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Pogled
skozi steklo

*A Look
through the Glass*



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Irena Lazar

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Predgovor

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Generalna skupščina Združenih narodov je na pobudo Mednarodne komisije za steklo (ICG), združenj ICOM Glass in Community of Glass Associations (CGA), 18. maja 2021 leto 2022 razglasila za mednarodno leto stekla (International Year of Glass 2022 – IYOG 2022).¹ Med več kot 1.100 podporniki iz 74 držav je bila tudi Slovenija, med njimi Fakulteta za humanistične študije Univerze na Primorskem. Leto z organizacijo različnih dogodkov po vsem svetu poudarja pomembno vlogo stekla v današnjem življenju in posebej izpostavlja znanstveni, tehnološki in gospodarski pomen tega pogosto spregledanega prosojnega materiala. Steklo je prav tako izjemno pomemben medij v umetnosti in njegov zgodovinski razvoj je nedeljiv del napredka ter razvoja človeštva.

Vizija mednarodnega leta stekla 2022 je praznovati preteklost, sedanost in bodočnost tega izjemnega ter spremenljivega materiala in slediti ciljem Agende 2030 Združenih narodov. Z željo poudariti vlogo stekla v napredku in razvoju človeštva skozi zgodovino ter predstaviti vlogo in pomen znanstvenih raziskav o antičnem steklu tako v raziskovalnih kot v muzejskih institucijah, smo pripravili monografijo z naslovom *Pogled skozi steklo/A Look through the Glass*.

Avtorica in mednarodno uveljavljena raziskovalka antičnega stekla, ki je med drugim organizirala tudi 19. svetovno konferenco raziskovalcev stekla leta 2012 v Sloveniji (AIHV – Association Internationale pour l’histoire du verre), v njej predstavlja nabor člankov o razi-

skavah antičnega stekla v Sloveniji in njenem sosedstvu, ki so plod njenega raziskovalnega dela v zadnjem desetletju. Zbrani so v treh glavnih sklopih oz. poglavjih.

Prvo poglavje, naslovljeno »Razvoj steklarstva na območju jugovzhodnih alp in sosedstva«/»Development of Glassmaking in the South-East Alpine Area and Its Vicinity«, predstavlja razvoj antične steklarske obrti in zadnje rezultate raziskav na območju Slovenije ter njenega sosedstva v dveh preglednih člankih. Med drugim predstavlja dokaze o lokalni proizvodnji rimskega stekla v Celeji in Petovionii ter o novih najdbah v sosednjih državah in izjemno najdbo oljenke z upodobitvijo rimske steklarske peči z najdišča Križišče pri Spodnjih Škofijah v bližini Kopra, ki v svetovnem merilu predstavlja eno najpomembnejših odkritij 21. stol.

Drugo poglavje z naslovom »Najdišča in gradivo«/»Sites and Finds« prinaša poglobljene študije uvodoma izpostavljenega gradiva, ki so v veliki meri plod raziskav antičnega stekla, odkritega med obsežnimi arheološkimi raziskavami med gradnjo avtocestnega križa v Sloveniji. Izpostavljeni so predvsem tisti sklopi najdb, ki predstavljajo zaokrožene celote in imajo izjemen pomen tudi v svetovnem merilu. Omenimo najdbe zgodnje imperialnega stekla intenzivnih barv, bogat sklop luksuznega dekoloriranega oz. razbarvanega stekla z vrezanim okrasom z najdišča Ribnica pri Brežicah (*Romula*), importe v kalupu narejenih posod, med katerimi velja izpostaviti čašo s podpisom steklarskega mojstra *Enniona*, ki je zaenkrat prva taka najdba pri nas,

¹ <https://www.iyog2022.org/>

ter nove odlomke čaše z upodobitvami bogov iz Celja (*Celeia*). Poglavje zaključuje pregled steklenega gradiva rimskega grobišča iz Budve v Črni gori, ki ga je avtorica kot specialistka obdelala na povabilo kolegov iz Črne gore.

O pomenu interpretacije in posredovanja raziskovalnih rezultatov javnosti govori tretje poglavje z naslovom »Steklo kot muzejski predmet«/»Glass as a Museum Object«. Steklene najdbe so po opravljenih analizah ter raziskavah predane v muzeje in tam nadaljujejo svoje življenje kot muzejski predmeti, ki z ustrezno interpretacijo o sebi lahko pripovedujejo različne zgodbe in na ta način približajo raziskovalne rezultate ter našo kulturno dediščino najširši publiki. Rimska steklenica s Ptuja, z upodobitvijo aleksandrijskega svetilnika, je izdelek s kakovostnim brušenim okrasom, ki je nastal po naročilu v aleksandrijskih delavnicah. S svojim motivom nam na eni strani govori o bogastvu in moči antične Aleksandrije, na drugi pa o premožnih prebivalcih Petovione, ki so si lahko privoščili vrhunske umetniške dosežke rimske steklarke obrti. Več stoletij mlajše gradivo brodoloma pri Gnaliću na Hrvaškem nam priča o usodi beneške trgovske ladje z izjemnim steklenim tovorom, ki s svojim bogastvom in raznolikostjo ni samo dokaz bogate beneške proizvodnje stekla, ampak tudi trgovskih povezav med Evropo in Osmanskim cesarstvom.

Posamezni predmeti, ki so obravnavani in objavljeni v tej monografiji, so bili v teku mednarodnega leta stekla 2022, ki smo ga obeležili v sklopu vseslovenskega muzejskega projekta Po stekleni poti/Along the Glass Trail, predstavljene tudi v vitrinah meseca po številnih slovenskih muzejih.

Pričujoča monografija je tako rezultat dolgoletnega arheološkega raziskovalnega dela na področju materialne kulture antike, ki hkrati odpira pot promociji znanosti in znanstvenih dosežkov, namenjeni javnosti. Monografija je kot e-publikacija in prva v monografski seriji *Libri Universitatis Hereditati* prosto dostopna vsem raziskovalcem doma in po svetu, študentom in ostali javnosti, da spoznajo najnovejše

najdbe antičnega stekla z območja današnje Slovenije in se hkrati seznanijo z zadnjimi rezultati raziskovalnega dela na področju tega sklopa materialne kulture.

Foreword

Zrinka Mileusnić

On the initiative of the International Commission on Glass (ICG), ICOM Glass and the Community of Glass Associations (CGA), the United Nations General Assembly declared the International Year of Glass 2022 – IYOG 2022 on 18 May 2021.¹ Among the 1.100 supporters plus of the initiative from 74 countries, were also Slovenia and the Faculty of Humanities of the University of Primorska.

Various events throughout the world, organized within the remit of the International Year of Glass, have drawn attention to the significant role that glass occupies in today's life, as well as highlighting the scientific, technological and economic importance of this transparent material, which has often been overlooked. Glass is also an extremely important medium in the art and its historical evolvement forms an inseparable part of the progress and development of humanity.

The aim of the International Year of Glass 2022 was to celebrate the past, present and future of such an extraordinary and adaptable material, while also following the goals of the United Nations' 2030 Agenda. The monograph entitled *Pogled skozi steklo/A Look through the Glass* wishes to emphasize the role of glass in the progress and development of humankind throughout history, as well as to present the role and importance of scientific research on ancient glass, both within research institutions and museums.

The author of the monograph, an internationally renowned researcher of ancient glass, who also organized the 19th World Conference of Glass Researchers in 2012 in Slovenia (AIHV – Association Internationale pour l'histoire du verre), introduces the research on ancient glass in Slovenia and its surrounding area through a set of articles, which are the fruit of her research during the past decade. The articles are arranged into three main sections. The first section, entitled “The Development of Glassmaking in the South-East Alpine Area and Its Vicinity”, consists of two review articles on the development of ancient glassmaking, and presents the results of the latest research endeavours in the territory. Among other points of discussion, the section highlights evidence of the local production of Roman glass in *Celeia*, and *Poetovio*, along with new finds in neighbouring countries. An exceptional find of an oil lamp depicting a Roman glass furnace from the Križišče site near Spodnje Škofije and Koper in Slovenia represents one of the most important discoveries of the 21st century on a global scale.

The second section, entitled “Sites and Finds”, brings forth in-depth studies of the materials presented in the introduction. These studies are the result of extensive research into ancient glass discovered while investigating the archaeological finds retrieved during the construction of the highway cross in Slovenia. The focus is principally on sets of findings, which represent coherent wholes, thus highlighting their exceptional worldwide significance. Special attention

¹ <https://www.iyog2022.org/>

on is drawn to the finds of mould-made early imperial monochrome glass, a rich set of luxurious decoloured glass with incised decoration from the site of Ribnica near Brežice (*Romula*), and imports of mould-made vessels, particularly a beaker signed by Master Ennion, notably the first such find in Slovenia so far, as well as new fragments of a mythological beaker from Celje (*Celeia*). The chapter concludes with an examination of the glass material from the Roman burial site from Budva in Montenegro, which the author processed as an expert guest, at the invitation of her Montenegrin colleagues.

The third chapter, entitled “Glass as a Museum Object”, discusses the importance of interpreting and communicating research results to the public. Once analyzed and researched, the glass findings are handed over to museums, where they continue their lives as museum objects. Provided with an appropriate interpretation, they can tell different stories about themselves and thus bring research results closer to the widest audiences as part of our cultural heritage. Such a case is the Roman bottle from Ptuj (*Poetovio*) with the representation of the Alexandrian lighthouse, a product with high-quality engraved decoration, which was made to order in the Alexandrian workshops. On the one hand, its motif tells us about the wealth and power of ancient Alexandria, and on the other, about the wealthy residents of *Poetovio*, who could afford to order top artistic achievements from Roman glassmaking workshops. Another example comes from material retrieved from a shipwreck near Gnalić in Croatia, dated several centuries later, and testifying to the fate of the Venetian merchant ship with its extraordinary glass cargo. Its wealth and diversity are not only proof of rich Venetian glass production but also evidence of the trade connections between Europe and the Ottoman Empire.

The individual objects discussed and presented in this monograph were also displayed in showcases as exhibits of the month in various Slovenian museums during the celebrations of the International Year of Glass 2022, which was

part of the all-Slovenian museum project Along the Glass Trail.

The present monograph is thus the result of many years of archaeological research in the field of the material culture of antiquity, and also wishes to pave the way for the promotion of science and scientific achievements aimed at the public. As an e-publication and the first monograph in the series *Libri Universitatis Hereditati* it is freely accessible to all researchers at home and around the world, as well as to students and the wider public. We hope that they can gain an insight into the latest finds of antique glass from the area of present-day Slovenia and at the same time, learn about the results of the latest research work in this field of material culture.

Razvoj steklarstva
na območju
jugovzhodnih Alp
in sosedstva

Development
of Glassmaking
in the South-east
Alpine Area
and its Vicinity

Antična steklarska proizvodnja na območju jugovzhodnih Alp in vzhodnega Jadrana

Ancient Glass Production in the South-east Alpine Area and Eastern Adriatic

Izvlček

Intenzivne in specialistične raziskave antičnega stekla samostojno ali v sklopu novih arheoloških odkritij prinašajo vedno nove rezultate. Primerjave novih izsledkov v mednarodnem prostoru s stanjem raziskav pri nas omogočajo drugačno ali natančnejše ovrednotenje nekaterih do sedaj znanih dejstev ali hipotez. V tem kontekstu članek na novo osvetljuje stanje raziskav antične steklarske proizvodnje našega območja in bližnjega sosedsstva.

Ključne besede: rimsko steklo, steklarske delavnice, lokalna proizvodnja, JV Alpe, Jadran

Abstract

Intensive and specialized research on ancient glass by itself or in the frame of new archaeological discoveries constantly brings new results. Comparisons of new research results within the international area with the state of research in our area enable new or more precise evaluations of some of the so-far-known facts or hypotheses. In this context, the article newly evaluated the state of research on ancient glass production in the SE Alpine area and its vicinity.

Keywords: Roman glass, glass workshops, local production, SE Alps, Adriatic

Intenzivne in specialistične raziskave antičnega stekla tako samostojno ali v sklopu novih arheoloških odkritij prinašajo vedno nove rezultate (Nenna 2008; Fünfschilling 2015). Primerjave izsledkov mednarodnega prostora s stanjem raziskav pri nas omogočajo drugačno in natančnejše ovrednotenje nekaterih do sedaj znanih dejstev. V tem kontekstu na novo osvetljujemo stanje raziskav antične steklarske proizvodnje našega območja in bližnjega sosedsstva.

Prazgodovina

Najstarejše najdbe steklenih predmetov z območja jugovzhodnih Alp poznamo iz obdobja kulture žarnih grobišč. Grob 289 iz Dobove, datiran v 11. stol. pr. n. št., vsebuje najstarejšo pri nas po-

znano stekleno jagodo (Stare 1975, tab. 41: 3). V mlajših grobovih kulture žarnih grobišč, v času 9. in 8. stol. pr. n. št., postanejo steklene najdbe pogostejše in v grobovih večkrat najdemo priložene steklene jagode oz. ogrlice. Priložene jagode v teh grobovih so najprej zelo majhne (pr. 0,4–0,6 cm), večinoma modre in bele barve. Sčasoma pa se v številnih grobovih iz obdobja prehoda bronaste v železno dobo na najdišču Mestne njive v Novem mestu pojavljajo tudi večje modre jagode, okrašene z belimi ali rumenimi očesci (Križ 1995, tab. 57: 113; Križ in Turk 2003, 89).

V starejši železni dobi doživi stekleno okrasje v slovenskem in evropskem prostoru izreden razcvet v barvah in oblikah, prav tako pa se v tem času pri nas pojavijo prve steklene posode. Steklene jagode so običajno nanizane v dolge ogr-

lice, najdemo jih tudi našite na oblačilih. Jagode so okrogle, sodčaste, cevaste, oblikovane kot košarice, ovnove glavice ali ptice, nekatere imajo celo železne zanke za obešanje (Križ 1997, 38 spodaj). Barvne kombinacije so zelo pestre, okrasni motivi obsegajo valovnice, pike, cik-cak linije, očesca in aplikle drugobarvnega stekla (Haevernick 1974, 61; Križ in Turk 2003, 91, št. 19, 98–99). V gomili I iz Stične je bilo npr. najdenih 20.500 steklenih jagod, prav tako bogat pa je bil grob z Magdalenske gore, v katerem pa so našteali le 7.310 steklenih jagod (Haevernick 1974, 62). S steklom so bile okrašene in olepšane tudi nekatere okrasne zaponke – fibule. Med njimi so še posebej zanimive fibule ježevke, najdene npr. na Magdalenski gori, v Vačah, na Brezju in v Šmarjeti (Haevernick 1959, Taf. 1: 1–8). Lok teh fibul ima na bronastem žičnatem jedru obloge, oblikovane iz naravno prozornega modro-zelenkastega stekla z ježastimi aplikacijami. Oblogi iz temno modro obarvanega stekla, ki krasita fibuli iz Boštanja, sta okrašeni s steklenimi nitmi v kontrastni rumeni barvi, raztegnjenimi v cik-cak motiv, in z jagodami v obliki očesc (Haevernick 1959, Taf. 2: 8–9). Spet drugače sta izdelana loka fibul iz Rovišča, kjer je steklo jantarne barve v obliki spirale ovito okrog jedra, na sredini pa okras dopolnjujejo še steklene bunčice (Haevernick 1959, Taf. 2: 5–7). Fibule s stekleno oblogo se pojavljajo predvsem v 6. st. pr. n. št. (Gabrovec 1987, 49).

Izjemen pojav v grobovih jugovzhodnoalpskega prostora so tudi majhne posodice z vertikalnimi rebri na ostenju. Gre za izdelke, narejene v kalupu, ki so jim nato naknadno narebrili ostenje (Haevernick 1958a, 14; 1974, 65). V Sloveniji jih poznamo v 5. stol. pr. n. št. v Mostu na Soči in Črnljici pod Rifnikom (Haevernick 1958, Taf. 1: 4–5, 2, 3; 1, 2; Lazar 2004b, 49, kat. št. 4). Izdelane so iz naravno obarvanega, rahlo zelenkastega stekla, obarvanega stekla jantarno rjave barve ali iz modro obarvanega stekla v različnih odtenkih. Predvsem modre skodelice so pogosto okrašene z nitmi drugobarvnega stekla v ravnih ali cik-cak linijah. Posodice iz Mosta na Soči imajo tudi presegajoč, narebren ročaj (Haever-

nick 1958, Taf. 2: 3–6). Nekateri avtorji so domnevali, da so bile skodelice namenjene shranjevanju kozmetičnih proizvodov; glede na velikost in izdelavo ustja lahko potrdimo, da niso bile pripravne za pitje, prej za zajemanje tekočin.

Razvejani trgovski stiki kultur starejše železne dobe jugovzhodno alpskega prostora s svetom zahodnih in sredozemskih kultur se ne odražajo le v izbranih importih kovinskih ter keramičnih izdelkov, ampak tudi v steklenem gradivu. Mednje sodijo posodice, izdelane na jedru, izdelki steklarskih delavnic v Sredozemlju. Skoraj v celoti ohranjena posodica je bila najdena v Stični (Kastelic 1960, tab. 3: 2). Dvoročajna morda steklenička (*amforiskos*) je po ostenju okrašena z večbarvnimi nitmi stekla v cik-cak motivu, ki ga dopolnjujejo linije po vratu in ramenu. Odlomke enakih izdelkov poznamo tudi iz gomile v Šmarjeti (Dular 1991, tab. 29: 26–28). V obeh primerih gre po analogijah za izdelke sredozemskih delavnic iz obdobja 5. stol. pr. n. št. (Harden 1981, 77, pl. 11: 175–190).

Vprašanje lokalne proizvodnje

Izredno pestra paleta steklenih jagod in ostalih okrasnih predmetov v starejši železni dobi, s številnimi izvirnimi oblikami, barvami in okraši, najdenimi samo na tem prostoru, ponuja domnevo, da so tu morda delovale steklarske delavnice. Na to možnost je prva opozorila Elisabeth Haevernick, ki je preučevala jagode s slovenskih najdišč (1974, 65), in njena hipoteza je bila nato večkrat povzeta. Nove in številne najdbe, predvsem iz gomil na Kapiteljski njivi v Novem mestu (Križ 1997; Križ in Turk 2003), so v zadnjih desetletjih paleto barv in oblik steklenih jagod iz starejše železne dobe še obogatile.

Prav zaradi tega bi se zdela domneva o lokalni proizvodnji toliko verjetnejša. Žal pa imamo zaenkrat v celoti raziskanih predvsem veliko grobišč. Raziskanost prazgodovinskih naselbin, kjer bi lahko odkrili sledove steklarske obrti, je precej skromnejša. Poleg tega za izdelavo jagod zadošča že peč majhnih dimenzij, odpadkov je malo, zato je verjetnost, da bi odkrili ostanke take peči, majhna.

Poznavanje značilnosti steklarske proizvodnje, postopkov taljenja surovin za pridobivanje surovega stekla in trgovine s steklenimi ingoti že od bronaste dobe dalje (Bass 1986, 289), pa ponuja še nekaj prepričljivejših odgovorov. Najverjetneje je, da je steklo kot surovina prišlo v naše kraje oz. halštatska središča kot import ali rezultat trgovske izmenjave in je tu potekala le proizvodnja jagod. Druga možnost so tudi potujoči obrtniki, ki so se selili iz kraja v kraj, postavili peč in v času bivanja na izbrani lokaciji zadostili potrebam, željam ter okusu prebivalcev posameznih naselbin in morda tudi njenih sosed. Kakovost izdelave steklenih jagod iz Novega mesta, bogastvo okrasa in posebne oblike brez dvoma pričajo o izkušenih mojstrih, ki so odlično obvladali svojo obrt. Jagode bi bile lahko izdelane tudi v delavnicah izven našega ozemlja, vendar po naročilu in okusu odjemalcev oz. kupcev. Morda so ponekod služile celo kot neke vrste plačilno sredstvo. Taki primeri so poznani v srednjeveški steklarski industriji (Calvi di Coenzo 1996, 10).

V zadnjem času je analiza nekaterih oblik steklenih jagod, značilnih za negovski horizont, npr. amforic iz brezbarvnega stekla, pokazala, da gre brez dvoma za uvožene izdelke z območja Makedonije (Blečić Kavur in Kavur 2017, 101); tam so steklarske delavnice proizvajale raznolike in izjemno kakovostne izdelke iz brezbarvnega stekla za elito po postopku, ki so ga poznali že stari Asirci, nato pa se je preko Male Azije razširil in uveljavil tudi v Makedoniji (Ignatiadou 2016, 132, 136, slika 4). Razprostranjenost teh miniaturnih amforic, ki niso imele le okrasnega, ampak tudi apotropeski pomen, odraža široko razvejane stike sredozemskih središč tudi s prazgodovinskim svetom JV evropskih ter balkanskih kultur tekom 4. stol. pr. n. št. (Blečić Kavur in Kavur 2017, 107, slika 4; Rustoiu 2015, 367, slika 3). Te izmenjave odražajo na eni strani trgovino na dolge razdalje in na drugi socialne stike vrhnjega sloja, ki je z izmenjavo daril in eksogamijo potrdil politične, socialne in gospodarske zveze oz. zaveze (Rustoiu 2015, 372).

Še več pa nam o izvoru surovin in izdelkov povedo arheometrične analize. Te je v okviru svoje doktorske disertacije opravila Ana Franjić in prve izsledke predstavila na kongresu v Carigradu leta 2018 (Franjić idr. 2022) in najnovejše spomladi 2020 na simpoziju v Kopru.¹ Rezultati analiz so pokazali več skupin glede na sestavo stekla; kobaltno modro lahko vzporejamo z izdelki iz Nimruda v Mezopotamiji in iz Francije, skupina stekla, narejena z egipčanskim natronom, pa ustreza t.i. skupini levantinskega stekla (Franjić idr. 2022, 27). Ti rezultati kažejo, da je steklo v starejši železni dobi v te kraje prihajalo kot import in rezultat trgovine na dolge razdalje, kot surovo steklo in/ali kot izdelki. Če so slednje deloma izdelovali tudi na Dolenjskem, pa ostaja še odprto vprašanje.

Dokler nimamo neposrednih dokazov za izdelavo jagod v prazgodovinskih naselbinah, ostaja ideja o lokalni proizvodnji le hipoteza. Vse več pa je dokazov, da so surovine in izdelki prihajali k nam v okviru trgovine ter tudi kot izmenjava daril med elito.

Rimska doba

Rimska doba in razširitev rimske oblasti na obravnavano območje je skupaj z vsemi drugimi dosežki rimske civilizacije prinesla tudi novosti ter napredek v steklarski obrti, ki je v helenizmu in obdobju republike razvila številne novosti in tudi nove tehnike. Nobenih dokazov ni, da bi se prazgodovinska tradicija, povezana z uporabo stekla, nadaljevala v rimski čas. V teku 1. stol. pr. n. št. in 1. stol. n. št. so trgovske poti steklenih izdelkov do naših krajev pretežno vodile preko severne Italije (Lazar 2006b, 331; Horvat idr. 2020). Glavni trgovski center oz. emporij za področje JV Alp, Panonije in Balkana je bila Akvileja; tu so se zbirali izdelki iz severno italjskih delavnic pa tudi iz drugih centrov osrednje Italije. Redki dragoceni izdelki so prihajali tudi iz delavnic vzhodnega Sredozemlja in Egipta.

¹ Simpozij ARTE-FACTUM – Study Days on Ancient Glass je potekal med 6. in 8. marcem 2020 na UP FHŠ v Kopru, prispevki s konference so objavljeni v reviji *SUH* 2022, 10 (1).



Slika 1: Karta področja JV Alp in Jadrana z obravnavanimi najdišči (pripravil Andrej Preložnik).
Figure 1: Map of the SE Alpine and Adriatic area with sites mentioned in the text (elaborated by Andrej Preložnik).

Neposredne povezave s severno-italskimi in akvilejskimi delavnicami dokazujejo tudi na naših najdiščih odkriti izdelki, ki izvirajo iz teh delavnic (slika/figure 1). Odlomek dna večje pravokotne steklenice z odtisom oz. napisom *Sentia Secunda* iz Akvileje je bil najden v naselju oz. občestni in carinski postaji *Romula* (Ribnica pri Jesenicah na Dolenjskem) (Lazar 2005c, 41; 2020a). Delno ohranjen napis lahko primerjamo z dvema v celoti ohranjenima steklenicama iz groba v Linzu (Schwanzar 2003, 333, slika 2). Napis oz. odtis na dnu v treh vrsticah je odlično ohranjen (SENTIA SECVNDA FACIT AQ(vileia) VITR(earia)) in ga lahko prevedemo kot »izdelala Sentija Sekunda iz Akvile-

je«. Na osnovi primerjave lahko potrdimo, da je odlomek dna iz Romule prav tako pripadal dvo-ročajni steklenici, ki je nosila napis steklarke ali lastnice steklarske delavnice Sentie Sekunde iz Akvileje. Prvotno so napis oz. odtis interpretirali kot ime lastnice steklarske delavnice, saj naj bi bilo pihanje stekla prezahtevno, da bi ga lahko obvladala ženska (Calvi 1968, 12–13). Danes seveda vemo, da to ne drži, po drugi strani Marianne Stern (1997, 130) ugotavlja, da okrajšava VITR pomeni *vitrearius/ria* (lat. steklopihalec/-ka) in se torej nanaša na steklarja ali steklarko, medtem ko beseda *facit* (izdelal) neposredno kaže na mojstra, ki je posodo izdelal in ne na lastnika steklarske delavnice. Sodeč po obliki ohranjenih

steklenic iz Linza lahko sklepamo, da je *Sentia Secunda* delovala v drugi polovici 1. stol., njeni izdelki pa postali razširjeni in široko uporabni kot posode za shranjevanje ter transport.

Nova tehnika – nova odkritja

Najzgodnejši in najneposrednejši dokaz o pihanju stekla ter morda celo o širitvi novoodkrite steklarske tehnike na območju Jadrana brez dvoma predstavljajo oljenke z upodobitvijo steklarske peči in steklarjev ob njej (Lazar 2004b, 28, slika 15; 2006a, 227). Do sedaj poznamo le tri take najdbe in vse izvirajo z najdišč ob obalah Jadrana. Prva oljenka je bila najdena v prvi polovici 20. stol. v Benkovcu (rimska *Asseria* na Hrvaškem (Abramič 1959, 149), druga je bila odkrita v drugi polovici 20. stol. v bližini Ferrare (*Voghenza*) v Italiji (Baldoni 1987, 22), najnovejša in najbolje ohranjena najdba pa je oljenka iz Slovenije (Lazar 2006a 230, sliki 2–3). Primerjava velikosti oljenk in diskov kaže, da sta oljenki iz Ferrare in Spodnjih Škofij (dl. 11,5 in 11,3 cm) zelo verjetno nastali v istem kalupu, medtem ko je bil kalup za oljenko iz Aserije drugačen, saj je imel nad motivom vrezani imeni *Athenio* in *Tre(a)llus* (Abramič 1959, 151; dl. oljenke 10,5 cm). Za razliko od prvih dveh, ki sta najdbi izven zaključnih oz. iz uničenih kontekstov, zadnja oljenka izvira iz groba (gr. 3, grobna parcela 1, Križišče pri Spodnjih Škofijah, nekaj km od Kopra), datirana v čas med 40 do 60 n. št. (Novšak, Bekljanov Zidanšek in Žerjal 2019, 166–175).

Oljenka iz sivo žgane gline sodi v skupino t. i. reliefnih oljenk in pripada tipu Loeschke IV z zaokroženim noskom ter volutama ob straneh. Relief (slika/figure 2) predstavlja steklarsko peč ter ob njej levo in desno steklarja pri delu. Upodobitev je odlično izdelana in oljenka zelo dobro ohranjena, zato na njej prepoznamo mnoge podrobnosti (Lazar 2006a, 229). Desna figura piha v steklarsko pipo, leva pa mu pomaga ob peči. Osrednji del tvori peč, deljena v dva dela, spodnji služi kot kurišče. V gornjem delu peči je vidna večja, polkrožno zaključena odprtina. Služila je za zajemanje staljenega stekla iz talilnikov in kot delovna odprtina steklarja. Steklar sedi na niz-



Slika 2: Oljenka z upodobitvijo rimske steklarske peči, Križišče pri Spodnjih Škofijah, Pokrajinski muzej Koper (risba Anđelka Fortuna Sajc).

Figure 2: Oil lamp with the representation of a Roman glass furnace, Križišče near Spodnje Škofije, Regional Museum Koper (drawing Anđelka Fortuna Sajc).

kem stolčku ob peči, oblečen je v kratko tuniko in bos, kar poudarjajo poševni vrezi na nogi. Na tleh ležijo trije predmeti, ki jih lahko interpretiramo kot odpadke, nastale med delom. Oseba ima glavo dvignjeno, usta našobljena in pripravljena za pihanje v cev, ki jo drži pred seboj. Pipa je, če upoštevamo sorazmerja med osebo in orodjem, dolga manj kot meter in na pogled precej robustna. Morda ni kovinska, ampak glinena, kot predlaga Marianne Stern² na osnovi svojih šte-

² Prvi pihani izdelki so verjetno nastali z uporabo glinenih pip in so šele kasneje razvili kovinske. Nekateri raziskovalci, kot npr. Marianne Stern, menijo, da je bil steklarjem najlažje dostopen material prav glina. Njene lastnosti so dobro poznali, na zalogi je bila v vsaki delavnici. Glina precej slabše prevaja toploto kot kovina, zato je z njo lažje delati, posebej če je pipa kratka, dolga npr. 30–60 cm. Izdelava

vilnih eksperimentov (Stern 1999, 446; 2005, 15–18, slike 1–5). Pod pipo je okrogla odprtina oljenke za zrak. Figura na levi čepi ob peči, verjetno je mojstrov pomočnik. V rokah ima krajši predmet, ki je postavljen navpično, morda preverja ohlajeno posodo.

V tem trenutku nimamo dokazov za obstoj lokalne proizvodnje rimskega stekla na obalnem območju ali v zahodni Sloveniji, nedaleč stran pa leži Akvileja, kjer je, kot kažejo najdbe, steklarska delavnica delovala že v 1. stol. (Mandruzza to in Marcante 2007, 16). Proizvodnja steklenih izdelkov oz. pihanje stekla se je na področju današnje Slovenije razvila v drugi polovici 1. oz. na začetku 2. stol. Najverjetneje so delavnice predvsem pokrivalo lokalne potrebe za vsakdanjo rabo. Razvoj obrti je brez dvoma povezan s širitvijo rimske države na ozemlje današnje Slovenije in z romanizacijo tega prostora.

Rimska steklarska proizvodnja v Celeji in Petovioni

Najdbe steklarskih peči, talilnikov, staljenega stekla in odpadkov proizvodnje, ki jih poznamo iz Celeje in Petovione, kažejo, da je bila prav v teh mestih v 1. oz. 2. stol. osnovana lokalna proizvodnja stekla. Ostanke peči, kosov surovega stekla, odpadki pihanja in uničeni izdelki so tiste najdbe, ki dokazujejo obstoj sekundarne proizvodnje stekla, to je izdelave steklenih posod, v obeh mestih. Obrt je bila odvisna od uvoza surovega stekla, ki so ga pripravili in talili v sredozemskih središčih primarne proizvodnje in nato transportirali do delavnic po imperiju (Nenna 2008, 61; 2021, 21).

Dokazi o proizvodnji stekla v Celeji (*Municipium Claudium Celeia*, danes Celje) so bili odkriti pri izkopavanjih leta 1991. Žal ostanki steklarske peči niso bili odkriti, saj so bila izkopavanja omejena na območje gradbenega posega, vendar pa so ostanki steklenih kapelj, niti, koščkov staljenega stekla in odpadki z ustja steklar-

kovinske cevi ni enostavna, glineno pa si lahko izdelata steklar sam. Zato ni bilo treba investirati v drage kovinske pripomočke, ampak so si lahko orodje izdelali po svojih željah in potrebah. Enostavna izdelava orodja je bila morda tudi eden od vzrokov za bliskovito razširitev nove tehnike.

ske pipe neposredni dokazi, da so na tem mestu pihali steklo oz. izdelovali stekleno posodje (Lazar 2003a, 214, slika 57). Količina odpada je bila precejšnja, amorfni koščki surovega stekla so bili pretežno zelenkastega odtenka. Značilni odpadki za dokaz steklarske proizvodnje so kaplje stekla, ki dokazujejo preverjanje viskoznosti, steklene niti, ki nastanejo med delom steklopahača in izdelavo posode, ter odpadki z ustja steklarske pipe. Ti so na pogled kot slabo narejeno ustje posode, a so najneposrednejši dokaz o uporabi steklarske pipe in pihanju posod. Prav tako pomembni so odpadki slabo izdelanih posod, kot npr. uničeno ustje posode, trakovi, iz katerih so vlekli ročaje, staljeni fragmenti zavrženih delov itd.; nenazadnje je bil v enega od grobov severne nekropole priložen polizdelek skodelice (Lazar 2008a, 137, sliki 2–3). Ostanke tanke plasti ali prstana staljenega stekla na dnu balzamarijev in čaš poleg steklarske pipe dokazujejo tudi uporaba prijemalke oz. kovinske palice.

Omeniti velja tudi lego celejske delavnice. Zadnja izkopavanja v obdobju 2002 do 2005 so v Celju odkrila ostanke večjega obrtnega območja na severnem delu mesta oz. na njegovem robu. Tudi steklarji so si svoj prostor poiskali v tem delu mesta – zaradi uporabe ognja stran od gosto naseljenega mestnega središča, neposredno ob glavni cesti, ki je vodila iz mesta in je bila v bližini reke, prav tako pomembne transportne poti, za dostavo tako surovin in kurjave kot za prevoz izdelkov. Prav zadnje raziskave v severnem delu mesta, v neposredni bližini ostankov delavnice, so prinesle tudi nove dokaze o delovanju steklarjev. V enem od pozno rimskih grobov severne celejske nekropole so bile pridane steklene cevčice in polizdelek, ki dajejo nove podatke o možnih začetkih in času delovanja steklarske delavnice. Upoštevajoč male steklene cevke in koščke surovega dekoloriranega stekla ter nedokončano polkroglasto skodelico (Isings 96b) (slika/figure 3), lahko domnevamo, da se je proizvodnja stekla v mestu začela že v drugi polovici 1. stol. in je delovala še konec 3. oz. v začetku 4. stol. (Lazar 2008a, 138).

Sodeč po do sedaj znanih najdbah je bila steklarska obrt najbolj razvita oz. najobsežnejša

v Petovionii (*Colonia Ulpia Traiana Poetovio*, danes Ptuj). Šest steklarskih peči, ostanki talilnikov in steklarski odpad so neposredni dokazi o steklarski proizvodnji v mestu (Lazar 2003a, 219, slike 61–64; Korošec 2004, 67). Leta 1978 je ekipa ptujskega muzeja v okviru zaščitnih izkopavanja na parceli Hameršek odkrila dve steklarski peči in ostanke tretje. Istega leta so na parceli Preložnik odkrili ostanke še treh peči (Lazar, 2003a, 219).



Slika 3: Celje (*Celeia*) – polizdelek skodelice iz poznorimskega groba in odpadki iz delavnice, Pokrajinski muzej Celje (foto: Irena Lazar).

Figure 3: Celje (*Celeia*) – unfinished bowl from a late Roman grave and waste from the workshop, Regional Museum Celje (photo: Irena Lazar).

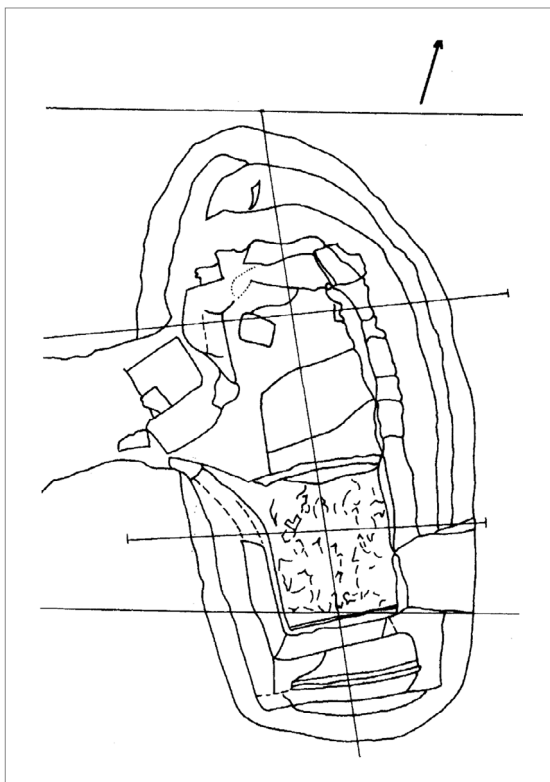
Najbolje ohranjeni ostanki peči so bili odkriti na parceli Hameršek in na osnovi tega lahko podamo rekonstrukcijo njihovega izgleda.³ Peči so bile podolgovato ovalnega tlorisa, z zunanjimi merami 2,05 m x 1,00 m in notranjimi 0,70 m x 1,30 m. Zidovi so bili iz opek različnih oblik in na notranji strani zamazani z več plastmi gline, posebej debel je bil sloj na notranji strani (Lazar 2003b, 79, slika 1). Notranjost peči je bila z zidom deljena v dva dela, eden je bil namenjen kurišču, drugi pa je bil delovni prostor. Neposredno ob kuriščnem delu je ležal kanal, ki je služil kot manipulativni prostor za kurjenje

3 Natančnega tlorisa in izgleda peči na parceli Preložnik zaradi preskromne ohranjenosti ni bilo mogoče rekonstruirati.

peči (slika/figure 4). Kuriščni del je bil nekoliko večji od delovnega prostora in se je polkrožno zaključil (vel. 0,60 x 0,40 cm). Delovni prostor je bil kvadratnega tlorisa. Kako je izgledal gornji del peči, lahko samo ugibamo. Zaradi zaščitnega posega je bil raziskan le majhen del okrog peči in na osnovi tega ne moremo sklepati, ali odkriti ostanki predstavljajo celotno delavnico ali pa del večjega obrtnega kompleksa steklarjev. Potrdimo lahko samo to, da so peči ležale v obrtnem predelu Petovionie na Spodnji Hajdini, kjer so med drugim obratovale tudi peči za keramiko in opeko (Jevremov 1985, 419; Horvat idr. 2003, 160). Številne druge posamične najdbe pa hkrati kažejo, da steklarji niso delovali le v tem delu mesta (Lazar 2003a, 221). Med njimi velja izpostaviti predvsem kose talilnikov z ostanki staljenega stekla na notranji strani in robovih ustja. Njihove oblike kažejo, da so za taljenje uporabili na vretenu izdelane posode, nizke lonce enakih oblik, kot jih poznamo med ptujsko kuhinjsko keramiko (Istenič 1999, 137, slika 130).

Trenutno še ne obstaja natančna opredelitev steklarskih peči s kvadratno obliko delovnega prostora, kot jih poznamo na Ptujju. Lepri in Lucia Saguí (2017, 170) domnevata, da so podolgovate strukture (2 m dolžine in 1 m širine) uporabljali le za ponovno taljenje surovine in morda še za dodajanje novega surovega stekla; bolj razširjene peči okroglega tlorisa pa naj bi bile v uporabi predvsem za pihanje oz. izdelovanje steklenih posod. Primerjava tovrstnih struktur z nekaterimi drugimi primeri na najdiščih, kot so npr. Besançon (Munier 2003; Munier in Brkojewitsch 2003), Plaudren (Triste 2008), Augst (datirano 130 do 160 n. š.) (Fischer 2009), *Ulpia Oescus* (Bolgarija, zadnja četrtina 3. in prva pol. 4. stol.) (Kabakčieva 1987), kompleksi steklarskih peči v Nemčiji (Köln, 1.–2. stol.) (van Geesbergen 1999, 108–109, 120) in kompleks Hambacher Forst (Gaitzsch idr. 2000, 105–106, 162–163, 168; 4. stol.), potrjujejo njune domneve in interpretacijo (Lepri in Saguí 2017, 172).

Ostanki izdelkov, ki bi lahko nastali v ptujskih delavnicah, niso prav številni. Glede na ohranjene odlomke in odpad lahko domnevamo,



Slika 4: Ptuj (*Poetovio*) – tloris steklarske peči na parceli Hameršek (po Lazar 2003b).

Figure 4: Ptuj (*Poetovio*) – ground plan of a glass furnace on the Hameršek plot (after Lazar 2003b).

da so izdelovali kvadratne in cilindrične steklenice v več velikostih, cilindrične čaše in balzamarije s stopničasto razširjenim vratom, posebej pogost pa je bil tudi okras nataljenih niti po vratu in ostenju (Lazar 2003a, 230).

Spremljevalno keramično gradivo in steklene najdbe, odkrite ob steklarskih pečeh, kažejo, da so steklarske delavnice obratovali v 2. in 3. stol. Najdbe iz 1. stol. so preskromne, da bi lahko v tem trenutku razmišljali o zgodnejšem razvoju te obrti v Petovionii.

Lahko pa na osnovi dokaj obsežnega naselbinskega in grobnega sklopa steklenih najdb ocenjujemo, kako se je uporaba stekla in steklenega posodja v mestu razvijala ter spreminjala. Steklenih izdelkov iz prve polovice 1. stol. je med gradivom relativno malo, njihovo število in razno-

likost oblik močno porasteta konec 1. stol., in sicer za 300% (Lazar 2001, 34). Gre pretežno za izdelke za vsakdanjo uporabo. Večina oblik je v uporabi še v naslednjem stoletju, ko se jim pridružio še nove oblike, nove tehnike krašenja ter kakovostni importirani izdelki. Do velike spremembe pride v 3. stol., ko se razpon oblik močno skrči, nato pa se v 4. stol. oblike stekla pretežno omejijo na posode za pitje. Zanimivo pa je, da kljub majhnemu številu oblik in količini steklenega posodja slednjega še vedno redno in v precejšnji količini prilagajo v petovionske grobove, kar na nek način odraža in potrjuje še vedno živahen utrip mesta v pozni antiki.

Problem interpretacije najdb v Emoni in Kranju

Izpostaviti velja še dve najdišči, za kateri se je domnevala proizvodnja rimskega stekla, a je na osnovi najdb in sodobnega poznavanja obrti ne moremo potrditi (podrobneje Lazar (2003a, 216)). Zaradi velikega števila steklenih pridatkov v emonskih grobovih je bila ideja o mogoči lokalni proizvodnji v Emoni zapisana že pred pol stoletja (Plesničar-Gec 1976, 35). Nato so izkopavanja v insuli XXXI v SZ delu mesta odkrila ostanke, ki so jih interpretirali kot steklarsko delavnico (Plesničar-Gec 1981, 136). V prostoru velikosti 4,1 x 4,7 m, ki je bil s slabo ohranjenimi zidovi deljen v tri dele, so naleteli na ostanke, ki naj bi pripadali steklarski delavnici (odlomki opek, posod, okenskega stekla, staljenega stekla). Žal je bila ta najmlajša faza arhitekturnega kompleksa najslabše ohranjena in pokrita samo z ostanke ruševine. Verjetno je bil ta del stavbe uničen in nato zravnan (str. 139).

Ob natančnejšem pregledu objavljenega gradiva z izkopavanj v insuli XXXI moramo izraziti dvom, ali je na odkritem mestu res delovala steklarska delavnica. Skromnost ostankov arhitekture peči ni presenetljiva. Zanimivo pa je, da na opekah ni ostankov steklene žlindre oz. staljenega stekla, ampak se opek držijo koščki stekla in odlomki posod. Do tega lahko pride tudi pri požaru, in zatorej ti ostanke niso nujno del uničene steklarske peči. Ostalo gradivo so bili prete-

žno odlomki steklenih posod in okenskega stekla, nič pa ne govori v prid obdelavi stekla. Med odlomki posod prevladujejo čaše oblike Isings 96, ki so gladke ali okrašene z modrimi kapljami, plitve skodele z gubami (Isings 117) in steklene svetilke s čepki (Lazar 2003a, 198, obl. 9.3.1.). Plast je bila na osnovi novčnih najdb in stekla datirana na konec 4. in začetek 5. stol. (Plesničar-Gec 1981, 142).

Ostanke uničenih posod in okenskega stekla lahko interpretiramo na več načinov. Morda gre za zbiranje odpadnega stekla za ponovno uporabo, navado, ki je bila uveljavljena in jo poznamo z več rimskih najdišč (Price 1991b, 23). Gradivo kaže časovno enotnost in majhno raznolikost, zato lahko pomislimo tudi na prodajalno stekla. V neposredni bližini so delovale tudi terme (insula XXXII) in morda so bile prav te glavni odjemalec. S tem izpostavljamo več možnih interpretacij najdb iz insule XXXI, neposredne dokaze o delovanju steklarjev pa moramo še odkriti.

Med zaščitnimi izkopavanji v Kranju ob gradu Kieselstein leta 1998 so arheologi našli na zanimive strukture, ki so jih interpretirali kot ostanke poznoantične steklarske delavnice oz. dveh steklarskih peči (Sagadin 2004, 107). Na površini 7 x 13 m so odkrili dve okrogli jami. Premer prve je bil 1,9–2,1 m (gl. 1 m), druge pa 2–2,2 m (gl. 0,6 m). Vkopani sta bili v glino in na notranji strani ometani. Večja jama je imela na Z strani razširitev za kurišče, zapolnjeno s plastjo žganine. Večja jama je bila zapolnjena s kamni, na nekaterih je bila na površini plast steklastega sloja, zaradi izpostavljenosti veliki vročini. Med jamama je bila ploščad premera 1 m utrjena z malto in zamejena s kamenjem. Približno meter od prve jame je ležal plitev bazen (vel. 2,1 x 1,2 m), ki je bil delno zapolnjen z apnencem in ostanki školjk.

Med drobnimi najdbami je bilo veliko odlomkov stekla, pretežno ustja in dna čaš na nogi, mnoge so bile poškodovane v ognju. Na osnovi keramičnega gradiva in stekla so kompleks datirali v 6. stol. (Sagadin 2004, 110; 2008).

Čeprav kompleks v Kranju še ni bil v celoti objavljen, želimo ponovno opozoriti na problem njegove interpretacije (Lazar 2003a, 217). Na najdišču in ob t. i. pečeh ni bilo najdb, značilnih za obdelavo stekla, deformirane posode so bile uničene zaradi izpostavljenosti ognju in niso kazale, da gre za zavržene izdelke delavnice. Jame so bile na notranji strani ometane, enako je bil ometan manipulativni prostor. Pri sedaj poznanih steklarskih pečeh te podrobnosti ni nikjer, povsod so premazane z več plastmi gline. Prav tako je vprašljiva različna raven manipulativnega prostora in osrednjega dela peči. Pri steklarskih pečeh je to navadno izenačeno, da upravljanje s pečjo teče nemoteno.

Razlaga, da je ena peč služila za proizvodnjo, druga pa za ohlajanje posod, je vprašljiva. Razdalja med njima je namreč več kot meter ali dva. Rimske peči so imele prostor za ohlajanje v sklopu same peči ali pa v peči v neposredni bližini. Tako se je posoda lahko takoj oz. samo s zasukom steklarja odložila za ohlajanje, da je proces tekkel počasi in nemoteno (Foy in Nenna 2001, 48–55). Prenos pravkar izdelane posode v nekaj metrov oddaljeno peč za ohlajanje bi povzročil prehitro hlajenje stekla na površini, napetosti zaradi temperaturne razlike bi povzročilo pokanje in lomljenje izdelkov (Price 1991b, 25).

Glede na ogled terena med izkopavanji in opisane strukture lahko brez dvoma ugotovimo, da na tem najdišču ne gre za ostanke steklarskih peči. Glede na velikost in gradnjo bi jih bilo prej mogoče interpretirati kot apnenice oz. peči za žganje apna; kar nekaj jih poznamo tudi pri nas (Tušek 1984; Novšak, Bekljanov Zidanšek in Žerjal 2019, 81).

Hrvaška – lokalna proizvodnja v Panoniji in Dalmaciji

V sosednjih pokrajinah je bila glede na trenutno stanje raziskav rimska steklarska obrt razvita v Gleisdorfu v Avstriji (Fuchs 1980), na območju severne Italije (Buora 1997, 23; Maccabruni 2004, 33; Mandruzzato in Marcante 2007, 16) ter v Siskiji (*Siscia*, Sisak) (Burkowsky 1999; Fadić 2004, 96, sliki 1–2; Leljak in Lazar 2013, 117)



Slika 5: Solin (*Salona*, Hrvatska) – marmorni kalup za odtis dna steklenice z napisom *Miscenius Ampliatus facit Salonas*, Arheološki muzej Split (po Buljević 2004a).

Figure 5: Solin (*Salona*, Croatia) – marble mould for bottle base with the inscription *Miscenius Ampliatus facit Salonas*, Archaeological Museum Split (after Bujević 2004a).

in Saloni (Solin, Dalmacija) (Buljević 2005, 93) na Hrvaškem. Prav tako je z arheološkimi odkritji na Jadranu potrjena trgovina s surovim steklom; na rimski potopljeni ladji z Mljeta je tovar poleg ostalega vseboval veliko količino surovega stekla (Radić in Jurišić 1993, 113).

Za območje hrvaškega dela province Panonije ugotavljamo, da so na več najdiščih ohranjeni elementi, ki odpirajo vprašanje možnega obstoja lokalne proizvodnje (Leljak in Lazar 2013, 115), to so npr. Sisak, Vinkovci in Štrbinči. Najdbe vključujejo surovo steklo, odkrito v reki, tlorise peči in verjetne lokalne oblike izdelkov. Vendar ostaja še veliko vprašanj, povezanih z lokalno steklarsko proizvodnjo v severnem delu Hrvaške. Opredelitev temeljev peči, ki so bile odkrite v Sisku, kot steklarskih, je po našem

mnenju še vedno nekoliko vprašljiva. Samo tloris peči, brez kakršnih koli spremljajočih najdb *in situ*, povezanih s proizvodnjo stekla, še ne more biti nedvoumen dokaz, da gre za steklarsko peč.

Neposredni arheološki dokazi o obdelavi stekla (Leljak in Lazar 2013, 130 in op. 36) na najdišču niso bili odkriti; dokler teh dokazov ni, ne moremo nedvoumno govoriti o steklarski proizvodnji na področju južnega dela province Panonije. Verjetnost obstaja, ni pa nedvoumno dokazana z najdbami.

Na drugi strani arheološke najdbe iz Dalmacije obstoj lokalne proizvodnje stekla potrjujejo ne samo z ostanki verjetne steklarske peči (Auth 1975), ampak tudi z epigrafskimi podatki oz. najdbami (Buljević 2005, 9, slika 6). V Soloni so ostanke steklarske peči odkrili v sedem-

desetih letih prejšnjega stoletja, ležala je severno od kurije. Toda začetek obratovanja oz. delovanja peči žal ni natančno časovno opredeljen; datiran je v obdobje od 1. do 3. stol. (Auth 1975, 147; Clairmont in von Gonzenbach 1975, 58–63, 230, pl. 4. 8. 63). Najdbo pa dopolnjujejo drugi dokazi o delovanju steklarjev. Na odlomku sarkofaga s salonitanske nekropole Manastirine je ohranjeno ime steklarja *Paschasius* oz. *Pascasius* (Egger 1926, 99; Šašel 1986, 285, št. 2487). Z jugovzhodne nekropole v Saloni pa je od leta 1884 znan marmorni kalup z imenom *Miscenius Ampliatus* (Buljević 2004a, 194, slike 1, 2). Najdbo so dolgo časa interpretirali kot kalup za izdelavo slavnostnih kruhkov, Zrinka Buljević pa jo je nazadnje pravilno opredelila kot kalup za dno večje kvadratne steklenice (str. 193). Poleg imena mojstra ali lastnika, ki sporoča, da je izdelek *Miscenius Ampliatus facit Salonas*, je v reliefu tudi podoba gladiatorjev (slika/figure 5).

Številne najdbe steklenega posodja z območja Zadra (*Iader*) in nekatere poseben oblike, ki se pojavljajo predvsem na tem področju oz. na predelu Liburnije, so podlaga za hipotezo, da je tudi v Zadru delovala steklarska delavnica (Fadić 2004, 101). Žal obrat ali drugi dokazi o sekundarni steklarski proizvodnji na tem področju do sedaj niso bili odkriti in številne najdbe steklenega posodja so za sedaj bolj odraz stanja raziskav nekropole antične Liburnije.

Nova odkritja v Črni gori

Za konec velja omeniti še zadnja pomembna odkritja iz rimske Dogleje (*Doclea*, Duklja) v Črni gori, ki jih je objavil kolega Miloš Živanović (2014, 47). V teku izkopavanj v letih 2002 do 2013 je bil odkrit obrtni predel v poznoantičnem mestu, ki je nastal na opuščnem in zapuščenem predelu mestnega kapitolja. Središče rimskega mesta *Doclea* je v poznorimski dobi izgubilo svoj pomen in zato so ta predel zasedli obrtniki ter tu postavili delavnice za predelavo železa in obdelavo stekla. Mestne komunikacije so območje še vedno povezovale z mestoma *Dyrrhachium* (Drač, Albanija) in *Salona* (Solin, Hrvaška).

Steklarski obrat je obsegal večje območje, ki še ni v celoti raziskano. V teku 4. stol. so stare

stavbe podrli in predel očistili ter na tem mestu zgradili steklarsko delavnico, ki jo datirajo na konec 4. in začetek 5. stol. (Živanović 2014, 130). Odkriti so bili trije prostori s posamičnimi pečmi (3/IX, 15/IX, 12/IX) (slika/figure 6) in domnevajo, da so nastale oz. delovale v časovnem zaporedju.



Slika 6: Duklja (*Doclea*, Črna gora) – steklarska peč v prostoru 15/IX med izkopavanji (foto: Miloš Živanović) (po Živanović 2014).

Figure 6: Duklja (*Doclea*, Montenegro) – glass furnace in Room 15/IX during excavation (photo: Miloš Živanović) (after Živanović 2014).

Peči so bile zgrajene v kotu prostora, ob njih so odkrili številne odpadke obdelave stekla, talilnike in fragmente stekla. Prostori so bili dokaj veliki, kar kaže na dobro organiziran obrat, morda so bili nekateri namenjeni posebej shranjevanju in celo okraševanju (Živanović 2014, 101, 130, pl. 42, 49).

