim svijetom).[113] Također se nastavlja produkcija keramičkih posuda različitih formi i ukrasa, a kao što je to slučaj i s prethodnim razdobljem ni željezno doba južnodalmatinskog područja nije dobro istraženo. Željeznodobna keramika zastupljena je grubim smeđim, crnim i narančastim posuđem s primjesama kalcita (T. XV, 8-12). Ističu se ulomci posuda s plastičnim jezičastim (T. XV, 10) i izvučenim ručkama izduženog ovalnog presjeka (T. XV, 11) iz željeznodobnog ilirskog horizonta (iz posljednjeg istraženog sloja na SZ području uz utvrdu). Analogni su im delmatski nalazi ručki iz Gospodske pećine kod vrela Cetine, koje također imaju kraće ili duže ručke sličnog tipa.[114] Jezičaste ručke također nalazimo u srednjem brončanom dobu u Gudnji na Pelješcu.[115] Vertikalna trakasta ručka koja nadvisuje otvor posude nađena je u mješovitom prapovijesnom sloju uz JI stranu utvrde (T. XV, 12), a slične primjere nalazimo u srednjobosanskoj željeznodobnoj grupi.[116]

[108] I. MAROVIĆ, B. ČOVIĆ, 1983, 199, sl. 15/15.
[109] B. ČOVIĆ, 1983d, T. XV/8.
[110] B. ČOVIĆ, 1983a, 157.
[111] B. MARIJANOVIĆ, 2005a, 91–92, T. LIX/3, T. LX/1-5.
[112] S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 215.
[113] S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 229.
[114] I. MAROVIĆ, 1979, 29–31, sl. 9/2, 10/1-3.
[115] B. MARIJANOVIĆ, 2005a, 91, T. LIX/4a-b.
[116] B. ČOVIĆ, 1987a, 491, T. LII/21.

the Cetina cultural group.[108]

The following fragments are parts of the opening of a vessel with an applied handle in shape of a horseshoe (T. XIV, 7), of the type found on the Early Bronze Age vessels in northern Dalmatia[109] and Herzegovina.[110] Several sherds of vessels with such handles were found in the Middle Bronze Age layers of the Gudnja cave on Pelješac. Such handles are also found on vessels from the third phase of the Posušje culture.[111]

Dynamic population movements and growing trade contacts marked the Late Bronze Age.[112] **The Iron Age** brought the development of metallurgy and advanced trade connections with southern regions (Greek, Italic, Etruscan world).[113] Production of ceramic vessels in various forms and with different ornaments continued. Southern Dalmatian area in the Iron Age is poorly explored, just like in the previous period. The Iron Age pottery is represented by coarse brown, black and orange vessels with calcite inclusions (T. XV, 8-12). Fragments of vessels with embosed semicircular (T. XV, 10) and pulled handles with elongated oval cross-section (T. XV, 11) were found in the Iron Age Illyrian horizon (from the last excavated layer in the NW area next to the fort). We can find analogies for these finds in the Dalmatian handles, in longer or shorter variants, from Gospodska pećina at the Cetina river source.[114] Semicircular and flattened handles are also found in the Middle Bronze Age in Gudnja on Pelješac.[115] Vertical strap handle that surmounts vessel opening was found in the mixed prehistoric layer along the SE side of the fort (T. XV, 12). Similar examples can

[108] I. MAROVIĆ, B. ČOVIĆ, 1983, 199, fig. 15/15.
[109] B. ČOVIĆ, 1983d, T. XV/8.
[110] B. ČOVIĆ, 1983a, 157.
[111] B. MARIJANOVIĆ, 2005a, 91-92, T. LIX/3, T. LX/1-5.
[112] S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 215.
[113] S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 229.
[114] I. MAROVIĆ, 1979, 29-31, fig. 9/2, 10/1-3.
[115] B. MARIJANOVIĆ, 2005a, 91, T. LIX/4a-b.

Neki ulomci su karakteristični i za brončano i za željezno doba, a zbog male sačuvanosti nije ih moguće tipološki ni kronološki pouzdano odrediti.

Pronađeno je više keramičkih utega (T. XVI, 1) koji su se mogli rabiti pri ribolovu. Upotrebljavani su tijekom različitih prapovijesnih razdoblja, a prema kontekstu ostale keramike mogu se datirati u brončano i željezno doba. Zanimljiv nalaz su posudice različitih formi: šalica s ručkom, brodić i pehar s dvije drške (T. XVI, 2). Mogu se pripisati brončanodobnom/željeznodobnom razdoblju, a izrađene su kao minijaturne kopije posuda koje su korištene u svakodnevnom životu što donekle pomaže pri njihovoj kronološkoj determinaciji. Imale su funkciju igračaka, a izrađivali su ih iskusni keramičari koji su bili zaduženi za izradu uobičajenih posuda za upotrebu zajednice, a ponekad i djeca. Osim keramičkih posudica, izrađivane su lutke te stolovi i stolice. Takve igračke izrađivale su se i od drukčijih materijala (kosti, kože, tekstila, drva, trstike, slame, rjeđe metala). Slični predmeti korišteni su od mlađeg kamenog do mlađeg željeznog doba.[117]

Južnodalmatinsko područje bilo je pod utjecajem Delmata i glasinačke grupe. Od 6. st. pr. Kr. nadalje intenzivira se trgovina i upotreba grčkih proizvoda. Od 4. st. pr. Kr. helenizacija zahvaća i ovo područje,[118] što se očituje i u keramičkim importima. **Grčko-helenistička keramika** (5. – 4. st. pr. Kr.) pronađena je u dosta fragmentiranom stanju (T. XVI, 3-9), no ipak je moguće pretpostaviti neke tipološke forme i ukrase. Ulomci su nađeni uz južnu stranu utvrde u sloju s mješovitim prapovijesnim materijalom (eneolitičkim/brončanodobnim, željeznodobnim) među kojima su bile i kovanice kralja Baleja (2. st. pr. Kr.) (T. XXVI, 1, 3). Na temelju sačuvanih fragmenata može se pretpostaviti da su pripadali manjim vrčevima (T. XVI, 5),

[117] D. BALEN-LETUNIĆ, 2014, 11–13, 321, sl. 1, 2, 4.
[118] S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 325, 349–358.

be found in the Cental Bosnian group dating to the Iron Age.[116]

Some sherds are characteristic of both Bronze and Iron Ages, and due to poor preservation they cannot be determined neither typologically nor chronologically.

Several ceramic weights (T. XVI, 1) were found that could have been used in fishing. They were used in different prehistoric periods, and the context of the remaining pottery dates them to the Bronze and Iron Ages. Small vessels in different forms are particularly interesting: cup with a handle, small boat and a goblet with two handles (T. XVI, 2). They can be attributed to the Bronze / Iron Ages, and they were made as miniature copies of the vessels used in everyday life, making their chronological determination somewhat easier. They were used as toys. They were made by experienced potters, who also produced regular vessels for everyday use, but sometimes also by children. Dolls, tables and chairs were made in addition to small ceramic vessels. Such toys were made of other materials as well (bone, leather, textile, wood, reed, straw, rarely metal). Similar objects were used from the Late Stone Age to the Late Iron Age.[117]

Southern Dalmatian region was influenced by the Delmatae and the Glasinac group. Trade and use of Greek products were intensified from the 6th century BC onwards. Hellenization started in this region from the 4th century BC, [118] which is reflected in pottery import. **Greek-Hellenistic pottery** (5th-4th cent. BC) was found in quite fragmentary condition (T. XVI, 3-9), but still we can assume certain typological forms and decorations. Fragments were found along the southern side of the fort in the layer with mixed prehistoric material (Eneolithic / Bronze and Iron Ages) including the coins of king Ballaios (2nd cent. BC) (T. XXVI, 1, 3). On the basis of preserved

[116] B. ČOVIĆ, 1987a, 491, T. LII/21.
[117] D. BALEN-LETUNIĆ, 2014, 11-13, 321, fig. 1, 2, 4.
[118] S. DIMITRIJEVIĆ, T. TEŽAK-GREGL, N. MAJNARIĆ-PANDŽIĆ, 1998, 325, 349-358.

ulomak jedne stope je možda tvorio donji dio lekane (T. XVI, 8), a drugi dno *skyphosa* (T. XVI, 9). Ukras je izveden crnim slikanjem na keramičkoj podlozi ili je crnim premazom pokrivena cijela površina. Prikazi su slabo sačuvani, a na ulomku stijenke nedefinirane posude sačuvan je dio florealnog ornamenta (T. XVI, 3). Sličan mu je prikaz (lepezasta palmeta oblih listova) s ulomka koji je nađen u Starom Gradu na Hvaru, a određen je kao lukanski (?) produkt 4. st. pr. Kr.[119] Na jednom ulomku vidljive su urezane linije (T. XVI, 8), što je bilo uobičajeno za posude izrađene u 5. i 4. st. pr. Kr. Tako se postizao kontrast crnog premaza i urezanog dijela tj. keramičke posude.[120]

Premazivanje keramičkih posuda crnom bojom karakteristično je za grčku keramiku tijekom arhajskog, klasičnog i helenističkog doba. Crno slikanje također je prisutno na ranorimskim posudama. U početku se crno slikane keramičke posude rade u Ateni, a kako su ti proizvodi distribuirani diljem Mediterana, dospijevaju i do južne Italije i Sicilije gdje su počele djelovati lokalne radionice (osobito u Tarantu i Metapontu) tijekom 5. i 4. st. pr. Kr. Južnotalijanska keramika sada prednjači pred atenskim produktima i uvelike se importira na istočnu obalu Jadrana.[121] No, ta vrsta keramike importirana je i iz grčkih kolonija u Jadranskome moru u kojima su također organizirane keramičke radionice. O tome svjedoči keramika farskih radionica koja je već pronađena u istraživanjima u istočnojadranskom zaleđu, na području Bosne i Hercegovine,[122] a sokolski nalazi na kojima je crni premaz često oštećen (što može upućivati na moguću domaću izradu lošije kvalitete) još su jedan dokaz o intenzitetu trgovine između grčkih kolonija na Jadranu (Faros, Issa) i Ilira. No, za neke nalaze ne treba isključiti južnoitalsko

[119] B. MIGOTTI, 1986, 161, T. 2/9, T. 9/4.
[120] M. MIŠE, 2005, 30.
[121] B. MIGOTTI, 1986, 29.
[122] M. KATIĆ, 1996, 123–124; M. KATIĆ, 1999–2000, 49; M. MIŠE, 2005, 27.

fragments we can assume that they belonged to smaller jugs (T. XVI, 5), fragment of one ring base might have been a lower part of a lekane (T. XVI, 8), and the other a skyphos base (T. XVI, 9). Decoration was executed by black painting on ceramic base or entire surface was covered with black glaze. Depictions are poorly preserved, and a fragment of floral ornament can be recognized on the piece of wall of an undefined vessel (T. XVI, 3). It is similar to a depiction (fan-like palmette with rounded leaves) on a sherd found in Stari Grad on the island of Hvar, determined as Lucanian (?), dating to the 4th cent. BC.[119] Incised lines are visible on one fragment (T. XVI, 8), which was common for vessels made in the 5th and 4th centuries BC. In that way contrast of black glaze and incised ornament was achieved.[120]

Covering ceramic vessels with black paint is characteristic of Greek pottery in the archaic, classical and Hellenistic period. Black painting is also present on the early Roman vessels. At the beginning black painted ceramic vessels were made in Athens, and since these products were distributed across the Mediterranean, they reached southern Italy and Sicily where local workshops started working (especially in Taranto and Metapontum) in the 5th and 4th centuries BC. Southern Italic pottery exceeded Athenian products and was imported in great quantities to the eastern Adriatic coast.[121] However this kind of pottery was also imported from Greek colonies in the Adriatic Sea where pottery workshops were also active as evidenced by pottery of the Pharian workshops that has already been found in the exacavations in the eastern Adriatic hinterland, in the territory of Bosnia and Herzegovina. [122] Finds from Sokol, often wih damaged black glaze (which might suggest possible local, less quality production) are yet another proof of

[119] B. MIGOTTI, 1986, 161, T. 2/9, T. 9/4.
[120] M. MIŠE, 2005, 30.
[121] B. MIGOTTI, 1986, 29.
[122] M. KATIĆ, 1996, 123-124; M. KATIĆ, 1999-2000, 49; M. MIŠE, 2005, 27.

porijeklo.

Na dubrovačkom području već je pronađena raznovrsna grčko-helenistička keramika, a ističu se nalazi iz istraživanja u Vilinoj špilji iznad izvora rijeke Omble (prva polovica 4. – početak 3. st. pr. Kr.),[123] te Spile Nakovane – ilirskog svetišta na Pelješcu. Keramika iz Nakovane importirana je od 4. st. pr. Kr. do početka nove ere iz Spine, južne Italije, Grčke ali i iz radionica na Jadranu koje su imitirale grčke uzore (Issa, Resnik). Uglavnom je riječ o posudama za serviranje i pijenje vina te objedovanje.[124] Plereji osobito od 4. stoljeća intenziviraju kontakte s Grcima i koriste se pomorskim komunikacijama. U ranijem istraživanju, nedaleko od utvrde Sokol, pronađene su grobnice s prilozima koje su sadržavale oslikane helenističke posude i ilirsku keramiku grube izrade.[125] Ti nalazi svjedoče da su Iliri s južnog Jadrana i njegova zaleđa imali razvijene trgovačke veze s Grcima u helenističkom razdoblju, što upućuje i na suživot tih dviju velikih zajednica.

Korintske amfore (4. st. pr. Kr.) također su zastupljene među nalazima pronađenim uz utvrdu Sokol (T. XVII, 1). Ta vrsta amfora proizvodila se u Korintu (6. – 3. st. pr. Kr.), Korkiri na Krfu, a njhova produkcija odvijala se i na Hvaru (4. st. pr. Kr.). Dosta su česti takvi nalazi na istočnoj obali Jadrana.[126] Za sokolske nalaze ovih amfora može se pretpostaviti hvarsko porijeklo, a već spomenuti nalazi grčko-helenističke keramike jadranske produkcije također upućuju na takve trgovačke kontakte Ilira i doseljenih grčkih kolonista.

Grčko-italske amfore (sredina 4. – kasno 2. st. pr. Kr.) bile su u upotrebi kao ambalaža uglavnom na otocima i obali, ali nađene su i u unutrašnjosti kod Daorsa (na gradini u Ošanićima u Hercegovini).[127] Prepoznatljive

[123] D. PERKIĆ, 2010, 159–161, kat. 404.
[124] S. FORENBAHER, T. KAISER, 2003, 62–92, 114–132; R. MENALO, 2005, 20–27.
[125] N. KAPETANIĆ, 2013, 9, 14.
[126] M. KATIĆ, 2005, 51–59.
[127] B. KIRIGIN, 1994, 18; B. KIRIGIN, T. KATUNARIĆ, L. ŠEŠELJ, 2005, 7.

intensity of trade between the Greek colonies in the Adriatic (Pharos, Issa) and the Illyrians. However southern Italic provenance should not be ruled out for certain finds.

Diverse Greek-Hellenistic pottery was found in the Dubrovnik region, with particularly interesting finds from Vilina špilja over the Ombla river source (first half of the 4th – beginning of the 3rd cent. BC),[123] and Spila Nakovana – Illyrian sanctuary on Pelješac. Pottery found in Nakovana was imported from the 4th cent. BC until the end of the 1st century BC from Spina, southern Italy, Greece and workshops in the Adriatic that imitated Greek models (Issa, Resnik). Mostly these are vessels for serving and drinking wine and dining.[124] Plereii intensified contacts with the Greeks especially from the 4th century using naval communications. In the earlier excavation in the vicinity of Fort Sokol, tombs were found with grave goods including Hellenistic vessels and coarse Illyrian pottery.[125] These finds testify to the fact that the Illyrians from the southern Adriatic and its hinterland had developed trade connections with the Greeks in the Hellenistic period, suggesting coexistence of these two big communities.

Corinthian amphorae (4th cent. BC) are also represented among the finds recovered near Fort Sokol. This kind of amphorae was produced in Corinth (6th-3rd cent. BC), Corcyra in Corfu, as well as Hvar (4th cent. BC). Such finds are quite common on the eastern Adriatic coast.[126] Provenance of the finds of these amphorae found in Sokol should probably be looked for in Hvar and previously mentioned finds of Greek-Hellenistic pottery of the Adriatic production suggest such trade contacts of the Illyrians and the settled Greek colonists.

Graeco-Italic amphorae (mid-4th – late

[123] D. PERKIĆ, 2010, 159-161, cat. 404.
[124] S. FORENBAHER, T. KAISER, 2003, 62-92, 114-132; R. MENALO, 2005, 20-27.
[125] N. KAPETANIĆ, 2013, 9, 14.
[126] M. KATIĆ, 2005, 51-59.

su po trokutasto naglašenom donjem vanjskom rubu otvora (koji je zakošen pod oštrim kutom), imaju izdužen vrat i ručke. Kod ranijih formi (4. – 3. st. pr. Kr.) nalazimo kraće i šire rame, dok su kasnije amfore (2. st. pr. Kr.) izdužene i elegantne. Najprije su izrađivane u južnoj Italiji, ali pretpostavlja se i njihova produkcija u lokalnim radionicama na Jadranu. Služile su za transport vina,[128] koje se u velikim količinama uvozilo na područje Ilirika. Fragmenti takvih amfora nađeni su uz utvrdu Sokol (T. XVII, 2), uz njezinu JI stranu na prijelazu antičkih u prapovijesne slojeve formirane potresima. Ti nalazi svjedoče o trgovini vinom s južnom Italijom prije uspostave rimske vlasti nad ovim prostorima.

Italske amfore (2. st. pr. Kr. – 1. st.) također su zastupljene među nalazima sa Sokola, a sačuvani su ulomci oboda i ručki amfora (T. XVII, 3-4). Nađeni su ispod kasnoantičkih slojeva formiranih potresima uza sjevernu stranu utvrde na području gdje se u antičko vrijeme nalazio izvorni ulaz na utvrdu. Nisu sačuvani žigovi, što je uobičajeno za većinu amfora. Mogle su služiti za transport vina, ulja, garuma, voća. Budući da je riječ o djelomično sačuvanim nalazima, nije uvijek moguće pouzdano odrediti o kojim se tipovima radi.

Kasnoantička i ranobizantska keramika (5. – 7. st.) zastupljene su ulomcima stolne (vrčevi, zdjele) i u većem broju skladišno-transportne (amfore) keramike. Amfore su ukrašene horizontalnim više ili manje gustim rebrima (T. XVII, 5-6), koja su mogla prekrivati i cijelu posudu. Uglavnom su pronađene stijenke, otvori, ručke (trakaste, ovalne s hrptom po sredini) (T. XVII, 5-6; T. XVIII, 1), dna amfora (XVIII, 2) i različiti ulomci kuhinjskog posuđa (T. XVIII, 3), no nisu uvijek dovoljni za pouzdanu rekonstrukciju pa se njihove forme mogu pretpostaviti preko analognih primjera. Sličan materijal pronađen je diljem istočnojadranskog područja (utvrda

[128] B. KIRIGIN, 1994, 15–24; A. STARAC, 2006, 86–87.

2nd cent. BC) were used as packaging mostly on the islands and coast, but they were also found in the hinterland with the Daorsi (on the hillfort in Ošanići in Herzegovina).[127] They are recognizable by triangular lower outer part of the opening (slanted at an oblique angle), with elongated neck and handles. In the earlier forms (4th – 3rd cent. BC) we find shorter and wider shoulder, while later amphorae (2nd cent. BC) are more elongated and more elegant. At first they were made in southern Italy, but their production in the local workshops in the Adriatic is also assumed. They were used for wine transport[128] that was imported into Illyricum in ample quantities. Fragments of such amphorae were found next to Fort Sokol (T. XVII, 2), along its SE side at the transition of layers dating to antiquity to prehistoric ones formed in the earthquakes. These finds testify to wine trade with southern Italy before the Roman power was established in this region.

Italic amphorae (2nd cent. BC – 1st cent.) are also represented among the Sokol finds, with fragments of rim and handles (T. XVII, 3-4). They were found under the late antique layers formed in the earthquakes along the northern side of the fort where the original fort entrance was located in antiquity. Stamps have not been preserved, as usual for most amphorae. They might have been used for transport of wine, oil, garum, fruit. Since finds are only partially preserved, it is not always possible to determine the type.

Late antique and early Byzantine pottery (5th-7th cent.) are represented with fragments of tableware (jugs, bowls) and more abundant pottery used for storage and transport (amphorae). Amphorae were decorated with horizontal ribs, more or less dense (T. XVII, 5-6), that might cover the entire vessel. Mostly walls, openings, handles (strap, oval with

[127] B. KIRIGIN, 1994, 18; B. KIRIGIN, T. KATUNARIĆ, L. ŠEŠELJ, 2005, 7.
[128] B. KIRIGIN, 1994, 15-24; A. STARAC, 2006, 86-87.

Lopar,[129] Zadar – Poluotok,[130] Split – Dioklecijanova palača,[131] uvala Sobra kod rta Pusti na Mljetu,[132] Župa dubrovačka – crkva sv. Đurđa,[133] uvale Veliki i Mali Molunat,[134] Stari Bar[135]). Poznate su pod nazivom *Late Roman 1* (LR 1), a bile su u upotrebi tijekom 5. i 6. stoljeća. Nemaju žigove, a proizvodile su se u Siriji, Kilikiji, na Cipru te ušću Dunava na Crnome moru. Čest su nalaz diljem Rimskog Carstva, a također su u većem broju nađene na istočnom Jadranu[136] o čemu svjedoče već spomenuti analogni nalazi. Tipovi amfora *Late Roman 2-6* (LR 2-6) imaju guste vodoravne ureze na trbuhu i ramenu, a većina ih je importirana s područja istočnog Mediterana.[137]

Kasnoantičke amfore imaju mali vrat koničnе ili cilindrične forme i prstenasto zadebljan otvor (T. XVII, 7-8) te polukružno savijene ručke. Sačuvano je nekoliko ulomaka oboda koji se mogu atribuirati sjevernoafričkim amforama. Riječ je o amforama formi *Africana II* (T XVII, 7) koje imaju vertikalno uzdignut obod. Proizvodile su se na području današnjeg Tunisa tijekom 3. stoljeća.[138] Jedan obod (T XVII, 8) podsjeća na nešto kasniju formu sličnu amforama *Keay LXII* (5. – 6. st.), a pripada istom proizvodnom krugu tuniških radionica.[139]

Na Sokolu je zastupljena i keramika s valovnicom (T. XVIII, 3) karakteristična za kasnoantičko razdoblje (5. i 6. st.).[140] No, tako ukrašena keramika prisutna je kod Slavena, čija keramika se razvijala na bazi kasnoan-

[129] A. JANEŠ, 2014, 19–20, 26, T. 2/1-2.
[130] L. BEKIĆ et al., 2017, 42–43, sl. 5.
[131] J. MARDEŠIĆ, 2014, 49–52, 65–69, 73, kat. 14, 18–19, 22–27, 39.
[132] A. KISIĆ, 1988, 158, 163, Sl. 7.
[133] M. PERKIĆ, 2008, 84–86, 115, 117, T. 24, 26.
[134] A. KISIĆ, 1988, 154.
[135] M. ZAGARČANIN, 2013, 30–32, 39–41, figs. 2.5, 2.6, 2.9, 2.12.
[136] A. STARAC, 2006, 101, 105.
[137] L. BEKIĆ et al., 2017, 42.
[138] M. BONIFAY, 2004, 111–114.
[139] S. J. KEAY, 1984, 309-328. Za determinaciju ovih ulomaka dugujemo zahvalnost kolegi Mladenu Pešiću, ravnatelju Međunarodnog centra za podvodnu arheologiju u Zadru.
[140] L. BEKIĆ, J. VIŠNJIĆ, 2008, 232.

a ridge in the middle) were found (T. XVII, 5-6; T. XVIII, 1), as well as bases of amphorae (XVIII, 2) and different sherds of kitchenware (T. XVIII, 3), but they are not always sufficient for a reliable reconstruction so their forms can be assumed on the basis of analogous examples. Similar examples were found across the eastern Adriatic region (fort Lopar,[129] Zadar – Poluotok,[130] Split – Diocletian's Palace,[131] Sobra cove near cape Pusti on the island of Mljet,[132] Župa dubrovačka – church of St George,[133] coves Veliki and Mali Molunat,[134] Stari Bar[135]). They are known as *Late Roman 1* (LR 1), used in the 5th and 6th centuries. They bear no stamps, and they were produced in Syria, Cilicia, Cyprus and in the Danube Delta on the Black Sea. They are a common find in all parts of the Roman Empire, and they were also found in the eastern Adriatic[136] in a considerable amount, evidenced by previously mentioned analogous finds. *Late Roman 2-6* (LR 2-6) amphorae have dense horizontal incisions on the body and shoulder, and majority was imported from the eastern Mediterranean.[137]

Late antique amphorae have a short neck in conical or cylindrical form, thickened rim (T. XVII, 7-8) and semicircularly bent handles. Several rim sherds were preserved that can be attributed to north African amphorae: form *Africana II* (T XVII, 7) with vertically raised rim, produced in the region of present-day Tunisia in the 3rd century.[138] One rim (T XVII, 8) resembles somewhat later form similar to amphorae *Keay LXII* (5th-6th cent.), and it belongs to the identical production circle of

[129] A. JANEŠ, 2014, 19-20, 26, T. 2/1-2.
[130] L. BEKIĆ et al., 2017, 42-43, fig. 5.
[131] J. MARDEŠIĆ, 2014, 49–52, 65–69, 73, kat. 14, 18–19, 22–27, 39.
[132] A. KISIĆ, 1988, 158, 163, Fig. 7.
[133] M. PERKIĆ, 2008, 84-86, 115, 117, T. 24, 26.
[134] A. KISIĆ, 1988, 154.
[135] M. ZAGARČANIN, 2013, 30-32, 39-41, figs. 2.5, 2.6, 2.9, 2.12.
[136] A. STARAC, 2006, 101, 105.
[137] L. BEKIĆ et al., 2017, 42.
[138] M. BONIFAY, 2004, 111-114.

tičke i ranobizantske. Slični nalazi također su zabilježeni na drugim istočnojadranskim nalazištima s kasnoantičkim horizontom.[141] Osim ovih ulomaka s karakterističnim obilježjima, nađeno je i grubo kuhinjsko posuđe bez ornamenta. Iako su ulomci navedenih karakteristika pronađeni u zasipima grobova, nije riječ o ostatcima grobnih priloga, nego o otpadnom materijalu iz slojeva oko grobova kojima su oni zasuti. Riječ je o ambalažnom i kuhinjskom posuđu korištenom na utvrdi u vrijeme njezina intenzivnog razdoblja. Brojan kasnoantički materijal potvrđuje dobru snabdjevenost Sokola u tom periodu i daje pogled u ekonomske i društvene prilike ove važne utvrde na putu iz zaleđa prema Jadranu.

