IRENA LAZAR

RIMSKO STEKLO SLOVENIJE
THE ROMAN GLASS OF SLOVENIA

OPERA INSTITUTI ARCHAEOLOGICI SLOVENIAE

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VSEBINA

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PREDGOVOR

Monografija *Rimsko steklo Slovenije* je v manjši meri prilagojena doktorska disertacija Rimsko steklo Slovenije, ki je nastala pod mentorstvom izr. prof. dr. Božidarja Slapšaka in je bila obranjena februarja 2002 na Filozofski fakulteti Univerze v Ljubljani.

V knjigi je zajeto objavljeno stekleno gradivo z območja Slovenije, z izjemo emonskega. Precejšen del zajema tudi neobjavljeno gradivo, ki so ga dali na razpolago kolegi iz različnih ustanov po Sloveniji, pomembno pa je gradivo ptujskih steklarskih delavnic, ki ga je izkopal pokojni Blagoj Jevremov (Pokrajinski muzej Ptuj).

Gradivo z emonskih nekropol ni vključeno v monografijo kataloško, temveč je upoštevano le kot primerjave. Izpuščeno je bilo na željo vodje emonskih izkopavanj dr. Ljudmile Plesničar Gec, ki je obdelovala gradivo emonskih grobišč v mednarodnem projektu, v katerem je bilo posebej obravnavano tudi stekleno gradivo.

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PREFACE

This monograph, *The Roman Glass of Slovenia*, differs only in minor details from the doctoral dissertation of the same title, written under the mentorship of Prof. Božidar Slapšak, and defended in February 2002 at the Faculty of Arts of the University of Ljubljana.

The book encompasses all the published glass material from the territory of Slovenia, with the exception of that from Emona. It also encompasses part of the unpublished material, which was made available by colleagues from various institutions throughout Slovenia. Particularly important is also the material from the glass workshops of Ptuj, excavated by the late Blagoj Jevremov (Pokrajinski muzej Ptuj) that was also made available.

The material from the cemeteries of Emona is not included and is referred to only for analogies. It was left out in accordance with the wishes of the director of the Emona excavations, Dr. Ljudmila Plesničar Gec, who studied the material from the Emona cemeteries in an international project, where the glass material was dealt with separately.

I would especially like to thank my colleague Marjana Tomanič Jevremov (Pokrajinski muzej Ptuj), who made available to me for study and publication unpublished material and documentation from the excavations of Blagoj Jevremov, helped me with the analysis, and drew my attention to many finds in the storerooms of the Ptuj museum related to the production of Roman glass at this site.

Examination of unpublished glass finds from excavations and their inclusion in this study was also made possible by the following colleagues: Alma Bavdek and Tine Schein (Notranjski muzej Postojna), Saša Djura Jelenko (Koroški pokrajinski muzej Slovenj Gradec), Dr. Marko Frelih (Logatec), Prof. Mitja Guštin (Faculty of Arts, Department of Archaeology), Alenka Jovanović (Posavski muzej Brežice), Snježana Karinja (Pomorski muzej Sergej Mašera Piran), Milan Sagadin (ZVKDS OE Kranj), Marija Lubšina Tušek and Ivan Tušek (ZVKDS OE Maribor), Nada Osmuk (ZVKDS OE Nova Gorica), Prof. Božidar Slapšak (Faculty of Arts, Department of Archaeology), Marko Stokin MA (ZVKDS OE Piran), Andrej Šemrov (Numismatic

Za ogled steklenega gradiva v depojih in zbirkah se zahvaljujem tudi dr. Janki Istenič (Narodni muzej Slovenije), Borutu Križu (Dolenjski muzej Novo mesto), doc. dr. Vereni Vidrih Perko (Gorenjski muzej Kranj) in Mojci Vomer Gojkovič (Pokrajinski muzej Ptuj).

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V knjigo so vključene fotografije steklenega gradiva iz mnogih slovenskih muzejev. Fotografiranje so mi omogočili dr. Janka Istenič (Narodni muzej Slovenije v Ljubljani), Alenka Jovanovič (Posavski muzej Brežice), Borut Križ (Dolenjski muzej Novo mesto), Marjana Tomanič Jevremov, Mojca Vomer Gojkovič in Ivan Žižek (Pokrajinski muzej Ptuj). Hvala tudi dr. Erichu Hudeczku iz Deželnega muzeja (Landesmuseum Joanneum) v Gradcu, ki mi je dovolil objavo ptujskega gradiva, ki je shranjeno v graškem muzeju.