Odkrite oblike posod so bile pretežno namenjene pitju in shranjevanju tekočin, najštevilnejše med njimi pa so polkroglaste čaše oblike Isings 96, pretežno datirane v 4. in 5. stol. (Isings 1957; Živanović 2014, 130). V enem od prostorov so našli veliko število odlomkov steklenih zapestnic in jagod, zato domnevajo, da je tu obstajala tudi proizvodnja t. i. črnega stekla⁴ (soba IX, Živanović 2014, 131). Trenutne najdbe kažejo, da je steklarski obrat v prvih desetletjih 5. stol. prenehal delovati, izdelkov, ki bi bili značil-

4 Izraz črno steklo uporabljamo kot *terminus technicus*; več o tem gl. v Lazar (2019b z dodatno literaturo).

ni za 6. in 7. stol., na najdišču niso odkrili (Živanović 2014, 98, 131).

Podobni obrtni centri poznorimske dobe, ki govorijo o preobrazbi urbanih centrov številnih rimskih mest, so znani tudi iz mest *Romuliana* in *Ulpiana* v provinci Meziji in sodijo v čas 4. in 5. stol. (Janković 1983, 102–103; Parović Pešikan 1991, 33–60). Osnovani so bili znotraj zaprtega mestnega predela in izkoristili nekdanjo oz. ohranjeno infrastrukturo. Poznorimske steklarske delavnice so bile v tem delu imperija odkrite tudi v Sirmiju (*Sirmium*, Sremska Mitrovica), v Caričin Gradu (*Iustiniana Prima*), posamične najdbe so znane tudi iz Skadra (*Skodra*) (Milošević 1976, 102–108; Ivanišević and Stamenković 2010, 39–52; Hoxha 2003, 99).

Sklep

Arheološke raziskave in analize steklarske proizvodnje v antiki prinašajo vedno nove podatke, tako glede proizvodnje stekla kot surovine kot sekundarne proizvodnje širom imperija (Nenna 2007). Pregled znanih in novih najdb območja JV Alp in Jadrana, povezanih z rimsko steklarsko proizvodnjo, prav tako odkriva nova dejstva; ta odražajo živahne in tesne trgovske stike, ki so se v času pozne republike in zgodnjega imperija razvili med jadranskim območjem in njegovim zaledjem (*Aquileia–Emona–Celeia–Poetovio*; *Aquileia–Emona–Siscia*; *Aquileia–Pula–Iader*), prav tako pa s področjem vzhodnega Sredozemlja, središčem razvoja in napredka antičnega steklarstva.

Dediščina proizvodnje stekla na območju današnje Slovenije in njenega sosedsstva je izjemno bogata in raznolika, vendar v mnogih primerih še ne v celoti ovrednotena, zato raziskave in obdelava novo odkritega gradiva tečejo dalje. Poudariti pa velja, da po propadu rimskega imperija nimamo dokazov o neposrednem nadaljevanju steklarske proizvodnje v mlajša obdobja. V samostanu Žiče, ustanovljenem ok. leta 1160, so v bogati knjižnici med drugim hranili tudi knjige o obdelavi in proizvodnji stekla (Lazar 2003b, 81). Kdaj in kako pa se je obrt v srednjem veku ponovno vzpostavila in razvila, ostaja odprto.

Summary

In the southeastern Alpine region, the first known glass finds are from the Urnfield Culture period. In the Early Iron Age, the area witnessed an extraordinary diversification of glass decoration in colour and form as well as the appearance of the first glass vessels. New analyses of the material give evidence about the long-distance trade with glass and glass products from the Mediterranean. The Roman period brought innovations that had developed in glass craft in the Hellenistic and Early Roman periods. The earliest evidence of glass-blowing in the Adriatic area is represented by oil lamps depicting a glass furnace. The best-preserved lamp was found lately in Slovenia in a Roman grave in Križišče near Spodnje Škofije in the vicinity of Koper. Roman glass production developed in *Celeia* (Celje) and *Poetovio* (Ptuj) as early as the end of the 1st or the beginning of the 2nd century. Glass production in neighbouring areas is confirmed to have existed in Gleisdorf (Austria) and at *Siscia* (Sisak) and *Salona* (Solin, *Dalmatia*) in Croatia. The archaeological finds from Dalmatia consist also of epigraphic evidence. A sarcophagus fragment from the necropolis at Manastirine in *Salona* revealed the name of a glassmaker *Paschasius* or *Pascasius*, while the southeastern necropolis yielded a marble mould with the inscription *Miscenius Ampliatus facit Salonas*. The latest discoveries in the area are known from the Roman town of *Doclea* (Duklja, Montenegro), where three Late Roman glass furnaces were discovered.

Povzetek

Na območju JV Alp so najstarejše steklene najdbe znane iz obdobja culture žarnih grobišč. V starejši železni dobi pride do izjemnega porasta steklenega gradiva, ki se odraža v raznolikosti okrasa barv in tudi prvem pojavu steklenih posod. Nove raziskave gradiva prinašajo dokaze o trgovini na dolge razdalje s steklom in steklenimi izdelki iz Sredozemlja. Rimsko obdobje prinese napredek, ki je rezultat razvoja steklarske obrti v helenizmu in času rimske republike. Najstarejši dokazi o poznavanju pihanja stekla so na območju Jadrana med drugim izpričani z upodobitvijo steklarskih peči na oljenkah. Najbolje ohranjena oljenka je bila nedavno odkrita v Sloveniji, in sicer v rimskem grobu na najdišču Križišče pri Spodnjih Škofijah blizu Kopera.

Steklarska proizvodnja rimske dobe se je na našem območju razvila v Celju (*Celeia*) in na Ptujju (*Poetovio*) na koncu 1. oz. najkasneje na začetku 2. stol.

V sosedstvu je obstoj steklarske obrti potrjen v Gleisdorfu v Avstriji ter v Sisku (*Siscia*) in Saloni (Solun, Dalmacija) na Hrvaškem. V Dalmaciji so arheološke najdbe potrjene tudi z epigrafskimi dokazi. Odlomek sarkofaga z nekropole Manastirine v Saloni priča o steklarju z imenom *Paschasius* ali *Pascasius*, z jugovzhodne nekropole pa izvira marmorni kalup za dno steklenice z napisom *Miscenius Ampliatus facit Salonas*. Zadnja odkritja s tega območja izvirajo iz rimske Duklje (*Doclea*, Črna gora), kjer so odkrili tri steklarske peči iz poznorimske dobe.

Glass Finds in Slovenia and Neighbouring Areas

Steklene najdbe iz Slovenije in njenega sosjedstva

Abstract

In Slovenia, the first glass finds are known from the Urnfield Culture period, from the 11th century BC. In the early Iron Age, the area witnessed an extraordinary diversification of glass products in colour and form as well as the appearance of the first glass vessels. The Roman period brought innovations that had developed in glass craft in the Hellenistic and early Roman periods. The glass products trade routes led mostly through northern Italy during the first century AD. Local glass production developed on the territory of present-day Slovenia at the latest from the beginning 2nd century.

Keywords: prehistoric glass, Novo Mesto, Roman glass, local production, *Celeia*, *Poetovio*

Izveček

V Sloveniji poznamo najstarejše steklene izdelke iz 11. stol. pr. n. št., iz obdobja kulture žarnih grobišč. V starejši železni dobi pride do velike raznolikosti izdelkov v okrasu in barvah, pojavijo se prve steklene posode. Rimsko obdobje prinese novosti in inovacije, ki so se razvile v času helenizma in zgodnje rimskega obdobja. Trgovske poti steklenih izdelkov so v 1. stol. do nas večinoma vodile preko severne Italije. Lokalna proizvodnja stekla se je na našem območju razvila najkasneje na začetku 2. stol.

Gljučne besede: prazgodovinsko steklo, Novo mesto, rimsko steklo, lokalna proizvodnja, *Celeia*, *Poetovio*

In Slovenia, the first glass finds are known from the Urnfield Culture period. The oldest grave with a glass bead is a grave from Dobova, from the 11th century BC (Stare 1975, pl. 41: 3). In later graves of the Urnfield Culture, from the 9th and 8th centuries BC, glass necklaces become more common. The beads were at first very small (diam. 0.4–0.6 cm), and white or blue in colour. There are, however, several graves at the site of Mestne njive in Novo Mesto dating from the Bronze Age–Iron Age transition that contained large blue beads with white or yellow “eyes” (Križ 1995, pl. 57: 113; Križ and Turk 2003, 89).

In the early Iron Age of the European (and Slovenian) area witnessed an extraordinary diversification of glass decoration in colour and

form as well as the appearance of the first glass vessels. Glass beads were usually strung on long necklaces, and they are also found sewn onto clothing. The beads are round, barrel-shaped, tubular, shaped like baskets, ram heads, or birds, and several have iron loops for hanging (Križ 1997, 38 below). The colour combinations are highly varied and the decorative motifs include wavy lines, dots, zigzags, eyes and applied elements of differently coloured glass (Haevernick 1974, 61; Križ and Turk 2003, 91, no. 19, 98–9).

Several decorative brooches–fibulae were also adorned with glass. The so-called “porcupine” fibulae are particularly interesting, found at Magdalenska gora, Vače, Brezje, and Šmarjeta (Haevernick 1959, Taf. 1: 1–8) (figure/slika 7).



Figure 7: Map of Slovenia with sites mentioned in the text (elaborated by Andrej Preložnik).
Slika 7: Karta Slovenije z najdišči omenjenimi v besedilu (pripravil Andrej Preložnik).

The bow of these fibulae has a bronze wire core surrounded by a coating of naturally transparent blue-green glass with spiky applied glass. The coating of dark blue glass that ornaments the fibula from Boštanj is decorated with glass threads in a contrasting yellow colour, drawn out in a zigzag design, and with eye beads (Haevernick 1959, Taf. 2: 8, 9). The bow of the fibulae from Rovišče was also made in a specific manner: amber glass was wound in a spiral around the wire core, and the decoration was completed with small glass projections (Haevernick 1959, Taf. 2: 5, 7). Fibulae with a glass coating appear primarily in the 6th century BC (Gabrovec 1987, 49).

An exceptional element in the graves of the southeastern Alpine region is represented by small vessels with vertical ribbing on the walls. These were probably products made in a mould, the walls of which were subsequently ribbed (Haevernick 1958a, 14). They are known in Slo-

venia from the 5th century BC from Most na Soči (Haevernick 1958a, Taf. 1: 4–5, 2, 3; 1, 2) and Črnolica beneath Rifnik (Pirkmajer 1994, fig. 40; Lazar 2004b, 49, cat. no. 4). They were made from naturally coloured, slightly greenish glass, and from a coloured glass of amber brown or blue in various shades. Primarily blue cups were frequently decorated with threads of differently coloured glass in straight or zigzag lines. Some cups from Most na Soči also had an extended, ribbed handle (Haevernick 1958a, Taf. 2: 3–6).

The extensive trading contacts of the Early Iron Age Culture of the southeastern Alpine region with those of the Mediterranean world are reflected also in the glass material. This includes vessels made on a core, which had the widest distribution among products of the Hellenistic glassworks in the Mediterranean.

An almost entirely preserved core-made vessel was found at Stična (Kastelic 1960, Pl.

3: 2; Lazar 2004b, 16, fig. 4). The double-handled blue flask (*amforiskos*) was decorated with multicoloured glass threads in a zigzag-motif, complemented by simple lines on the neck and shoulders. Fragments of identical products are also known from the barrows at Šmarjeta (Dular 1991, pl. 29: 26–8). One of them contained a small dark blue vessel with a handle and a rim bordered with a yellow glass thread. Based on analogies, both vessels can be classified as products of Mediterranean workshops, dating from the end of the 6th to the beginning of the 4th century (Harden 1981, 77, pl. 11: 175–90).

The exceptionally varied selection of glass beads and other decorative objects found in early Iron Age sites in the southeastern Alpine region, with forms, colours, and decorations that are specific to this area, leads to the conclusion that glass workshops must have been active in this region.

This possibility was first noted by Elisabeth Haevernick, who studied the glass beads from Slovenian sites (1974, 65). New finds, primarily from the tumuli at Kapiteljske njive in Novo Mesto (Križ 1997, 37; Križ and Turk 2003) have further enriched the palette of colours and forms of early Iron Age glass beads.

The hypothesis of local production thereby seems all the more likely. Unfortunately, exhaustive excavations have been undertaken primarily on large cemeteries, while research into prehistoric settlements, where traces of glass-working could be discovered, has as yet been quite limited. Furthermore, bead production requires only a furnace of small dimensions and produces little waste, whereby the likelihood that the remains of such a furnace would be discovered is minimal. However, the latest results of spectrometric analysis of Iron Age glass from Novo Mesto offered new information. Several different glass types were detected in the assemblage. The results indicate that raw glass was imported to Novo Mesto from eastern Mediterranean centres and corroborate the existence of long-distance trade during the first millennium BCE (Franjić et al. 2022, 25).

The glass material of the late Iron Age exhibits traits that distinguish it from the products of the early Iron Age. Bead necklaces are very rare in this period and often represent the inheritance of the indigenous inhabitants. The La Tène graves at Kapiteljske njive in Novo mesto contain numerous forms of beads that were in use in the Early Iron Age (Križ 2001, 61). New types appear in the Middle La Tène period and have different decorations (Križ 2001, 125; gr. 471, 126; gr. 491), while the quality of the products also differs from the Early Iron Age examples.

The glass bracelet was by far the widest distributed form in the Late Iron Age, particularly in the Middle La Tène Period. Its variants appear in transparent, yellowish, and dark blue colours, often decorated with bands of differently coloured glass on the inner side, while the exterior bears geometrical decorations in numerous variants (Gebhard 1989, 73; Križ 2001, 60).

The bows of several fibulae were also decorated with glass, such as a fibula from Vinica decorated with a fragment of a glass bracelet that had been pierced and threaded onto the bow (Haevernick 1960, Abb. 1: 1–4). The rare glass rings from Brstje should also be mentioned here (Pahič 1966, pl. 1: 4, 5). Interestingly, no glass vessels are known from this period either in Slovenia or in general in the La Tène Culture.



Figure 8: Ribbed bowls, Emona, graves 95 and 335, City Museum Ljubljana (photo: Tomaž Lauko).
Slika 8: Rebrasti skodelici, Emona, groba 95 in 335, Mestni muzej Ljubljana (foto: Tomaž Lauko).

The Roman period brought, together with all the civilisational progress in the area, also innovations that had developed in glass craft in the Hellenistic and early Roman periods. There is, however, no proof of the continuation of glass-making from the prehistoric period to the Roman era.

The trade routes of glass products towards Slovenia led mostly through northern Italy during the first centuries AD. The main trade centre for trade in the eastern Alps, Pannonia, and the Balkans was Aquileia, where the products of the northern Italian and partly the central Italian workshops gathered. Rare valuable products also arrived from the eastern Mediterranean and Egypt.

Mosaic vessels were rare and valuable items and only a few of them are known from the grave contexts (Lazar, 2003a, fig. 9), while only fragments have survived from the settlements (Lazar 2004b, 51, fig. 12). The same is true of gold-band glass (p. 50, fig. 7).

The earliest mosaic vessels at *Magdalensberg* (Austria) are known from the Augustean contexts (Czurda-Ruth 1979, 19). At *Celeia* (Celje), they date from the Tiberian period, as revealed by the latest excavation conducted in 2003–04. Both Norican towns, on the basis of their glass material thus, confirm these early and extensive trading contacts with the Roman state from the late Republican and early Imperial periods.

The group of mould-made products from the first half of the 1st century is predominantly composed of ribbed bowls (figure/slika 8). These are found in various versions as grave and settlement finds. This group of products also includes some luxurious pieces of mosaic glass (Lazar 2003a, 32, fig. 9), which were imported from the northern Italian production centres.

The group of moulded monochrome vessels with ceramic profiles can be considered a typical product of the northern Italian workshops. They appear in large quantities in the second quarter of the 1st century and are known predominantly on western sites. However, new finds from Ribnica (*Romula*) in Slovenia, a Roman custom sta-

tion on the *Aquileia–Emona–Siscia* road, show their distribution also in the south-eastern Alpine area (figure/slika 9).



Figure 9: Small mould-made bowls of opaque turquoise glass, Emona, grave 578 (photo: Tomaž Lauko).

Slika 9: Skodelici iz neprosojnega turkiznega stekla, izdelani v kalupu, Emona, grob 578 (foto: Tomaž Lauko).

Ribnica near Jesenice in Dolenjska, a Roman road and customs station known as *Romula*, is one of the most extensive sites investigated along the new motorway route in 2001–2004 (Breščak 2005, 39). The name of the station is known from *Tabula Peutingeriana*. With its control and supply role, the station's location on the route of the main Roman road (*via publica Aquileia–Emona–Neviodunum–Siscia*) was an act of careful strategic planning. Due to its position on the route from the valley of the Krka and

Sava rivers to the Pannonian plain, it also supervised the river traffic along the Sava (*Savus*). The settlement grew up along the Roman road on the narrowest part of the terrace between two small hills that certainly served as observation points. Furthermore, crammed between the Sava River and the northernmost slopes of the Gorjanci Hills, it occupied the narrowest point of transition between the hilly area of Dolenjska and the flatland of Pannonia.

New excavations were conducted at the site under the aegis of ZVKDS (Institute for the Protection of Cultural Heritage of Slovenia), the Novo Mesto Regional Unit (Breščak 2005, 40). They uncovered an extensive settlement and necropolis area. The structures date from the late 1st century BC to the 4th century AD. The heart of the settlement was located on a terrace of the Sava to the east of a brook, where an official building of the post, strengthened by buttresses, was unearthed within the foundations. Excavations also uncovered foundations of several production buildings, a local temple (?), traces of shed-like structures on the east bank of the brook, several segments of the Roman road and the station's western necropolis with over 120 graves (Lazar 2020a).

It is, therefore, not surprising that the site yielded rich and variegated glass material, confirming thus the lively trade route leading through this station from the north to the south.

Besides the already mentioned group of mould-made vessels, mould-blown products are also present, albeit in smaller quantities. Some finds, however, are worth a particular mention. One such is a one-handed beaker signed by *Ennion* (Lazar 2004b, 53, fig. 17; 2005b, 40).

Among the names of Roman glass masters preserved on their products, the best-known name is certainly *Ennion*. He worked in the Near East and his products include jugs, amphoras, small angular bottles and several types of beakers. *Ennion* is not a common Greek name and is probably a Hellenized Semitic one as stated by Marianne Stern (1995, 69). Perhaps he was a Jew, Phoenician or from some other region with

a Semitic population. His workshops probably operated in Sidon. *Ennion's* products stand out in the mould-blown objects group on account of their precision and clear design, modelled on the products of Roman toreutics of that time. However, the decorations and moulds were specially adapted for working in glass. As asserted by Marianne Stern, his work was innovative and technically refined (1995, 69).

On the basis of finds, his production is considered to have started in the first quarter of the 1st century, while during the second quarter, his products became widespread even in the western part of the Roman Empire. Beakers predominate among the finds from Italy; in Harden's opinion, these are later examples of *Ennion's* production. The increase in the number of products in the west also gave rise to ideas about the master's workshop being moved from the Near East to Italy (Harden 1935, 165; Price 1991a, 72). However, recent finds prove that his products were also distributed in Spain, Greece, France (McClellan 1983, 76), Slovenia and Croatia (Lazar 2005b; Buljević 2004b; 2015).

To return to Ribnica (*Romula*), a partly preserved one-handed beaker made from yellowish glass, blown into a mould was found among the site's glass material. The decoration consists of pillars, palmettos, concentric circles and a part of a star (?), while in the centre, inside a partially preserved square frame, there is the inscription in Greek ΜΝΗΘΗ Ο ΑΓΟ ΠΑΖΩΝ (*mnesthe ho agorazon* – Let the buyer be remembered!). The inscription on the other side ENNI / ΩΝΕΠ / ΟΙΗCΕ Ν (*Ennion made me*) is not preserved (Lazar 2005b, 40, figs. 1, 2).¹ On the wall, the remains can be seen of the fixing of the handle, which is now missing.

The two most suitable comparisons with the find from Ribnica are a beaker of greenish glass found at Tremithus (Cyprus) (Price 1991a, 66, fig. 9, Pl. XVIIb) and a beaker of dark blue glass from Vid (*Narona*) in Croatia (Buljević 2004b, 188, 203, fig. 7). These completely pre-

¹ For more detail see the chapter 'Ennion Beaker and Other Fragments of Mould-Blown Glass' in this volume.

served one-handed beakers were blown into a mould with the same pattern as the one from Ribnica, since the decoration, inscription and other details are absolutely identical. The difference between them is in size, or more precisely, in the size of the rim, as the Cyprian beaker is somewhat smaller, and the *Narona* beaker has a bigger diameter than the Ribnica one. According to Harden's classification, the beakers all belong to the A 1 type (1935, 168) or to type A according to Lehrer (Lehrer 1979; Price 1991a, 66). The Ribnica fragment has a different arrangement of the inscription within a square frame: MNE.. / OAOΓOP / AZΩN. The letter ,N' is positioned above the letter ,Ω' (ω) in the third line and not in the fourth as in the other two beakers. They belong therefore the same type of beaker with the same decoration but were blown into moulds with a differently arranged inscription within the square frame. This points to slight differences in the moulds for the same beaker type and shows that certainly more of them existed since these differences could have come about during the renewal of a mould or the production of a new one.

Chronologically, one-handed beakers belong to the second quarter of the 1st century. The rare finds from dated contexts occur in the late Tiberian or Claudian strata (Price 1991a, 65). Unfortunately, the Ribnica find comes from mixed strata, without any exact historical contexts. The accompanying archaeological material is dated throughout the 1st century.

Another fragment of an Ennion beaker made of dark blue glass is known from the legionary camp at *Tilurium* (Gardun, Croatia). Unfortunately, its small size prevents the determination of the exact beaker type (Buljević 2005, 95, fig. 1).

The first find of this product in Slovenia and the recent finds from the sites in Croatia show how developed the trade in master Ennion's products was. But there was also trading with other masters' products; for example, a beaker signed by *Aristeas* is known from *Augusteum* in

Narona (Vid, Croatia) (Buljević 2004b, 186, cat. no. 8).

For the time being, the question of whether the workshops and their branches moved to other places (perhaps in Italy as supposed by Harden 1935, 65) or whether moulds were exchanged between individual workshops will have to remain unanswered. In spite of this, the finds can serve as proof, of this area early included in the long-distance glass trade from early on.



Figure 10: Polygonal bottle with Dyonisiac symbols, Emona, grave 427 (87), City Museum Ljubljana (photo Tomaž Lauko).

Slika 10: Šestkotna steklenička s simboli čaščenja Dioniza, Emona, grob 427(87), Mestni muzej Ljubljana (foto: Tomaž Lauko).

Other mould-blown products from the 1st century are preserved in a relatively small quantity (Lazar 2003a, 50–5). Here, a mythological

beaker from Črnelo near Stična should be mentioned, found in a grave from the second half of the 1st century (Lazar 2003a, 49, fig. 17), as well as fragments of another beaker found in a settlement stratum in Celje (Celeia) (Lazar 2006b; 2011).² A small fragment of a circus cup is known from an insula in Emona (Ljubljana) (Petru 1980, 446, fig. 1; Lazar 2003a, 48, fig. 16), a small polygonal bottle with symbols connected with Dionisos cult jug, patera, shield buckle, amphora, laurel wreath, shepherd's crook was found in one of the graves of the northern necropolis (Plesničar-Gec 1972, 85, pl. 205: 3; Lazar 2004b, 54, cat. no. 20) (figure/slika 10), while one of the graves in Poetovio (Ptuj) contained a pyxis made of opaque, milk white glass (Istenič 1999, 76, fig. 61; Lazar 2003a, 46, fig. 13).

The comparisons among individual glass working techniques in the 1st century in the area of present-day Slovenia indicate that blown vessels predominate (Lazar 2003b, 233, fig. 66). Only in the first half of the 1st century were all three manufacturing techniques more or less equally represented, while the quantity of products indicates a relative equality between them. The new technique of free-blowing supplanted more complicated and expensive manufacturing processes. Its development coincided with the Roman state's extension into the territory of Slovenia and the complete Romanization of this area.

The glass material from the Roman period found on the territory of Slovenia has also been classified into ten groups of vessels (plates, bowls, beakers, ladles, jars, bottles, jugs, cosmetic vessels, lamps, miscellaneous), with 154 different variants distinguished so far (Lazar 2003a, 24). The classification into variants was based only on fragments preserved to the extent that sufficiently distinctive characteristics could be noted.

The representation of individual groups of products in relation to their use showed a great predominance in tableware (70%). Storage and transport were the purpose of 21% of the vessels, primarily represented by various bottles and

2 See also the chapter 'A Beaker for Special Occasions' in this volume.



Figure 11: Small globular ribbed bowls from the necropolis in Polhov Gradec, National Museum of Slovenia (photo: Tomaž Lauko).

Slika 11: Kroglaste rebraste skodelice z grobišča v Polhovem Gradcu, Narodni muzej Slovenije (foto: Tomaž Lauko).

jars that served for the storage of provisions (Lazar 2003a, 234, fig. 67). The remaining products were various small vessels for cosmetics and medical preparations as well as a small group of other forms that appear only as individual examples.

A review of the number of variants per individual form also shows that products that served as part of table service (groups 1–3) were best represented. Bowls and beakers (groups 2 and 3) stand out from the remaining glass products in terms of quantity and the number of variants.

Their representation and interrelation are comparable throughout several centuries. Although beakers exceed bowls in number, growth in the number of variants was noted for both forms from the end of the 1st century and in the 2nd century, with a considerable decline in subsequent centuries.

The comparison of the number of forms and their variants through the centuries showed the increase in the number of variants in the 1st century and the decline in the number of forms and variants in the 4th and 5th centuries. This reflects the development and representation of glass products in the material culture of the Roman period in Slovenia as well as the economic conditions in the area.

There is, even during the 1st century, an evident difference between its first and its second half. In the second half of the 1st century, the number of glass forms increased by more than 100%, indicating the spread of the use of glass among all population strata and the complete Romanization of the region of present-day Slovenia. At the end of the century, all large settlements were awarded the status of a *municipium* or *colonia*, received citizenship rights and, with the establishment of the road network and provincial administration, the entire territory of Slovenia became romanised.

The products of blown blue-green glass predominated in the second half of the 1st century. The characteristic forms had fold-back and flattened rims, triangularly shaped or tubular rolled rims, while the bases were often simply formed and concave in the centre, sometimes with the standing surface drawn out on the edge and formed or pressed into a low ring base. Some forms imitate products made from precious materials, such as two-handled beakers and footed goblets with a characteristic stepped rim. Such forms are no longer found in the following centuries, except as individual pieces. Small ladles with vertical handles (Lazar 2003a, 123) and shallow dishes and jugs of coloured glass are also special features of this period.

Small globular bowls with ribs and decoration of horizontal trails (so-called *zarte Rip-penschalen*) were also very popular till the mid-1st century. They were discovered in grave units as well as settlement strata (figure/slika 11). The early use of this form in Slovenia is indicated by the grave finds from the Augustan period from Mihovo (Haevernick 1958b, 80). Some bowls are known also in later grave units from the second half of the 1st century (for Dobova see Petru 1969; for Trebnje see Slabe 1993, 25; Lazar 2004a, 61, cat. nos. 42, 43).

Many products from the second half of the 1st century were blown from glass with an intense blue shade, as can be noted on artefacts from graves in *Celeia* (Celje) and in *Emona* (Ljubljana). This special feature indicates related or identical sources for products that reached Slovenia during the 1st century primarily through Aquileia as the main trade centre for this area.



Figure 12: Base fragment of a rectangular bottle with remains of a stamp of *Sentia Secunda* from Aquileia, *Romula*, settlement find (photo: Tomaž Lauko).

Slika 12: Odlomek dna pravokotne steklenice z delom žiga Sentic Sekunde iz Akvileje, *Romula*, naselbinska najdba (foto: Tomaž Lauko).

The connections with North Italian or Aquileian workshops can be proved also directly

through the products of glass-workers operating in the town. A fragment of the base of a large rectangular bottle with an inscription of *Sentia Secunda* from Aquileia was found at *Romula* (Ribnica near Brežice), already mentioned post station lying at the main road *Aquilei–Emona–Siscia* (Lazar 2005c, 41) (figure/slika 12). The partly preserved inscription can be compared to a bottle from Linz (Schwanzar 2003, 333, Abb. 2) which is completely preserved and has an inscription in three lines impressed on the base (SENTIA SECVNDA FACIT AQ(uileia) VITR(earia) – Sentia Secunda makes [it] in Aquileia. The Ribnica fragment could probably be filled in the same way. Comparisons allow the conclusion that this fragment belonged to a two-handled bottle with the name of the glass worker or the owner of the glassworks, *Sentia Secunda* of Aquileia, impressed on its base. The connection between Roman settlements from the Slovene territory and Aquileia is not unusual, since the latter acted as the main trade centre for the south-eastern Alpine region from its very foundation onwards.

However, the fragment's particular value lies in the fact that there have been only two other vessels bearing the signature of *Sentia Secunda* from Aquileia discovered as of yet; those in the grave at Linz (Schwanzar 2003). Female names occur only rarely as signatures or imprints on glass products. Judging by the form of the extant bottles from Linz, we can conclude that *Sentia Secunda* was active in the second half of the 1st century when her products became widespread and commonly used as storage and transport vessels.

Originally, the name was interpreted as that of the female owner of the workshop, since glass-making was considered too difficult for a woman (Calvi 1968, 1213). However, Marianne Stern argues (1997, 130) that the abbreviation VITR stands for *vitrearius* (glass worker) and therefore refers to a glass worker (male or female), while the word *facit* (produced) would also directly point to the master craftsman who made the vessel and not to the owner of the

workshop. In her opinion we should reckon with a female glass worker, proving that women also mastered this craft.



Figure 13: Glass ladles from Emona, graves 408, 526 and 973, City Museum Ljubljana (photo: Tomaž Lauko). Slika 13: Steklene zajemalke iz Emone, grobovi 408, 626 in 973, Mestni muzej Ljubljana (foto: Tomaž Lauko).

A significant group among the 1st-century glass material in the Slovene area are also small ladles known from *Emona* graves (Plesničar-Gec 1976, 35; Demaine 1987, 135; 1990, 129). Ladles are only rarely found on other Roman sites in Slovenia (Lazar 2003a, 124, fig. 36) and are not known from the sites in Pannonia and Dalmatia (figure/slika 13). Ladles appear as grave goods slightly before the middle of the 1st century and they continue in use until the middle of the 2nd century (Demaine 1987, 136). The earlier examples have mostly ring bases, while in the late 1st century this is eliminated and ladles with simple concave bases continued to be in use (Demaine 1987, 137, figs. 1, 2; Lazar 2004b, figs. 33–5). Several analogies to the ladles from *Emona* are known from *Pompei*

and *Herculaneum* (Scattozza Höricht 1986, form 17b) from the mid-1st century, while the examples from *Vitudurum* are dated to the 1st and the beginning of the 2nd century (Rütti 1988, 63).

Perhaps this form, rather specific for Emona can be connected with the founding of Emona at the end of the 1st century BC and with the new incomers from Italy (Šašel Kos 2000, 277; 2002, 373). The settlers from the Italian peninsula brought with them also the taste and habits from the motherland which are reflected in the *Emona* burials from the middle of the 1st till the mid-2nd century in *Emona*.

The Aquileian influence in the southeastern Alpine region continued into the first half of the 2nd century, as the majority of products still came from Italic workshops. This is particularly true for the high-quality vessels of decolourised glass. Various forms of conical facet-cut beakers appear as settlement finds in *Celeia* (Celje) and *Romula* (Ribnica) and belongs to the groups I and II according to the Oliver classification (1984, 36; Lazar 2003a, forms 3.3.4 and 3.3.5); new forms of beakers with faceted decoration can be added to this group, which are obviously imitating vessels made of other materials (figure/slika 14).³ There are also some ceramic imitations of the facet-cut beakers known. These were found in burials in *Emona* (Petru 1972, pl. 44: 12), *Celeia* (unpublished) and Verdun (Breščak 2002, 138, cat. no. 72/3) in Slovenia and also at *Andautonia* (Ščitarjevo), the later now kept at the Archaeological Museum in Zagreb (Croatia) (Nemeth Ehrlich 1994, 121, fig. 'a' on p. 122).

A wide range of forms and vessels can be observed also in a group of cast colourless glass from the Flavian period. Numerous plates and dishes, together with shallow bowls, some being plain and others having facet-cut decoration, are known from Logatec (*Longaticum*), Ptuj (*Potovio*) and again from Ribnica (forms AR 16.2; AR 75) (Rütti 1991). Their use is dated from the Flavian period and through the 2nd century (Lazar 2003a, 44).

3 For more detail see the chapter 'Finds of Roman Colourless Glass from Romula' in this volume.



Figure 14: Beakers with facet-cut decoration were copied in ceramic, Verdun, grave 12, Dolenjska Museum Novo Mesto (photo: Irena Lazar).

Slika 14: Čaše z vrezanim facetiranim okrasom so posnemali tudi v keramiki, Verdun, grob 12, Dolenjski muzej Novo mesto (foto: Irena Lazar).

The above-mentioned forms of vessels were most probably all imported from the established glass workshop that employed skilled masters. But a group of free-blown oviform beakers made of greenish glass (Lazar 2003a, 97) are known primarily from the sites in *Noricum* and *Pannonia*. Vessels with the characteristic form of the walls, an everted rim, a fold beneath it and a ring base appear in plain and indented variants (Lazar 2003a, 96, forms 3.4.1. and 3.4.2.). They were first called 'the Emona beakers' as the greatest quantity was primarily known from *Emona* (Istetič 1994, 94). Judging from the recent research, however, numerous new finds show their distribution in the wider Pannonian and Norican region; from the sites in Slovenia, Austria, Croatia and Hungary (Fuchs 1980, pl. 41: 3; Šavel 1990, pl. 2: 4; Gregl 1997, 38; Lazar 2003a, 96; Guštin 2004, 72, fig. 3). Beakers of both forms appear

in graves from the second half of the 1st century to the middle of the 2nd century. According to their distribution, we may suggest that these vessels are very probably the products of one of the earliest glass workshops operating in Noricum or Pannonia that was not yet identified.

The influence of the glass production centres in the Rhine valley, particularly the Köln workshops, developed and spread in the middle of the 2nd century. Their production began to replace the influence of the Italic workshops and to satisfy the demand even in that part of the Empire (Lazar 2003a, 109, 115). In this period, if not earlier, the first local glass production centres were organized. The demand for glass vessels for everyday use in the 2nd century was, to some extent, certainly satisfied by the products from local workshops. The finds from Ptuj (*Poetovio*) and Celje (*Celeia*) prove the existence of glass production from the 2nd century onwards (Lazar 2003b, 224).

The second century witnessed a continuation of exceptional growth in the use of glass products. Many forms that appeared already in the 1st century were still in use. These were primarily bottles with a handle, collared bowls and some forms of indented beakers (Lazar 2003a, 98–100), which were joined by some new variants (Lazar 2003a, 98, fig. 32: 3.5.1.–4., 3.5.7.). The high-quality thinly blown beakers as well as indented beakers of milky white glass were also popular. Simple cylindrical beakers (Lazar 2003a, 102, fig. 33: 3.6.1.–2.) were very widespread and appeared in many sizes and variants. They were often made of decoloured glass.

Certain special features and changes in production can be noted as characteristic of this and the following century: the forming of the rim was simpler, the edge was fire-rounded or thickened, rims of bottles were simply turned out, sometimes funnel-like, the base most often had an applied single or double ring foot. The emphasis was on simple forms; the decoration was reduced, and indentations predominating. Two new decorative techniques appeared during the century: the application of glass threads or trails

on the walls, neck, and even all over the vessels, and wheel-cut geometric decoration.

Most products, and particularly those of better quality, still came from the northern Italic workshops (Lazar 2003a, 72, 75, 100) and were joined, at the end of the 2nd and in the 3rd century, by the products of the centres from the Rhine valley (p. 83). The applied decoration on high-quality vessels copied floral and figural motifs. These products were imported from eastern workshops, and they were characterized by the deliberately decoloured glass with trail decoration. Two footed goblets from *Poetovio* are a good example of such vessels (Lazar 2003a, 115, fig. 34: 3.8.4; Mikl Curk 1976). Products of the western, mostly Köln workshops, where the vessels were decorated with multicoloured glass threads, are at present not represented to a great extent in Slovenia, as only a few small fragments have been preserved (Lazar 1993, 9, pl. 2: 4).

A considerable decline in the quantity of glass products can also be perceived in the 3rd century in the eastern Alpine region. Some forms go out of use and the variety of forms as well as the number of vessels was also reduced.

The various simple wheel-cut decorations that appeared on products in the 2nd century evolved into intricate geometric and figural motifs in the 3rd century. Simple hemispherical forms of bowls and beakers became ever more widespread and the details of the manufacture also changed, most notably in the forming of the vessel rims. There were increasing numbers of products with cut rims, which were sometimes ground, but not on the simpler products.

Characteristic products of the 3rd century were hemispherical bowls with somewhat thickened walls of colourless or sometimes milky white glass, decorated with wheel-cut geometric decorations of circles, almond-shaped hollows and rhombs. The most valuable products of this period are vessels with cut figural decoration and decoration in high relief (Lazar and Tomanič Jevremov 2000, 201, pl. 1, 2).

The number of forms was drastically reduced in the 4th century, as was the number of

individual variants. Conical glasses predominate (Lazar 2003a, 117–20) and hemispherical bowls with cut, curved rims (fig. 35: 3.8.6.–3.10.3.) and flat, slightly concave and ring bases also appear. The rare decoration consisted only of horizontal wheel-cut lines, later joined by applied drops of glass in contrasting colours and indentations. New forms of the late Roman period were conical lamps and lamps with a handle, although it is sometimes difficult to distinguish between beakers and lamps (p. 198).

There are few storage vessels from this period. Jugs were widespread in the first two centuries, and their use extended up to the first half of the 3rd century, after which their quantity declined drastically. Comparisons with bottles show quite well that the relationship between these forms was fairly balanced sometime in the mid-3rd century, after which bottles became predominant.

Bottles exhibited a relatively uniform representation from the second half of the 1st century onwards and continued to the end of the 4th century. The comparison of the two sub-groups has shown a predominance of bottles with handles in the first two centuries and their marked decline in the 3rd and 4th centuries. In later centuries bottles without handles predominate.

Valuable vessels of the late Roman period, such as bowls with wheel-cut figural decoration, diatretra products, and those with gold medallions, are relatively rare in Slovenia. Those that are known are preserved only as modest fragments (Mikl Curk 1963, 492), while there were some important objects of gold glass found in Croatia. The finds of the gold glasses from Štrbinci should be mentioned (Migotti 2003). One fragment represents a married couple and is dated to the second third of the 4th century (p. 36) while the second one with a family scene and an inscription VIVATIS FELICIS IN DEO is from the second half of the 4th century (p. 61).

Political conflicts aggravated economic conditions in the 3rd century and caused considerable changes, which were soon reflected in the glass industry. From the second half of the cen-

tury, the demand was in great decline and most of it could be supplied by local and nearby Pannonian production centres, while imports from the Rhine valley declined. Expensive objects appeared only exceptionally.

The regression continued in the 4th and 5th centuries. It is difficult to establish to what extent trade was still extant, and to what extent local industry was active in supplying at least the immediate vicinity. The quality of the glass products was poorer: the walls were full of glass bubbles, and an olive green colour predominated. Conditions in larger towns at that time certainly enabled the continuation of tradition and the use of glass vessels, which in the smaller settlements had almost died out because of poor economic conditions.

Glass production or more precisely glass-blowing was present on the territory of present-day Slovenia from the 2nd century onwards. It probably did not extend beyond a local framework, and the products primarily met the demand for objects of everyday use such as balsamaria, beakers, bottles, and window glass.

The earliest evidence of glass-blowing or perhaps of interest for a newly developed technique in glass-working in the Adriatic area is represented by oil lamps depicting a glass furnace, the latest and best-preserved lamp was found lately in Slovenia (Lazar 2004b, 27, fig. 15).

The lamp (see figure/slika 18) was found in a grave at the site Križišče near Spodnje Škofije, a few kilometres from Koper (Lazar 2005a, 17; 2006a).⁴ The relief on an excellently preserved clay oil lamp represents a glass furnace and glass-workers beside it (Lazar 2004b, 28, fig. 15; 2005a, 17). The motif is the same as that on the only two other oil lamps depicting a glass furnace – from *Asseria* (modern Benkovac in Croatia) (Abramić 1959, 149) and Ferrara (Italy) (Baltoni 1987, 22).

The decorated disk of the lamp shows relief with a glass furnace flanked by a pair of glass-workers, one of whom is engaged in blow-

4 See also the chapter 'Roman Oil Lamp from Slovenia Depicting a Glass Furnace' in this volume.

ing while the other assists at the furnace. The representation is excellent and the oil lamp itself is very well preserved so that many details which are blurred in the other two lamps can be seen clearly. In the centre is the furnace, divided into two sections. The lower one obviously serves as a stokehole. The upper section of the furnace has a larger aperture, of a semi-circular form, that was used for scooping molten glass out of the melting pot and served as the glass-blowers working port. Inside the relief line surrounding the upper opening or door appears a V-shaped object turned upside down. On the left and right in the upper part, two small shelves or working surfaces are shown, the right-hand one rests on a leg or stand. The right one can be interpreted as the working surface or slab on which the glassblower rolled a glass post before blowing and marvered the glass during his work.

The right-hand figure sits on a low stool beside the furnace, dressed in a short tunic. He is barefoot, his head is raised, his lips pushed forward and ready to blow into the pipe which he holds inclined in front of him. The figure on the left side of the furnace, probably the master craftsman's assistant, is less precisely drawn. He seems to be squatting next to the furnace. He has a short object in his hands, placed upright. There is no inscription or name on the upper part of the disk, as on the oil lamp from *Asseria* (Abramić 1959, 150, Taf. 27).

The oil lamp from the grave in Slovenia is by far the best preserved of all three lamps. The relief is very well executed, crisp and not damaged. The relief scenes on the lamps differ only in the placement of the air vent, which is on the lower side of the disk in the find from Benkovac, while on the lamps from Italy and Slovenia, it is below the blowpipe.

At present, there is no evidence of local glass production from the rather limited coastal region of present-day Slovenia.

Finds of furnaces, raw glass, and glass-working waste from Celje and Ptuj prove that a glass industry developed here as early as the begin-

ning of the 2nd century. Remains of raw glass, glass-blowing waste, and destroyed products at *Celeia* and *Poetovio* prove the existence of the secondary production of glass, that is the manufacture of glass vessels. The craft depended on the use of imported raw glass, which was melted and prepared in larger glass production centres. According to the present state of research, primary glass production (melting of raw glass from the basic ingredients), is thought not to have existed in the region of Slovenia (Lazar 2003b, 224).

The proof of glass production in *Celeia* was first obtained during the excavations in 1991. The excavated area did not reveal the remains of a glass furnace, however, the remains of raw glass and glass waste weighed several kilograms. The varied glass waste in the form of drops, threads, chips of melted glass and moils provide evidence that glass was melted, tested and worked at the site (Lazar 2003a, 214, fig. 57). The latest excavations at the immediate vicinity brought new evidence concerning the glass production in the town. Fragments of small glass tubes and semi-finished products give additional information about the time span and the possible beginning of glass production. Considering the remains of small glass tubes and waste of decolourized glass, we may suppose that glass production began in *Celeia* before the beginning of the 2nd century as thought previously.⁵

Judging from the finds known to date, glass manufacture was best developed at *Poetovio*. The discovered glass furnaces and remains of crucibles and glass waste directly prove the production of glass and the developed glass working craft (Lazar 2003a, 219, figs. 61, 64; Korošec 2004, 67). The remains of products created in these workshops are not very numerous among the excavated material. On the basis of several fragments, it can at least be hypothesized that the Ptuj glass workers manufactured square bottles with the decoration of a rosette on the base, cylindrical beakers, and balsamaria (Lazar 2003a,

5 See also the chapter 'Roman Glass Production in *Celeia* (Noricum)' in this volume.'

230). Chemical analysis of the raw glass and fragments of bottles has shown that the glass had the same composition, further evidence in support of the hypothesis.

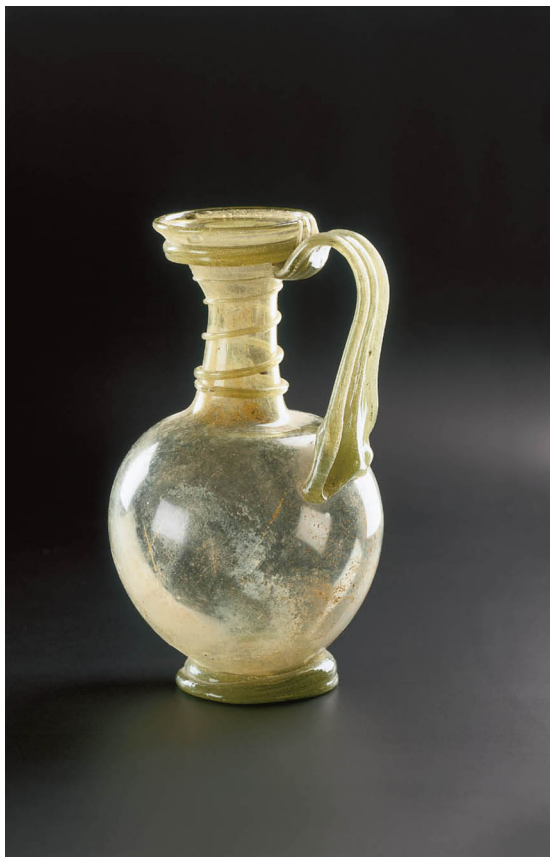


Figure 15: Jug with trail decoration on the neck, Ptuj, individual find, Regional Museum Ptuj Ormož (photo: Tomaž Lauko).

Slika 15: Vrčec z nataljenim okrasom niti na vratu, Ptuj, posamična najdba, Pokrajinski muzej Ptuj Ormož (foto: Tomaž Lauko).

The typological analysis of the glass from the sites at Ptuj has pointed to some products that stand out in terms of form and could have been produced in local workshops. The largest group consists of balsamaria with a stepped widened neck at the juncture with the rim. The form does not appear at other sites however it is a characteristic offering in the graves of *Poetovio*. The second interesting form is a goblet

of globular form on a high-ringed base (Lazar 2003a, fig. 2: 3.6.5.), which has no analogies. It was found in a grave from the 2nd century, and its unique nature leads to the assumption that this was a local product. The last group of hypothesized local products is composed of small bottles and jugs with globular bodies and an applied decoration of glass trails, which are numerous among the material from Ptuj. Their common characteristic is an almost uniform manner of forming the applied decoration (figure/slika 15).

On the basis of the glass and pottery finds discovered next to the glass furnaces, it can be established that the workshops were active in the 2nd and 3rd centuries, more specifically at least in the first half of the latter. The finds from the end of the 1st century are too minimal for the beginning of glass manufacture in *Poetovio* to be placed in an earlier period.

The numerous settlement and grave finds from *Poetovio* enable analysis and comparison of the development of the town and the reflection of this in the material culture and, in this case, the glass products. *Poetovio* received the status of a *colonia* during the reign of the emperor Trajan and experienced, in the following two centuries, a period of the greatest development in both the economic and political sense, since the town functioned as the seat of the Illyrian customs service (Horvat et al. 2003, 153).

The material from *Poetovio* includes a few glass products from the first half of the 1st century. The glass vessels then increased by almost 300% from the second half of the 1st century onwards (Lazar 2001, 34). These were simple and mostly undecorated products for everyday use. The majority of forms remained in use in the following century, when the spectrum of shapes was supplemented and new decorations appeared. The range of forms shrunk in the 3rd century, until in the 4th century they were limited primarily to forms intended for drinking. It is interesting that despite the limited spectrum of glass vessels in use in the 4th century, the cemeteries of *Poetovio* still show regular use of glass objects and

their placement in graves. This reflects the still lively pulse of the town, and perhaps the characteristic conical beakers and lamps can be connected to a powerful Christian community and the religious life of the city.

Poetovio's archaeological heritage stands out in Slovenia since its glass material includes certain exceptional objects, which were available only to the wealthiest stratum due to their rarity and high price (Lazar and Tomanič Jevremov 2000; Mikl Curk 1963). Such objects are, for example, a bottle with a depiction of the lighthouse from Alexandria, a kantharos with decoration cut in high relief (figure/slika 16) and vessels with colourless snake-thread decoration (Lazar and Tomanič Jevremov 2000; Lazar 2003a, 62, fig. 26).



Figure 16: Kantharos made of decolorised glass with decoration cut in high relief, Ptuj, grave 11/1982, Regional Museum Ptuj Ormož (photo: Tomaž Lauko). Slika 16: Kantaros iz dekoloriranega stekla z okrasom v visokem relief, Ptuj, grob 11/1982, Pokrajinski muzej Ptuj Ormož (foto: Tomaž Lauko).

All these objects came from distant production centres that specialized in particular types of products and often made them by order. The presence of such finds was a reflection of the great economic power of the town.

Glass production in neighbouring areas is confirmed to exist in Gleisdorf (Austria), northern Italy (Buora 1997, 23; 2004b, 12; Maccabruni 2004, 33) and Croatia (*Siscia*; Burkowsky 1999; Fadić 2004, 96, figs. 1, 2; *Salona*, Dalmatia; Buljević 2005). The trade with raw glass, on the other hand, is confirmed by an underwater find from Mljet in Croatia (Kisić 2000, 5), where a shipwreck with a considerable amount of raw glass was discovered near the Dalmatian coast, thus indirectly proving the existence of local glass production in the Adriatic area during the Roman period.

The archaeological finds from Dalmatia that testify of a glass production consist not only of excavated remains of a 'possible' glass furnace (Auth 1975; Cambi 1976) but also of epigraphic evidence (Buljević 2005, 98, fig. 6). A sarcophagus fragment from the necropolis at Manastirine in *Salona* revealed the name of a glassmaker *Paschasius* or *Pascasius* (Šašel 1986, 285, no. 2487), while the south-eastern *Salona* necropolis yielded a marble mould with the name of *Miscenius Ampliatus*, known since 1884 (Buljević 2005, 194, figs. 1, 2). It was long thought to be a mould for festive bread but, as attested by Zrinka Buljević (2005, 193), it is a mould for the base of large rectangular bottles with an image of a gladiator. The mould bears the inscription *Miscenius Ampliatus facit Salonas*.

Several base marks from bottles and balsamaria give the names of glass-blowers or workshop owners, operating in the area. The most widely spread name is that of *Gaius Salvius Gratus*, known for its products in Dalmatia, Slovenia, Italy and further to the north (Buora 2004a, 152; Lazar 2006d). Others, for example, *L. Aemilius Blasius* and *Gn. Pompeius Cassianus*, are known so far only from northern Italy and Dalmatia (Fadić 1997, 87; Buljević 2005, 100).

The above-mentioned finds with inscriptions and base marks provide a rich source of knowledge on the trade contacts and the extent of the trade with glass products, of the outstanding and innovative individuals that outgrew the boundaries of their regions and used the functioning of the Empire to their advantage in order to rise and develop their creativity and initiative.

The new finds from the south-eastern Alpine region as well as from the Adriatic coast reveal intense trade contacts, during the Republican and early Imperial periods, between the Adriatic region and its hinterland (*Aquileia–Emona–Celeia–Poetovio; Aquileia–Emona–Siscia; Aquileia–Pula–Iader*) as well as with the eastern Mediterranean as the centre of development for the craft of glass-making.

The legacy of glass vessels in Slovenia and the wider Adriatic region with several important Roman sites is extensive and further studies will certainly enable numerous comparisons, analyses, as well as interdisciplinary research.

Summary

In Slovenia, the first glass finds are known from the Urn-field Culture period. In the early Iron Age, the area witnessed an extraordinary diversification of glass decoration in colour and form as well as the appearance of the first glass vessels. An exceptional element in the graves of the south-eastern Alpine region is represented by small vessels with vertical ribbing. The glass bracelet was by far the widest distributed form in the Late Iron Age Period.

The Roman period brought innovations that had developed in glass craft in the Hellenistic and early Roman periods. The main trade centre for trade in the eastern Alps was Aquileia, valuable products also arrived from the eastern Mediterranean and Egypt. The group of mould-made products is predominantly composed of ribbed bowls. The monochrome-coloured ware appears in the second quarter of the 1st century. Mould-blown products are present in smaller quantities, but a one-handed beaker signed by *Ennion* and a mythological beaker from Črnelo should be mentioned.

The comparisons among individual glass-working techniques in the 1st century in the area indicate that blown

vessels predominate. Only in the first half of the 1st century were all three manufacturing techniques more or less equally represented, while the quantity of products indicates relative equality between them. The glass material from the Roman period has been classified into ten groups of vessels (plates, bowls, beakers, ladles, jars, bottles, jugs, cosmetic vessels, and lamps). The representation of individual groups of products in relation to their use showed a great predominance in tableware (70%). Storage and transport were the purposes of 21% of the vessels. A review of the number of variants per individual form also shows that products that served as part of table service were best represented. Bowls and beakers stand out from the remaining glass products in terms of quantity and the number of variants. Their representation and interrelation are comparable throughout several centuries. Although beakers exceed bowls in number, growth in the number of variants was noted for both forms from the end of the 1st century and in the 2nd century, with a considerable decline in subsequent centuries. The comparison of the number of forms and their variants through the centuries showed a high increase in the number of variants in the 1st century, the second century witnessed a continuation of exceptional growth in the use of glass products. At the end of the 3rd and during the 4th and 5th centuries there is a significant decline in the number of forms. Valuable vessels of the late Roman period, such as bowls with wheel-cut figural decoration, diatreta products, and those with gold medallions, are relatively rare in Slovenia. All these reflect the development and representation of glass products in the material culture of the Roman period in Slovenia as well as the economic conditions in the area.

Povzetek

V Sloveniji so najstarejše steklene najdbe znane iz časa kulture žarnih grobišč. V starejši železni dobi smo priča izjemni raznolikosti steklenih jagod v okrasu, barvi in oblikah, pojavijo se tudi prve steklene posode. Izjemen pojav v grobovih JV alpskega prostora so male posode s pokončnimi rebri. V latenskem obdobju so najbolj razširjene steklene zapestnice.