Osim antičkih amfora i posuda, također su nađeni malobrojni ulomci (rame i ručka) keramičke svjetiljke (T. XVIII, 4) u kasnoantičkim slojevima. Jedan je nađen uz južnu, a drugi uz istočnu stranu utvrde, u blizini grobova. Na svjetiljci su prisutni tragovi gorenja što nam otkriva da je bila u svakodnevnoj upotrebi. Ulomci imaju ukras stilizirane borove grančice, a prema dekoraciji su im analogne svjetiljke koje su pronađene na području Dalmacije[142] i Panonije.[143] Takve svjetiljke izrađivale su se na području sjeverne Afrike od kraja 4. do polovice 5. stoljeća, kao i u drugim provincijama, a bile su u upotrebi diljem Mediterana. Uglavnom su bile ukrašene motivima iz svakodnevnog života i životinjskog svijeta te vegetabilnim i geometrijskim prikazima.[144] Iako su nalazi svjetiljki malobrojni, ipak svjedoče o trgovini takvim predmetima na području južnojadranskog zaleđa.

Među **kasnosrednjovjekovnim i ranono-**

141 L. BEKIĆ, J. VIŠNJIĆ, 2008, 232; V. DELONGA, 2014, 104–105, 127–128, kat. 9-10, 12; A. JANEŠ, 2014, 17–19, 24, T.1/1-15.

142 V. BUBIĆ, 2011, 245–248, 254–255, 278–282, 290–291, 298–300, kat. 2, 5-7, 22-23, 81-82, 102, 120-122; V. BUBIĆ, 2012, 119, 128, 130–131, 133, 136–137, 139–143, 145, 158–159, kat. 13, 15, 18, 26, 34, 35, 37–40, 42, 76.

143 B. VIKIĆ-BELANČIĆ, 1972, 118, 166, 169–170, kat. 280, 289, 304, T. XVII/1-2, 4.

144 B. VIKIĆ-BELANČIĆ, 1972, 118–119, 120–125; V. BUBIĆ, 2012, 119, 122.

the Tunisian workshops.[139]

Pottery decorated with a wavy line (T. XVI-II, 3) characteristic of Late Antiquity (5th and 6th centuries) was found at Sokol.[140] Pottery with identical decoration was also used by the Slavs whose pottery developed on the basis of late antique and early Byzantine models. Similar finds were recorded at other eastern Adriatic sites with late antique horizon.[141] In addition to these finds with characteristic decoration, some coarse undecorated kitchenware was also found. Although fragments with mentioned characteristics were found in grave fills, they were not grave goods but waste material from layers around the graves used for filling. This is pottery for storage purposes and kitchenware used in the fort's heyday. Abundant late antique material testifies to good supply of Sokol in this period and offers a view into economic and social circumstances of this important fort on the way from hinterland to the Adriatic.

In addition to amphorae and vessels from antiquity, scarce fragments (shoulder and handle) of a ceramic lamp (T. XVIII, 4) were found in late antique layers. One sherd was found next to the southern side of the fort, and the other by the eastern side of the fort, close to graves. Traces of burning were noticed on the lamp suggesting it was in everyday use. The sherds are decorated with a motif of stylized pine branch. Analogous lamps in terms of decoration were found in the region of Dalmatia[142] and Pannonia.[143] Such lamps were manufactured in the region of northern Africa from the end of the 4th to mid-5th century, as

139 S. J. KEAY, 1984, 309-328. We would like to thank Mladen Pešić, director of the International Center for Underwater Archaeology in Zadar for his assistance in determining these sherds..

140 L. BEKIĆ, J. VIŠNJIĆ, 2008, 232.

141 L. BEKIĆ, J. VIŠNJIĆ, 2008, 232; V. DELONGA, 2014, 104-105, 127-128, cat. 9-10, 12; A. JANEŠ, 2014, 17-19, 24, T.1/1-15.

142 V. BUBIĆ, 2011, 245-248, 254-255, 278-282, 290-291, 298-300, kat. 2, 5-7, 22-23, 81-82, 102, 120-122; V. BUBIĆ, 2012, 119, 128, 130-131, 133, 136-137, 139-143, 145, 158-159, cat. 13, 15, 18, 26, 34, 35, 37-40, 42, 76.

143 B. VIKIĆ-BELANČIĆ, 1972, 118, 166, 169-170, kat. 280, 289, 304, T. XVII/1-2, 4.

vovjekovnim keramičkim nalazima zastupljeni su ulomci grubog i stolnog posuđa svakodnevne upotrebe. Grubo kuhinjsko posuđe korišteno je za skladištenje i pripremu hrane, dok je glazirano bilo namijenjeno za serviranje. Gruba keramika (lonci, zdjele) crne je i smeđe boje, izrađena je od slabo pročišćene gline i ima primjese kalcita. U istraživanju je pronađena veća skupina ulomaka glazirane keramike (*invetriata, maiolica, graffita*) importirane s Apeninskog poluotoka (južna Italija, Faenza, Marche, Venecija; 14. – 17. st.), različitih tipoloških formi (zdjele, zdjelice, vrčevi, tanjuri) (T. XIX, 1-9; T. XX, 1-5). Nađeni su i rijetki ulomci zdjelica orijentalne keramike (Iznik, 16. st.) (T. XX, 6) te španjolske lustrum keramike (Valencija, Manises, 15. st.) (T. XX, 7). Nalazi su pronađeni u kasnosrednjovjekovnim/ranonovovjekovnim nasipnim slojevima uokolo utvrde, pa ih stratigrafski nije moguće precizno datirati zbog čega je bilo potrebno osloniti se na analogne primjere.

U 14. stoljeću na utvrdu Sokol importira se keramika iz južne Italije (arhajska majolika). Ističe se ulomak ručke sa smeđim paralelnim crticama (T. XIX, 1). Pronađeno je nekoliko ulomaka vrčeva majolike s ukrasom medaljona s kobaltnoplavim bobicama u reljefu (*zaffera in rilievo*) (T. XIX, 2). Tako dekorirana keramika izrađivana je krajem 14. i početkom 15. stoljeća u Romagni, Toskani, Umbriji, Marchama, Laciju.[145] Zastupljeno je renesansno majoličko posuđe iz porodice cvjetne gotike (*famiglia floreale-gotico*) koje je izrađivano od polovice 15. do početka 16. stoljeća u Romagni i Marchama. Vrčevi s *a scaletta* i *a ciuffo* motivom (T. XIX, 3) učestali su na istočnoj obali Jadrana.[146] Nađeni su i ulomci majolike *alla porcellane* (T. XIX, 4). Ta vrsta keramike oponaša kineski porculan, a izrađivana je u Romagni, Venetu i Toskawell as in other provinces, and they were used throughout the Mediterranean. They were usually decorated with motifs from everyday life, animal world, vegetal and geometric depictions.[144] Although lamp finds are scarce, they still testify to trade with such objects in the area of southern Adriatic hinterland.

Late medieval and early postmedieval ceramic finds comprise fragments of coarse pottery and tableware for everyday use. Coarse kitchenware was used for storage and food preparation, while glazed pottery was intended for serving. Coarse pottery (pots, bowls) is black or brown, made of poorly purified clay, with calcite inclusions. A considerable amount of glazed pottery (*invetriata, maiolica, graffita*) imported from the Apennine Peninsula (southern Italy, Faenza, Marche, Venice, 14th-17th cent.) was found in the excavations, in different typological forms (bowls, small bowls, jugs, plates) (T. XIX, 1-9; T. XX, 1-5). Oriental pottery was represented by rare fragments of small bowls (Iznik, 16th cent.) (T. XX, 6) and Spanish lusterware (Valencia, Manises, 15th cent.) (T. XX, 7). The finds were recovered in late medieval / early postmedieval fill layers around the fort, so they could not be dated on the basis of stratigraphy but relying on analogous examples.

In the 14th century pottery from southern Italy (archaic maiolica) was imported to Fort Sokol. A handle decorated with brown parallel lines is especially interesting (T. XIX, 1). Several fragments of maiolica jugs were found decorated with a medallion with cobalt blue beads in relief (*zaffera in rilievo*) (T. XIX, 2). Pottery decorated in that way was made at the end of the 14th and beginning of the 15th century in Romagna, Toscana, Umbria, Marche, Lazio.[145] The finds include Renaissance maiolica ware from the Gothic-floral family (*famiglia floreale-gotico*) that was made from the mid-15th to

[145] T. BRADARA, O. KRNJAK, 2016, 141, 148–149, kat. 49.

[146] H. ZGLAV-MARTINAC, 2004, 142, kat. 172–173; K. GUSAR, 2010, 128–131, 365-370, kat. 393–407; T. BRADARA, O. KRNJAK, 2016, 142, 150–151, kat. 51.

[144] B. VIKIĆ-BELANČIĆ, 1972, 118-119, 120-125; V. BUBIĆ, 2012, 119, 122.

[145] T. BRADARA, O. KRNJAK, 2016, 141, 148-149, cat. 49.

ni u prvoj polovici 16. stoljeća.[147] Brojniji su ulomci majolike *berettine* (T. XIX, 5) za koju je karakteristična plava i plavo siva podloga s oslikanim geometrijsko-biljnim motivima u različitim bojama. Ta vrsta keramike izrađivala se od 16. do sredine 17. stoljeća i vrlo je čest nalaz na istočnoj obali Jadrana.[148] Rijetki su nalazi majolike s ukrasom listova masline (*a foglie d'ulivo*) (T. XIX, 6). Takve posude izrađivane su sredinom 16. stoljeća i početkom 17. stoljeća, a importirane su iz Veneta, Marcha, Emilije Romagne.[149] Također je dokumentirana *maiolica compendiaria* (T. XIX, 7). Taj stil bio je popularan u drugoj polovici 16. i početkom 17. stoljeća.[150]

Nađeno je i nekoliko ulomaka zdjelica s engobnim premazom od kaolinske gline i s caklinom, koje su ukrašene mrljama (*a macculazione*) (T. XIX, 8). Njihova proizvodnja odvijala se krajem 16. i tijekom 17. stoljeća.[151] Višebojna *rivestita* vrlo je čest nalaz na istočnoj obali Jadrana, a zastupljena je i na Sokolu (T. XIX, 9). Odlikuje se dekoracijom višebojnih koncentričnih kružnica i stiliziranih biljnih motiva. Karakteristična je za srednjotalijanske radionice druge polovice 16. i početka 17. stoljeća.[152]

Također su zastupljene posude s engobnim premazom na kojem je urezan ukras, te nakon slikanja premazan caklinom. Ističe se ulomak renesansne grafite iz druge polovice 15. ili početka 16. stoljeća (T. XX, 1) karakterističan za radionice Emilije Romagne i Veneta.[153] Dje-

147 H. ZGLAV-MARTINAC, 2004, 173, kat. 352–353; K. GUSAR, 2010, 147–149, 393–398, kat. 476-492; L. KOVAČIĆ, 2010, 23, 51, kat. 23; T. BRADARA, O. KRNJAK, 2016, 146, 156, kat. 59.

148 H. ZGLAV-MARTINAC, 2004, 170–171, kat. 334-341; K. GUSAR, 2010, 403–408, kat. 505-522; L. KOVAČIĆ, 2010, 24, 51-52, kat. 24-27; B. MILOŠEVIĆ, N. TOPIĆ, 2014, 1–20; T. BRADARA, O. KRNJAK, 2016, 147, 157, kat. 60.

149 H. ZGLAV-MARTINAC, 2004, 171–172, kat. 345-351; K. GUSAR, 2010, 180–181, 437–440, kat. 609-616; L. KOVAČIĆ, 2010, 28, 54, kat. 33.

150 H. ZGLAV-MARTINAC, 2004, 166–169, kat. 312-333.

151 K. GUSAR, 2010, 57–58, 277–280, kat. 126-135.

152 K. GUSAR, 2010, 181–182, 618–621, kat. 440-441.

153 H. ZGLAV-MARTINAC, 2004, 138, kat. 148; K. GUSAR, 2010, 82–85, 304, kat. 208–210.

early 16th century in Romagna and Marche. Jugs with *a scaletta* and *a ciuffo* motif (T. XIX, 3) are common on the eastern Adriatic coast.[146] Fragments of maiolica *alla porcellane* were also found (T. XIX, 4). This kind of pottery imitates Chinese porcelain, and it was made in Romagna, Veneto and Tuscany in the first half of the 16th century.[147] Fragments of maiolica *berettina* are more numerous (T. XIX, 5), characterized by blue or blue-gray base with painted geometric and vegetal motifs in different colours. This kind of pottery was made from the 16th to mid-17th century and it is a very common find on the eastern Adriatic coast.[148] Rare maiolica finds are decorated with olive leaves (T. XIX, 6). Such vessels were manufactured in the mid-16th and early 17th century, and they were imported from Veneto, Marche, Emilia Romagna.[149] *Maiolica compendiaria* (T. XIX, 7) was also documented. This style was popular in the second half of the 16th and early 17th century.[150]

There were also some fragments of small bowls with engobe coating of kaolin clay and glaze, characterized by blurred decoration (*a macculazione*) (T. XIX, 8). They were produced at the end of the 16th and in the 17th century.[151] Polychrome *rivestita* is a very common find on the eastern Adriatic coast, and it was found in Sokol (T. XIX, 9). It is decorated by polychrome concentrical circles and stylized vegetal motifs. It is characteristic of the

146 H. ZGLAV-MARTINAC, 2004, 142, cat. 172-173; K. GUSAR, 2010, 128-131, 365-370, cat. 393-407; T. BRADARA, O. KRNJAK, 2016, 142, 150-151, cat. 51.

147 H. ZGLAV-MARTINAC, 2004, 173, kat. 352–353; K. GUSAR, 2010, 147–149, 393–398, kat. 476-492; L. KOVAČIĆ, 2010, 23, 51, kat. 23; T. BRADARA, O. KRNJAK, 2016, 146, 156, kat. 59.

148 H. ZGLAV-MARTINAC, 2004, 170–171, kat. 334-341; K. GUSAR, 2010, 403–408, kat. 505-522; L. KOVAČIĆ, 2010, 24, 51-52, kat. 24-27; B. MILOŠEVIĆ, N. TOPIĆ, 2014, 1–20; T. BRADARA, O. KRNJAK, 2016, 147, 157, kat. 60.

149 H. ZGLAV-MARTINAC, 2004, 171-172, cat. 345-351; K. GUSAR, 2010, 180-181, 437-440, kat. 609-616; L. KOVAČIĆ, 2010, 28, 54, cat. 33.

150 H. ZGLAV-MARTINAC, 2004, 166-169, cat. 312-333.

151 K. GUSAR, 2010, 57-58, 277-280, cat. 126-135.

lomično je sačuvan motiv ležeće srne na cvjetnom polju. Pronađen je u nasipu uz istočnu stranu utvrde. Kasna arhajska grafita (Emilia Romagna, druga polovica 15. st./prva polovica 16. st.) zastupljena je s više ulomaka (T. XX, 2-3). Gravirana mreža i plohe s urezima (listovi ili heraldički motivi) doslikani su oker žutom i zelenom bojom.[154] Jedan ulomak ima trag distancijatora (*zampa di gallo*) (T. XX, 2) koji je nastao tijekom pečenja posude. Više ulomaka zdjela kasne grafite (T. XX, 4-5) pronađeno je uz istočnu stranu utvrde u novovjekovnom nasipu. Kasna grafita proizvodila se u Venetu krajem 16. i početkom 17. stoljeća.[155] Ugravirani su različiti biljni motivi (pužolike vitice, latice), a oslikani su plavom, zelenom i žutom bojom.

Fragmenti talijanske glazirane keramike (Faenza) također su nađeni na utvrdama Sokol na Plivi,[156] Kličevici kod Benkovca,[157] Čačvini kod Trilja,[158] te Svaču kod Ulcinja[159] što upućuje na uporabu luksuzne glazirane keramike u bližem i daljem jadranskom zaleđu u sklopu vojnih objekata. Također su u bosanskim srednjovjekovnim gradovima (Bobovac, Kraljeva Sutjeska, Blagaj, Borač) pronađeni ulomci talijanske majolike iz 14. stoljeća (arhajska majolika), ali i s kraja 15. stoljeća (porodica cvijetne gotike). Majolika je osobito importirana iz faentinskih radionica.[160]

Osim talijanske glazirane keramike, u kasnosrednjovjekovnim/ranonovovjekovnim nasipnim slojevima uz sjevernu i istočnu stranu utvrde Sokol, nađeni su malobrojni ulomci keramike iz Iznika, oslikani plavom i maslinastozelenom bojom (T. XX, 6). Budući da su ulomci malih dimenzija nije moguće pouzdano odrediti kojoj vrsti posuda su pripadali. Motiv su cvjetići i vitice, nastali pod utjecajem kineskog porculana (otomanizirani

154 K. GUSAR, 2010, 68, 288, kat. 162, 291, kat. 170-171.
155 H. ZGLAV-MARTINAC, 2004, 152, kat. 230-233.
156 I. BOJANOVSKI, 1972, 54.
157 K. GUSAR, M. ĆURKOVIĆ, 2011, 9, 20–21, kat. 16-17.
158 Lj. GUDELJ, 2000, 171–175.
159 E. ZEČEVIĆ, 1989, 116.
160 P. ANĐELIĆ, 2004, 146–147, 221–223.

central Italian workshops of the second half of the 16th and early 17th century.[152]

There are also vessels with engobe coating and incised ornament, that was glazed after painting. A fragment of Renaissance sgraffito pottery from the second half of the 15th or early 16th century (T. XX, 1) is characteristic of the workshops of Emilia Romagna and Veneto.[153] Motif of a doe lying in a flower field is partially preserved. It was found in the fill along the eastern side of the fort. Late archaic sgraffito pottery (Emilia Romagna, second half of the 15th cent./first half of the 16th cent.) is represented by several fragments (T. XX, 2-3). Engraved net and surfaces with incisions (leaves or heraldic motifs) were painted in ocher-yellow and green.[154] One sherd has a mark of a separator (*zampa di gallo*) (T. XX, 2) created during firing of the vessel. Several fragments of late sgraffito pottery (T. XX, 4-5) were found along the eastern side of the fort in the Modern Period fill. Late sgraffito pottery was produced in Veneto by the end of the 16th century and at the beginning of the 17th century.[155] Different vegetal motifs were engraved (snail-like tendrils, petals), painted in blue, green, yellow.

Fragments of Italian glazed pottery (Faenza) were also found at forts Sokol on Pliva,[156] Kličevica near Benkovac,[157] Čačvina near Trilj,[158] and Svač near Ulcinj[159] suggesting use of luxurious glazed pottery in closer and more distant Adriatic hinterland within military structures. Fragments of Italian maiolica dating to the 14th century (archaic maiolica), and late 15th century (Gothic-floral family) were also found in Bosnian medieval towns (Bobovac, Kraljeva Sutjeska, Blagaj, Borač). Maiolica was import-

152 K. GUSAR, 2010, 181-182, 618-621, cat. 440-441.
153 H. ZGLAV-MARTINAC, 2004, 138, cat. 148; K. GUSAR, 2010, 82-85, 304, kat. 208-210.
154 K. GUSAR, 2010, 68, 288, cat. 162, 291, cat. 170-171.
155 H. ZGLAV-MARTINAC, 2004, 152, cat. 230-233.
156 I. BOJANOVSKI, 1972, 54.
157 K. GUSAR, M. ĆURKOVIĆ, 2011, 9, 20-21, cat. 16-17.
158 Lj. GUDELJ, 2000, 171-175.
159 E. ZEČEVIĆ, 1989, 116.

kineski elementi). Ovi iznički ulomci mogu se datirati u drugu polovicu 16. stoljeća (cca. 1570.), prema slično ukrašenom posuđu iz muzejskih kolekcija.[161] U kasnosrednjovjekovnom nasipnom sloju uza zapadnu stranu utvrde pronađen je ulomak zdjelice španjolske keramike s plavim slikanjem (T. XX, 7), no lustrum (metalni premaz koji se nanosio na posudu nakon glazure i boje) nije se sačuvao. Motiv nije dobro sačuvan, ali moguće je da je riječ o ostatku arapskog natpisa. Takve posude uglavnom su izrađivane u Valenciji, Paterni, Manisesu.[162] Ulomak španjolske majoličke zdjelice ukrašene lustrom pronađen je u istraživanju utvrde Kličevice,[163] tako da ovo nije izolirani nalaz iznimno luksuzne glazirane keramike u kontekstu vojnog objekta.

