
ZAŠTITNO ISTRAŽIVANJE NA LOKALITETU ŽDRIJAC KRAJ NINA

RESCUE EXCAVATIONS AT ŽDRIJAC SITE NEAR NIN

Autor donosi rezultate zaštitnog istraživanja obavljenog 2016. godine na položaju Ždrijac blizu Nina radi polaganja cjevovoda za mrijestilište Cromaris d. d. Radi se o većoj količini amfora okomito zakopanih u tlo, pronađenih *in situ*. Autor donosi analogije s ostalim intervencijama u prostoru u smislu sekundarne upotrebe arheološkog materijala (amfora) na inozemnim i domaćim lokalitetima.

Ključne riječi: antika, amfore, srednja Dalmacija, Nin, Ždrijac, geotehnika

The author presents the results of the rescue excavations carried out at Ždrijac site near Nin in 2016, prior to the construction work along the route of the future suction pipe for the hatchery of Cromaris Ltd Company. The finds include a large number of amphorae buried upright in the ground, found *in situ*. The author also presents analogies with other spatial alterations associated with reuse of archaeological material (amphorae) at international and local sites.

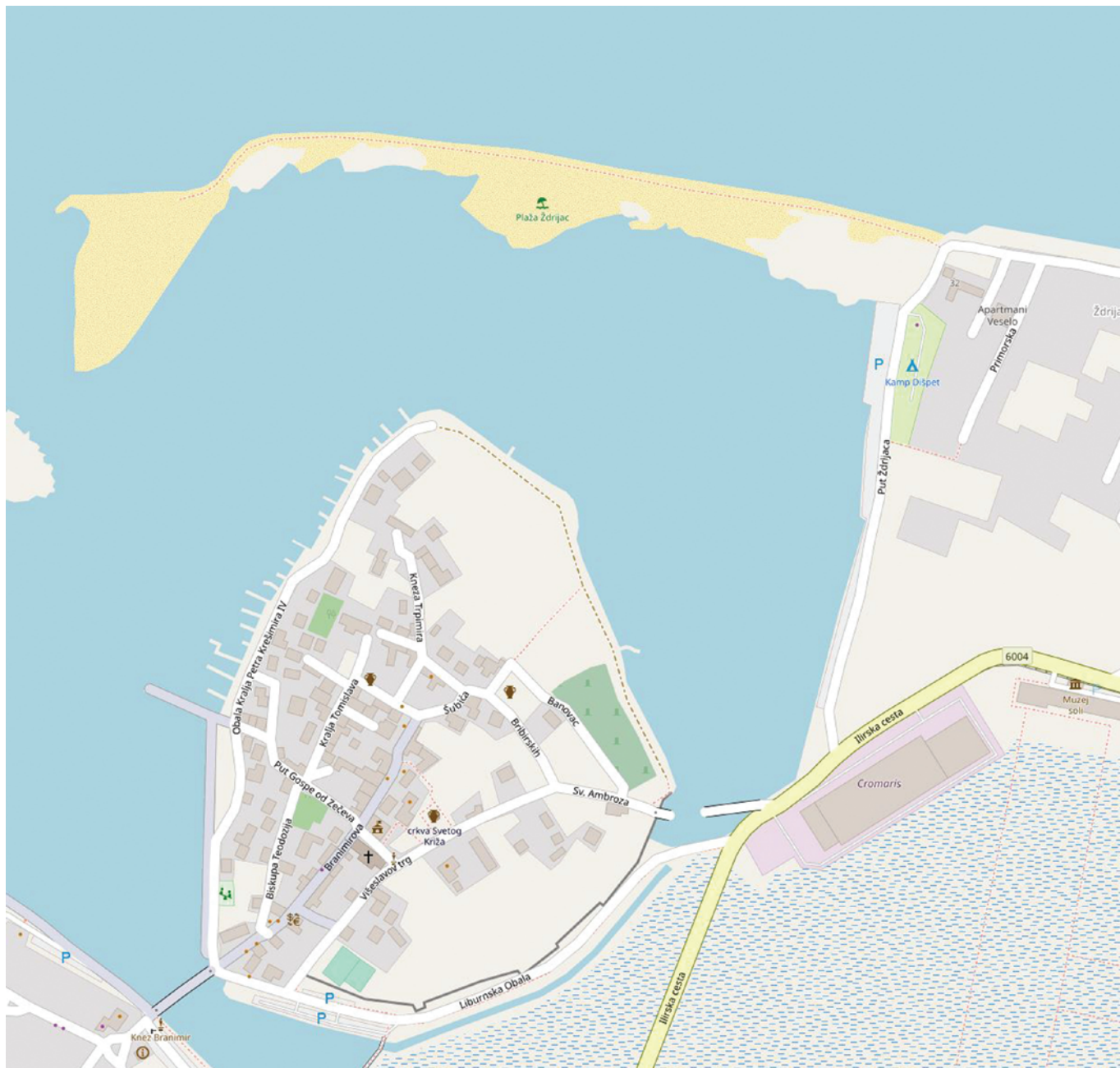
Key words: antiquity, amphorae, Central Dalmatia, Nin, Ždrijac, geotechnics

1. UVOD (OPĆENITO O ŽDRIJACU)

Poluotok Ždrijac nalazi se sjeverno od grada Nina i zatvara ninsku luku ostavljajući između sprudova prolaz koji se naziva Usta. Na poluotoku su otkrivene nekropole lokalnog stanovništva iz gotovo svih razdoblja – od prapovijesnih, preko antičkih pa sve do ranosrednjovjekovnih. Osim nekropola, na području Ždrijaca i okolnog prostora vezanog uz taj poluotok istraživane su i druge strukture nevezane za pokapanje (sl. 1).¹

1. INTRODUCTION (ŽDRIJAC – GENERAL FACTS)

Located north of the town of Nin, Ždrijac Peninsula closes the town's port, leaving only the narrow pass between sandbars called Usta. Necropolises of the local populations from almost all periods – from prehistory to antiquity to Early Dark Ages – were discovered on the peninsula. Besides the necropolises, other structures – not related to burials – were also researched on Ždrijac and in the surrounding areas (Fig. 1).¹



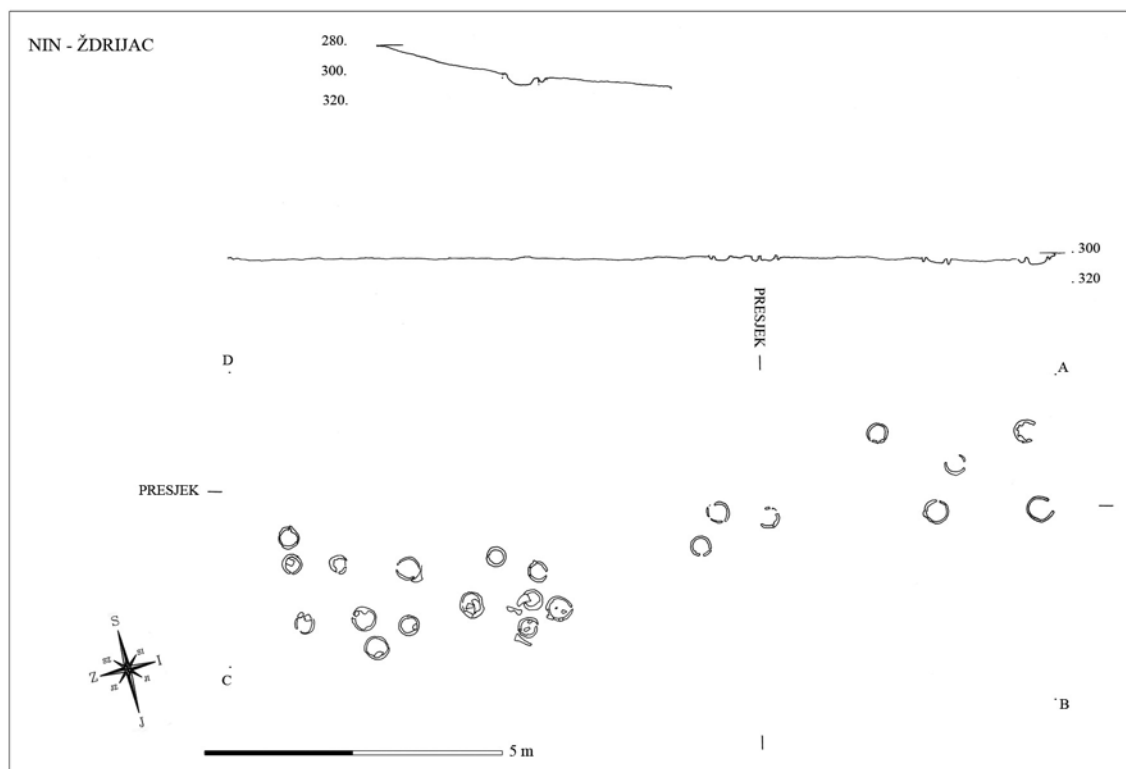
Slika 1. Geografski položaj poluotoka Ždrijac