Rimska doba je prinesla ves napredek, ki ga je steklarstvo doživelo v času helenizma in zgodnje rimske dobe. Glavno središče za trgovino z JV Alpami je bila Akvileja, dragoceni predmeti so prihajali tudi iz vzhodnega

Sredozemlja in Egipta. V skupini v kalupu izdelanega posodja prevladujejo rebraste skodelice, od druge četrtine 1. stol. se pojavljajo tudi izdelki iz intenzivno obarvanega stekla. V kalup pihani izdelki niso zelo številni, omenimo pa čašo s podpisom *Enmiona* in čašo bogov iz Črnelega.

Primerjava med posameznimi steklarskimi tehnikami je pokazala, da v 1. stol. na našem območju prevladuje pihano posodje. Samo v prvi polovici 1. stol. so vse tehnike bolj ali manj enakovredno zastopane in enako lahko rečemo za količina posodja glede na tehnike. Stekleno gradivo rimske dobe smo uvrstili v deset skupin posodja (krožniki, skodelice, čaše, zajemalke, vrči, steklenice, lonci, kozmetično posodje, svetilke). Zastopanost posameznih skupin posodja glede na uporabo je pokazala prevlado namiznega posodja (70 %), shranjevanju in transportu pa je bilo namenjeno 21 % posodja. Tudi pregled različic glede na skupino je pokazal, da so najbolj zastopani namizni izdelki. Skodele in čaše med ostalim gradivom posebej izstopajo, tako po količini kot številu različic. Njihova zastopanost je primerljiva tudi skozi stoletja. Čeprav čaše po količini presegajo skodele, opazimo porast različic pri obeh oblikah od druge polovice 1. in skozi vse 2. stol., z opaznim upadom v naslednjih stoletjih.

Primerjava števila oblik in njihovih različic skozi stoletja je pokazala veliko porast števila različic v 1. stol., porast uporabe stekla pa se nadaljuje še skozi 2. stol. Konec 3. stol. in tekom 4. in 5. stol. opazimo izjemen upad v številu oblik. Dragocene steklene posode pozno rimske dobe, kot so izdelki diatreta, steklo z zlato folijo in posode s figuralnim brušenim okrasom, so pri nas redke. Vse to odraža razvoj in zastopanost steklenih izdelkov v materialni kulturi rimske dobe na Slovenskem ter tudi gospodarske razmere v tistem času.

Roman Oil Lamp from Slovenia Depicting a Glass Furnace

Rimska oljenka iz Slovenije z upodobitvijo steklarske peči

Izvlček

Med arheološkimi raziskavami na najdišču Križišče v Spodnjih Škofijah pri Kopru so v letih 2002 in 2003 raziskali del večje grobne parcele ob rimski cesti (*via Flavia Tergeste–Pola*). Eden od žganih grobov na parceli je imel priloženo oljenko z upodobitvijo rimske steklarske peči. Relief prikazuje peč in ob njej dva steklarja. Oljenka in relief sta najbolje ohranjena med trenutno poznanimi tremi oljenkami s tem motivom (Benkovac, Ferrara, Spodnje Škofije). Grob z oljenko iz Spodnjih Škofij lahko glede na pridanke umestimo v sredino 1. stol.

Gljučne besede: rimska doba, Slovenija, steklarstvo, oljenka, steklarska peč, pihanje stekla

Abstract

In 2002 and 2003 at Spodnje Škofije near Koper (Slovenia) at the archaeological site named Križišče ('*Crossroad*'), part of a Roman burial ground beside the Roman road (*via Flavia Tergeste–Pola*) was investigated. One of the cremation graves included an oil lamp with a representation of a glass furnace. The relief shows a glass furnace and a glass worker to the left and right of it. The oil lamp from the grave in Slovenia is by far the best preserved of all three lamps known so far (Benkovac, Ferrara, Spodnje Škofije). The grave with the oil lamp from Slovenia can be placed in the middle of the 1st century.

Keywords: Roman period, Slovenia, glass-working, oil lamp, glass furnace, glass blowing

In 2002 and 2003, a rescue excavation along the route of the future motorway was carried out at Spodnje Škofije near Koper (Slovenia), at an archaeological site named Križišče ('*Crossroad*'). Part of a Roman burial ground beside the Roman road (*via Flavia Aquileia–Tergeste–Pola*), which ran in a north-south direction, was investigated (Novšak 2003, 165; Novšak, Bekljanov Zidanšek, and Žerjal 2019, 28). In the northern part of the necropolis two roads connected with the above-mentioned road, one leading towards a Roman villa in the immediate vicinity (Školarice on the hill Bečajevec), and the other towards the Roman settlement of Sermin

(figure/slika 17). The main road was still in use in the late Roman period.

The necropolis was investigated along the eastern edge of the road. It had paved grave plots and was bordered on the eastern side by a 2-metre-high well-built wall of sandstone. Three grave plots were investigated. The most northerly one had a square shape (16 x 16 m) and lay exactly where the side road branched off towards the nearby Školarice villa (Novšak 2003, 258; Novšak, Bekljanov Zidanšek, and Žerjal 2019). The graves on these plots differ in the manner of burial and in their form. On the three plots, 27 cremated and 16 skeleton burials and 6 graves of newborn babies were researched. They were dated to the

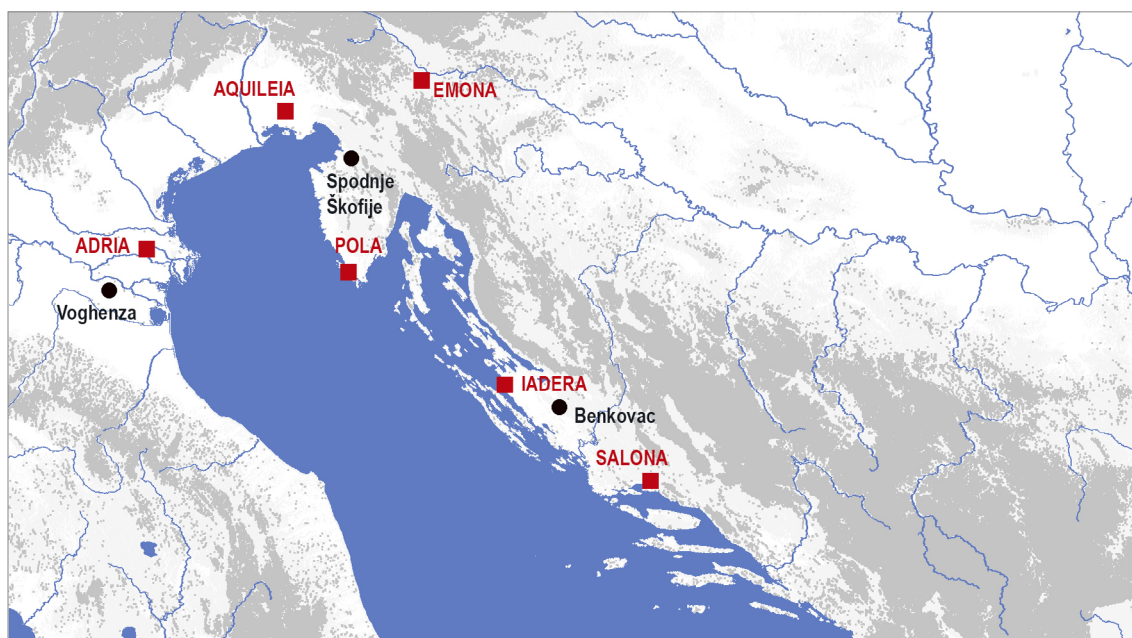


Figure 17: Map of the northern Adriatic with the sites mentioned in the text (elaborated by Andrej Preložnik).
Slika 17: Karta severnega Jadrana z najdišči obravnavanimi v besedilu (pripravil Andrej Preložnik).

period from the 1st to the 5th century. The ground-plan arrangement could not be observed, but the majority of the graves were of the cremation type. The predominant form was the so-called *bustum* type of burial – the cremation of the deceased was made directly above the burial pit.

Judging by the quality of the grave goods, some socially well-situated individuals were buried here. The position of the northern grave plot beside the road turning off towards the villa indicates that it was possibly the property of the owner of the villa in the earlier phase (1st century). One of the cremation graves in the above-mentioned grave plot (grave no. 3) is particularly interesting. The grave goods included an excellently preserved clay oil lamp (figure/slika 18) with a representation of a glass furnace and glass workers beside it (Lazar 2004b, 28, fig. 15, cat. no. 25; 2005a, 17–9. The motif is the same as that on the only two other oil lamps depicting a glass furnace known so far – from *Asseria* (modern Podgrađe near Benkovac, in Croatia) and the vicinity of Ferrara in Italy (Abramić 1959, 149–51; Baldoni 1987, 22–9).

The new oil lamp, of grey burnt clay, is 11.3 cm long, 8.1 cm wide and 2.6 cm high. It belongs to the group of so-called relief oil lamps of the Loeschke type IV, with a rounded nozzle and volutes on either side (figure/slika 19). The disk is decorated with a relief showing a glass furnace and to the left and right of it a glass worker, one of whom is engaged in blowing (a glass vessel) while the other assists at the furnace. The representation is excellent and the oil lamp itself is very well preserved so that many details which are blurred in the other two lamps can be seen clearly 6.¹ In the centre is the furnace, divided into two sections. The lower one obviously serves as a stoke hole (or stoking compartment); the opening is hatched diagonally. The upper section of the furnace has a larger aperture, of semi-circular form. This was used for scooping molten glass out of the melting pot and served as the glassblower's working port. Inside the relief line surrounding the upper opening or door appears a V-shaped object turned upside down. Probably we should not interpret this

1 For discussion and remarks about the relief on the lamp I'm indebted to Dr. Marianne E. Stern.



Figure 18: Photo of the oil lamp from Spodnje Škofije near Koper, site Križišče, grave 3, Regional Museum Koper (photo: Tomaž Lauko).

Slika 18: Fotografija oljenke iz Spodnjih Škofij pri Kopru, najdišče Križišče, grob 3, Pokrajinski muzej Koper (foto: Tomaž Lauko).

as the melting pot for glass. Possibly this schematic sketch draws attention to the working port's small door or fireguard (perhaps no more than a pot shard, as suggested by Marianne Stern (2004, 83) which closed the working port while work was in progress, so as to maintain the temperature inside the furnace and at the same time protect the glassblower while he was working at the furnace.² On the left and right in the

² At some medieval furnaces remains of pottery frames have been excavated; according to the excavator they served to change the size of the working port (information Marianne E. Stern; Steppuhn 2001, 40, Abb. 4). They can be compared to pottery frames discovered at Avenches (Amrein 2001, 88, pl. 20: 74).

upper part two small shelves or working surfaces are shown, the righthand one rests on a leg or stand. The right one can be interpreted as the working surface or slab on which the glassblower rolled a glass post before blowing and marvered the glass during his work above the furnace. Undulating lines incised in the upper left part above the furnace indicate the heat emanating from the furnace.

The right-hand figure sits on a low stool beside the furnace, dressed in a short tunic, the folds of which are emphasized with deep incisions. He is barefoot, as can be seen by the short-slanting incisions at the front of his foot. On the floor by his foot lie three objects, which can probably be interpreted as raw glass and/or waste material formed during his work. The person's head is raised, his lips pushed forward and ready to blow into the pipe which he holds inclined in front of him. This is elliptically broadened at the end and draws attention to the oblong, a rather big object that the glass worker is blowing. Considering the proportions of the glassblower and his tool, the blowpipe is less than a metre long and looks quite robust. We can also observe that something is attached to the underside of the pipe. If the blowpipe is not made of metal, but of clay, as Marianne Stern suggests (1999, 446), the long narrow strip tied to it may have served to reinforce the pipe while the glassblower blew a large, heavy object (pers. com. Marianne E. Stern). The round hole below the pipe is the oil lamp's air vent.

The figure on the left side of the furnace, probably the master craftsman's assistant is less precisely drawn. He seems to be squatting next to the furnace. He has a short object in his hands, placed upright. It is not a blowpipe. Could it be a "pointed" bellows of the vertical type depicted on several Roman monuments depicting a smith at work? (Weisgerber and Roden 1985, 6–10, figs. 10–3). In that case, the triangular shelf seen on the left side of the furnace probably represents the support for the bellows (suggested by E. M. Stern; Weisgerber and Roden 1985, 9). However, according to the last experiments on Roman glass blowing by Mark Taylor and David Hill,

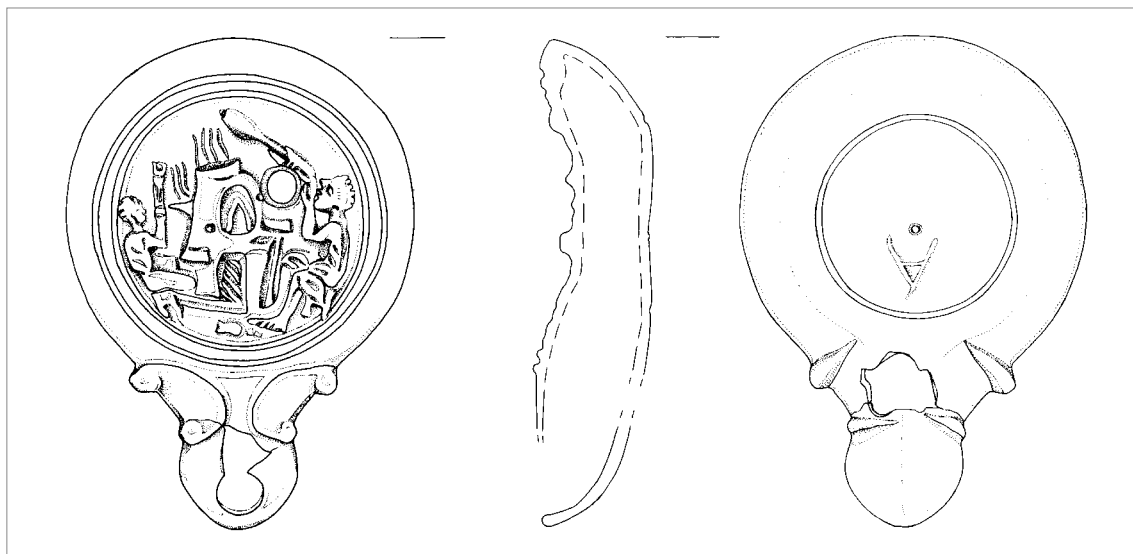


Figure 19: Drawing of the oil lamp from gr. 3 (drawing Jerneja Kobe).
Slika 19: Risba oljenke iz groba 3 (risba Jerneja Kobe).

the bellows are not necessary. The desired heat in the furnace for melting and blowing can be achieved with proper stocking.³ Therefore it is also possible, that the assistant on the left side of the furnace is only checking the finished object, which he took out of the annealing oven.

There is no inscription or name on the upper part of the disk, as on the oil lamp from *Asseria* (Abramić 1959, 150, Taf. 27; Buljević 2005, 100, sl. 8) where we read the names of *ATHENIO* and *TRE(A?)LLUS* above the furnace. The names were part of the mould and not added after the firing.⁴ On the lamp from Slovenia a letter 'A' is scratched on the underside of the lamp. The same letter is scratched also on the remains of the second lamp in the grave (Novšak, Bekljanov Zidanšek, and Žerjal 2019, 171, no. 26). It would be too bold even to think to associate this letter with the name on the oil lamp from Benkovac.

The oil lamp from the grave in Slovenia is by far the best preserved of all three lamps. The relief is very well executed, crisp and not damaged. The relief scenes on the lamps differ only in the

placement of the air vent (*infundibulum*), which is on the lower side of the disk in the find from Benkovac, more precisely on the lower part of the furnace (figure/slika 20), while on the lamps from Ferrara and Slovenia, the small hole is below the blowpipe, on the right upper side of the relief. Probably we may assume that at least the two lamps from Italy and Spodnje Škofije were made in the same mould since their individual details are identical as well as their length (Ferrara 11.5 cm, Spodnje Škofije 11.3 cm; Benkovac 10.5 cm). The relief on the lamp from Ferrara (figure/slika 21) is too worn and the right side is not preserved for all other details to be compared.

The grave in which the lamp was found produced also some glass objects. Fragments of four balsamaria were discovered (Lazar 2005a, 18, fig. 4; Novšak, Bekljanov Zidanšek, and Žerjal 2019, 166–75). They were blown from the glass of a slightly bluish hue, well produced, without air bubbles, and with relatively thick walls. Of three balsamaria only slightly rounded bases are preserved. Their forms agree with those of tubular-shaped balsamaria (the form 8.6.1.; Lazar 2003a, 175) that were characteristic of the 1st and the first half of the 2nd century. One balsamarium was preserved up to half its height. It is a tubu-

3 Pers. comm. David Hill and Mark Taylor; www.roman-glassmakers.co.uk

4 Pers. information by Zrinka Buljević from the Archaeological Museum Split.

lar balsamarium with a constriction at the base of the neck, a type which can be classified among the Slovenian material as the 8.6.2. form. These occur from the middle or from the second half of the 1st century onwards (Lazar 2003a, 176, 195).



Figure 20: Oil lamp from Croatia (*Asseria*, Benkovic; after Abramić 1959).

Slika 20: Oljenka iz Hrvaške (*Asseria*, Benkovic, Hrvaška; po Abramić 1959).

There were very few other grave goods in this grave (Novšak, Bekljanov Zidanšek, and Žerjal 2019, 168–70), though we should mention some iron fragments, amphora Dressel 2–4 remains, and two coins; one from the period of Tiberius and was badly damaged and the other a rather worn bronze coin of Claudius (41–54).⁵ The bone remains of this ash grave were unfortunately too scanty for analysis. Considering the composition of grave goods, this grave can be placed in the period between 40 to 60 AD (p. 166).

To whom can the grave be connected? Was the deceased in some way linked with the glasswork trade (a glass-blower, perhaps a glassware merchant) or is the representation on the oil lamp purely coincidental? Is it possible that in the nearby villa (Školarice) a glass workshop operated as well as other branches of business? The excavations carried out so far have not provided data which would support such a hypothesis. Maybe the oil lamp laid in the grave was only an

⁵ The coins were determined by Alenka Mišček from the Numismatic Cabinet of the National Museum of Slovenia, Ljubljana.

expression of interest in craft which in the course of the 1st century spread like wildfire throughout the whole empire due to the newly discovered technique of free blowing.



Figure 21: Oil lamp from Italy (Voghenza, Ferrara; after Baldoni 1987).

Slika 21: Oljenka iz Italije (Voghenza, Ferrara; po Baldoni 1987).

At present, there is no evidence of local Roman glass production from the rather limited coastal region of present-day Slovenia (Lazar 2003b, 78). But not far away lies Aquileia, where—to judge by the finds—glass workshops did operate as early as the 1st century (Stern 2004, 116, note 56; Calvi 1968; Mandruzatto 2008). Moreover, the town was a strong commercial centre and played an important role in trade links between the northern Adriatic region and the south-eastern Alps in the first centuries AD, including trade in glass and glass products.

Summary

In 2002 and 2003, a rescue excavation was carried out at Spodnje Škofije near Koper, at an archaeological site named Križišče ('Crossroad'). Part of a Roman burial ground beside the Roman road (*via Flavia Tergeste–Pola*)

was investigated. One of the cremation graves included an excellently preserved clay oil lamp with a representation of a glass furnace. The motif is the same as that on the only two other oil lamps depicting a glass furnace known so far, from *Asseria* (modern Benkovac, Croatia) and Ferrara (in Italy).

The new oil lamp has a disc decorated with a relief showing a glass furnace and to the left and right of it a glass worker, one of whom is engaged in blowing while the other assists at the furnace. The representation is excellent and very well preserved so that many details which are blurred in the other two lamps can be seen clearly. In the centre is the furnace, divided into two sections. The lower one obviously serves as a stoke hole; the opening is hatched diagonally. The upper section of the furnace has a larger aperture, of semi-circular form. This was used for scooping molten glass out of the melting pot. Inside the relief line surrounding the upper opening or door appears a V-shaped object turned upside down. Possibly this schematic sketch draws attention to the working port's small door or fireguard which closed the working port while work was in progress. On the left and right in the upper part, two small shelves or working surfaces are shown. The right one can be interpreted as the working surface or slab on which the glassblower rolled a glass post. The right-hand figure sits on a low stool beside the furnace, dressed in a short tunic. The person's head is raised and ready to blow into the pipe which he holds inclined in front of him. The figure on the left side of the furnace seems to be squatting next to the furnace. He has a short object in his hands, placed upright. Perhaps he is checking the finished object that he took out of the annealing oven.

The oil lamp from the grave in Slovenia is by far the best preserved of all three lamps. Considering the composition and extent of the grave goods, this grave can be placed in the mid-1st century.

Povzetek

V letih 2002 in 2003 so v Spodnjih Škofijah pri Koprju potekale arheološke raziskave na najdišču Križišče. Ob rimski cesti (*via Flavia Tergeste-Pola*) so odkrili del rimskega grobišča. V enem od grobov je bila priložena odlično ohranjena oljenka z reliefom steklarske peči. Motiv je povsem enak kot na ostalih dveh do sedaj poznanih

oljenkah z upodobitvijo rimskih steklarskih peči iz Hrivaške (Benkovac) in Italije (Ferrara).

Novo odkrita oljenka ima disk okrašen z reliefom, ki prikazuje steklarsko peč, desno in levo od nje pa sta steklarja, eden piha v steklarsko pipo, drugi mu pomaga ob peči. Upodobitev je zelo dobro ohranjena, številni detajli, ki na ostalih dveh oljenkah niso natančno prepoznavni, so na njej jasno vidni. V središču je peč, deljena na dva dela. Spodnji služi kot kurišče, odprtina je poudarjena s posebnimi linijami. Gornji del peči ima večjo odprtino polkrožne oblike. Uporabljali so jo za zajemanje stajenega stekla iz talilnikov v peči. Sredi odprtine je upodobljen narobe obrnjen predmet oblike V. Morda gre za shematičen prikaz zaslona odprtine v peči, ki so ga uporabljali med delom oz. pihanjem. Na levi in desni strani gornjega dela sta dve polički oz. delovni površini. Desna bi lahko bila namenjena valjanju stekla na pipi v procesu dela.

Desna figura sedi na nizkem stolčku ob peči, oblečena je v kratko tuniko. Glavo ima dvignjeno in pripravljeno za pihanje v pipo, ki jo drži pred seboj. Figura na levi strani peči verjetno ob slednji čepi. V roki ima predmet, obrnjen navpično. Morda preverja izdelano posodo, ki jo je vzela iz prostora za ohlajanje.

Oljenka iz Slovenije, ki je bila najdena v grobu, je najbolj ohranjena med tremi do sedaj poznanimi najdbami. Glede na sestavo groba in priložene pridatke, lahko grob z oljenko umestimo v sredino 1. stol.

Roman Glass Production in *Celeia* (*Noricum*) – New Evidence

Rimska proizvodnja stekla v Celeji (Norik) – novi dokazi

Izvlček

Dokazi o steklarski proizvodnji v Celeji so bili prvič odkriti med izkopavanji v letih 1991–1992. Količina steklenega gradiva je bila precejšnja, med njimi so bili kosi surovega stekla. Različni odpadki v obliki kapelj, niti, staljenega stekla in zavrženih slabo izdelanih posod so dokazovali, da so na najdišču steklo talili, preverjali njegovo kakovost in izdelovali posode. Nova izkopavanja v letih 2003–2004 so potrdila delovanje steklarske delavnice. V poznorimski grob je bil priložen polizdelek polkroglaste skodelice, kar dokazuje, da so bile steklarske delavnice v mestu aktivne še v celotnem 3. stol.

Ključne besede: steklarska delavnica, surovo steklo, odpadki stekla, proizvodnja stekla, polizdelek

Abstract

Evidence of glass production in *Celeia* was first discovered during excavations in 1991–92. The quantity of the glass material was considerable. Raw blue-green glass predominated and the largest pieces were 2 to 3 cm thick. Various waste in the form of drops, threads, chips of melted glass and poorly worked vessels shows that glass was melted, tested and worked. New excavations in 2003–2004 confirmed the existence of a glass workshop. The unfinished bowl was added to a late Roman grave. This proves that the glass workshops in *Celeia* were still in operation in the 3rd century.

Keywords: glass workshop, raw glass, glass waste, glass production, glass bowl

Proof of the production of glass in *Celeia* was first discovered during excavations in Levstikova Street in 1991–92 (Lazar 1997, 7; 2003a, 214, fig. 57; 2008a). A major concentration of fragments of raw amorphous glass and a large quantity of glass waste and broken vessels were found in an area of some 30 square meters just along the northern edge of the late Roman town wall (figure/slika 22). Despite careful work, no elements were discovered in the excavated area that could be determined as the remains of glass furnaces. Only a few fragments of clay or brick with a thick layer of melted glass gave evidence of the existence of a glass furnace. As these were rescue excavations, where the size

of the excavated area was limited to the dimensions of the construction pit, it is considered that it will be possible to excavate the site completely in the future.

The study of the excavated material confirmed that glass workers were active in this part of the city. The quantity of the excavated glass material was considerable, and the remains of raw glass and glass waste weighed several kilograms.

The discovered pieces of raw glass were blue-green and decolourised. The amount of blue-green raw glass fragments predominated and the largest were from 2 to 3 cm thick, which confirms that in the workshop larger pieces of raw glass or



Figure 22: Fragments of raw glass, glass waste and glass fragments for recycling, Celje, Levstikova Street (photo: Irena Lazar).

Slika 22: Odlomki surovega stekla, steklarskih odpadkov in stekla za reciklažo, Celje, Levstikova ulica (foto: Irena Lazar).

glass ingots were used for melting and blowing. The pieces of decolourised raw glass were smaller and some of them have a yellowish tinge.

Some fragments of raw glass had the remains of clay on the surface which led us to the conclusion that these are the rest of the melting pots.

Various waste in the form of drops, threads, and chips of melted glass show that at this site glass was melted, its viscosity was tested, and it was worked. Direct evidence for blowing and the manufacture of glass vessels are the remains of poorly worked and rejected vessels, handles, and rods of bent glass (Lazar 2003a, fig. 57: 4, 5, 7) from which the handles of vessels were formed. Pontil marks on the bases of balsamaria and sev-

eral beakers confirm the use of metal rods – pontils – in addition to the blowing pipe.

The waste of deformed glass products on the site included many fragments of cylindrical beakers of decolourised glass (Lazar 2003a, forms 3.6.1.–2.), which were almost certainly produced in this workshop. Comparative material was excavated in 1995 at the site of a Roman tile factory operating in the second half of the 2nd century (Lazar 2006c, 70, 75, nos. 8–11). The market of the glass makers from *Celeia* thus extended all over the municipal territory.

Fragments of violet-coloured vessels are also very interesting (PMC, inv. no. R 21562–65). This colour is created by adding manganese oxides to the glass. Roman glass workers also used

manganese for decolouring glass, neutralizing the iron oxides to acquire an entirely decoloured glass (Velde and Hochuli-Gysel 1996, 185). Fragments of violet-coloured glass were rare, some even showing a combination of decolourised and violet colour glass on one vessel.

The other fragments of glass vessels that were discovered in Levstikova Street belonged to various forms, including pieces of mosaic glass, ribbed bowls, square bottles with base marks, and glass with applied snake-thread decoration (Lazar 1997, pl. 1–3), so far rather rare amongst our glass material. If the earliest forms are considered to represent glass for recycling, production at this workshop can be assigned to the 2nd as well as to the 3rd century. Such a dating is also based on the depth of the stratum in which the remains were discovered, as it lay beneath the level of the late Roman walls, dated to the end of the 3rd century.



Figure 23: Unfinished glass bowl was added to a late Roman grave (photo: Irena Lazar).

Slika 23: Nedokončana steklena skodelica je bila priložena v pozno rimskem grobu (foto: Irena Lazar).

New excavations in 2003–2004, somewhat to the north of the area excavated in 1992, brought to light new elements, that confirm the existence of a glass working site in this part of the town. An unfinished glass bowl in a late Roman grave (gr. 35) (figure/slika 23), glass rods and fragments of glassworking waste from the settlement area should be singled out.

The bowl was put in a grave together with an iron nail, there were no other grave goods. The upper part of the vessel, a hemispherical bowl, was not yet cut off. The product is rather thick and we may assume that it was part of a vessel form Isings 96b (Isings 1957, 113; Rütli 1991, 95, AR 6; Lazar 2003a, 83, form 2.6.2.). The base of the vessel is flat and slightly concave in the centre, the rim was probably slightly stepped.

The form is dated to the 3rd century and onward although some individual finds are known also from the end of the 2nd century (Rütli 1991, 95). In Slovenia, these vessels appear in the 3rd and 4th centuries (Lazar 2003b, 84). The unfinished bowl was added to a grave that can be dated according to other graves of the necropolis to the 3rd or beginning of the 4th century.

The product proves the glass workshops in *Celeia* operated in the 3rd century and with some speculation perhaps also at the beginning of the 4th century.

Two glass rods (figure/slika 24) from the settlement area in Mariborska cesta are particularly intriguing because they don't belong to a glass vessel. They are straight, small and quite thinly blown. Similar glass rods are known from two other sites in Slovenia. One was excavated in Ptuj (*Poetovio*) (Korošec 2004, 68, fig. 1) where the glass workshops operated in the 2nd and 3rd centuries (Lazar 2003b, 79) and the second one in Slovenj Gradec (*Colatio*) (Djura Jelenko 2004, 106, pl. 38: 286). Is it possible that these glass tubes are part of a glass-working process or even glassblowing? If we could answer to this it would mean that the glass-blowing experiments began in the Roman provinces much earlier than so far known. But at the moment, despite intriguing finds, these questions remain unanswered.

The position of the Celje glass workshop should be mentioned in the conclusion. In Roman towns, all crafts that involved the use of fires and kilns or furnaces were usually located on the outskirts, as far as possible from the residential buildings. The glass workers of *Celeia* also sought their place on the northern edge of the town, somewhat away from the densely set-

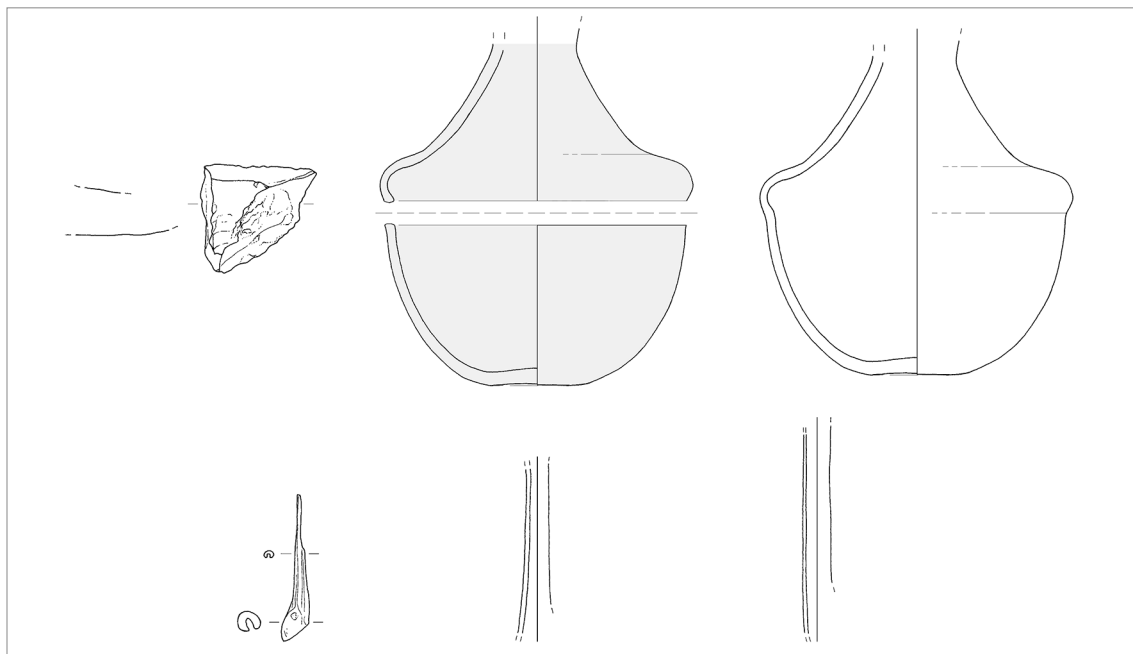


Figure 24: Drawing of the bowl, glassworking waste and two glass tubes from *Celeia* (drawing Jerneja Kobe).
Slika 24: Risba polizdelka, steklarskega odpada in steklenih cev iz Celeje (risba Jerneja Kobe).

bled centre, and near both the roads and the river, which then represented important transportation routes.

Summary

Evidence of glass production in *Celeia* was first discovered during excavations in 1991–92. The quantity of the glass material was considerable. Raw blue-green glass predominated and the largest pieces were 2 to 3 cm thick. Various waste in the form of drops, threads, chips of melted glass and poorly worked vessels shows that glass was melted, tested and worked. The waste of cylindrical beakers of decolourised glass prove they were produced in this workshop. Comparative material was excavated at the site of a tile factory from the 2nd century. The market of the glass makers from *Celeia* thus extended all over the municipal territory.

New excavations in 2003–2004 confirmed the existence of a glass workshop, in particular findings of an unfinished glass bowl, glass rods and fragments of waste. Similar glass rods are known from other sites in Slovenia: Ptuj (*Poetovio*) and Slovenj Gradec (*Colatio*). Is it possible that these glass tubes are part of a glass-making

process or even glass-blowing? The unfinished bowl was added to a grave dated to the 3rd or beginning of the 4th century. It is part of a vessel form Isings 96b. The product proves that the glass workshops in *Celeia* were still in operation in the 3rd and perhaps even at the beginning of the 4th century. The position of the Celje glass workshop should be singled out in the conclusion. In Roman towns, all crafts that involved the use of fires and kilns or furnaces were usually located on the outskirts, as far as possible from the residential buildings. The risk of fires was reduced in this manner. The glass workers of *Celeia* also sought their space on the northern edge of town, somewhat away from the densely settled centre, and near both the roads and the river, which then represented an important transportation route.

Povzetek

Dokazi o steklarski proizvodnji v Celeji so bili prvič odkriti med izkopavanji v letih 1991–92. Količina steklene gradiva je bila precejšnja, prevladovali so kosi surovega stekla, največji odlomki so bili debeli med 2 in 3 cm. Številni odpadki v obliki kaplj, niti, staljenega stekla in slabo izdelanih posod so dokaz o taljenju, preverjanju vi-

skoznosti in obdelavi stekla. Številni odlomki cilindričnih čaš iz brezbarvnega stekla dokazujejo, da so slednje izdelovali v tej delavnici. Primerjalno gradivo izvira z najdišča opekarske delavnice, datirane v drugo polovico 2. stol. Trg te steklarske delavnice je očitno obsegal celotno mestno območje Celeje.

Nova izkopavanja v letih 2003 in 2004 so potrdila delovanje steklarske delavnice, posebej še najdbe polizdelka skodelice, steklenih cevki in odpadkov stekla. Podobne steklene cevke poznamo tudi z drugih najdišč po Sloveniji: Ptuja (*Poetovio*) in Slovenj Gradca (*Colatio*). Vprašanje je, ali gre za steklene cevke, ki so del steklarske proizvodnje ali celo pihanja stekla. Nedokončana skodelica je bila pridana v poznorimski grob, ki je datiran v 3. oz. na začetek 4. stol. Pripada obliki Isings 96b. Izdelek bi lahko bil dokaz, da so delavnice v Celeji delovale še vse 3. stol., morda celo do začetka 4. stol.

Na koncu velja izpostaviti še položaj steklarske delavnice v Celeji. Obrti, ki so bile povezane z ognjem, so bile v rimskih mestih navadno locirane na robu mesta, čim dlje od stanovanjskih poslopij, da so zmanjšali nevarnost požarov. Tudi celejski steklarji so svoje mesto poiskali na severnem robu mesta, nekoliko izven gosto poseljenega središča, blizu glavnih prometnic in reke, ki je bila prav tako pomembna transportna pot.

Najdišča
in gradivo

Sites
and Finds

Coloured Monochrome Glass of the Early Imperial Period in *Romula* (*Pannonia*)

Intenzivno obarvano stekleno posodje iz zgodnje cesarskega obdobja iz Romule (Panonija)

Izvléček

Članek predstavlja pomembno skupino intenzivno obarvanega stekla iz zgodnjemperialnega obdobja, ki je bilo v tem obsegu prvič odkrito med raziskavami na najdišču *Romula*. Celostna obdelava gradiva je v teku, vendar želimo izpostaviti nekaj preliminarnih rezultatov. Enobarvno stekleno posodje intenzivnih barv, značilno za prva desetletja 1. stol., opredeljujejo oglate forme in ostri profili, odlikuje pa ga tudi izjemno kakovostna izdelava. Med gradivom pa je tudi pomembna skupina t. i. črnega stekla.

Ključne besede: rimsko steklo, izdelava v kalupih, obarvano steklo, neprosojno steklo, črno steklo

Abstract

The article presents an interesting glass assemblage of early imperial coloured mould-made fine ware discovered in Roman road and custom station *Romula*, the largest group of coloured glass discovered so far in Slovenia. The complete study of the material is in progress but we would like to point out preliminary results. Monochrome translucent coloured fine ware, characteristic for the first quarter of the 1st century AD, have distinguished angular and carinated profiles and are further characterized by strong colours and high standards of craftsmanship. There is also a significant group of black-appearing glass vessels.

Keywords: Roman glass, mould-made glass, coloured fine ware, opaque glass, black glass

During the 2nd and 1st centuries BC the Hellenistic states were incorporated into the Roman Empire. As stated by Grose this furnished the impetus for the creation of the Roman Glass industry that flourished from the Augustan time to the end of the Empire (1989, 241). The glass craft developed quickly and spread all over the Roman Empire. It became a strong and independent Roman enterprise which achieved maturity within less than a century. This was possible on one side because of the expansion of trade during the early imperial period, the rapid spread of the glass factories and of the knowledge how to make raw glass and glass products and the combination of

the old and newly discovered production techniques (Grose 1986, 66; 1989, 242).

But in the years of development and growth, the Roman glass-making and glass industry faced several significant and important changes in the course of the 1st century BC and AD. During the Roman imperial period, glass objects were manufactured in secondary glass workshops all over the Empire (Stern 1999) by the use of imported raw glass. Archaeological findings identified the Syro-Palestinian coast as the main area for primary glass production (Nenna 2007; Gorin-Rosen 2012).

Free blowing slowly replaced the time-consuming moulding techniques, glassware sudden-

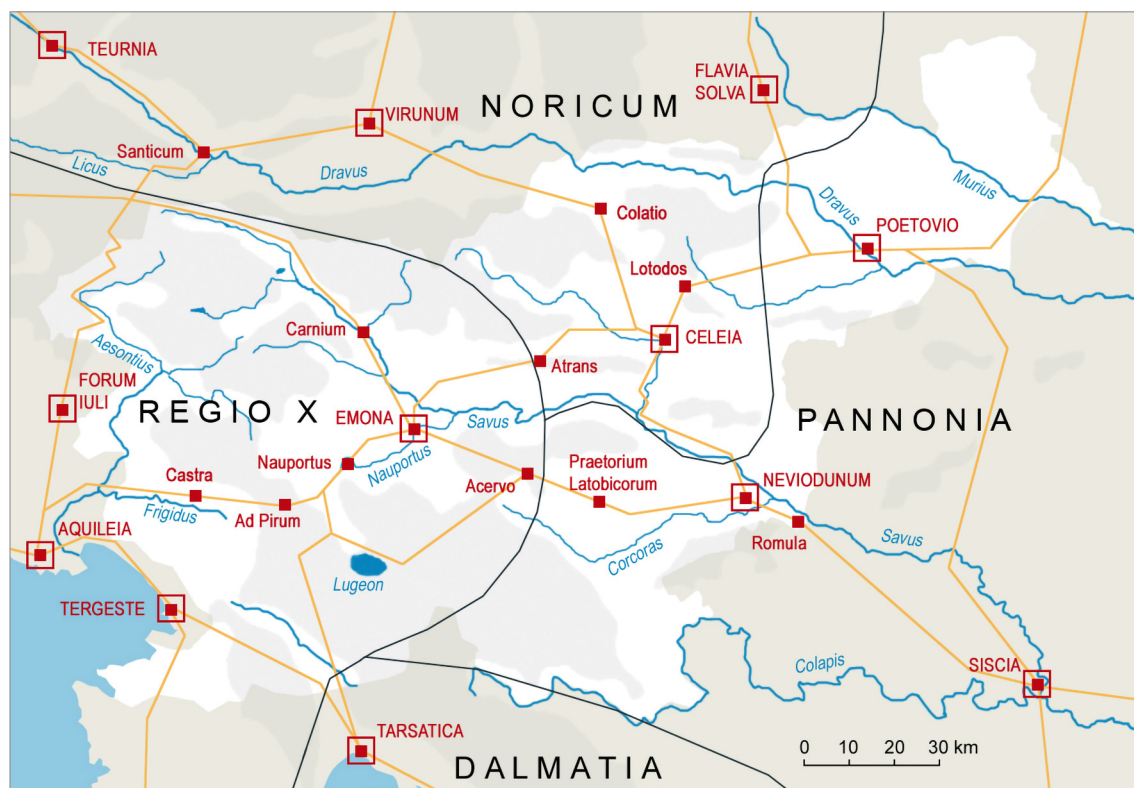


Figure 25: Map with the site of *Romula* and Roman communication routes (elaborated by Andrej Preložnik).
Slika 25: Karta z lokacijo najdišča *Romula* in rimskimi komunikacijskimi potmi (pripravil Andrej Preložnik).

ly became a commodity available to all classes in their everyday life. Numerous manufacturing centres operated in the Mediterranean and in the western part of the Empire, some specialized in mass production while others developed in more specialized workshops for high-quality products (Stern 1999).

We would focus on the products of the latter, recently excavated in Slovenia, since not many archaeological excavations and settlement research in the area give an opportunity to study high-quality early imperial glass. The article presents and gives preliminary information about the very rich glass assemblage of early imperial coloured mould-made fine ware discovered in Roman road and custom station *Romula* in the period from 2001 to 2005. The complete study of the material is in progress but due to the interesting and large amount of glass finds we would

like to point out some preliminary results and observations.

The extensive rescue excavations started during the motorway construction on the route Ljubljana–Novo Mesto–Brežice, which corresponds also with the former Roman *via publica* (in early development also *via militaris*) *Emona–Neviodunum–Siscia*. Ribnica near Brežice in Lower Carniola (Slovenia), a Roman post and customs station known as *Romula* is one of the most extensive sites investigated along the new motorway route in the recent period (Breščak 2004; Lazar 2020a). The name of the station is known from *Tabula Peutingeriana*. With its control and supply role, the station's location on the route of the main Roman road (*via publica Aquileia–Emona–Neviodunum–Siscia*) was an act of careful strategic planning (figure/slika 25) (Lazar 2020a).

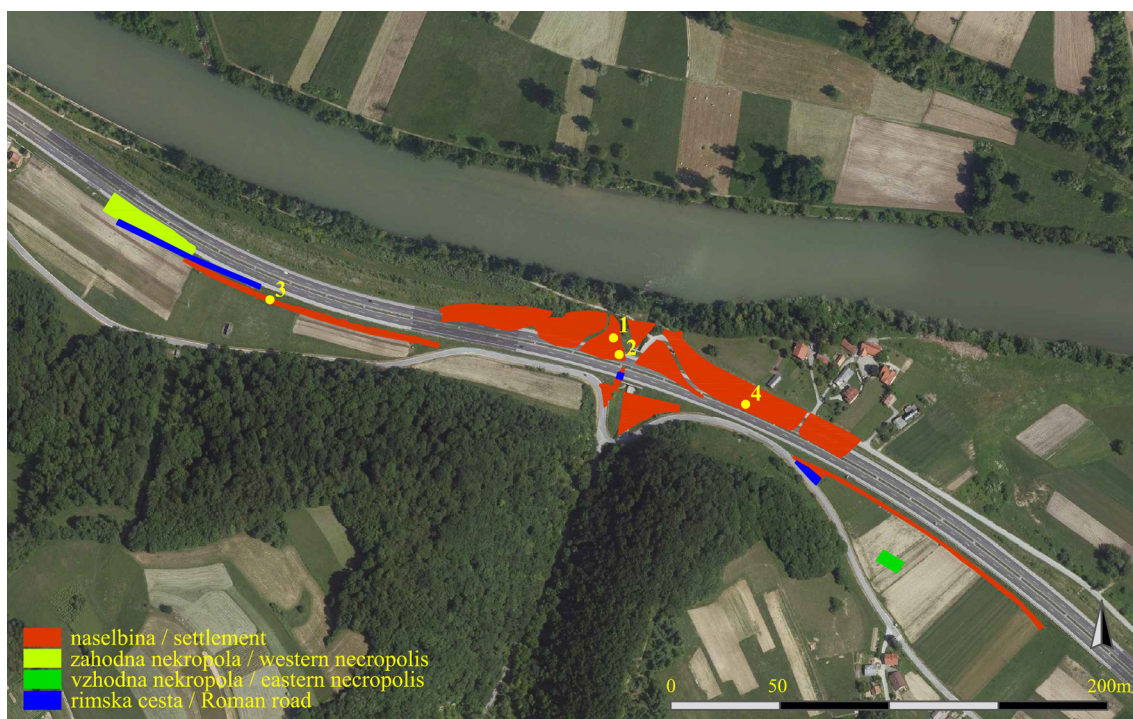


Figure 26: The excavated area of *Romula* (elaborated by Aleš Ogorelec, after Lazar 2020a).

Slika 26: Raziskano območje najdišča *Romula* (pripravil Aleš Ogorelec, po Lazar 2020a).

New excavations uncovered the extensive settlement and necropolis area. The structures date from the late 1st century BC to the 4th AD. The heart of the settlement was located on a terrace of the river Sava and archaeologists researched official and production buildings, several segments of the Roman road and the western and eastern necropolis (Lazar 2020a) (figure/slika 26). It is, therefore, not surprising that the site yielded rich and variegated glass material from the settlement and necropolis, confirming thus the lively trade connections and routes leading through the station.

The largest group of materials we are now working on is the early imperial mould-made glass. We are talking about two distinctive groups of fine wares in early Imperial contexts (Grose 1991, 2). Group one consists of coloured fine wares, made by mould-pressing and the Group two of colourless fine wares, made by casting or mould-pressing (Lierke 2009).

When publishing the impressive collection of early ancient glass from the Toledo Museum of Art, Grose defined six families of mould-made vessels within the group of Early Roman Glass (1989, 244–61). Monochrome translucent coloured fine ware and monochrome opaque coloured fine ware were defined as family III–Roman cast monochrome vessels (Grose 1989, 254). Due to the angular and carinated ceramic-like profiles, the group was also known as the so-called glass with ceramic profiles, as it was defined by Berger (1960, 24–30) in his study of the glass from Vindonissa.

This group of fine wares is characterized by angular lathe-turned forms, strong colours and very high standards of craftsmanship. The group has no stylistic ties with the production of glass in the late Hellenistic period. It was observed, that several of the colours, like emerald green, are the inventions of the newly established Roman Glass industry (Grose 1991, 2). The angular and carinated forms reveal the influence of con-

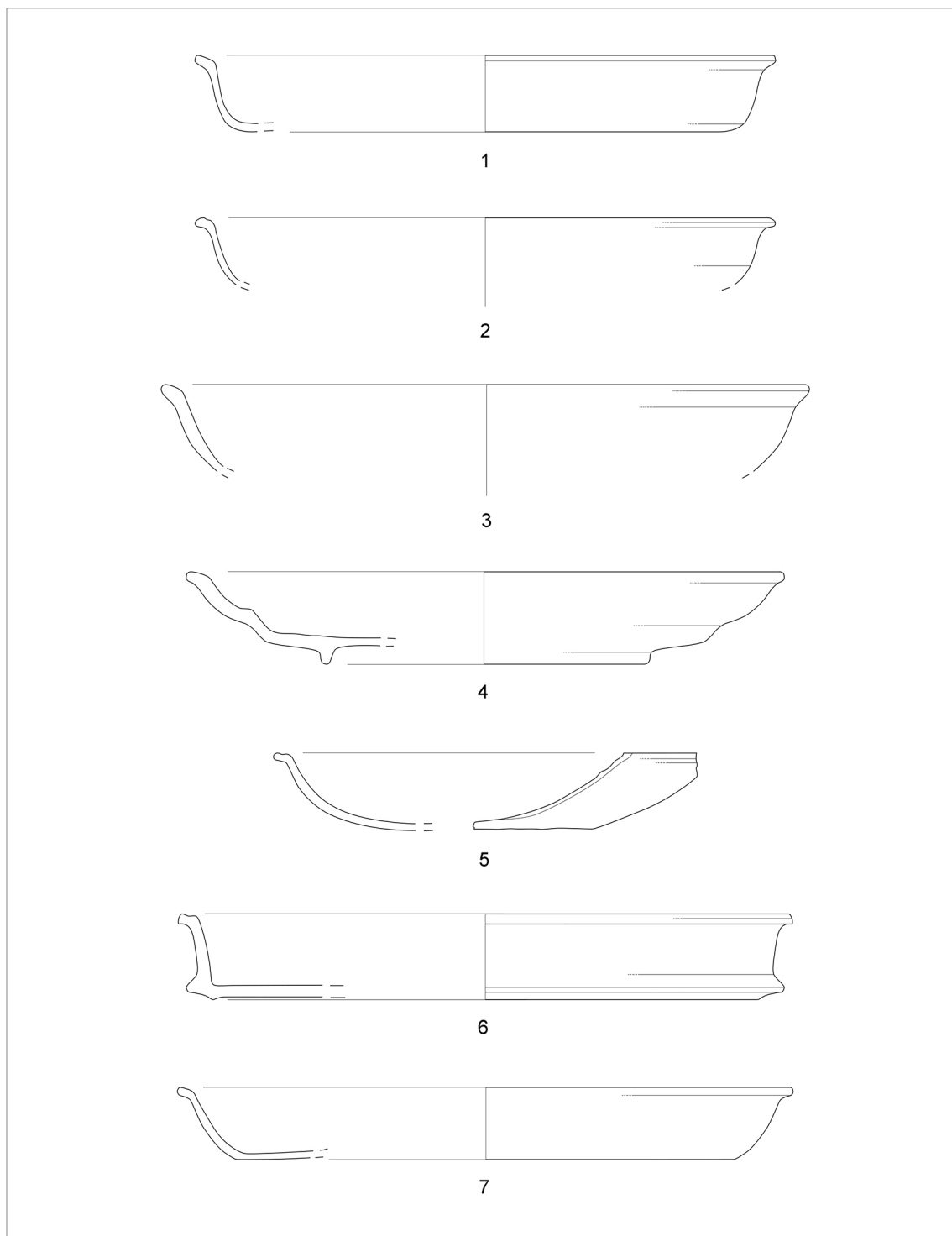


Figure 27: Forms of mould-made coloured translucent glasses – plates; M = 1 : 2, drawings Andreja Izlakar.
Slika 27: Oblike posod iz intenzivno obranega stekla izdelane v kalupih – krožniki; M = 1 : 2, risbe Andreja Izlakar.

temporary metalware, bronze or even silverware of the Julio-Claudian era (Grose 1989, 254). The distribution of these products is western since the majority of the examples were discovered on Italian and other European archaeological sites; that's why this group is understood as a distinctive product of the early Roman glass industry in the west and the Italian production centre is assumed or more precisely the factory or a cluster of workshops of Roman Italy.

These glasses first appeared in the first quarter of the 1st century AD, perhaps ongoing to about 60 AD (Grose 1989; 1991; 2017). Only a generation or two after its appearance the coloured fine ware obviously fell from fashion. The group of monochrome-coloured vessels is very homogeneous and Grose defined ten principal forms: plates, cups or bowls (hemispherical, concave and carinated), pyxis and less common large plates or trays (1989, 260, fig. 135; 1991, 2), but today some additional individual forms can be added. In *Romula* the finds of this group of glass are surprisingly numerous and forms do not appear only as the individual finds but in numbers. We have recognized eight of ten principal forms: cups and plates in various forms and pyxis with subtypes (figures/sliki 27, 28) and we would single out the main characteristics of the assemblage.

Monochrome translucent coloured fine ware

For the group of translucent monochrome fine ware, the colours of translucent emerald green, cobalt and dark blue, and peacock blue are very distinctive. Emerald green and peacock blue are the colours developed by the Roman glass industry and used almost exclusively for this class of glass vessels. Among the *Romula* material, emerald green glass is predominant for all forms of fine wares. The green glasses from Ribnica were analysed by Caroline Jackson and more about the glass colouring and analyses of the green glasses can be read in the published works (Jackson, Lazar, and Cottam 2015; Cottam and Jackson 2018, 93).

Plates (15 vessel fragments; figure/slika 27: 1–7) with constricted, straight or convex walls are made predominantly of translucent dark green (various shadows of emerald green) glass and only two of them are made of dark blue or cobalt blue glass. Some of the plate fragments have shallow grooves on the base and several of them have a small circle in the centre where they were affixed to the lathe.

Cups (17 vessel fragments) (figure/slika 28: 1–6) vary in size and form; they are hemispherical, with convex walls or have carinated walls. Some of the fragments have shallow grooves on the walls or the inner side of the base, but none of the bases shows attachment remains on the base on the outside. They are again made predominantly of translucent deep or emerald green glass, only two fragments belong to a dark blue cup.

Five fragments of pyxides (5 individual vessels) (figure/slika 28: 9–10) in the group of translucent coloured ware are made of deep green glass. Their diameter and height vary, from 5.6 to 11 cm in diameter and from 4 to 4.5 cm in their height. Some examples have a distinct circle on the base, where the vessel was attached to the lathe.

The presented group of glass has some individual comparisons on Slovenian sites from *Emona* (insula 32; Plesničar-Gec 1983, pl. 23: 12, 16, 19, 22, 25), *Celeia* and *Poetovio* (unpublished) but so far nowhere have these glasses appeared in such quantity as in *Romula*. It is also significant that in *Romula* these are all settlement finds and those vessels were not used or added as grave goods, although graves from the mid-1st century and on were excavated on the western necropolis of the site and some of them include high-quality mould-blown glass and amber objects.