Ovi keramički nalazi svjedoče o luksuznom stilu života na utvrdi koji gotovo da nije odudarao od kulture življenja u urbanim sredinama tog razdoblja. Pri tome je položaj utvrde imao važnu ulogu jer je smještena na putu iz zaleđa prema Jadranu, kuda su se kretale razne trgovačke karavane s ciljem prodaje svojih produkata u zaleđe i kupnje određenih sirovina od domaćeg stanovništva. To je osobito izraženo u kasnom srednjem vijeku kad Venecijanci plasiraju svoje produkte, a doborostojeće stanovništo iz jadransko-balkanskog zaleđa konzumira zapadnoeuropski stil življenja.[164]

KROVNI CRIJEP (*TEGULAE*, *IMBRICES*)

Nalazi krovnog crijepa, tegula i kanalica (*tegulae*, *imbrices*) vrlo su obilni (T. XXI, 1-7). Kao što je očekivano, osobito su brojni u antičkim slojevima, ali ima ih i u kasnijim jer je materijal sekundarno korišten u srednjem

[161] N. ATASOY, J. RABY, 1994, 239–241, kat. 442, 443, 445, 756.
[162] F. AMIGUES, 1995, 129; T. BRADARA, O. KRNJAK, 2016, 158.
[163] K. GUSAR, M. ĆURKOVIĆ, 2011, 9, 21, kat. 18.
[164] V. BIKIĆ, 2006, 201–210.

ed in particular from the Faentine workshops.[160]

Except for Italian glazed pottery, scarce fragments of pottery from Iznik, painted in blue and olive-green (T. XX, 6), were found in late medieval / early postmedieval fill layers next to the northern and eastern side of Fort Sokol. It is not possible to determine the type of vessel these sherds belonged to since they are too small. Decorative motifs are flowers and tendrils, created under influences of Chinese porcelain (Ottomanized Chinese elements). These Iznik sherds can be dated to the second half of the 16th century (ca. 1570), on the basis of similarly decorated vessels from museum collections.[161] A fragment of a small bowl of Spanish pottery decorated with blue painting (T. XX, 7) was found in late medieval fill layer next to the western side of the fort, but luster (metal coating applied on the vessel after glaze and paint) was not preserved. The motif is poorly preserved, but possibly it was an inscription in Arabic. Such vessels were usually made in Valencia, Paterna, Manises.[162] Fragment of a Spanish maiolica bowl decorated with luster was found in excavations on fort Kličevica,[163] so this is not an isolated find of exceptionally luxurious glazed pottery in the context of a military structure.

These pottery finds testify to luxurious lifestyle on the fort that was not much different than in the urban centers at the time. The position of the fort was very important in that regard as it stood on the road from the hinterland to the Adriatic, where different trade caravans traveled with an aim of selling their products in the hinterland and buying certain raw materials from the local population. This was particularly noticeable in the Late Middle Ages when the Venetians offered their products, and well-off population from the Adri-

[160] P. ANĐELIĆ, 2004, 146-147, 221-223.
[161] N. ATASOY, J. RABY, 1994, 239-241, cat. 442, 443, 445, 756.
[162] F. AMIGUES, 1995, 129; T. BRADARA, O. KRNJAK, 2016, 158.
[163] K. GUSAR, M. ĆURKOVIĆ, 2011, 9, 21, cat. 18.

vijeku, što je također poznato s drugih lokaliteta na dubrovačkom području.[165] Slično kao na konavoskom Sokolu, i na Sokolu na Plivi nađeni su ulomci tegula koje su vjerojatno korištene kao građevinski materijal, ali nema naznaka o rimskom utvrđenju na Plivi.[166] Budući da je najviše polomljenih tegula i kanalica pronađeno uz sjevernu i sjeveroistočnu stranu utvrde, može se pretpostaviti da je na toj strani utvrde došlo do urušavanja kuća koje su bile pokrivene krovnim crijepom, u nekom od potresa koji su bili učestali na dubrovačkom području. Osim fragmenata sačuvane su i cijele ili manje oštećene tegule i crjepovi koji su korišteni u grobnoj arhitekturi (u formi krova na jednu vodu i krova na dvije vode, te obložnica i poklopnica) (T. I, 5; T. II, 3; T. VIII, 4; T. IX, 3; T. XXI, 2-4). Također su manji dijelovi tegula ugrađivani u kasnoantičke zidove s južne strane utvrde. Dimenzije bolje sačuvanih tegula i kanalica su različite,[167] a mogu upućivati na raznovrsne proizvođače i duži period u kojem su tegule naručivane za potrebe gradnje na utvrdi i oko nje. Pečati, koji su mogli garantirati kvalitetu i veličinu proizvoda,[168] također su vrlo različiti što upućuje na drukčije izvore nabave. Neke tegule ukrašene su užljebljenim koncentričnim polukrugovima i dvostrukim petljama (T. XXI, 1, 3) dobivenim povlačenjem prstiju po svježoj glini, što je uobičajeno i za nalaze tegula s mnogih drugih lokaliteta u široj regiji (Župa dubrovačka,[169] Gornji Tučepi,[170] Baška na Krku,[171] Ptuj – *Poetovio*[172]). No, ti ukrasi nisu uvijek sasvim jednaki nego je riječ

[165] M. PERKIĆ, 2008, 86–87, 118, T. 27; N. TOPIĆ et al., 2019, 87, 129, T. XVIII/1-2.
[166] I. BOJANOVSKI, 1972, 54.
[167] Dimenzije tegula: 54 x 37 cm, 54 x 40 cm; 54,5 x 38,5 cm; 54,5 x 40 cm; 55 x 37 cm; 55 x 39 cm; 56 x 39 cm; 56 x 43 cm; 56 x 42 cm; 58 x 45 cm; 61 x cca 40 cm. Dimenzije kanalica: 50 x 23 cm; 50 x 22 cm; 76 x 27 cm.
[168] R. MATIJAŠIĆ, 1985, 289; R. MATIJAŠIĆ, 1989, 62.
[169] M. PERKIĆ, 2008, 86–87, 118, T. 27.
[170] S. BOŽEK, 1999-2000, 512.
[171] L. BEKIĆ, J. VIŠNJIĆ, 2008, 242, 254, Tabla 3/75, Tabla 15/1.
[172] I. TUŠEK, 2004, 118, sl. 6.

atic-Balkan hinterland accepted western European lifestyle.[164]

ROOF TILES (*TEGULAE*, *IMBRICES*)

Finds of roof tiles, tegulae and imbrices are very abundant. (T. XXI, 1-7). As expected, they were particularly numerous in layers dating to antiquity, but they also appear in later phases as this material was in secondary use in the Midldle Ages, which has been attested at other sites in the Dubrovnik region.[165] Similar to Sokol in Konavle, the other Sokol, on Pliva, yielded finds of tegulae that were probably used as construction material, though there are no indicators of a Roman fortification on Pliva.[166] Since most broken tegulae and imbrices were found along the northern and northeastern side of the fort, we can assume that houses covered with roof tiles collapsed on this side of the fort, in some of the earthquakes that often shook the Dubrovnik littoral. Except for fragments, complete or less damaged tegulae and tiles were preserved that were used in funerary architecture (in form of a mono- or double-pitched roof, as bases and covers) (T. I, 5; T. II, 3; T. VIII, 4; T. IX, 3; T. XXI, 2-4). Smaller parts of tegulae were incorporated into late antique walls on the southern side of the fort. Dimensions of better preserved tegulae and imbrices are not uniform,[167] and they might suggest different producers and longer chronological range in which tegulae were ordered for constructions on and around the fort. Stamps, that might have guaranteed quality and size of the pro-

[164] V. BIKIĆ, 2006, 201-210.
[165] M. PERKIĆ, 2008, 86–87, 118, T. 27; N. TOPIĆ et al., 2019, 87, 129, T. XVIII/1-2.
[166] I. BOJANOVSKI, 1972, 54.
[167] Tegulae dimensions: 54 x 37 cm; 54 x 40 cm; 54,5 x 38,5 cm; 54,5 x 40 cm; 55 x 37 cm; 55 x 39 cm; 56 x 39 cm; 56 x 43; 56 x 42 cm; 58 x 45 cm; 61 x cca 40 cm); imbrices dimensions: 50 x 23 cm; 50 x 22 cm; 76 x 27 cm.

o njihovim varijacijama. Raširenost sličnih oznaka na tegulama upućuje na univerzalnost u označavanju, ali i na trgovačku povezanost šireg područja. Tegule su različitih boja, od žućkaste što se smatra akvilejskom karakteristikom do crveno narančastih tonova koji se povezuju s Padskom nizinom.[173] Budući da su importi tegula iz tih područja već poznati na području Dalmacije, može se pretpostaviti i takvo porijeklo za manji dio materijala, što bi ga datiralo u 1. stoljeće. No, datum velikog dijela materijala, sudeći po njegovu kontekstu i količini, seže u kasnoantičko razdoblje. Također je bilo uobičajeno da se nakon 1. stoljeća osnivaju lokalne radionice (vojničke i privatne) jer uvoz opada,[174] pa možemo pretpostaviti da se na obližnjem području nalazila radionica za izradu krovnog crijepa.

Na nekim tegulama pronađenima uz utvrdu Sokol sačuvani su pravokutni pečati, a jedan bi se mogao čitati kao FORTIS (T. XXI, 5). Za sada nije poznat paralelan primjer tegule s tim natpisom, ali je taj natpis učestao na svjetiljkama koje su se izrađivale u sjevernoitalskim ili dalmatinskim radionicama krajem 1. do polovice 2. stoljeća.[175] Nekoliko manjih fragmenata ima djelomično i slabije sačuvane pečate, od kojih neke nije moguće pročitati dok za ostale koji su vrlo loše sačuvani nemamo analogne primjere koji bi pomogli pri interpretaciji, pa ih za sada nije moguće pouzdano očitati (T. XXI, 6-7). Budući da je riječ o velikoj količini materijala, vjerojatno je u blizini postojala radionica u kojoj se izrađivao krovni crijep, u sklopu kolonije Epidauruma. Poznato je da su se u ranom srednjem vijeku u Kuparima izrađivale opeke i kupe u svrhu građevinskog materijala za crkve.[176] Ovi nalazi važni su za rekonstrukciju trgovačkih putova i tržišta u antici, te ubiciranje mogućih lokalnih radionica. Upućuju na intenzitet gradnje

[173] S. BOŽEK, 1999-2000, 512, bilješka 4.
[174] R. MATIJAŠIĆ, 1989, 65-66.
[175] Z. BULJEVIĆ, 2010, 113, 115, 117, 126, 141–142, sl. 33, Tabla 10/G16, sl. 51.
[176] Z. ŽERAVICA et al., 2007, 25.

duct,[168] are also very diverse suggesting different acquisition sources. Some tegulae are decorated with grooved concentrical semicircles and double loops (T. XXI, 1, 3) resulting from dragging fingers on fresh clay, which is common for finds of tegulae from many other sites in the wider region (Župa dubrovačka,[169] Gornji Tučepi,[170] Baška on the island of Krk,[171] Ptuj – *Poetovio*[172]). However these decorations are not always the same but they come in variations. Wide distribution of similar marks on tegulae suggests universality of marking, and trade connections of the wider region. Tegulae come in different colours, from yellowish which is considered to be an Aquileian characteristic, to red-orange tones associated with the Po Valley.[173] Since import of tegulae from these regions has already been known in Dalmatia, we can assume identical provenance for a smaller part of the material, dating it to the 1st century. However most material, judging by its context and amount, dates to Late Antiquity. Local workshops (military and private) were founded after the 1st century as indicated by reduced import,[174] so we can assume that a roof tile workshop was situated in the vicinity of the fort.

Rectangular stamps have been preserved on some tegulae found at Fort Sokol, and one could be read as FORTIS (T. XXI, 5). We have not been able to find a parallel example of tegula with this stamp which is common on lamps produced in northern Italic or Dalmatian workshops from the end of the 1st century until the mid-2nd century.[175] Several smaller fragments have partially and poorly preserved stamps, some of which are illegible

[168] R. MATIJAŠIĆ, 1985, 289; R. MATIJAŠIĆ, 1989, 62.
[169] M. PERKIĆ, 2008, 86-87, 118, T. 27.
[170] S. BOŽEK, 1999-2000, 512 .
[171] L. BEKIĆ, J. VIŠNJIĆ, 2008, 242, 254, Table 3/75, Table 15/1.
[172] I. TUŠEK, 2004, 118, fig. 6.
[173] S. BOŽEK, 1999-2000, 512, note 4.
[174] R. MATIJAŠIĆ, 1989, 65-66.
[175] Z. BULJEVIĆ, 2010, 113, 115, 117, 126, 141-142, fig. 33, Table 10/G16, fig. 51.

u rimskom razdoblju, a time i na važnost i gospodarski stupanj lokaliteta u to vrijeme.

METALNI NALAZI

Metalni nalazi također su raznovrsni (predmeti svakodnevne upotrebe, nošnja, oružje), a mogu se datirati od željeznog doba do novog vijeka (T. XXII–XXV). Manja skupina željeznodobnih nalaza pronađena je u dubokom mješovitom prapovijesnom sloju uz južnu stranu utvrde. Ističe se privjesak u obliku posudice s poklopcem (T. XXII, 1) koji je vjerojatno služio kao viseća dekoracija luka fibule. Ne nalazimo mu identične paralele, a slični privjesci s takvom alkom i stopom zastupljeni su u željeznodobnim grupama: japodskoj (6. – 4. st. pr. Kr.)[177] i srednjodalmatinskoj (6. – 5. st. pr. Kr.).[178] No, karakteristični su i za južne ilirske krajeve. Drugi privjesak (T. XXII, 2) karakterističan je za isto razdoblje (6. – 4. st. pr. Kr.), a slične primjere nalazimo u Bosni (grobni nalaz iz Vratnice).[179] Takvi privjesci su kod Ilira, u ovom slučaju Plereja, imali dekorativno svojstvo, ali su ujedno služili i kao amuleti.[180] U nasutom prapovijesnom sloju na JI dijelu sonde, pronađen je ulomak privjeska (vjerojatno s luka fibule) (T. XXII, 3). Iz istog konteksta su vrhovi igli sa stožastom i ravnom glavom (T. XXII, 4), kakve nalazmo u japodskoj[181] i srednjodalmatinskoj grupi. Karakteristične su uglavnom za 8. st. pr. Kr. i dosta su rasprostranjene na SZ Balkanu, ali su pojedini tipovi u upotrebi i do 6. st. pr. Kr.[182] Ističe se nalaz glave dvojne igle „omega" tipa (T. XXII, 5) kojoj paralele nalazimo među željeznodobnim materijalom iz obližnjih regija (srednjodalmatinska[183] i srednjobosanska kulturna grupa; 6. – 5. st. pr. Kr., a traju sve

[177] R. DRECHSLER-BIŽIĆ, 1987, 434, XLV/6, T. XLVII/8.
[178] B. ČOVIĆ, 1987b, 455, T. L/14, 16.
[179] B. ČOVIĆ, 1984, 43, 45, sl. 9/13.
[180] A. STIPČEVIĆ, 1991, 95.
[181] R. DRECHSLER-BIŽIĆ, 1987, 400–401, Sl. 22/12, 14.
[182] B. ČOVIĆ, 1987b, 452–455, T. XLVIII/15-17.
[183] B. ČOVIĆ, 1987b, 456, T. L/8.

while the poorly preserved ones lack analogies that might facilitate the interpretation, so they could not be reliably identified (T. XXI, 6-7). Since large amount of tegulae was recovered at the fort, probably a roof tile workshop was situated somewhere near, within the colony of Epidaurum. It is known that bricks and tiles were made in Kupari in the Early Middle Ages as construction material for churches.[176] These finds are important for reconstruction of trade routes and markets in antiquity, and location of possible workshops. They suggest the intensity of building in the Roman period, and thereby the importance and stage of economic development of the site at the time.

METAL FINDS

Metal finds are also diverse (objects for everyday use, costume, weapons), dating from the Iron Age to the Modern Period (T. XXII-XXV). A smaller group of the Iron Age objects was found in deep mixed prehistoric layer along the southern side of the fort. Pendant in shape of a little lidded vessel (T. XXII, 1) stands out, probably used as a hanging decoration of the fibula bow. We cannot find adequate parallels for it, but similar pendants with identical ring and foot are represented in the Iron Age groups: Iapodic (6th-4th cent. BC)[177] and Central Dalmatian (6th-5th cent. BC).[178] However they are characteristic of other southern Illyrian regions. The other pendant (T. XXII, 2) is characteristic of the same period (6th-4th cent. BC), and similar examples can be found in Bosnia (grave goods from Vratnica).[179] Such pendants had decorative meaning for the Illyrians, Plereii in this case, but they were also used as amulets.[180] In the filled prehistoric layer in the SE

[176] Z. ŽERAVICA et al., 2007, 25.
[177] R. DRECHSLER-BIŽIĆ, 1987, 434, XLV/6, T. XLVII/8.
[178] B. ČOVIĆ, 1987b, 455, T. L/14, 16.
[179] B. ČOVIĆ, 1984, 43, 45, fig. 9/13.
[180] A. STIPČEVIĆ, 1991, 95.

do kraja 3. st. pr. Kr.),[184] što upućuje na import iz tih područja i na kontakte s drugim ilirskim plemenima. Nalazi takvih igli već su poznati iz ranijih istraživanja ilirskih grobova nedaleko od utvrde Sokol.[185] Također je nađena brončana karičica s krajevima koji su prebačeni jedan preko drugoga, koja je mogla služiti kao prsten. Poznato je da su se Iliri bavili rudarstvom i obradom metala, te da su izrađivali različite lijevane predmete.[186] Budući da su u istom sloju s prapovijesnim nalazima pronađeni i komadi drozge, mogli bismo pretpostaviti i lokalnu produkciju nekih predmeta. No, pojedini nalazi ipak svjedoče o razmjeni dobara sa susjednim zajednicama.

Tijekom istraživanja kasnoželjeznodobnog sloja uza sjevernu stranu utvrde pronađena je jedna cjelovita i dvije djelomično sačuvane fibule (od jedne je nađen luk, a od druge igla) koje se mogu datirati u 1. st. pr. Kr. (T. XXII, 6). Riječ je o jednostavnim lučnim fibulama na čijim završetcima se nalazi nekoliko navoja koji završavaju iglom. Prije početka arheološkog istraživanja, tijekom sanacije utvrde/građevinskih radova, pronađeni su različiti tipovi fibula (*Aucissa* fibula s trakastim lukom, 1. st.; fibula s lukovičastim završetcima, 4. – 5. st.; kasnoantičke i ranobizantske fibule, 5. – 6. st.).[187]

Među metalnim nalazima je i ključ iz rimskog vremena (T. XXII, 7), iz antičkog sloja uz JI stranu utvrde. Željezna kopča (T. XXII, 8) pronađena je u sloju s kasnorimskim materijalom uz JI stranu utvrde, a iz sličnog konteksta su i željezni noževi i britve (T. XXIII, 1). Prije početka arheološkog istraživanja, tijekom građevinskih radova, nađen je dio bizantske kopče s perforiranim križem i polumjesecom (6. st.).[188] U kasnoantičkim slojevima uz sjevernu i južnu stranu utvrde pronađena su ra-

[184] B. ČOVIĆ, 1984, 43, 45, sl. 9/3; B. ČOVIĆ, 1987a, 502, T. LIII/18.
[185] N. KAPETANIĆ, 2013, 9, 13.
[186] A. STIPČEVIĆ, 1991, 112-116.
[187] N. KAPETANIĆ, 2013, 17–19, 21.
[188] N. KAPETANIĆ, 2013, 17–18, 20.

part of the probe, a piece of a pendant was found (probably from a fibula bow) (T. XXII, 3). The same context yielded tips of pins with conical or flat heads (T. XXII, 4), also found in the Iapodic[181] and Central Dalmatian group. They are characteristic mostly of the 8th cent. BC and are quite widespread in NW Balkans, but certain types were used until the 6th cent. BC.[182] Find of the head of a double "omega" pin (T. XXII, 5) is especially interesting, with parallels among the Iron Age material from the neighbouring regions (Central Dalmatian[183] and Central Bosnian cultural groups; 6th-5th cent. BC, and they were used until the end of the 3rd cent. BC),[184] suggesting import from these regions and contacts with other Illyrian tribes. Finds of such pins are known from earlier excavations of the Illyrian graves in the vicinity of Fort Sokol.[185] A bronze circlet with overlapping ends was also found, that might have been used as a ring. The Illyrians practiced mining and processed metals, making different cast objects.[186] Since pieces of slag were found in the same layer with prehistoric finds, we might assume local production of some objects. However certain finds testify to exchange of goods with neighbouring communities.

One complete and two partially preserved fibulae (bow of one example, and pin of the other) were found in the excavation of the Late Iron Age layer next to the northern side of the fort (T. XXII, 6). They can be dated to the 1st century BC. These are simple bow fibulae on whose ends are coils ending in a pin. Before the beginning of the archaeological excavations, during the fort repair / construction works, various types of fibulae were found (*Aucissa* fibula with a flat bow, 1st cent.; fibula with bulbous endings, 4th-5th cent.; late

[181] R. DRECHSLER-BIŽIĆ, 1987, 400-401, fig. 22/12, 14.
[182] B. ČOVIĆ, 1987b, 452-455, T. XLVIII/15-17.
[183] B. ČOVIĆ, 1987b, 456, T. L/8.
[184] B. ČOVIĆ, 1984, 43, 45, fig. 9/3; B. ČOVIĆ, 1987a, 502, T. LIII/18.
[185] N. KAPETANIĆ, 2013, 9, 13.
[186] A. STIPČEVIĆ, 1991, 112-116.

zličita oruđa (dlijeto, šilo, jednokraki šestar) (T. XXIII, 2-3, 5) i čavli (T. XXIII, 4). Slična šila su poznata iz kasnoantičkog razdoblja, a pronađena su i u srednjovjekovnim grobovima sjeverne i južne Dalmacije.[189] U kasnoantičkom sloju uz južnu stranu utvrde nađen je dio koplja (drške) (T. XXIII, 6).

Kasnosrednjovjekovni metalni materijal dosta je brojan, a osobito nalazi vojnog karaktera. Samostrijel se rabio još među nomadskim azijskim narodima, u rimsko doba taj način ratovanja je usavršen, a zadržao se do srednjeg vijeka.[190] Jedna strelica je u obliku izduženog lista, nađeno je mnoštvo vrhova strelica (veretona) koničnog oblika, a ima i strelica s naglašenim zašiljenim ili piramidalnim vrhom (T. XXIV, 1). Slične brojne željezne strelice od samostrela iz 14./15. st. poznate su iz istraživanja utvrđenja na području Bosne i Srbije,[191] te iz zaleđa Dalmacije i Crne Gore. Na utvrdi Sokol na Plivi nađeni su raznoliki metalni nalazi.[192] Strelice su nađene u srednjovjekovnim bosanskim gradovima Bobovcu[193] i Kraljevoj Sutjesci.[194] Brojni su takvi nalazi na utvrdama, a nađeni su na Svaču kod Ulcinja[195] te srednjodalmatinskom zaleđu na utvrdama Kličevici kod Benkovca[196] i Čačvini kod Trilja.[197] Strelica s naglašenim zašiljenim vrhom (15. st.) pronađena je u istraživanju u Splitu (Dioklecijanova palača).[198] Također je nađen veći broj fragmenata pločica koje su tvorile oklop, a koje su spajane zakovicama (T. XXIV, 2). Nađeni su i dijelovi konjske opreme – žvala i potkova.

U arhivskim dokumentima iz 15. stoljeća (1423., 1428., 1438., 1458.) zabilježeno je da je na utvrdu Sokol više puta pristizalo oružje

189 J. BELOŠEVIĆ, 1980, 120–122; M. PERKIĆ, 2008, 82, 133, kat. 9, T. 22/9.
190 G. A. ŠKRIVANIĆ, 1957, 111–114.
191 G. A. ŠKRIVANIĆ, 1957, 111–112.
192 I. BOJANOVSKI, 1972, 54, 56–57, sl. 17-18.
193 P. ANĐELIĆ, 2004, 153.
194 P. ANĐELIĆ, 2004, 235.
195 E. ZEČEVIĆ, 1989, 115–116, T. II/19.
196 K. GUSAR, M. ĆURKOVIĆ, 2011, 11, 28–29, kat. 45-50.
197 Lj. GUDELJ, 2000, 169–170.
198 J. BONAČIĆ MANDINIĆ, 2014, 369, 377, kat. 14.

antique and early Byzantine fibulae, 5th-6th cent.).[187]

A Roman-era key is another metal find (T. XXII, 7), from the layer dating to antiquity along the SE side of the fort. Iron clasp (T. XXII, 8) was found in the layer with late Roman material next to the SE side of the fort, and iron knives and razors are from a similar context (T. XXIII, 1). Before the archaeological excavation started, a piece of a Byzantine clasp with perforated cross and a crescent (6th cent.) was found during construction works.[188] Various tools (chisel, awl, single-leg compass) (T. XXIII, 2-3, 5) and nails (T. XXIII, 4) were found in late antique layers next to the northern and southern side of the fort. Similar awls are known from Late Antiquity, and they were also found in medieval graves in northern and southern Dalmatia.[189] A part of a spear (handle) was found next to the southern side of the fort (T. XXIII, 6).