Figure 1. Geographical position of Ždrijac Peninsula

priredio / prepared by: D. Taras

1 M. Dubolnić Glavan 2015, 466–468, dodatak 3, br. 23–25.

1 M. Dubolnić Glavan 2015, 466–468, appendix 3, no. 23–25.



Slika 2. Tlocrt položaja amfora istraženih 2005. godine
Figure 2. Ground plan of amphorae researched in 2005

priređio / prepared by:
R. Maršić

Prva istraživanja na Ždrijacu vršena su između 1909. i 1912. godine kada su otkriveni grobovi starijeg željeznog doba i rimskog doba. Nekropole (prapovijesne, rimske i srednjovjekovne) se nastavljaju istraživati tijekom 20. stoljeća u više navrata: 1954., 1967., 1969. – 1971., 1974. – 1975., 1977., 1983. i 1999.² Uz nalaze grobova u ranijoj se literaturi spominje i nalaz paljevinskog sloja koji bi mogao pripadati mjestima za spaljivanje pokojnika (*ustrinum*).³ Tijekom zaštitnih istraživanja 1970. i 1972. godine nađeni su i ostatci rimske arhitekture između prapovijesne i srednjovjekovne nekropole. U zoni plime i oseke više se puta spominje pojava okomito ukopanih amfora koje su vađene u nekoliko navrata od sedamdesetih godina 20. st. do 2005. godine.⁴ Kustosica Područne zbirke u Ninu Lj. Klarin u muzejskim bilješkama spominje zaštitna istraživanja 1982. godine na Ždrijacu, kada je pronađeno sedam amfora okomito zakopanih u pijesak, paralelno s obalom u dužini od 10 m i širini od 1 m u smjeru sjeveroistok-jugozapad.⁵ U vrijeme velikih zimskih oseka 2005. godine dokumentirano je područje inače potopljenog dijela obale na prostoru dužine oko 14 m i širine oko 4 m. Utvrđena je veća količina amfora okomito zakopanih u pijesak/dno, sličnog tlocrtnog rasporeda kao i u sondi iskapanoj za potrebe zaštitnog istraživanja 2016. godine.⁶ Sve su amfore sličnih

The first excavations on Ždrijac were carried out between 1909 and 1912, when Iron Age and Roman Age graves were discovered. Excavations at the necropolises (prehistoric, Roman and medieval ones) were continued on many occasions in the 20th century: in 1954, 1967, 1969-1971, 1974-1975, 1977, 1983 and 1999.² The earlier literature mentions not only the graves, but also a burned layer that could belong to the sites of funeral pyres (*ustrina*).³ During the 1970 and 1972 rescue excavations, remains of Roman architecture were also found in between the prehistorical and medieval necropolises. In a number of places, amphorae standing upright in the ground were discovered on several occasions in the tidal zone between the 1970s and 2005.⁴ In museum notes, curator of the Nin Collection Lj. Klarin mentions the rescue excavations carried out on Ždrijac in 1982, when seven amphorae were found buried upright in sand, in parallel with a 10 meters long and one meter wide section of the coast, oriented northeast-southwest.⁵ During a period of substantial low tides in winter 2005, the usually flooded part of the coastline – approx. 14 meters long and approx. 4 meters wide – was researched and documented. A large quantity of amphorae buried upright in sand/soil was found, positioned in a pattern similar to the one in the test pit dug up for the purpose

2 Dodatna literatura u: M. Dubolnić Glavan 2015, 466–468.

3 M. Dubolnić Glavan 2015, 94.

4 M. Dubolnić Glavan 2015, 467–468.

5 Lj. Klarin 1981–1982, izvještaj iz muzejskih bilješki.

6 Dokumentiranje vodila M. Kolega, kustosica i voditeljica Muzeja ninskih starina, izvor fotografija i tlocrta R. Maršić, dokumentarist Arheološkog muzeja Zadar.

2 Additional literature in M. Dubolnić Glavan 2015, 466–468.

3 M. Dubolnić Glavan 2015, 94.

4 M. Dubolnić Glavan 2015, 467–468.

5 Lj. Klarin 1981–1982, report from museum notes.



Slika 3. Crtanje pozicija amfora iz 2005.

Figure 3. Drawing of positions of amphorae, 2005

foto / photo by: fototeka Arheološkog muzeja Zadar /
Photo Archive of Archaeological Museum Zadar

dimenzija te su dokumentirane fotografski i nivelirom, iako nacrt nije georeferenciran (sl. 2–3).

Na Ždrijacu, uz more na posjedima Ljubičić i Pijaca nađena su dva rimska žrtvenika s natpisima za koje se pretpostavlja da potječu s nekog od svetišta ili hrama u blizini.⁷

U podmorju Ždrijaca na položaju Usta vršena su podvodna arheološka istraživanja u više navrata. Ostaci konstrukcija dvaju srednjovjekovnih brodova istraživani su krajem šezdesetih i početkom sedamdesetih godina pod vodstvom Z. Brusića. U istraživanjima su nađeni i ostaci kolaca s isprepletenim šibljem i daskama, kao i više komada željeznog oruđa, keramičkih posuda i tegula datiranih u 6. i 7. st.⁸

Godine 2009. I. Radić Rossi u istraživanjima nailazi na drvenu konstrukciju sastavljenu od nizova tanjih i debljih kolaca ili pilona nepoznate namjene. Pronađena su i dva paralelna kamena nasipa postavljena okomito na potez *Ploča*, čija namjena nije razjašnjena.⁹

of the rescue excavation of 2016.⁶ All the amphorae are of a similar size. They were documented by photographing and levelling, although the plan was not georeferenced (Figs. 2–3).

On the land of the Ljubičić and Pijaca families on Ždrijac Peninsula, two Roman altars were found. They contained inscriptions believed to originate from some of the sanctuaries or temples in the vicinity.⁷

On the seabed off Ždrijac, at Usta site, underwater archaeological excavations were carried out on several occasions. The remains of the hulls of two medieval ships were researched in the late 1960s and early 1970s under the supervision of Z. Brusić. The research yielded remains of stakes with interwoven wicker and planks, together with many pieces of iron tools, ceramic vessels and roof tiles dated to the 6th and 7th centuries AD.⁸

In 2009, I. Radić Rossi found a wooden structure consisting of rows of thick and thin stakes or pylons of unknown purpose. Two parallel stone dikes lying vertically to *Ploča* stretch were also found. Their purpose has not been explained yet.⁹

7 M. Dubolnić Glavan 2015, 281–282, br. 47–48.

8 Z. Brusić 1969, 1978.

9 I. Radić Rossi 2009, 512–515.

6 The documenting activities were headed by M. Kolega curator and the head of the Museum of Nin Antiquities. Source of photos and plan views: R. Maršić, documentarist of the Archaeological museum Zadar.

7 M. Dubolnić Glavan 2015, 281–282, no. 47–48.

8 Z. Brusić 1969; 1978.

9 I. Radić Rossi 2009, 512–515.



Slika 4. Početak radova
 Figure 4. Beginning of excavations

foto / photo by: D. Taras

2. ISTRAŽIVANJE

Zaštitno istraživanje na Ždrijacu, nedaleko od Nina započeto je u siječnju 2016. godine, nakon dojave iz Muzeja ninskih starina čiji su djelatnici vršili arheološki nadzor prilikom izvođenja građevinskih radova tvrtke Cromaris d. d. na trasi cjevovoda gdje se postavljala usisna cijev za mrijestilište. Voditelj Muzeja ninskih starina Mate Radović obavijestio je Odjel za podvodnu arheologiju Arheološkog muzeja u Zadru o uočenim nalazima amfora, zaustavljajući građevinske radove kako bi moglo započeti zaštitno arheološko istraživanje.

U istraživanjima su osim voditelja, kustosa Arheološkog muzeja Zadar Dina Tarasa, sudjelovali i dokumentarist Arheološkog muzeja Zadar Robert Maršić, voditelj Muzeja ninskih starina Mate Radović, vježbenici Muzeja ninskih starina Ivana Botica i Suzana Malović te studenti arheologije Ines Šelendić, Petar Krnjus i Ivan Klarić. Područje istraživanja određeno je površinom od oko 150 m² u širini iskopa cjevovoda.

2. THE EXCAVATION

The rescue excavation on Ždrijac near Nin began in January 2016, after information had been received from the staff of the Museum of Nin Antiquities, who carried out an archaeological supervision on the route of the suction pipe for a hatchery that the contractor Cromaris PLC was laying. Mate Radović, head of the Museum of Nin Antiquities, notified the Department of Underwater Archaeology of Archaeological Museum Zadar about the amphora finds at the construction site, demanding that the construction work be stopped in order to launch an archaeological rescue excavation.

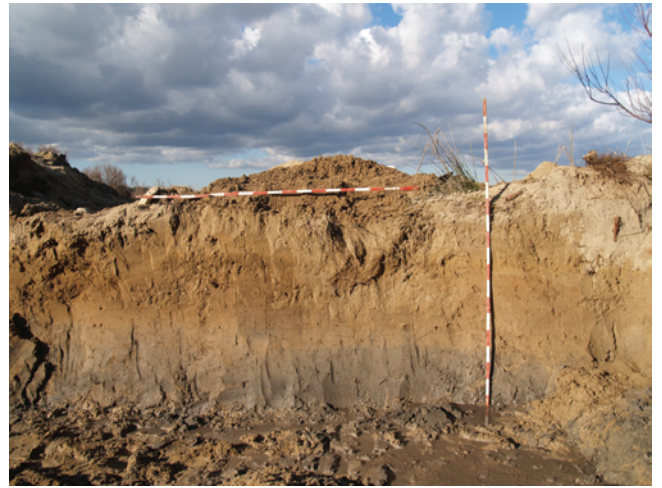
The excavation was led by Dino Taras, a curator from Archaeological Museum Zadar. Other participants included Robert Maršić, the Museum's documentation officer, Mate Radović, head of the Museum of Nin Antiquities, interns of the Nin Museum Ivana Botica and Suzana Malović and archaeology students Ines Šelendić, Petar Krnjus and Ivan Klarić. An area of approx. 150m² along the ditch prepared for the pipeline was outlined for the rescue excavation.