The comparisons to the material from well-dated sites or strata are known from Magdalensberg (Czurda-Ruth 1979, 65–91), where all fragments presumably date before 45 AD, when the site was abandoned, with few examples attributed to late Augustan levels (1979, 70–1). In *Vindonissa* dated examples are concentrated in Tiberian and early Claudian contexts, some con-

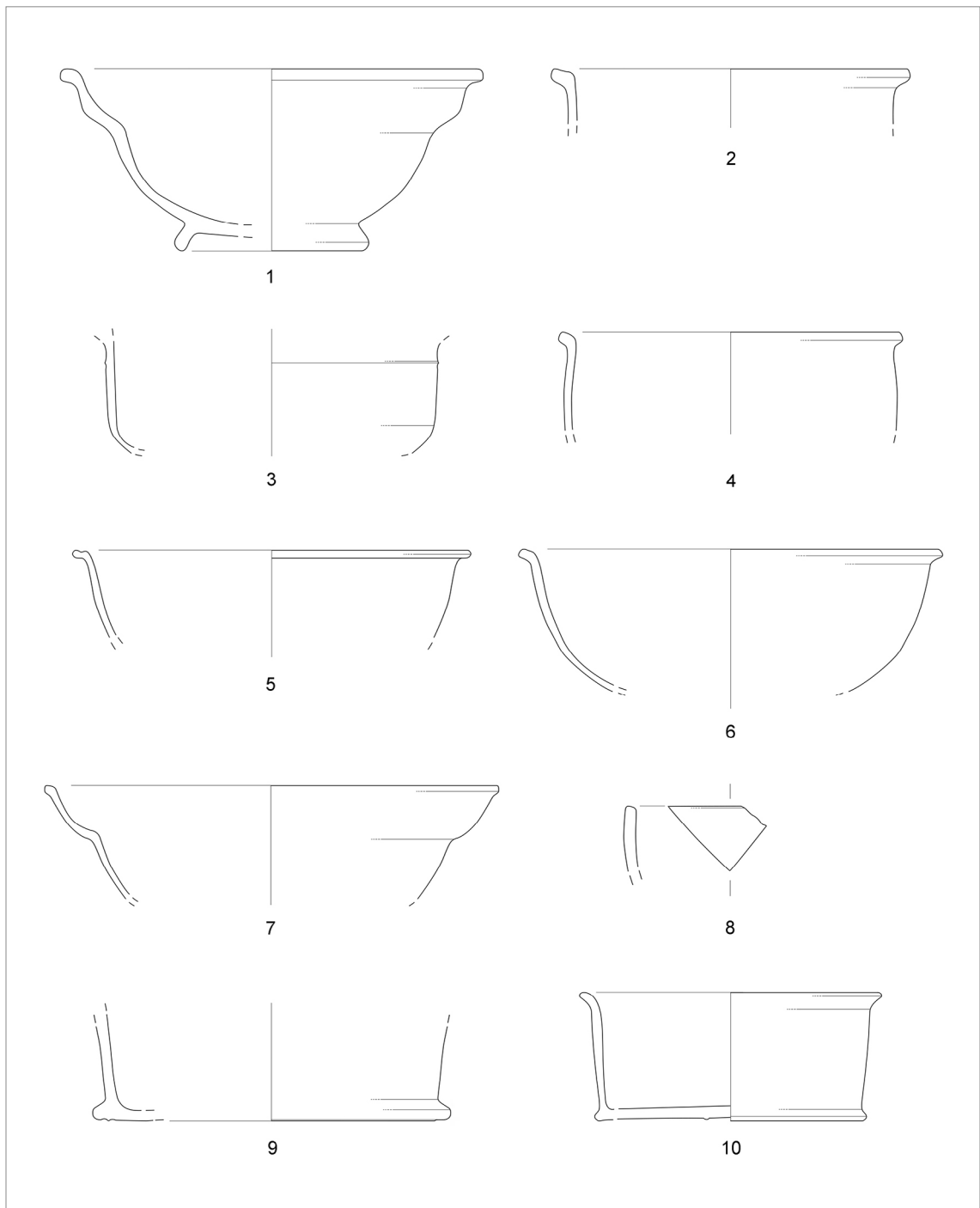


Figure 28: Forms of mould-made coloured translucent and opaque glasses – cups and pyxides; M = 1 : 2, drawings Andreja Izlakar.

Slika 28: Oblike posod iz intenzivno obranega stekla izdelane v kalupih – čaše in pikside; M = 1 : 2, risbe Andreja Izlakar.

tinuing into the Neronian period (Berger 1960, 24–30). Some fragments are also known from Salona (Buljević 2016, 64, dark green and blue glass vessels).

At Cosa, dated examples of translucent and opaque fine wares come from five deposits (Grose 2017, 81). The earliest is deposit IV (before 25–15 BC) associated with the reoccupation of the town in Augustan times. Significantly, the opaque ware in light blue and white is represented in this deposit. As Grose argues, they can represent some of the earliest products of the Roman glass industry or they were products imported from the eastern Mediterranean (2017, 81–2).

Deposits V and VI are dated to the period of cca 25–15 BC to cca 40–45 AD, and forms of carinated bowls, pyxides and a bowl with an out-turned rim are represented in these strata (Grose 2017, 81, pl. 8: 134, 136, 137, 139; pl. 9: 154), some of them come from a shop storeroom destroyed in ca 40–45 AD. Vessels of this group presented in deposits VII and VIII (before approx. 50–55 AD) prove the production of this group of glass vessels until the mid. 1st century or even later, but not after the last quarter of the 1st century (Grose 2017, 82).

Monochrome opaque-coloured fine wares

Glasses of this group are made of opaque light blue glass. There is also one very deteriorated base fragment of red glass, but it is questionable if it can be included in this group. The opaque glass vessels are represented only with one form, a bowl, with two variants: they have hemispherical or carinated walls (figure/slika 28: 7–8).

The dating of the opaque vessels is the first half of the 1st century AD. Judging from the glass products found in Cosa (Grose 2017, 81) in the deposit dated before 25–15 BC their production may have begun already in the last decades of the 1st century BC. Prototypes for the Roman monochrome opaque vessels may have been the Hellenistic products of the 1st century BC also made

in white and light blue opaque glass (Grose 2017, 82).

Black (appearing) glass vessels (figure/slika 29)

Although black glass vessels, the term is used as a “*terminus technicus*” accepted by glass specialists (Cosyns 2015), are often studied separately from other glasses, I have included it in this chapter since several fragments of mould-made vessels were recorded among the glass assemblage.

But what is black glass and how do we define it? Thanks to the research of Cosyns in the past decades the Roman black glass from *Britannia, Gallia Belgica* and *Germania Inferior* was studied within several projects (Cosyns 2011; Cosyns and Hanut 2005; Cosyns and Fontaine 2009). It is known that black glass vessels are present in the 1st century AD and again from the middle of the 2nd to the middle of the 3rd century (Cosyns 2015, 190). Black glass jewellery is introduced later and is in use well into the 5th century AD (Cosyns 2006; Jelinčić 2009). In addition to the chronological, geographical and typological distribution analysis of these products, also the archaeometry and study of the glass compositions are extremely valuable (Cagno et al. 2014).

The black glass vessels were produced with various techniques. In the 1st century (from Tiberian to the Flavian period) they were mould-made and free-blown, but in the second period (mid-2nd to the last quarter of the 3rd century) these glasses were free-blown, with very few exceptions (Cosyns 2015, 191).

As written by J. Bayley (1999, 90, 92), black glass is glass that is so densely coloured that it is opaque and appears black. Only with the assistance of strong transmitted illumination in this black glass, one colour will become visible (Cosyns 2015, 191).

The vessels from *Romula* are made of deep violet or deep brown glass that looks like black. All the vessels belong to mould-made products and several of them have distinctive angular lathe-turned forms (Lazar 2019b, 30). The pro-



Figure 29: Fragments of mould-made glass vessels and jewellery made of black glass, *Romula* (photo: Aleš Ogorelec).
Slika 29: Odlomki v kalupu izdelanih posod in nakita iz črnega stekla, *Romula* (foto: Aleš Ogorelec).

duction of the black-appearing glass vessels in the 1st century AD reflects the popularity of the coloured mould-made fine wares produced in the period of the Julio-Claudian dynasty (Grose 1991, 3; Cosyns and Fontaine 2009, 83).

Among the forms, we have recorded plates, bowls and pyxides (see figures/sliki 27 and 28). Plates are presented in various types, they have straight or convex walls, and slightly profiled rims and their base is often decorated with shallow grooves of concentric circles on the inner side (figure/slika 27: 1–5). The bowls have out-turned walls and slightly profiled or out-turned rims (figure/slika 28: 6, 7). The group of pyxides or vessels with cylindrical walls are represented by several individual products that vary mostly in size. Their diameter measures from 5 to 10 cm and the outside of their base is often decorated with shallow grooves of concentric circles (figure/slika 28: 8–10).

Cosyns and Fontaine (2009, 80, tabs. 1, 2) have divided the forms of the mould-made black

appearing glass vessels from the 1st century into several groups and forms; further on Cosyns defined 14 principal forms with subgroups for the mould-made glass (2011, 48, fig. 33), and 19 forms for the free blown vessels (2011, 52, fig. 34). It is possible that this group will develop with new finds and publications. Within the glass material from Slovenia, we can already define new types of the so far defined individual forms.

Conclusion remarks

The presented group of glass has some individual comparisons on Slovenian sites from *Emونا* (insula 32) (Plesničar-Gec 1983, pl. 23), *Celeia* and *Poetovio*, but so far nowhere have these glasses appeared in such quantity as in *Romula*. It is also significant that these are all settlement finds and those vessels were not used or added as grave goods, although graves from the mid-1st century and on were excavated on the western necropolis of the site and some of them include high-quality mould-blown glass and amber objects.

Although the majority of the presented coloured wares come from destroyed strata, their period of use in *Romula* is confirmed with coin finds, two-thirds of them ranging from the Augustan period to the mid-2nd century. But comparisons with the individual finds from dated deposits in Roman Empire confirm the use of the coloured translucent and opaque ware similar to the finds from *Romula* in the period of the first three-quarters of the 1st century.

Our preliminary observation could be that the whole group of these coloured fine wares in *Romula* reflects the Roman glass market taste of the 1st century. The individual demand and taste for luxury glasses in the Empire soon offered and produced a new group of fine glass tableware – colourless instead of deep, strong colours. In *Romula* the demand for luxury ware continues and colourless glass overtook the households and tables in the second half of the 1st and 2nd centuries (Lazar 2020b).

The study of the material is in progress, together with other small finds, the necropolis and the site architecture. We hope to add significant new information about the presented glass material and its use by the end of the research of the site.

Summary

The article presents the glass assemblage of early imperial coloured mould-made fine ware discovered in Roman road and custom station *Romula* (Slovenia), the largest group of coloured glass discovered so far in Slovenia. Monochrome translucent coloured fine ware, characteristic for the first quarter of the 1st century AD, have distinguished angular and carinated profiles and are characterized by strong colours and high standards of craftsmanship. Due to the ceramic-like profiles, the group was also known as glass with ceramic profiles, as it was defined by L. Berger. The group has no stylistic ties with the production in the late Hellenistic period, several of the colours, like emerald green, are the inventions of the newly established Roman Glass industry. The distribution of these products is western since the majority of the examples were discovered on Italian and other European archaeological sites.

These glasses first appeared in the first quarter of the 1st century AD, perhaps ongoing to about 60 AD. The group is very homogeneous with ten principal forms: plates, cups or bowls (hemispherical, concave and carinated), pyxis and less common large plates or trays. In *Romula* we have recognized eight of ten principal forms: cups and plates in various forms and pyxis with subtypes. The emerald green glass is predominant for all forms of fine wares on the site.

Plates with constricted, straight or convex walls are made of translucent dark green (various shadows of emerald green) glass and dark blue or cobalt blue glass. Cups are hemispherical, with convex walls or have carinated walls. Some of the fragments have shallow grooves on the walls or on the inner side of the base. They are made of deep green glass, few fragments belong to dark blue and opaque turquoise cups. Five fragments of pyxides are made of deep green glass. Several of the fragments have shallow grooves on the base and several of them have a small circle in the centre where they were affixed to the lathe. There is also a group of black-appearing glasses, made of deep violet or deep brown glass that looks like black. Among the forms, we have recorded plates, bowls and pyxides.

The presented group of glass has some individual comparisons on Slovenian sites from *Emona*, *Celeia* and *Pototio*, but so far nowhere have these glasses appeared in such quantity. It is also significant that these are all 1st-century settlement finds and those vessels were not used or added as grave goods, although graves from the mid-and second half of the 1st century were excavated on the western necropolis of the site.

Povzetek

Poglavje obravnava skupino zgodnjeimperialnega steklenega posodja intenzivnih barv, izdelanega v kalupih, ki je bilo odkrito na najdišču rimske obcestne in carinske postaje *Romula*. Ta skupina finega namiznega posodja, značilna za prvo četrtino 1. stol., ima poudarjene in keramiki podobne profile, odlikuje jo izjemna kakovost izdelave in je narejena iz stekla intenzivnih barv. Zaradi značilnih profilov je bila ta skupina posodja dolgo znana kot steklo s keramičnimi profili. Obravnavana skupina izdelkov nima stilističnih povezav z izdelki helenističnega čaša, številne barve, posebej smaragdno zelena, naj bi bile odkritje novo osnovane rimske steklarske industri-

je. Razprostranjenost teh izdelkov je vezana na zahod imperija, večina posod je bila odkritih na italijanskih in ostalih evropskih najdiščih.

Tovrstno posodje se prvič pojavi v prvi četrtini 1. stol. in je v uporabi do približno leta 60.

Skupina je zelo homogena, predstavlja jo deset glavnih oblik z različicami: npr. krožniki, čaše oz. skodelice, pikside in redko tudi pladnji. Na najdišču *Romula* so zastopane vse oblike z več različicami. Med barvami pri vseh prevladuje smaragdno zelena v različnih odtenkih.

Krožniki s profiliranim, z ravnim ali s konveksnim ostenjem so izdelani iz temnozelenega in temnomodrega (kobaltnega) stekla. Skodelice imajo profilirano, polkroglasto ali navzven nagnjeno ostenje, notranja stran je pri nekaterih okrašena s plitvimi kanelurami. Izdelane so iz temnozelenega, temnomodrega in neprosjega turkiznega stekla. Pikside so pretežno izdelane iz temnozelenega stekla. Poleg plitvih kanelur je na več izdelkih ohranjen majhen krog na sredini dna, ki kaže na mesto pritrditve posode na stružnico. Med najdbami je tudi skupina na pogled črnega stekla, izdelana iz temnovijoličnega ali temnorjavega stekla, ki izgleda kot črno. V tej skupini se pojavljajo krožniki, skodelice in pikside. Obravnavana skupina posodja ima primerjave med gradivom Emone, Celeje in Petovione, vendar na nobenem od najdišč to gradivo ni tako obsežno in raznoliko. Prav tako velja poudariti, da vse najdbe izvirajo iz naselbinskih plasti 1. stol. Med grobnimi pridatki ne najdemo teh oblik, čeprav so bili na zahodni nekropoli odkriti tudi grobovi iz sredine in druge polovice 1. stol.

Finds of Roman Colourless Glass from *Romula* *Najdbe dekoloriranega rimskega stekla iz Romule*

Izvlček

Poglavje prinaša prve rezultate obdelave večje skupine kakovostnega rimskega dekoloriranega stekla. Odkrito je bilo med izkopavanji v letih 2001 do 2004 na najdišču rimske občestne in carinske postaje *Romula* v Sloveniji. Ker gre za izjemno obsežno in kakovostno skupino steklenega posodja, okrašene-ga z vrezanim okrasom, ki je bilo posebej priljubljeno od druge polovice 1. stol. dalje, želimo predstaviti prve rezultate raziskav tega gradiva.

Ključne besede: rimsko steklo, izdelano v kalupu, dekolorirano steklo, vrezovanje, *Romula*

Abstract

The chapter presents and gives preliminary information about the very rich glass assemblage of mould-made colourless glass. It was discovered between 2001 and 2004 on the site of a Roman road and custom station *Romula* in modern Slovenia. Due to this interesting and large amount of glass finds with cut decoration, popular from the second half of the 1st century on, we would like to communicate some preliminary results and observations.

Keywords: Roman glass, mould-made glass, colourless glass, cutting, *Romula*

The extensive rescue excavations started during the motorway construction on the route Ljubljana–Novo Mesto–Brežice, which corresponds also with the former Roman *via publica* (in its early development also *via militaris*) *Emona–Neviodunum–Siscia* uncovered an extensive settlement and necropolis area of the Roman station *Romula*. The structures date from the late 1st century BC to the end of the 4th or even the first years of the 5th century AD. The heart of the settlement was located on a terrace of the river Sava to the east of a brook and the excavations uncovered official and production buildings, several segments of the Roman road and a western and eastern necropolis (Lazar 2020a, 387–402).

It is, therefore, not surprising that the site yielded rich and variegated glass material from the settlement and necropolis, confirming thus the lively trade connections and routes leading through the station.

The largest group of materials we are working on is the early Imperial mould-made glass. We are talking about two distinctive groups of fine wares in early Imperial contexts (Grose 1998; 1991). Group 1 consists of coloured fine wares of monochrome glass, made by mould-pressing¹ and Group 2 of colourless fine wares, made by casting or mould-pressing. The latter will be presented here.

¹ See chapter *Coloured monochrome glass of the early imperial period in Romula* in this volume.

Colourless glass is known from the early periods of ancient glass-making. In the pre-Roman periods, the manufacture of colourless glass can be seen as an attempt to imitate rock-crystal (Ignatiadou 2010, 419). The first peak period in the production of colourless glass products is the 8th and 7th centuries in Assyria and the production lasted for about less than two centuries. The next renowned group of colourless glass comes from the Achaemenid period in Persia, which was also linked several times with ancient written sources, i.e. a passage from the Acharnians of Aristophanes (Ignatiadou 2011, 421; Trowbridge 1930). Today we know that this group of colourless glass is distributed on both sides of the Aegean and the Black Sea coast and that most of the vessels have been found in contexts of the 4th century BC (Ignatiadou 2010, 425).

The popularity of colourless glass increased again in the Roman period. During the late 1st century and 2nd century, it was produced for high-quality tableware. Pliny the Elder also mentions these products and suggests that “the most highly valued glass is colourless and transparent, as closely as possible resembling rock-crystal” (*NH* 36,200).

More about colourless glass and the different qualities of its production was researched by C. Jackson and S. Paynter, where they discuss the compositional analysis of Roman colourless glass and explore it in the light of the organization of the Roman glass production (Jackson 2005, 763; Paynter and Jackson 2019, 1533).

Working on Roman glassware in Slovenia two decades ago, only a few rare examples of colourless facet-cut vessels were recorded; a beaker from the grave in *Poetovio* and two shallow bowls (Lazar 2003a, 93, 43), one from a grave in *Poetovio* and the other excavated as a settlement find in *mansio Longaticum* (Logatec).

Due to vast excavations in the past decades and a new evaluation of the finds we can observe that the number of facet-cut and plain colourless tableware has increased considerably and several new forms were recognized. Various forms of beakers and bowls with facet-cut decorations

were excavated as settlement and grave finds on various sites from the Roman period in Slovenia. They appear in archaeological contexts from the Flavian period onwards and are a very good chronological marker for the late 1st and early 2nd centuries.

Figure 30 shows new settlement finds of colourless beakers with facet-cut honeycomb decoration from *Romula* and *Celeia* which belong to groups I and II according to the first classification made by Oliver (1984, 39).² The facets can be cut like rhombs/diamonds or more rounded, on some fragments we observe even elongated facets, and set in several lines over the body. The group can be compared with colourless glass beakers from France, defined as a group IN 10, dated to the last decades of the 1st century with some finds known also in the first third of the 2nd century (Foy et al. 2018, 18). More precisely fragments fig. 30: 1, 3 can be defined in comparison with the finds from August (*Augusta Raurica*) as a form AR 45.1 or Lazar 3.3.4. (variant Isings 21; Fünfschilling 2015, 313) while fig. 30: 2 can be defined as a form AR 45.1B – a type with a ridge between the foot and the decorated body. The form is already known from the grave no. 289 in *Poetovio*, which is dated to the Flavian–Hadrianic period according to the grave goods (Istenič 2000, 99). Several small fragments of this type of beaker are also known from the site of custom station Trojane (*Atrans*) and Roman *villa rustica* in Mošnje (PN 2959, 5408).³ This form is dated in August (Fünfschilling 2015, 313) in the period between 70 and 120 AD and in Avenches (*Aventicum*) between 100 and 150 AD (Bonnet Borel 1997, 30).

Two beakers (fig. 30: 4–5) and several more fragments have more straight walls and can be defined as a form AR 45.2 (Fünfschilling 2015, 314) or a group IN 11 defined in France (Foy et al. 2018, 19). The facets on the beakers are elongat-

2 Celeia – 1: S 212, 2: S 175, 3: S 184 (Regional Museum Celje); Romula – 4: S 1315, 5: 1316, 6: S 724, 7: S 1072 (Institute for the Protection of Cultural Heritage in Slovenia, unit Novo Mesto) (Lazar 2021).

3 The material is being prepared for the publication by the author.

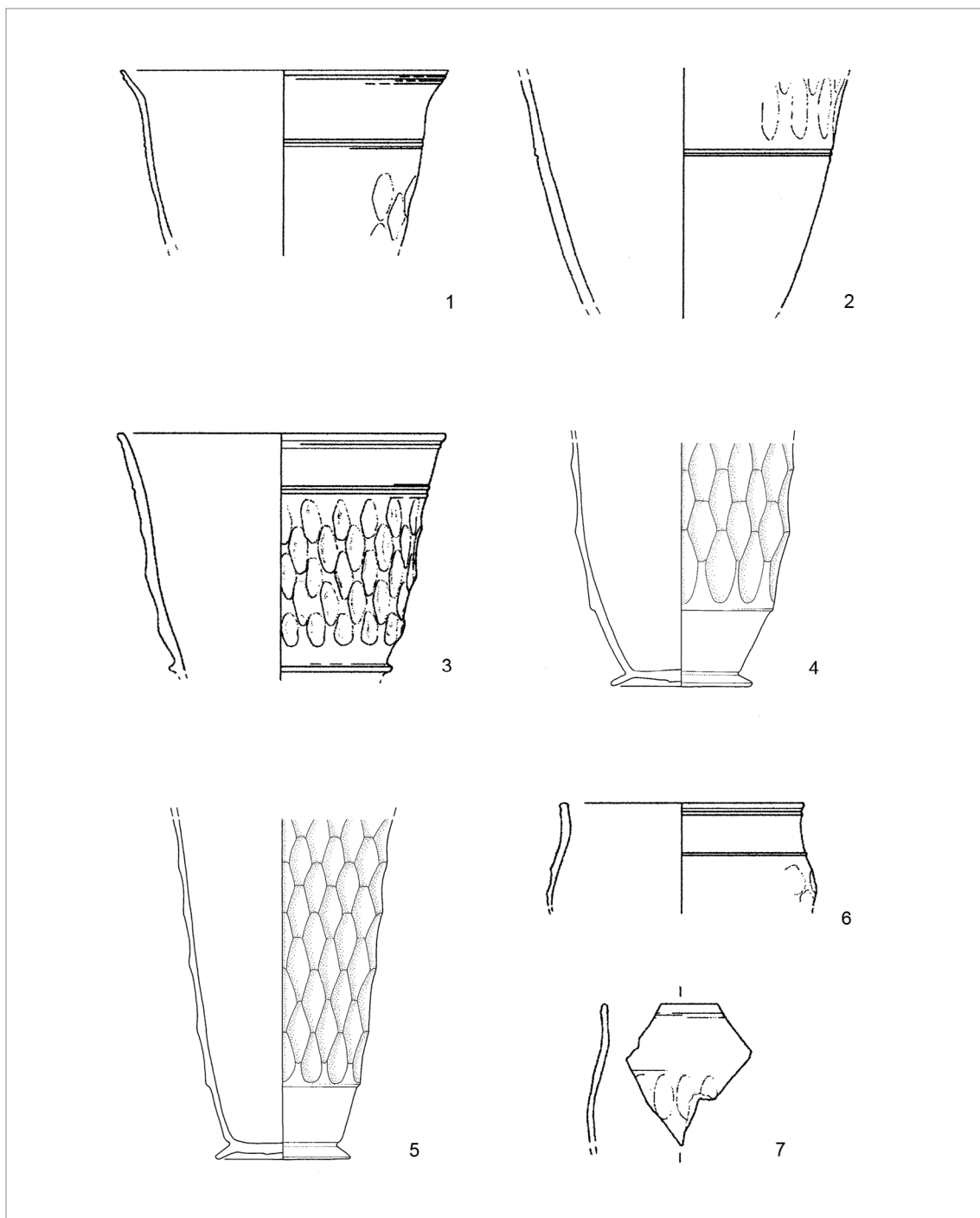


Figure 30: Finds of colourless facet-cut beakers from *Celeia* (Celje, nos. 1–3) and *Romula* (Ribnica, nos. 4–7). M = 1 : 2, drawings Jerneja Kobe, Janja Tratnik Šumi.

Slika 30: Najdbe čaš iz dekoloriranega stekla z vrezanim facetiranim okrasom iz Celeje (Celje, št. 1–3) in Romule (Ribnica pri Brežicah, št. 4–7). M = 1 : 2, risbe Jerneja Kobe, Janja Tratnik Šumi.

ed and angular and there is no ridge on the wall below the decoration. It is important to mention, that both beakers have a visible roundel on the base, where the vessel was attached to the lathe-turned mould. A beaker of the same form, with straight walls and no ridge on the walls, is also known from the grave 166 in Nova Tabla in north-eastern Slovenia (Guštin 2004, 75, fig. 10; Lazar 2020b, 343, fig. 3a, b). The grave from Nova Tabla is dated to the beginning of the 2nd century AD (Guštin 2004, 77).

Two finds from *Romula* (fig. 30: 6, 7) show a more rounded belly form of a beaker, one with rhomboid and the other with elongated ovoid facets on the wall. They can be compared with the beaker from Nijmegen in the Netherlands (Oliver 1984, 42, fig. 15), the group IN 18 of the colourless glass from France dated to the end of the 1st and beginning of the 2nd century (Foy et al. 2018, 26), and with the finds from *Augusta Raurica* where this type of beaker is defined as a form AR 45.4 and is dated between 30 and 130 AD (Fünfschilling 2015, 315).

It is worth mentioning that there are metal⁴ and ceramic imitations of the facet-cut beakers known. The ceramic ones, to mention a few examples, were found in burials in *Emona* and Verdun and among settlement finds in *Celeia* (Petru 1972, pl. 44: 12; Breščak 2002, 138, cat. no. 72/3).

The second group of finds (figure/slika 31) are colourless shallow bowls with facet cut decoration that appear on the rim, the walls and even on the base. The presented fragments were all discovered as settlement finds in *Romula*.⁵ Nos. 1, 3 and 4 can be defined as a form 2.1.8. (Lazar 2003a, 43, fig. 12). The form is characterized by a sharp profilation and high quality of the cut decoration. The rim is wide, highly out-turned, with an overhanging edge; it is decorated with facet-cut on both sides and on the edge. The circular or oval facets can be combined with rice

grain cuts (fig. 31: 3, 4). The finds from *Romula* are decorated on the rim (fig. 31: 1, 3) and on the base (fig. 31: 4).

Comparisons to these new finds are known in Slovenia from *Poetovio* (Ptuj; gr. 615; Istenič 2000, pl. 134: 4) and from *Longaticum* (Logatec; Lazar 2004a, 59, fig. 2: 1). While the bowl from Ptuj is decorated only on the rim and the base, the bowl from Logatec shows a rich and more elaborate decoration. The rim is decorated on the edge, on the upper side with the ridge and on the lower side with oval facet cuts, and the same decoration appears in two lines on the body. The base is decorated with elongated honeycomb-like facets and the edge of the foot is also decorated with small rice grain cuts. The bowl was found during excavations at the *mansio Longaticum* in a stratum featuring a coin of Emperor Domitian (81–96 AD) (Lazar 2003a, 44).

This form of the bowl can be compared with finds from *Augusta Raurica* (form AR 16.2; Fünfschilling 2015, 281), dated to the period from 80 to 150/60 AD. The forms Trier 23 and Aventicum 25/26 give similar dating and the main period of use for these bowls can be set between the late 1st and mid-2nd century AD (Goethert-Polaschek 1977, 36; Bonnet Borel 1997, 24; Fünfschilling 2015, 282). Some finds of these bowls from Milan prove their appearance and use also in younger contexts at the end of the 2nd century (Uboldi 2017, 185, fig. 1: 1, 2).

Another bowl fragment from *Romula* is decorated on the body, but with elongated facets and the preserved fragment can be compared with the form IN 142 (Foy et al. 2018, 148) or more precisely the find from Spain (Price 1987, fig. 3: 1) regarding the decoration, since the rim is not completely preserved. We may assume it is similar to the form AR 13.2 (Fünfschilling 2015, 279).

Find no. 2 (Fig. 31: 2) has a rim widened into a kind of handle, but the dimensions are small and therefore it cannot be defined as a large plate-like AR 16.1. (Fünfschilling 2015, 281), or even an oval plate-like AR 26 and Aventicum 35 (Fünfschilling 2015, 289; Bonnet Borel 1997, 26).

4 Berthouville treasure, Chaourse treasure – end of 2nd–early 3rd century (Baratte and Painter 1989, figs. 26 (Berthouville), 58–61 (Chaourse)). I would like to thank you to Anne De Pury-Gysel for the information.

5 *Romula* – 1: S 1212, 2: 1201, 3: 1253, 4: 1046 (Institute for the Protection of Cultural Heritage in Slovenia, unit Novo mesto).

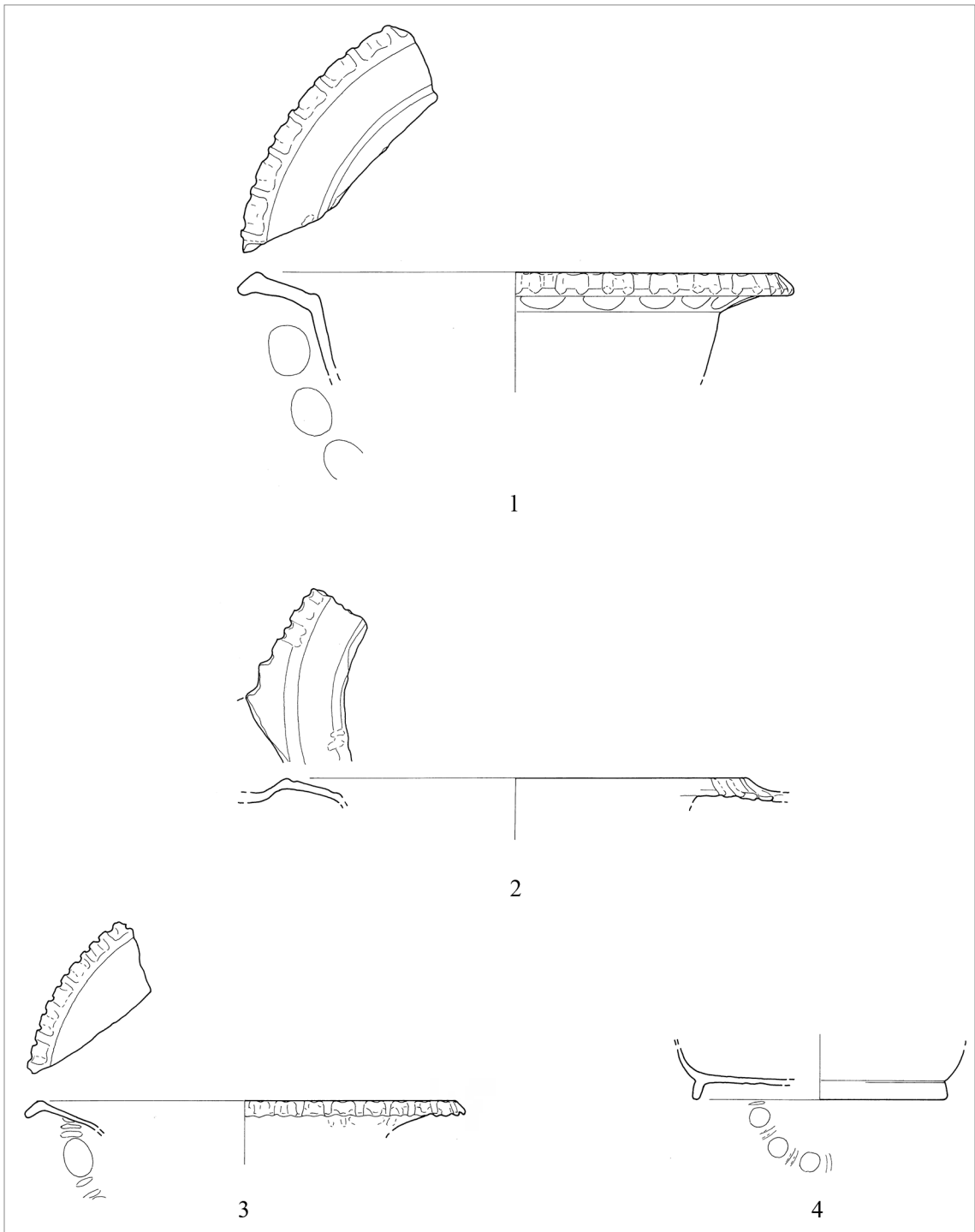


Figure 31: Fragments of colourless bowls with facet-cut decoration from *Romula*. M = 1 : 2, drawings Jerneja Kobe.

Slika 31: Odlomki skodel iz dekoloriranega stekla z vrezanim facetiranim okrasom iz Romule. M = 1 : 2, risbe Jerneja Kobe.

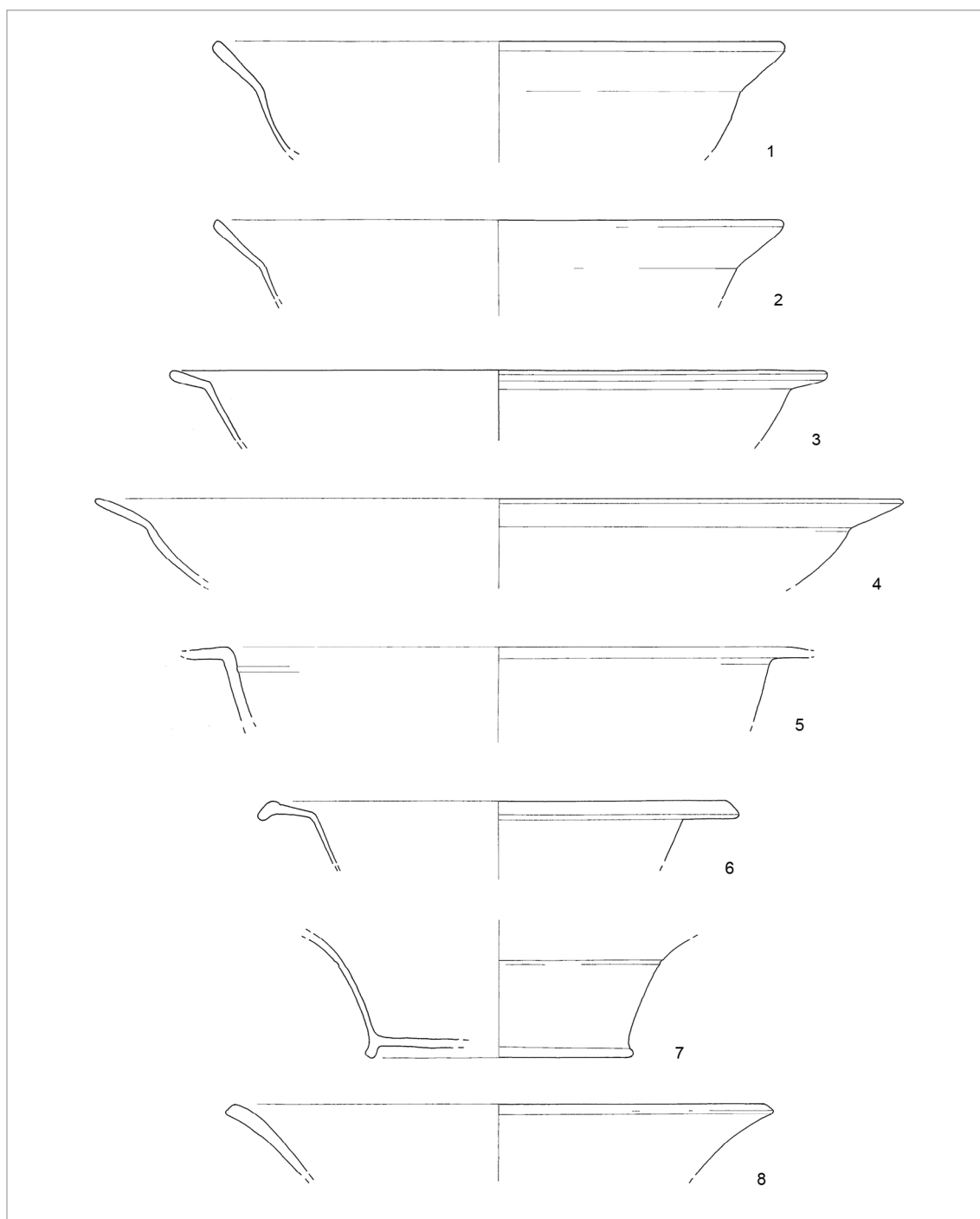


Figure 32: Selected forms of undecorated mould-made colourless glass from *Romula*. M = 1 : 2, drawings Jerneja Kobe, Janja Tratnik Šumi.

Slika 32: Izbrane oblike v kalupu izdelanih neokašenih posod iz brezbarvnega stekla iz Romule. M = 1 : 2, risbe Jerneja Kobe, Janja Tratnik Šumi.



Figure 33: Colourless beakers with various decorations, *Romula* (photo: Aleš Ogorelec).
 Slika 33: Čaše iz dekoloriranega stekla z različnimi okrasi, *Romula* (foto: Aleš Ogorelec).

The facet-cut dish with handles from the Ernesto Wolf collection in Stuttgart shows how elaborate these dishes (AR 16) were, and perhaps our find from *Romula* can be defined as a smaller version of such a dish, similar to the finds from Nin or *Asseria* (Fadić 1997, 174, nos. 152, 153) and dated to the end of the 1st century.

The last group of colourless glass we would like to mention (figure/slika 32) are also various forms of bowls and plates without decoration. Plates and bowls with funnel rims on low ring foot (forms AR 13.1. and 13.2; IN 134; Fünfschilling 2015, 279; Foy et al. 2018, 140; fig. 32: 1, 2) are documented by fragments of rims and bodies of these vessels and several base fragments, most of

the examples do not have any grooves on the inside of the vessel. They are dated to the late 1st to 2nd century in Augst and the late 1st to 3rd century in France (Fünfschilling 2015, 278–79; Foy et al. 2018, 140).

The next forms are small and large bowls with a distinctive wide rim and overhanging edge (AR 15; in German *Kragenrand*) on a wide base ring (figure/slika 32: 3, 4) (Fünfschilling 2015, 280; IN 133; Foy et al. 2018, 139), and a bowl fragment similar to the form AR 186 in a larger, colourless variation (figure/slika 32: 5) (Fünfschilling 2015, 280). The forms were dated in Augst from Flavian to Severan periods by Rütti, and lately from 80/90 to 170/180 (Rütti 1991; Fünfschilling 2015, 280).

There are also several fragments of bowls with a wide, highly out-turned rim and an overhanging edge (fig. 32: 6) in smaller and larger variants (AR 16.1; IN 142; AR 16.2; IN 143; AR 16.1: Fünfschilling 2015, 281; IN 142; Foy et al. 2018, 148 and AR 16.2; Fünfschilling 2015, 281; IN 143; Foy et al. 2018, 150).

Another larger group of colourless glass are bowls with out-turned walls on low foot, the rim is rounded and several of them have a simple horizontal groove on the walls (figure/slika 32: 7–9) (AR 20.2; IN 129; Fünfschilling 2015, 284; Foy et al. 2018, 135).

The strata of the presented forms and their use in *Romula* are confirmed with coin finds two-thirds of them ranging from the Augustan period to the period of Marcus Aurelius (161–180). Only a few of them (6 coins) comes from the 3rd century.

Other forms of colourless glass (figure/slika 33), some of them mould-made, like miniature shallow bowls (AR 24.2; Fünfschilling 2015, 287), beakers with narrow, slightly swirling flutes on the walls (IN 12; Foy et al. 2018, 21; von Boeselager 2012, 102–4), and several free blown forms such as cylindrical beakers with a simple decoration of horizontal lines or ridges (IN 32; Foy et al. 2018, 41), beakers with arcade decoration (AR 48; Fünfschilling 2015, 316) etc. will be presented in detail in the forthcoming publication.

The study of the material is in process, together with other small finds, the necropolis and the site architecture. In the course of this research, we hope to add significant new information about the presented glass material and its use.

Summary

The chapter presents preliminary information about the glass assemblage of mould-made colourless fine wares discovered between 2001 and 2004 on the site of *Romula* in modern Slovenia. The popularity of colourless glass increased during the late 1st and 2nd centuries, it was produced for high-quality tableware. Due to vast excavations in the past decades and a new evaluation of the

finds the number of facet-cut and plain colourless tableware has increased considerably and several new forms were recognized. Various forms of beakers and bowls with facet-cut decorations were excavated on various sites from the Roman period in Slovenia. They appear in archaeological contexts from the Flavian period onwards and are a very good chronological marker for the late 1st and early 2nd centuries. Colourless beakers with facet-cut honeycomb decoration from *Romula* (Ribnica near Brežice) and *Celeia* (Celje) belong to groups I and II according to the first classification made by Oliver. The facets can be cut like rhombs/diamonds or more rounded, on some fragments we observe even elongated facets, and set in several lines over the body. The group can be compared with colourless glass beakers from France (IN 10). Two beakers and several more fragments have more straight walls (form AR 45.2 or a group IN 11), and two finds show a more rounded belly form of a beaker (IN 18), one with rhomboid and the other with elongated ovoid facets on the walls.

The colourless shallow bowls with facet cut decoration are characterized by a sharp profilation and high quality of the cut decoration. The rim is wide, highly out-turned, with an overhanging edge; it is decorated with facet-cut on both sides and on the edge. The circular or oval facets can be combined with rice grain cuts, and the finds are decorated on the rim and on the base. They can be compared with the forms AR 16.2, AR 13.2, AR 16.1 or AR 26 from *Augusta Raurica*.

There is also a group of bowls and plates without decoration. They can be compared to the finds from August dated to the late 1st to 2nd century and finds in France from the late 1st to 3rd century. The small and large bowls with a distinctive wide rim and overhanging edge, are dated in August from 80/90 to 170/180. Several fragments of bowls with a wide, highly out-turned rim and an overhanging edge in smaller and larger variants were also defined. The strata of the presented forms and their use in *Romula* are confirmed with coin finds two-thirds of them ranging from the Augustan period to the period of Marcus Aurelius (161–180).

Povzetek

Poglavje obravnava skupino kakovostnega, v kalupu izdelanega dekoloriranega stekla, ki je bilo odkrito tekom raziskave na najdišču *Romula*, v letih med 2002 in 2004.

Priljubljenost brezbarvnega stekla je v rimski dobi zrasla v drugi polovici 1. stol. in v 2. stol., namenjeno je bilo predvsem izdelavi kakovostnega namiznega posodja. Glede na obsežne terenske raziskave v zadnjih desetletjih in novi interpretaciji gradiva je obseg poznanega gradiva precej obsežnejši, prepoznane so bile tudi številne nove oblike.

Na številnih najdiščih rimske dobe v Sloveniji se pojavljajo različne oblike čaš in skodel z vrezanim facetiranim okrasom. Najdemo jih v arheoloških kontekstih od flavijskega obdobja dalje in so pomembna kronološka značilnost za pozno 1. ter zgodnje 2. stol. Dekolorirane čaše s facetiranim okrasom satovja iz Romule in Celeje sodijo v skupini I in II, kot ju je opredelil Oliver. Facete na okrasu imajo obliko rombov, nekatere so bolj zaokrožene, druge pa podolgovate in postavljene v več vodoravnih vrst po ostenju. Primerjamo jih lahko s skupino dekolriranega posodja iz Francije (IN 10). Nekatere čaše imajo ožje in višje ostenje (obl. AR 45,2 ali IN 11), druge so bolj kroglaste oblike (IN 18), z romboidnimi in podaljšanimi facetami okrasa.

Plitve dekolrirane skodelice s facetiranim okrasom opredeljujejo ostre profilacije in visoka kakovost izdelave ter vrezanega okrasa. Ustje je široko in močno izvihano, rob je zapognjen navzdol, z vrezanim okrasom je okrašeno na gornji in spodnji strani. Okras facet je kombiniran z okrasom riževega zrna in ga najdemo tako na ustju kot dnu. Skodelice lahko primerjamo z oblikami AR 16,2, AR 13,2, AR 16,1 or AR 26 iz Avguste Raurike – Augst.

V skupini so tudi večje skodele in krožniki brez okrasa. Sorodne oblike najdemo v Augstu, datirane so v pozno 1. in 2. stol., najdbe iz Francije pa v pozno 1. do 3. stol. Oblike, prepoznavne po široko izvihanem ustju in navzdol zapognjenem robu ustja, so v Augstu datirane med l. 80–90 do 170–180. Večje skodele s širokim ravnim in izvihanim ter zapognjenim robom ustja se prav tako pojavljajo med gradivom.

Naselbinske plasti, v katerih se predstavljeni izdelki pojavljajo v Romuli, kjer so najštevilčnejši, opredeljujejo novčne najdbe, ki segajo od avgustejskega časa do vlade Marka Avrelija (161–180).

Ennion Beaker and other Fragments of Mould-Blown Glass

Čaša mojstra Enniona in druge najdbe v kalup pihanega stekla

Abstract

Glass vessels constitute a source of inscriptions of various types and groups. The names of artisans or workshop owners, for example, are known from mould-blown vessels and even more so from the base marks on free-blown vessels that appear in great numbers. All these allow us then to gain important information on the workshops and the distribution of their products, on the names of the glass-blowers and their social or national origin. The article presents new finds of mould-blown beakers from Slovenia. The most interesting one is a partly preserved one-handed beaker signed by *Ennion*.

Keywords: Roman glass, mould-blowing, inscriptions, *Ennion*, workshops, trade routes

Izvleček

Na steklenih posodah prepoznamo različne vrste napisov. Imena mojstrov ali lastnikov delavnic so najbolj znana na v kalup pihanih izdelkih, različne znake in okrajšave imen najdemo tudi na prostopihanem posodju. Vsi ti podatki nam omogočajo zbrati številne podatke o imenih mojstrov in njihovem izvoru, lokalnih delavnicah, razprostranjenosti njihovih izdelkov itd. Članek predstavlja nove najdbe v kalup pihanih čaš iz Slovenije. Med njimi posebej izstopa delno ohranjena enoročajna čaša s podpisom mojstra *Enniona*.

Gljučne besede: rimsko steklo, pihanje v kalup, napisi, *Ennion*, delavnice, trgovina

Glass vessels, in addition to other sources, provide various sorts of inscriptions. Based on their production technique, they are divided into two separate groups. The first is constituted by mould-blown vessels and the second by free-blown vessels with base marks, made in one-part moulds. The various types of mould-blown vessels from the 1st century AD give the names of the artisans or workshop owners, expressly stating and proving the maker of the object. This group is formed by early products, predominantly from the 1st century, that were made by mould-blowing. It is a technique developed after the invention of free-blowing and it required a particularly skilled glass-blow-

er with the ability to handle the blowpipe during the production procedure. The inscriptions on these products speak of artisans that produced the richly decorated and exceptionally well-made vessels and wished to emphasize their mastery of the craft of glass-making, the quality of the moulds and also their artistic talent. The distribution of these products allows us to trace the trading areas of particular workshops and their craftsmen, the extensive trade routes, running from East to West and from South to North, as well as the rapid development and spread of the new glass-making techniques during the 1st century.

On the other hand, it is also known that the demanding production procedure caused these products to be of higher price ranges and not the cheapest on the market and that they could also be custom-made which indirectly implies that they were not commonly accessible. Their appearance within a grave or a settlement, therefore, indicates the status of the owner and indirectly also a presence of a class of well-to-do individuals in Roman settlements, either strong or poor, depending on the importance and size of the town.

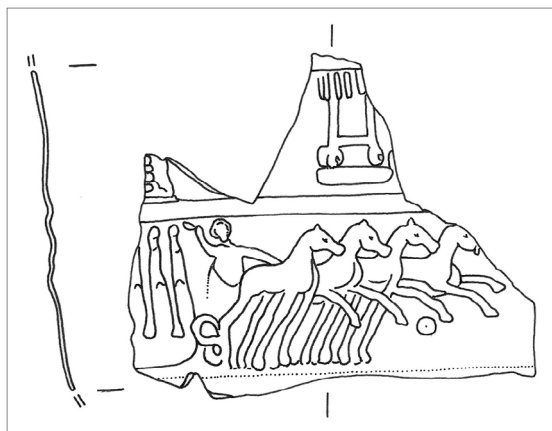


Figure 34: Fragment of circus beaker from *Emona* (Ljubljana) (drawing after Petru 1980 by Janja Tratnik Šumi).

Slika 34: Odloemek cirkuške čaše iz Emone (Ljubljana) (risba Janja Tratnik Šumi, po Petru 1980).

The first example of this group of vessels that will be mentioned here is the cups with names of winners or competitors in sporting events – known also as gladiator or circus cups (Sennequier et al. 1998). They are widely distributed in the western part of the Roman Empire. One was also found in Ljubljana, in an *insula* of *Emona*. It is a fragment of a circus cup with a depiction of a quadriga (figure/slika 34) (Petru 1980, 445, fig. 1). Unfortunately, the small fragment preserved does not include the frieze which usually bears inscriptions such as *Vale Cresces* or *Vale Pinius* – Long live Cresces. The names of certain competitors known from these cups are, in fact, pre-

served also in literary sources (for example Suetonius, Cassius Dio, see Stern 1995, 60), tying thus, in the best possible way, an archaeological find to the reality of the Roman daily life.

The names of Roman glass masters, preserved on their products, include one that is surely known best, which is *Ennion*. This is not a common Greek name and it is, therefore, likely to be a Hellenized Semitic one, as suggested by E. M. Stern (1995, 69), perhaps Jewish, Phoenician or originating from another region with a Semitic population. He worked in the Near East, with his workshops probably operating in Sidon. The range of his products includes jugs, amphoras, small angular bottles and several types of beakers (Lightfoot 2015). Within the group of mould-blown products, his work stands out due to its precision and clear design, modelled on the contemporary products of Roman toreutics. It was innovative and technically refined (Stern 1995, 69).

Based on finds, his production is considered to have started in the first quarter of the 1st century, while during the second quarter, its products became widespread even in the western parts of the Empire. Beakers predominate amongst the finds from Italy; in Harden's opinion, these are later examples of Ennion's production. The increase in the number of products in the West also encouraged ideas about the master's workshop being moved from the Near East to Italy (Harden 1935, 165; Price 1991a, 72). However, recent finds prove that, apart from Italy, his products were also distributed in Spain, Greece, France (McClellan 1983, 76), Croatia (Buljević 2012) and Slovenia. As for the latter, the site of Ribnica near Brežice yielded (during the 2002–2004 excavations) new finds of imported mould-blown beakers (Lazar 2005b, 41; 2022, 31).

Some finds are worth a particular mention and one such is a partly preserved one-handed beaker signed by *Ennion* (Lazar 2004b, 53, fig. 17; 2005b, 40), made from yellowish glass (figure/slika 35). On the wall, the remains of the fixing of the handle can be seen. The decoration consists of pillars, palmettos, concentric cir-

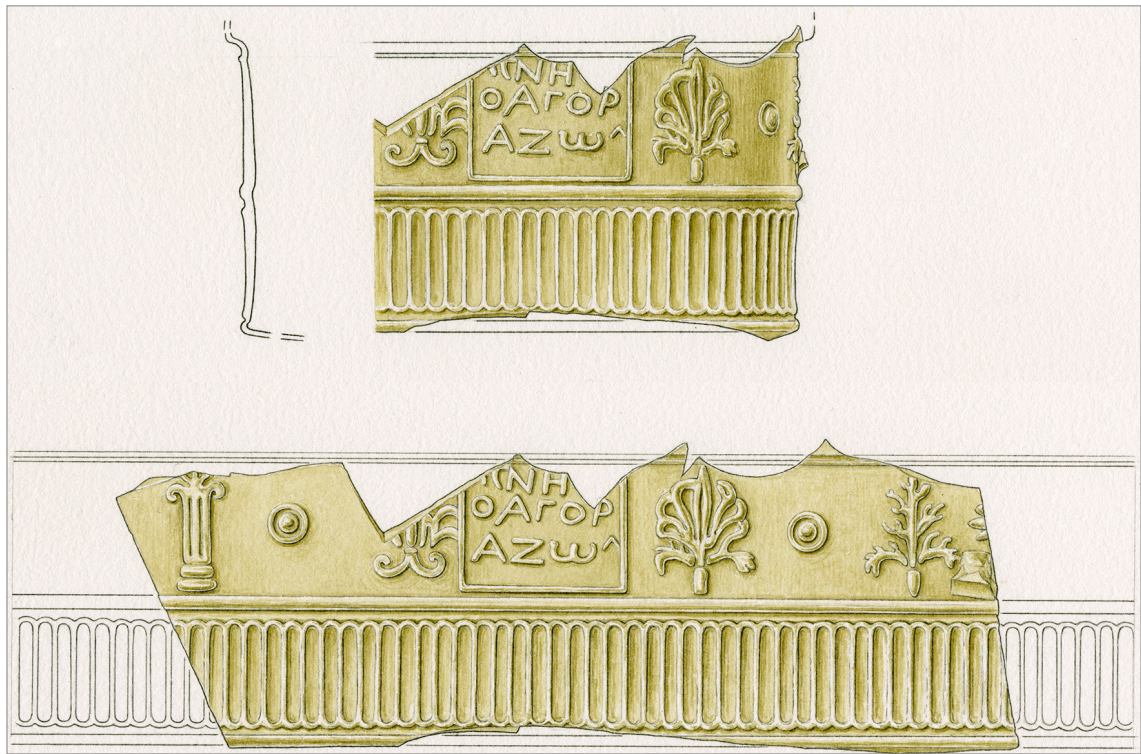


Figure 35: Fragment of a beaker signed by *Ennion*, drawing Anđelka Fortuna Saje.
 Slika 35: Odlomek čaše s podpisom *Enniona*, risba Anđelka Fortuna Saje.

cles and a part of a star (?) and can be defined as a Near Eastern style of decoration (Lightfoot 2015, 36, fig. 26; Lehrer 1979, Pl. VI: 2). In the centre, inside a square frame, there is the inscription in Greek ΜΝΗΘΗ ΟΑΓΟΡ ΑΖΩΝ (*mnesthe ho agorazon* – Let the buyer be remembered!). The second inscription panel ΕΝΝΙ / ΩΝΕΠΙ / ΟΙΗΣΕ Ν (*Ennion made me*), which we can presuppose on the basis of the analogies, is not preserved.