Late medieval metal material is quite abundant, in particular military finds. Crossbow was used by the nomadic Asian populations, and in Roman time this weapon was improved to perfection. It was used until the Middle Ages.[190] One arrow is in shape of an elongated leaf, and many arrowtips (veretons) are conical in shape There are also arrows with pronouncedly pointed or pyramidal tip (T. XXIV, 1). Similar iron crossbow arrows dating to the 14th/15th centuries were found in the excavations of forts in Bosnia and Serbia,[191] as well as in the hinterland of Dalmatia and Crna Gora. Diverse metal finds were found in Fort Sokol on Pliva.[192] Arrows were found in medieval Bosnian town of Bobovac[193] and Kraljeva Sutjeska.[194] Identical finds are numerous in forts,

187 N. KAPETANIĆ, 2013, 17-19, 21.
188 N. KAPETANIĆ, 2013, 17-18, 20.
189 J. BELOŠEVIĆ, 1980, 120-122; M. PERKIĆ, 2008, 82, 133, cat. 9, T. 22/9.
190 G. A. ŠKRIVANIĆ, 1957, 111-114.
191 G. A. ŠKRIVANIĆ, 1957, 111-112.
192 I. BOJANOVSKI, 1972, 54, 56-57, fig. 17-18.
193 P. ANĐELIĆ, 2004, 153.
194 P. ANĐELIĆ, 2004, 235.

različitog tipa: samostrijeli, veretoni (u pojedinačnim narudžbama spominju se količine od čak 1000 i 3000 komada), oklopi, kacige, štitovi, bombarde, bombardele, spingarde, kamene kugle, barut, puške, olovne kugle za puške.[199] Godine 1465. navodi se da su se veretoni izrađivali na utvrdi, a 1474. spominje se da se ostala vojna oprema i oružje i dalje naručuju, među kojima i sablje.[200] Za 1476. godinu izrađen je popis predmeta koji su predani utvrdi, a navodi se cijeli niz vojnih predmeta: tarasi, maškule, željezne puške, samostrijeli, sablje, željezni veretoni (4900 komada), oklopi, obrazine za oklope, kacige, koplja, celenga (rijetki šljemovi sa zaštitom ramena), bombarde.[201] Prema navedenome, krajem 15. stoljeća dolazi do promjene u korištenju oružja jer je sada u upotrebi i vatreno oružje, te dolazi do prilagodbe novom načinu ratovanja na utvrdi. Početkom 17. stoljeća (1605., 1631.) na Sokol se i dalje doprema oružje (puške, barut i slično).[202] Budući da je Venecija oslabila nakon Kandijskog rata (1645. – 1669.), utvrda Sokol ubrzo je napuštena.[203]

Osim predmeta vojnog karaktera, arhivski dokumenti spominju i materijal povezan s obavljanjem radova na utvrdi poput željeznih klinova (15. st.). Početkom 16. stoljeća (1509., 1513.) spominju se: željezo za spone (30 litara), čavli, kreč za krov, cigle, daske.[204] O tome svjedoče sljedeći nalazi: razni klinovi, čavli (kružne, piramidalne, raskucane glave) (T. XXIV, 3-4), kovački čekić (T. XXV, 1), te alati i pribor poput šestara (T. XXV, 2). Također su nađeni noževi (T. XXV, 3) koji su mogli biti upotrebljavani za različite svrhe. Udice (T. XXV, 4) upućuju na ribolov, a srpovi na poljoprivrednu djelatnost (T. XXV, 5). Među nalazima je i jedno kresivo (T. XXV, 6).

199 L. BERITIĆ, 1966, 108, 115, 119.
200 L. BERITIĆ, 1966, 121–122.
201 L. BERITIĆ, 1966, 122.
202 L. BERITIĆ, 1966, 128–129.
203 L. BERITIĆ, 1966, 132.
204 L. BERITIĆ, 1966, 122, 124–125.

such as Svač near Ulcinj[195] and central Dalmatian hinterland on forts Kličevica near Benkovac[196] and Čačvina near Trilj.[197] Arrow with pronouncedly pointed tip (15th cent.) was found in the excavation in Split (Diocletian's Palace).[198] A number of fragments of armor plaques were also found, that were joined with rivets (T. XXIV, 2). Some parts of horse equipment were also recovered – bits and horseshoe.

In the 15th century archival documents (years 1423, 1428, 1438, 1458) it was recorded that Fort Sokol was supplied with different types of weapons: crossbows, veretons (individual orders mention as many as 1000 and 3000 pieces), armors, helmets, shields, bombardas, bombardellas, spingardas, stone balls, gunpowder, rifles, lead balls for rifles.[199] In 1465 it is stated that the veretons were made on the fort, and in 1474 that other military equipment and weapons were still ordered, including sabers.[200] A list of objects, mostly military utensils, delivered to the fort was made for the year 1476: signal ship cannons ("taras" type), mortars, iron rifles, crossbows, sabers, iron veretons (4900 pieces), armors, cheek-pieces for armors, helmets, spears, rare helmets with shoulder protection (*celenga*), bombardas.[201] In accordance with the aforemetioned, firearms were introduced into standard weaponry at the end of the 15th century, and the fort was adjusted to the new way of warfare. At the beginning of the 17th century (1605, 1631) weapons were still delivered to Sokol (guns, gunpowder etc).[202] Since Venice lost power after the Cretan War (1645-1669), Fort Sokol was soon abandoned.[203]

Except for military objects, archival documents also mention material related to main-

195 E. ZEČEVIĆ, 1989, 115-116, T. II/19.
196 K. GUSAR, M. ĆURKOVIĆ, 2011, 11, 28-29, cat. 45-50.
197 Lj. GUDELJ, 2000, 169-170.
198 J. BONAČIĆ MANDINIĆ, 2014, 369, 377, cat. 14.
199 L. BERITIĆ, 1966, 108, 115, 119.
200 L. BERITIĆ, 1966, 121-122.
201 L. BERITIĆ, 1966, 122.
202 L. BERITIĆ, 1966, 128-129.
203 L. BERITIĆ, 1966, 132.

Ostali lokaliteti približnog datuma i konteksta iz šire regije jadranskog zaleđa dali su dosta metalnog materijala sličnog karaktera. Tijekom istraživanja utvrde Sokol na Plivi nađeni su brojni kasnosrednjovjekovni metalni nalazi, a među njima i predmeti praktične namjene (noževi, britve, škare, kovani klinovi).[205] U istraživanju kraljevskih dvora u Bobovcu i Kraljevoj Sutjesci također su nađeni razni metalni predmeti svakodnevne upotrebe (noževi, britve, šarke, lokoti, ključevi, dlijeta, sjekire).[206] Na utvrdi Svač u blizini Ulcinja, koja je izgrađena u sklopu Justinijanova utvrđivanja Ilirika u 6. stoljeću, nađeni su metalni nalazi (noževi, koplja, kopče, kresiva, ključevi, šarke – 14./15. st.)[207] slični onima s konavoskog Sokola. Slični noževi i kovani čavli pronađeni su u istraživanju utvrda Kličevice kod Benkovca[208] i Čačvine kod Trilja.[209]

Također je nađena pređica željezne pojasne kopče nepravilne pravokutne forme (T. XXV, 7), dok trn nije sačuvan. Među metalnim nalazima ističe se venecijanska olovna plomba s prikazom krilatog lava (T. XXV, 8), pronađena uz južnu stranu utvrde u sloju s kronološki mješovitim nalazima. Plombe su tijekom srednjeg i novog vijeka korištene za označavanje porijekla i kvalitete proizvoda, a uglavnom se povezuju s tekstilom koji se izvozio iz Venecije. Nekoliko olovnih plombi poznato je iz istraženih brodoloma uz istočnu obalu Jadrana (pličina Sv. Pavao kod Mljeta, Koločepski kanal, Gnalić kod Biograda n/M).[210]

Budući da su se takvi, uglavnom željezni, predmeti upotrebljavali tijekom više stoljeća, nije moguće izvršiti njihovu preciznu dataciju, no može ih se okvirno odrediti u kasni srednji i rani novi vijek. Različiti uporabni predmeti i dijelovi ratne opreme upućuju na svakodnevni život na Sokolu. U nekim aspek-

[205] I. BOJANOVSKI, 1972, 56.
[206] P. ANĐELIĆ, 2004, 155–157, 236–238.
[207] E. ZEČEVIĆ,1989, 112–116, T. II/7, 10, 18-19.
[208] K. GUSAR, M. ĆURKOVIĆ, 2011, 11, 23–25, kat. 28-30, 32-33.
[209] Lj. GUDELJ, 2000, 170.
[210] J. BEZAK, 2015, 112–113, 179, kat. 91.

tenance of the fort such as iron wedges (15th cent.), or iron for clamps (30 liters), nails, roof lime, bricks, planks (early 16th cent.).[204] This is attested by the following finds: various wedges, nails (with round, pyramidal, forged heads) (T. XXIV, 3-4), blacksmithing hammer (T. XXV, 1), and tools and utensils such as a pair of compasses (T. XXV, 2). Knives were also found (T. XXV, 3) that could have been used for various purposes. Hooks (T. XXV, 4) suggest fishing, and sickles agricultural activity (T. XXV, 5). Metal finds include one tinder (T. XXV, 6).

Other sites dating roughly to the same period and belonging to the same context from the wider region of the Adriatic hinterland yielded substantial quantities of similar metal finds. During the excavation of Fort Sokol on Pliva numerous late medieval metal finds were recovered, including practical objects such as knives, razors, scissors, forged wedges.[205] Research of imperial courts in Bobovac and Kraljeva Sutjeska also resulted in various metal objects for everyday use (knives, razors, hinges, padlocks, keys, chisels, axes).[206] On fort Svač near Ulcinj that was built within Justinian's fortification of Illyricum in the 6th century, metal finds were recovered (knives, spears, clasps, tinders, keys, hinges – 14th/15th cent.)[207] similar to the ones from Sokol in Konavle. Similar knives and forged nails were found in the research of forts Kličevica near Benkovac[208] and Čačvina near Trilj.[209]

An irregular rectangular ring of an iron belt buckle was also found (T. XXV, 7), while the prong has not been preserved. Venetian lead seal featuring a depiction of a winged lion stands out among the metal finds (T. XXV, 8), found next to the southern side of the fort in the layer with mixed finds in terms of chronol-

[204] L. BERITIĆ, 1966, 122, 124-125.
[205] I. BOJANOVSKI, 1972, 56.
[206] Lj. GUDELJ, 2000, 170.
[207] E. ZEČEVIĆ,1989, 112-116, T. II/7, 10, 18-19.
[208] K. GUSAR, M. ĆURKOVIĆ, 2011, 11, 23-25, cat. 28-30, 32-33.
[209] Lj. GUDELJ, 2000, 170.

tima, sudeći po materijalu, život na utvrdi odvijao se u skladu s naseobinama tadašnjeg doba koje nisu bile vojnog karaktera.

METALURŠKI NALAZI

Na utvrdi i uz nju odvijala se i metalurška djelatnost. Zabilježena je još od prapovijesnog razdoblja, a povezuje se s ilirskim slojem koji je dokumentiran uz JI stranu utvrde. U njemu su nađeni manji komadi drozge koji svjedoče o lijevanju metalnih predmeta, vjerojatno manjih dimenzija.

Uz zapadnu stranu utvrde pronađena je oštećena željezna posuda s tragovima staklaste drozge (T. XXV, 9) što svjedoči o visokim temperaturama taljenja i metalurškom djelovanju u kasnom srednjem ili ranom novom vijeku. Uza SI stranu utvrde nađena je dosta oštećena talionička željezna posudica koja je mogla biti korištena za taljenje sirovine za izradu predmeta manjih dimenzija (T. XXV, 10). Tijekom istraživanja pronađena je veća količina kovačke drozge (T. XXV, 11), osobito uz sjevernu i SI stranu utvrde. Taj metalni otpad bacan je iz kovačnice koja je smještena na sjevernoj strani utvrde Sokol pa je bilo za očekivati pronaći najviše drozge na toj strani. U kovačnici su kovani i popravljani različiti predmeti u kasnom srednjem vijeku. Drozga upućuje na to da su se u mnogo većoj količini kovali i popravljali predmeti (oruđe, oružje) od željeza nego od drugih metala (bakar, bronca, olovo). No, buduće kemijske analize će razjasniti odnos između pronađene drozge i nalaza, te pobliže porijeklo sirovina koje su nabavljane iz rudnika u unutrašnjosti Bosne.[211] Gruba sirovina pročišćavala se u proizvođačkim središtima, a izvozila se čista metalna sirovina. Glavni trgovci metalima iz Bosne i Srbije bili su Dubrovčani koji su tamo imali i svoje kolonije u kasnom srednjem vijeku (14. – 15. st.). Također su i talijanski trgovci su-

[211] N. TOPIĆ, N. DRAŠKOVIĆ VLAŠIĆ, 2015, 7–9.

ogy. Seals were used in the Middle Ages and Modern Period to mark origin and quality of products, and they are mostly associated with textile exported from Venice. Several lead seals were found in shipwrecks along the eastern Adriatic coast (shallows Sv. Pavao near Mljet, Koločep Channel, Gnalić near Biograd n/m).[210]

Since such, mostly iron finds were used for centuries, it is difficult to date them precisely, but they can be broadly dated to the Late Middle Ages and Early Modern Period. Various utilitarian objects and parts of military equipment illustrate everyday life in Sokol. In some aspects, judging from the material, life on the fort was not much different than in synchronous civilian settlements.

METALLURGICAL FINDS

Metallurgical activities were carried out on and around the fort. Metallurgical traces were recorded back from prehistory, related to the Illyrian layer that is documented along the SE side of the fort. Slag pieces were found in it testifying to casting metal objects, probably small in size.

Damaged iron vessel with pieces of glassy slag was found next to the western side of the fort (T. XXV, 9) attesting high temperatures of melting and metallurgic activity in the Late Middle Ages or Early Modern Period. Quite damaged iron melting pot was found along the NE side of the fort. It might have been used for melting raw material for manufacturing smaller objects (T. XXV, 10). A substantial amount of blacksmithing slag was found in the excavations (T. XXV, 11), in particular along the northern and NE side of the fort. This metal waste was thrown from the forge that was located on the northern side of Fort Sokol so it was expected that most slag might be found on this side. Various objects were made and repaired in the forge in the Late

[210] J. BEZAK, 2015, 112-113, 179, cat. 91.

djelovali u trgovini balkanskim metalima koje su izvozili diljem Mediterana.[212]

Budući da je primarna funkcija utvrde bila obrambena, produkti su ponajviše bili vojnoga karaktera (veretoni, koplja, olovni metci, pločice oklopa), a izrađivani su i neophodni alati i potrepštine za gradnju i popravke utvrde, te svakodnevni predmeti (čavli, klinovi, noževi, britve, ključevi). Osim što su oružje i ostali predmeti izrađivani na utvrdi, također su velike količine takvih predmeta naručivane iz drugih središta, o čemu svjedoče arhivski podaci.[213]

NUMIZMATIČKI NALAZI

U arheološkim istraživanjima provedenim 2012. i 2013. uz utvrdu Sokol u Konavlima otkriveno je devet primjeraka starog novca.[214] Iz objektivnih razloga nije bio moguć uvid u tu numizmatičku građu nakon provedenog postupka čišćenja i konzervacije pa zbog toga izostaju metrološki podatci. Novac je determiniran prema fotografijama koje su nastale neposredno nakon otkrića tih nalaza, kada je na njima bilo naslaga nečistoće. Unatoč tomu, većina ih pruža dovoljno podataka za tipološku i kronološku analizu.

Najstariji numizmatički nalazi iz spomenutih istraživanja pripadaju helenističkom razdoblju. To su tri novca od bakrene slitine iskovana za ilirskog kralja Baleja (*Ballaios*). Na aversu je prikaz vladareve glave u profilu, koji je kod dvaju primjeraka okrenut ulijevo (T. XXVI, 1-2), a na jednome udesno (T. XXVI, 3). Na reversu je prikazana Artemida u iskoraku na lijevo. Odjevena je u hiton, a u rukama drži dva koplja i baklju. Od legende, koja se sastoji od ΒΑΛΛΑΙΟΥ desno od božice i ΒΑΣΙΛΕΩΣ lijevo od nje, na prvom i trećem primjerku vidljiv je dio Balejeva ime-

[212] D. KOVAČEVIĆ, 1961, 140, 166–170.
[213] L. BERITIĆ, 1966, 105–131.
[214] Veća količina novca pronađena je izvan arheološkog istraživanja, a ovdje neće biti predmet obrade.

Middle Ages. Slag indicates that mostly iron objects (tools, weapons) were made and repaired in the forge, while other metals (copper, bronze, lead) were not as common. However future chemical analyses will shed more light on the relation between the recovered slag and finds, as well as on more precise origin of raw materials procured in mines in the inland of Bosnia.[211] Coarse raw material was purified in production centers, and pure metal raw material was exported. Main traders with metals from Bosnia and Serbia were residents of Dubrovnik that had their colonies there in the Late Middle Ages (14th-15th cent.). Italian traders also participated in the trade with Balkan metals that were exported across the Mediterranean.[212]

Since primary function of the fort was defensive, the products were mostly military (veretons, spears, lead bullets, armor plaques), but neccesary tools and utensils for building and repairing the fort were also made, as well as everyday objects (nails, wedges, knives, razors, keys). Except for local production of arms and other objects, large amount of such items were ordered from other centers, as testified by the archival information. [213]

NUMISMATIC FINDS

Nine old coins were found in the archaeological excavations conducted in 2012 and 2013 next to Fort Sokol in Konavle.[214] Objective reasons prevented autopsy of that numismatic material after procedures of cleaning and conserving which is why metrologic data are missing. The coins have been determined on the basis of photographs that were taken immediately after the discovery of the finds, while they were still covered with impurities.

[211] N. TOPIĆ, N. DRAŠKOVIĆ VLAŠIĆ, 2015, 7-9.
[212] D. KOVAČEVIĆ, 1961, 140, 166-170.
[213] L. BERITIĆ, 1966, 105-131.
[214] A number of coins were found unrelated to the archaeological research. They will not be analyzed here.

na. Kod drugoga komada nije moguće utvrditi je li bila naznačena i vladareva titula. Razdoblje vladavine tog ilirskog kralja, poznatog samo prema novcu, starija literatura smješta približno između 167. i 135. prije Krista.[215] U novije vrijeme ona je pomaknuta skoro 100 godina ranije.[216] Balejev novac nije rijetka pojava. Otkriven je i u obližnjem Dubrovniku.[217] Primjera radi, nađen je i na brojnim lokalitetima u susjednoj Hercegovini.[218] Posve se logično može očekivati da će ga biti i na utvrdi Sokol, jer se taj lokalitet nalazi blizu pretpostavljene Balejeve kovnice u Risnu, a možda i prijestolnice, gdje je njegov novac pronađen u velikom broju.[219]

Četvrti numizmatički nalaz pripada Rimskom Carstvu. Iz razdoblja je tetrarhije. To je tzv. radiatus koji je iskovan u ime Galerija s titulom cezara (T. XXVI, 4), suvladara cara Dioklecijana (284. – 305.). Na aversu je prikazano udesno okrenuto poprsje sa zrakastom krunom i u draperiji. Uokolo je legenda: GAL VAL MAXIMIANVS NOB CAES. Na reversu je s desne strane Jupiter sa žezlom. Stoji okrenut ulijevo. Do njega je Galerije u vojnoj odori. Okrenut je prema rimskom bogu, od kojeg prima malu Viktoriju na kugli. Oko te kompozicije je legenda: CONCORDIA MIL-ITVM. U polju je oznaka radionice Γ, a u odsječku kratica kovnice ALE. Prema standardnom katalogu rimskog carskog novca *Roman Imperial Coinage* taj je novac iskovan između 296. i 297. u trećoj radionici kovnice u Aleksandriji.[220] Uobičajena je pojava diljem antičke vojne velesile pa nije potrebno navoditi analogije.

Vremenski slijedi novac Dubrovačke Republike iz kasnoga srednjeg i ranoga novog vijeka (T. XXVI, 5). To je minca ili folar s aversnim prikazom glave okrenute u lijevo,

[215] J. BRUNŠMID, 1998, 88.
[216] R. CIOŁEK, 2011, 86–92; P. DYCZEK et al., 2011-2012, 97–99.
[217] I. MIRNIK, 1995, 170.
[218] I. DRAGIČEVIĆ, 2019, u tisku.
[219] D. UJES, 1993, 5–7; R. CIOŁEK, 2011, 73–74.
[220] RIC VI, 1968, br. 48b.

Nevertheless most of them offer enough information for typological and chronological analysis.

The oldest numismatic finds from the aforementioned excavations date to the Hellenistic period – three coins made of copper alloy, struck during the Illyrian king Ballaios. The obverse features a depiction of the emperor's head in profile, facing left on two examples (T. XXVI, 1-2), or right on one coin (T. XXVI, 3). The reverse bears a depiction of Artemis stepping out to the left. She is wearing a chiton, holding two spears and a torch in her hands. The legends consists of ΒΑΛΛΑΙΟΥ right of the goddess and ΒΑΣΙΛΕΩΣ to the left. A part of Ballaios' name is visible on the first and third example. It was impossible to determine if the king's title was present on the second piece. Period of reign of this Illyrian king, known only from coins, is dated approximately between 167 and 135 BC in the older publications.[215] Recently this dating has been moved for 100 years earlier.[216] Ballaios' coins are not rare. They were also found in nearby Dubrovnik.[217] For instance, they were recovered from a number of sites in nearby Herzegovina.[218] It is logical to expect their presence in Fort Sokol, since this site is close to Ballaios' mint in Risan (Rhizinium), and possibly also capital, where his coins were found in great quantities.[219]

The fourth numismatic find belongs to the tetrachy period of the Roman Empire. It is so-called radiatus struck for Galerius, with the title of caesar (T. XXVI, 4), co-ruler of the Emperor Diocletian (284-305). On the obverse is a draped bust with radiate crown, facing right, surrounded by the legend GAL VAL MAXIMIANVS NOB CAES. Jupiter with a scepter is on the right side of the reverse, facing left.

[215] J. BRUNŠMID, 1998, 88.
[216] R. CIOŁEK, 2011, 86-92; P. DYCZEK et al., 2011-2012, 97-99.
[217] I. MIRNIK, 1995, 170.
[218] I. DRAGIČEVIĆ, 2019, forthcoming.
[219] D. UJES, 1993, 5-7; R. CIOŁEK, 2011, 73-74.

oko koje je natpis: MONETA RAGVSII. U središtu reversa su tri kule s gradskim vratima, a uokolo je legenda: CIVITAS RAGVSII. Ovakvi tekstni i likovni sadržaji manjim dijelom se naziru na još dvama primjercima s utvrde Sokol (T. XXVI, 6-7). Inače, riječ je o nominali kasne emisije, koja pripada razdoblju između 1452. i 1612. godine.[221] Brojni analogni primjerci otkriveni su u arheološkim istraživanjima u Dubrovniku.[222]

Dva novca datiraju podosta vremena nakon što je utvrda Sokol napuštena 1672. godine. Možda su posljedica pastirskih djelatnosti. Kako god bilo, iz 19. su stoljeća. S njegova početka je turska para od slitine srebra i bakra (T. XXVI, 8). Iskovana je u Misiru (Kairo, Egipat) za vladavine Selima III. (1789. – 1807.).[223] Na aversu je sultanovo ime i jedna od titula u obliku tugre (vrsta monograma, ali s cjelovitim tekstom): Selim Han bin Mustafa el-Muzafer Daima. U prijevodu: Selim kan sin Mustafin uvijek pobjednik. Unutar reversa je vidljiv veći dio sadržaja na arapskom: Darebe fi Misr sene [1203.]. U prijevodu: Kovano u Egiptu godine 1203. Gore se vidi i 16, brojka koja se odnosi na godinu sultanove vladavine, što znači da je para iskovana 1218., odnosno 1803./1804. godine.[224] Malo je dalmatinskih nalaza turskih para iz Egipta. Jedna od sultana Mahmuda I. (1730. – 1754.) nađena je u Zadru.[225]

Posljedni numizmatički nalaz iz utvrde Sokol datira iz konca 19. stoljeća. To je uobičajeni austrougarski novac od bakra u vrijednosti od 2 helera (T. XXVI, 9).[226] Iskovan je 1896. u Beču. Na aversu unutar kartuše naznačene su nominala i godina. Unutar reversa dominira okrunjeni dvoglavi orao.