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Čeprav je monografija posvečena rimskemu steklu, zaradi izjemnih prazgodovinskih najdb uvodoma na kratko predstavljamo arheološko zapuščino starejših obdobij. S tem smo želeli opozoriti na bogato tradicijo te obrti že v predrimski dobi in možen obstoj lokalnih delavnic v času starejše železne dobe.

Knjigo sestavljata dva dela. Prvi del je posvečen predstavitvi steklenih izdelkov, ki se na slovenskem prostoru pojavljajo v rimski dobi, oziroma od 1. do 5. stoletja. Predstavljene so do leta 2000 objavljene najdbe in del neobjavljenega gradiva. Izdelki so najprej deljeni v tri večje skupine glede na tehniko izdelave (uporaba

Cabinet, NMS). I would like once more to express my sincere gratitude to them all.

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Thanks must also go to Gudrun Glöckner MA (Graz, Austria), who enabled analysis of glass samples free of charge in the framework of the "Multi-Element-Determination in Roman Glasses" project. Analysis was performed by Oliver Schwinger MA, Institut für Analytische Chemie, Karl-Franzens-Universität, Graz (Austria).

Photographs of glass material from many Slovenian museums are included in the book, and permission to photograph was granted by Dr. Janka Istenič (Narodni muzej Slovenije, Ljubljana), Alenka Jovanovič (Posavski muzej Brežice), Borut Križ (Dolenjski muzej Novo mesto), Marjana Tomanič Jevremov, Mojca Vomer Gojkovič, and Ivan Žižek (Pokrajinski muzej Ptuj). I would also like to thank Dr. Erich Hudeczek of the Landesmuseum Joanneum in Graz, who permitted the publication of the material from Ptuj kept in this museum in Austria.

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Although this study is dedicated to Roman glass, due to the existence of exceptional prehistoric finds, a brief presentation of the archaeological legacy from earlier periods serves as an introduction. We wished to draw attention to the rich tradition of this craft even in the

kalupa, pihanje v kalup in prosto pihanje), kot je v navadi pri drugih objavah steklenega gradiva, znotraj tega pa skupine izdelkov in njihovih oblik.

Za boljše razumevanje izrazov so pred vsakim sklopom predstavljeni steklarska tehnika in rezultati najnovejših raziskav. Datiranje posameznih oblik je bilo povsod, kjer je mogoče, opredeljeno na osnovi grobnih celot in ostalih datiranih kontekstov s slovenskih najdišč, v primeru posamičnih najdb sloni časovna opredelitev na primerjavah z gradivom z drugih evropskih najdišč. Tudi če je bilo za posamezno obliko na voljo malo ožje datiranih najdb, smo se odločili za datacijo na osnovi primerjav z najdbami z drugih evropskih najdišč. Na koncu poglavja so priložene preglednice oblik za vsako steklarsko tehniko posebej.

V drugem del publikacije predstavljamo do sedaj neobjavljeno gradivo s petovionskih steklarskih delavnic na Spodnji Hajdini. Uvodoma smo zaradi boljšega razumevanja značilnosti obdelave in izdelave steklenih posod predstavili osnovne lastnosti stekla kot materiala in možnosti njegovega oblikovanja. Pregled stanja raziskav o lokalni proizvodnji stekla v rimski dobi na Slovenskem pa uvaja v raziskavo o proizvodnji stekla v Petovioni. Glavni poudarek velja ostankom steklarskih peči, delavniškim odpadkom in rekonstrukciji ter interpretaciji izkopanega gradiva.

V zaključku sta oba dela združena v celoto in na osnovi obravnavanega gradiva so predstavljene glavne značilnosti razvoja lokalne steklarske obrti, trgovske poti, uporaba steklenega gradiva v vsakdanjem življenju, odnos med posameznimi skupinami izdelkov in odraz razvoja ter romanizacije našega prostora skozi ta del materialne kulture.

Posebej je označena in zbrana tudi vsa bibliografija objav rimskega stekla v Sloveniji.

pre-Roman period, along with the possible existence of local workshops in the period of the early Iron Age.