The preserved inscription is of type J, together with the decoration (Lightfoot 2015, 28), allows comparing this beaker with a beaker of greenish glass found in *Soluntum* (Solunto) Italy (now Palermo Museum in Sicily) (De Bellis 2004, 129–33, figs. 6, 8) and with a beaker from The Shlomo Moussaieff Collection (Lightfoot 2015, 92). These completely preserved one-handled beakers were blown into a mould with the same pattern as the one from Ribnica, since the

decoration, the inscription within the square frame, and other details are absolutely identical.

This can be concluded from the position of the letters on the inscription ΜΝΕ... / ΟΑΓΟΡ / ΑΖΩΝ; we can observe that the letter ,Ν' is positioned above the letter ,Ω' (ω) in the third line and not in the fourth as on other beakers from this group, like the one from *Narona* in Croatia (Buljević 2015, 61, fig. 50: 1). This points to slight differences in the moulds for the same beaker type and shows that certainly several moulds existed since these differences could have come about during the renewing or remodelling of a mould or the production of a new one. Chronologically, one-handled beakers belong to the second quarter of the 1st century. The rare finds from dated contexts occur in the late Tiberian or Claudian strata (Lightfoot 2015, 26; Price 1991a, 65). The *Romula* find comes from the strata with archaeological material dated around the mid-

and second half of the 1st century. The recent finds prove that *Ennion* products were widely distributed in the west, including Spain, Greece, France (Buljević 2015; McClellan 1983, 76), Slovenia and Croatia (Buljević 2015, 61, fig. 50: 1).

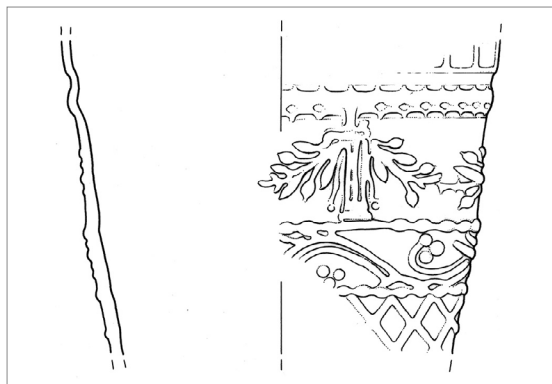


Figure 36: Fragment of a mould-blown beaker with vegetal decoration, *Romula*, drawing Anđelka Fortuna Saje.
Slika 36: Odlomek v kalup pihane čaše z rastlinskim okrasom, *Romula*, risba Anđelka Fortuna Saje.

Another find is a fragment with mould-blown decoration similar to *Ennion* products (figure/slika 36). This is a fragment of a conical beaker made of bluish, naturally coloured glass of high quality. There is no inscription field on it, but the decoration shows similarities with glasses signed by *Ennion*, and with other signed beakers. We can recognize four registers of decoration divided with horizontal lines of pearls or small dots. Two registers with floral decoration show in lower line elements of a Dionysiac style decoration known on two-handled *Ennion* cups (Lightfoot 2015, 36, fig. 27), and the upper line decoration consists of columns with garlands. The fragment ends with vertical flutes on the upper part and a net pattern on the lower part, decoration typical for mould-blown products made by *Ennion* and/or *Aristeas*.

Chronologically, one-handled *Ennion* beakers belong to the second quarter of the 1st century. As for their distribution, the first find of this product in Slovenia and the finds from sites in Croatia published by Zrinka Buljević (2004b, 188; 2012; 2015) prove how devel-

oped the trade in master *Ennion*'s products was. The question of whether the workshops and their branches moved to other places or whether moulds were exchanged between individual workshops, on the other hand, still remains to be answered. However, the possibility of migrating glass workers should not be neglected. It is known that glass-blowers from the eastern Mediterranean migrated to Italy and other provinces of Europe and could also have travelled with their trade.

Interestingly, this group of products has a special feature that stands out: the vessels, the styles of which became multiregional and popular in many parts of the Roman world, are almost all tableware and fine glass tableware may have been valued primarily as status symbols (Stern 1995, 94). The finds suggest that the chief attraction of the mould-blown tableware may have been to give the impression of culture and erudition.



Figure 37: *Ennion* beaker from Ribnica near Brežice (*Romula*), Slovenia (photo: Tomaž Lauko).
Slika 37: *Ennion*ova čaša iz Ribnice pri Brežicah (*Romula*), Slovenija (foto: Tomaž Lauko).

Summary

Glass vessels, in addition to other sources, provide various sorts of inscriptions. The various types of mould-blown vessels from the 1st century AD give the names of the artisans or workshop owners, expressly stating and proving the maker of the object. This group is formed by early products, predominantly from the 1st century,

that were made by mould-blowing. The names of Roman glass masters are preserved on their products, including one indeed known best, *Ennion*. He worked in the Near East, with his workshops probably operating in Sidon. His products include jugs, amphoras, small angular bottles and several types of beakers. Within the group of mould-blown products, his work stands out due to its precision and clear design, modelled on the contemporary products of Roman toreutics. It was innovative and technically refined.

Recent finds in Europe prove that, apart from Italy, his products were also distributed in Spain, Greece, France, Croatia and Slovenia. As for the latter, the site of Ribnica near Brežice yielded new finds of imported mould-blown beakers. A partly preserved one-handled beaker signed by Ennion discovered in 2003 was made from yellowish glass. The decoration consists of pillars, palmettos, concentric circles and a part of a star (?) and can be defined as a Near Eastern style of decoration. In the centre, inside a square frame, there is the inscription in Greek ΜΝΗΘΗΟΑΓΟ ΠΑΖΩΝ (*mnesthe ho agorazon* – Let the buyer be remembered!). The second inscription panel ENNI / ΩΝΕΠ / ΟΙΗCΕ Ν (*Ennion made me*), which we can presuppose based on the analogies, is not preserved. The preserved inscription allows comparing this beaker with a beaker found in Soluntum (Solanto), Italy and with a beaker from The Shlomo Moussaieff Collection. These one-handled beakers were blown into a mould with the same pattern as the one from Ribnica since the decoration, the inscription within the square frame, and other details are identical. Chronologically, one-handled beakers belong to the second quarter of the 1st century. The rare finds from dated contexts occur in the late Tiberian or Claudian strata.

Povzetek

Na steklenih posodah lahko tekom analize zasledimo, ne glede na tehniko ali čas izdelave, tudi različne vrste napisov. Na številnih izdelkih iz 1. stol., ki so nastali s pihanjem v večdelne kalupe, beremo imena mojstrov ali morda lastnikov delavnic, ki z napisom neposredno sporočajo, kdo je posodo izdelal. Med imeni rimskih mojstrov, ki so se ohranila na njihovih izdelkih, najdemo tudi ime Enniona, ki je brez dvoma najbolj poznan med vsemi. Deloval je na bližnjem vzhodu, njegova delavni-

ca je bila najverjetneje locirana v Sidonu. Med njegovimi izdelki najdemo vrče, amfore, majhne stekleničke in več vrst čaš. V skupini v kalup pihanih izdelkov njegovo delo posebej izstopa zaradi natančnosti in kakovostnega oblikovanja, ki se je vzoroval po sočasnih izdelkih rimske toreutike. Bil je inovativen in tehnično dovršen.

Novejše najdbe širom Evrope kažejo, da so bili njegovi izdelki razširjeni ne samo v Italiji, ampak tudi v Španiji, Grčiji, Franciji, na Hrvaškem in v Sloveniji. Članek se posveča prav čaši iz Slovenije, iz Ribnice pri Brežicah, kjer je bila odkrita prva najdba te vrste. Deloma ohranjena enoročajna čaša iz rumenkasto obarvanega stekla s podpisom Enniona je bila odkrita leta 2003. Okras sestavljajo stebri, palmete, koncentrični krogi in del zvezde ter ga lahko opredelimo kot bližnjevzhodni slog okrasa. V osrednjem delu je znotraj kvadratnega okvirja napis v grščini ΜΝΗΘΗ ΟΑΓΟ ΠΑΖΩΝ (*mnesthe ho agorazon*; »Naj se ohrani ime kupca«). Napis na drugi strani, kot ga poznamo iz primerjav (ENNI / ΩΝΕΠ / ΟΙΗCΕ Ν; »Ennion me je izdelal«), pa ni ohranjen. Na osnovi ohranjenega napisa lahko

čašo primerjamo z najdbo iz Solunta v Italiji in čašo iz zbirke The Shlomo Moussaieff Collection. Vse tri enoročajne čaše so bile pihane v enak kalup, saj so okras, napis in razporeditev črk v okviru ter druge podrobnosti povsem enaki.

Kronološko lahko enoročajne čaše umestimo v drugo četrtino 1. stol. Redke najdbe iz datiranih kontekstov se pojavljajo v plasteh poznotiberijskega in klavdijskega obdobja.

Čaša za posebne priložnosti: odlomka čaše bogov iz Celeje

A Beaker for Special Occasions: Two Fragments of a Mythological Beaker from Celeia

Izvlček

Članek govori o novi najdbi v kalup pihane steklene čaše, ki je bila odkrita med nasebinskimi izkopavanji rimske Celeje. Sodi med t. i. čaše bogov, redke in zanimive izdelke za posebne priložnosti, ki so bili priljubljene predvsem v drugi polovici 1. stol. Ohranjena je figura Bakha in del stebra, ki je ločeval figure božanstev, upodobljene na ostenju, ter skrival šiv večdelnega kalupa. Sodi v II. skupino čaš po opredelitvi Gladys Weinberg.

Ključne besede: steklo, pihanje v kalup, čaše bogov, *Celeia*, Črnelo

Abstract

The paper discusses a new find of a mould-blown glass beaker discovered during settlement excavations in Roman *Celeia*. It belongs to the so-called mythological beakers, rare and interesting objects for special occasions, which were especially popular during the second half of the 1st century AD. The figure of Bacchus and part of the column that separates the deities depicted on the walls and hides a seam of the multi-part mould are preserved. The find belongs to group II, according to Gladys Weinberg.

Keywords: glass, mould-blowing, mythological beakers, *Celeia*, Črnelo

Potem ko je pihanje stekla izpodrinilo drage in zamudne tehnike izdelave steklenih posod z uporabo kalupov ter drugih pripomočkov (Lierke 2009), se je za kratek čas zdelo, da bo steklo postalo najbolj vsakdanji del rimske kulture. Pa vendar steklo kot material s svojo krhkostjo in prosojnostjo vedno znova vsaj pri posameznih izdelkih poudarja lastnosti, ki posodo zaradi estetike okrasa povzdignejo s preproste obrtne na umetniško raven. Mednje prav gotovo sodi v kalup pihano stekleno posodje, pri katerem so v 1. stol. steklarji kar tekmovali, kdo bo oblikoval novo, še drugačno obliko ali pa s svojimi izdelki počastil dogodke iz rimskega vsakdana in nam jih na ta način ohranil vse do danes.

Kar nekaj časa je bilo uveljavljeno prepričanje, da se je pihanje v kalup razvilo še pred pozna-

vanjem prostega pihanja in da gre pravzaprav za fazo v razvoju prostega pihanja. Eksperimenti in preverjanje teorij v praksi pa so pokazali, da je pihanje v kalup zahtevna tehnika, ki jo lahko obvlada le tisti, ki je že osvojil skrivnosti prostega pihanja. Staljeno steklo je namreč kot živa snov, ki jo moraš imeti ves čas pod nadzorom, sicer se v trenutku spremeni v deformirano ali brezoblično kepo. Šele potem ko steklar obvlada prosto pihanje in rokovanje z mehko in polzečo kroglico steklene mase na pipi, ki jo mora ves čas vrteti, da nastajajoči predmet morebiti ne konča v prahu ob steklarski peči, lahko preveri svoje mojstrstvo še s pihanjem v kalupe (več o tem Stern 1995, 20–30).

V kalup pihane posode različnih oblik in vzorcev so bile v rimskem obdobju zelo razširjene, še posebej pa so bile priljubljene v 1. stol. Z

uporabo kalupov so omogočili hitrejšo in obsežnejšo proizvodnjo skupin enakih izdelkov, ki so bili namenjeni uporabi v vsakdanjem življenju, številni od njih pa so služili tudi samo okrasnemu ali celo propagandnemu namenu.

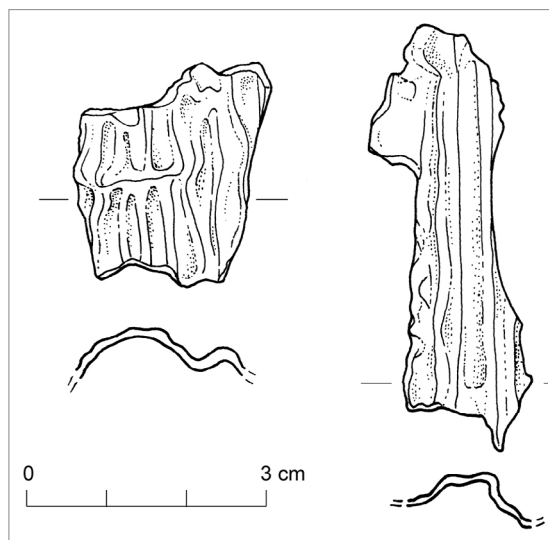
Steklarji so za svoje delo uporabljali večdelne keramične kalupe, za najzahtevnejše izdelke so bili kalupi tudi petdelni (Stern 1995, 28). Ker se steklo, za razliko od keramike, po ohlajanju ne skrči, je bil to edini način, da so izdelano posodo nepoškodovano vzeli iz kalupa. Le-te so verjetno izdelali tako, da so oblikovali vzorec, okrog njena vtisnili glino in nato previdno, po posameznih delih, odstranili tako narejeni kalup. Nanje so seveda dodali posebne oznake, ki so omogočale popolno prilaganje in spajanje posameznih delov kalupa med pihanjem in izdelavo posode. Kalupi so bili nato žgani in s tem pripravljene za uporabo. Ko je bil kalup enkrat izrabljen, so na osnovi arhetipa oz. vzorca brez težav izdelali nov, identičen kalup.

Kakovostna proizvodnja v kalup pihanih posod različnih oblik ali vzorcev je bila tako odvisna na eni strani od sposobnosti oz. umetniške žilice izdelovalca vzorca oz. kalupa in na drugi strani od spretnosti ter izkušnje steklopihača. Malo verjetno je, da bi celoten proces izvedla samo ena oseba, saj postopek vključuje različne spretnosti na številnih področjih.

Z rimskodobnih najdišč po Sloveniji imamo ohranjenih kar nekaj odličnih v kalup pihanih izdelkov (Lazar 2004b, 22, kat. št. 16–24), še več pa se jih verjetno v obliki neopredeljenih odlomkov skriva po depojih. Med številnimi steklenimi najdbami, ki so bile v zadnjih letih v Sloveniji izkopane v okviru avtocestnih projektov, je bilo prav tako odkritega veliko novega in do sedaj pri nas po oblikah nepoznanega steklenega gradiva (Lazar 2004b, 78, kat. št. 92, 93). Posamezni predmeti ali odlomki prav gotovo sodijo med najdbe, vredne širše pozornosti, in to ne samo v slovenskem merilu (Lazar 2005b; 2005c).

Ob tej priložnosti želim predstaviti odlomka steklene čaše, ki sta bila najdena med izkopavanji na Mariborski cesti v Celju (slika/figure 38) (Novšak idr. 2004). Najdba sama po sebi se bo marsikomu zdela sicer skromna, vendar gre za

odlomka t. i. čaše bogov. Tovrstni, v kalup pihani izdelki niso zelo številni, v Sloveniji smo do sedaj poznali samo najdbo iz Črnelega, in zaradi vsebine svojega okrasa še vedno zbujejo precej pozornosti ter vprašanj glede svojega namena, uporabe in izvora.



Slika 38: Odlomka v kalup pihane čaše iz Celja (Mariborska cesta), Pokrajinski muzej Celje. M = 1 : 1, risba Jerneja Kobe.

Figure 38: Fragments of a mould-blown beaker from Celje (Mariborska cesta), Regional Museum Celje. M = 1 : 1, drawing Jerneja Kobe.

Prve čaše s podobami bogov (angl. *mythological beakers*, *Seasons beakers*; nem. *Götterbecher*; iz slednjega je nastal tudi slov. prevod »čása« oz. »čāše bogov«) so bile prepoznane konec 19. stol. (ok. 1870) (gl. Weinberg 1972). Številne so bile kot posamične najdbe pridobljene s strani zbiralcev ali muzejev in glede na dokaj dobro ohranjenost večina verjetno izhaja iz grobnih celot. Čaše so bile izdelane oz. pihane v petdelen kalup: štiri je deli za ostenje in poseben del kalupa za dno čaše. Stiki oz. šivi med posameznimi deli kalupa so na ostenju čaše skriti v stebrih, ki ločujejo polja, na katerih so upodobljena božanstva.

Prvo obsežno študijo o čašah bogov je v sedemdesetih letih prejšnjega stoletja objavila Gladys Weinberg (1972, 26–47). V svojo raziska-



Slika 39: Čaša bogov iz Črnelega, grob 1; Narodni muzej Slovenije, Ljubljana (foto: Tomaž Lauko).
 Figure 39: Mythological beaker from Črnelo, grave 1; National Museum of Slovenia, Ljubljana (photo: Tomaž Lauko).

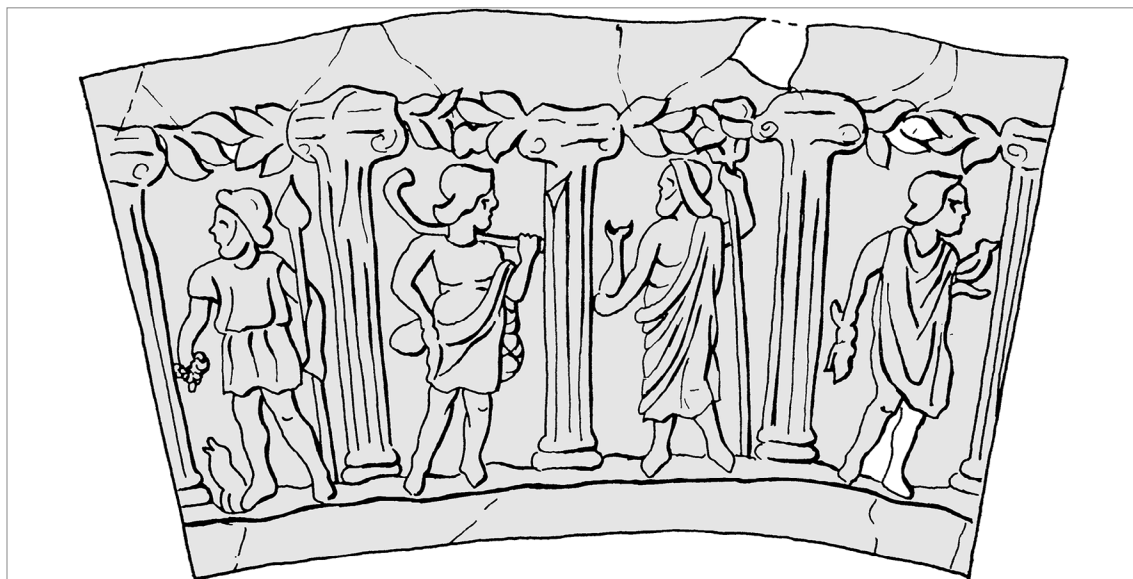
vo je zajela 24 čaš in odlomkov ter izdelke razporedila v štiri skupine glede na ikonografijo. Njena študija je spodbudila nadaljnje raziskave, številna izkopavanja pa so odkrivala tudi vedno nove najdb. Tako je lahko že v devetdesetih letih sledila nova raziskava te skupine izdelkov, ki jo je v obliki doktorske disertacije in člankov predstavila Karol Wight (1990; 1994) in v kateri je zajela že preko 40 čaš. Na tej osnovi je lahko tudi deloma korigirala ikonografske opredelitve Gladys Weinberg. V skupini I so na čašah upodobljeni Herkul, Himenaj, Merkur in personifikacija jeseni (Wight 1994, 25), na čašah II. skupine Bakh, Himenaj, Neptun in Bonus Eventus (str.

35), v skupini III pa na ostenju prepoznamo Fortuno, Apolona, Bakha in Merkurja (str. 50); četrta skupina, ki se ikonografsko razlikuje od ostalih skupin, pa v glavnem obsega le odlomke čaš. Na nekaterih je bilo mogoče do sedaj prepoznati samo upodobitev Vulkana, na drugih pa odlomke figur Bakhovih spremljevalcev in morda tudi samega Bakha. Poudariti je treba, da se tipi upodobitev posameznih božanstev (npr. Bakh, Merkur) razlikujejo od skupine do skupine, kar jasno kaže, da so izdelovalci kalupov črpali iz različnih ikonografskih virov oz. predlog (str. 48). Prav tako je opazna razlika v kakovosti izvedbe figur in detajlov, npr. atributov božanstev, pri čemer po kakovosti izstopata I. in III. skupina.

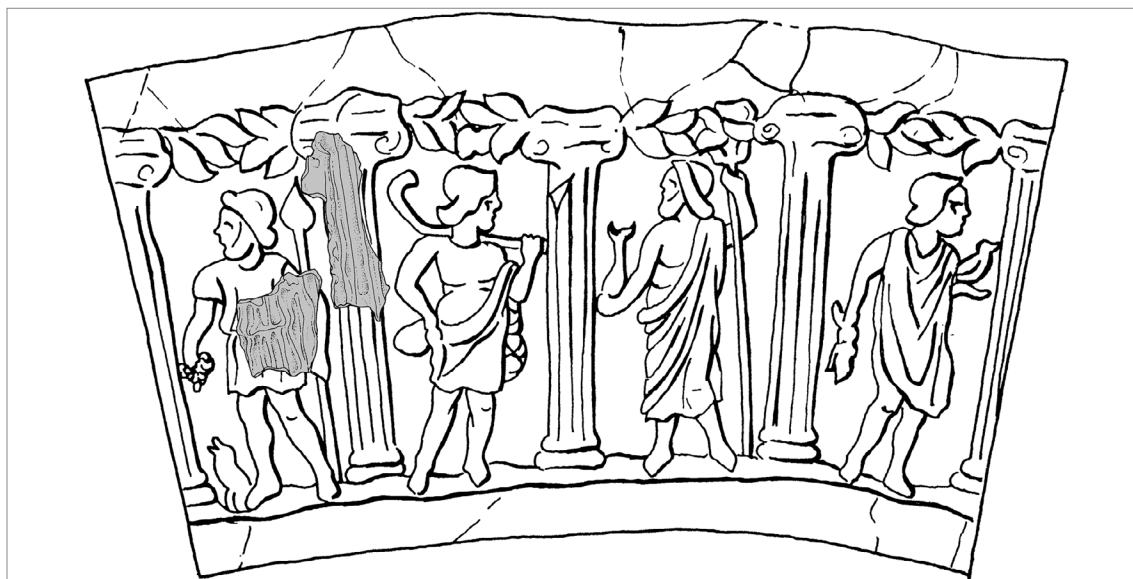
Čaša iz Črnelega (slika/figure 39) po svoji obliki in ikonografiji po opredelitvi Gladys Weinberg sodi v skupino II (1972, 38). Že v prvi objavi groba iz Črnelega je Ložar (1935, 97) upodobljene figure na čaši prepoznal kot božanstva in jih opredelil kot Dioniza, Hermesa, Pozejdona ter neznano božanstvo. V skupni študiji o čašah bogov pa jih je kasneje Gladys Weinberg na novo opredelila kot dve božanstvi in dve personifikaciji letnih časov – in sicer kot Pozejdona in Dioniza ter jesen in poletje. Če pogledamo na risbo (slika/figure 40), si po njeni interpretaciji z leve proti desni sledijo Dioniz, poletje, Pozejdon in jesen. Svojo razlago je med drugim utemeljila z dejstvom, da sta obe božanstvi pogosto upodobljeni skupaj s personifikacijami letnih časov (Weinberg 1972, 43).

Nove najdbe so najbolj razširile prav II. skupino čaš (18 novih čaš), zato je Karol Wight lahko revidirala in na novo utemeljila opredelitev božanstev v tej skupini (1994, 35). Na čaši iz Črnelega lahko tako od leve proti desni prepoznamo naslednje figure oz. boštva: Bakh (Dioniz), Himenaj (prej poletje), Neptun (Pozejdon), Bonus Eventus (prej jesen).

Bakh – mladeniška figura Bakha stoji frontalno in je oblečena v kratak, tesno prepasan hiton. V levi roki drži pokonci tirsovo palico, v desni roki pa posodo (krater ali kantaros) in iz nje izliva (vino) v odprta usta mladega panterja,



Slika 40: Razvit plašč čaše iz Črnelega s podobami božanstev (po Petru 1976).
Figure 40: Drawing of a beaker from Črnelega with a representation of deities (after Petru 1976).



Slika 41: Rekonstrukcija odlomkov iz Celja na plašču čaše iz Črnelega, risba Jerneja Kobe.
Figure 41: Reconstruction of the fragments from Celje on the beaker from Črnelega, drawing Jerneja Kobe.

ki mu sedi ob desni nogi. Glava je obrnjena v desno oz. nam kaže levi profil.

Himenaj – bog svatbe; tričetrtine telesa je prikazano v frontalni drži, tudi on je oblečen v hitonisk, ki pa mu v draperiji pada po telesu in razkriva desni del prsnega koša. Preko leve rame nosi baklo, v spuščeni desnici pa drži posodo (morda svatbeni leutrofor). Njegovi lasje so zaviti navzgor. Himenaja je Gladys Weinberg interpretirala kot poletje (1972, 43). Božanstvo je upodobljeno tudi na čašah I. skupine, in sicer v identični pozi, atributi pa so tu težje prepoznavni in precej zabrisani.

Neptun – bog morja; božanstvo je prikazano frontalno, bradata glava ponuja pogled v levi profil. Oblačilo je bogato draperirano in mu pada z levega ramena po telesu ter odkriva desni del torza. Figura ima dvignjeno levo roko, v kateri drži trizob, desna roka je iztegnjena in v njej stoji delfin, z nosom/rilcem navzdol. Figura Neptuna je jasna in prepoznavna z njegovimi atributi. Primerjave za ta tip upodobitve, ki se je razvil v pozno republikanskem obdobju, najdemo na gemah in novcih (Sena Chiesa 1966, 105, št. 48).

Bonus Eventus – figura stoji frontalno in je oblečena v hlamido. V desni roki, spuščeni ob telesu, ima vejice cvetja ali žita, v pred seboj iztegnjeni levi roki pa predmet, ki spominja na ptico. Atributi tega božanstva so najbolj nejasni, zato ga je bilo od vseh upodobitev najteže prepoznati oz. določiti. *Bonus Eventus*, ki je bil prvotno opredeljen kot personifikacija jeseni, je rimska personifikacija, povezana z žetvijo oz. s pravilom pridelkov, kasneje pa tudi simbol blaginje in sreče. Njegova podoba je velikokrat upodobljena samostojno na gemah (npr. Nestorović 2005, 28, tab. 2: 18, 19) in novcih, datiranih v 1. in 2. stol. (Arias 1986, 123–124).

Odlomka čaše iz Celja (gl. sliko/figure 38) sta velika 2,5 x 3 in 1,7 x 5,4 cm.¹ Posoda je bila narejena iz kakovostnega stekla modrikastega odtenka in izredno tanko pihana. Natančen ogled odlomkov nam v enem odlomku omogoča pre-

poznati ostanke telesa oz. figure v kratkem prepasnem oblačilu, v drugem pa del stebra. Slednji so ločevali posamezne figure na obodu čaše in skrivali robove oz. šive večdelnega kalupa. S svojim modrikastim odtenkom stekla odlomka izstopata od večine ostalih najdb, primerjamo pa ju lahko z delno ohranjeno čašo enakega modrikastega odtenka iz zaliva Fos v Franciji (Foy in Nenna 2001, 82, št. 79).

Primerjava risbe z risbo v celoti ohranjene čaše iz Črnelega pokaže, da v prvem odlomku lahko identificiramo ostanek figure Bakha, popolnoma identične figuri na prvi čaši (slika/figure 41). Tudi drugi odlomek, del stebra, se po svojih detajlih lepo prilega enemu od stebrov. Primerjava odlomka z božanstvi, ki so upodobljena še na ostalih treh skupinah čaš z bogovi, je potrdila, da gre torej tudi v tem primeru za odlomek čaše, ki sodi v II. skupino. Nobeno od božanstev, upodobljenih na ostalih skupinah čaš, namreč ni prikazano v kratki prepasani tuniki. Figura Bakha, ki je upodobljena tudi na čašah III. skupine, se tam kaže kot gola figura s tirsovo palico in z grozdom v roki (Wight 1994, 47).

Detalji izdelave in prileganje obeh risb nam torej potrjujejo, da imamo opraviti tako rekoč s čašo dvojčico. To seveda pomeni, da sta obe čaši nastali v enakem, ali morda celo v istem kalupu.

Seveda se nam takoj porodi naslednje vprašanje: kje so bili proizvodni centri teh izdelkov in po kakšnih poteh so prispeli do nas? Najdišča I. skupine čaš, ki je umetniško najbolj homogena in najkakovostnejša, so bila večinoma koncentrirana v vzhodnem Sredozemlju, zato je bila postavljena teza, da so tudi delavnice obstajale nekje na tem območju, morda v enem od umetniških središč, kot sta bila Rodos in Pergamon (Wight 1990, 72). Skupina II je zaradi zelo razpršenih najdišč, posejanih tako rekoč po celotnem imperiju (gl. seznam v Wight 1994, 35), v tem smislu bolj problematična. Zaradi tega so kakršni koli zaključki o proizvodnih središčih samo hipotetični. Razlika v detajlih ikonografije in kakovosti izvedbe motivov nakazuje, da je morda druga skupina čaš nastala po vzoru prve, vendar v delavnicah, ki s prejšnjimi nimajo povezave.

¹ Inv. št. PMC 24458a, b (H 8/9; SE 7285, S 314; obd. št. 9335).

Seznam dokumentiranih čaš iz leta 1994 (Wight 1994) se je seveda dopolnil z novimi najdbami, predvsem iz zahodnega dela imperija (Foy in Nenna 2003, 250, slika 69; Hochuli-Gysel 2003, 181, sliki 4.29–30). Med slednjimi gre za najdbe s točnim najdiščem in z datiranim kontekstom. Ideja, da so čaše širili predvsem pripadniki vojske, ki jo je oblikovala Karol Wight (1990, 73), je preživeta. Taka interpretacija ni več aktualna zaradi novoodkritih najdb, npr. iz Francije. Poleg tega nova razprostranjenost čaš druge skupine kaže dobro zastopanost v zahodnem delu imperija. To pod vprašaj postavlja celotno idejo o vzhodnih delavnicah ali siro-palestinskem izvoru teh izdelkov. Verjetneje je, da lahko v tem kontekstu razmišljamo o potujočih steklarskih mojstrih (Stern 1995, 46). Tako izdelovalci kalupov kot mojstri steklopihači so bili visoko cenjeni obrtniki, ki so svoje znanje znali unovčiti in so ga ponujali od delavnice do delavnice. V slednjih so bili lahko le zunanji izvajalci, najeti za določen čas, da je steklarna v določenem obdobju pokrila potrebe na tržišču. Le-te so bile tako kot danes odsev trenutne mode in skladno s tem se je zadovoljilo povpraševanje na trgu.

Kako, za kaj in ob kakšnih priložnostih so te čaše uporabljali? Visoka, prisekano konična oblika z ravno odrezanim ustjem kaže, da je šlo za pivske posode, torej kozarce oz. čaše za pitje. Kot priljubljena oblika so te posode razširjene v julijsko-klavdijskem obdobju, še posebej med v kalup pihanimi izdelki jih poznamo precej, npr. čaše z motivi lotosa, mandljev ipd. (Lazar 2004b, 55, kat. št. 24; Celje, inv. št. 24593f – neobjavljeno; Foy in Nenna 2003, 249, slike 70–74). Dobra ohranjenost čaš in prilaganje v grobove kot darilo pokojniku pa kažejo tudi na poseben status, ki so ga imeli ti izdelki. Zaradi bogatega okrasa in izpovednosti motivov je zelo verjetno, da so jih uporabljali ob določenih ritualih ali kot darila za posebne priložnosti. Posamezne skupine nam že s svojo ikonografijo in skupino upodobljenih božanstev nakazujejo, ob kakšnih priložnostih bi jih lahko uporabljali. Skupina I je npr. povezana s poroko in poročnimi slavji, skupina IV (Bakh in njegovi spremljevalci) pa brez dvo-

ma s praznovanji v čast Bakhu. Žal pa ohranjeni konteksti do sedaj znanih najdb niso dovolj izpovedni, da bi lahko v celoti potrdili takšne domneve. Za libacije ob slavnostih in žrtvovanjih so npr. največkrat uporabljali fialo, plitvo skodelo, in ne visokih čaš.

Nov podatek, ki nam ga za naš prostor daje čaša iz Celja, je ta, da je bila odkrita v naselbinskem kontekstu; z nekaj drznosti lahko celo dodamo, da v neposredni bližini tempeljskega kompleksa, ki je s serijo zgodnjericinskih svetišč doživel svoj višek prav sredi 1. stol. Za konec lahko samo dodamo, da so bile čaše bogov brez dvoma izdelki, ki so jih uporabljali ali podarjali ob posebnih priložnostih; božanstva, ki se družijo na čašah II. skupine, govorijo, da so bili to najverjetneje dogodki, povezani s prijaznimi in z lepimi platmi življenja, ki so jih Rimljani pogosto označevali s skupno besedo – *otium*.

Summary

The chapter discusses a new find of a mould-blown glass beaker discovered during settlement excavations in Roman *Celeia*. The fragments belong to the so-called mythological beakers, especially popular during the second half of the 1st century. Such mould-blown objects are not very numerous, until now only the find from Črnelo is being known from Slovenia.

The first comprehensive study of mythological beakers was published by Gladys Weinberg, who organized them into four groups according to their iconography. Already in the 1990s a new study from Karol Wight partly amended the iconographic determinations of Weinberg.

The beaker from Črnelo belongs to group II according to Weinberg, based on its form and iconography. Rajko Ložar already recognized the figures depicted on the beaker as deities and identified them as Dionysus, Hermes, Poseidon and an unknown deity. Later Weinberg described the figures as two deities and two personifications of the seasons. According to her interpretation, the figures in the drawing follow from left to right: Dionysus, Summer, Poseidon and Autumn.

New finds greatly added to group II of these beakers. Thus, Wight could revise and newly establish the definition of the deities in this group. In the beaker from Čr-

nelo, the following deities can be identified from left to right: Bacchus (Dionysus), Hymen (previously Summer), Neptune (Poseidon) and *Bonus Eventus* (previously Autumn).

The two beaker fragments from Celje are 2.5 x 3 and 1.7 x 5.4 cm in size. The vessel was made from quality bluish glass and extremely thinly blown. A meticulous examination of the fragments enables us to identify the remains of a body, i.e. a figure in a short girded garment on one and part of a column on the other fragment. A comparison between this drawing and the drawing of the fully preserved beaker from Črnelo shows that the figure of Bacchus can be identified on the first fragment, completely identical to the figure on the first beaker. Furthermore, the second fragment, part of a column, also matches one of the columns in its details. A comparison of the fragment with the deities has confirmed that the fragments belong to a beaker from group II. The details of the making confirm that both beakers are to be seen as twins. This of course means that both were made in an identical, perhaps even the same mould.

Due to the rich decoration and expressiveness of the motifs it is very likely that they were used at particular rituals or as gifts for special occasions. The new information offered by the beaker from Celje is that it was found in a settlement context. Mythological beakers were without doubt objects used on special occasions; the divinities on the beakers of group II probably attest to events relating to kind and pleasant aspects of life, which the Romans encompassed with one word – *otium*.

Povzetek

Razprava predstavlja novo najdbo v kalup pihane čaše, ki je bila odkrita med naselbinskimi izkopavanji rimske Celeje. Odlomka pripadata t. i. čaši bogov, izdelkom, ki so bili priljubljeni v drugi polovici 1. stol. Izdelki te vrste niso prav številni, do sedaj smo iz Slovenije poznali samo čašo bogov iz Črnelega.

Prvo celovito študijo o čašah bogov je objavila Gladys Weinberg, ki jih je glede na ikonografijo razdelila v štiri skupine. Že l. 1990 je sledila nova študija Karol Wight, ki je delno korigirala predhodnje ikonografske opredelitve.

Čaša iz Črnelega glede na obliko in ikonografijo sodi v skupino II po Gladys Weinberg. Že Ložar je figure na čaši prepoznal kot božanstva in jih opredelil kot Dioniz,

Hermesa, Pozejdona in neznano božanstvo. Gladys Weinberg jih je opisala kot dve božanstvi in dve personifikaciji letnih časov, in sicer kot Dioniza, poletje, Pozejdona in jesen.

Nove najdbe so povečale opredeljeno skupino II in Karol Wight je revidirala ter na novo opredelila božanstva v tej skupini. Na čaši iz Črnelega tako lahko od leve proti desni opredelimo naslednje figure: Bakh (Dioniz), Himenaj (prej poletje), Neptun (Pozejdon) in *Bonus Eventus* (prej jesen).

Odlomka čaše iz Celja nista prav velika (2,5 x 3 in 1,7 x 5,4 cm). Izdelana je bila iz stekla modrikastega odtenka in zelo tanko pihana. Natančen pregled odlomkov je omogočil prepoznati ostanke telesa osebe v kratki prepasani tuniki in del stebra na drugem odlomku.

Primerjava te risbe z risbo plašča iz Črnelega je pokazala, da lahko figuro opredelimo kot Bakha in je povsem enaka kot na ohranjeni čaši. Drugi odlomek, del stebra, se je prav tako prilegal enemu od stebrov. Primerjava odlomkov in opredeljenih upodobitev je pokazala, da odlomka sodita v II. skupino čaš. Glede na detajle izdelave lahko zaključimo, da imamo opraviti s čašama dvojčicama. To pomeni, da sta bili verjetno izdelani v enakem, če ne celo v istem kalupu.

Glede na bogat okras in pomen upodobljenih motivov je zelo verjetno, da so bile čaše v uporabi ob posebnih ali določenih praznovanjih ali pa podarjene za posebne priložnosti.

Zanimiv podatek je, da sta bila odlomka čaše iz Celja najdena v naselbinskih slojih. Čaše bogov so bile brez dvoma izdelki, namenjeni posebnim priložnostim; božanstva na čašah II. skupine pričajo o dogodkih, povezanih s prijaznimi in z lepimi platmi življenja, ki so jih Rimljani poimenovali z eno besedo – *otium*.

Črno steklo, da ali ne?: nove najdbe posod iz na pogled črnega stekla *Black Glass, yes or no?: New Finds of Vessels from Black-Appearing Glass*

Izvlček

Leta 1993 je bil v rimskem grobu na Ptuju priložen ovalen vrč, narejen iz na pogled črnega stekla. Kaj pomeni izraz »črno steklo« v rimski materialni kulturi? Kako opisati te izdelke, da bo to strokovno ustrezno in splošno sprejeto? Črno steklo je steklo, ki je tako intenzivno obarvano, da je neprosojno in na pogled črno. V članku želimo zato opozoriti na omenjeno problematiko ter stanje raziskav: predstavljamo tudi nove najdbe posod iz črnega stekla iz našega prostora, še posebej, ker je bilo območje JV Alp in tudi Jadrana do sedaj s tovrstnimi izdelki skromno zastopano.

Ključne besede: rimsko steklo, črno steklo, izdelava v kalupih, pihano steklo, *Romula*, *Poetovio*, steklen nakit

Abstract

In 1993, an oval jug made of black-appearing glass was attached to a Roman grave in Ptuj. What does the term "black glass" mean in Roman material culture? How to describe these products to be professionally relevant and generally accepted? Black glass is glass that is so intensely coloured that it is opaque and black to the eye. In the article, we, therefore, want to draw attention to the mentioned problem and the state of the research. We are also presenting new finds of black glass vessels from our area, especially since the area of the SE Alps and also the Adriatic was so far modestly represented by such products.

Keywords: Roman glass, black glass, mould-made, blown glass, *Romula*, *Poetovio*, glass jewellery

Uvod

V *Ptujskem arheološkem zborniku* leta 1993 je kolega Ivan Tušek objavil izsledke raziskav na ptujski obvoznici. V eni od sond je bil v rimskem grobu 4 priložen visok ovalen vrč, narejen iz na pogled črnega stekla (Tušek 1993, 390, tab. 8–9; Lazar 2003a, 130–131, obl. 5.1.7.). Kakšno steklo je to in ali je izraz »črno steklo« pravičen oz. upravičen? V zadnjem času se je zaradi številnih in obsežnih raziskav tudi pri nas povečalo število posod, izdelanih iz na pogled črnega stekla – poleg žetonov in okrasnih izdelkov, ki smo jih v večji meri beleži-

li že prej –, zato je prav, da tej problematiki posvetimo nekaj besed in zadnje stanje raziskav na tem področju osvetlimo v širšem kontekstu rimskega imperija.

Stanje raziskav

Že dolgo nazaj je Elisabeth Haevernick zapisala (1963, 123), da črnega stekla v rimski dobi ni oz. ga Rimljani niso poznali oz. izdelovali. Pri tem se je opirala na Plinija Starejšega, ki je v svojem pisanju pravzaprav pomešal izdelke iz obsidiana in neprosojnega, na pogled črnega stekla (*NH* 36,196–197). To seveda tudi kaže, da Rimljani očitno niso ločevali (ali znali ločiti?) med

naravnim obsidianom in izdelanim črnim steklom, še posebej, ker je bilo teh izdelkov v primerjavi z drugim steklenim gradivom malo (Cosyns 2015, 191).

V raziskavah antičnega stekla se je zato v zadnjih letih pojavil problem, kako pravzaprav opredeliti izdelke iz neprosojnega, na pogled črnega stekla.¹ Kako torej opisati in določiti te posode in druge izdelke, da bo to strokovno ustrezno in splošno sprejeto? Kaj pomeni izraz »črno steklo« v rimski materialni kulturi, ali je prav, da ga uporabljamo, in kako ga natančno opredelimo?

S problematiko se je v zadnjih letih, od svoje doktorske disertacije dalje, največ ukvarjal Cosyns (2011) in prav njegovim raziskavam gre zahvala, da se tem izdelkom v okviru študij antičnega stekla posveča več pozornosti in je terminologija na tem področju v zadnjem desetletju enotnejša, če ne v celoti poenotena.

Oko raziskovalca in arheologa bo v praksi ugotovilo, da imata tako črno kot belo neprosojno steklo, oz. izdelki iz tako obarvanega stekla, še dodaten odtенок – belo je lahko rahlo rumenkasto, modrikasto in tudi črno odseva različne nianse. Črno steklo je torej steklo, ki je tako intenzivno obarvano, da je neprosojno in na pogled črno (Bayley 1999, 90, 92). Šele z močno lučjo, ki presvetli izdelek, lahko raziskovalec ugotovi, katera barva je v tem t. i. črnem steklu prevladujoča. Največkrat je to rjava, vijoličasta, zelena pa tudi modra in celo rdeča. Za natančnejšo opredelitev kronološke in predvsem geografske razprostranjenosti teh izdelkov pa je zelo pomembno ugotoviti, katera barvila so bila dodana steklu, da je na pogled črno (Cosyns 2015, 191; Cagno idr. 2014), kar seveda zahteva arheometrične analize.

Arheometrične analize več sto vzorcev črnega stekla so pokazale, da se je sestava stekla zgodnjericanskega obdobja razlikovala od stekla v poznorimskem obdobju, prav tako barvila oz. minerali za obarvanje surovega stekla (Cagno idr. 2014). Do sredine 2. stol. so za pripravo na

pogled črnega stekla uporabljali dva recepta. Prevladovalo je t. i. steklo siro-levantinskega tipa iz relativno čistega peska in natrona, obarvano z manganom, druga vrsta stekla pa je bila izdelana iz manj čistega peska z visoko vsebnostjo železa in brez dodanih barvil (Cagno idr. 2014, 128). Črno steklo v poznorimskem obdobju je bilo izdelano iz sode in barvano z visoko količino železa, verjetno celo s tako čistim virom, kot je magnetit (str. 137). Odgovor, ali je bilo steklo barvano lokalno ali pa v primarnih delavnicah, še ni jasen.

Pregled in raziskave črnega stekla² na osnovi objavljenega gradiva so večkrat oteženi in problematični, saj avtorji v objavah ne opišejo natančno barve stekla oz. ne ločijo med na pogled črnim steklom in njegovo pravo osnovno barvo. Pogosto je izdelek tudi le preprosto opisan kot npr. iz neprosojnega stekla, kot temno steklo, pri nakitu pa se večkrat pojavi tudi zamenjava z gagatom.³

V članku želimo zato opozoriti na omenjeno problematiko ter stanje raziskav in ob tem na nekatere nove najdbe posod iz črnega stekla iz našega prostora (izdelanih v kalupu ali prosto pihanih), še posebej, ker je bilo območje JV Alp in tudi Jadrana do zdaj s tovrstnimi izdelki zelo skromno zastopano, z izjemo nakita (Cosyns 2015, 192, slika 18.1).

Predstavitev gradiva in razprava

Raziskave črnega stekla na območju zahodnih provinc rimskega imperija so pokazale, da so bili ti izdelki priljubljeni in modni v dveh obdobjih, izdelovali pa so jih z različnimi steklarskimi tehnikami. Prvi vrh priljubljenosti sodi v 1. stol., natančneje v obdobje med vlado cesarja Tiberija in flavijske dinastije (30–80 n. št.) (Cosyns in Fontaine 2009). V tem času so bile te poso-

² V nadaljevanju bomo za »na pogled črno steklo« uporabljali izraz »črno steklo« kot *terminus technicus*.

³ Gagat je vrsta črnega lignita, nastalega z razgradnjo dreves, starih več milijonov let, ki so pod visokim tlakom fosilizirala. Že v antiki so ga cenili kot okrasni kamen, saj se zelo lahko obdeluje (trdota po Mohsovi lestvici med 2,5 in 4). Rimljani so ga največ porabljali za nakit. Zaradi svoje temne barve je dobil tudi oznako žalni nakit, ki je bil cenjen in dragocen.

¹ Angleži uporabljajo izraz *black-appearing glass*, *black looking glass*, v zadnjem času pa tudi kar preprosto *black glass* kot tehnični izraz za posebno vrsto stekla oz. izdelkov.

de izdelane tako z uporabo kalupov kot s prostim pihanjem. Čeprav v majhnih količinah, je razprostranjenost posod iz črnega stekla v tem obdobju značilna za celotno območje rimskega imperija (Cosyns 2015, 191).

Tu velja posebej izpostaviti Veliko Britanijo, kjer so tovrstni izdelki znani s številnih najdišč, kot so npr. Colchester, Fishbourne, Carlisle, in so bili najdeni v kontekstih pretežno civilnega značaja, toda razpon najdenih oblik ni prav širok (Cosyns in Fontaine 2009). Na evropskih najdiščih na celini je kontekst najdišč z izdelki iz črnega stekla bogatejši in bolj raznolik, pa tudi razpon oblik je pestrejši (Cosyns in Hanut 2005, 117, tab. 1). Posode se pojavljajo v bogatih žganih pokopih, včasih tudi tumulih, in sodijo v skupino t. i. luksuznega posodja. Večinoma so bile v grob pridane po sežigu pokojnika, zato so dobro ohranjene in je bilo definiranih več oblik oz. skupin pretežno namiznega posodja: krožniki, skodelice, cilindrične posode (pikside), čaše na nogi (skifosi), pladnji, ki se dalje delijo na posamične različice oblik (Cosyns in Fontaine 2009, 83, tab. 1, 2). Na zahodnoevropskih najdiščih je bilo na posodju mogoče dokumentirati tudi različne vrste okrasa, ki sega od apliciranega in vtisnjenega drugobarvnega stekla (npr. belega ali modrega), plitvih kanelur do gub na ostenju, na britanskih najdiščih pa je črno steklo praviloma neokrašeno. To je še posebej zanimivo, saj je npr. prav angleški Colchester najdišče z največ prepoznanimi posodami oz. odlomki posod črnega stekla, raznolikih oblik in širokega časovnega razpona (Cool in Price 1995, 32, 35, 100, 103).

Med gradivom s slovenskih rimskodobnih najdišč so zgodnje oblike posod iz črnega stekla dokumentirane v *Romuli* (Ribnica pri Brežicah), in sicer v naselbinskem kontekstu. V vseh primerih gre za v kalupu izdelane posode, mnoge oblike s svojimi izrazitimi profili spominjajo na kovinsko oz. sigilatno posodje zgodnjeimperialnega časa. Proizvodnja posod iz črnega stekla v 1. stol. je namreč v celoti odražala priljubljenost in razširjenost enobarvnih steklenih posod intenzivnih barv, ki so jih izdelovali v času julijsko-klavdijske dinastije, od začetka do sredine

1. stol. (Grose 1991, 3; Cosyns in Fontaine 2009, 83).

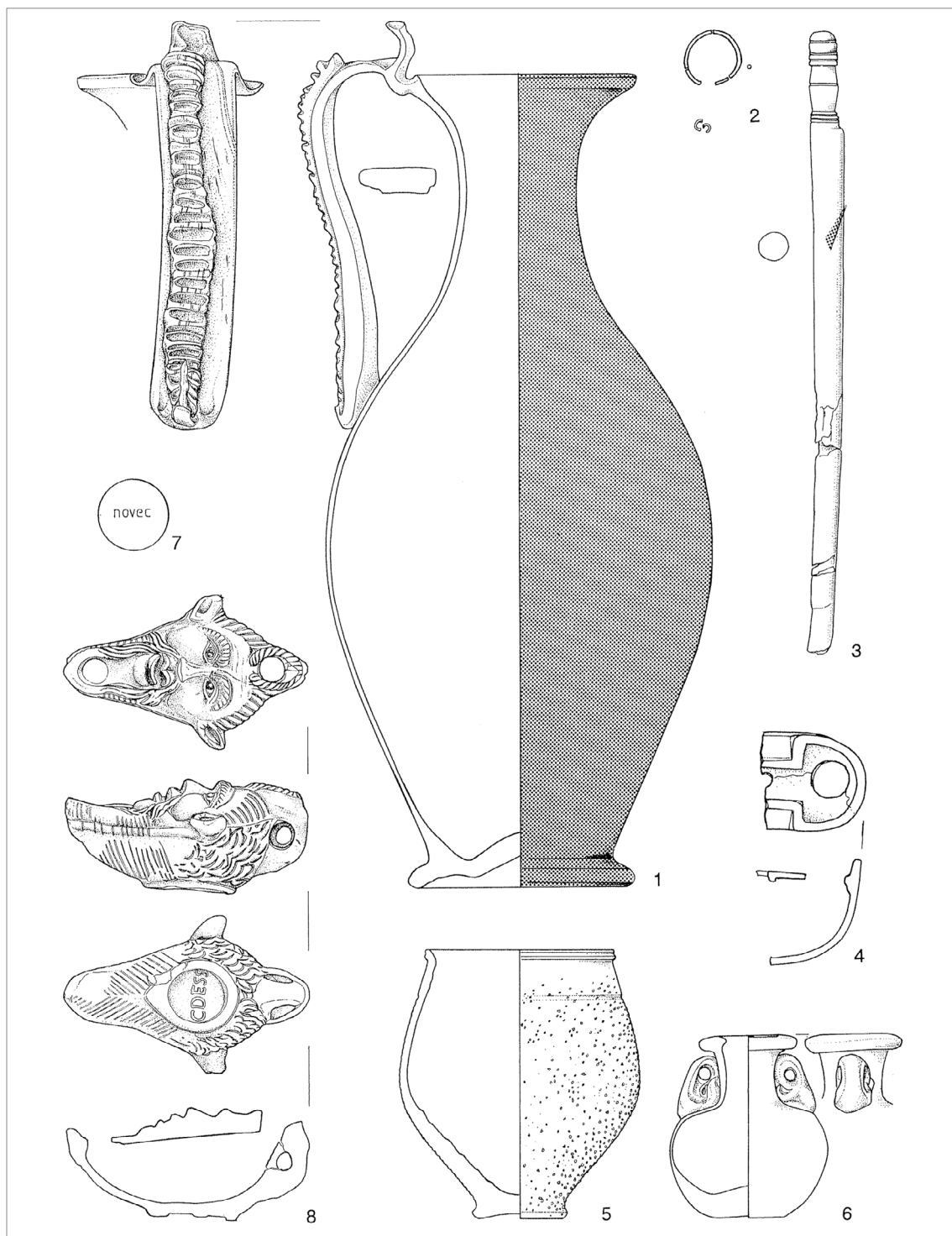
Med oblikami v Ribnici se pojavljajo krožniki različnih oblik, z ravnim ali poševnim ostenjem, z rahlo profiliranim ustjem, njihovo dno je na notranji strani večkrat okrašeno s plitvimi kanelurami v obliki koncentričnih krogov (Lazar 2019b, tab. 1: 1–5), skodelice z navzven nagnjenim ostenjem in rahlo profiliranim ali izvihanim ustjem (tab. 1: 6, 7) ter posode s cilindričnim ostenjem oz. pikside. Slednje so zastopane z več posamičnimi izdelki, ki v svoji velikosti variirajo, njihov premer znaša med 5 in 10 cm (tab. 1: 8–10). Enako kot krožniki so na zunanji strani dna pogosto okrašene s plitvimi kanelurami v obliki koncentričnih krogov.