[221] I. DOLENEC, 1993, 46.
[222] M. ILKIĆ, N. TOPIĆ, Ž. PEKOVIĆ, 2015, 4–5, kat. br. 37-57; N. TOPIĆ et al., 2019, 62, 72, 75–76, Tabla XI, 7-10, Tabla XII, 1-5.
[223] C. L. KRAUSE, C. MISHLER, 1984, 484, C#63.
[224] Ovaj turski novac pomogao nam je determinirati Amer Sulejmanagić, na čemu mu najljepše zahvaljujemo.
[225] L. BEKIĆ et al., 2017, 160, 163, Sl. 1: 16.
[226] E. SZAIVERT, 1991, br. 497.

Galerius is next to him in a military uniform, facing Roman god, from whom he is receiving little Victoria on a ball. This composition is surrounded by the legend: CONCORDIA MIL-ITVM. Workshop mark Γ is in the field, and mint abbreviation ALE in the exergue. According to the standard catalogue of the Roman imperial coins *Roman Imperial Coinage* these coins were minted between 296 and 297 in the third workshop of the Alexandria mint.[220] It is very common across the Roman Empire so it is not necessary to list analogies.

Coins of the Republic of Ragusa of the Late Middle Ages and Early Modern Period (T. XXVI, 5) are represented by *minca* or *folar* with a depiction of a head facing left on the obverse, surrounded by the legend: MONETA RAGVSII. In the center of the reverse are three towers with city gates, with a legend around: CIVITAS RAGVSII. Such textual and visual contents can be partially discerned on two more examples from Fort Sokol (T. XXVI, 6-7). It is a denomination of late issue, dating to the period between 1452 and 1612.[221] Numerous analogous examples have been discovered in the archaeological excavations in Dubrovnik.[222]

Two coins date to the period long after the fort had been abandoned in 1672. They might be related to shepherds' activities. Be that as it may, they date to the 19th century. Turkish para made of alloy of silver and copper dates to the beginning of the 19th century (T. XXVI, 8). It was struck in Mısır (Cairo, Egypt), during the reign of Selim III (1789-1807).[223] The obverse bears sultan's name and one of his titles in shape of tughra (a kind of monogram but with complete text) Selim Han bin Mustafa el-Muzafer Daima. In translation: Selim kan sin Mustafin forever victorious. Big-

[220] RIC VI, 1968, no. 48b.
[221] I. DOLENEC, 1993, 46.
[222] M. ILKIĆ, N. TOPIĆ, Ž. PEKOVIĆ, 2015, 4-5, kat. br. 37-57; N. TOPIĆ et al., 2019, 62, 72, 75-76, Tabla XI, 7-10, Table XII, 1-5.
[223] C. L. KRAUSE, C. MISHLER, 1984, 484, C#63.

Svi ovi nalazi su iz nasutih slojeva oko utvrde, osim jednog novca kralja Baleja (T. XXVI, 2) koji je nađen unutar kasnoantičkog groba iz 6. stoljeća.

STAKLENI NALAZI

Stakleni materijal je vrlo raznovrstan, a može se datirati od ranorimskog perioda do ranog novog vijeka (T. XXVII–XXIX). Pronađen je u nasipnim slojevima uokolo utvrde izvan grobnog konteksta, a manjim dijelom u zasipu grobova (bez funkcije priloga). Materijal upućuje na kontinuitet u korištenju staklenih predmeta na utvrdi. Nalazi su funkcionalno raznoliki, a obuhvaćaju posude (čaše, zdjelice, boce, vrčeve), svjetiljke, prozorsko staklo (*oculi*), ukrasnu pločicu. Rimski stakleni predmeti importirani su pretežno iz talijanskih (Aquileia) (1. – 2. st.) i rajnskih (Köln, Trier) (3. – 4. st.) središta, a brojniji su nalazi iz kasne antike. Ranobizantski (6. st.) stakleni predmeti nisu previše brojni, dok su više zastupljeni kasnosrednjovjekovni i ranonovovjekovni (13. – 17. st.) nalazi koji su izrađivani u venecijanskim, dubrovačkim ili drugim lokalnim radionicama.

Ulomak stijenke rebraste zdjelice karakterističan je za **ranorimsko razdoblje** (prva polovica 1. st.). Posuda od kobaltnoplavog stakla izrađena je tehnikom presavijanja preko kalupa (T. XXVII, 1). Analogne primjere nalazimo u Polačama na Mljetu[227] i Sisku.[228] Rebraste zdjelice također su poznate iz istraživanja kolonije Epidauruma (lokalitet Rat u Cavtatu), gdje je nađeno više ulomaka rebrastih zdjelica zelenoplave boje.[229] Nekoliko ulomaka izrađeno je od plavkastozelenkastog stakla, a pripadali su zdjelicama s prošupljenim obodom i prošupljenom bazom (T.

[227] L. KOVAČIĆ, 2017, 16, 51, kat. 2.
[228] I. BAĆANI, 2017, 65, kat. 67.
[229] N. TOPIĆ, H. PUHARA, L. VUKOVIĆ, 2019, 51-52, Fig. 2.2-3.

ger part of the text in Arabic is legible inside the reverse: Darebe fi Misr sene [1203.]. In translation: Struck in Egypt in 1203. Number 16 is recognizable at the top, relating to the year of the sultan's reign, meaning that it was struck in 1218, or in 1803/1804.[224] There are few Dalmatian finds of Turkish para from Egypt. One such specimen of Sultan Mahmud I (1730-1754) was found in Zadar.[225]

The last numismatic find from Fort Sokol dates to the end of the 19th century. It is a common Austro-Hungarian 2 heller copper coin (T. XXVI, 9).[226] It was struck in 1896 in Vienna. Denomination and year were denoted inside a cartouche on the obverse. A crowned double-headed eagle is dominant on the reverse.

All these coins were found in filled layers around the fort, except for one coin of king Ballaios (T. XXVI, 2) that was found in the 6th century late antique grave.

GLASS FINDS

Glass material is very diverse, and it can be dated from the early Roman period to the Early Modern Period (T. XXVII-XXIX). It was found in fill layers around the fort outside the grave context, and to much lesser degree in grave fills (but not as grave goods). The material suggests continuity of use of glass finds on the fort. The finds are functionally diverse, encompassing vessels (beakers, cups, bottles, jugs), lamps, windowpane (*oculi*), decorative plaque. Roman glass objects were imported mostly from the Italian workshops (Aquileia) (1st-2nd cent.) and Rhine centers (Köln, Trier) (3rd-4th cent.). Late antique finds are more numerous. Early Byzantine (6th cent.) glass finds are not as abundant, while late medieval and postmedieval glass items are some-

[224] We would like to extend our sincere gratitude to Amer Sulejmanagić who helped us to determine this Turkish coin.
[225] L. BEKIĆ et al., 2017, 160, 163, Fig. 1: 16.
[226] E. SZAIVERT, 1991, no. 497.

XXVII, 2) koje se datiraju u 1. – 2. stoljeće.[230] Ulomci dna od tirkiznozelenog stakla karakteristični su za boce izrađivane od 1. do 3. stoljeća (T. XXVII, 3).[231] Među nalazima je i ulomak oboda zdjele ili žare izrađen od maslinastozelenog stakla, karakterističan za 2. – 3. stoljeće (T. XXVII, 4).

Više je zastupljeno **kasnorimsko staklo**, koje se uglavnom odlikuje maslinastozelenom i žućkastozelenom bojom. Pronađeno je nekoliko ulomaka oboda i stijenki polukuglastih čaša za piće od žućkastog i maslinastog stakla koje se uglavnom datiraju u 3. – 4. stoljeće (T. XXVII, 5). Te čaše, koje su mogle služiti i kao svjetiljke uljanice ili zdjelice, karakteristične su za rajnske radionice, ali i akvilejsko područje, a njihova upotreba proteže se i u ranobizantsko razdoblje (do 7. st.).[232] Analogni nalazi pronađeni su na više lokaliteta na istočnoj obali Jadrana i njezinu zaleđu,[233] te u balkanskom zaleđu, Crnome moru i Maloj Aziji.[234] No, nije isključena njihova produkcija u Saloni.[235] Ulomci stijenki polukuglastih čaša od žućkastosmeđeg stakla s apliciranim modrim mrljama (*Nuppengläser*) (T. XXVII, 6) karakteristični su za posude koje su se proizvodile u rajnskim radionicama 3. – 4. st.,[236] sjeverno galskim[237] te sjevernotalijanskim, istočnim i dunavskim radionicama.[238] Tako ukrašene čaše, ali od bezbojnog stakla, pronađene su u istraživanju Rata u Cavtatu.[239] Slični nalazi poznati su s različitih nalazišta u Hrwhat better represented (13th-17th cent.)

Wall fragment of a small ribbed bowl is characteristic of the **early Roman period** (first half of the 1st century). Vessel of cobalt blue glass was made by using the technique of bending over mold (T. XXVII, 1). Analogous examples can be found in Polače on Mljet[227] and in Sisak.[228] Ribbed bowls are also known from the excavations of the colony of Epidaurum (site of Rat in Cavtat), where several sherds of green-blue ribbed bowls were found.[229] Few fragments were made of bluish-greenish glass, and they belonged to small bowls with perforated rim and hollowed base (T. XXVII, 2) dating to the 1st-2nd cent.[230] Fragments of bases made of turquoise green glass are characteristic of bottles made from the 1st to 3rd cent. (T. XXVII, 3).[231] Among the finds is a fragment of a rim of a bowl or an urn made of olive-green glass, characteristic of the 2nd and 3rd centuries (T. XXVII, 4).

Late Roman glass is more abundant, mostly characterized by olive-green and yellowish green color. Glass finds include several fragments of rims and walls of hemispherical beakers for drinking made of yellowish and olive glass mostly dating to the 3rd-4th centuries (T. XXVII, 5). These beakers, that might have been used as oil lamps or cups, are characteristic of the Rhine workshops, and Aquileian region. Their use was continued in the Early Byzantine perod (until the 7th cent.).[232] Analogous finds were recovered from a number of sites on the eastern Adriatic coast and its hinterland,[233] and the Balkan inland, Black Sea and

230 I. LAZAR, 2004, kat. 31, 58.
231 C. ISINGS, 1957, 63-65, Form 50; Za determinaciju ulomaka zahvaljujemo dr. sc. Anastassiosu Antonarasu iz Muzeja bizantske kulture u Solunu.
232 K. BARTOLIĆ SIROTIĆ, 2013, 95–97.
233 S. GLUŠČEVIĆ, 1995, 164–172, 178–181; K. BARTOLIĆ SIROTIĆ, 2013, 96–99, 103, 106, SL. 4-5, kat. 1-3, T. 1./1-3.
234 M. KRIŽANAC, 2016, 93–95, Fig. 5.29,32, Fig. 6/.3, 34.
235 S. GLUŠČEVIĆ, 1995, K. BARTOLIĆ SIROTIĆ, 2013, 97; 177.
236 C. ISINGS, 1957, 113, type 96; K. GOETHERT-POLASCHEK, 1977, 54–55, 58, 61, 65, 68, 307, 310–311, 315, 318, 321, Tafel 39 / 188, 210, 233-234; Tafel 41 / 268, 250, Tafel 42 / 267, 269.
237 J. MORIN-JEAN, 1922–1923, 218–225, Figs. 296-301, Pl. 10.
238 A. LARESE, 2004, 89.
239 N. TOPIĆ, H. PUHARA, L. VUKOVIĆ, 2019, 54-55, Fig. 3.5.

227 L. KOVAČIĆ, 2017, 16, 51, cat. 2.
228 I. BAĆANI, 2017, 65, cat. 67.
229 N. TOPIĆ, H. PUHARA, L. VUKOVIĆ, 2019, 51-52, Fig. 2.2-3.
230 I. LAZAR, 2004, cat. 31, 58.
231 C. ISINGS, 1957, 63-65, Form 50; We would like to thank Anastassios Antonaras of the Museum of Byzantine Culture in Thessaloniki for his assistance in determining the fragments.
232 K. BARTOLIĆ SIROTIĆ, 2013, 95-97.
233 S. GLUŠČEVIĆ, 1995, 164-172, 178-181; K. BARTOLIĆ SIROTIĆ, 2013, 96-99, 103, 106, fig. 4-5, cat. 1-3, T. 1./1-3.

vatskoj.[240] Nađene su u istraživanju vojnog logora Tilurium (Trilj).[241] Čaša izrađena od iste boje stakla kao sokolski nalazi i s apliciranim modrim kapljicama pronađena je u Sisku.[242] Slični nalazi također su pronađeni u istraživanju lokaliteta na sjeveru i istoku Hrvatske, a pretežno su datirani u 4. stoljeće,[243] kao i takve čaše s apliciranim kapljicama iz muzeja u Akvileji (*Museo Archeologico di Aquileia*).[244]

Ulomak posude, vjerojatno zdjelice sa širokim otvorom, izrađene od blijedog žućkastozelenkastog stakla (T. XXVII, 7), karakterističan je za posude koje su bile u upotrebi u kasnoantičkom/ranobizantskom razdoblju (4. – 6. st.). Također je nađen ulomak gornjeg dijela plitke zdjele izrađene od blijedo zelenog stakla (T. XXVII, 8), a prema analognim primjerima s područja Srbije može se datirati u ranobizantsko razdoblje (6. – 7. st.).[245]

Pronađeno je nekoliko ulomaka oboda i stijenki koničnih recipijenata s apliciranim ručkama (T. XXVII, 9). Ulomci stopa (pretežno fragmentarno sačuvanih) koji su mogli tvoriti čaše na stalku ili svjetiljke također su zastupljeni među staklenim nalazima sa Sokola (T. XXVII, 10). Ti nalazi mogu se datirati u 5. – 6. stoljeće, a pretežno se povezuju s ranokršćanskim crkvama, pa mogu nagovijestiti i postojanje takvog, za sada nedefiniranog, objekta uz utvrdu. Izrađeni su pretežno od žućkastog, žućkastozelenog i maslinastozelenog stakla. Brojni analogni primjeri poznati su iz ranijih istraživanja ranokršćanskih lokaliteta na istočnoj obali Jadrana i jadranskog zaleđa,[246] ali i sa šireg područja Balkana, Male Asia Minor.[234] However their production in Salona cannot be ruled out.[235] Wall fragments of hemispherical beakers made of yellowish brown glass with applied dark blue prunts (*Nuppengläser*) (T. XXVII, 6) are characteristic of vessels produced in the Rhine workshops in the 3rd and 4th centuries,[236] northern Gallic,[237] and northern Italian, eastern and Danubian workshops[238] Beakers decorated in that way, only made of colorless glass, were found in the excavations of Rat in Cavtat.[239] Similar finds are known from different sites in Croatia,[240] such as military camp *Tilurium* (Trilj).[241] Beaker made of glass in the same color as the finds from Sokol, with applied dark blue prunts was found in Sisak.[242] Similar finds were recovered at the excavations of the sites in northern and eastern Croatia, mostly dating to the 4th century.[243] Such beakers with applied prunts can also be found in the museum in Aquileia (Museo Archeologico di Aquileia).[244]

Fragment of a vessel, probably a small bowl with a wide opening, made of pale yellowish greenish glass (T. XXVII, 7), is characteristic of the vessels used in the Late Roman/Early Bizantine period (4th-6th cent.). A fragment of the upper part of a shallow bowl made of pale green glass is another glass find from Sokol (T. XXVII, 8). On the basis of analogies from Serbia it can be dated to the early bizantine period (6th-7th cent.).[245]

Several fragments of rims and walls of con-

240 V. DAMEVSKI, 1974, 87, T. XV/3.
241 Z. BULJEVIĆ, 2014, 225–226, T. 6.96.
242 I. BAĆANI, 2017, 70, kat. no. 75.
243 Z. GREGL, 2013, 50–52, kat. 62, 65, 68.
244 M. CARINA CALVI, 1969, Tav. 26.4-5.
245 M. KRIŽANAC, 2016, 88-89, Fig. 1.1-2.
246 V. HAN, 1981, 135, T. XI/1; C. FISKOVIĆ, 1983, 76–77, sl. 18. 19; I. FADIĆ, 1992, 63–66, T. 1/1-2, T. 3/1; I. FADIĆ, 1994, 213–215, 221; Z. BULJEVIĆ, 1994, 259, 262, kat. 14-15; Z. BULJEVIĆ, 2002, 171, 192, kat. 25; I. FADIĆ, 2005, 221–119, 233–234, sl. 2, kat. 16-18; Z. ETTINGER STARČIĆ, 2006, 256–258, sl. 11; Š. PEROVIĆ, 2012, 589–597; L. KOVAČIĆ, 2017, 44–45, 88-89, kat. 66-69.

234 M. KRIŽANAC, 2016, 93-95, Fig. 5.29,32, Fig. 6/.3, 34.
235 S. GLUŠČEVIĆ, 1995, K. BARTOLIĆ SIROTIĆ, 2013, 97; 177.
236 C. ISINGS, 1957, 113, type 96; K. GOETHERT-POLASCHEK, 1977, 54-55, 58, 61, 65, 68, 307, 310-311, 315, 318, 321, Tafel 39 / 188, 210, 233-234; Tafel 41 / 268, 250, Tafel 42 / 267, 269.
237 J. MORIN-JEAN, 1922–1923, 218–225, Figs. 296–301, Pl. 10.
238 A. LARESE, 2004, 89.
239 N. TOPIĆ, H. PUHARA, L. VUKOVIĆ, 2019, 54-55, Fig. 3.5.
240 V. DAMEVSKI, 1974, 87, T. XV/3.
241 Z. BULJEVIĆ, 2014, 225–226, T. 6.96.
242 I. BAĆANI, 2017, 70, cat. no. 75.
243 Z. GREGL, 2013, 50–52, cat. 62, 65, 68.
244 M. CARINA CALVI, 1969, Tav. 26.4-5.
245 M. KRIŽANAC, 2016, 88-89, Fig. 1.1-2.

Azije, Crnoga mora i Bliskog istoka.[247] Osim svjetiljki u obliku konične čaše s ručkama i svjetiljki na stalku, također su zastupljene svjetiljke s donjim dijelom u obliku ljevka (T. XXVII, 11). Takve svjetiljke pripadaju istom vremenskom razdoblju (5. – 6. st.), kao i prethodno navedeni tipovi. Ovaj tip svjetiljki također je zabilježen na širem balkanskom prostoru, osobito Srbiji i Kosovu, ali i na Crnome moru, Maloj Aziji i na Bliskom istoku. Takve svjetiljke stajale su na metalnom nosaču (grč. *polykandilon*).[248]

Tamnozelena uglačana gema-pločica (T. XXVII, 12) nepravilne je pravokutne forme zaobljenih krajeva. Nađena je u nasipnom sloju koji je sadržavao mješavinu materijala koji pripada razdoblju od kasne antike do srednjeg vijeka. Slične gema-pločice korištene su kao dekorativni elementi nakita, odjeće, mozaika (uglavnom zidnih), ali i kao ornament u arhitekturi, na štitovima, namještaju, krunama, crkvenim posudama, križevima, koricama knjiga. Uglavnom su pravokutne ili ovalne forme (ali ima i trokutastih i romboidnih), ravne su i uglačane, a izrađene su najviše od zelenog, plavog i crvenog stakla. Upravo tamnozelene gema-pločice, vrlo slične sokolskom nalazu, ponekad i nešto većih dimenzija, izrađivale su se u Solunu u **ranokršćanskom razdoblju** u drugoj polovici 6. stoljeća, ali i u drugim radioničkim središtima. Takvi nalazi poznati su s više lokaliteta u Grčkoj, Makedoniji, te s rijetkih u Turskoj i Jordanu, a povezuju se s crkvenim i svjetovnim objektima. U Francuskoj i Srbiji slični predmeti korišteni su u rimskom razdoblju.[249] Pravo stanje geografske raširenosti, upotrebe i trgovine ovakvim predmetima još treba istražiti. Funkcija toga predmeta na Sokolu nije sasvim jasna, a moguće je da je bila dekorativni umetak za odjeću jer je pronađeno i mnoštvo

[247] M. KRIŽANAC, 2016, 95–99, Fig. 7.54, Fig. 8/56, Fig. 9.61.
[248] M. KRIŽANAC, 2016, 99–100, Fig. 11.65-77.
[249] A. Ch. ANTONARAS, 2018, 1–21, Figs. 1.1, 1.2, 1.10. Za determinaciju pločice zahvaljujemo dr. sc. Anastassiosu Antonarasu iz Muzeja bizanstke kulture u Solunu.

ical vessels with applied handles were found (T. XXVII, 9). Fragments of feet (usually fragmentary) that may have belonged to footed beakers or lamps were also present among the glass finds from Sokol (T. XXVII, 10). These finds can be dated to the 5th and 6th centuries, and they are mostly associated with the Early Christian churches, so they might be interpreted as an indicator of such structure, next to the fort, unknown for now. They were made mostly of yellowish, yellowish-green and olive green glass. Many analogies can be found among the material from the earlier excavations of the Early Christian sites on the eastern Adriatic coast and the Adriatic hinterland,[246] but also from the wider area of the Balkans, Asia Minor, Black Sea and Near East.[247] Except for lamps in shape of a conical beaker with handles and lamps on a base, there are also lamps with funnel-shaped lower part (T. XXVII, 11). Such lamps belong to the same period (5th-6th cent.), as well as the aforementioned types. This type of lamps was also recorded in the wider Balkan region, especially in Serbia and Kosovo, but also in the Black Sea, Asia Minor and Near East. Such lamps stood on the metal holder (Greek *polykandilon*).[248]

Dark green polished gem-plaque (T. XXVII, 12) has irregular rectangular form with rounded edges. It was found in the fill layer that contained mixed finds dating from Late Antiquity to the Middle Ages. Similar gem-plaques were used as decorative elements of jewelry, clothes, mosaics (mostly wall mosaics), but also as an ornament on architecture, shields, furniture, crowns, church vessels, crosses, book covers. They are usually rectangular or oval (but also triangular or rhomboid), flat and polished,

[246] V. HAN, 1981, 135, T. XI/1; C. FISKOVIĆ, 1983, 76–77, sl. 18. 19; I. FADIĆ, 1992, 63–66, T. 1/1-2, T. 3/1; I. FADIĆ, 1994, 213–215, 221; Z. BULJEVIĆ, 1994, 259, 262, kat. 14-15; Z. BULJEVIĆ, 2002, 171, 192, kat. 25; I. FADIĆ, 2005, 221–119, 233–234, sl. 2, kat. 16-18; Z. ETTINGER STARČIĆ, 2006, 256–258, sl. 11; Š. PEROVIĆ, 2012, 589–597; L. KOVAČIĆ, 2017, 44–45, 88-89, kat. 66-69.
[247] M. KRIŽANAC, 2016, 95-99, Fig. 7.54, Fig. 8/56, Fig. 9.61.
[248] M. KRIŽANAC, 2016, 99-100, Fig. 11.65-77.

drugih predmeta koji odudaraju od vojnog karaktera i upućuju na viši životni standard.