After a number of amphorae were found *in situ* along the pipeline route, the construction work was stopped and the archaeological rescue excavation began (Fig. 4).



Slika 5. Sonda tijekom poplave
Figure 5. Flooded trench

foto / photo by: D. Taras



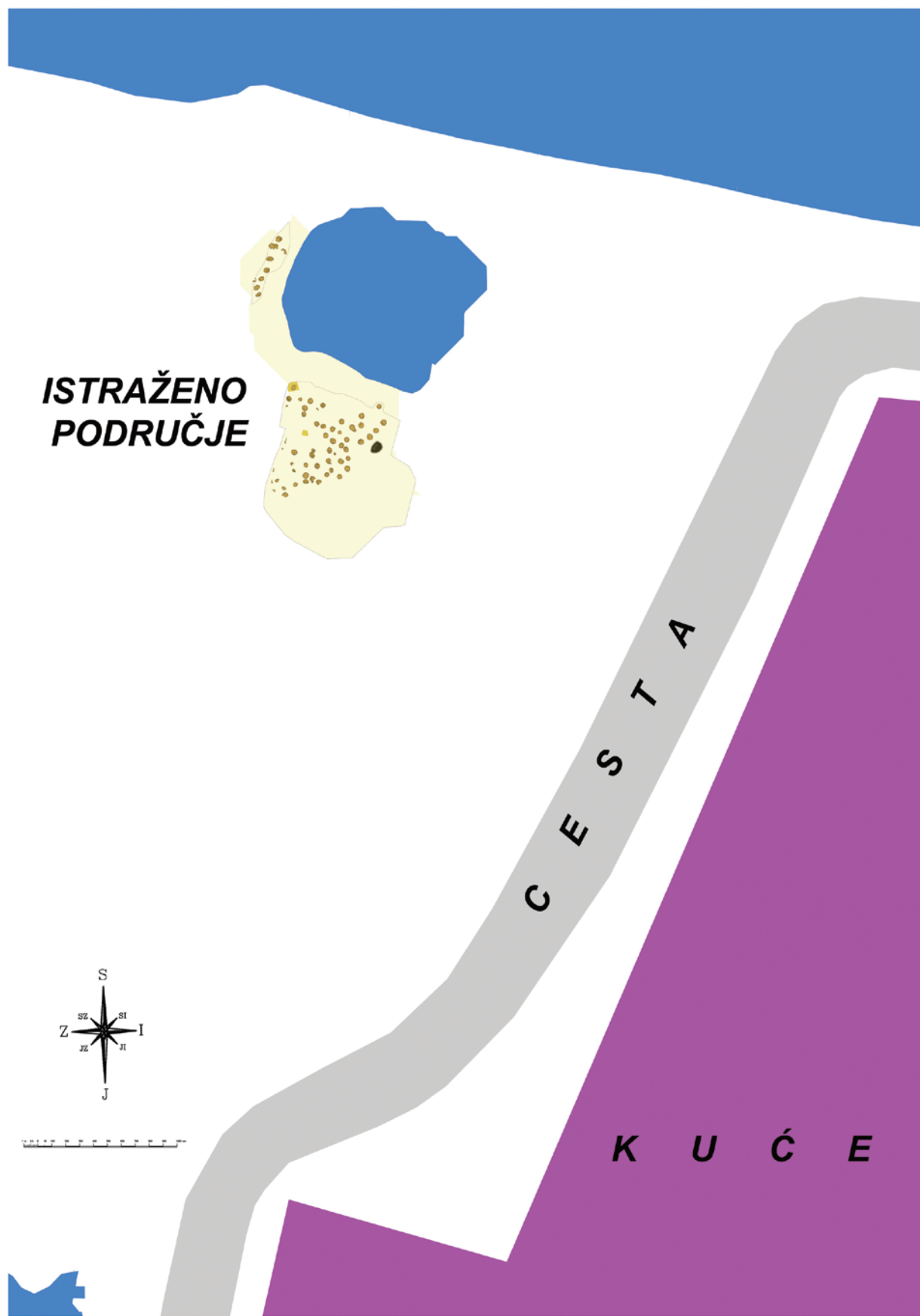
Slika 7. Zapadni profil sonde
Figure 7. Western profile of trench

foto / photo by: D. Taras



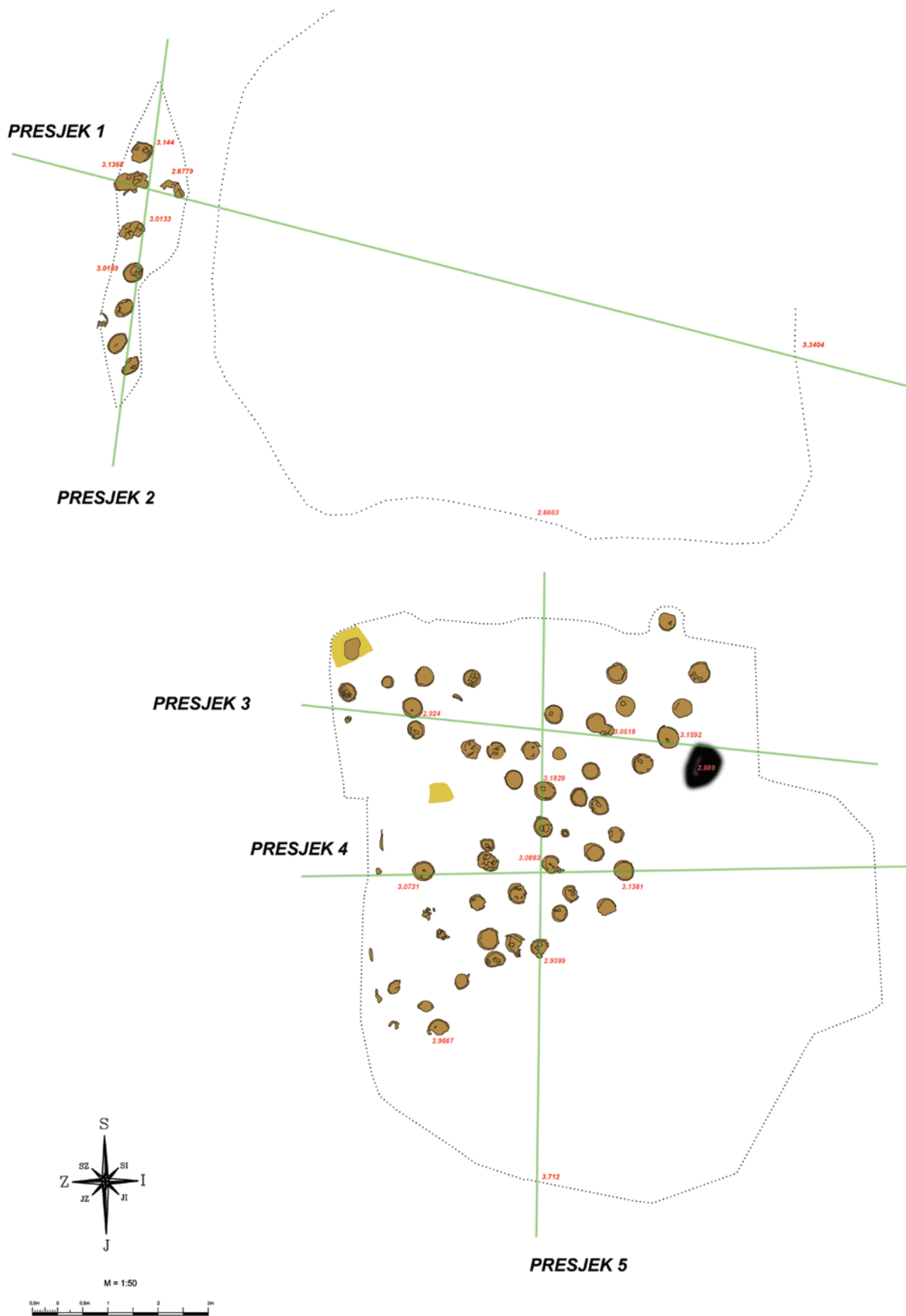
Slika 6. Pogled na sjeverni dio sonde tijekom rada
Figure 6. View of northern part of trench during excavations