The book consists of two sections. The first part is dedicated to the presentation of the glass products found in Slovenia from the Roman period, i.e. from the 1st to the 5th centuries AD. Finds published up to 2000 are presented, as well as some of the unpublished material. The products are first classified into three major groups based on the technique of manufacture (core-dipping, mould-blowing, and free- blowing), as is the practice in other publications of glass material, followed by the definition of specific groups of products and their forms.

To better understand the terminology, the glass making technique is presented for each group, along with results of the most recent research. The dating of individual forms was wherever possible determined on the basis of grave units and other dated contexts from Slovenian sites, while only in the case of individual finds was the chronological determination based on comparisons with material from other European sites. Similarly, if few specifically dated finds were available for individual forms, dating was preferred on the basis of comparisons with finds from other European sites. Tables of forms for each glass making technique are provided separately at the end of every chapter.

The second part of the publication consists of as yet unpublished material from the glass workshops of Poetovio at the site of Spodnja Hajdina. As an introduction, for better comprehension of the characteristics of the treatment and production of glass vessels, we have discussed the basic nature of glass as a material and the possibilities of its formation. A review of the state of research into the local production of glass in the Roman period in Slovenia leads into an investigation of the production of glass at Poetovio. The main emphasis is placed on the remains of glass furnaces, manufacturing debris, and the reconstruction and interpretation of the excavated material.

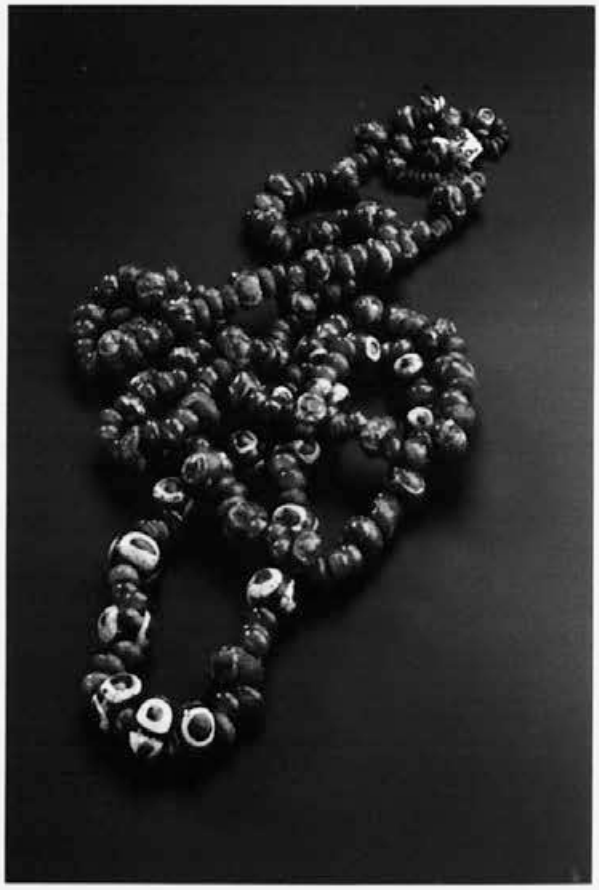
In the conclusion, both sections have been fully integrated, and on the basis of the analyzed material, the main characteristics are presented of the development of the local glass-working craft, trade routes, the use of glass material in everyday life, the relations between individual groups of products, and the reflection of the development and Romanization of Slovenia as seen through this aspect of the material culture.

All publications referring to Roman glass in Slovenia are separately noted and collected in the bibliography.

PRAZGODOVINSKO STEKLO V SLOVENIJI

Prvi stekleni predmeti, to so predvsem steklene jagode in predmeti za okraševanje, so znani iz srede 3. tisočletja pr. n. š. Kosi surovega stekla in drobni stekleni izdelki, odkriti na najdiščih današnjega Iraka (Ešnuna, Eridu), kažejo, da so Sumerci prvi poznali skrivnost proizvodnje in obdelave stekla (Grose 1989, 45). Steklene posode se pojavijo več stoletij kasneje, okrog leta 1500. Med najstarejše sodijo najdbe z najdišč hetitskega kraljestva (Nuzi, Tel al-Rimah) in Sirije (Ninive, Ašana); njihovo uporabo omenjajo tudi pisni viri (Grose 1989, 46).