Kasnosrednjovjekovno i ranonovovjekovno staklo brojnije je i raznolikije, a pretežno su takvi nalazi nađeni u nasipnom sloju koji je sadržavao izmiješani kasnosrednjovjekovni i novovjekovni materijal. Pronađeni su ulomci čaša bez ukrasa (*moioli*) (T. XXVIII, 1) koje su bile uobičajene i učestale zbog svoje jednostavnosti.[250] Korištene su pretežno u razdoblju od 13. do 15. stoljeća. Nekoliko ulomaka čaša ukrašeno je slikanjem i emajlom plave, crvene i žute boje (tip *Aldrevandin*) (T. XXVIII, 2). To su luksuznije posude koje su se izrađivale u Veneciji u 13. i početkom 14. stoljeća.[251] Pronađene su u cisterni na utvrdi pri njezinoj sanaciji. Manji broj ulomaka čaša s gornjim proširenim i donjim bačvastim dijelom ukrašen je kapljičasto-bradavičastim aplikacijama (*Nuppenbecher*) i aplikacijom u obliku spljoštene geme (*Krautstrunk*) (T. XXVIII, 3).[252] Te aplikacije imale su funkciju pri držanju čaše, da ne klizne iz ruke, jer se u srednjem vijeku obično jelo prstima. Takve čaše osobito su korištene tijekom 14. i 15. stoljeća, najviše su karakteristične za zapadnoeuropske (njemačke) radionice,[253] no analize su pokazale da je ovdje riječ o venecijanskim importima,[254] osim za jedan ulomak koji je zapadnjačke provenijencije.[255] Također su pronađeni ulomci čaša s nitima i rebrima, koje su konusne ili imaju gornji dio u obliku šalice, dok im je donji dio bačvaste forme što također tipološki upućuje na zapadu Europu. No, analize su pokazale da njihov kemijski sastav također odgovara venecijanskoj tehnologiji (*vitrum blanchum*).[256] Neke imaju aplicirane plave niti u gornjem dijelu čaše (T. XXVIII, 4), druge imaju rebra

[250] V. HAN, 1971, 58.
[251] D. WHITEHOUSE, 2001, 297; I. KRUEGER, 2002, 111–132; N. TOPIĆ, 2015, 120–126, 228-232, kat. 14-23.
[252] N. TOPIĆ, 2015, 135–144, 264-265, kat. 117-120.
[253] E. BAUMGARTNER, I. KRUEGER, 1988, 210–218.
[254] N. TOPIĆ et al., 2018, Table 2, samples 44-45.
[255] N. TOPIĆ, 2016, 586–587.
[256] N. TOPIĆ et al., 2016, samples 21, 38, 53, 62; N. TOPIĆ et al., 2018, Table 2, samples 31-43, 46-77.

made mostly of green, blue and red glass. Exactly dark green gem-plaques, very similar to the Sokol find, sometimes somewhat bigger, were made in Thessaloniki in the **Early Christian period** in the second half of the 6th century, but also in other workshop centers. Such finds have been recovered at a number of sites in Greece, Macedonia, and only rarely in Turkey and Jordan, related to churches and secular buildings. Similar objects were used in France and Serbia in the Roman period.[249] Actual state of geographical distribution, use and trade with such objects needs to be further explored. Function of this object in Sokol is not quite clear, but it might have been a decorative appliqué for clothes since many other objects were found not related to military character, suggesting high standard of living.

Late medieval and early postmedieval glass is more abundant and more diverse. Such finds mostly originate from a fill layer that contained mixed late medieval and postmedieval material. In it were fragments of undecorated beakers (*moioli*) (T. XXVIII, 1) that were common due to their simplicity.[250] They were used mostly in the period from the 13th to 15th century. Some beaker sherds were decorated with painting and enamel in blue, red and yellow (type *Aldrevandin*) (T. XXVIII, 2). These were more luxurious vessels made in Venice in the 13th and early 14th century.[251] They were found when the cistern on the fort was repaired. Few sherds of beakers with the upper expanded and lower barrel-shaped part were decorated with drop-shaped appliquès (*Nuppenbecher*) and with an appliquè in form of a flattened gem (*Krautstrunk*) (T. XXVIII, 3).[252] These appliquès were used for holding beakers, to prevent slipping from hand, as it

[249] A. Ch. ANTONARAS, 2018, 1-21, Figs. 1.1, 1.2, 1.10. We would like to thank Anastassios Antonaras of the Museum of Byzantine Culture in Thessaloniki for his assistance in determining the plaque.
[250] V. HAN, 1971, 58.
[251] D. WHITEHOUSE, 2001, 297; I. KRUEGER, 2002, 111-132; N. TOPIĆ, 2015, 120-126, 228-232, cat. 14-23.
[252] N. TOPIĆ, 2015, 135-144, 264-265, cat. 117-120.

u donjem dijelu (T. XXVIII, 5) ili su izrađene kombiniranjem tih dekorativno-funkcionalnih elemenata. Korištene su tijekom 14. i početkom 15. stoljeća.[257] Nađeno je i više sitnih fragmenata čaša izrađenih tehnikom optičkog puhanja (*bicchieri gambassini*), s ornamentom pčelinjih saća, kvadratića, heksagona, rombova (14. – 15. st.).[258] Od novovjekovnih čaša zastupljene su one koje su ukrašene različitim reljefnim istacima (T. XXVIII, 6), a koje su karakteristične za zapadnoeuropske (nizozemske) radionice 17. stoljeća.[259] Malobrojni su nalazi čaša na stalku venecijanske ili dubrovačke provenijencije koje su se izrađivale tijekom 16. – 17. stoljeća. Osobito se ističu čaše na stalku u obliku lavlje glave (T. XXVIII, 7) koja simbolizira Republiku Sv. Marka.[260]

Zdjelice su ukrašene na različite načine, a ima i onih bez dekoracije. Neke su imale ručke, a jedna finije izrađena ručka od tirkiznog stakla (T. XXVIII, 8) sa sačuvanim dijelom bezbojne stijenke mogla je biti aplicirana na zdjelicu.[261] Takve ručke karakteristične su za venecijanske radionice 17. stoljeća.[262] Zdjelica izrađena od modrog stakla s apliciranom nožicom (T. XXVIII, 9) može biti venecijanski produkt 16. stoljeća.[263] Također su nađeni ulomci zdjelica od žućkastog stakla s rebrastom dekoracijom (T. XXIX, 1-2). Pripadaju renesansnom razdoblju, a vjerojatno su produkti talijanskih radionica.[264] Rijetki ulomci izrađeni su u kalupu s ornamentom „dijamanata“ i rubom koji je izrađen od uvijenog žućkastog i mliječnog stakla (T. XXIX, 3).[265] Slični primjerci poznati su iz brodoloma

[257] LJ. KOJIĆ, M. WENZEL, 1967, 80–90; P. ANĐELIĆ, 2004, 149, 223–226; N. TOPIĆ, 2015, 145.
[258] N. TOPIĆ, 2015, 130–132, kat. 48-51, 55, 57, 59, 61-62, 64-66.
[259] J. GAWRONSKI et al., 2010, 80–81, 1.2.4-1.2.5; A. LAMÉRIS, K. LAMÉRIS, W. LAMÉRIS, 2015, 86–87, cat. 54.
[260] N. TOPIĆ, 2015, 159–160, 310, kat. 249.
[261] N. TOPIĆ, 2015, 167, 344, kat. 346.
[262] L. ZECCHIN, 1989, 47–51.
[263] I. LAZAR, H. WILLMOTT, 2006, 60, Fig. 73; N. TOPIĆ, 2015, 360–361, kat. 393.
[264] N. TOPIĆ, 2015, 362–363, kat. 399-400.
[265] N. TOPIĆ, 2015, 171, 364, kat. 404.

was common to eat with hands. Such beakers were used in particular in the 14th and 15th centuries. They are characteristic of the western European (German) workshops,[253] but analyses have shown that these specimens were import from Venice,[254] except for one example of western provenance.[255] There were also fragments of beakers with threads and ribs, that are conical or they have cup-shaped upper part, while their lower part is barrel-shaped, which is a typological characteristic of western Europe. However analyses have shown that their chemical composition also corresponds to the Venetian technology (*vitrum blanchum*).[256] Some have blue threads applied in the upper part (T. XXVIII, 4), others have ribs in the lower part (T. XXVIII, 5) or they were made by combining these decorative and functional elements. They were used in the 14th and early 15th century.[257] There were also a few small fragments of beakers made by using the technique of optical blowing (*bicchieri gambassini*), with an ornament of honey comb, small squares, hexagon, rhombs (14th-15th cent.).[258] Postmedieval beakers are represented by the examples decorated with various embossed protrusions (T. XXVIII, 6), characteristic of western European (Dutch) workshops of the 17th cent.[259] There are few footed beakers of the Venetian or Ragusan provenance made in the 16th and 17th centuries. An example that stands out is a footed beaker on a base shaped like a lion head (T. XXVIII, 7), symbolizing the Republic of St Mark.[260]

Small bowls are decorated in different ways,

[253] E. BAUMGARTNER, I. KRUEGER, 1988, 210-218.
[254] N. TOPIĆ et al., 2018, Table 2, samples 44-45.
[255] N. TOPIĆ, 2016, 586-587.
[256] N. TOPIĆ et al., 2016, samples 21, 38, 53, 62; N. TOPIĆ et al., 2018, Table 2, samples 31-43, 46-77.
[257] LJ. KOJIĆ, M. WENZEL, 1967, 80-90; P. ANĐELIĆ, 2004, 149, 223-226; N. TOPIĆ, 2015, 145.
[258] N. TOPIĆ, 2015, 130-132, kat. 48-51, 55, 57, 59, 61-62, 64-66.
[259] J. GAWRONSKI et al., 2010, 80-81, 1.2.4-1.2.5; A. LAMÉRIS, K. LAMÉRIS, W. LAMÉRIS, 2015, 86-87, cat. 54.
[260] N. TOPIĆ, 2015, 159-160, 310, cat. 249.

kod Gnalića (kraj 16. st., sjevernotalijanska radionica).[266]

Nađen je samo jedan ulomak lijevka manjeg vrča ili ampule (T. XXIX, 4).[267] Slični muransko-venecijanski nalazi datirani su od kraja 15. do početka 17. stoljeća.[268] Boce su puno više korištene na utvrdi, a među njima se ističu ingastare (boce uskog dugog vrata) koje su mogle biti bez dekoracije, ali su izrađivane i optičkim puhanjem ili su dekorirane mliječnobijelim nitima (T. XXIX, 5-6). Uglavnom su korištene od 14. do 16. stoljeća i vrlo su rasprostranjene.[269] Vrčevi su nađeni u manjem broju, a ističu se ulomci jednostavnog vrča bez dekoracije s trolisnim otvorom i ručkom (16. – 17. st.) (T. XXIX, 7).[270]

Među staklenim nalazima zastupljene su i bikonične svjetiljke. Jedna je izrađena od žućkastog stakla, a rekonstruirana je na temelju ulomka dna i stijenke s dijelom ručke (T. XXIX, 8).[271] Prema analognim primjerima iz obližnjeg Kotora, datirana je u 14. stoljeće.[272] Drugi fragment je izrađen od bezbojnog stakla i ukrašen plavim horizontalno apliciranim nitima (T. XXIX, 9),[273] a s obzirom na to da mu je promjer oboda cca 18 cm, moguće je da je pripadao bikoničnoj svjetiljci (iako su tako dekorirane čaše imale velike promjere oboda, često oko 14 cm).

Prozorsko staklo zastupljeno je ulomcima *ocula* (T. XXIX, 10) (15. – 16. st.) (staklenih diskova koji su bili uglavljeni u olovne ili drvene okvire) koji su tvorili staklene plohe.[274] Ti nalazi otkrivaju nam da su na utvrdi neke kuće bile zastakljene, što nije uobičajeno za obrambene i vojne objekte, dok je u gradskim sredinama to bilo učestalo. Moguće je da je

266 I. LAZAR, H. WILLMOTT, 2006, 44, 116, Fig. 44:S9a, Plate 8/1-2.
267 N. TOPIĆ, 2015, 518, kat. 837.
268 R. BAROVIER MENTASTI et al., 1982, 143, cat. 204; L. ZECCHIN, 1990, 56.
269 N. TOPIĆ, 2015, 183–186, 380–383, kat. 443–448, 451.
270 N. TOPIĆ, 2015, 190–191, 395, kat. 483.
271 N. TOPIĆ, 2015, 192, 398-399, kat. 492.
272 M. KRIŽANAC, 2001, 53, T. XVII/112, T. XVIII/114-117.
273 N. TOPIĆ, 2015, 192, 400, kat. 496.
274 N. TOPIĆ, 2015, 200–204, 415–416, kat. 539-540.

but there are also undecorated examples. Some had handles, and one finely modeled handle made of turquoise glass with preserved part of colorless wall could have been applied on the small bowl.[261] Such handles are characteristic of the 17th century Venetian workshops.[262] Small bowl made of dark blue glass with an applied foot (T. XXVIII, 9) could be a Venetian product of the 16th century.[263] There were also fragments of small bowls made of yellowish glass with ribbed decoration (T. XXIX, 1-2). They belong to the Renaissance period, probably as products of the Italian workshops.[264] Rare pieces were made in the mold with "diamond" ornament and an edge made of twisted yellowish and milk glass (T. XXIX, 3).[265] Similar examples were found in the Gnalić shipwreck (late 16th century, northern Italian workshop).[266]

Only one fragment of a juglet or ampulla was found (T. XXIX, 4).[267] Similar Murano-Venetian finds are dated to the period from the end of the 15th to the beginning of the 17th century.[268] Bottles were used more frequently on the fort, such as *ingastare* (bottles with long narrow neck) that might have been undecorated, but they were optically blown or decorated with milky-white threads (T. XXIX, 5-6). This widespread type was mostly used from the 14th to 16th century.[269] Jugs were less numerous. Fragments of a simple undecorated jug with trefoil mouth and handle are particularly interesting (16th-17th cent.) (T. XXIX, 7).[270]

Biconical lamps are represented among the

261 N. TOPIĆ, 2015, 167, 344, kat. 346.
262 L. ZECCHIN, 1989, 47-51.
263 I. LAZAR, H. WILLMOTT, 2006, 60, Fig. 73; N. TOPIĆ, 2015, 360-361, cat. 393.
264 N. TOPIĆ, 2015, 362-363, cat. 399-400.
265 N. TOPIĆ, 2015, 171, 364, cat. 404.
266 I. LAZAR, H. WILLMOTT, 2006, 44, 116, Fig. 44:S9a, Plate 8/1-2.
267 N. TOPIĆ, 2015, 518, cat. 837.
268 R. BAROVIER MENTASTI et al., 1982, 143, cat. 204; L. ZECCHIN, 1990, 56.
269 N. TOPIĆ, 2015, 183-186, 380-383, cat. 443-448, 451.
270 N. TOPIĆ, 2015, 190-191, 395, cat. 483.

takve prozore imala kaštelanova kuća na utvrdi, a njezina obnova spominje se 1526. godine.[275] Taj datum približno odgovara dataciji *ocula* koji su možda ugrađeni pri toj obnovi. *Oculi* su bili popularni produkti dubrovačkih radionica, ali su se uvozili i iz Venecije pa ne možemo pouzdano odrediti njihovo porijeklo.

Nalazi općenito svjedoče o višem životnom standardu i upotrebi luksuznih staklenih posuda, osim uobičajenih keramičkih. Tomu je pridonio i položaj Sokola koji je kontrolirao prijelaz iz zaleđa prema obali, a tom rutom prolazile su i mnoge trgovačke karavane. Dakle, život na utvrdi odvijao se vrlo slično onomu u gradskim naseljima, sudeći prema standardu keramičkih i staklenih predmeta. Također su ulomci staklenih posuda talijanske (venecijanske, apeninske, sjevernojadranske) ili dubrovačke provenijencije nađeni na utvrdama Sokolu na Plivi,[276] Kličevici kod Benkovca,[277] te Čačvini kod Trilja[278] što upućuje na uporabu luksuznog krhkog posuđa i u drugim vojnim objektima jadranskog zaleđa.

U kasnosrednjovjekovnom razdoblju dosta su jaki venecijanski utjecaji na kulturu življenja u jadranskom/balkanskom zaleđu.[279] Trgovačke rute obično su polazile iz Dubrovnika prema unutrašnjosti, a ovi nalazi upućuju na to da je i utvrda Sokol bila važan punkt na karavanskoj ruti koja je vodila prema krajnjim odredištima u Bosni i Srbiji.

ZAKLJUČNA RAZMATRANJA

Lokalitet Sokol u Dunavama u Konavlima ima dugi kontinuitet u naseljavanju, od prapovijesti do ranog novog vijeka. U kasnom eneolitiku na tom području postojalo je naglass finds. One specimen was made of yellowish glass, and it was reconstructed on the basis of a fragment of base and wall with a piece of handle (T. XXIX, 8).[271] It was dated to the 14th century on the basis of analogous examples from nearby Kotor.[272] The other fragment was made of colorless glass and decorated with blue horizontally applied threads (T. XXIX, 9).[273] Since its rim diameter is ca. 18 cm it is possible that it belonged to a biconical lamp (although beakers decorated in that way had big rim diameters, often around 14 cm).

Windowpane is represented by fragments of *oculi* (T. XXIX, 10) (15th-16th cent.) (glass discs that were usually installed in lead or wooden frames) that constituted glass surfaces.[274] These finds indicate that some houses on the fort had glass panes which is not common for defensive and military structures, unlike the cities. It is possible that the castellan's house in the fort had such windows. Its renovation is mentioned in 1526.[275] This date roughly corresponds to the dating of *oculi* that might have been installed during renovation. *Oculi* were popular products of the Dubrovnik workshops, but they were also imported from Venice so their provenance cannot be determined with certainty.

Finds in general testify to high standard of living and use of luxurious glass vessels, except for common pottery. The position of Sokol definitely contributed to that fact as it controled the passage from the hinterland to the littoral, which was a road traveled by many caravans. Therefore life on the fort resembled urban life in many ways, at least judging from the standard of ceramic and glass objects. Fragments of glass vessels of Italian (Venetian, Apennine, northern Adriatic) or Ragusan provenance were found at forts in Sokol on Pliva,[276]

275 L. BERITIĆ, 1966, 125.
276 I. BOJANOVSKI, 1972, 54.
277 K. GUSAR, M. ĆURKOVIĆ, 2011, 10–11, 22–23, kat. 22-27.
278 LJ. GUDELJ, 2000, 175–178.
279 V. BIKIĆ, 2006, 201–210.

271 N. TOPIĆ, 2015, 192, 398-399, cat. 492.
272 M. KRIŽANAC, 2001, 53, T. XVII/112, T. XVIII/114-117.
273 N. TOPIĆ, 2015, 192, 400, cat. 496.
274 N. TOPIĆ, 2015, 200-204, 415-416, cat. 539-540.
275 L. BERITIĆ, 1966, 125.
276 I. BOJANOVSKI, 1972, 54.

selje, zatim je formirana brončanodobna i željeznodobna ilirska gradina. Utvrda je osobito bila važna u kasnoantičko doba, zatim tijekom ranobizantskog razdoblja kada je to bila važna kontrolna točka prolaza iz balkanskog zaleđa prema moru, te u razvijenom srednjem vijeku kad je utvrda bila pod raznim gospodarima. U kasnom srednjem vijeku utvrda dolazi pod dubrovačku vlast a napuštena je 1672. godine.

Istraženo je područje uz utvrdu, a pri tom je ustanovljeno postojanje manjeg broja grobova uz sjevernu stranu, većeg uz istočnu i jugozapadnu stranu utvrde, dok na zapadnom dijelu nisu nađeni grobovi. Moguće da je ta strana pod utvrdom bila korištena za metalurške radnje, pečenje hrane (krušna peć), uzgoj stoke i nastambe. Pronađeni su kasnoantički/ranosrednjovjekovni grobovi i kasniji srednjovjekovni te ranonovovjekovni grobovi (uz iznimku jednog kasnijeg ukopa iz 19. ili 20. st.). Kasnoantički grobovi nađeni su pod konstrukcijom tegula na dvije vode uz kombinaciju kamenog materijala, s kamenom konstrukcijom te rijetko u grobnoj raci. Neki grobovi pronađeni su razoreni i poremećeni. Grobni prilozi su izostali, a provedene analize radioaktivnim ugljikom ^{14}C odredile su datume grobova u rasponu od 5. do 19. stoljeća.

Uz južnu stranu utvrde vjerojatno je postojao neki sakralni objekt i groblje, koje se nastavljalo uz istočnu stranu koristeći se prirodnom zaštitom stijena utvrde, te se nastavljalo prema SI području uz utvrdu. Na sjeveru se nalazio kasnoantički ulaz na utvrdu. U kasnoantičkom periodu bilo je uobičajeno da se sakralni objekti i groblje nalaze na ulazu u grad. Ulaz na JZ dijelu vjerojatno je formiran u kasnom srednjem vijeku, što se i podudara s arhivskim podacima koji navode da je utvrda Sokol tada bila u dvojnom vlasništvu.

Sonde nisu istražene do kraja kulturnih slojeva, osim istočnog povišenog dijela sonde 2 gdje je na jednom dijelu definirano postojanje sterilnog sloja ispod kasnoeneolitičke/brončanodobne razine. U ovoj fazi učinjen

Kličevica near Benkovac,[277] and Čačvina near Trilj[278] suggesting that fragile luxurious vessels were also used in other military structures in the Adriatic hinterland.

Venetian influence on the culture of living in the Adriatic-Balkan hinterland was exceptionally strong in the late medieval period.[279] Trade routes usually started from Dubrovnik towards hinterland, and these finds suggest that Fort Sokol was an important station on the caravan route leading to final destinations in Bosnia and Serbia.

FINAL CONSIDERATIONS

The site of Sokol in Dunave in Konavle has long continuity of occupation, from prehistory to the Early Modern Period. A settlement was fomed at this position in the Late Eneolithic, followed by the Bronze and Iron Age Illyrian hillfort. The fort was particularly important in Late Antiquity, as well as in the early Byzantine period when it was an important control point on the road from the Balkan hinterland towards the sea, and in the High Middle Ages when it changed different rulers. In the Late Middle Ages the Republic of Ragusa seized the fort. It was finally abandoned in 1672.

The area next to the fort was excavated, unearthing a small number of graves along the northern side, bigger number along the eastern and southwestern side of the fort, while western part yielded no graves. It is possible that this area under the fort was used for metallurgical activities, baking (bread oven), livestock raising and houses. Late antique / early medieval graves were found as well as later medieval and early postmedieval graves (with the exception of one later burial from the 19th or 20th century). Late antique graves have been found under the construction of tegulae

[277] K. GUSAR, M. ĆURKOVIĆ, 2011, 10-11, 22-23, cat. 22-27.
[278] LJ. GUDELJ, 2000, 175-178.
[279] V. BIKIĆ, 2006, 201-210.

je opsežan arheološki zahvat, a u budućima preostaje istražiti pojedine dionice u potpunosti, te proširiti istraživanje na šire područje oko utvrde jer se na temelju dosadašnjih istraživanja može pretpostaviti da je na širem području uz utvrdu postojalo naselje koje je vjerojatno prvi put formirano na prijelazu kamenog u metalno doba. Život se tu nastavio u idućim razdobljima, a najbolje je dokumentirana kasnoantička/ranobizantska faza kada je život bio intenzivan na ovom prostoru. Prapovijesni ukopi nisu sačuvani, a od nastambi djelomično je dokumentirana ilirska kuća sa spremištem hrane. Sačuvanost je slaba zbog intenzivnog djelovanja potresa, ali je uzrok tomu i ljudski faktor (poništavanje ranijih slojeva dolaskom novih gospodara utvrde). Budući da je pronađena arhitektura, ostatci građevinskog materijala, mnoštvo pokretnih nalaza te grobovi djece, žena i muškaraca, možemo reći da lokalitet opravdava naziv Sokol-grad jer sve upućuje na to da je oko utvrde postojalo bar manje naselje.

U ovom istraživanju pronađen je materijal koji potvrđuje neke ranije, ali pruža i dosta novih spoznaja. Nađen je kasnoneolitički/eneolitički/brončanodobni kremeni materijal koji upućuje na nešto raniju dataciju lokaliteta od prijašnje. Eneolitičko razdoblje također je dokumentirano keramičkim nalazima, a brončano i željezno doba keramičkim materijalom i metalnim nalazima te karboniziranim bademima. Među prapovijesnim nalazima ističu se minijaturne keramičke posude. Slikana grčko-helenistička keramika (5. – 4. st. pr. Kr.) potvrđuje trgovačke kontakte domorodačkog ilirskog stanovništva s južnoitalskim i/ili jadranskim grčkim kolonijama. Također su nađene kovanice kralja Baleja (2. st. pr. Kr.) što upućuje na važnost kasnoilirskog razdoblja. Najbrojniji su kasnoantički nalazi koji su i raznovrsniji. Pronađena je velika količina tegula (*tegulae*) i kanalica (*imbrices*) od kojih neke imaju ostatke pečata. Ta velika količina nalaza upućuje na postojanje naselja oko utvrde, a dio je vjerojatno mogao pasti

in form of a double-pitched roof with combination of stone material, or with a stone construction and only rarely in a grave pit. Some graves were found destroyed and disturbed. There were no grave goods, and radiocarbon analyses dated the graves from the 5th to the 19th century.