foto / photo by: D. Taras



Slika 8. Prikaz istraženog prostora
 Figure 8. Area excavated so far

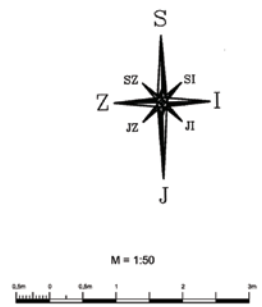
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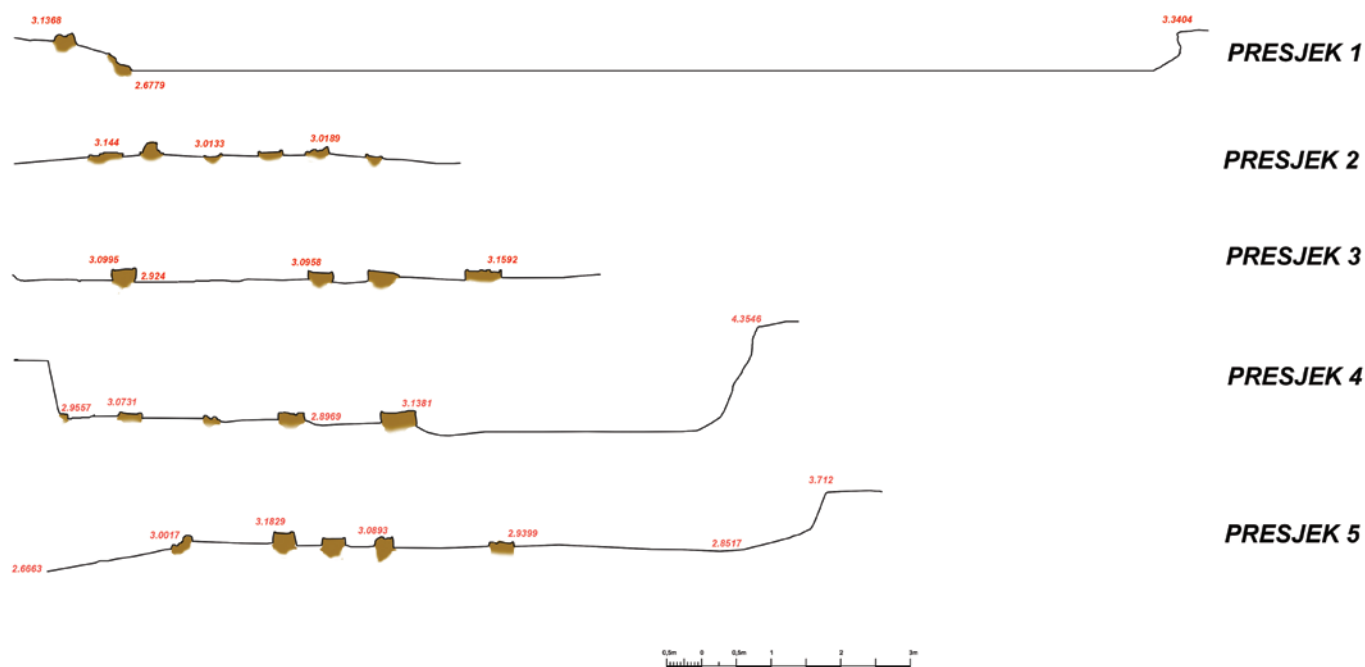
Slika 9. Tločrt sonde
Figure 9. Trench ground plan



Slika 10. Tlocrt sonde, fotomozaik
 Figure 10. Trench ground plan, photo mosaic



priredio / prepared by: R. Maršić



Slika 11. Karakteristični presjeci sonde

Figure 11. Trench, typical profiles

priređio / prepared by: R. Maršić

Nakon utvrđivanja više amfora *in situ* na području trase cjevovoda, građevinski radovi su zaustavljeni te je započelo zaštitno arheološko istraživanje (sl. 4).

Zbog iskopanih dijelova terena ispunjenih morem sa sjeverne i južne strane sonde, istraživanje se vršilo u tri faze. Prvo je istražena srednja trećina sonde, zatim južna trećina, da bi se na kraju istražila i sjeverna trećina gdje je bagerom napravljena „brana“ zbog prelijevanja mora iz sjevernog iskopa. Problem pri iskopavanju predstavljalo je konstantno nadiranje mora u sondu, zbog spuštanja razine sonde ispod današnje razine mora. U svrhu drenaže iskopana je dublja rupa na sterilnom dijelu pored sonde gdje se slijevao višak mora. Rad su otežavali vremenski uvjeti (kiša i bura), kao i plime koje su gotovo svakodnevno punile sondu sa 20 – 30 cm mora na cijeloj površini sonde (sl. 5).

Na cijelom prostoru istražene sonde stratigrafska je situacija bila jednaka – SJ 1 predstavlja gornji, površinski sloj smeđeg pijeska u kojem se zamjećuju amfore. Daljnjim skidanjem smeđeg sloja utvrđuje se da su amfore na području cijele sonde ukopane u tamnosivi sloj s ostacima vegetacije – SJ 2 – koji se također prostire na cijelom prostoru sonde (sl. 6). Dublje od amfora nije nađeno arheoloških ostataka. U presjeku terena utvrđen je i sloj gline – SJ 3 – koji je primijećen i dokumentiran na manjem području u sjeverozapadnom kutu sonde (sl. 7).

As the pits dug up in the ground to the north and south of the test pit were filled with seawater, the excavation was carried out in three phases. The middle third of the test pit was researched first, then followed the southern third and, eventually, the northern third, where an excavator made a “dam” in order to prevent constant spillovers of seawater from the northern pit. The seawater constantly penetrated into the test pit because the test pit level was below the present-day sea level. A deeper pit was then dug up on a sterile part by the test pit in order to ensure drainage of the surplus seawater. The excavation was made difficult by bad weather conditions (rain and wind) and high tides that filled the entire test pit with 20-30cm of seawater almost on a daily basis (Fig. 5).

Stratigraphy was the same throughout the test pit: SU1 was the upper (surface) layer of brown sand in which amphorae could be noticed. Upon removal of the brown layer, it was established that – throughout of the test pit – the amphorae were buried in a dark gray layer with plant remains (SU2) that also stretched across the test pit (Fig. 6). In the layers below the amphorae there were no archaeological finds. When a profile of the terrain was made, it was established that it also included a clay layer (SU3). It was observed and documented in a smaller, northwestern part of the test pit (Fig. 7).

Most of the amphora fragments were lower halves with bases; there were only three fragmented necks (all of them found inside amphorae) and one whole neck buried like the rest of the amphorae. The amphorae were not buried in any orderly spatial pattern. The only regularity observed was the fact that none of them had been found south of the line connecting the test pit’s northeastern and southwestern corners (in other words, in the test pit’s



Nađene amfore većinom su sačuvane kao donje polovice s dnom, sa samo tri primjerka fragmentiranih vratova (sva nađena unutar amfora) i jednim vratom ukopanim poput ostalih amfora. Ukopane su bez pravilnog prostornog rasporeda, a jedina uočena pravilnost jest da amfore nisu pronađene južnije od linije koja spaja sjeveroistočni i jugozapadni kut sonde, tj. na istočnoj polovini sonde. Na cijelom istraženom području dokumentirano ih je 60 (sl. 8–11).

Uz zapadni rub iskopa za cijev, sa sjeverne strane sonde utvrđeno je još 10 amfora *in situ*. Budući da su bile u području nadzora, fotodokumentirane su i snimljene totalnom stanicom te izvađene. Utvrđena je ista situacija kao i na području sonde – sterilni površinski sloj i ukopane amfore u tamnosivom sloju (sl. 12).

3. NALAZI

Gotovo su svi nalazi donje polovice amfora napuknutih stijenci, ukopane u tlo. U jednom slučaju radi se o grlu preokrenute amfore koje je bilo ukopano u sloj. Drugo grlo nađeno je fragmentarno sačuvano u donjoj polovici amfore. Grla pripadaju tipu amfora Lamboglia 2 (Peacock and Williams 8) koji se na istočnoj obali Jadrana javlja u razdoblju od 2. st. pr. Kr. pa do 1. st. U njima se čuvalo i prenosilo

Slika 12. Amfore izvan sonde, uz rub kanala

Figure 12. Amphorae outside trench, by the canal

foto / photo by: D. Taras

eastern half). A total of 60 of them were documented in the entire researched area (Figs. 8–11).

Along the western edge of the pipe ditch, to the north of the test pit, 10 more amphorae were found *in situ*. As they were within the rescue excavation area, they were photographed, measured with a total station and extracted. The same situation was established as in the test pit – the amphorae were buried in a dark gray layer underneath a sterile surface layer (Fig. 12).

3. THE FINDS

Lower amphora halves with cracked walls, buried in the soil, accounted for almost all the finds. In one case, it was the neck of an upside down amphora buried in the soil. Another neck was found fragmented in the lower half of an amphora. The necks belong to Lamboglia 2 type (Peacock and Williams 8), which appeared in the Eastern Adriatic in the period from the 2nd century BC to the 1st century AD.

Slika 13. Donja polovica amfore

Figure 13. Amphora, lower half

foto / photo by: D. Taras



uglavnom vino, a ponekad i maslinovo ulje.¹⁰ Dimenzije amfora variraju neznatno, s visinom koja se kreće između 85 i 90 cm te širinom trbuha oko 35 cm. Kapacitet im iznosi između 27 i 30 l. Distribucija tog tipa amfora prilično je široka i obuhvaća uglavnom sjevernu i istočnu obalu Jadrana, istočni Mediteran i sjevernu Afriku. Na istočnoj obali Jadrana čest je nalaz na brojnim otocima: Hvar, Korčula, Lastovo, Šolta, Brač, Šćedro, Palagruža i Čiovo. Veća su nalazišta na lokalitetu Sv. Teodor u Puli (oko 2077 primjeraka) i kao teret brodoloma na Veloj Svitnji na Visu (oko 800 primjeraka).¹¹ Nedavnim pregledom terena u zadarskom akvatoriju utvrđena je pojava tog tipa amfore i na lokalitetima uvala Dumboka na otoku Ižu, južni dio otočića Galešnjaka kod Turnja, kod otočića Karantunića, u blizini rta Osljinac na otoku Ižu i u uvali Tanko na otoku Ravi (sl. 13, 14, 15).¹²

Čišćenjem i pregledom amfora sa Ždrijaca utvrđeno je da većina sadržava fragmente stijenki i tamnisi- vi čvrsti sediment te svaka pri dnu ima ostatke biljnih vlakana. Kako se radi o vlaknima, determiniranje točne

**Slika 14. Grlo amfore tipa Lamboglia 2 u sloju**

Figure 14. Neck of Lamboglia 2 amphora, in layer

foto / photo by: D. Taras

They were mostly used for transporting wine and – sometimes – olive oil.¹⁰ Their size varies only slightly: their height is 85-90cm and their bellies are approx. 35cm wide. They could receive between 27 and 30 liters. This type of amphorae was rather widespread; it encompassed mostly Northern and Eastern Adriatic, Eastern Mediterranean and Northern Africa. In Eastern Adriatic is it often found on numerous islands: Hvar, Korčula, Lastovo, Šolta, Brač, Šćedro, Palagruža and Čiovo. Major site with such finds include Sv. Teodor site in Pula (around 2,077 specimens) and the shipwreck at Vela Svitinja on Vis (around 800 specimens).¹¹ During a recent survey of the seabed off Zadar, this type of amphorae was also found in Dumboka Cove on the island of Iž, on the southern part of Galešnjak islet near Turanj, off the islet of Karantunić, off Cape Osljinac on Iž and in Tanko Cove on the island of Rava (Figs. 13, 14, 15).¹²

The cleaning and analysis of the Ždrijac amphorae established that most of them contained fragments of walls and a hard, dark gray sediment. Remains of plant fibers were also found on the base of every one of them. It is very hard to determine the plant species from these fibers.¹³ In some of the amphorae, a filling like plaster or some similar compact mixture was found during the cleaning.