Oblike posod iz 1. stol., izdelanih v kalupu, sta Cosyns in Souen Fontaine (2009, 80, tab. 1, 2) najprej razdelila v več skupin in oblik, v nadaljevanju pa je Cosyns predlagal 14 osnovnih oblik s podskupinami za steklo, izdelano v kalupu (2011, 48, slika 33), ter 19 oblik za prosto pihano posodje tega časa (2011, 52, slika 34). Verjetno se bo ta razpon počasi razširil, glede na nove najdbe in objave, saj že med predstavljenim gradivom iz Slovenije prepoznamo nove različice posamičnih oblik.

Čeprav večji del najdb iz Ribnice izvira z območja Petričev grič, kjer so bile plasti večinoma uničene, nam novčne najdbe s tega območja vendarle kažejo, da je na tem delu naselja pretežni del dejavnosti potekal v 1. stol. in prvi polovici 2. stol. Dve tretjini novčnih najdb namreč izvira iz obdobja med vladavo cesarjev Avgusta (27 pr. n. št. do 14 n. št.) in Marka Avrelija (161–180). Preostalo spremljajoče in časovno ožje opredeljivo gradivo v veliki meri predstavlja v kalupu izdelano posodje iz intenzivno obarvanega stekla (druga četrtina 1. stol. do pribl. leta 60) (Grose 1989; 1991) ter posodje iz dekoliriranega stekla s facitiranim okrasom (Lazar 2020c), ki časovno pokriva obdobje druge polovice 1. stol.⁴

Drugo obdobje priljubljenosti in proizvodnje steklenih posod iz črnega stekla sodi v čas

4 Gradivo najdišča *Romula* je v obdelavi Inštituta za arheologijo in dediščino UP FHS in bo pripravljeno za objavo v letu 2023 in dalje.



Slika 42: Grobna celota groba 4/1988 z vrčem (po Tušek 1993).
Figure 42: Grave assemblage from the gr. 4/1988 with a jug (after Tušek 1993).

od sredine 2. do zadnje četrtine 3. stol. (Cosyns in Hanut 2005; Cosyns 2006). V tem času je posodje iz črnega stekla ponovno v modi predvsem v severozahodnih provincah rimskega imperija, ko nastajajo pretežno prosto pihani izdelki. Med oblikami prepoznamo večinoma namizno posodje, kot so skodelice, čaše, vrči, in posamične oblike kozmetičnega posodja (Cosyns 2011, 56, slika 35). Posode iz črnega stekla izginejo iz uporabe nekje med letoma 250 in 280, le izjemoma se najde kasnejši izdelek. Cosyns prekinitev proizvodnje povezuje z burnimi političnimi dogodki v galskih in germanskih provincah, saj je tam delovala večina delavnic (2015, 191). Razprostranjenost druge skupine izdelkov je namreč skoraj povsem omejena na provinci *Gallia Belgica* in *Germania Inferior*, le posamične najdbe so bile dokumentirane na območju provinc *Britannia*, *Germania Superior* in *Gallia Lugdunensis* (str. 193, slika. 18.1). Izjemo med najdbami pomeni vrč iz groba na Ptujju, ki kot najdba v provinci Panoniji dokazuje, da je izjema, ki potrjuje pravilo.

Elegantni enoročajni vrč iz ptujskega groba 4/1988 iz neprosojnega, na pogled črnega stekla (Tušek 1993, tab. 6: 3) izstopa tudi med objavljenim steklenim gradivom iz Slovenije. Sodi med redke prosto pihane izdelke iz črnega stekla z našega območja in iz drugih panonskih ter podonavskih provinc. Grob 4 sodi v sklop izkopavanj ptujske obvoznice v letih 1987 in 1988, ki jih je v okviru takratnega ZVKD Maribor vodil Ivan Tušek. Ležal je v sondi I, v kateri so odkopali 11 žganih in štiri skeletne grobove, ki so bili del večinoma že uničenega vzhodnega grobišča, potekajočega ob južni strani rimske ceste *Poetovio-Savaria* (str. 387). Grobišče je bilo uničeno ob gradnji železniške proge Ptuj–Ormož ter s širitvijo Potrčeve ceste in novogradenj ob njej.

Grob 4 s konstrukcijo iz tegul je bil ob odkritju že deloma uničen, poškodoval ga je izkop za vodovodno napeljavo, ohranjena velikost grobne jame je bila tako 106 x 65 cm, globina pa do 25 cm. V grobu so bili poleg vrča pridani (sliki/figures 42, 43) še steklena dvoročajna posodica za olje (Lazar 2003a, 171, obl. 8.3.2.), odlomki kadilnice, nosek pečatne oljenke, koščena okra-

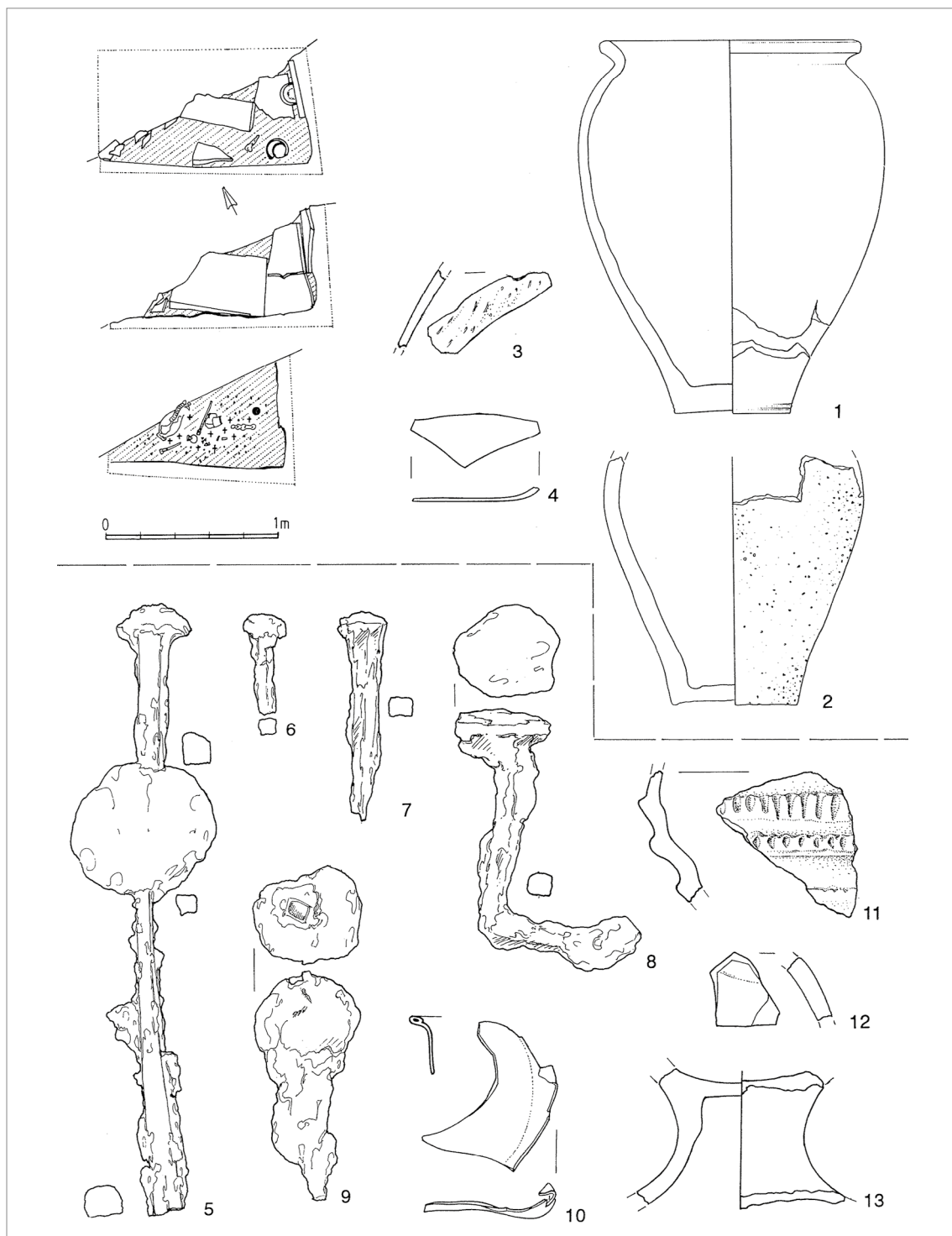
šna igla, glinen lonček z barbotinskim okrasom, pet žeblice, v ognju deformirana steklenička in močno izrabljen bronast novc. V premešani plasti severnega roba groba so našli še oljenko s podobno satira in z žigom CDESS. Na osnovi grobnih pridatkov grob sodi v 2. stol. Med drugim gradivom iz črnega stekla oblika za zdaj nima primerjav (Cosyns 2011, 56, slika 35).

Za razliko od posod so nakit iz črnega stekla izdelovali v precej večjih količinah in skozi celotno imperialno obdobje, še posebej je bil priljubljen in razširjen od druge polovice 2. stol. (Cosyns 2011). Med izdelki najdemo zapestnice, prstane, obeske, jagode različnih oblik, razdelilce za ogrlice, lasne igle in seveda številne igralne žetone. Najstarejše jagode iz črnega stekla so znane iz sredine 1. stol., njihova priljubljenost in številčnost pa porasteta od druge polovice 2. stol., ko je na zahodu imperija posebej razširjen in v modi tudi nakit iz gagata. Vse to drobno gradivo v zahodnem delu rimskega imperija v 5. stol. počasi izgine iz uporabe, medtem ko je na vzhodu še naprej opaziti uporabo širokega spektra nakita iz črnega stekla tudi v mlajših stoletjih, še do vključno zgodnje bizantinskega časa (Cosyns 2011).

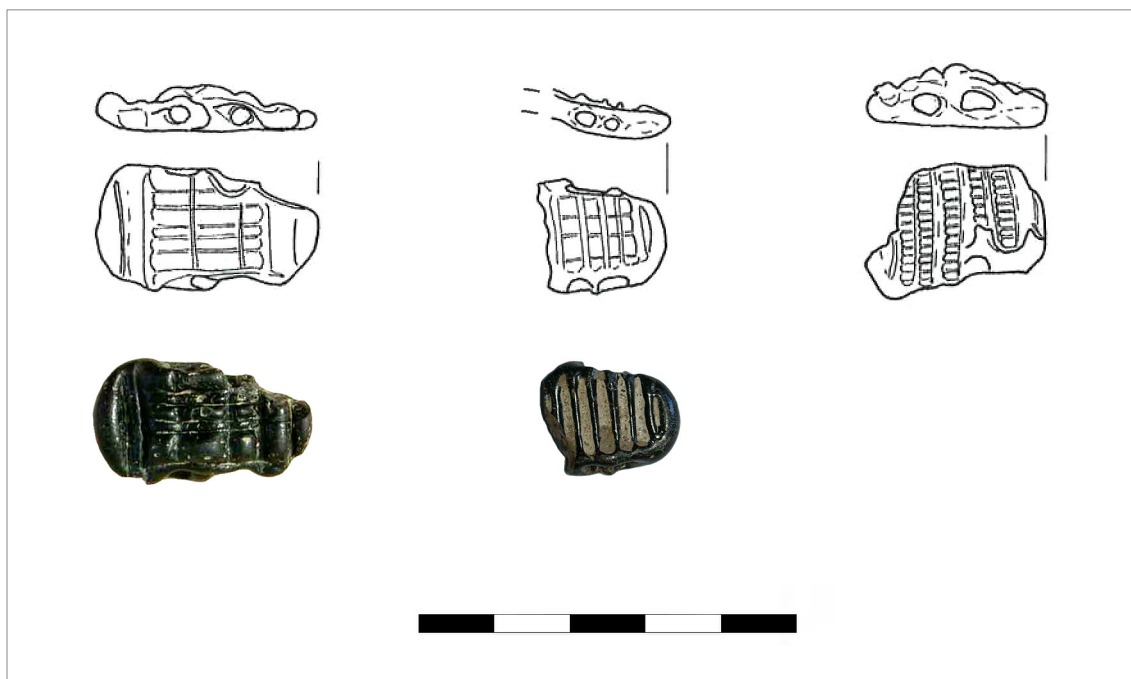
Kot omenjeno, je tega drobnega gradiva med arheološkimi najdbami tudi na naših najdiščih precej več kot posod; posebno obravnavo in študijo bi si prav gotovo zaslužile zapestnice. Na tem mestu pa omenjamo le zanimivejše najdbe iz Ribnice ter izpostavljammo dva tipa jagod – valjaste jagode z nataljenim okrasom iz drugobarvnega stekla in t. i. *Trilobitenperlen*⁵ oz. ploščate narebrene jagode, lahko bi jih poimenovali tudi razdelilci za ogrlice.

Med steklenimi jagodami večkrat izstopajo daljše valjaste jagode iz neprosojnega črnega stekla, ki se pojavljajo tudi med gradivom v Ribnici. Temne, neprosojne jagode so okrašene z nitmi iz kontrastnega belega neprosojnega stekla. Belo steklo je bilo ovito okrog jagode in še toplo raz-

5 Izraz *Trilobitenperlen* (nem.) je prva uporabila Elisabeth Haevernick (1975), ko je objavila članek o teh značilno oblikovanih in okrašenih jagodah. Narebrna površina jo je spomnila na izumrle členonožce, in zato je za te jagode izbrala tako posebno poimenovanje.



Slika 43: Grobna celota groba 4/1988 (po Tušek 1993).
 Figure 43: Grave assemblage from the gr. 4/1988 with a jug (after Tušek 1993).



Slika 44: Ploščate jagode z dvema luknjicama oz. razdelici za ogrlice iz na pogled črnega stekla, *Romula*.

Risbe Andreja Izlakar, računalniška priprava in foto: Aleš Ogorelec.

Figure 44: Flat beads or spacers with two perforations from a black-appearing glass, *Romula*.

Drawings Andreja Izlakar, computer design and photo: Aleš Ogorelec.

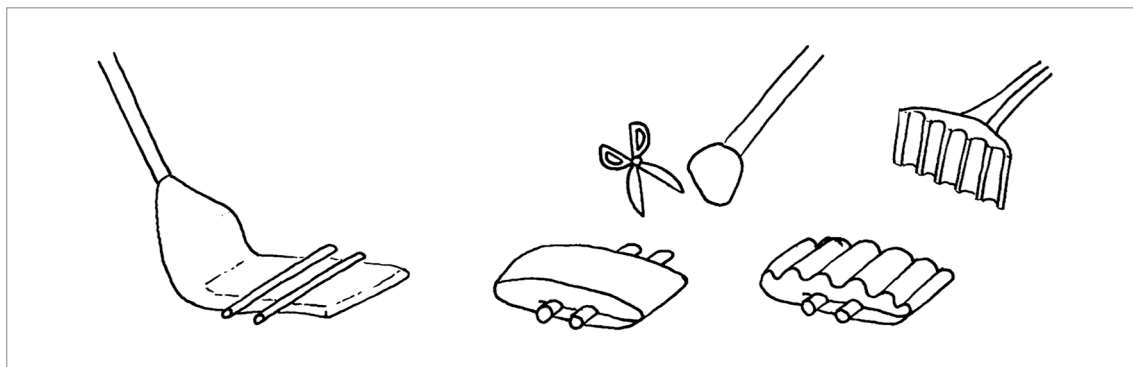
potegnjeno v peresast okras, pri nekaterih jagodah pa so nataljeno nit samo vtisnili v ostenje z valjanjem po ravni podlagi.

Podobne jagode z vtisnjanim okrasom v obliki črt, cik-caka ali peres najdemo že v prazgodovinskih in helenističnih kontekstih arheoloških najdišč v Sredozemlju (Spaer 2001, 99). Njihova proizvodnja se nadaljuje v rimski in tudi bizantinski čas, ko poznamo številne lokalne različice okrasa (str. 102, slika 47). Muzej Louvre hrani podobne jagode, nanizane v ogrlici iz črnomorskega Kerča (Arveiller-Dulong in Nenna 2011, 106, 164–165, št. 166, 182, 207 in 208). Datirane so v 1. do 2. stol. in opredeljene kot proizvod vzhodnosredozemskih delavnic (Arveiller-Dulong in Nenna 2011, 143), čeprav je mogoče, da so nastajale še kje, če sklepamo po raznolikosti njihovega okrasa in nihajoči kakovosti izdelave (Spaer 2001, 103).

Pri nas poznamo podobne jagode, npr. iz Ribnice, Petovione in Emone, kjer je bila taka

jagoda najdena v tiberijskih plasteh (Gaspari 2010, 112, slika 65). Hipoteza Gasparija o lokalni emonski proizvodnji (2010, 113) pa je, glede na njihovo razprostranjenost in trenutne arheološke dokaze, nekoliko preveč velikopotezna ali vsaj preuranjena.

Ploščate ovalne jagode, ki so na spodnji strani ravne, na gornji pa izbočene in okrašene, imajo v sredini navadno dve luknjici (*Romula*, PN 3128, 3166, S 492). Prva jih je zbrala in obravnavala Elisabeth Haevernick (1975, 105), ki jih je tudi poimenovala *Trilobitenperlen*, kajti okras na gornji strani tvorijo podolžni vrezi, pogosto pa je osrednji del še horizontalno narebren, da nastane vtis šahovnice (slika/figure 4.4). Ploščate jagode naj bi enako kot navadne jagode izdelovali z navijanjem na palico in jih nato dooblikovali ter okrasili v še toplem stanju, lahko ročno ali z od-tisom v kalupu (Spaer 2001, 66). Po natančnem pregledu najdb, kjer je bilo opazno prepogibanje stekla, pa je Cosyns predlagal drugačno rešitev



Slika 45: Rekonstrukcija verjetne izdelave ploščatih jagod (po Cosyns 2011, slika 16).
Figure 45: Reconstruction of a possible production of flat beads (after Cosyns 2011, fig. 16).

(2011): črno steklo je bilo naneseno na ravno površino, nanj so položili dve palici, steklo prepognili, okrasili in nato odstranili palici za luknjice (str. 29, sl. 16) (slika/figure 45). Okras vedno teče vzporedno z luknjicami v jagodi.

Med novimi najdbami so tudi številne jagode s figuralnim okrasom, ki pa jih med našim gradivom za zdaj ne poznamo (Arveiller-Dulong in Nenna 2011, 49). V Akvileji so npr. zastopane jagode z okrasom Meduzine glave, moške ali ženske glave v profilu, maske in par v portretu, obrnjen drug proti drugemu (Mandrzzato 2008, 29). Slednji naj bi prikazoval zakonski ali po mnenju nekaterih morda celo cesarski par (Spaer 2001, 66; Arveiller-Dulong in Nenna 2011, 49).

V arheoloških kontekstih so bile narebrane jagode najdene kot del ogrlice, ki je služil kot zaključek (npr. ogrlica v Akvileji) (Mandrzzato 2008, 63, slika 80) ali kot razdelilec, skozi katerega so napeljali trakove z nanizanimi jagodami; ti so prosto viseli kot podaljšek ogrlice. Primer ogrlice z dvema jagodama te oblike, na vsakem koncu ogrlice ena, je ohranjen npr. iz Neviouduna (Petru in Petru 1978, 65, tab. 17: 2). V skeletnem grobu v Budvi so bile priložene samo tri jagode, poleg steklenih balzamarijev (Marković 2012, gr. 201, tab. 80).

Jagode so poznane s številnih rimskodobnih najdišč pa Evropi in izven nje, pojavile naj bi se nekje v 3. stol., najbolj pa so razširjene v kontekstih 4. stol., v grobu iz Emilije-Romanje so dati-

rane v drugo polovico 3. stol., v grobu iz *Sopiana* pa v 4. stol. (Arveiller-Dulong in Nenna 2011, 49–50, št. 57). Na konec 3. stol. bi po priloženih balzamarijih sodil tudi grob iz Budve. Najdbe opisanih jagod so pretežno razprostranjene v osrednji in vzhodni Evropi, le malo je znanih iz Sredozemlja. Zaradi tega je že Elisabeth Havevnick domnevala, da so bile izdelane v Evropi, nove hipoteze pa delavnico postavljajo tudi v Brago na Portugalskem, kjer so izdelovali nakit iz črnega stekla (Cosyns 2011, 228; Arveiller-Dulong in Nenna 2011, 49).

Sklep

Ob koncu velja omeniti še poznane in domnevane delavnice črnega stekla. Na osnovi gradiva jih je opredeljenih kar nekaj, čeprav je to število v primerjavi z drugimi steklarskimi delavnicami majhno. Večinoma te delavnice niso proizvajale samo izdelkov iz črnega stekla, ampak so bili ti del širše proizvodnje obrata. Delavnica zgodnjeimperialnih izdelkov črnega stekla je gotovo delovala v francoskem Lyonu, domnevana pa je tudi delavnica v Švici, v mestu Avenches (Cosyns 2015, 228, tab. 110 in slika 118). Tri delavnice so potrjene za obdobje srednjega cesarstva in poznoroško dobo (*Augusta Raurica* – Kaiseraurgust v Švici in dve delavnici v Franciji), na osnovi številnih odpadkov slabo izdelanih zapestnic pa je domnevana tudi delavnica nakita v Orešču na sosednjem Hrvaškem (*Bolentio*) (Jelinčić 2009, 108). V pozni rimski dobi pa naj bi delovale de-

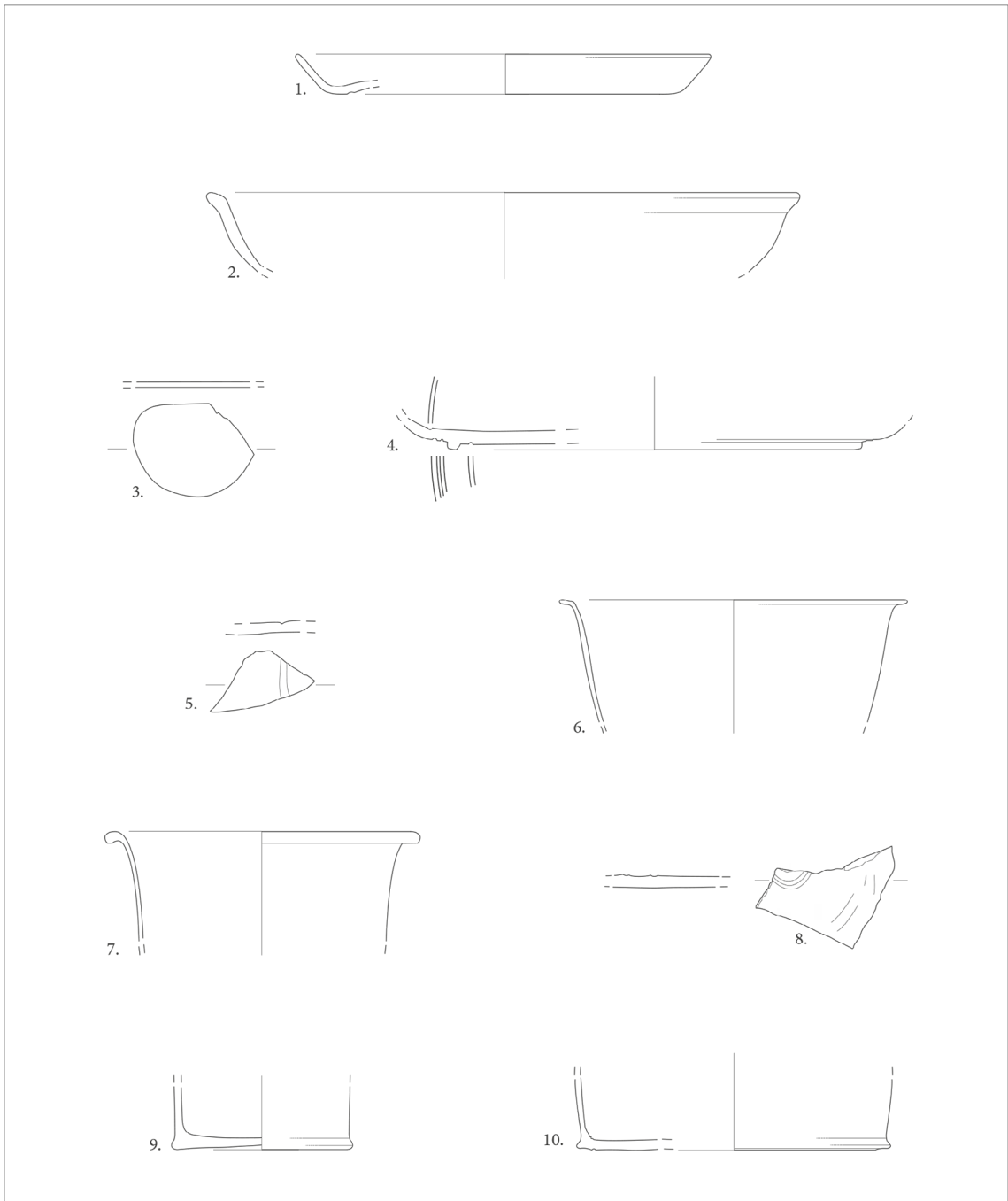


Tabla 1: Oblike posod iz na pogled črnega stekla, vse izdelano v kalupu, *Romula*. M = 1 : 2, risbe Andreja Izlakar.
 Plate 1: Forms of black-appearing glass, all mould-made, *Romula*. M = 1 : 2, drawings Andreja Izlakar.

lavnice v Akvileji, Trierju in Bragi na Portugalskem (Cosyns 2011, 229, tab. 111). Če pogledamo karto razprostranjenosti teh najdišč, vidimo, da so delavnice pretežno locirane v zahodnih provincah, le Portugalska in Hrvaška izstopata iz tega kroga.

V članku smo želeli opozoriti na skupino t. i. črnega stekla v rimski dobi in na nove najdbe posod ter nakita z območja Slovenije; te so v zadnjem desetletju obogatile nabor tega gradiva in še posebej oblik namiznega posodja tako pri nas kot v celotnem kontekstu rimskega imperija. To dokazuje, da se stanje raziskav na področju specialističnih študij stalno spreminja in seveda dopolnjuje. Upamo, da bo članek kolege spodbudil, da pobrskaajo po svojih depojih ali med novimi najdbami, in tako obogatijo trenutno znani nabor gradiva. Še bolj razveseljivo pa bi bilo, da to preraste v celovito študijo izdelkov iz na pogled črnega stekla na območju JV Alp.

Katalog obravnavanih posod

Prva skupina: 1. stol., v kalupu izdelano posodje (tabla/plate 1)

1. Del dna in ostenja krožnika z ravnim, rahlo vboklim dnom in navzven nagnjenim ostenjem iz neprosojnega, na pogled črnega stekla (temnorjavo do vijoličasto), na dnu plitva kanelura pred prehodom v ostenje, izdelano v kalupu. Pr. ustja 12 cm (S 298–PN 2377).
2. Del ustja in ostenja krožnika oz. plitve skodelice iz neprosojnega, na pogled črnega stekla (temnorjavo), izdelano v kalupu, ustje izvihano in profilirano. Pr. ustja 19 cm (S 913).
3. Odlomek dna posode iz neprosojnega, na pogled črnega stekla (temnorjavo do vijoličasto), izdelano v kalupu. Vel. 3,8 x 3 cm (S 924).
4. Del dna krožnika na nizki nogi, neprosojno, na pogled črno steklo (temnorjavo). Na zunanji in notranji strani ob nogi plitve kanelure. Pr. dna 13 cm (S 380–PN 3508).
5. Odlomek dna posode, verjetno krožnik, iz neprosojnega, na pogled črnega stekla (temnorjavo), vidna kanelura na notranji strani, izdelano v kalupu. Vel. 3,4 x 1,9 cm (S 925).
6. Del ustja in navzven nagnjenega ostenja skodelice, ustje izvihano in profilirano, neprosojno, na pogled črno steklo (temnorjavo do vijoličasto), izdelano v kalupu. Pr. ustja 11,2 cm (S 1001).
7. Dva odlomka čaše z izvihanim ustjem, neprosojno, na pogled črno steklo (temno rjavo), izdelano v kalupu. Zunanja stran groba, notranja gladka. Pr. ustja 10 cm (S 295–PN 2477).
8. Del dna posode, najverjetneje skodelice z ravnim ostenjem – piksida, neprosojno, na pogled črno steklo (temnorjavo), izdelano v kalupu, vidni koncentrični krogi. Vel. 4,5 x 3,2 cm (S 1061).
9. Del dna skodelice z ravnim ostenjem – piksida, neprosojno, na pogled črno steklo (temnorjavo), izdelano v kalupu. Pr. dna 5,8 cm (S 1004).
10. Del dna skodelice z ravnim ostenjem – piksida, neprosojno, na pogled črno steklo (temnorjavo), izdelano v kalupu. Pr. dna 10 cm (S 1272).

Druga skupina: 2.–3. stol., prosto pihano posodje (slika/figure 43)

1. Vrč iz neprosojnega črnega stekla s prese-gajočim ročajem, pritrjenim na ustje, z izrastkom kot oporo za palec, ročaj je po vsej dolžini okrašen s horizontalno narebrenim apliciranim steklenim trakom. Ustje izvihano, dno z izvlečeno prstanasto nogo. Viš. 23,4 cm, pr. ustja 6,4 cm, pr. dna 6,2 cm.

Summary

In 1993, a colleague, Ivan Tušek, published his research findings from the Ptuj Bypass site in the publication *Ptujski arheološki zbornik*. At one of the sites an oval jug of opaque, black-appearing glass was placed into Roman grave No. 4. What does the term black glass mean with-

in the Roman material culture? Is it right to use it, and how to accurately define it? How to describe these vessels and other products so that it will be professionally appropriate and widely accepted?

Black glass is glass that is so intensely coloured that it is opaque and seemingly black. Only by using strong light that goes through the product, it can be determined which colour is dominant. In this article, we would like to draw attention to the aforementioned issue, the state of research and new findings of black glass vessels from our region; especially since the southeastern Alpine area, as well as the Adriatic, has been only modestly represented by such products.

Research on black glass from the western provinces of the Roman Empire showed that these products were popular over two periods. The first belongs to the 1st century AD more specifically, during the period between the reign of Emperor Tiberius and the Flavian dynasty, and the vessels were made using both moulds and free blowing. The second period of production of black glass bowls dates from the middle of the 2nd to the last quarter of the 3rd century when mainly free-blown products were made.

Unlike bowls, black glass jewellery was made in large quantities and throughout the imperial period, particularly since the second half of the 2nd century, when it expanded.

In addition to the jug from Ptuj, the article presents new finds of black glass vessels from our area (mould-made) and selected forms of jewellery items. It is hoped that the presentation of this issue and the state of research will encourage further studies of this kind of material.

Povzetek

V *Ptujskem arheološkem zborniku* je kolega Tušek leta 1993 objavil izsledke raziskav na ptujski obvoznici. V eni od sond je bil v rimskem grobu 4 priložen ovalen vrč, narejen iz na pogled črnega stekla. Kaj pomeni izraz »črno steklo« v rimski materialni kulturi? Ali je prav, da ga uporabljamo, in kako ga natančno opredelimo? Kako opisati te posode in druge izdelke, da bo strokovno ustrezno in splošno sprejeto? Črno steklo je steklo, ki je tako intenzivno obarvano, da je neprosojno in na pogled črno. Šele z močno lučjo, ki presvetli izdelek, lahko ugotovimo, katera barva je prevladujoča. V članku želimo zato opozoriti na omenjeno problematiko ter stanje

raziskav in na nove najdbe posod iz črnega stekla z našega prostora, še posebej, ker je bilo območje JV Alp in tudi Jadrana za zdaj s tovrstnimi izdelki zelo skromno zastopano.

Raziskave črnega stekla na območju zahodnih provinc rimskega imperija so pokazale, da so bili ti izdelki priljubljeni v dveh obdobjih. Prvo sodi v 1. stol. n. št., natančneje v obdobje med vladjo cesarja Tiberija in dinastije Flavijcev, posode pa so bile izdelane tako z uporabo kalupov kot s prostim pihanjem. Drugo obdobje proizvodnje posod iz črnega stekla sodi v čas od sredine 2. do zadnje četrtine 3. stol., ko nastajajo pretežno prosto pihani izdelki. Za razliko od posod so nakit iz črnega stekla izdelovali v večjih količinah in skozi celotno imperialno obdobje, še posebej je bilo razširjeno od druge polovice 2. stol.

V članku poleg vrča s Ptuja predstavljamo nove najdbe posod iz črnega stekla z našega prostora (izdelanih v kalupu) in izbrane oblike nakitnih predmetov. Upamo, da bo predstavitev te problematike spodbudila nadaljnje študije tovrstnega gradiva.

Glass Material from the Roman Necropolis of Budva in the Social and Economic Context of the Empire

Stekleno gradivo z rimske nekropole Budva v socialnem in ekonomskem kontekstu imperija

Abstract

The publication of the Hellenistic and Roman necropolis of Budva gave the scientific public and various specialists an opportunity for the detailed study of the material in the wider context of the Roman Empire. The preliminary study of the glass assemblage in the necropolis has shown that the import of glass vessels from the eastern Mediterranean is represented through the period from the 1st to the 4th centuries, while the glass vessels from Italian or western workshops are less numerous and were imported predominantly during the 1st and 2nd centuries. In a grave ritual of Budva necropolis the glass vessels were abundantly added as grave goods and several graves comprise only glass as a grave good in a burial. *Keywords:* Budua, Adriatic, Roman glass, mould-blown glass, coloured glass, Mediterranean workshops

Izvleček

Objava grobov helenistične in rimske nekropole v Budvi je znanstveni javnosti in številnim specialistom ponudila priložnost za podrobne študije gradiva v širšem kontekstu rimskega imperija. Predhodne raziskave steklenega gradiva rimske nekropole so pokazale, da je gradivo iz vzhodnih sredozemskih delavnic zastopano od 1. do 4. stol., medtem ko so izdelki italjskih oz. zahodnih delavnic manj številni in so bili uvažani predvsem tekom 1. in 2. stol. V grobnem ritualu budvanske nekropole opažamo prilaganje stekla v veliki količini in v številnih grobovih so pridani samo stekleni predmeti.

Gljučne besede: Budva, Jadran, rimsko steklo, pihanje v kalup, obarvano steklo, sredozemske delavnice

The town of *Budua* lies on the Roman coastal road – *via publica Epidaurus–Scodra* (Cavtat–Skadar) and is mentioned in the *Tabula Peutingeriana* (Martinović 2011, 23). The Roman town was a successor of an important Iron Age and Greek settlement and the variety of glass goods from the Mediterranean workshops in the Budva necropolis gives valuable insight into the lively trade city on the Adriatic coast (figure/slika 46). The town was, nevertheless, included in intensive trade with the Mediterranean along the ancient trade routes already from the Hellenistic period on.

The publication of the Hellenistic and Roman necropolis of Budva gave the scientific public and various specialists an opportunity for the detailed study of the material in the wider context of the Mediterranean and the Roman Empire (Marković 2012). The preliminary study of the glass assemblage in the necropolis has shown that the import of glass vessels from the eastern Mediterranean is represented through the period from the 1st to the 4th centuries (Lazar 2016, 21), while the glass vessels from Italian or western workshops are less numerous and were imported predominantly during the 1st and 2nd centuries. Based on the published material it can



Figure 46: Map of the Adriatic with the site of Budva in Montenegro (elaborated by Andrej Preložnik).
Slika 46: Karta Jadrana z lokacijom najdišta Budva v Črni gori (pripravil Andrej Preložnik).

be assumed that trade was much more intensive with the eastern Mediterranean; in the 1st and 2nd centuries vessels from Syro-Palestinian workshops were most popular (mould-blown vessels) and from the second half of the 2nd century onwards products from Cypriot and Asia Minor workshops are rather numerous.

In 1936 and 1938, several graves from the Hellenistic and Roman periods were discovered during the construction works for a hotel in Budva (gr. Βουθόη, lat. *Budua*). Unfortunately, the material was split and sold, ending in various museums of former Yugoslavia (Belgrade, Cetinje, Split, Zagreb) as well as private collections. One part of the material that was separat-

ed in 1938 is now part of the Roman collection at the Archaeological Museum in Zagreb (Croatia)¹ and of the National Museum in Belgrade (Serbia) (Veličković 1976, 165). The collection in Zagreb includes 65 almost completely preserved glass vessels, without the exact or known context, all of them purchased in the period from the 1940s to the 1950s from several dealers or collectors (Bertol Stipetić and Gostinski 2021, 274).

The research of the Budva necropolis (gr. Βουθόη, lat. *Budua*) (Martinović 2011, 36) con-

¹ I would like to express my sincere thanks to the late Dr. Zoran Gregl, curator of the Roman archaeological collection in the Archaeological Museum in Zagreb, who offered me the Budva material for study and so initiated my interest for the glass assemblage from Budva necropolis.

tinued about twenty years later, between 1951 and 1957, and in the years 1980–1981. The necropolis has two parts, the older one belongs to the Hellenistic period (between the 4th and 1st centuries BC), while the Roman necropolis can be dated to the period from the 1st to the 4th centuries AD (Marković 2012, 11, 115). The excavated material was not completely studied until recently when the excavations from the period 1981–1982 were published by Čedomir Marković in 2012.

The published material of the Roman necropolis comprises 218 simple individual graves and 63 larger grave constructions or burial plots built of stone with several individual burials in stone or glass urns. The necropolis includes cremation and also skeleton burials, the latest being only 36 or 15% of 256 graves in total. The peak of the necropolis and flourish of the town was, according to the Roman graves assemblages, the 1st and 2nd century AD.

It is surprising how important were glass vessels in the grave ritual of Budva, glass predominates all other materials and many graves comprise only glass as a grave good in a burial. Very few graves contain no glass items. And that does not mean only one modest *balsamarium* but several glass vessels, some of them representing the highest level of craftsmanship from the established Mediterranean workshops. The latest discoveries and publications give the possibility to study the graves assemblages with varied and numerous glass items, ranging from diverse glass vessels representing various production techniques, colours and decoration, to jewellery like glass rings, spacers etc., as well as the patterns of use of the glass vessels and the social structure of the deceased.

Mould-blown glass bottles and balsamaria of various colours and decorations, glass urns of several types, cylindrical, polygonal and square bottles and various other glass tableware were abundantly added as grave goods. There are numerous graves with several glass objects in a grave as well as graves with only glass vessels added as grave goods (gr. nos. 4, 61, 66, 81, 82, 94, 14, 105, 106 etc., in total over 40%) and these can

be individual graves or graves within the family plots. Grave construction no. IV with a *cippus* in front of the built grave (pl. 93–95 and 122) contained nine individual burials and seven of them contained only glass goods. Additionally, 13 glass vessels, mostly for cosmetic purposes, were added individually and put on the grave floor and between the urns; they probably represent the remains of libation, annual celebration or other grave cult practices for the deceased. The grave construction and grave goods represent a fairly limited period of burials, ranging from the second half of the 1st (cup Is 12 – pl. 93: 13; plate Is 49 – pl. 94: 10; mould-blown glass items) to the end of the 2nd century (beaker made of decolourised glass (pl. 94: 5), large one-handled cylindrical bottles with a wide neck (pl. 93: 17; 94: 1, 11) and a square bottle Is 50 (pl. 94: 9), glass jars Isings 63 with M-shaped handles (pl. 93: 15) and globular jars with folded rims Isings 67 (pl. 94: 4, 14, 16).

All the above-mentioned types of larger transport glass vessels can be used also as glass urns in individual burials. Therefore, for the purpose of ash and grave good container in individual burials not only globular glass urns with or without the handles are used (forms Isings 63, 63, 67; Isings 1957, 81–3, 86) but also larger cylindrical bottles with a wide neck (figure/slika 47) and square or cylindrical jars are often used as an urn, the same practice as it was observed in family grave plots. These glass urns are covered or put under half an amphora or some other large lower part of the ceramic vessel for protection.

In this context, it is worth mentioning a group of large one-handled bottles with a decoration of horizontal grooves on the body (plot IV a: pl. 93: 12; plot XXVIIb: pl. 105: 14; A-I/12: PL. 115: 6) and typically folded rim-down, up and out to form a collar rim (see fig. 47 left). This type of rim is very specific and is mostly linked with the workshops of the eastern Mediterranean in the region of Asia Minor or even the Black Sea region, but not yet precisely located (Stern 2001, 40; Biaggio Simona 1991, 188, nos. 163.1.001, 176.1.001; Lazar 2008b, 49–100, 73, fig. 11). The decoration is a combination of



Figure 47: A selection of large cylindrical bottles from Budva necropolis. Museums and Galleries of Budva, Montenegro (photo: Irena Lazar).

Slika 47: Izbor većjih cilindričnih steklenic iz budvanske nekropole. Muzeji in galerije Budve, Črna gora (foto: Irena Lazar).

grooves and shallow incisions and appears on various forms of bottles, jugs etc.; it can be compared to the products of the 1st and 2nd centuries (Stern 2001, 37–9).

The forms of the individual graves and grave plots further show a distinct Italic influence with the use of Roman customs or more precisely a significant level of Romanisation in the town already from the beginning of the 1st century. Regarding and observing the grave types and forms, the graves in a simple grave pit contain no glass items. It may be assumed that these simple graves with only a few grave goods like ceramic bowls and plates of local production (gr. nos. 8, 11, 15, 17, 19, 21, 24, 31 etc.) represent the average inhabitants of the town as well as the indigenous population. The two most numerous types of burials, with a *dolium* (gr. nos. 14, 47, 56, 61, 62, 89 etc.) and a stone urn (gr. nos. 66, 106, 112, 164, 165, 179, some graves in plots V, XVII etc.) reflect the Italic influence in a town and the presence of Italic incomers. A large number of these graves prove the early settling of the Italic population

in the town who brought with them the Italic habits, together with their taste for more luxury and imported goods they used in their everyday life and later added in graves as grave goods for the deceased. In both above-mentioned types of graves, the glass items are very often used as ash containers and always as part of the grave goods if not only as such.

Another important sign of the early Roman presence and the appearance of the Italic and Roman military population are graves with *Aucissa* fibulae. They appear in graves with a *dolium* or stone urns, in graves nos. 106, 107, 133, 134, 153, 207, etc. The fibulae are made of bronze, with the exception of gr. no. 134 with a silver one and none of them bear any inscription (type Feugère 22b2 and Riha 5.2.1.) (Riha 1979, 114). They can be accompanied by glass goods (mould-blown flasks, balsamaria) and ceramics, according to the comparisons the grave assemblages can be dated to the Flavian period, with some exceptions even at the end of the century.



Figure 48: Mould-blown glass bottles exhibited at the Budva Museum. Museums and Galleries of Budva, Montenegro (photo: Irena Lazar).

Slika 48: V kalup pihane stekleničke razstavljene v Muzeju v Budvi. Muzeji in galerije Budve, Črna gora (foto: Irena Lazar).

In several examples, apart from the buried stone and glass urns, glass and other objects were also put on the ground of an *ossuarium* in a grave plot (nos. IV, V, XLIX; Marković 2012, 164, pl. 95–7). It is worth mentioning the group of finds in plot No. V (pl. 95: 16–36). It consists of a bronze box divided into five small compartments with lids for medicine drugs, a stone marver, three scalpels, two clasp knives, a knife, three bronze *spatulae* and a bronze instrument case. We may assume there was a doctor related to the family of *Iulia Politta* and *Octavia Celerina*, the names of the mother and a daughter we know from a *titulus* built in a construction of this plot (Martinović 2011, 89, no. 71; Lazar 2019a, 81).

It is important to single out a few groups of glass vessels or some specific forms since they present the most numerous group of grave goods on the necropolis. We have selected the number of high-quality mould-blown vessels and some imported forms of the vessels significant for dating of the assemblages to point out the importance of the Roman necropolis for the study of

glass use and glass trade in the town and the area in the Imperial period (figure/slika 48). These vessels were part of the grave goods assemblage in the burials of the 1st and 2nd centuries, only a few of them are younger/later and can be dated also to the 3rd century (Lazar 2016, 25).

One such large group is a mould-blown glass and it comprises bulbous bottles or ovular amphorisks with one or two handles (Stern 1995, 152), spherical bottles with vertical ribs, miniature transport amphorae (id. 157), date-shaped and almond-shaped bottles, hexagonal juglets, juglets with a flattened hexagonal body, one head flask and one bottle with honey-comb decorated body (or with a stylised grape pattern?). These vessels are made of translucent coloured glass of violet, blue, yellow, brown and bluish colour; sometimes a second colour is combined on handles (figure/slika 49). The latest is also true of only a few examples of mould-blown vessels made of colourless glass.

The most numerous among mould-blown glasses are bulbous bottles or ovular amphorisks



Figure 49: Ovaral amphorisk made of colourless glass with handles of naturally coloured glass. Archaeological Museum Zagreb, Croatia (photo: Archive of AMZ).

Slika 49: Ovalni amforisk iz dekoloriranog stakla z ročajji iz naravno obarvanog stakla. Arheološki muzej Zagreb, Hrvatska (foto: arhiv AMZ).

(Stern 1995, 152) with one or two handles, 37 bottles are represented within the published grave contexts and another 3 examples in Zagreb (figure/slika 49) and 3 in the Belgrade collection (Veličković 1976, 170, figs. 16–8). The body of these bottles which is globular or ovoid was blown in a two-part mould of two vertical sections (Stern 1995, 152) and is decorated with a band of scrolls or a tendril, flanked by vertical petals or flutes above and below. Handles are applied to the shoulder and attached to the neck, while the handle of one-handed bottles with projecting thumb-rest is attached to the rim. Vessels of this type were predominantly made of translucent manganese-coloured glass, while in

the Zagreb collection also two-handed vessels made of dark blue, yellow and decolourised glass are preserved. The latter has coil handles made of naturally coloured glass, as another two amphorisks in the Budva museum, which are made of violet and decolourised glass. The bottles appear in graves individually or in pairs and also in combination with other forms of mould-blown vessels like miniature amphorae (Marković 2012, gr. 66), juglets with a flattened hexagonal body (gr. 177), spherical bottles with vertical ribs (gr. 180, 28/2, Ve).

Excavated finds in Greece and Crimea suggested a 1st-century date of the finds and numerous find spots point to production in the Eastern Mediterranean (Athens, Damascus, Thessaloniki, Georgia, etc.) (Stern 1995, 152). The suggested Italian or Western Mediterranean production on the basis of finds from *Cumae*, Zadar and Benkovac is in my opinion not likely. The finds from these sites may well have been traded by the Mediterranean routes from the East.

The graves with amphorisks from Budva necropolis are dated mostly to the first century but some of them were found also in graves from the beginning or the first half of the 2nd century, where this type of mould-blown bottles appear together with a bowl Isings 43 with applied ribbed or corrugated bands on the everted rim (Marković 2012, gr. 66).

Spherical bottles with vertical ribs (Stern 1995, 149) are represented with only two examples (gr. 180, gr. AI-9). They are supposed to be produced in the second half of the 1st century in the Eastern Mediterranean, probably in the Syro-Palestinian area. There are several finds of one-handed bottles known from Armenia, Georgia, and Panticapaeum, most probably imported from Syria (Stern 1995, 150; Kunina 1997, 280, cat. no. 139, fig. 84). The two-handed bottle made of manganese-coloured glass was put in a grave together with a Hofheim cup or a beaker of Is 12 form (Marković 2012, pl. 114: 13; Isings 1957, 28), while the one-handed vessel made of yellow coloured glass was in a grave with an above described bulbous bottle, a balsamarium with a constriction on the neck (Lazar 2003a, 180, form

8.6.5.) and a bell-shaped beaker with a ring base (104, form 3.6.3.). The graves can be dated from the mid to the second half or the end of the 1st century.



Figure 50: Miniature transport amphora of translucent manganese-coloured glass with handles of dark blue glass. Archaeological Museum Zagreb, Croatia (photo: Archive of AMZ).

Slika 50: Miniaturna amfora iz prosojnega vijoličnega stekla in z ročajji iz temno modrega stekla. Arheološki muzej Zagreb, Hrvatska (foto: arhiv AMZ).

Similar finds from the graves in Zadar (*Iader*) and Liburnia can be determined to belong to two series of production (Fadić and Štefanac 2010, 298, cat. nos. 18–20). Three finds from the grave No. 367 of Relja necropolis (Zadar) are dated to the period of the emperor Claudius (41–54 AD), while the one from grave no. 310 and the find kept at the Murano Museum belong to another series and are dated from 40 to

90 AD, according to the grave assemblage (Fadić and Štefanac 2010, 300, cat. nos. 21–2).

The bodies of miniature transport amphorae (Stern 1995, 157) are decorated with concentric mould-blown ridges and are again more numerous represented, 19 were found in graves during the 1980–81 excavation, and one is kept in Zagreb collection (figure/slika 50) and 2 vessels in the National Museum in Belgrade (Veličković 1976, 71, figs. 19–20). This type of vessel imitates large clay transport amphorae. The tall slender body is an imitation of Greco-Italic amphorae of the late Hellenistic Period. The miniature glass amphorae are made of translucent coloured glass of violet, blue, yellow and greenish colour. Two examples have coloured handles, one is dark blue with greenish handles and another in the Zagreb collection is made of manganese-coloured glass with dark blue handles.

In graves, they appear individually or in pairs (Marković 2012, gr. 107, 144, XLVIe) and in combinations with bulbous bottles (gr. 65, 66, 28/2, Ve). The form is dated to the second half of the 1st century and the finds spread all over the Mediterranean, including Pavia, Pompei and Aquileia (Stern 1995, 158). It is possible that some of these amphorae might have been produced also in one of the western workshops. In Montenegro, similar finds are known from *Doclea*, where one of them was found in a grave with the coin of the emperor Hadrian (117–138 AD), which shows the popularity of these vessels that were obviously in use also some decades after the 1st century (Cermanović-Kuzmanović 1976, 178, tab. III: 16). Other comparisons can be mentioned to be found in *Scupi* (Skoplje, FYRM), grave No. 137, which is dated to the Flavian period (Mikulčić 1976, 194, tab. IV: 382), while the finds from Zadar, kept at the Murano Museum, have no dated context (Ravagnan 1994, 34, cat. nos. 26–7).

Two hexagonal juglets (figure/slika 51) with Dionysiac symbols (Stern 1995, 160), one from grave 81 (Marković 2012, pl. 61: 2) and another kept at the National Museum collection in Belgrade in Serbia (Veličković 1976, 171, tab. II: 3), are identical in decoration but the first one is

made of manganese coloured glass and the other of yellowish glass. The hexagonal body is divided into six panels and each of them shows an object in high relief: crossed double-ended *thyrsos*, a footed jug with a spout to the left and a high handle, a footed amphora with high handles, a *syrinx* or pan pipe, a *phiale* and a footed crater. The juglet was put in a grave (Marković 2012, pl. 61: 2–4) with another two glass vessels, a carinated cup made of greenish glass with a high kick at the base probably of a Cypriot production (Arveiller-Dulong and Nenna 2005, 192, no. 531) and an elongated balsamarium with simple cut-off rim (Isings 8) and can therefore be dated to the first half of the 1st century or even beginning of the 2nd century. In Thessaloniki, the same type of bottle was found in the public bathhouse of the agora and is dated to the last two decades of the 1st century (Antonaras 2010, 246).



Figure 51: The juglet with Dionysiac symbols made of violet-coloured glass, grave 81. Museums and Galleries of Budva, Montenegro (photo: Irena Lazar).
Slika 51: Vrčec z dionizičnimi simboli iz vijolično obarvanega stekla, grob 81. Muzeji in galerije Budve, Črna gora (foto: Irena Lazar).

Another one-handled juglet of the Syro-Pal-estinian production with a lenticular and hexagonally designed body (gr. 177) is decorated only with four concentric circles on each side and made of manganese-coloured glass. Comparisons are known from the collection of the Louvre museum (Arveiller-Dulong and Nenna 2005, 224, cat. nos. 653–5), with the provenance from Phoenicia and ancient Tortoise. The single find of this type of vessel in Budva was part of a grave that can be dated to the middle or to the second half of the 1st century (Marković 2012, 370, nos. 12–18). Two graves from the Zadar necropolis, where similar flasks were discovered, offer evidence for more precise chronology and are dated to the mid of the 1st century (Fadić and Štefanac 2010, 285).

Rather numerous (11) is a group of almond-shaped and date-shaped flasks, decorated with a pattern of vertical ridges imitating almond-shell and only a few of them resemble the wrinkled skin of a date. They are made predominantly of manganese-coloured glass, one is brownish yellow while two are made of transparent greenish glass (like an example from Nice; Fontaine and Roussel-Ode 2010, 190, no. 96). Comparison in form and colour can be found in the Hermitage collection (Kunina 1997, 280, cat. no. 146, fig. 91, left). In grave groups, they are rarely combined with other mould-blown vessels, and most frequently are added in pairs (Marković 2012, gr. 39, 27/2, A-I/11) or in combination with free-blown balsamarium (174, A-I/8). Graves with these flasks in Budva date to the 1st and 2nd centuries.

In plot construction No. V a grave with three mould-blown vessels in a stone urn was excavated (Marković 2012, 168, pl. 97). A double-head flask, a bottle with a honey-comb decorated body and a miniature transport amphora were all made of manganese-coloured glass. A double-head flask has a body in the shape of two heads of Medusa. The tubular neck has a constriction in the lower part and widens towards the head. The flask can be compared with a find published by E. M. Stern dated to the late 1st or 2nd century (1995, 22,

no. 142). The second flask was blown in a mould with a sunken honey-comb pattern and also has a pattern on the base – two diamonds with concave sides in raised outline surrounding an *umbilicus*. An identical bottle was found in a grave in Zadar which is dated to the end of the 1st century (Fadić and Štefanac 2014, 400).



Figure 52: Double head flask from old excavations, similar to the flask from the grave V. Museums and Galleries of Budva, Montenegro.

Slika 52: Steklenička z dvojnim obrazom iz starijih izkopavanj, sorodna steklenički iz groba V. Muzeji in galerije Budve, Črna gora.

In this context, we have to mention that several unpublished mould-blown vessels are ex-

hibited in the collection of the Budva museum. These are the finds from the first rescue excavation and campaigns in the years 1936, 1938, and 1951 to 1957. There is another double-head flask of manganese glass with Medusa heads (figure/slika 52) and a bottle with a chubby face; the latest seems to be of a younger generation of these products, i.e. from the 3rd century or even later (Stern 1995, 209, nos. 74–5; Foy 2010, 264). The publication and review of these finds would give additional important information regarding mould-blown glass and grave assemblages.