Along the southern side of the fort was probably a sacral structure and cemetery that continued along the eastern side using natural protection of the fort rock, extending further towards the NE area next to the fort. Late antique entrance to the fort was on the northern side. In late antique period it was common that sacral structures and cemetery were located at the entrance to the city. Entrance at the SW side was probably formed in the Late Middle Ages which corresponds to the archival information stating that Fort Sokol was in dual ownership.

The probes did not reach the end of the cultural layers, except for the eastern elevated part of probe 2 where in one part presence of sterile layer under the late Eneolithic / Bronze Age level was documented. An extensive archaeological excavation has been conducted in this phase, leaving for the future campaigns complete research of certain segments and expansion to the wider region around the fort since previous research suggests that there was a settlement in the wider region next to the fort, formed for the first time at the transition from from the Stone Age to the Metal Ages. Life continued here in subsequent periods, and late antique / early Byzantine phase is best documented when life was particularly intense in this region. Prehistoric burials have not been preserved, and houses are represented by an Illyrian house with a food storage. The state of preservation is poor due to earthquakes, but also human activities (with the arrival of the new masters of the fort earlier layers were obliterated). Since architectural remains were found as well as construction material pieces and abundance of movable finds and graves of children, women and

s kuća na utvrdi pri urušavanjima uzrokovanim potresima. Od ostalih nalaza zastupljeni su ulomci keramike (amfore, zdjele, zdjelice, grube i ukrašene reljefnim ili slikanim ornamentom), ulomci stakla (čaše, svjetiljke, zdjelice, boce), metalni predmeti (čavli, kopče, fibule, ključevi, oruđe, oružje), ulomci koštanih dvostranih češljeva. Kasnosrednjovjekovni i ranonovovjekovni nalazi su također brojni, a među njima ima najviše metalnih nalaza među kojima je dosta strelica (veretona) i ulomaka oklopnih pločica, kamenih kugli te različitog oruđa. Zastupljeno je stolno (vrčevi, zdjele, zdjelice) i grubo keramičko (lonci, zdjele) posuđe. Također su pronađeni ulomci staklenih posuda (zdjelice, čaše, boce, vrčevi) svakodnevne upotrebe. Numizmatički nalazi obuhvaćaju široki vremenski raspon, od rimskog razdoblja do novog vijeka.

Dakle, Sokol je dao iznimno velik broj nalaza, a istraživanje bi trebalo nastaviti da bi se upotpunila predodžba o njegovoj važnoj povijesnoj ulozi. Taj lokalitet je i od iznimne važnosti jer je vrlo prezentabilan, a to i je jedan od najvažnijih zadataka istraživanja, jer neprezentirani lokaliteti često padaju u zaborav te svrha istraživanja počinje gubiti širi smisao. Lokalitet Sokol obuhvaća utvrdu sa stalnim muzejskim postavom, te okolno područje – potencijalni arheološki park.

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men, we can say that the site justifies the title Sokol-grad (*Sokol-town*) as everything seems to indicate that there was at least a smaller settlement around the fort.

These excavations yielded finds that confirm earlier assumptions, and also offer some new insights. Flint artifacts dating to the Late Neolithic, Eneolithic and Bronze Age were recovered suggesting somewhat earlier dating of the site than previously assumed. The Eneolithic period was also documented with pottery finds, and Bronze and Iron Ages with pottery, metal finds and carbonized almonds. Miniature ceramic vessels stand out among the prehistoric finds. Painted Greek-Hellenistic pottery (5th-4th cent.) confirms trade contacts of the indigenous Illyrian population with the southern Italic and/or Adriatic Greek colonies. Coins of king Ballaios (2nd cent.) have been found suggesting the importance of the late Illyrian period. Late antique finds are most numerous and at the same time most diverse. Tegulae and imbrices were found in great quantities, some still bearing stamp traces. This abundance of finds suggests presence of a settlement around the fort, and some tegulae might have fallen off the fort houses in earthquakes. The rest of the finds include pottery sherds (amphorae, bowls, cups, coarse and decorated with relief or painted ornament), glass fragments (beakers, lamps, fibulae, keys, tools, weapons), fragments of double-sided combs. Late medieval and early postmedieval finds are also numerous, with dominant metal finds such as arrows (veretons) and pieces of armor plaques, stone balls and various tools. Tableware (jugs, bowls, small bowls) was found as well as coarse ceramic ware (pots, bowls). Fragments of glass vessels (small bowls, beakers, bottles, jugs) for everyday use belong to finds from this site. Numismatic finds cover a wide chronological span from the Illyrian period to postmedieval times.

Finally we can say that Sokol provided an abundance of finds that entice continuation of the research in order to complete the idea of

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its important historical role. This site is of exceptional importance as it is very presentable which is one the most important tasks of the research because sites that are not presented often fall into oblivion and research purpose is compromised. The site of Sokol encompasses the fort with a permanent museum display and the surrounding area – potential archaeological park.

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TABLE
FOTOGRAFIJE:

- T. I-XI, N. Topić (osim fotografija T. II.2, T. II.4, T. III.1; autorica: N. Drašković Vlašić);
- T. XII-XXIX: preuzeto iz N. TOPIĆ et. al., 2014a (Omega engineering d.o.o. Dubrovnik) osim fotografija: T. XII, 3-5; T. XIII, 1, 2, 4; T. XIV, 1, 3, 4, 6, 8; T. XV, 1, 3-7, 9-12; T. XVI; T. XVII, 1, 2, 4, 5, 7, 8 ; T. XVIII, 1 (u sredini), 2 (lijevo), 3 (dolje), 4; T. XIX; T. XX; T. XXI, 1, 2-4, 6; T. XXII, 1, 5; T. XXIII, 2-4; T. XXIV, 1, 2; T. XXV, 1, 6, 7, 9, 10; T. XXVII, 1, 3-10, 12 (fotografirano 2019. s dopuštenjem Muzeja i galerija Konavala);
- N. Topić: T. XXVII, 2, 11 (desno), 12; T. XXVIII; T. XXIX;
- M. Rogošić: T. XXII, 7 i 8;
- J. Beželj: T. XIII.2, XIV.1, XXI.1, XXVII.8.

CRTEŽI: N. Topić i Ž. Buško (Omega engineering d.o.o. Dubrovnik).

TABLES
PHOTOGRAPHS:

- T. I-XI, N. Topić (except: T. II.2, T. II.4, T. III.1 by: N. Drašković Vlašić);
- T. XII-XXIX: after N. TOPIĆ et. al., 2014a (Omega engineering d.o.o. Dubrovnik), except: T. XII, 3-5; T. XIII, 1, 2, 4; T. XIV, 1, 3, 4, 6, 8; T. XV, 1, 3-7, 9-12; T. XVI; T. XVII, 1, 2, 4, 5, 7, 8 ; T. XVIII, 1 (middle), 2 (left), 3 (lower), 4; T. XIX; T. XX; T. XXI, 1, 2-4, 6; T. XXII, 1, 5; T. XXIII, 2-4; T. XXIV, 1, 2; T. XXV, 1, 6, 7, 9, 10; T. XXVII, 1, 3-10, 12 (photographed in 2019. with permission of the Museums and Galleries of Konavle);
- N. Topić: T. XXVII, 2, 11 (right), 12; T. XXVIII; T. XXIX;
- M. Rogošić: T. XXII, 7 and 8;
- J. Beželj: T. XIII.2, XIV.1, XXI.1, XXVII.8.

DRAWINGS: N. Topić and Ž. Buško (Omega engineering d.o.o. Dubrovnik).

T. I

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GR 1

GR 2

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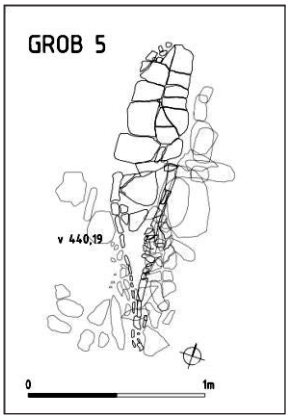

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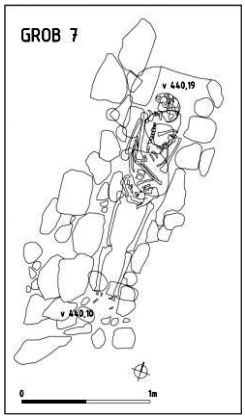

GR 5

GR 7

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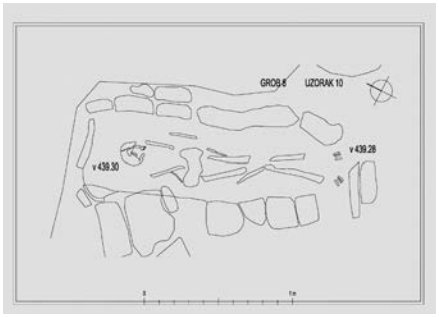

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GR 9

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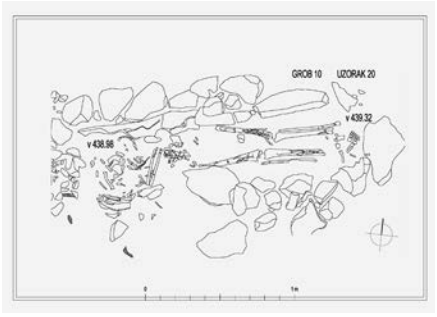

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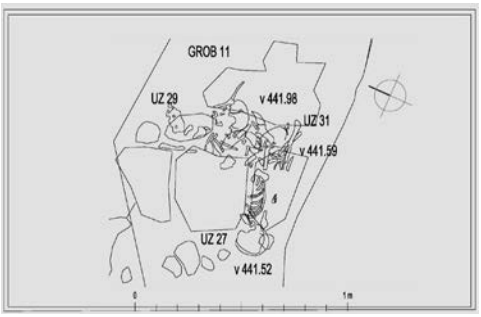

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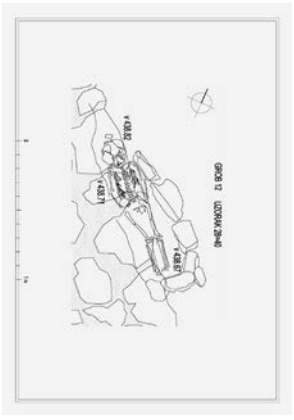

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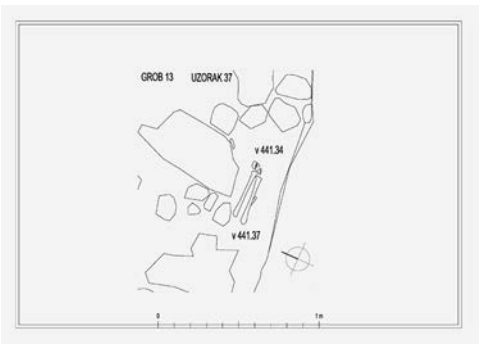

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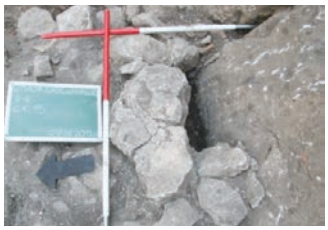

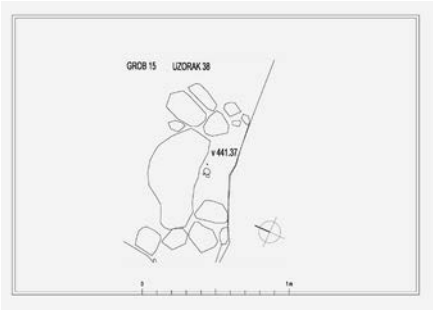

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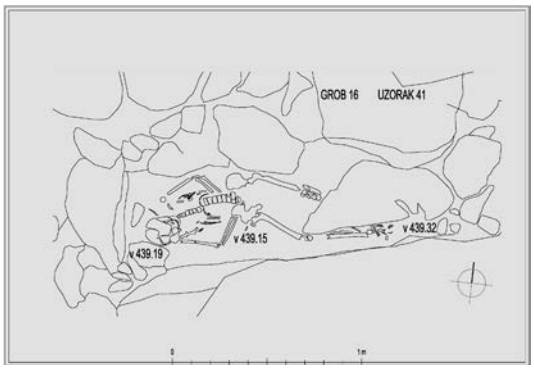

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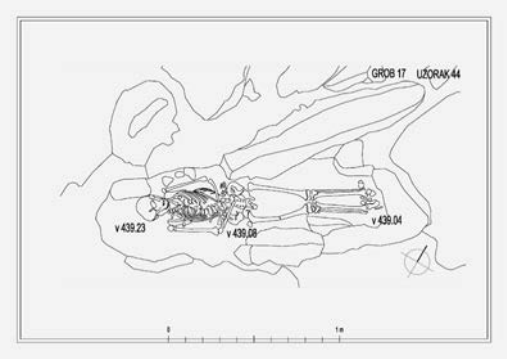

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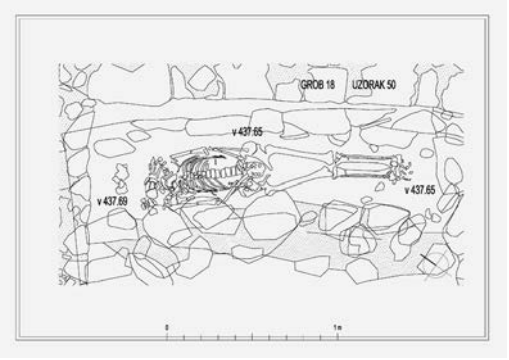

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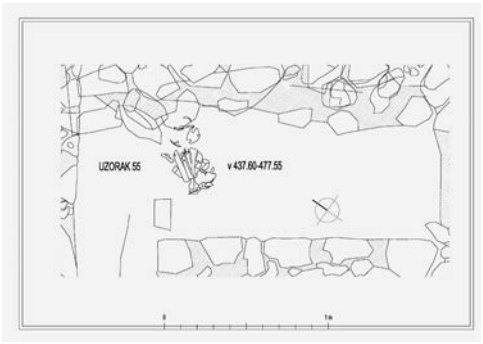

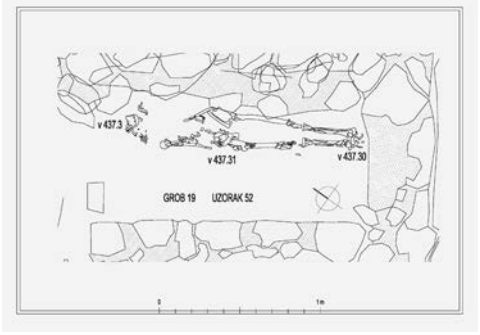

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GR 19 + uz.55

2

GR 20, uz. 54

3

GR 20, uz. 61

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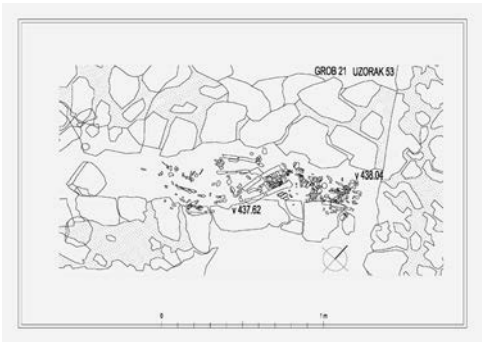

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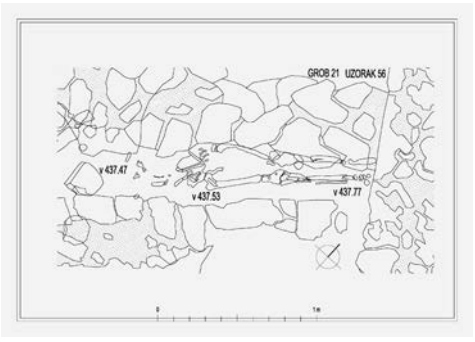

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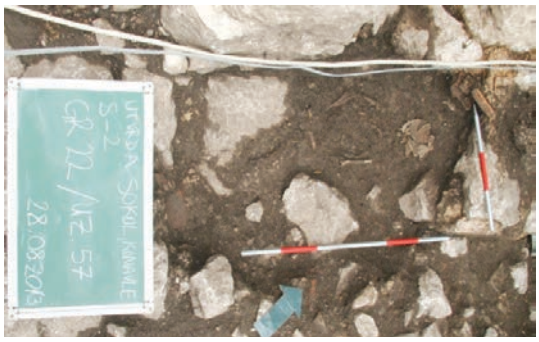

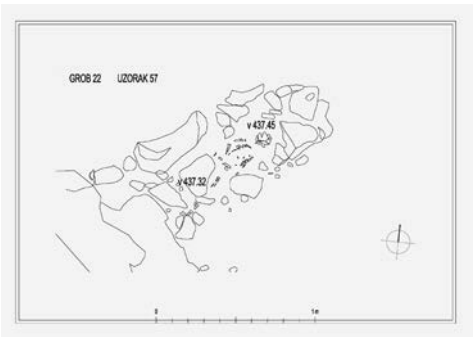

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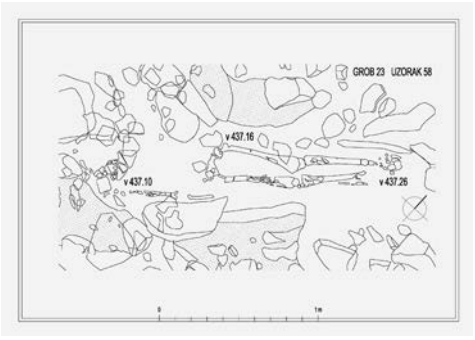

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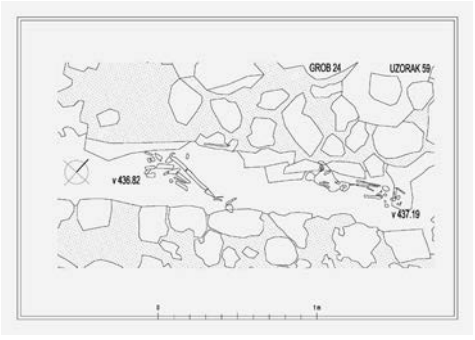

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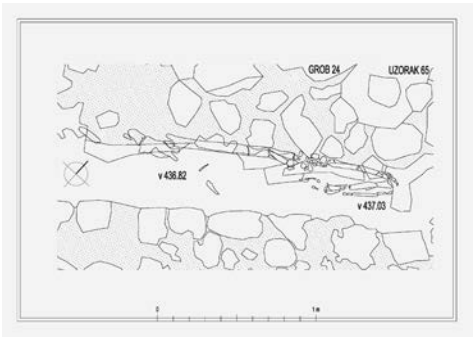
T. VI

1



GR 24, uz. 65

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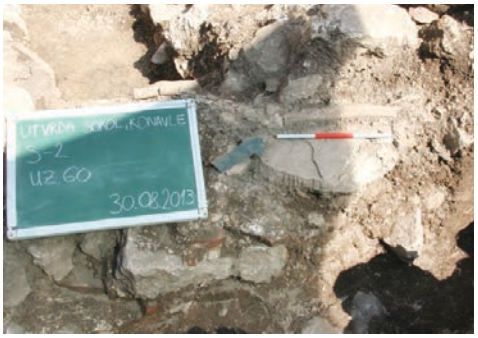
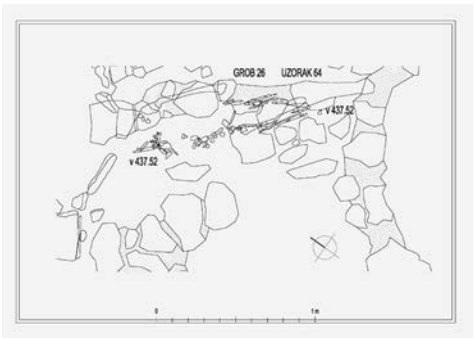


uz. 60

3



GR 26, uz. 64

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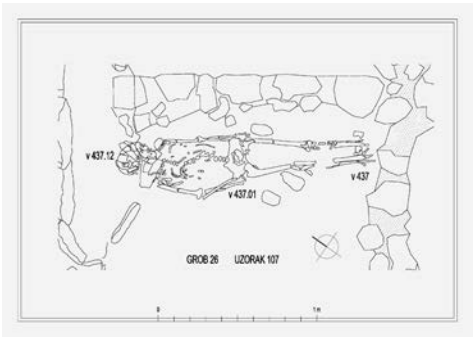
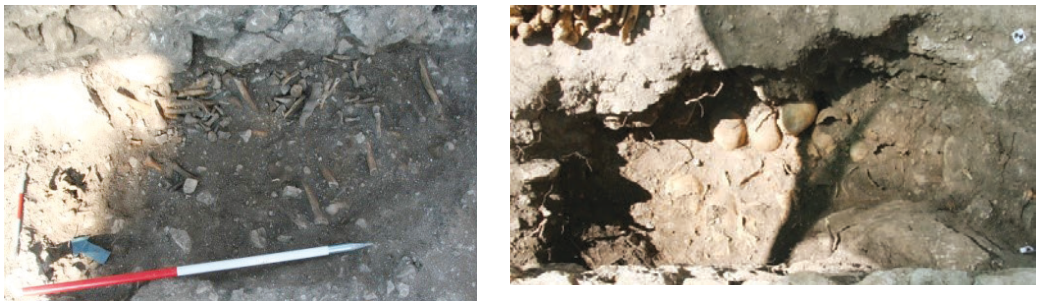


GR 26, uz. 107

T. VII

1



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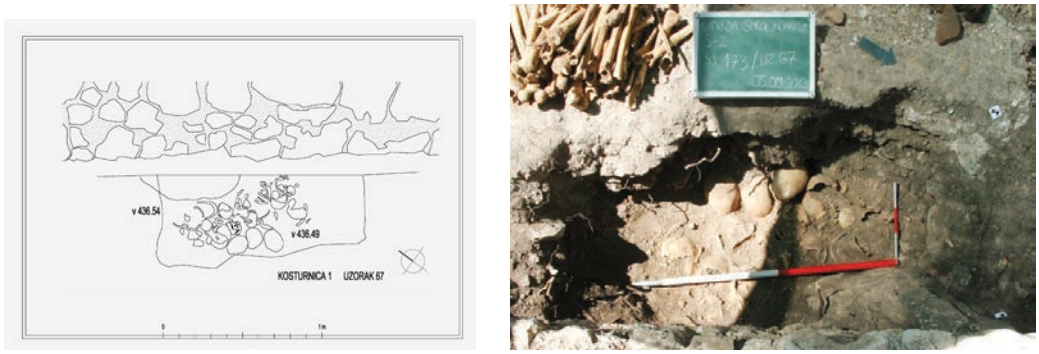
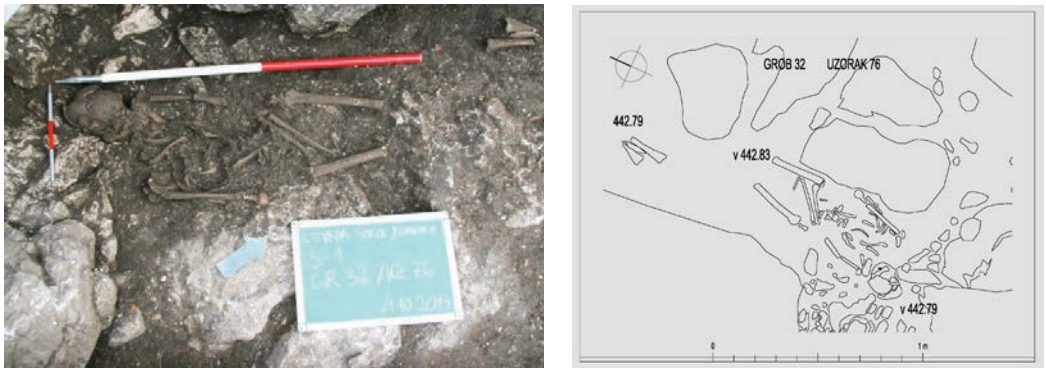