4. SIMILAR EXAMPLES OF AMPHORAE IN SECONDARY USE

As a type of ceramic vessels, amphorae are found at ancient sites throughout the world in various functions. Only a smaller part of them were used primarily for transporting or storing food or drinks. It was possible to

10 A. Lindhagen 2009, 84–85, 87–88, 105.

11 D. Van Limbergen 2018, 208–209.

12 M. Pešić 2013, 42–44.

10 A. Lindhagen 2009, 84–85, 87–88, 105.

11 D. Van Limbergen 2018, 208–209.

12 M. Pešić 2013, 42–44.

13 Personal communication R. Šoštarić.



Slika 15. Grlo amfore tipa Lamboglia 2

Figure 15. Neck of Lamboglia 2 amphora

foto / photo by: D. Taras

vrste biljke izrazito je teško.¹³ Neke od amfora prilikom čišćenja pokazuju ispunu žbukom ili nekom sličnom kompaktnom smjesom.

4. SLIČNI PRIMJERI AMFORA U SEKUNDARNOJ UPOTREBI

Amfore se kao tip keramičke posude na antičkim lokalitetima javljaju širom svijeta u raznim funkcijama, od kojih je manji dio vezan za primarnu funkciju transporta ili pohrane hrane i pića. Mogle su biti modificirane i prilagođene novoj funkciji na nekoliko načina: pravljjenjem rupa u tijelu amfore, skraćivanjem visine, odstranjivanjem grla i/ili dna s nogom ili rezanjem po dužoj osi. Isto tako, određeni dijelovi amfore mogli su biti korišteni posebno, poput vrata, ručki, noge i ulomaka trbuha. Peña navodi čak 26 različitih funkcija u kojima se amfora mogla koristiti nakon svoje osnovne namjene kao ambalaže za hranu ili piće.¹⁴ Kontekstu amfora sa Ždrijaca možemo pridružiti samo nekoliko sličnih funkcija. Antički pisci navode razna imena za amfore modificiranih tijela.

Tako se amfora s probušenim dnom naziva *amfora pertusa*¹⁵, amfora s odstranjenim dijelom vrata ili oboda spominje se kao *curto ... amphora collo*¹⁶, amfora s odstranjenim vratom i obodom kao *amphora collo defracto*¹⁷, dok se amfora s odstranjenim vratom i ramenima naziva *amphora media*¹⁸. *Vertex*

modify them and adapt them to a new function in several ways: by making holes in their bodies, by reducing their height, by removing the neck and/or footed base or by cutting them along the longer axis. Also, certain parts of an amphora could be used separately – like the neck, handles, foot and fragments of the belly. Peña mentions as many as 26 different functions amphorae were used for in addition to their basic purpose – packaging for food or drinks.¹⁴ Only a few similar functions can be associated with the context of the Ždrijac amphorae. The authors of the ancient world mention various names for the amphorae with modified bodies.

The amphora with a perforated base is called *amfora pertusa*¹⁵. The amphora with removed part of the neck or rim is called *curto ... amphora collo*¹⁶. The one with an entire neck or rim removed is *amphora collo defracto*¹⁷. The amphora with a removed neck and shoulders is called *amphora media*¹⁸. *Vertex amphorae*¹⁹ means an amphora neck with a part of the shoulder preserved.²⁰ The amphorae excavated at Ždrijac are mostly *amphorae mediae*; three of them belong to *vertex amphorae* type.

4.1. A geotechnical or hydrological structure

The amphorae found at Ždrijac could have been used as an element of a geotechnical or hydrogeological structure. Such a use of amphorae or their parts implies structures intended for stabilizing or elevating the soil or improving its drainage.

The dense pattern of amphorae in their geotechnical use, like in the example of Île des Sables in Arles, reminds of the situation found after the removal of the surface layer on Ždrijac, although the pattern in which the Ždrijac amphorae were buried was less dense and random. Lines of amphorae were discovered in Arles during rescue excavations there. Those amphorae were filled with the sediment that surrounded them. The amphorae were distributed in straight parallel or vertical lines. They mostly belonged to Dressel 1 type and lacked the neck or part of the neck. In places, the

13 Osobna komunikacija R. Šoštarić.

14 J. T. Peña 2007, 119–120.

15 Cato, *Agr.* 52. 1, 80, 133. 3.

16 Prop, 4. 5. 75.

17 Cato, *Agr.* 88. 1.

18 Mart. *Epigr.* 6. 93. 1.

14 J. T. Peña 2007, 119–120.

15 Cato, *Agr.* 52. 1, 80, 133. 3.

16 Prop, 4. 5. 75.

17 Cato, *Agr.* 88. 1.

18 Mart. *Epigr.* 6. 93. 1.

19 Sic. Fl., *De condicionibus agrorum* 108. 6–7.

20 J. T. Peña 2007, 123.

*amphorae*¹⁹ označava vrat amfore sa sačuvanim dijelom rame-na.²⁰ Iskopane amfore na Ždrijacu većinom su *amphorae mediae*, a jedan primjerak pripada tipu *vertex amphorae*.

4.1. Geotehnička ili hidrogeološka konstrukcija

Amfore nađene na Ždrijacu mogle su biti korištene kao element geotehničke ili hidrogeološke konstrukcije. Takva namjena amfora ili njezinih dijelova podrazumijeva konstrukcije namijenjene stabiliziranju tla, podizanju njegove razine ili poboljšanju njegove drenaže.

Geotehnička upotreba amfora, poput primjera iz Ile des Sables u Arlesu, gustim rasporedom podsjeća na situaciju zatečenu nakon skidanja površinskog sloja na Ždrijacu, iako su amfore na Ždrijacu ukopane rjeđim i nasumičnim rasporedom. U Arlesu su tijekom zaštitnih istraživanja otkriveni redovi ukopanih amfora ispunjenih sedimentom koji ih je okruživao, u pravilnim paralelnim ili okomitim linijama. Većinom su to amfore tipa Dressel 1 bez vrata ili bez dijela vrata. Redovi na nekim mjestima formiraju stepenasto područje širine oko 1 m. Raspored amfora i blizina rijeke ukazuju na vjerojatnu upotrebu amfora kao sredstva stabilizacije obale koju je povremeno plavila obližnja rijeka.²¹

Prilikom upotrebe amfora u hidrogeološkoj funkciji, najbolji efekt drenaže postigao se ukopavanjem amfora otvorenim na oba kraja okomito u tlo. U praksi taj postupak nije poštovan svaki put. Često se događalo da su cijele amfore (s dnom) samo zakapane u tlo bez obzira na položaj koji je znao biti horizontalan ili su nasumično bačene u jarak.²² Također, upotrebljavale su se da se zaustavi plavljenje tla – zakapanjem naopako u sloj propusnog tla, s time da se praznine ispune istim tlom, a sve zajedno pokrije nepropusnim slojem.²³ Na Ždrijacu amfore nisu ukopane otvorom prema dolje, a nije nađen ni nepropusni sloj iznad njih.

Najbliži primjer sekundarne uporabe amfora u geotehničkom smislu nalazi se na lokalitetu *Ad turres* kraj Crikvenice. Na čitavu otvorenom prostoru keramičarske radionice ustanovljen je sloj keramičkog otpada u svojstvu drenažnog sloja s obzirom na to da se radionica nalazila unutar gliništa. Uz razni keramičarski otpad nađene su i posložene amfore tipa Dressel 2-4. Te deformirane amfore također su bile proizvod iste radionice.²⁴

U Puli je, tijekom istraživanja u gradskoj jezgri 2005. godine, također ustanovljen drenažni i nivelirajući sloj ispunjen amforama. Velika količina amfora nađenih u sloju ima probušena ili slomljena dna. Također, u sloju su prisutni i ulomci amfora okrenuti naopako. Dio amfora nađen je s

amphorae outlined a cascade-shaped area, approx. 1 meter wide. The arrangement of the amphorae and the vicinity of a river indicate that they were probably used for stabilizing the bank that was occasionally flooded by the river.²¹

When amphorae were used for a hydrogeological purpose, drainage was the most effective when they were buried in such way that they stood upright in the ground, both ends open. In practice, this procedure was not implemented every time. Complete amphorae (with their base intact) would often be buried in the ground in any position – including the horizontal one – or would simply be thrown to the ditch.²² They were also used to stop the flooding of the soil by burying them upside down in a permeable soil layer; the amphorae would then be filled with the same soil and an impermeable soil layer would then be placed on top of it all.²³ The Ždrijac amphorae were not buried with their mouth downwards and no impermeable layer has been found above them.