From the Flavian period on there is a shift away in the taste from coloured wares and mould-blown glass to decolourised glass which resembles the precious and luxury items made of rock-crystal (Grose 1991, 2–5; Lazar 2020c, 340). The colourless products which were more or less perfectly decolourized with manganese or antimony remain in fashion and production through the whole 2nd and the 3rd century. It is astonishing how widespread the use of colourless glass was, as according to Pliny (*NH* 34,199), it appeared as the most valued variety of glass in the last quarter of the 1st century and at the beginning of the 4th century apparently remained the most expensive (Diocletian's Price Edict – PE, see Stern 1999, 460–3; Whitehouse 2004, 189–91).

Vessel glass was sold by weight and the PE uses the word *pondo* for vessel glass (Stern 2007, 374), and they reflect the amount of raw material for the vessel's production, not the amount of labour or its degree of aesthetic perfection. In the PE's price of thirty denarii per Roman pound is set for the vessels made of Alexandrian colourless glass, the highest price for the listed glass products (p. 375).² If we compare the price with the minimum daily wage for unskilled labour (25 denarii) and skilled labour (50 to 60 denarii) (p. 384) we could imagine, to whom these products were available.

No colourless products made in moulds and decorated with facets, most typical for the Flavi-

² The average weight of a late Roman glass vessel is approx. 150–350 g.



Figure 53: Beakers and bowls made of decolourised glass exhibited with other free-blown glasses from the Budva necropolis. Museums and Galleries of Budva, Montenegro (photo: Irena Lazar).

Slika 53: Čaše in skodele iz dekoloriranega stekla razstavljene z ostalim steklenim posodjem z budvanske nekropole. Muzeji in galerije Budve, Črna gora (foto: Irena Lazar).

an period, are known from the graves in Budva. But the free-blown vessels made of decolourised glass are quite well represented in this necropolis (figure/slika 53). Several parallels for these glasses can be found in the vicinity, on the Roman necropolis in Bakar, another Adriatic site (Lazar 2008b, 54, pl. 3). For the presented forms we have used the recently proposed typology by Foy et al. (2018) when working on the glass from Gaul.

The ring-footed bowls with a wide out-turned rim (gr. 104: pl. 64: 4; gr. XLVIId, f: pl. 109: 20; 110: 6 – form IN 142) (figure/slika 54), shallow and deep bowls with a double fold on the wide rim (gr. 176: pl. 77: 10; IN 154; gr. XVIIc, pl. 100: 14 – IN 155), bowls with corrugated rib on the rim (gr. 66: pl. 59: 16; IN 150), cylindrical beakers with a ring foot (gr. 73, 87; IN 124), beakers with the decoration of horizontal grooves (gr. 50, IVe–IN 32), biconical beakers with horizontal grooves (var. IN 89), various forms of indented beakers (gr. 65, 130: pl. 59: 3, 68: 2 – IN 45; gr. 142: pl. 69: 3–IN 46; gr. 123: pl.

67: 7–IN 51), etc. are all forms representing the 2nd and 3rd-century glass production all over the Empire and are even called inter regional styles (Grose 1991, 18). They were produced in several workshops in the West and in the East.

Talking about the provenance of some of the glass vessels and the possible workshops we will benefit from the mentioning of some forms with specific details of craftsmanship and high quality of production. There are rather numerous jugs with accented biconical body and handle with thumb rest; profiled handle is formed in an accented angular form and set on the shoulder and the neck of the vessel (gr. nos. 39/II, IVg: pl. 92: 2 and 94: 12). Similar details of the handle forms can be observed on globular jugs with the ridge on the shoulder (gr. nos. 152, 39/II, 41/II: pl. 72: 16; 92: 3, 8, 9).³ Jugs with ridges on the shoulder are known from several sites in Europe (Biaggio Simona 1991, fig. 14; Arveiller-Dulong and Nenna 2005, nos. 46–49), but other de-

³ Jugs are made of blue-green and coloured transparent glass—yellow, green.



Figure 54: A shallow ring-footed bowl with a wide out-turned rim, made of decolourised glass. Archaeological Museum Zagreb, Croatia (photo: Archive of AMZ).

Slika 54: Plitva skodela s prstanasto nogo in široko izvihanim ustjem iz dekoloriranega stekla. Arheološki muzej Zagreb, Hrvaška (foto: arhiv AMZ).

tails of these vessels have no exact comparisons. It could be a speculation to suppose, that the vessels must have come from one single workshop?

Conclusion

It is surprising how important glass vessels in a grave ritual of Budva were; glass is prevalent over other materials and many graves comprise only glass as a grave good in a burial. And that does not mean only one modest *balsamarium* but several glass vessels, some of them representing the highest level of craftsmanship from the Mediterranean workshops.

In the 1st and 2nd centuries, vessels from the Syro-Palestinian workshops presented above were most popular and from the second half of the 2nd century onwards, products from Cypriot and other Mediterranean workshops are rath-

er numerous. It also seems that from Italian and some other western workshops mostly the vessels for everyday use were imported, like tubular and conical toilet bottles or square transport bottles. On the other side more luxurious vessels, like numerous mould-blown flasks made of translucent coloured glass, were imported from the East i.e. the Syro-Palestinian workshops. Based on the published material from 1980–1981 excavations it can be concluded that trade was much more intensive with the eastern Mediterranean since the material is represented through the period from the 1st to the 4th centuries, although in the 3rd and 4th centuries to a slightly lesser extent.

There are still numerous open questions about the glass assemblage from Budva necropolis. It would be extremely important to publish also the material from older excavations to

get a more complete picture of the glass collection in context. There are not many sites where glass material and grave goods are present to such a great extent and also in such an excellent state of preservation. Therefore, the complete study of the glass material from Budva would be a *desideratum* for the future, to put the site on the pedestal it deserves due to its abundant amount of the presented translucent, yet fragile heritage.

Summary

The publication of the Hellenistic and Roman necropolis of Budva gave the scientific public and various specialists an opportunity for the detailed study of the material in the wider context of the Mediterranean and the Roman Empire. The preliminary study of the glass assemblage in the necropolis has shown that the import of glass vessels from the eastern Mediterranean is represented through the period from the 1st to the 4th centuries, while the glass vessels from Italian or western workshops are less numerous and were imported predominantly during the 1st and 2nd centuries. In a grave ritual of Budva necropolis the glass vessels were abundantly added as grave goods, the glass predominates all other materials and many graves comprise only glass as a grave good in a burial. Very few graves contain no glass items. And that does not mean only modest *balsamaria* but several glass vessels representing the highest level of craftsmanship from the Mediterranean workshops. The forms of the individual graves and grave plots show a distinct Italic influence and a high level of Romanisation already from the beginning of the 1st century. A large group of glass represent mould-blown vessels, like ovular amphorisks, spherical bottles with vertical ribs, miniature transport amphorae, date-shaped and almond-shaped bottles, hexagonal juglets, juglets with flattened hexagonal body, double-head flasks etc. The 2nd and 3rd-century material is well represented by free-blown colourless products, like bowls, beakers and jugs, made in various workshops all over the Empire. Some of the glass vessels with specific details of craftsmanship and high quality of production also open the question of a specific workshop that provided the citizens of *Budua* with its products. There are still numerous open questions about the glass assemblage from Budva ne-

ropolis, so it would be important to publish also the material from the older excavations to get a complete picture of the glass collection and of the necropolis as a whole.

Povzetek

Objava gradiva helenistične in rimske nekropole iz Budve je znanstveni javnosti ter različnim specialistom dala možnost za nadaljnje specialistične objave gradiva v kontekstu Sredozemlja in rimskega imperija kot celote. Predhodne študije antičnega stekla z nekropole so pokazale, da so uvoženi izdelki z območja vzhodnega Sredozemlja zastopani v obdobju med 1. in 4. stol., medtem ko je posodje iz italjskih in zahodnih delavnic manj številno ter je v Budvo prihajalo pretežno tekom 1. in 2. stol. Steklo je na budvanski nekropoli igralo pomembno vlogo v grobnem ritualu, saj so ga prilagali v grobove v velikem obsegu, v več primerih steklo celo prevlada nad ostalimi pridatki v grobu. Zelo malo je grobov, ki ne bi vsebovali niti enega steklenega predmeta. Pri tem ne gre le za skromne balsamarije, ampak za posodje, ki predstavlja visokokakovostne izdelke iz sredozemskih delavnic.

Grobna arhitektura in parcele odražajo značilen italjski vpliv in visoko raven romanizacije že od začetka 1. stol. dalje. Velik del steklenega gradiva predstavlja v kalup pihano posodje, kot so amforiski, stekleničke s pokončnimi rebri, miniaturne amfore, balsamariji v obliki datljev in mandljev, heksagonalne stekleničke, vrčki s sploščenim večkotnim ostenjem, stekleničke s podobami obrazov ipd. V 2. in 3. stol. prevladajo prosto pihani izdelki, med njimi skodele, čaše in vrči, ki so bili izdelani v različnih delavnicah širom imperija. Nekateri izdelki s svojimi posebnostmi v oblikah in okrasu ter z visoko kakovostjo izdelave odpirajo vprašanja izbranih delavnic, ki so meščane Budve oskrbovale s svojimi izdelki.

Še vedno ostajajo odprta številna vprašanja o steklenem gradivu z nekropole v Budvi, zato bi bilo pomembno pripraviti celovito objavo nekropole, vključno s starejšimi izkopavanji, da bi dobili celovito sliko o steklenih izdelkih in nekropoli kot celoti.

Steklo kot muzejski
predmet

Glass as a Museum
Object

The Engraved Glass Bowl from Bakar – A Vessel for Honourable Guests

Steklena skodela z graviranim okrasom iz Bakra – posoda za cenjene goste

Abstract

The chapter introduces a glass bowl with an engraved decoration that had been discovered in one of the burials of the Bakar necropolis (probably Roman *Vulcera*). The bowl stands out from the rest of the glass artefacts because of its quality and can be attributed to the so-called ‘contour groove group’ based on the decoration technique. The decorative motif, representing a medallion with a bust and a frieze of larger salt-water fish, matches the vessel to a group of products from a specialized Egyptian workshop from the end of the 2nd century.

Keywords: Roman glass, bowl, engraving, Bakar, Adriatic, Egypt, contour groove

Izvleček

Poglavje predstavlja stekleno skodelo z graviranim okrasom, ki je bila odkrita v enem od grobov bakarske nekropole (verjetno rimska *Vulcera*). Skodela po svoji kakovosti odstopa od ostalega steklenega gradiva in jo glede na tehniko okrasa uvrščamo med steklene izdelke iz t. i. skupine ‘*contour groove*’. Okrasni motiv, ki predstavlja medaljon z doprsno figuro in friz večjih morskih rib, posodo vzporeja s skupino izdelkov, ki so nastali v specializirani delavnici v Egiptu konec 2. stol.

Gljučne besede: rimsko steklo, skodela, graviranje, Bakar, Jadran, *contour groove*

The craft of glass-making was developed to such an extent in the Roman period that the Romans differentiated between glass-blowers (*vitrearii*) and glass engravers and grinders (*diatretarii*) already by name. Ancient sources also attest to their autonomy, speaking of specialized trades and also mentioning the *diatretarii* aside from architects, painters and sculptors (Paolucci 1997, 28). Just like painters and sculptors, glass engravers in the Roman period worked on the basis of patterns and models. The work was challenging and demanded special caution apart from the craftsmanship and artistic knowledge and skills due to the fragility of the material. This is precisely why the material responsibility of the engraver who would

damage the glass during his work was clearly defined and he was held responsible for the damage by the owner of the vessel he was engraving (pp. 28–9). The quality and high value of glass with engraved or ground decoration were first mentioned by the Roman poet Martial in his Epigrams; this is where we first find mention of the term *diatreta* and the poet compares the value of this glass with the price of five young slaves (Mart. Epigr. XII, 70).

Engraving, cutting and faceting are decorative techniques that were implemented only after the vessel had cooled. It mostly meant working in a different workshop; the glass-blowing workshops would have only produced very simple horizontal line engravings. With engraved



Figure 55: The bowl from Bakar with figural decoration, Archaeological Museum Zagreb (photo: Igor Krajcar).
Slika 55: Skodela iz Bakra s figuralnim okrasom, Arheološki muzej Zagreb (foto: Igor Krajcar).

lines made with small metal wheel grinders of various forms and hardness, they shaped the basic outlines, adding detail by hand with a hard-tipped, perhaps diamond (?) tool, and etched and opaque sections created a play of light and shadow in place of colours. The differences in the quality of workmanship of the preserved examples indicate that individual production centres brilliantly mastered their trade and were capable of creating a three-dimensional effect on the vessel. The arduousness of the decorating and work soon lifted these master craftsmen to a higher, more prestigious level, compared to other glass-workers.

Based on preserved objects with engraved figural and geometric decoration it has been possible to recognize and define several groups of products that belonged to individual workshops in the period of the Roman Empire. Such workshops probably operated for several generations,

the most renowned and quality products coming from ateliers in Rome, the Rhineland and Egypt.

In the last few years, researchers have recognized and determined a new group of products, made in Egypt, probably in a workshop in Alexandria (Stern 2001; Nenna 2003; 2007). Their distinct characteristic is the use of engravings for the contours, i.e. the borders, combined with hand-made incisions for the details. Among the few products belonging to this group is also a vessel that was transported from the African coast to the northern Adriatic (Gregl and Lazar 2008, 110, tab. 5: 3).

Since the end of the 19th century, the Archaeological Museum in Zagreb has kept the partially examined material from the Roman necropolis in Bakar (Roman *Volcera*) (Gregl and Lazar 2008, 110, tab. 5: 3). The individual grave inventories were not preserved after be-



Figure 56: Drawing of the Bakar bowl. M = 1 : 2, drawing Miljenka Galić.
Slika 56: Risba skodele iz Bakra. M = 1 : 2, risba Miljenka Galić.

ing handed over to the museum; therefore, the material could only be determined typologically (Ljubić 1881; 1882). Among the Bakar glass, a quality hemispherical bowl with engraved decoration (figure/slika 55) was also preserved. This is the only example of a figural decorated vessel in this group of glass. The glass was made from decolourised glass. It was first published by V. Damevski (including a drawing) in her survey of glass from Croatia (1976, 86, tab. 14; Strina-

ti and Alfano 1998). In 2008, during a revision and repeated examination of the Bakar material, the vessel was newly cleaned, glued and restored.¹ The quality of the procedure meant that new details of the decoration were now visible that had not been visible or clearly recognizable before.

The vessel has an everted, cut-off and ground rim; the walls are somewhat convex, while the

¹ The restoration of the bowl was conducted by Zrinka Znidarčić.

base is rounded. The exterior side has an engraved ornament that is well visible also on the interior of the bowl. The decoration that can be seen and observed from the exterior (figure/slika 56) has a medallion in the middle, encircled by two double lines of concentric circles. The space between them is filled by short incisions shaped like elongated rice grains. The space between them is filled by short incisions shaped like elongated rice grains. Because of the restoration, the figure in the centre of the medallion is not entirely preserved but is clearly recognizable. Given the analogies, it can be concluded that a bust was depicted here of a male figure, turned to the left, with a conical head covering or cap. The curly hair extends below the edge of the cap. The edges of the clothing, cap and face were delineated by a wavy wheel-ground line (groove), while the structure of the mantle or clothing was marked with individual double dashes. In front of the face are a still wavy upright line and a curved engraved line. This was probably a fishing rod (?), which can be recognized on other preserved vessels with similar decoration (Stern 2001, cat. no. 56). The outlines of the cap, clothing, and partly the face, were grooved with broad oblong lines, while individual details, such as the decoration of the cap, the clothing, the locks of hair, and the face, were engraved by hand.

Beyond the medallion and its frame was an area encircled by a single double line, filled with engravings of four large fish, while one could argue that one of the fish (the figure under the bust) actually represents a cephalopod. All the fish are swimming clockwise, one after the other. The main outlines of these figures were formed by elongated wheel-ground lines, while the details on the fish were incised by hand. The decoration depicting the fish species is made using double upright lines on two of the fish, while spiral lines were engraved on another. The waves on the surface of the water were depicted using several strokes.

The vessel was undoubtedly intended for serving fresh food as a welcome, as can be seen, depicted on numerous mosaics and frescoes (Stern 2001, 136). Gifts from the sea, offered on a vessel with a motif of a fisherman and his catch,

emphasized the hospitality of the house, giving honour at the same time to the guests and the hosts, who could show off such a valuable object.

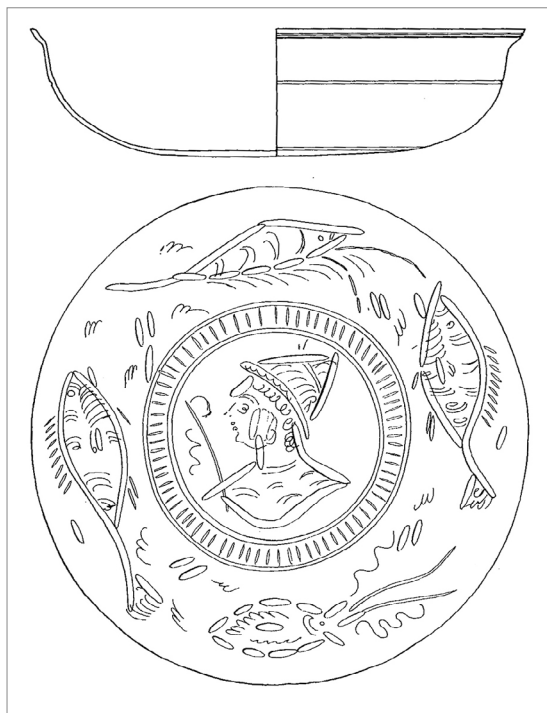


Figure 57: Bowl from the Ernesto Wolf collection
(after Stern 2001).

Slika 57: Skodela iz zbirke Ernesta Wolfa (po Stern 2001).

Details of the workmanship of the vessel from Bakar enable confirmation that this was a product belonging to the group Marianne Stern (2011, 136) classified as the 'contour groove group', thereby, defining the main characteristic of the decorative techniques of these vessels. During further analysis, they were also wittily dubbed 'fish platters', as large and tasty fish were depicted on all known examples of such vessels, and according to the manner of decoration, it was even possible to determine the species of fish on some examples (p. 137). The bowl from Bakar also has the same fish species depicted on it (left and right of the bust in the medallion), which can be recognized as seabreams (scientific name *Spari-*

dae).² Most breams have a narrow body and a single dorsal fin extending almost throughout their backs. The motif of similar large fish is also depicted on a bottle from Ptuj, belonging to the same group of products (Lazar and Tomanič Jevremov 2000, tab. 1; Lazar 2004b, 35, fig. 26). At least two of the depicted fish have an elongated dorsal fin, while the details of the decoration on the body of the fish are less distinctive.

The motif on the Bakar bowl is almost identical to that on the vessel from the Ernesto Wolf collection published by E. M. Stern (2001, 156–8, no. 56) (figure/slika 57). The figure is turned in the same direction and has an almost identically shaped and decorated head covering. The lower edge of the clothing is depicted with an identical wavy line. Unfortunately, the Bakar bowl had been restored; hence the individual details of the bust are somewhat unclear. A difference is visible in the arrangement of the fish, which all swim in the same direction on the Bakar bowl. A similar motif of large fish is also known from a deep bowl from the Corning Museum collection (Whitehouse 1997, no. 401; Nenna 2003, 362, fig. 7), and also on a vessel fragment from the site in Egypt (Nenna 2003, 362, fig. 8).

Naturally, it is possible to note details in the quality of workmanship in this small group of products, which means they were created in the same workshop but not manufactured by the same master glass worker. The motifs that appear on the vessels of this group from well-dated contexts (end of the 2nd and beginning of the 3rd centuries) are, as deduced by Marie-Dominique Nenna, related to decorations on Egyptian faience pottery (friezes with fish, ducks, baskets, etc.), dated to the first two centuries AD (Nenna 2003, 362).

Of the 19 known products from this group, 12 are from Egypt (Nenna 2007, 142) and one each from Croatia (bowl – Bakar) and Slovenia (bottle – Ptuj). The bottle with the depiction of a lighthouse from Ptuj (see figure/slika 60) is un-

² There are 125 species in 37 genera in the bream family. This family is common to almost all seas, while warmer seas present the centre of their population area. Breams are a very important part of the economy.

doubtedly exceptional due to its motif, which at the same time also directly relates it to the original workshops in Egypt (Lazar 2008c, 67).

Originally, many researchers determined this group of products as a younger version of the *Lynceus* group (Paolucci 1997, 41) which got its name after a cup from Cologne, on which the myth of *Lynceus* is depicted (Harden et al. 1988, 198, no. 108). But the characteristics of the technique in which they were made, the use of engraved lines only for contours, and the combination of decoration and motifs clearly distinguish these products from the so-called *Lynceus* group. Even more, recent finds from dated contexts (Egypt, Ostia; Nenna 2003, 362) have shown that these vessels belong to an earlier period and are at least half a century older than the above-mentioned group.

Given the homogeneity of the group in terms of glass quality, the composition of the decoration and the characteristics of the engraving technique, it can be concluded that these are products of an Egyptian workshop that began production in the second half of the 2nd century and exported its products to Italy, the Adriatic coast, as well as the West (Nenna 2003, 362; 2007, 141). Keeping in mind the recently collected finds, different workshops can be distinguished inside the ‘*contour groove group*’. These use the same production technique, but distinguish themselves through the motifs, pointing to the existence of several specialized workshops for this group of products (Nenna 2003, 363, figs. 9, 10).

It can be concluded with certainty that the Bakar bowl and Ptuj bottle both belong to the ‘*contour-groove group*’ according to their decoration technique, while it is very likely that the decorative motifs mean they were made in two different workshops. Nevertheless, based on analogies the Bakar bowl can most certainly be related to the bowls from the Ernesto Wolf collection, the Corning Museum of Glass and Tetynis (Stern 2001, no. 56; Whitehouse 1997, no. 401; Nenna 2003, fig. 8), and it can be concluded that these are products with the same figural

motif, surely made in Egypt and probably also in the same workshop. The bowl is dated to the late 2nd century.

Products with cut and engraved decoration, which were mostly made in small quantities on order, were intended primarily for the social and economic elite of the Roman period. Many factors contributed to the high final price of the product: the narrow specialization of the craft, the esteem of the quality craftsmen that passed on their knowledge to their sons or apprentices and were thus exempt from taxes, as well as the fragility and breakability of the vessels. The value of the object was in this case represented by the beauty of the decoration, made by a specialized artistic craftsmanship technique; the aesthetics were enough in these cases to often make the glass vessel even more valuable than those made of precious metals. During the 3rd century, engraved glass became entirely a case of prestigious production. The number of orders slowly rose; the meaning of iconography became more important and gained value as a means of spreading culture and the ideals of the ruling classes.

That glass with engraved decoration was largely a status symbol, is evident from analyses of necropolises and glass grave goods, especially from the Cologne (*Colonia Agrippinensis*) area, where glass vessels with engraved decoration and figural motifs are characteristic of the wealthiest graves, along with precious jewellery and bronze items (Friedhoff 1989).

The bowl from Bakar represents a status symbol in its own right. The item, made in an Egyptian workshop, certainly did not belong among the products of mass production. It was probably made on order for a person that wanted to fascinate and honour their guests with this prestigious tableware and emphasize their status, i.e. a high and important position in society; or perhaps the bowl was a gift, reflecting particular benevolence, of course, conveyed by the value of the gift itself, manufactured in a specialized workshop in Egypt.

Summary

Among the Bakar glass, only one vessel with engraved decoration is preserved, a shallow bowl made of decolourised glass. The vessel was newly cleaned and restored and details of the decoration were now visible that had not been clearly recognizable before. The decoration has a medallion with the figure in the centre. A male bust had a conical cap and the curly hair extends below the edge of the cap. In front of the face is probably a fishing rod.

Beyond the medallion and its frame was an area filled with three large fish, and one cephalopod. The edges of the decoration were delineated by a wavy wheel-ground line (groove), while the details were marked with individual double dashes.

The vessel was undoubtedly intended for serving fresh food as a welcome. Gifts from the sea, offered on a vessel with a motif of a fisherman and his catch, emphasized the hospitality, and the hosts show off such a valuable object.

Based on preserved objects with engraved figural and geometric decoration it has been possible to recognize and define several groups of products that belonged to individual workshops in the period of the Roman Empire. The most renowned and quality products come from ateliers in Rome, the Rhineland and Egypt.

Details of the workmanship of the vessel from Bakar enable confirmation that this was a product belonging to group E. M. Stern classified it as the '*contour-groove group*', thereby, defining the characteristic of the decorative techniques of these vessels. The motif on the Bakar bowl is almost identical to that on the vessel from the Ernesto Wolf collection, similar motifs are visible on the find from the Corning Museum and a fragment from Tebtynis.

Given the homogeneity of the group (19 finds) it can be concluded that these are products of an Egyptian workshop that began production in the second half of the 2nd century and exported its products to Italy, the Adriatic coast, as well as the West.

Povzetek

Edini primer figuralno okrašene posode z rimske nekropole v Bakru je plitva polkroglasta skleda iz dekoloriranega stekla. Po čiščenju in restavriranju lahko na okrasu prepoznamo podrobnosti, ki prej niso bile vidne. Ok-

ras na zunanji strani predstavlja medaljon, v katerem je doprsje moške figure. Na glavi ima pokrivalo, izpod nje ga gledajo kodrasti lasje, pred obrazom je najverjetneje ribiška palica. Izven medaljona je prostor, ki ga zapolnjujejo večje morske živali, tri ribe in sipa. Obrisi in glavne poteze so izdelani z brušenjem, posamezni detajli pa so vrezani ročno.

Posoda je bila brez dvoma namenjena serviranju hrane v znak dobrodošlice. Darovi morja na posodi z motivom ribiča in njegovega ulova so brez dvoma poudarili gostoljubje, gostitelj pa se je istočasno pohvalil z dragocenim predmetom.

Do danes je bilo mogoče na osnovi ohranjenih najdb z brušenim figuralnim ali geometrijskim okrasom prepoznati in opredeliti več skupin najdb, ki so pripadale posameznim delavnicam širom imperija. Najkakovostnejši izdelki so prihajali iz Rima, Egipta in Porenja.

Na osnovi podrobnosti izdelave bakarske skodele lahko potrdimo, da gre za izdelek, ki sodi v skupino, ki jo je Marianne Stern opredelila kot *'contour groove group'* in s tem določila glavne značilnosti okrasa tega posodja.

Motiv na skodeli je identičen skledi iz zbirke Ernesta Wolfa, sorodne motive pa prepoznamo še na globoki skledi iz zbirke v Corningu in odlomku posode iz Tebtynis. Na osnovi detajlov izdelave lahko zaključimo, da so nastale v isti delavnici, a jih ni izdelal isti mojster.

Z ozirom na homogenost skupine (19 poznanih izdelkov) lahko zaključimo, da gre za izdelke egipčanske oz. aleksandrijske delavnice, ki je s proizvodnjo začela v drugi polovici 2. stol. in izvažala svoje izdelke v Italijo, na Jadrin in v zahodne province.

Dragoceno darilo iz Egipta
– rimska steklenica s Ptuja, izdelek graverjev iz Aleksandrije
A Precious Gift from Egypt
– *The Bottle from Ptuj, a Product of Engravers from Alexandria*

Izvlček

V tem poglavju predstavljamo steklenico z brušenim okrasom iz rimske dobe, najdeno v enem od grobov rimske Poetovione. Izdelek je zanimiv zaradi kakovostnega brušenega okrasa in motiva, ki je upodobljen na obodu posode. Brušen okras posodo uvršča v posebno skupino izdelkov, t.i. *contour groove group*, ki jih pripisujemo delavnicam v Egiptu, najverjetneje v Aleksandriji. S slednjo pa je povezan tudi figuralni motiv, saj na ostenju steklenice lahko prepoznamo faroški svetilnik. Risba sodi med redke ohranjene upodobitve iz rimske dobe, ki predstavljajo enega od sedmih čudes antičnega sveta.

Ključne besede: rimsko steklo, graviranje, *diatretarii*, Egipt, Faros, *Poetovio*, 'contour groove group'

Abstract

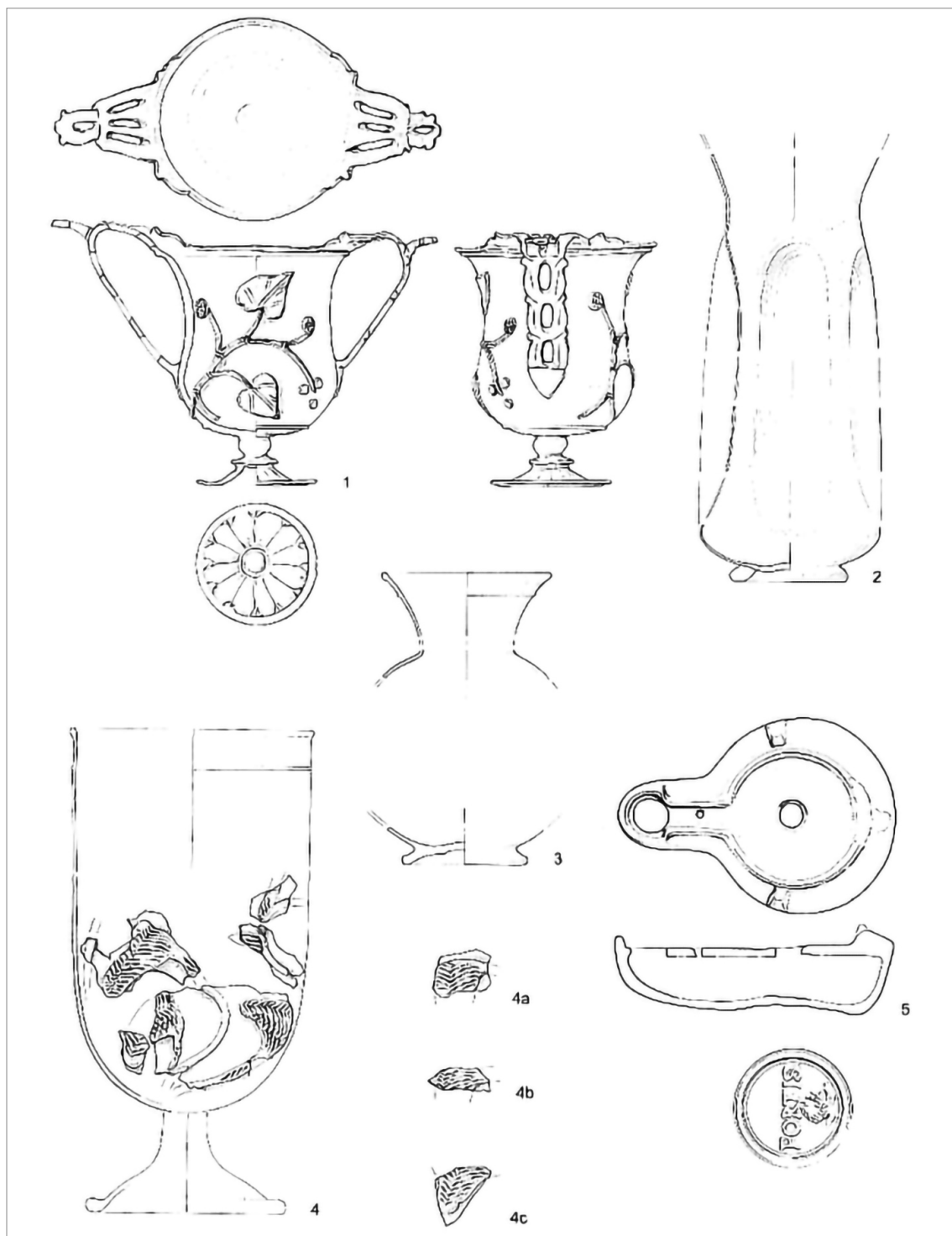
This chapter presents a bottle with engraved decoration from the Roman period, found in one of the tombs of the Roman *Poetovio*. The product is interesting because of the high-quality engraved decoration and the motif depicted on the walls of the bottle. Decoration defines the vessel in a special group of products, i.e. contour-groove group, attributed to workshops in Egypt, most likely in Alexandria. A figural motif is also connected with the latter, as the Pharos lighthouse can be recognized on the vessel. The drawing is one of the rare surviving depictions from the Roman era, representing one of the Seven Wonders of the Ancient World.

Keywords: Roman glass, engraving, *diatretarii*, Egypt, Pharos, *Poetovio*, contour groove group

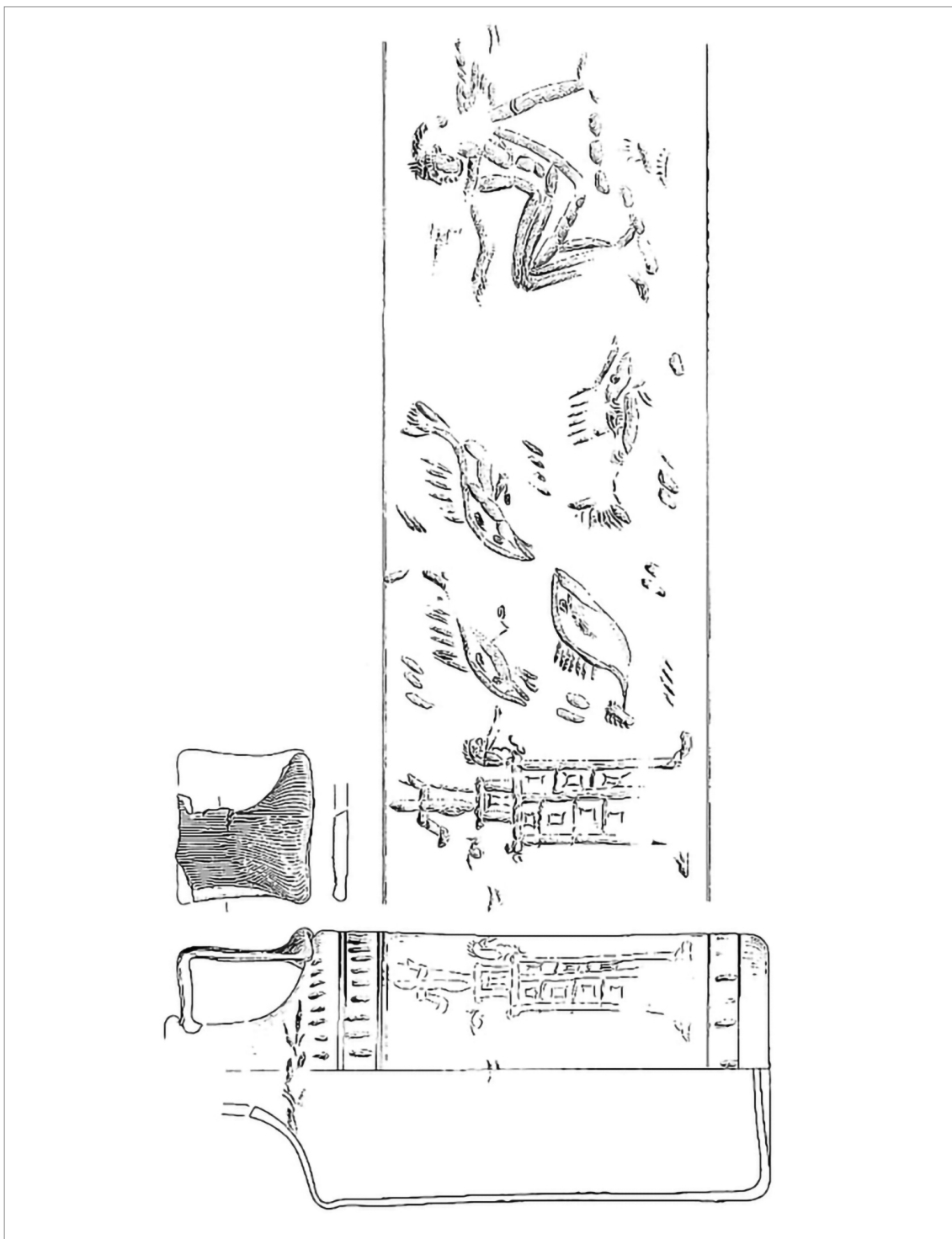
Rimljani so že s poimenovanjem steklopihače (*vitreatarii*) ločili od graverjev in brušilcev (*diatretarii*). Graverji na steklo so v rimski dobi, prav tako kot slikarji ali kiparji, delali na osnovi predlog oz. vzorcev. Delo je bilo zahtevno in je poleg obrtne spretnosti ter umetniškega znanja zahtevalo tudi posebno pazljivost zaradi lomljivosti stekla. Prav zaradi tega je bila materialna odgovornost graverja, ki bi poškodoval predmet med svojim delom, tudi jasno določena in graver je za poškodbo odgovarjal lastniku posode, ki jo je krasil (več o tem Paolucci (1997, 27–30)). Zahtevnost krašenja in dela je te mojstre v primerjavi z ostalimi steklarji kma-

lu dvignila na višjo, prestižnejšo raven (več o tem Harden idr. (1988, 179–186) in Harden (1935)).

Na osnovi ohranjenih posod z brušenim figuralnim in geometrijskim okrasom je danes mogoče prepoznati ter opredeliti že nekaj skupin izdelkov, ki so pripadali posameznim delavnicam v obdobju rimskega cesarstva. Delavnice so verjetno delovale skozi več generacij, najbolj znani ateljeji so v Rimu, Porenju in Egiptu. V zadnjih nekaj letih so raziskovalci stekla opredelili novo skupino izdelkov s kakovostnim figuralnim okrasom, ki so najverjetneje nastajali v delavnici v Aleksandriji (Stern 2001; Nenna 2003; 2007). Njihova značilnost je uporaba gravure za



Slika 58: Grobni pridatki iz groba 11/1982 (po Lazar in Tomanič Jevremov 2000).
Figure 58: Grave goods from the gr. 11/1982 (after Lazar and Tomanič Jevremov 2000).



Slika 59: Risba steklenice iz groba v Petovioni. M = 1 : 2, risba Dragica Lunder Knific.

Figure 59: Drawing of a bottle from the g. in *Petovio*. M = 1 : 2, drawing Dragica Lunder Knific.

obrobe oz. zunanje linije upodobljenih motivov, s prostoročnimi vrezji pa so poudarili detajle.

Med ne prav številnimi izdelki, ki sodijo v to skupino, imenovano *contour groove group* (skupina z žlebljenimi oz. graviranimi obroba-mi),¹ se je ohranila tudi steklenica, ki je z afriške obale pripotovala vse do Petovione (Lazar in Tomanič Jevremov 2000, 195). Odkrita je bila v grobu, ki so ga sodelavci Pokrajinskega muzeja Ptuj odkrili tekom enega od zaščitnih izkopavanj na območju rimske Petovione. Grob 11, ki je bil zidan iz opeke in pokrit z marmornimi ploščami, je bil žgan, med pridatki pa so prevladovali stekleni predmeti (slika/figure 58): čaša gubanka iz mlečno belega stekla, čaša na nogi z nataljenim okrasom, steklenička iz mlečno belega stekla, oljenka z žigom FORTIS. Med njimi sta po svoji izjemni kakovosti izstopala kantaros z vrezanim reliefnim okrasom rastlinja in steklenica z brušenim figuralnim okrasom (Lazar in Tomanič Jevremov 2000, 197, tab. 1, 2.). In prav tej želimo posvetiti nekaj več pozornosti, saj sodi med izdelke, ki so nastali, navadno po naročilu in v majhnih količinah, v specializiranih delavnicah.

Cilindrične steklenice iz dekoloriranega stekla so postale priljubljene konec 2. stol. (Isings, 1957, 156, obl. 126), najdbe na območju JV Alp pa so datirane od konca 2. pa do začetka 4. stol. (Lazar 2003a, 156, obl. 6.3.7.). Njihova značilnost je izvihano, lijakasto ustje, cilindrično oz. valjasto telo, ki se proti dnu lahko nekoliko zoži, dokaj širok ročaj pa je navadno gosto narebren in upognjen z izrazitim klekom. Ostenje teh posod je najpogosteje okrašeno z vodoravnimi vrezanimi ali z brušenimi linijami, včasih pa z geometrijskim okrasom v več ločenih pasovih. Figuralni okras se ne pojavlja zelo pogosto, zato so taki izdelki deležni toliko večje pozornosti (Fremerdsdorf 1951, 8; Klein 1996, 152).

Ptujska steklenica ima gosto narebren, le deloma ohranjen ročaj, vrat in ustje sta ohranjena

¹ Poimenovanje *contour-groove group* se kot t.i. tehnični izraz zaenkrat uporablja v vsej mednarodni strokovni literaturi s tega področja; prevod navajamo kot dodatek oz. pojasnilo in hkrati kot predlog za iskanje ustreznega poimenovanja v slovenskem jeziku.

le v odlomkih; restavrirana je bila v delavnicah RGZM v Mainzu. Ostenje po vsej površini pokriva figuralni motiv, zgoraj in spodaj pa ga omejujejo dva vodoravna okrasna pasova. Motiv je bil izdelan v kombinaciji gravure s kolesčkom in prostoročno vrezanih detajlov, izdelanih z ostro konico. Obrisi figur in poslopja so bili zarisani z uporabo gravure, s širšimi linijami, posamezni detajli na osebi, živalih in stavbi pa so bili vpraskani prostoročno (slika/figure 59).



Slika 60: Figura, sedeča na obali (foto: Tomaž Lauko).

Figure 60: Figure sitting on the coast (photo: Tomaž Lauko).

Motiv na posodi predstavlja morsko pokrajino. Na obali, ponazorjeni s kratkimi gravurami v poševni liniji in z rastlinjem pod njo, sedi v profilu prikazana moška oseba, ki se naslanja na levo roko, okrašeno z dvema narokvicama oz. obročkoma, desno roko izteguje predse (slika/figure 60). Na glavi ima s prostoročno vrezanimi linijami poudarjeno nekakšno pokrivalo, za hrbtom pa je morda nakazano plapolanje oblačila ali vetra. Pokrivalo na glavi je nenavadno bogato, široko potegnjeno nazaj, kratke,



Slika 61: Prizor s svetilnikom na ptujski steklenici (foto: Tomaž Lauko).

Figure 61: A scene with a lighthouse on the Ptuj bottle (photo: Tomaž Lauko).

vodoravne vrezane linije na vrhu dajejo vtis šivov. Z nekoliko domišljije bi v tem pokrivalu lahko prepoznali *nemes*, kraljevsko pokrivalo faraonov (Tiradritti 2008, kat. št. 133, 138); morda pa je umetnik le želel ponazoriti bogato pričesko ali lasuljo, po vzoru upodobitev v egipčanski umetnosti (Wilkinson, 2003, 92, 96). Gola oseba verjetno upodablja božanstvo ali mitološko osebo, žal pa nima atributov, po katerih bi jo lahko povsem natančno opredelili. Glede na motiv, lahko razmišljamo o Neptunu (oz. Pozejdonu) ali Eolu, njegovemu sinu in bogu vetrov. Morda pa gre za Proteja (*Proteus*), ki naj bi bil prav tako Pozejdonov sin. O njem

piše že Homer v *Odiseji*; simboliziral naj bi morsko božanstvo, s preroškimi sposobnostmi in z močjo, da se je lahko preobrazil v kakršnokoli obliko; opoldne je navadno spal oz. počival na otoku Faros (Seyffert, 1995, 523). Po mlajši legendi, o kateri piše Herodot (Herodot iz Halkarnasa 2006, II, 112, 114–116), pa je bil Pozejdonov sin Protej mitski egipčanski kralj, ki je živel na Farosu. V tem primeru nas faraonsko pokrivalo (*nemes* oz. *klaft*) upodobljene osebe ne preseneča. Prostor pred figuro je morje, v katerem plavajo štiri večje ribe, gornji dve sta obrnjeni v levo, spodnji dve pa v desno. Vse imajo izrazito poudarjene hrbtnne plavuti, ki potekajo po vsej dolžini hrbtna.

Motiv zamejuje visoka stavba z več nadstropji (slika/figure 61). Poslopje je kvadratnega tlorisa, nakazane so številne odprtine oz. okna v nadstropjih. Prva etaža se konča s ploščadjo, na kateri na robovih prepoznamo skulpture in v sredini še eno manjše, verjetno okroglo nadstropje, okronano s kipom na vrhu. Kip v dvignjeni levi roki drži sulico oz. kopje, desnico pa ima spuščeno; v njej drži še en predmet, ki pa ni prepoznaven – samo ugibamo lahko, ali gre za daritveno posodo (*fiála*). V stavbi lahko prepoznamo svetilnik in glede na detajle zgornjega dela upodobitve ter kip na vrhu arhitekture sklepamo, da je na steklenici upodobljen svetilnik z otoka Faros v Aleksandriji, eno od sedmih čudes antičnega sveta.

Figuralni motiv je spodaj in zgoraj zamejen s pasom, omejenim z vrezanimi linijami in zapolnjenim s pokončnimi gravurami v obliki žitnih ali riževih zrn. Nad gornjo linijo se zunaj pasu še enkrat ponovi linija riževih zrn in nad njo rastlinski oz. vitičast okras, prav tako v vodoravni liniji.

Če želimo primerjati verodostojnost upodobitve svetilnika na ptujski steklenici, velja omeniti vsaj nekatere značilnejše primere iz rimskega obdobja. Ohranjenih ni veliko, poleg tega pa ne smemo pozabiti, da se moramo pri teh upodobitvah vprašati, ali je bil kot model res original oz. koliko je upodobitev stvar umetniške svobode in interpretacije. Le redko ima-

mo priložnost upodobitev primerjati z ohranjenim originalom oz. njegovim verodostojnim opisom iz obdobja antike. Ne vemo, ali je imel npr. graver pred seboj original ali je motiv povzel z neke druge upodobitve, ali pa je preprosto uporabil že obstoječo predlogo oz. model. Ob tem velja omeniti tudi, da so že v antiki obstojali t. i. spominki, izdelki, namenjeni izvozu, popotnikom, obiskovalcem prireditvev ipd. Kot primer naj navedemo stekleničke z motivom mest *Baiiae* in *Puteoli* (Painter 1975, 55, slika 1), čaše z motivom cirkuških dirk in z imeni zmagovalcev oz. tekmovalcev (Landes 1998, 11) ipd. Taki izdelki so v veliki meri uporabljali in širili enoten ikonografski model določenega motiva.

Nekatere upodobitve aleksandrijskega svetilnika so zelo stilizirane in včasih samo na podlagi razberemo, za katero stavbo gre. Tak primer je mozaik iz Sepphorisa v Izraelu iz 5. stol. (Empereur 2004, 26). Bolj verodostojne in točnejše, glede na opise, ki jih poznamo, so upodobitve na novcih in nekaterih drobnih predmetih. Kar na nekaj rimskih novcih najdemo na zadnji strani motiv svetilnika iz Aleksandrije. Motivi kot celota se sicer med seboj nekoliko razlikujejo, saj novci časovno segajo od cesarja Domicijana (91–92) do cesarja Komoda (188–189). Glavno poslopje svetilnika pa je skoraj vedno upodobljeno z določenimi skupnimi značilnostmi – stavba kvadratnega tlorisa s številnimi okni, Tritoni na prvi etaži, druga etaža in na njej kip; slednji ima na treh upodobitvah v iztegnjeni levici sulico, drugo roko pa spuščeno ob telesu, nekoliko nagnjeno stran. To nakazuje, da morda v roki drži predmet.

Svetilnik je enako upodobljen tudi na dveh steklenih gemah. Na gemi iz 1. stol. motiv dopolnjujeta podobi božanstev Izide Farije in Pozejdona, ki stojita vsako na eni strani svetilnika – njima posvečeni svetišči sta namreč stali na otoku Faros (Empereur 2004, 32). Podoben motiv najdemo še na eni stekleni gemi, ki jo hrani Umetnostnozgodovinski muzej na Dunaju (inv. št. 41286) (Pfrommer 2005, 683–684). Gema prikazuje svetilnik in ob njem Izido Farijo, z ladijskim krmilom v desni roki, s katerim je

kot boginja Izida Tihe usmerjala usode ljudi. Izida je bila ena najbolj priljubljenih boginj v Aleksandriji, saj ji je že ustanovitelj mesta dal postaviti prvo svetišče (Pfrommer 1999, 60). Svetilnik na tej gemi je prikazan kot poslopje s spodnjim kvadratnim delom, z nakaznimi nadstropji v obliki prečnih linij, na ploščadi nad njim sta dva Tritona s piščalmi, oktogonalni del nad njim pa se sklene s kipom v nadnaravni velikosti, ki s svojo pozo dvignjene desnice in spuščene levice spominja na upodobitev s ptujske steklenice. Gema, ki je brez najdiščnega konteksta, je datirana v 2. stol. (Pfrommer 2005, 683).

Nekoliko drugače je predstavljen svetilnik na stekleni čaši iz Begrama, najdišča severno od Kabula v Afganistanu (Whitehouse 1989, 151; 1998, 640). Na najdišču, ki je bilo identificirano kot Kapisa, rezidenca tamkajšnjih kraljev, so leta 1937 francoski raziskovalci v enem od poslopij odkrili skrinjo dragocenih predmetov, ki izvirajo iz vseh strani Sredozemlja. Poleg predmetov iz bronu, kamene strele in slonove kosti je bilo tudi 180 steklenih posod. Med njimi so bili odlomki čaše diatreta, na kateri je bil prikazan stolp s kipom na vrhu in okrog njega tri plovila (jadrnica, galeja in čoln). Okrogli stolp ima na vrhu ob robovih skulpturi, v sredini pa podstavek, na katerem stoji gola figura z veslom v roki – Pozejdon. Najdbe podobnih zgodnjih izdelkov diatreta čašo uvrščajo v 1. stol., tako kot posode, okrašene v tehniki visokega reliefa (Whitehouse 1989, 153). Čeprav motiv na čaši interpretirajo kot aleksandrijski svetilnik, se v podrobnostih, predvsem pa kip na vrh precej razlikuje od drugih upodobitev. Iz različnih virov so se sicer ohranili podatki, da je bil kip božanstva vrh aleksandrijskega svetilnika v obdobju antike večkrat zamenjan, vendar so nejasni in nepopolni. V primeru čaše iz Begrama je verjetneje, da predstavljeni motiv ni povezan z Aleksandrijo.

Pogled na ostenje ptujske steklenice nam torej odkriva: poslopje je kvadratnega tlorisa (spodnji del je zaradi slabe ohranjenosti nejasen), vodoravne linije in okna poudarjajo nadstropja. Na zgornji etaži je dobro viden eden od dveh Tritonov, za njim pa drugo nadstropje stavbe s stebri

in ploščadjo na vrhu, na kateri se dviga kip. Ta v levi roki drži kopje oz. sulico, druga roka, ki je spuščena ob telesu in nekoliko odmaknjena, pa drži predmet – morda daritveno posodo. Motiv na steklenici z detajli najlaže primerjamo z upodobitvami na novcih in omenjenih gemah (Empereur 2004, 32; Pfrommer 2005, 683). Na vseh prepoznamo vsaj štiri skupne elemente: poslopje kvadratnega tlorisa, Tritoni na prvi etaži, druga etaža in kip s sulico v roki na vrhu svetilnika. Hkrati velja omeniti, da te upodobitve ustrezajo predlagani rekonstrukciji svetilnika, kot jo je podal Reddé (1979, 869, slika 9: 3). Na podlagi primerjav z drugimi upodobitvami lahko potrdimo, da je poslopje na steklenici s Ptujja res aleksandrijski svetilnik.

Druge podrobnosti okrasa, predvsem velike ribe, pa povezujejo posodo z drugimi izdelki t. i. skupine z žlebljenimi obrisi oz. *contour groove group* in njenimi delavnicami oz. ateljeji. Steklenica s Ptujja je že zaradi svojega motiva, ki jo neposredno povezuje z izvornimi delavnicami v Egiptu, izjemna. Od 19 sedaj poznanih izdelkov, ki pripadajo tej skupini, jih je 12 z egipčanskih najdišč (Nenna 2007, 142), po eden pa iz Slovenije (steklenica s Ptujja) in sosednje Hrvaške (Bakar, skodela) (Gregl in Lazar 2008, tab. 5: 3).

Arheološki muzej hrani gradivo iz rimske nekropole v Bakru (rimska *Volcera*). Med bakarskim steklom se je ohranila kakovostno izdelana polkroglasta skodela z brušenim okrasom (Gregl in Lazar 2008, 57, slika 6).

Motiv sorodnih velikih rib, ki ga prepoznamo na skodeli iz Bakra, je upodobljen tudi na steklenici s Ptujja. Vsaj na dveh od njih prepoznamo dolgo hrbtno plavut, detajli okrasa po telesu rib pa so manj izraziti. Podobno narejen motiv rib poznamo tudi na skodeli iz zbirke v Corningu (Whitehouse 1997, no. 401; Nenna 2003, 362, fig. 7) in odlomku posode z najdišča Tebtynis (Nenna 2003, 362, slika 8). Motivi, ki se pojavljajo na posodah te skupine so sorodni okrasu na keramiki iz egiptovske fajanse (frizi rib, race, košare), datirani v prvi dve stoletji našega štetja (str. 362).

Glede na homogenost skupine je mogoče ugotoviti, da gre za izdelke egipčanske delavnice, ki je s proizvodnjo začela v drugi polovici 2. stol. in izvažala v Italijo, na zahod in jadransko obalo (Nenna 2003, 362; 2007, 141). Upošteva je zbrane najdbe pa lahko v skupini ločimo različne delavnice, ki se razlikujejo po motiviki in kažejo na več specializiranih ateljev te skupine izdelkov (str. 363, slika 9, 10).

Ptujska steklenica je, če sklepamo po kompleksnem in zelo kakovostno izvedenem figuralnem motivu, izdelek neke druge, ločene delavnice v Egiptu ali Aleksandriji. Nekateri detajli okrasa so npr. primerljivi s steklenico iz Haware (Nenna 2003, 363, slika 10), saj poleg identične oblike in kakovosti dekoloriranega stekla prepoznamo tudi enake detajle pri omejevanju okrasnega polja na ostenju (dvojna linija, riževa zrna). Žal pa je osrednji motiv večinoma geometrijski in izdelan v tehniki, ki v celoti ne ustreza značilnostim te skupine. Podobno izvedbo figure, celo v podobni pozi kot na ptujski steklenici, pa poznamo z delno ohranjene stekleničke, odkrite pri izkopavanjih kapitolija v Brescii.²

Ekskurz: svetilnik na otoku Faros v Aleksandriji

Ko govorimo o motivu na steklenici s Ptujja, nas seveda zanima, ali je na motivu res predstavljen svetilnik in ali smo glede na maloštevilne ohranjene upodobitve iz antike lahko prepričani, da gre prav za svetovno čudo na otoku Faros. Zato se velja ozreti na nekatera zgodovinska dejstva, povezana s faroškim svetilnikom in z antično Aleksandrijo. Kaj danes vemo o tej zgradbi in koliko podatkov iz antike se je ohranilo?