Kosturnica (KO), uz. 66, 67

3

GR 27-31

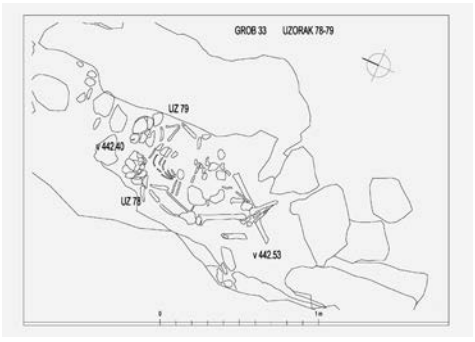
4



GR 32

T. VIII

1



GR 33, uz. 78, 79

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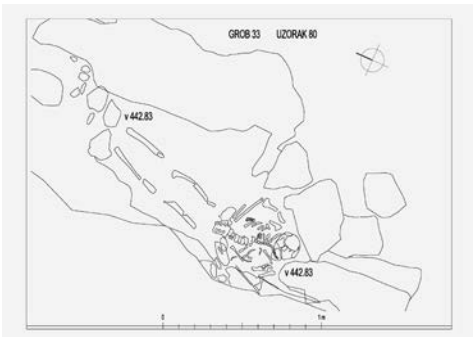

GR 33, uz. 80

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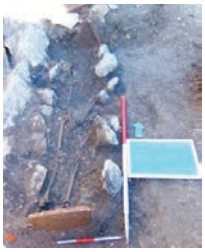

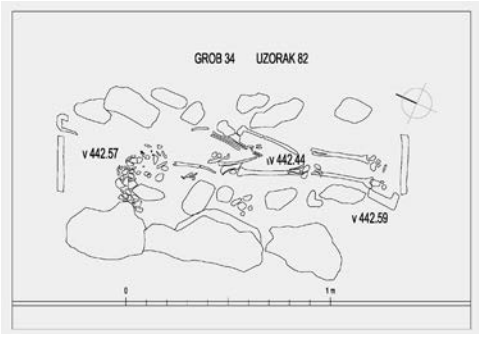

GR 34, uz. 82

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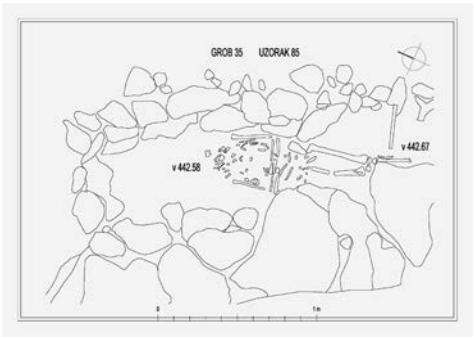
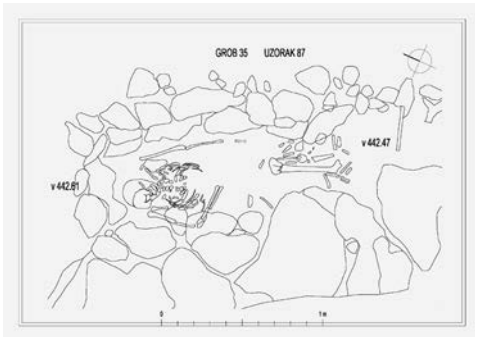


GR 35, uz. 83, 85

T. IX

1



GR 35, uz. 87

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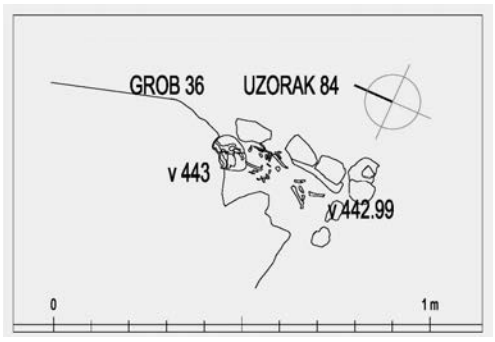

GR 36, uz. 84

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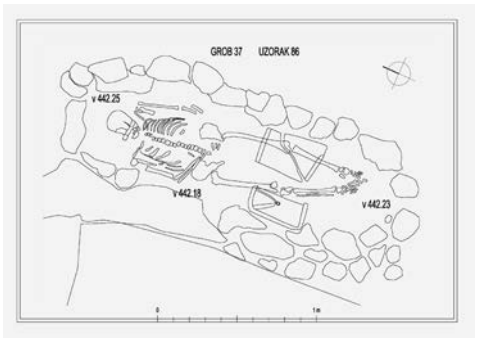

GR 37, uz. 86

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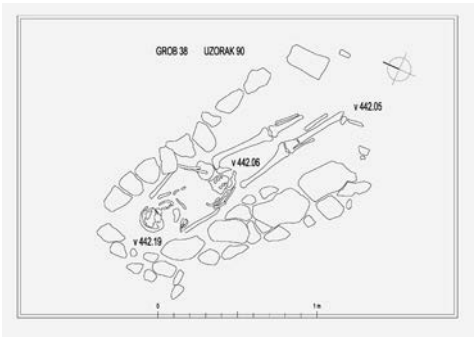
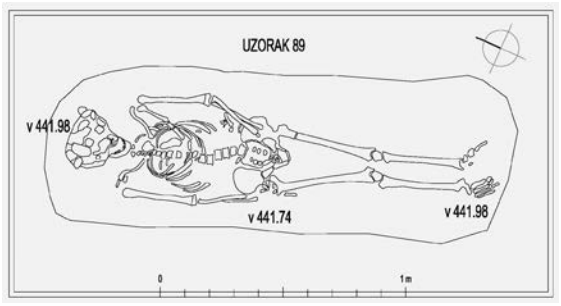


GR 38, uz. 90

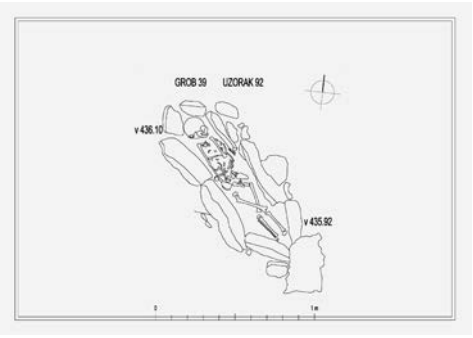
T. X

1



uz. 89

2



GR 39, uz. 92

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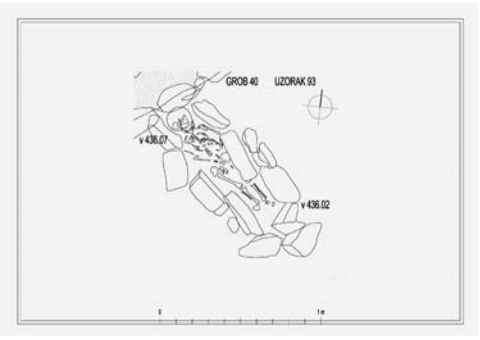

GR 40, uz. 93

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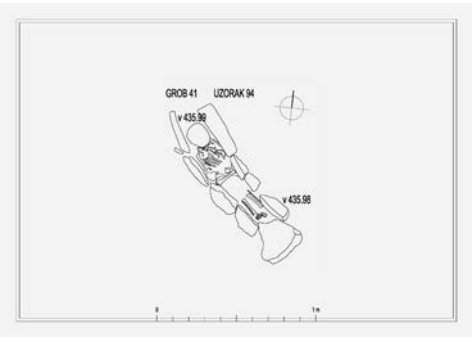

GR 41, uz. 94

T. XI

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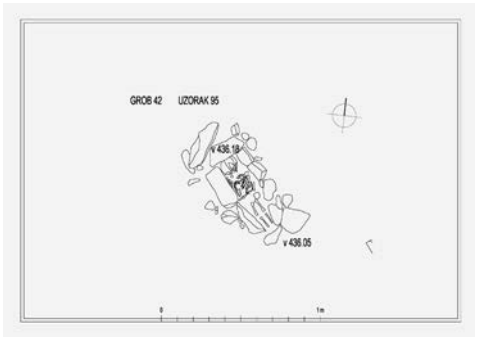

GR 42, uz. 95

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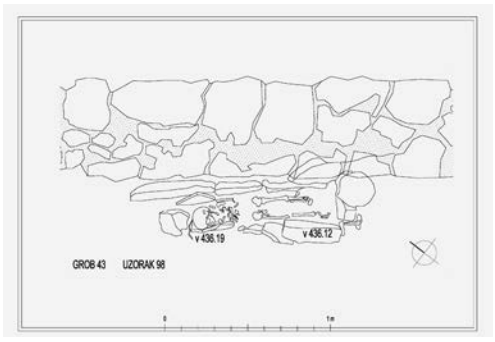

GR 43, uz. 98

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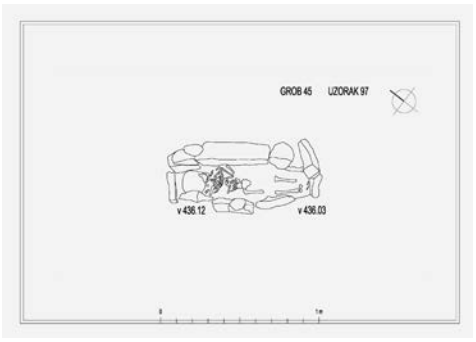

GR 45, uz. 97

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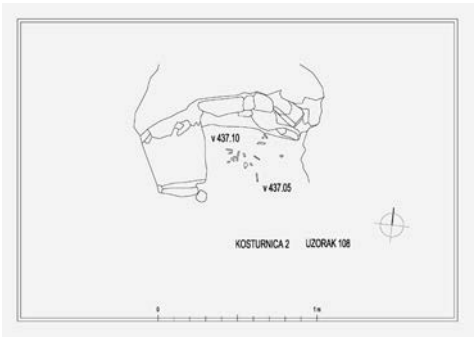
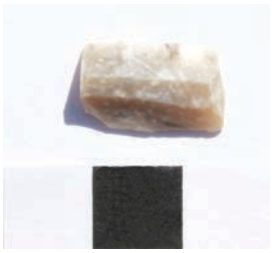


Dječja kosturnica, uz. 108

T. XII



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T. XIII


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T. XIV

T. XV

T. XVI


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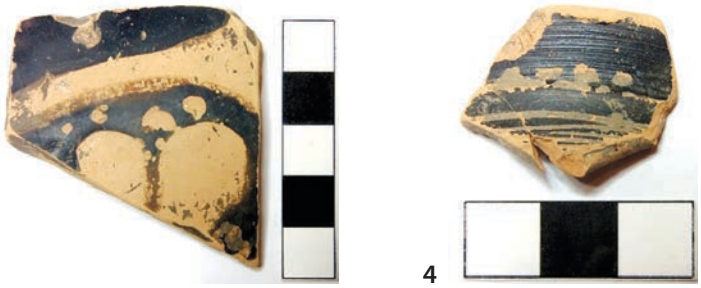
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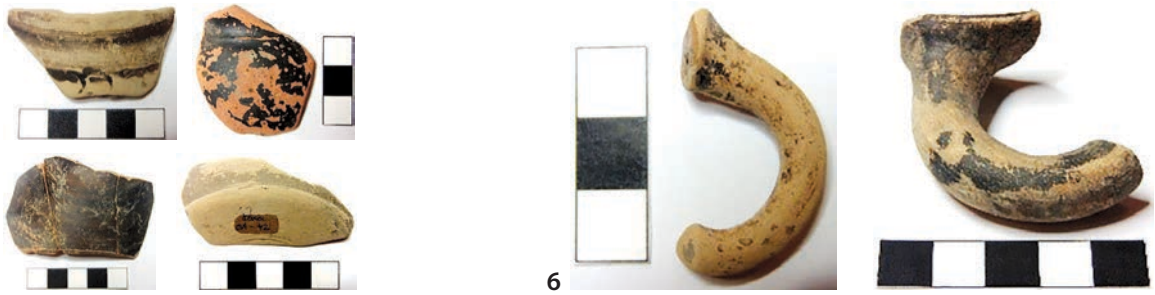
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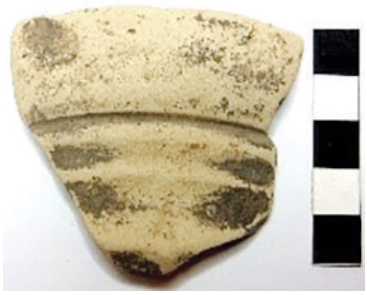
7 8 9

T. XVII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T. XVIII

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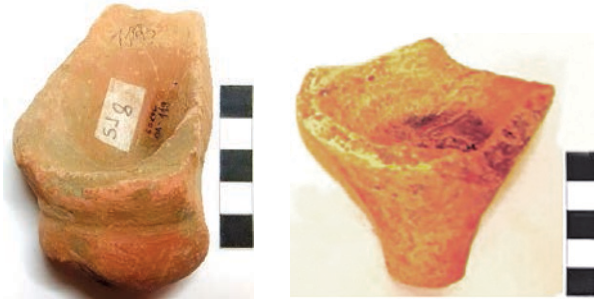

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T. XIX


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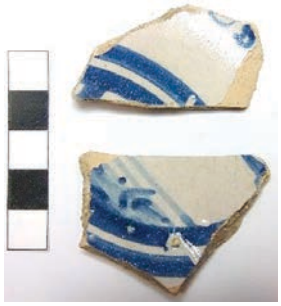
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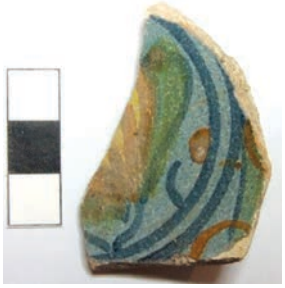
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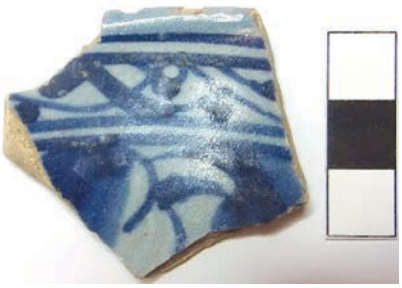

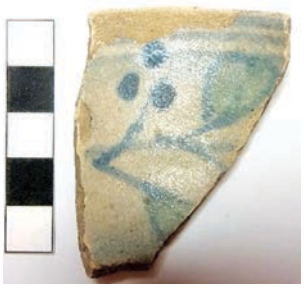
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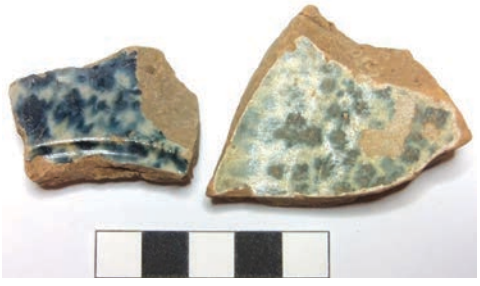
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T. XX


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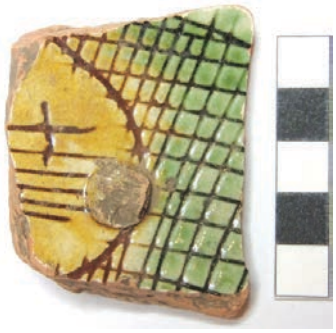
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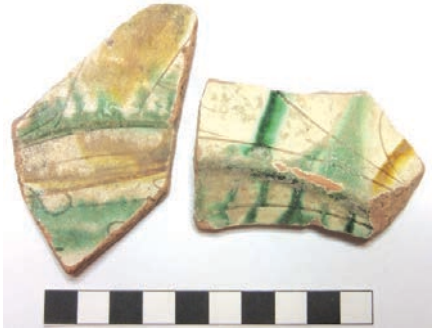
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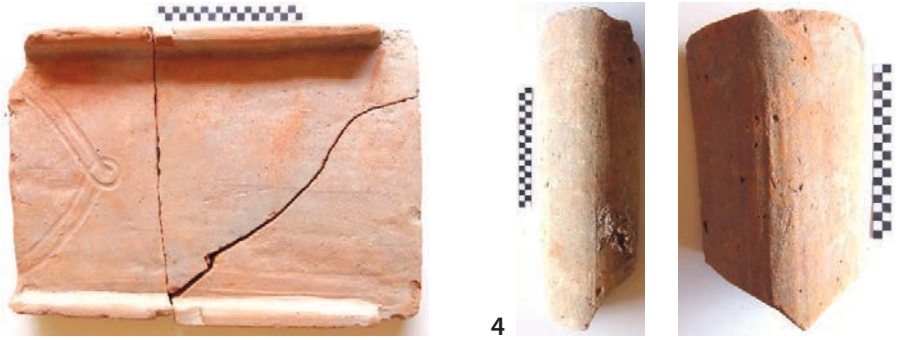
T. XXI

1 2



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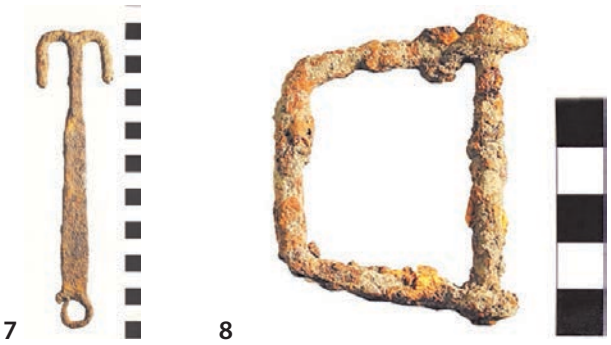
T. XXII



T. XXIII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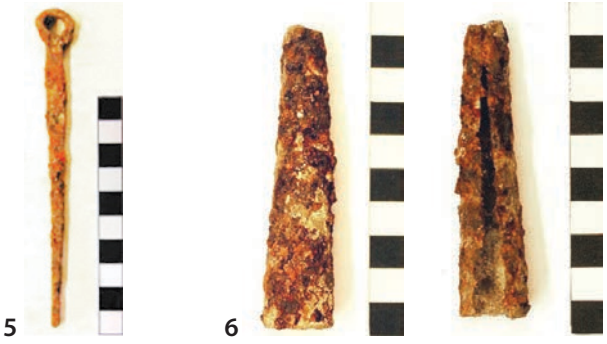
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T. XXIV

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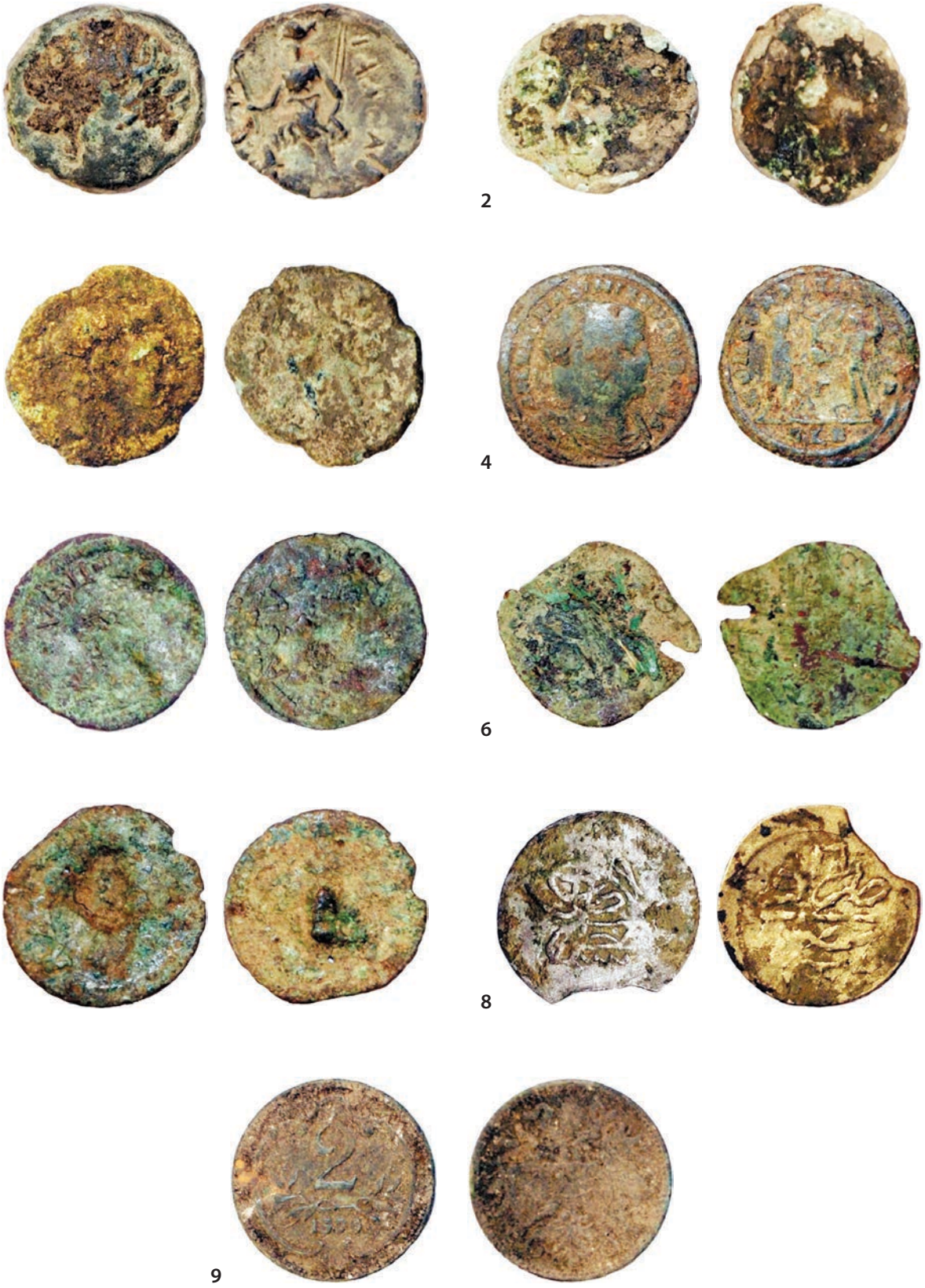
T. XXV

T. XXVI



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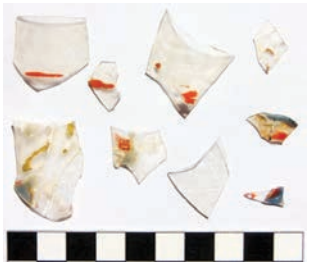
T. XXVII

T. XXVIII


1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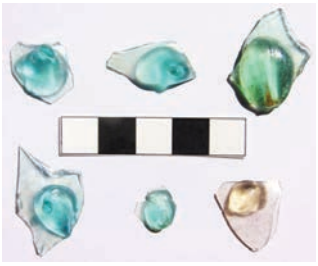
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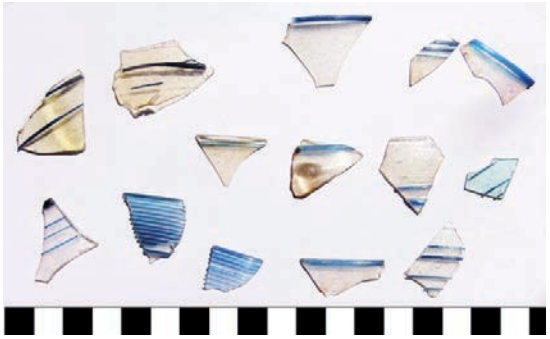
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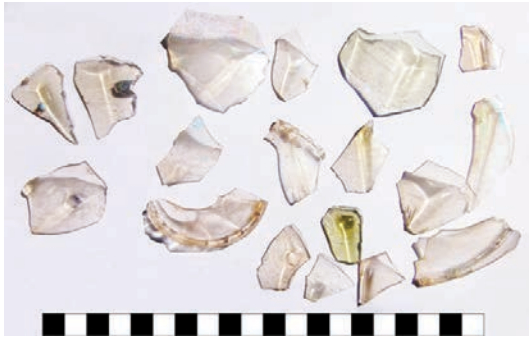
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7 PN 231


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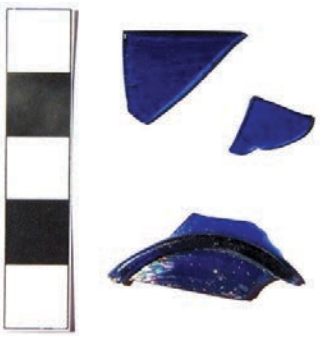
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T. XXIX


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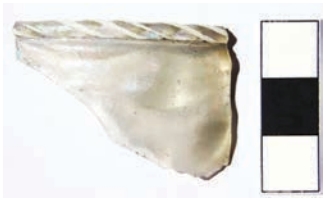
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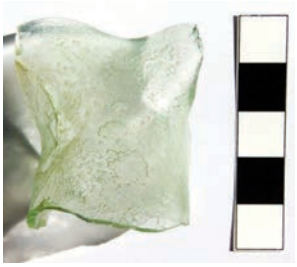
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