The geographically closest example of a secondary use of amphorae for geotechnical purposes can be found at *Ad turres* site near Crikvenica. Across the entire yard of a pottery workshop, a layer of pottery waste was found. It had been used as a drainage layer as the workshop was located inside a clay pit. In addition to various pottery waste, Dressel 2-4 amphorae were also found, arranged in a pattern. Those deformed amphorae had been produced in that same workshop.²⁴

During the 2005 excavations in Pula's historical core, a layer filled with amphorae was also discovered. It had been used for drainage and levelling. The numerous amphorae found in the layer have perforated or broken bases. The layer also includes some amphora fragments turned upside down. Some amphorae were found with their lids and filled with the gravel from the beach. The amphorae in the lower layer mostly contained the sediment, while those in the upper part of the layer were mostly empty and without lids. Most of these amphorae are complete and belong to Lamboglia 2 type.²⁵ Transitional forms between Lamboglia 2 and Dressel 6A types were also found. All in all, some 2,000 amphorae were found there. This layer had been made during the construction of public baths in Pula, in order to level the sloping ground they were built on.²⁶

4.2. Planting pots

The fact that almost all of these amphorae (except three of them) were found buried in the ground with their foot

19 Sic. Fl., *De condicionibus agrorum* 108. 6–7.

20 J. T. Peña 2007, 123.

21 J. T. Peña 2007, 185–186, fig. 6. 20.

22 J. T. Peña 2007, 189.

23 J. T. Peña 2007, 190.

24 G. Lipovac Vrkljan 2008, 5–7, sl. 4–5.

21 J. T. Peña 2007, 185–186, fig. 6. 20.

22 J. T. Peña 2007, 189.

23 J. T. Peña 2007, 190.

24 G. Lipovac Vrkljan 2008, 5–7, figs. 4–5.

25 A. Starac 2006, 1–2.

26 A. Starac 2006, 4.

poklopcem, ispunjen morskim šljunkom (žalom). Amfore u donjem sloju uglavnom su sadržavale sediment, dok su one pri vrhu sloja uglavnom prazne i bez poklopca. Većina pronađenih amfora cjeloviti su primjerci te pripadaju tipu Lamboglia 2.²⁵ Također su prisutni i prijelazni oblici između Lamboglia 2 i Dressel 6A tipa. Sveukupno, radi se o oko 2000 amfora. Taj je sloj nastao tijekom izgradnje javnih kupelji u Puli radi niveliranja nagnutog terena na kome se gradilo.²⁶

4.2. Posude za sadnju

Činjenica da su gotovo sve (osim tri) amfore ukopane u tlo s nogom prema dnu i da im nedostaje grlo ukazuje na još jednu mogućnost koju je moguće vidjeti na lokalitetu Abu Hummus (Egipat). Ondje je nađena velika količina amfora u kontekstu koji jasno sugerira njihovu upotrebu kao posuda za sadnju.²⁷ Količina amfora kao i prostorni raspored upućuju na nivo sistematizirane sadnje. Na lokalitetu nalazimo tri tipa korištenih posuda: amfore bez vrata, grla amfora i gornji (narebreni) dijelovi amfora vratom zakopani prema dolje („upside down amphorae“), koji pripadaju amforama tipa Amphore Égyptienne 3 (AE 3) u raznim varijantama, dok su neke amfore neodređenog tipa. Svi tipovi amfora nađeni na Abu Hummusu čine korpus od 1367 amfora, raspoređenih u redove s pravilnim razmacima. Lokalitet ima tri glavne faze – kamena gradnja datirana u ptolemejsko ili ranorimsko doba (1. st. pr. Kr.), ciglena gradnja i renovacija koje ukazuju na vrijeme od sredine 1. st. pr. Kr. do 1. ili 2. st., dok najmlađi tipovi amfora pripadaju u 2. i 3. st.²⁸ Na osnovi iskopavanja napravljen je okvirni izračun veličine rasadnika te procijenjena količina amfora na cijeloj izračunatoj površini rasadnika ukazuje na moguće postojanje oko 10000 komada.²⁹

Grla amfora, amfore bez dna ili amfore vratom zakopane prema dolje moguće da su bile korištene za rast sadnica, kao i za njihov transport. Široki otvori tih *vertex amphorae* upućuje na njihovu upotrebu za rast mladica dobivenih presađivanjem ili cijepljenjem.³⁰

Plinije Stariji u svom se djelu *Naturalis Historia* osvrće na upravljanje rasadnicima te ističe da neke biljke bolje rastu ako se uzgajaju u rasadnicima prije transporta. Nadalje, Plinije i Katon preporučuju da se neke biljke (stabla) radije uzgajaju od mladice nego od sjemenke.³¹

Kenawi, Macaulay-Lewis i McKenzie navode još nekoliko primjera korištenja amfora kao posuda za sadnju s drugih lokaliteta koji predstavljaju vrtove ili rasadnike. Tako navode Pompeje kao mjesto s dva rasadnika i nekoliko

down and missing their neck indicates yet another possible purpose – such as the one found at Abu Hummus site in Egypt. The context of the large quantity of amphorae found there clearly indicates they were used for planting.²⁷ Their quantity and spatial arrangement indicate the level of systematized planting. Three types of vessels can be found on that site: amphorae without neck, amphora necks and upper (ribbed) parts of amphorae with their necks downward (“upside down amphorae”). They belong to various subtypes of the Amphore Égyptienne 3 (AE 3) type. Some belong to unidentified types. A total of 1,367 amphorae of all types were found at Abu Hummus, arranged in lines at regular intervals. Three main phases were established at the site: a stone structure dated to the Ptolemaic Period or early Roman Period (1st century BC); a brick structure and renovations probably belong to the period between the mid-1st century BC and the 1st or 2nd centuries AD; and the latest amphora types belong to the 2nd and 3rd centuries AD.²⁸ Based on the excavations, a rough estimate of the area of the nursery-garden was made. The overall number of amphorae on the entire area was estimated at 10,000 specimens.²⁹

It is possible that the amphora necks, baseless amphorae or amphorae buried with their necks downwards were used for planting of seedlings and for their transport. The wide mouths of these *vertex amphorae* indicate they were used for the growth of green shoots (slips for planting or grafts).³⁰

In his work *Naturalis Historia*, Pliny the Elder dwells on nursery management and points out that some plants grow better if they are grown in nurseries before transport. Also, Pliny and Cato recommend that some plants (trees) should better be grown from green shoots than from seeds.³¹

Kenawi, Macaulay-Lewis and McKenzie give a few more examples of the use of amphorae as planting pots in gardens or nurseries at several other sites. For example, they mention Pompeii as a place with two nurseries and several commercial gardens in an urban context. After the AD 62 earthquake, the house VII.xi.1 was turned into a nursery. Part of the nursery is fenced off with buried amphorae the upper parts of which were removed. The amphorae were filled with earth so that seeds could sprout inside them.³² It seems that amphorae were reused as planting pots in Italy in the period between the 1st century BC to the 3rd century AD. Also, Gardens of Lucullus (*Horti Lucullani*) were identified on Rome's Pincian Hill.

25 A. Starac 2006, 1–2.

26 A. Starac 2006, 4.

27 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015.

28 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 209–211.

29 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 212.

30 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 214.

31 Plin. *Nat.hist.* 17. 12., Cato. *Agr.* 133.

27 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015.

28 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 209–211.

29 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 212.

30 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 214.

31 Plin. *Nat.hist.* 17. 12., Cato. *Agr.* 133.

32 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 215.

komercijalnih vrtova u urbanom kontekstu. Kuća VII.xi.1 pretvorena je u rasadnik nakon potresa 62. godine. Dio rasadnika na jednom je dijelu ograđen ukopanim amforama čiji su gornji dijelovi odstranjeni te su napunjene zemljom kako bi u njima klijalo sjeme.³² Čini se da su se iskorištene amfore koristile kao posude za sadnju na talijanskom tlu od 1. st. pr. Kr. sve do 3. st. Također, na rimskom brdu Pincian ubicirani su Lukulovi vrtovi (*Horti Lucullani*) gdje je nađena velika količina raznih posuda za sadnju koje uključuju (uz *ollae perforatae*) i niz amfora iz 1. st.³³ Nedavna istraživanja na lokalitetu *Templum Pacis* u Rimu ukazuju na ponovnu upotrebu amfora kao posuda za sadnju. U Oplontisu, na položaju vile A, nađen je gornji dio amfore koji je sadržavao limunovo drvo koje je presađeno od sadnice. Taj je nalaz važan jer ukazuje na činjenicu da je drvo najvjerojatnije posađeno na drugom mjestu te je zatim transportirano u vrt vile, s obzirom na to da su se sadnice uzgajale u rasadniku ili na plantaži.³⁴

Prikaz upotrebe amfore vidljiv je na tipičnoj grčkoj posudi tipa *lekythos*, nađenoj u mjestu Karlsruhe, na kojoj je prikazan Adonis kako daruje Erosa sadnicom koja se nalazi u grlu amfore, dok je drugo grlo sa zasađenom biljkom prikazano na podu.³⁵

Manja amfora s perforiranim tijelom nađena je (uz *ollae perforatae*) u Herkulovu vrtu, također u Pompejima.³⁶

Jedan od vrtova u Horacijevoj vili u Licenzu (sjeverno-istočno od Rima) sadrži „cilindrično ovoidnu“ amforu zakopanu naopako, bez dna – uz druge posude za sadnju. Ta je amfora bila ispunjena sastavom zemlje karakterističnim za gnojivo.³⁷