Leta 331 pr. n. št. sta Aleksander Veliki in arhitekt Dejnokrat (*Deinokrates* ali *Deinochares*) (Vollkommer 2007, 162) z Rodosa oblikovala in določila urbanistične smernice bodoče Aleksandrije (Plu., *Alex* 1, 26,4–5; Green 1992, 276): najprej obzidje, rastre ulic in pristanišča ter nato še ob-

² Podatke o novi najdbi mi je prijazno posredovala dr. Elisabeta Roffia (2015), za kar se ji najlepše zahvaljujem.

sežen sistem vodne oskrbe mesta. Monumentalni načrt in izvedba mesta izjemnih razsežnosti, ki je bilo po velikost takoj za Atenami, sta navdušila in impresionirala že ljudi v antiki. Širina glavnih dveh ulic naj bi po antičnih virih znašala kar 30 metrov (dejansko znaša njuna širina 14 m, ostale so široke 7 m) (Empereur 1998, 56). Aleksander je umrl, preden je bil obsežni načrt gradnje uresničen. Njegov general Ptolemaj pa je kot novi vladar Egipta Ptolemaj I. Soter (Rešitelj) nadaljeval zastavljeno delo v vsej monumentalnosti in zvesta ji je ostala tudi celotna dinastija Ptolemajcev.

Eno najveličastnejših poslopij tega mesta je bil vsekakor svetilnik na otoku Faros (Pharos), ki so ga zgradili za večjo varnost ladij in mornarjev, ki so pripluli v Aleksandrijo z vseh strani Sredozemlja. Po ohranjenih virih iz 9. stol. naj bi svetilnik pričeli graditi leta 297 pr. n. št.; drugi viri pa poročajo, da so ga začeli graditi šele leta 283 pr. n. št., v času vlade Ptolemaja II. (Empereur 2004, 14). Plinij Starejši piše o izjemni vsoti 800 talentov,³ ki so jo namenili samo za gradnjo te stavbe (NH 36,83). S svojo lepoto in veličastnim videzom je naredila izjemen vtis. Toponim Pharos je pozneje postal latinski Pharus in kmalu je ime simboliziralo oz. postalo sinonim za vse podobne svetilniške zgradbe. Že v antiki se je aleksandrijski svetilnik uvrstil med sedem čudes antičnega sveta. Rimska Aleksandrija je na Tabuli Peutingeriani prikazana s simbolom svetilnika in to prav tako kaže na zavest o pomenu tega poslopja. Strabon je zapisal, da je bil svetilnik zgrajen iz belega kamna (Str. 17, 1.6–9). To je nekatere zavedlo k napačni interpretaciji, da je bila stavba zgrajena iz marmorja. Zadnja izkopavanja Empereurja in njegove ekipe so dokazala (1998, 80; 2004), da so za gradnjo uporabili lokalni apnenec bele barve, za temelje pa granit.

Natančen opis svetilnika in njegove arhitekture žal ne izvira iz antike, ampak iz poznejšega obdobja, podal ga je Abu al-Haggag Yusuf Ibn Muhammad al-Balawi al-Andalusi, popotnik iz prve polovice 12. stol. Poslopje, ki naj bi bilo vidno z razdalje 300 stadijev (ok. 5 km daleč,

3 800 talentov ustreza približno 20.800 kg srebra.

natančneje 5.160 m), je imelo tri etaže oz. nadstropja. Prvo je bilo kvadratnega tlorisa in nekoliko piramidalno grajeno, visoko 71 m (s klančino v notranjosti, ki so jo uporabljali za tovorjenje kuriva za ogenj na vrhu), sledil mu je 34 m visok oktogonalni del s stopnicami v notranjosti, zadnji del pa je bil okrogel oz. cilindričen in visok 9 m. To je bil tudi prostor za ogenj, katerega svetloba naj bi bila z ogledali usmerjena in razpršena tako, da jo je bilo videti čim dlje (Di Pasquale 2004, 40). Na terasi prve etaže oz. nadstropja so bili na vogalih postavljeni Tritoni, na vrhu poslopja pa je stal ogromen kip božanstva. Dolgo je prevladovalo prepričanje, da je bil to Pozejdon. Novoodkriti papirus, t. i. milanski papirus (Isak Kres 2006, 29), pa je z do sedaj nepoznanimi verzmi pesnika Posidipa (*Posidippos*) iz Pele, ki je živel na aleksandrijskem dvoru v 3. stol. pr. n. št., prinesel nove podatke. Pesnikovo delo dokazuje, da je šlo v resnici za kip Zevs Soterja – Rešitelja (Empereur 1998, 84). To neposredno nakazuje tudi povezavo s časom Ptolemaja I. Soterja. Eden od ohranjenih napisov pa tudi priča, da je arhitekt in prijatelj družine Ptolemajcev Sostrat, sin Deksifana s Knida (*Sostratos, Dexiphanes*) (Müller 2007, 850), daroval denar za postavitve kipa na vrhu svetilnika za blagor pomorščakov in ga posvetil Ptolemaju I. ter njegovi ženi Berenike (Empereur 2004, 16; Müller 2007, 851). Skupna višina zgradbe je znašala 135 m. Dostop do svetilnika je bil urejen s klančino, ki je imela 16 lokov, ob vhodu pa sta stala monumentalna kipa Ptolemaja I. in njegove žene.

Poslopje in njegova oblika sta bila kmalu vzor za gradnjo številnih poznejših svetilnikov. Tako lahko na več koncih rimskega imperija prepoznamo sorodne gradnje, npr. v mestu Leptis Magna na libijski obali, še danes vidni ostanki v Taposiris Magni, 48 km zahodno od Aleksandrije, v Cezareji v Palestini, Fréjusu na francoski obali itd. (Castagnolli 1960, 596).

Svetilnik v Aleksandriji je v celotnem obdobju svojega obstoja zbujal pozornost in bil priljubljen motiv za upodabljanje v različnih umetniških zvrsteh, npr. na mozaikih, freskah in tudi

na predmetih za vsakodnevno uporabo (novci, geme, posodje).

Okrog leta 1700 je znani umetnik Fischer von Erlach po opisu iz 12. stol. izdelal idealno ali, bolje rečeno, domišljjsko rekonstrukcijo te zgradbe (Empereur 2004, 86). Zelo natančno je zapise in druge vire o svetilniku konec 19. stol. preučil Herman Thiersch. Devet let je preživel v Egiptu in nato objavil knjigo o svetilniku s Farsa (*Antike Islam und Occident – ein Beitrag zur Architekturgeschichte*, 1909). Njegove risbe kažejo zgradbo v različnih fazah razvoja in propada, od začetka 3. stol. do osmanskega obdobja, ko je v letih ok. 1477–80 sultan Kait Bey objekt prezidal v utrdbo z enakim imenom. Thierscheve risbe so bile osnova za številne nadaljnje študije (Pfrommer 1999, 10, Abb. 8a–c).

O upodobitvah svetilnikov v antiki je pisal tudi Reddé (1979, 845–856). Ugotavlja, da so si umetniki kot po navadi pri upodobitvah dovolili veliko svobode, še posebej ko je šlo za detajle. S primerjavo upodobitev svetilnika iz Aleksandrije na novcih in drugih predmetih ugotavlja, da zadnja etaža verjetno ni imela kupolaste strehe, in zavrača Thierschevo rekonstrukcijo tega dela svetilnika, saj naj bi nastala brez prave podlage. To naj bi bilo smiselno tudi zaradi ognja, ki je gorel na vrhu in bi povsem uničil tako oblikovano arhitekturo. Po njegovem mnenju je bil osmerokotni del, ki je stal na prvi etaži, pravzaprav odprta arhitektura s kolonado oz. stebri, v kateri je gorel ogenj, pokrit pa je bil s podijem, na katerem je na podstavku dominiral orjaški kip (Reddé 1979, 869, slika 9: 3). Tritoni na prvi etaži, s svojimi piščalmi iz školjk, pa naj bi imeli več namenov; eden za zvočne signale ladjam v primeru megle, drugi je oddajal zvočni signal za merjenje časa in se je oglašal ob vsaki polni uri, tretjega pa so uporabljali kot opozorilni signal v primeru nevarnosti oz. sovražnega napada (Reddé 1979, 870; Pfrommer 2005, 684). Kip Zevsa Soterja, simbola dinastije Ptolemajcev, je bil postavljen na svetilnik ob koncu gradnje oz. kmalu zatem in je dominiral kot osrednje božanstvo na vrhu svetilnika najmanj do konca vlade te dinastije ter ustanovitve rimske province leta 30 pr.

n. št. Omenjene upodobitve na novcih, gemah in ptujski steklenici pa kažejo, da je ostal na vrhu zgradbe morda še dlje, celo do 2. stol.

Za konec nam ostaja še vprašanje, kako je dragocena steklenica prispela do Petovione? Grobna arhitektura skupaj s pridatki dokazuje visok socialni položaj pokojnega. V Petovioni, naselju, ki je v 2. in 3. stol. cvetelo kot največje rimsko mesto na območju današnjega slovenskega prostora (Horvat idr., 2003, 153–190), so prav gotovo živeli premožni predstavniki tako civilnega kot vojaškega upravnega sloja, ki so jih življenjske usode gnale na vse strani imperija, po drugi strani pa so bili dovolj premožni, da so si lahko privoščili vse, kar je bilo v določenem obdobju modno in je po svoje dokazovalo njihov visok družbeni položaj. Nakup ali naročilo izdelka, izdelanega v majhni seriji, brez dvoma sodi v ta kontekst. Grobni inventar s Ptuja gotovo izstopa zaradi velike kakovosti priloženih steklenih predmetov (Lazar in Tomanič Jevremov 2000, 195, tab. 1), ki večinoma sodijo v drugo polovico 2. stol., v skrajnem primeru na začetek 3. stol. Izjema je *kantharos* z okrasom v visokem reliefu, ki je značilen primer prežitka oz. pridatka kot družinske (?) dediščine in sodi glede na okras v 1. stol.

Stekleni izdelki z brušenim in graviranim okrasom so bili namenjeni socialni in ekonomski eliti rimskega časa. Počasno in natančno delo, umetniški dar, ki ni bil dan vsakomur, obrtna spretnost, pridobljena z izkušnjami, in stalna skrb, da se krhka posoda ne zdrobi pod prehudim pritiskom brusnega koleščka, vse to je vplivalo na visoko končno ceno figuralno okrašenega izdelka. Posebno vrednost je predstavljala prav lepota okrasa.

Da je šlo pri steklu z brušenim okrasom za statusni simbol, so pokazale analize poznorimskih grobišč in grobnih pridatkov na območju Kölna. Pokazalo se je, da so za najbogatejše grobove poleg dragocenega nakita in bronastih izdelkov značilni prav pridatki steklenih posod z brušenim okrasom in s figuralnimi motivi (Friedhoff 1989, 45).

Tudi steklenica iz Petovione je bila statusni simbol in enako seveda velja za kantaros iz istega groba, ki predstavlja prežitek starejšega časa. Izdelek, ki je nastal v egipčanski delavnici, prav gotovo ni sodil med predmete široke proizvodnje. Verjetno je bil izdelan po naročilu, za osebo, ki je s prestižnim posodjem hotela očarati svoje goste na gostiji in poudariti visok družbeni položaj. Morda pa je steklenico skupaj z vsebino dobila v dar kot izraz posebne naklonjenosti, ki je bila seveda izražena prav z dragocenostjo darila samega, saj so ga ustvarile roke izkušenega graverja v specializirani delavnici v Egiptu. To so bili izdelki, ki so v družini pogosto ostali več generacij in se dedovali iz roda v rod; bili so predmeti posebne vrednosti, tako zaradi kakovosti kot zaradi z njimi povezanih spominov. Gre torej za dediščino, ki še danes, v arheološkem kontekstu, nosi posebno sporočilo in govori o ljudeh, njihovem življenju, medsebojnih odnosih in duhu antičnega časa.

Povzetek

Do danes je bilo na osnovi ohranjenih izdelkov z brušenim figuralnim in geometrijskim okrasom mogoče opredeliti nekaj skupin izdelkov, ki so pripadali posameznim delavnicam v obdobju rimskega cesarstva. V zadnjih nekaj letih so raziskovalci opredelili novo skupino izdelkov s figuralnim okrasom, ki so nastajali v Egiptu, najverjetneje v delavnici v Aleksandriji. Njihova značilnost je uporaba gravure za obrobe, ki je kombinirana s prostoročnimi vrezi za detajle oz. podrobnosti. Med izdelki, ki sodijo v skupino, imenovano *contour groove group*, se je v Sloveniji ohranila steklenica, odkrita na Ptujju. Izvira iz žganega groba, med pridatki pa so prevladovali stekleni predmeti. Ostenje ptujske steklenice pokriva figuralni motiv, omejujeta ga dva horizontalna okrasna pasova. Obrisi figur in poslopja so bili zarisani z uporabo gravure, posamezni detajli na osebi, živalih in stavbi so bili vpraskani prostoročno. Motiv predstavlja morsko pokrajino. Na obali sedi moška oseba, prikazana v profilu, ki se naslanja na levo roko, desno roko ima iztegnjeno predse. Na glavi ima neke vrste pokrivalo (nemes oz. klaft?). Gola figura verjetno predstavlja božanstvo ali mitološko osebo. Glede na motiv lahko razmišljamo o Neptunu (oz. Pozejdonu) ali Eolu. Morda pa gre za Pro-

teja (*Proteus*), ki naj bi bil prav tako Pozejdonov sin. O njem piše že Homer v *Odiseji*; predstavljal naj bi morsko božanstvo s preroškimi sposobnostmi; opoldne je navadno spal oz. počival na otoku Faros. Po mlajši legendi pa je bil Protej mitični egipčanski kralj, ki je živel na Farosu. V tem primeru nas faraonsko pokrivalo upodobljene osebe ne preseneča. Pred figuro je morje, v katerem plavajo štiri večje ribe. Motiv zaključuje visoka stavba z več nadstropji. Poslopje je kvadratnega tlorisa, nakazane so številne odprtine oz. okna v nadstropjih. Prva etaža se zaključuje s ploščadjo, na kateri prepoznamo skulpture in v sredini še manjše, okroglo nadstropje, s kipom na vrhu. Le-ta ima v dvignjeni levici sulico oz. kopje, desnico ima spuščeno; v njej drži nerazpoznaven predmet, mora daritveno posodo. V stavbi prepoznamo svetilnik in glede na detajle sklepamo, da je upodobljen svetilnik z otoka Faros v Aleksandriji. Skoraj identično je svetilnik upodobljen na stekleni gemi iz 1. stol., kjer motiv dopolnjujeta podobi božanstev Izide Farije in Pozejdona, vsako na eni strani svetilnika. Podoben motiv najdemo na stekleni gemi, ki jo hrani Umetnostnozgodovinski muzej na Dunaju.

Nekoliko drugačen je svetilnik na stekleni čaši iz Begrama, najdišča severno od Kabula v Afganistanu. Okrogli stolp ima na vrhu ob robovih skulpturi, v sredini pa podstavek, na katerem stoji gola figura z veslom v roki – Pozejdon. Čeprav stavbo interpretirajo kot aleksandrijski svetilnik, se v podrobnostih, predvsem kipa na vrhu, precej razlikuje od drugih upodobitev. Verjetneje je, da predstavljeni motiv ni povezan z Aleksandrijo.

Upodobitev s ptujske steklenice najboljše vzporejamo z upodobitvami na novcih in omenjenih gemah. Na vseh prepoznamo štiri skupne elemente: poslopje kvadratnega tlorisa, Tritoni na prvi etaži, druga etaža in kip s sulico v roki na vrhu svetilnika. Upodobitve ustrezajo predlagani rekonstrukciji svetilnika, kot jo je podal Reddé. Na osnovi primerjav lahko potrdimo, da poslopje na steklenici s Ptujja res predstavlja aleksandrijski svetilnik.

Steklenica s Ptujja je že zaradi svojega motiva, ki jo neposredno povezuje z izvornimi delavnicami skupine *contour groove group* v Egiptu, izjemna. Glede na homogenost skupine raziskovalci ugotavljajo, da gre za izdelke delavnice, ki je s proizvodnjo pričela v drugi polovici 2. stol. in svoje izdelke izvažala v Italijo, na zahod in tudi na jadransko obalo. Steklenica s Ptujja in skodela iz Bakra po svoji tehniki okrasa pripadata skupini *contour groove*

ve group', glede na detajle okrasa pa je verjetno, da sta nastali v različnih delavnicah.

Summary

Until today, on the basis of preserved products with engraved figural and geometric decoration, it was possible to identify several groups of products that belonged to individual workshops during the period of the Roman Empire. In the past few years, researchers have identified a new group of wares with figural decoration that was produced in Egypt, most likely in a workshop in Alexandria. Their characteristic is the use of engraving for borders, which is combined with freehand cuts for details or details. Among the products belonging to the contour groove group, a bottle found in Ptuj has been preserved in Slovenia. It originates from a cremated grave where glass objects prevailed as grave goods.

The wall of the Ptuj bottle covers a figural motif, bounded by two horizontal decorative bands. Outlines of figures and buildings were drawn using contour engraving, and individual details on people, animals and buildings were scratched freehand. The motif represents a seascape. A male figure, shown in profile, is seated on the shore, leaning on his left arm, his right arm extended in front of him. The figure has some kind of headdress (nemes or kluft?) on her head. The naked man probably represents a deity or mythological figure. Depending on the motif, we can think about Neptune (or *Poseidon*) or *Aeolus*. But perhaps it is *Proteus*, who is also supposed to be Poseidon's son. Homer already writes about him in the *Odyssey*; supposed to represent a sea deity with prophetic powers; at noon he usually slept or rested on the island of Pharos. According to a younger legend, Proteus was a mythical Egyptian king who lived on Pharos. In this case, the pharaoh's headdress of the depicted person does not surprise us. In front of the figure is the sea, in which swim four large fish. The motif is completed by a tall building with several floors. The building has a square floor plan, and many openings or windows on the floors are indicated. The first floor ends with a platform on which we can recognize the sculptures and in the middle round floor with a statue on top. She has a spear or spear in her raised left hand, and her right hand is lowered, holding an unrecognizable object in it, it must be an offering vessel. We recognize a lighthouse in the building and, based on the details, we con-

clude that the depicted lighthouse is Faros in Alexandria. Almost identically, the lighthouse is depicted on a glass gem from the 1st century, where the motif is complemented by the images of the deities Isis Pharia and Poseidon, each on one side of the lighthouse. A similar motif can be found on a glass gem kept at the Kunsthistorisches Museum in Vienna.

Slightly different is a decoration on a glass beaker from Begram, a site north of Kabul, Afghanistan. The round tower has sculptures at the top along the edges, and in the middle, there is a pedestal on which stands a naked figure with an oar in his hand – Poseidon. Although the building is interpreted as an Alexandrian lighthouse, it is quite different from other depictions in the detail, especially the statue at the top. It is more likely that the motif presented is unrelated to Alexandria.

The depiction of the Ptuj bottle is best compared to the depictions on the coins and the mentioned gems. We can recognize four common elements in all of them: the building with a square floor plan, the Tritons on the first floor, and the second floor and a statue with a spear in hand at the top of the lighthouse. The renderings correspond to the proposed reconstruction of the lighthouse as given by Reddé. Based on comparisons, we can confirm that the building on the bottle from Ptuj really represents the Alexandrian lighthouse.

The bottle from Ptuj is extraordinary because of its motif, which directly connects it to the original workshops of the contour groove group in Egypt.

Considering the homogeneity of the group, the researchers note that it is the product of a workshop that started production in the second half of the 2nd century and exported its products to Italy, the West and the Adriatic coast. The bottle from Ptuj and the bowl from Bakar belong to the 'contour groove group' according to their decoration technique, and given the details of the decoration, it is likely that they were made in different workshops.

The Glass from the Gnalić Wreck

Steklo s potopljene ladje pri Gnaliću

Abstract

A few miles south of the town of Biograd, at the end of the 16th century, a ship sunk in the vicinity of the rocky islet of Gnalić and bears its name. It is located at the southern entrance to the Pašman channel. A team of Slovene and English archaeologists undertook at the end of 2004 the first systematic analysis of the glass from the shipwreck. The aim was to classify the glass for the first time, and also to answer a number of specific research questions. The article brings the presentation of our results in a text for museum purposes.

Keywords: Gnalić, Croatia, shipwreck, Biograd, renaissance glass, beakers, flat glass

Izvlček

Nekaj milj južno od mesta Biograd je konec 16. stol. v bližini skalnatega otoka Gnalić potonila ladja, ki danes nosi njegovo ime. Leži na južnem vhodu v Pašmanski kanal. Skupina slovenskih in angleških arheologov je leta 2004 začela s sistematično analizo steklenega tovara z ladje. Njihova naloga je bila prva sistematična opredelitev steklenega gradiva in poiskati odgovore na številna raziskovalna vprašanja. Članek predstavlja rezultate raziskav v besedilu za muzejsko predstavitev.

Gljučne besede: Gnalić, Hrvaška, brodolom, Biograd, renesančno steklo, čaše, ravno steklo

The Eastern Adriatic coastline has always been a popular route for ships. Its advantages are the favourable current and the possibility of offering shelter during inclement weather. Unfortunately, some of the ships encountered difficulties before they reached the shelter. Such was the destiny of the ship that sunk a few miles south of the town of Biograd, at the end of the 16th century.

The ship sank in the vicinity of the rocky islet of Gnalić and bears its name. It is located at the southern entrance to the Pašman channel, known as part of the sailing route since ancient times.

Amateur divers accidentally discovered the remains of the ship at a depth of 26–27 metres.

In 1967 local fishermen noticed the remains and reported them to the authorities. Soon it was obvious that it was a merchant ship that had sunk with all its rich cargo.

Only a few months after the discovery, the first underwater research actions were organised by the Institute for the Preservation of Cultural Monuments and the Regional Museum in Zadar. Up to 1996, six campaigns were organised to recover portions of the vessel and its cargo.

Shortly after the initial a large part of the diagnostic pieces were exhibited in several locations in the former Yugoslavia until the whole collection was deposited in a specially established museum in Biograd, where they can still be seen today.

On the initiative of Smiljan Gluščević, Head of the Department for underwater archaeology in the Archaeological Museum in Zadar and in cooperation with Mira Hanuda Vegar and Gorka Božulić, former directors of the Regional Museum in Biograd, the shipwreck and the cargo of a ship from Gnalić has been included in the international project 'The Heritage of Serenissima', organised by University of Primorska (Koper) with the cooperation of the Karl Franzens University in Innsbruck and University Ca' Foscari in Venice (Serenissima 2006). The goal of the project was to investigate Venetian influence in the Adriatic.

A team of Slovene and English archaeologists undertook at the end of 2004 the first systematic analysis of the glass from the shipwreck. The aim was not only to classify and accurately quantify the glass for the first time, but also to answer a number of specific research questions (Lazar and Willmott 2006a).¹

The glass was an important, if not the most important, part of the ship's cargo discovered near Gnalić. Only a few months after the discovery of the ship the first underwater research was organised. The campaign was mainly aimed at the removal of the cargo and protecting the site from looting. During the campaigns in 1967, 1972 and 1973 divers mainly picked up the material that was visible on the seabed. A good part of the glassware, particularly the drinking glasses, was found on the bottom of the sea away from the perimeter of the ship. The goods probably fell into the sea whilst the ship was foundering or it is possible that this part of the cargo was intentionally jettisoned. The drinking glasses were still packed in wicker baskets, and the flat glass still had straws placed between the various layers. The shipwreck was most probably caused by a storm, combined with a strong north-westerly wind typical in the area, which resulted in rough seas and bad visibility that obscured the low-lying islet from view. Another factor contributing

to the shipwreck during the sailing was that it was most probably overloaded.

Before our project, the last underwater campaign in Gnalić was organised in 1996. On the basis of earlier investigations, the divers concentrated in two areas: the ship and the area to the southwest of it. The area about 100 metres to the south and southwest of the sunken ship was carefully investigated. Here, another part of the glass cargo was discovered. It is possible that during the storm part of the glass cargo fell off the boat and was carried by the wind. The glass from this area is comprised of exclusively two types of simple goblets, which were obviously transported in great quantity. To date around 3500 pieces of these goblets have been recovered.

The objects discovered at the shipwreck were first illustrated and discussed in *Vrulje*, the journal of the Museum in Zadar (Radulić 1970) and exhibited from 1970 to 1971. The first description of the glass finds from Gnalić was written by Sofia Petricioli (1973, 85–92) in volume 15 of the *Journal of Glass Studies*, together with some limited chemical analysis by Robert Brill (1973, 93–7). An article about the ship by Astone Gasparetto was published in the same *Journal*. After a systematic examination of the archives and the records of the notaries of the period in Venice, Gasparetto came to the conclusion that the wreck most probably belonged to a ship the *Gagliana*, which left Venice in November 1583 (1973, 82).

The latest research in Venetian archives during the continuation of the work on the site of Gnalić (Radić Rossi and Nicolardi 2019) confirmed the identification of the ship as *Gagliana Grossa* and discovered its very complex history. The archives also give another interesting and important piece of information that in 1583 Sultan's office ordered 5000 windowpanes from the Venetian bailo in Constantinople (Radić Rossi and Batur 2020, 530).

After these first reports, the work on Gnalić material did not continue until the year 2004. The new study of the material began as a part of an international project The Heritage of Se-

¹ The research on the site is now continuing within the projects of Croatian colleagues under the director Irena Radić Rossi (Radić Rossi and Batur 2020).



Figure 62: The number of plain goblets stored at the museum in Biograd (photo: Caroline Jackson).
 Slika 62: Velika količina navadnih čaš shranjenih v muzeju v Biogradu (foto: Caroline Jackson).

renissima, joined by Slovene, Italian and Austrian Universities at the end of 2004, with the main portion of the project being finished in 2005 (Gnalić 2004; Guštin, Gelichi, and Spindler 2006). The glass cargo was studied by a team joined by Slovene and English colleagues. From the amount and variety of the studied glass material, we may suppose that it was a very important, if not the most important, part of the ship's cargo. We can now estimate that the amount of the excavated objects totals in excess of 5500 pieces, and this is by no means all the original cargo, it is likely that the majority of the material is still underwater (Lazar and Willmott 2006a; 2006b; 2009).

Vessel glass from the Gnalić wreck was made of naturally coloured and intentionally

coloured glass. It represents roughly 75% of the entire glass assemblage from the wreck. The tableware included beakers, goblets and tankards, as well as bowls, lids, tazzae and vases. The group of containers is less numerous and included sprinklers, flasks, bottles and jars. A small selection of coloured glass was also discovered. The style of these vessels is very un-European and they represent even less than 0,5 % of the cargo.

We will briefly present the variety of forms and glass groups represented in the cargo. The first group are plain beakers. We divided them into two subgroups according to height (small and large). This is a simple form with nearly straight sides and a simple, low pushed-in base. (Lazar and Willmott 2006a, 26, figs. 17–8.)

The next broad group are goblets (figure/slika 62). We divided them into subgroups according to their stem shape and type, and further variants according to the bowl forms and decoration. The majority of goblets are plain, but some groups are decorated with mould-blowing or engraving.

Goblets with the hollow foot are made of two separate paraisons that form the bowl and the foot. The foot is joined to the bowl directly. Goblets with a low hollow foot and a plain bowl are the most numerous forms in this glass assemblage. The bowl shapes vary slightly and are either straight and tapering or tulip-shaped. In the last campaign in 1996 this form was found in the area away from the ship, and in total 2300 vessels were found. Goblets of this form can also have a decorated bowl, with an optic-blown pattern of teardrops, but they are not so common.

Only a few examples of a goblet with a hollow foot and folded bowl were found. In this form a foot is joined to the bowl with a flattened disk—*merese* (Lazar and Willmott 2006a, 30, fig. 21). A group of goblets with high hollow foot have a hemispherical bowl, the foot is joined to the bowl with separate reel-shaped *merese*. The hemispherical bowl is usually plain, or very occasionally decorated with optic-blown ribs that can sometimes grow into a teardrop-shaped decoration. This is another rather numerous group with around 900 examples being recovered in 1996.

Goblets with inverted baluster stems are represented by 4 variants: a goblet with a solid baluster stem can have either a plain or decorated bowl, whilst a ribbed inverted baluster stem appears as both a small and a large variant.

Knopped-stem goblets from Gnalić were made in a good quality thinly-blown glass, probably of a mixed-alkali or soda composition, and the bowls and feet are sometimes decorated with engraving. The goblets have stems with either plain or ribbed flattened knops, a combination of plain and ribbed knop, a spiral ribbed knop, or in only two examples a ribbed three-stepped stem (Lazar and Willmott 2006a, 34, figs. 25–

31). Engraved decoration on the bowl is composed of leaf, scroll and foliage design, and the foot is decorated with simple leaf engraving.

The group of drinking vessels with mould-blown stems from Gnalić consists of two basic forms—the ladder and lion-mask stem goblet. Ladder stem goblets are not very numerous and appear in two subgroups with a plain or decorated (optic-blown ribbed) bowl.

Examples of the lion-mask stem are quite numerous and were divided into 5 variants according to the height of the lion mask and bowl decoration. The study of more than a hundred preserved stems provided further answers to questions concerning mould types. Lion mask stems are the epitome of *façon de Venise* glassware of the second half of the 16th and beginning of the 17th centuries. This form is an Italian innovation of the mid-16th century and within a few decades, they were produced in most areas of northern, central and southern Europe. Studies from England and Belgium have shown that relatively few moulds were used in each region. It is not surprising therefore that such a large number from Gnalić (over 100 examples) can be grouped only into five categories (Lazar and Willmott 2006a, 38, figs. 35–9, pl. 4, 5).

Tankards are larger drinking vessels. The general form in ceramic appears in the 15th century, and although the earliest glass examples are early 16th century, they are known also from the late 17th century (Willmott 2002, 55). Traditionally this form is thought to be Northern European in origin, although they may have been produced in southern Europe for an alternative market. Given their large capacity they were presumably used for the consumption of beer, although we can not exclude that they may have also functioned as jugs. Generally, they can be found with either a cylindrical or bellied shape to the body. Only tankards with spherical bodies are found amongst the cargo of the Gnalić wreck. They have a vertical neck and rim, rounded body and folded pedestal foot. A solid handle is attached to the neck and shoulder. They are made of high-quality glass and decorated with either



Figure 63: An engraved footed bowl (photo: Tomaž Lauko).
 Slika 63: Skleda na nogi z graviranim okrasom (foto: Tomaž Lauko).

vetro a fili and *vetro a retorti* trails, prominent opaque white trails or engraved decoration. Associated with the tankard is a lid with a solid finial, domed top and folded rest. They can be plain or decorated in the same manner as the tankards.

The group of bowls includes a hemispherical vessel in both smaller and larger variants as well as footed bowls. These larger open vessels were primarily used for the temporary storage and serving of both, liquids and solids at the table. They could also in some cases have been used for hand washing or even as drinking vessels. Variations of bowls are found throughout most periods, although they become increasingly common during the late 15th and 16th centuries. Their

simple hemispherical design would have allowed for large numbers of them to be easily stacked in the containers. However, given that most have very thin bodies and rims, in the majority of vessels, only the foot has survived. The first group consists of simple vessels with a pushed-in base or applied base ring. Smaller examples are decorated with applied twisted opaque white, or white and blue *vetro a retorti* trails to their rim. Footed bowls are found as plain or decorated examples. Plain-footed bowls are by far the most numerous, there being 167 in this group, whilst decorated vessels are very few, and only one is completely preserved (figure/slika 63). Its engraved decoration is composed of a foliage de-

sign in the central portion, with a band of scrollwork above it and another band of foliage below the rim. The vessel is made of high-quality glass and very thinly blown.

Among the forms represented by only a few examples are bowl lids and *tazzae*. Glass lids were an Italian innovation of the later 15th century, appearing on bowls and tankards but in some cases also on goblets. Flat lids survive that have a solid finial and either plain, optic-blown or engraved surfaces. Domed lids can be plain or decorated with engraving. It seems most likely that they would have been associated with bowls. *Tazzae* predominantly appear in the 16th century and were used to form elaborate displays holding fruits, sweetmeats and other exotic foods. Two basic varieties of *tazzae* have been found: those with a knob stem and those with an open applied foot; their diameter exceeds 20 cm and their shape and elaborate appearance mean that these were expensive items. Examples with an open foot have a simple decoration of applied trails, which can be plain or pinched (Lazar and Willmott 2006a, pl. 13). *Tazzae* with a knob stem have more elaborate decoration of *filigrana* or engraving. One of the engraved vessels is decorated with foliage and fruits in its central portion, and on outer panels with a laurel and foliage design, whilst a second one has applied trails and engraving of alternating blank and foliage panels (Lazar and Willmott 2006a, pl. 11, 12).

A vase is a form that typically has a narrow neck with an out-turned rim, an ovoid body and a foot. A group of vases from the Gnalčić wreck includes smaller vessels with engraved decoration of leaves and foliage and two examples with mould-blown decoration. There are significant differences in size between examples which suggests that they may have been used for a variety of functions. One of them was blown in a mould with human faces (possibly with three faces in the original form and two of them can still be recognised on the surviving portion). Large vases are represented by footed examples with handles and a spout. This very elaborate form is made of good quality glass, thinly blown and

primarily decorated with engraving, although applied raspberry prunts, shell appliquéés, trails and a lid with a domed top, also decorated with leaf engraving and raspberry prunts, complement its form and decoration. Their height varies between 20 and 25 cm.



Figure 64: Plain sprinklers (photo: Tomáš Lauko).
Slika 64: Neokrašene stekleničke s kapalko (foto: Tomáš Lauko).

The last broad category includes vessels intended for the storage of liquids and solids. The group from the cargo represent containers, flasks and bottles. This is one of the earliest forms that appear in glass and there are a considerable number of variations. The long-necked bottle, a typical and popular form of the period that appeared as early as the 12th century, is represented by two plain variants (one with a narrow and one with a funnel-mouth rim), as well as those decorat-

ed with opaque white trails or simple colourless trail decoration. A simple plain or wavy trail is sometimes applied around the upper neck.

A separate and homogenous group is the sprinkler – a small flask with a spherical body and a tall tapering neck (figure/slika 64). This is a very distinctive form of a container as it is the only one in which contents were completely sealed. Sprinklers are usually assumed to have held perfumes and other precious liquids. The bottle was designed so that its narrow top could easily be snapped off and the contents dripped out. The form causes the contents of the vessel to pour slowly, or in drops, as would be needed for perfume-sprinkling. This use is not certain, but the shape has led us to regard it as the most likely function for these vessels. The examples from Gnalić are plain, optic-blown with ribbing or decorated with opaque white trailing. They are all made of high-quality glass and are excellently manufactured.

In this context, we should also mention the small pear-shaped flask, represented by only a few examples. The form of the flask leads us to the tentative possibility that these are parts of sandglasses (Lazar and Willmott 2006a, 55, fig. 66). This was an instrument for measuring time, and took the form of a reversible device made of two vertical connected phials. The sandglasses are known archaeologically from the early 13th century in Italy, but most examples date to the 17th century and continued in common usage until the 18th century (Willmott 2005). The first production centres to specialise in them were in Venice, the Low Countries and Germany.

Whilst the vast majority of the vessels could be shown to belong to relatively few well-defined categories, there were some smaller groups of glass which were much more unusual. Perhaps one of the most interesting of these was a number of intentionally coloured oval bottles and shallow small bowls that were distinctly un-European in style. This leads to several possibilities: that this glass was manufactured for a specific customer in the East or simply for an eastern market. However, this assemblage is small and of

the over 5,000 vessels recovered just 65 (or less than 0.012%) of the assemblage falls into this group.

The most striking of these are made of deep blue or opaque red glass and decorated with blobs of coloured glass which are ‘marvered’ or smoothed into their surfaces (figure/slika 65). Plainer, but no less unusual, are over 40 examples of plain blue oval flasks with a distinctive ‘stepped’ rim. All of these vessels cannot be paralleled by examples from known centres of Western European glass production. Their presence, albeit in relatively small numbers, on what had been previously assumed to be a Venetian galley is curious. Certainly, they confirm that the cargo consisted of a more complex mixture of vessels than originally first thought.



Figure 65: Small oval bottle with splashed decoration (photo: Tomaž Lauko).

Slika 65: Ovalna steklenička z okrasom nataljenih lis (foto: Tomaž Lauko).

In addition to vessel glass, over 1,300 pieces of flat glass were recovered, forming nearly 25%



Figure 66: A group of flat glass from the Gnalič wreck (photo: Tomaž Lauko).
Slika 66: Skupina ravnega stekla z ladje pri Gnaliču (foto: Tomaž Lauko).

of the cargo (figure/slika 66). This divides into two separate types. Over 700 of these are circular window glass ‘crowns’ or panes. The window glass was made by blowing and opening out a bubble of glass on the blowing iron, and then spinning it so the centrifugal force created an even-shaped disc. Window panes were not commonly used in this period, and when used they would be purchased in multiples to provide a glazing pattern within each window. Their primary use would be for glazing in churches or buildings owned by rich families.

The mirrors, both circular and rectangular and of standardized shapes and sizes, were incomplete and were in transit to be finished

with the mirroring of tin and mercury elsewhere (Herrera et al. 2008).

The group of plain window panes shows that there was no standardised size or range of sizes of the panes produced. This was most probably done intentionally for a specific building project while different glazing projects would require panes of different sizes. A handful of examples are further decorated with mould-blown designs, but given that so few were found it might be that these were also made for a specific purpose. The latest research in Venetian archives gives information that in 1583 Grand Vizier of Sultan Murad III ordered 5000 window panes from the Venetian bailo in Constantinople after the old palace of the Sultan burnt down (Radić Rossi and Batur 2020, 530). This would tie the window panes cargo of the ship with the court of Constantinople.

The other category of flat glass comes from mirrors (figure/slika 67). The mirrors found are all made by a more laborious process, to ensure that the glass is of sufficient flawless quality to reflect without distortion. A thick sheet of glass was first cast into the approximate size and once cooled its surfaces were ground smooth and the sheet cut and ‘grozed’ or chipped to the appropriate shape. Two different shapes of mirrors were found, circular and rectangular. Interestingly, not only are finished examples of rectangular mirrors present in the assemblage, (three distinct size categories) but the ship also carried a number of ‘sides’—or cast but unground mirror plates. These were presumably being traded with the intention that they are finished off elsewhere. Part of the mirrors, both circular and rectangular and of standardized shapes and sizes, were incomplete and were in transit to be finished with the mirroring elsewhere (Herrera et al. 2008). Some of the mirrors retain evidence for their silvered backing, although contrary to popular belief silver was not actually used to make them reflective, rather an amalgam of tin and mercury was applied.

Besides the enormous quantity of glass vessels and flat glass, a large amount of glass beads



Figure 67: Rectangular and circular mirrors
(photo: Tomaž Lauko).
Slika 67: Pravokotna in okrogla ogledala
(foto: Tomaž Lauko).

was collected from the sea bed. They were found together, on a pile, and put in a vessel. Their weight exceeds 2 kilograms. These beads were not yet evaluated and researched. More or less, these are miniature glass objects since their diameter and length are no larger than 1 cm (figure/slika 68). Their form is circular, oval and elongated, and they are made of coloured (red, green, blue, yellow) or colourless glass, and decorated with glass threads in contrasting or white colours. The new research and sorting of the finds in 2017 determined that 76 types of beads were found on the ship (Radić Rossi and Batur, 2020, 537). Since our information about their discovery is lacking, we can not presume or conclude whether they were transported as jewellery or as individual items.

The cargo from Gnalić gives an opportunity to study not only the typology and chronology of the Renaissance glass but also the organisation of trade and transport. It is most likely that the ship was conducting point-to-point trade. The entire cargo was loaded at a single point of origin and offloaded at its final destination—the complex loading of such a ship with this volume and variety of cargo (Gnalić 2004) would suggest that picking up and offloading at many points along the coast would be unrealistic. The diverse nature of the cargo would suggest that while the ship may have been loaded at a single port, its cargo was collected from different manufacturing centres.

The glass discovered on a seabed in some areas retained evidence of its original containers and storage for the voyage. Woven baskets, straw padding and wood boxes all provide information about the packing and transport of the finished glass products. The more elaborate, and of course valuable, items were packed in wooden boxes and as we may assume carefully stored in the lower hold of the ship. Common forms, which were transported in great numbers (such as the varieties of simple beaker and goblet-forms S1 and S2) were discovered in woven baskets many meters away from the perimeter of the ship. It therefore can be suggested that they were not so carefully stored and perhaps during the course of the shipwreck even intentionally jettisoned from the ship. The window glass and mirrors were carefully packed with layers of straw placed between the sheets and then most probably placed into wooden chests.

The variety of glass goods onboard, with vessels for everyday use like footed goblets, decorative table display wares including vases and half-finished products like the mirror glass plates, suggests they were intended for a range of different markets. But, some small groups of speciality glass items, such as the small coloured bowls and coloured bottles may well have been packed for delivery to a particular customer.

The intended market is also a matter of speculation. As far as the glass is concerned, most of



Figure 68: Glass beads recovered from the Gnalić wreck (photo: Caroline Jackson).
Slika 68: Steklene jagode najdene na potopljeni ladji pri Gnaliću (foto: Caroline Jackson).

the assemblage is of lower quality plain drinking wares which were for everyday use and relatively low value. The flat glasses for mirrors and windows were of a higher value but again could be destined for almost any market. The existence of small consignments of specialist glassware on the ship, which includes some highly decorated articles (such as the engraved vases and bowls) that were probably produced in Venice, would indicate glasses were made for specific, luxury-loving markets. And this would not be unlikely if the ship was heading for Constantinople.

However, most of the simple forms (such as goblets, bowls, and jars) were made for everyday use. But were they really all produced in Venice? Or perhaps in several north Italian workshops and then shipped from Venice?

Stylistic analysis of the cargo opened numerous questions connected with the origin of the glass products on board and the intended market. Archaeometric analysis could help us to define the groups of products on the basis of their composition and minor differences in production technology and thereby indicate the possibility of their origin in the Venetian workshops or even in the wider area of northern Italy or the Adriatic.

Caroline Jackson was responsible for sampling the glass and for chemical analysis using ICPS. The numerous broken fragments combined with the multiple replications of some of the forms have enabled us to take in excess of 212 samples and these will prove crucial in aiding in

a comprehensive characterisation of the whole assemblage.

What can be concluded from the analysis? The first conclusion is that the glass from the wreck conforms to a very similar composition (Jackson 2006, 87), no high-quality glasses such as *crystallo* were found, and all the other glasses, regardless of whether they are vessels, windows or mirrors, are of a composition which matches that defined as *vitrum blanchum* by researchers. However, there appear to be different manufacturing groups within this overall composition, which is reflected in differences in trace elements associated with the sands used to manufacture the glasses (Jackson 2009, 137).

In some cases, these compositional groups can be linked to different stylistic groups, indicative of different manufacturing centres specialising in the production of different vessels. The mirrors and window glass seem to be manufactured at different centres, even though they require very similar glass-working technologies. It appears that there seems to be some specialisation between different functional types of glasses which is probably related to the location of manufacture. The lion stem goblets show a wide variation in composition, as do the mirrors.

Compositional evidence indicates that the glasses are all of the same general composition, but that it is likely these were manufactured at different centres. Are these manufacturing centres widely dispersed within Italy or do these compositions reflect different workshops within a closely defined area? Alternatively, were glasses made elsewhere, outside of Italy? The consignment aboard the vessel must have been manufactured within a constrained time period, one which probably did not precede the date of the wreck by more than a year or so, and so the differences in composition cannot be linked to differences over time, giving us an enviable snapshot of trade in glass at a very specific moment.

Using our understanding of the material at the present time, the compositional analysis of the glass from the Gnalić shipwreck indicates that the glass cargo on board was all *vitrum*

blanchum; subtle differences in composition indicate that different styles of glasses, most notably vessel glasses, were manufactured at different centres. The low concentrations of some trace elements suggest these centres were *probably* located within Italy. The glass could then have been transported to the ship for loading at a single location, which may have been Venice. The destination of the ship was most probably Constantinople, if we take into consideration the above-mentioned results of the latest research in the Venetian archives.

Summary

The Eastern Adriatic coastline has always been a popular route for ships. Its advantages are the favourable current and the possibility of offering shelter during inclement weather. Unfortunately, some of the ships encountered difficulties before they reached the shelter. Such was the destiny of the ship that sunk a few miles south of the town of Biograd, at the end of the 16th century. The ship sank in the vicinity of the rocky islet of Gnalić and bears its name. It is located at the southern entrance to the Pašman channel, known as part of the sailing route since ancient times.

Amateur divers accidentally discovered the remains of the ship at a depth of 26–27 metres. In 1967 local fishermen noticed the remains and reported them to the authorities. Soon it was obvious that it was a merchant ship that had sunk with all its rich cargo.

Only a few months after the discovery, the first underwater research actions were organised and up to 1996, six campaigns were organised to recover portions of the vessel and its cargo.

Shortly after the initial a large part of the diagnostic pieces was exhibited in several locations in the former Yugoslavia until the whole collection was deposited in a specially established museum in Biograd, where they can still be seen today.

On the initiative of Smiljan Gluščević, Head of the Department for underwater archaeology in the Archaeological Museum in Zadar and in cooperation with Mira Hanuda Vegar and Gorka Božulić, former directors of the Regional Museum in Biograd, the shipwreck and the cargo of a ship from Gnalić has been included in the international project *The Heritage of Serenissima*, or

ganised by University of Primorska (Koper) with the cooperation of the Karl Franzens University in Innsbruck and University Ca' Foscari in Venice. The goal of the project was to investigate Venetian influence in the Adriatic.

A team of Slovene and English archaeologists undertook at the end of 2004 the first systematic analysis of the glass from the shipwreck. The aim was not only to classify and accurately quantify the glass for the first time, but also to answer a number of specific research questions. Since its discovery, it has been widely assumed that the ship was a Venetian galley and therefore the likely origin for all the glass was Murano. However, this supposition was open for question for the first time. Furthermore, it had never been established where the glass cargo might have been heading, or indeed whether it was destined for a single place, or represented the contexts of a ship that was stopping to trade at a variety of Adriatic ports.

Povzetek

Vzhodna jadranska obala je bila od nekdaj privlačna za morjeplovstvo. Njena prednost so ugodni tokovi in številne možnosti za iskanje zavetja v primeru slabega vremena. Vseeno pa so se številne ladje spopadle s težavami, še preden so tam našle zavetje. Tako usodo je doživea ladja, ki je konec 16. stol. potonila nekaj kilometrov južno od mesta Biograd. Potonila je v neposredni bližini skalnatga otočka Gnalić in je po njem tudi poimenovana. Otok leži ob južnem vходу v pašmanski kanal, ki je že iz antičnih časov znan kot plovna pot.

Amaterski potapljači so na ostanke ladje naleteli povsem slučajno, na globini med 26 in 27 metri. Leta 1967 so lokalni ribiči o ostankih ladje obvestili oblasti. Kmalu je postalo jasno, da gre za ostanke trgovske ladje, ki je potonila z vsem svojim tovorom.

Le nekaj mescev po odkritju so bila organizirane prve podvodne raziskave, do leta 1996 pa je bilo organiziranih šest raziskovalnih kampanj, da bi rešili ostanke ladje in njenega tovara.

Kmalu po začetku raziskav so organizirali prve razstave gradiva, ki so potovale po več lokacijah nekdanje Jugoslavije, celotna zbirka pa je bila nato shranjena v novo osnovanem muzeju v Biogradu, kjer je na ogled še danes.

Na pobudo Smiljana Gluščevića, vodje Oddelka za podvodno arheologijo Arheološkega muzeja v Zadru,

in s sodelovanjem Mire Hanuda Vegar in Gorke Božulić, nekdanjih direktoric Regionalnega muzeja v Biogradu, je bilo gradivo potopljene ladje pri Gnaliću vključeno v mednarodni projekt »The Heritage of Serenissima/Dediščina Serenissime«, ki ga je pridobila Univerza na Primorskem (Koper) v sodelovanju z Univero Karl Franzens iz Innsbrucka in Univerzo Ca' Foscari iz Benetk. Cilj projekta je bilo raziskovanje beneškega vpliva in dediščine na Jadranu.

Skupina slovenskih in angleških arheologov je konec leta 2004 začela s sistematično analizo steklenega gradiva s potopljene ladje. Njen cilj je bil ne le kvantitativna in tipološka opredelitev gradiva, ampak tudi najti odgovore na številna raziskovalna vprašanja. Vse od odkritja so namreč domnevali, da je potopljena ladja beneška galeja in njen tovor stekla izvira iz muranskih delavnic. Ta predpostavka je bila prvič postavljena pod vprašaj. Prav tako do takrat ni bilo nikoli z gotovostjo ugotovljeno, kam je bila ladja namenjena oz. ali je bil njen cilj en sam ali pa se je ustavljala in trgovala v več jadranskih pristaniščih.

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Recenziji

Reviews

Pogled skozi steklo Recenzija

Tina Milavec

Predložena monografija je rezultat dolgoletnega arheološkega raziskovalnega dela Irene Lazar, mednarodno uveljavljene specialiste za steklo, predvsem antično pa tudi kasnejše.

Ob mednarodnem letu stekla 2022, katerega obeleževanju se pridružuje tudi Slovenija prav pod njenim vodstvom, je združila in zaokrožila 13 študij posameznih izjemnih predmetov, pomembnih najdišč ter pogledov na steklo kot muzejski predmet.

Prvi del, poimenovan 'Razvoj steklarstva na območju jugovzhodnih Alp in sosedstva' predstavlja predvsem razvoj antične steklarske obrti in zadnje rezultate raziskav na območju Slovenije in okolice.

Drugi del z naslovom 'Najdišča in gradivo' prinaša najnovejše študije steklenega gradiva, večinoma kot rezultat raziskav antičnega stekla, odkritega med obsežnimi arheološkimi raziskavami med gradnjo avtocestnega križa v Sloveniji v zadnjih 25 letih. Izpostavljene so predvsem tiste najdbe, ki imajo izjemen pomen tudi v svetovnem merilu.

Tretji del, 'Steklo kot muzejski predmet', poudarja pomen interpretacije in posredovanja raziskovalnih rezultatov vsem. Muzejski predmeti pripovedujejo zgodbe in na ta način približujejo raziskovalne rezultate ter kulturno dediščino kar najširši javnosti, kar je gotovo eden najpomembnejših ciljev oz. zadnja postaja dela vsakega raziskovalca. Tu predstavljeni rezultati bodo na ogled tekom mednarodnega leta stekla

2022 v različnih muzejih po Sloveniji v sklopu vseslovenskega muzejskega projekta Po stekleni poti.

Monografija bo objavljena predvsem v angleškem pa tudi v slovenskem jeziku in bo brez dvoma uspešno predstavljala lahko dostopne domače študije steklenega gradiva iz Slovenije ter bližnje sosesčine v mednarodnem prostoru.

A Look through the Glass Review

Caroline M. Jackson

I wish to strongly support the application for funding for the publication of a volume on the scientific study of glasses by Professor Irena Lazar. The volume is timely, as 2022 is the International Commission on Glass and United Nations International Year of Glass and the collection of papers will form an important contribution. This volume will constitute a firstly a celebration of glass but it also focusses on research undertaken in and around Slovenia. Thus it will illustrate the role of glass in a regional archaeological and historical study and demonstrate how this material and its products informs our understanding of the material and political past.

Irena Lazar is an internationally renowned researcher in ancient and historic glasses, and has worked on the material from prehistory to the early modern period. She is the foremost researcher on the topic in Slovenia. She has actively contributed to major international conferences, hosted the international congress on glass research in 2012 and is on the board of the Association pour l'Histoire du Verre, the major international body for historical and archaeological glass research. The publication will showcase her research and research collaborations into glass spanning a wide chronological period, from Slovenia and neighbouring regions.

The book gives a comprehensive coverage of man-made glasses from all periods and incorporates a very large body of knowledge. It provides a very timely synthesis of the major and current work in the area – in a research theme which has

grown considerably in the last 20 years. It will be read widely by scholars who work on the analysis of glass, those who are interested in the history of glasses, material scientists, archaeological scientists and both arts, humanities and science students. The publication will also resonate with those interested in the history and archaeology of Slovenia. It will promote an understanding of scientific work in archaeology of the region, and in glass, to the general public internationally, especially if it can be widely available and accessible in an electronic format.

The publication highlights just some of the major projects the author has researched through relevant and informative case studies. The volume is divided into three themes, the first looks at the development of working with glass in Slovenia and surrounding areas from the Early Iron Age but focussing predominantly on the Roman period, a period when glass working and glass use in the region was vibrant. This research includes important finds such as the lamp showing a glass working furnace and the glass from the glass working regions in Celje and Ptuj. It also demonstrates the range and extent of the movement of glasses into and from the region.

The second theme in the book looks at finds from the region which have international importance and relevance to our understanding of the region in the Roman period; these include a beaker which depicts Roman gods which have special social importance, vessels in the region which have been imported from specialist

glassmakers (Ennion) and sites which have yielded important and high status Roman assemblages, especially highly prized strongly coloured and colourless glass, such as those from early Roman Ribnica, and the extensive assemblage from the cemetery at Budva, Montenegro.

The third theme in the book examines how glasses form an important resource in museums and enable communication about the material past to scholars and to the public. This includes specific illustrative examples such as the Roman decorated bottle from Ptuj which tells us of the wealth of its owner, about the skill of the glassworker and about how history was then told in images and a high quality decorated bowl imported from Egypt. Finally, the volume concludes with a chapter on the impressive and extensive collection of 17th century vessel and window glass discovered on the Gnalic shipwreck, which displays the extensive international movement of glass in a snapshot of time.

The content, structure and organisation of the publication are well conceived and it is a very accessible and informative volume. The written style is easy to follow and the volume represents a very good resume of important research undertaken by Professor Lazar in the region.