Nadalje, u Hadrijanovoj vili pri iskapanju područja zvanog „Canopus“ nađene su *ollae perforatae* i amfore. Amfore kojima se mogao odrediti tip pripadaju sjevernoafričkom tipu datiranom u prvu polovinu 2. st. Grla amfora perforirana su na tri mjesta i zakopana obodom prema dolje, a stijenske su raspuknute zbog pritiska korijena na njih. Tako gusti niz amfora sugerira da je unutar njih rasla neka vrsta živice, a s obzirom na to da su stijenske napuknute, pretpostavlja se da je rasla u amforama neko duže vrijeme.³⁸

Amfore i druge posude cijelih stijenki u kojima se sadilo ukazuju na činjenicu da su se biljke vjerojatno često mijenjale ili su bile podrezivane (kako im se korijen ne bi razgranao). Pri iskapanju na dijelu zvanom *Teatro greco* u Hadrijanovoj vili, uz stražnji zid proscenija nađene su polovice amfora u tri rova (rov br. 33 – 7 kom, rov br. 35 – 1 kom,

Large quantities of various planters were found there, including numerous 1st-century AD amphorae (next to *ollae perforatae*).³³ Recent excavations at *Templum Pacis* site in Rome indicate that amphorae were reused as planting pots. In Oplontis, at the site of “Villa A”, the upper part of an amphora was found, containing a lemon tree transplanted from a seedling. It is an important find because it indicates that the tree was most likely planted elsewhere and was subsequently transported to the villa’s garden – because seedlings were usually grown in nurseries or on plantations.³⁴

The *lekythos* – a typical Greek vessel – found in Karlsruhe shows one secondary use of an amphora: Adonis is shown as presenting an Eros with a seedling depicted on the amphora’s neck, while the other neck with a growing plant is depicted on the ground.³⁵

A smaller amphora with a perforated body was found (next to *ollae perforatae*) in the Garden of Hercules, also in Pompeii.³⁶

In one of the gardens in Horace’s Villa in Licenza (northeast of Rome), a “cylindrical-ovoid” amphora was found buried upside down. It was found next to other planters and its base was missing. The amphora was filled with a soil typically used as manure.³⁷

Also, in Hadrian’s Villa, *ollae perforatae* and amphorae were found during the excavations at the site called Canopus. It was established that the amphorae were of a North African type dated to the first half of the 2nd century AD. Their necks are perforated in three places and are buried with their rims down. The walls cracked due to the pressure of the roots. Such a dense pattern of amphora arrangement indicates that some sort of a hedge was grown in them. As their walls are cracked, it is believed that the hedge grew in the amphorae for a longer period of time.³⁸

Amphorae and other vessels with intact walls indicate that plants were probably often replaced or were pruned (so that their roots would not branch out). The excavations at the site known as *Teatro greco* in Hadrian’s Villa, at the back wall of the proscenium, amphorae halves were found in three ditches (Ditch 33 – 7 specimens; Ditch 35 – 1 specimen; Ditch 41 – 2 specimens). They belonged to the decorative garden on the terrace.³⁹ For this secondary use, the amphorae were modified and buried (planted?) in the same way as those in Abu Hummus – rims downwards and lower halves upright. Bases were removed

32 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 215.

33 Budući da konsenzusa oko točne lokacije vrtova još nema, uzeti s dozom opreza.

34 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 217.

35 D. Burr Thompson, R. E. Griswold 1982, 35, fig. 50.

36 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 217.

37 K. Gleason, J. C. Schryver, L. Passalacqua 2006, 85.

38 W. F. Jashemski, E. S. Prina Ricotti, J. Foss 1992a, 581–584, figs. 5, 7.

33 Since there is still no consensus about the exact location of the Gardens, this should be taken with reserve.

34 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 217.

35 D. Burr Thompson, R. E. Griswold 1982, 35, fig. 50.

36 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 217.

37 K. Gleason, J. C. Schryver, L. Passalacqua 2006, 85.

38 W. F. Jashemski, E. S. Prina Ricotti, J. Foss 1992a, 581–584, figs. 5, 7.

39 R. Hidalgo 2012, 26–27.

rov br. 41 – 2 kom), a bile su dio ukrasnog vrta na terasi.³⁹ Pri ponovnoj upotrebi, amfore su kao posude za sadnju modificirane i ukopane (zasađene?) na isti način kao i u Abu Hummusu – grla su ukopana obodom prema dolje, a donje polovice ukopane su uspravno. Na većini su zbog drenaže odstranjena dna. Promjer amfora je 25 cm, a međusobni razmak 35 cm.⁴⁰

Dokazi o raznim sadnjama nađeni su na jugozapadnom dijelu Palatina, u otvorenom okrugu gdje se nalazio Elagabalov hram i šumarak posvećen istočnjačkom bogu sunca. Tragovi sađenja nađeni su u tri gredice u smjeru istok-zapad, a između njih je prolazila staza od utabane zemlje. Isti uzorak vidi se na istočnoj strani ulice 281, s dužim gredicama. Oba niza gredica bila su paralelna s južnom stranom hrama. Sjeverno od gredica položenih u smjeru istok-zapad nalaze se još dva niza biljaka u amforama. Manje amfore ukopane su uz veće rupe u živcu, koje su sadržavale amfore većih dimenzija. Veće amfore pripadaju tipu *Africana I*, dok su manje identificirane kao *Schöne-Mau XXXV*. Oba tipa dolaze u varijantama grla i amfora bez donjeg dijela. Ostale amfore nađene kao posude za sadnju pripadaju tipovima nađenim u Ostiji u ranom 3. st., kao i male tripolitanske vinske amfore iz Tunisa datirane u drugu pol. 2. st. Na lokalitetu su nađene i dvije afričke amfore kasnog 2. i ranog 3. st., kao i amfora velikog otvora, podrijetlom iz grada Kume, čija je upotreba rasprostranjena širom italskog poluotoka u ranocarskom periodu, a služila je za prijevoz voća i možda vina.⁴¹

Amfore pronađene u kontekstu ponovne upotrebe kao posude za sadnju proizvođene su diljem cijelog Carstva, od italskog poluotoka do sjeverne Afrike. Većina ih je modificiranog tijela – prepiljene napola, s rupama na tijelu, sami vratovi, dna. Biljke koje su transplantirane u druge rasadnike i vrtove bile su prenošene i u manjim posudama (*ollae perforatae* ili u košarama).

4.2.1. Amfore kao dio vrta u sepulkralnoj funkciji

U rimskoj funerarnoj tradiciji javlja se pojam pogrebnih vrtova. Oni su mogli biti okruženi zidovima, imati veliku selekciju zasađenih biljaka i stabala, kao i razne druge dodatke za okrpju gostiju, poput zdenaca, bazena, prostorija za gozbe i ostale opreme. Takve bogate grobnice u skladu su s rimskim načinom razmišljanja i odražavaju rimsku sklonost prema vrtovima / uređenju prostora. Također, na neki način preslikavaju idilični krajobraz Elizeja na ovozemaljski prostor.⁴²

U rimskim provincijama vrtne su grobnice znale biti smještene na nepravilnim dijelovima zemlje, između parceliziranih čestica pogodnih za obradu, najčešće trokutastog

from most of them to enable drainage. Their diameter is 25cm and the distance between them 35cm.⁴⁰

Evidence of planting was also found in the southwestern part of the Palatine Hill, in an open area with the Temple of Elagabalus and a grove dedicated to the oriental sun god. Traces of planting were found in three garden beds oriented in east-west direction, with beaten paths between them. The same pattern can be seen on the eastern side of street 281, with longer garden beds. In both cases, the beds were parallel with the temple's southern side. To the north of the east-west oriented beds, two more lines of plants in amphorae can be seen. Smaller amphorae were buried next to the large holes in bedrock that contained larger amphorae. The larger specimens belong to *Africana I* type and the smaller ones to *Schöne-Mau XXXV* type. Both types have varied necks and their bases are missing. Other amphorae reused as planters belong to the types found in Ostia in the early 3rd century AD. Small Tripolitanian wine amphorae from Tunisia, dated to the second half of the 2nd century AD, can also be found there. There were also two African amphorae from the late 2nd and early 3rd centuries AD and a wide-mouthed amphora from the city of Cuma. The latter one was widespread throughout the Italic Peninsula in the Early Imperial Period. It was used for transport of fruits and, perhaps, wine.⁴¹

The amphorae reused as planters were produced throughout the Empire, from Italic Peninsula to Northern Africa. Most of them were modified – they were sawn in half, their bodies were drilled, or the necks and bases were detached from the rest of the body. The plants which were to be transplanted to other nurseries and gardens were also transported in smaller vessels (*ollae perforatae* or in baskets).

4.2.1. Amphorae in sepulchral gardens

Sepulchral gardens are a phenomenon known in the Roman funerary tradition. They would be encircled with walls and contain a wide variety of plants and trees and amenities for visitors like wells, pools, banquet halls and the like. Such tombs were fully in line with Roman ideas about life. They reflect their affection for gardens / environmental design. In a way, they are a copy of Elysium in this-worldly life.⁴²

In Roman provinces, garden tombs would be located on asymmetrical parts of land, between land plots suitable for farming. Usually their ground plan would be triangular (*subcesiva*). Such tombs functioned as boundaries between the large land plots set aside for farming. They

39 R. Hidalgo 2012, 26–27.

40 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 217–218.

41 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 219–220.

42 J. M. C. Toynbee 1982, 95.

40 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 217–218.

41 M. Kenawi, E. Macaulay-Lewis, J. McKenzie 2015, 219–220.

42 J. M. C. Toynbee 1982, 95.

tlocrta (*subcesiva*). Takve su grobnice zapravo predstavljale granice između većih obradivih parcela i bile su odijeljene zasađenim drvećem, ukopanim spaljenim ostatcima ili keramičkim posudama blizu spomenika.⁴³

Grobnice s nekom vrstom vrta, koje se pojavljuju od druge polovine 1. st., nazivaju se *cepotaphium* (grč. *kepos* „vrt“, *taphos* „grobница“). U tu se kategoriju ubraja širok spektar značenja riječi vrt – od najosnovnijeg vrtnog ukrasa do ogromnih zasađenih parcela koje su mogle sadržavati vinograde, voćnjake i velike rasadnike.⁴⁴ Pojava je prvotno je vezana za grčki kulturni krug, a u Aleksandriji je potvrđena u Strabonovim opisima. Taj se izraz javlja u rimskim natpisima 25 puta, a u pisanim izvorima ni jednom.⁴⁵ U Aleksandriji je na taj način postignut uzgoj i na grobnim parcelama, što je moglo predstavljati i unosan posao.⁴⁶

U rimskom se svijetu tako uređen prostor različito naziva, u skladu s njegovim različitim namjenama. *Pomarium* je voćnjak i predstavlja parcelu koja donosi prihode. Prihodi su mogli biti iskorišteni za uređenje grobnice ili za osobni profit. *Viridarium* je zeleni prostor unutar popločenog ili ograđenog prostora. Takav prostor nije definiran komercijalnom svrhom, već ima ukrasnu svrhu. *Paradeisos* je vrsta luksuznog ukrasnog vrta naseljenog i pticama, cvrčcima. Izraz je bliži rajskom vrtu nego običnom zelenom prostoru. *Lucus* pripada potpuno različitoj kategoriji – predstavlja šumsko mjesto naseljeno božanstvom, mjesto izvan ljudskog svijeta.⁴⁷

Često su zapravo takvi rasadnici, voćnjaci ili vinogradi zasađeni oko grobnice zarađivali dovoljno novca da sami sebe održe, pa čak i da vlasniku donesu profit. Novac od prihoda koristio se za financiranje raznih svetkovina (npr. *Parentalia* u veljači, festival ljubičica početkom proljeća, festival ruža između svibnja i srpnja...) i rođendana pokojnika.⁴⁸

Amfore nađene prilikom zaštitnog istraživanja na Ždrijacu ipak ne pokazuju tendenciju prema nekom određenom uzorku ili tlocrtnoj dispoziciji koju smo vidjeli na italiskim i afričkim primjerima recikliranih amfora u kontekstu rasadnika i/ili vrtova, iako je moguće da su se u tom smislu koristile. Isto tako neke su amfore grupirane na malom, dok su druge raširene na širem području, što sugerira da vjerojatno nisu u pitanju jednake biljke u svim amforama – neke vrste stabala i grmova zahtijevaju više mjesta za krošnju. Geotehnička ili hidrološka funkcija također je moguća, ali je tlocrtna dispozicija amfora prerijetka za bilo kakvo utvrđivanje obale ili drenažu područja, kao i za dizanje razine tla. Moguća je također i uređenost prostora u smislu nekakvog rasadnika ili voćnjaka oko grobnih parcela, na tlu koje nije

were separated from them with trees, buried incinerated remains or ceramic vessels next to monuments.⁴³

Tombs with some sort of gardens first appeared in the second half of the 1st century AD. They were called *cepotaphium* (Greek *kepos* for “garden” and *taphos* for “tomb”). These gardens ranged from elementary decorations to vast planted land plots that could contain vineyards, orchards and large nurseries.⁴⁴ Such gardens were originally typical of Greek culture. Strabo describes them in Alexandria. The expression was found in 25 Roman inscriptions, but written sources do not mention it.⁴⁵ In Alexandria, growing plants on sepulchral land plots was probably even turned into a lucrative business.⁴⁶

There were various names for such spaces in the Roman world, depending on their various functions. *Pomarium* was an orchard, and such a land plot was intended to make profit. The profit could be used for improvement of the tomb or as a personal profit. *Viridarium* was the green area inside a flagged or walled-in area. Its purpose was decorative, not commercial. *Paradeisos* was a luxurious garden of a sort, which also contained birds and cicadas. The term indicates its similarity to the Garden of Eden, as opposed to some ordinary green area. *Lucus* was a different category – a forest abode of a deity, a place out of this world.⁴⁷

Such nurseries, orchards or vineyards planted around a tomb would often earn enough money for their maintenance, even for additional profit for their owner. The profit would be used for financing various festivities (e.g. *Parentalia* in February, the festival of violets in early summer, the festival of roses between May and July...) and birthdays of the deceased.⁴⁸

The amphorae found during the rescue excavations on Ždrijac do not seem to reflect some of the above described patterns or ground plans found in Italy and Africa, where amphorae were reused in the context of nurseries and/or gardens, although it is possible that they were used for such a purpose. Also, some of the Ždrijac amphorae are grouped within a small area, while the others are grouped with a larger distance between them. This suggests that the plants they were used for were not the same: some trees and bushes need more space for their crowns. It is also possible that these amphorae had a geotechnical or hydrogeological function, but the distance between them is too large to indicate coast stabilization, land drainage, or ground elevation. Another possibility is that it was a nursery or an orchard around sepulchral

43 J. Bodel 2018, 201.

44 J. Bodel 2018, 203.

45 J. Bodel 2018, 210.

46 J. Bodel 2018, 214.

47 J. Bodel 2018, 215–221.

48 J. Bodel 2018, 222.

43 J. Bodel 2018, 201.

44 J. Bodel 2018, 203.

45 J. Bodel 2018, 210.

46 J. Bodel 2018, 214.

47 J. Bodel 2018, 215–221.

48 J. Bodel 2018, 222.



Slika 16. Druga vojna katastarska izmjera Habsburške Monarhije, sredina 19. st., na podlozi Google Maps prikaza Ždrijaca
Figure 16. Second military cadastral survey, Hapsburg Monarchy, mid-19th century, against the backdrop of Google Map of Ždrijac

priređio / prepared by: D. Taras

inače bilo pogodno za uzgoj kultura zbog svoje kvalitete i blizine mora, ali bi trebalo definirati nekropolu ili grobnu parcelu uz koju je vezan.

5. ZAKLJUČAK

Lokalitet na Ždrijacu zasigurno predstavlja neku vrstu intervencije u prostoru. Radi se o amforama bez vrata, ukopan u sterilni sloj ždrijačkog pijeska. Razmak između amfora varira od nekoliko centimetara do nekoliko desetaka centimetara. Uzevši u obzir da je more u doba kada su amfore tipa Lamboglia 2 proizvođene i upotrebljavane bilo oko 2 m pliće, obala je bila mnogo dalje nego što je danas, a i sam predio između Ždrijaca i rimske *Aenonae* drukčije je izgledao.⁴⁹ Katastarska karta Habsburške Monarhije s početka 19. st. prikazuje poluotok Ždrijac s mnogo većom površinom nego danas (sl. 16).⁵⁰

Ta činjenica možda negira geotehničku ili hidrotehničku namjenu tih posuda. Njihov tlocrtni raspored također

land plots, on the soil that was otherwise not suitable for planting due to its poor quality and the vicinity of the sea. However, a necropolis or sepulchral land plot it possibly belonged to should be identified first.

5. CONCLUSION

The Ždrijac site certainly reflects an alteration in space of a sort. The amphorae found there have no necks and are buried in the sterile layer of the Ždrijac sand. The distance between them varies from several centimeters to several dozens of centimeters. We should keep in mind that, in the period when Lamboglia 2 amphorae were produced and used, the sea was approx. 2 meters shallower, the coastline was much further than it is today and even the tract between Ždrijac and Roman *Aenona* looked different.⁴⁹ According to an early-19th century cadastral map of the Hapsburg Monarchy, Ždrijac Peninsula was much bigger than it is today (Fig. 16).⁵⁰

49 B. Ilakovic 1996, 84–85.

50 <https://mapire.eu/en/map/cadastral/?layers=osm%2C3%2C4&bbox=1686277.5027723839%2C5501646.825719201%2C1695239.7443388207%2C5505468.6771334605> (23. 7. 2019).

49 B. Ilakovic 1996, 84–85.

50 <https://mapire.eu/en/map/cadastral/?layers=osm%2C3%2C4&bbox=1686277.5027723839%2C5501646.825719201%2C1695239.7443388207%2C5505468.6771334605> (23 July 2019).

odudara od hortikulture ili rasadničke namjene. Možda se pojava ukapanja amfora može pridružiti nekoj kulturnoj funkciji s obzirom na otkrivene rimske grobove u blizini? Konačni zaključak moći će se dati nakon istraživanja drugog dijela plaže Ždrijac u obalnom dijelu, po mogućnosti tijekom većih oseka. Na taj način upotpunili bismo sliku o točnom rasporedu ili pronašli neke druge indikativne strukture i ostatke koji bi nas usmjerili prema sigurnijem zaključku o funkciji ukopanih amfora.

This perhaps rules out the possibility that the amphorae were used for a geotechnical or hydrogeological purpose. The pattern of their distribution also differs from the one usually used in landscape design or nurseries. Maybe these buried amphorae had some cult purpose, as Roman graves were found in the vicinity? For a final conclusion, the other part of Ždrijac Beach, the one closer to the coast, should be researched, preferably during very low tide periods. It would contribute to our insight into the ground plan pattern of the amphorae or reveal some other structures or remains enabling more positive conclusions about the purpose of the buried amphorae.

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