V Sloveniji so prve steklene najdbe znane iz obdobja kulture žarnih grobišč. Najstarejši grob s stekleno jagodo je grob 289 iz Dobove iz 11. stoletja pr. n. š. (Stare 1975, t. 41: 3). V mlajših grobovih kulture žarnih grobišč, v 9. in 8. st. pr. n. š., je steklenih ogrlic vse več. Jagode so najprej večinoma zelo majhne (pr. 0,4–0,6 cm), bele ali



Sl. 1: Drobne steklene jagode so prilagali v grobove že v kulturi žarnih grobišč. Novo mesto, Mestne njive, gr. 295, Dolenjski muzej Novo mesto (foto: T. Lauko).

Fig. 1: Tiny glass beads were used as grave goods as early as the Urnfield Culture. Novo mesto, Mestne njive, gr. 295, Dolenjski muzej Novo mesto (photo: T. Lauko).

PREHISTORIC GLASS IN SLOVENIA

The first glass objects recovered to date are primarily glass beads and other decorative items. They are known from the mid 3rd millennium BC. Fragments of raw glass and tiny glass products discovered at sites in present day Iraq (Eshnuna, Eridu) indicate that the Sumerians first knew the secrets of producing and working glass (Grose 1989, 45). Glass vessels appear several centuries later, around 1500 BC. Among the eldest are finds from sites of the Hittitte Kingdom (Nuzi, Tell al-Rimah) and Syria (Ashana, Niniveh); their use is also mentioned by written sources (Grose 1989, 46).

In Slovenia, the first glass finds are known from the Urnfield Culture period. The oldest grave with a glass bead is grave 289 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 first very small (dia. 0.4 - 0.6 cm), and were white or blue (*Fig. 1*). Several graves at the site of Mestne njive in Novo mesto from the Bronze Age - Iron Age transition contain large blue beads with white or yellow eyes (Križ 1995, pl. 57: 113).

In the early Iron Age, glass decorations in the European (and Slovenian) region experienced an extraordinary augmentation in colour and form, and the first glass vessels appeared. Glass beads were usually strung on long necklaces, and they are also found sewn onto clothing. Beads are circular, barrel-shaped, tubular, shaped like baskets, ram heads, or birds, and some have iron loops for hanging (Križ 1997, 38 below). The colour combinations are highly variegated, and the decorative motifs include wavy lines, dots, zigzags, eyes and applied elements of differently coloured glass (Haevernick 1974, 61).

Tumulus I at Stična contained 20500 glass beads (Haevernick 1974, 62), and a grave at Magdalenska gora was also rich, but only 7310 glass beads were found in it (Rutar 1894, 184). Several decorative brooches - fibulae were also adorned with glass. The "porcupine" fibulae are particularly interesting, found at Magdalenska gora, Vače, Brezje, Šmarjeta (Haevernick 1959, Taf. 1:1-8). The bow of these fibulae has a bronze wire core surrounded by a coating of transparent blue-green glass with spiky applied elements. 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 beads in the shape of eyes (Haevernick 1959, Taf. 2: 8, 9). The bow of the fibulae from Rovišče was also made differently; amber glass was wound in a spiral around the wirecore, and the decoration was completed with small glass projections

modre barve (*sl. 1*). V nekaterih grobovih z Mestnih njiv v Novem mestu, ki sodijo v prehod iz bronaste v železno dobo, se pojavljajo tudi večje modre jagode z belimi ali rumenimi očesci (Križ 1995, t. 57: 113).

V starejši železni dobi doživi stekleno okrasje v evropskem in slovenskem prostoru izreden razcvet v barvah in oblikah, pojavijo pa se tudi prve steklene posode. Steklene jagode so običajno nanizane v dolge ogrlice, 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 aplike drugobarvnega stekla (Haevernick 1974, 61).

V gomili I iz Stične je bilo najdenih 20500 steklenih jagod (Haevernick 1974, 62), prav tako bogat pa je bil grob z Magdalenske gore, v katerem pa so našteli le 7310 steklenih jagod (Rutar 1894, 184). S steklom so bile obogatene tudi nekatere okrasne zaponke - fibule. Med njimi so še posebej zanimive fibule ježevke, najdene na Magdalenski gori, v Vačah, na Brezju in Šmarjeti (Haevernick 1959, Taf. 1: 1-8). Lok teh fibul ima na bronastem žičnatem jedru obloge, oblikovane iz 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. š. (Gabrovec 1987, 49).

Izjemen pojav v grobovih jugovzhodnoalpskega prostora so tudi majhne posodice z vertikalnimi rebri na ostenju. Verjetno gre za izdelke narejene v kalupu, ki so jim nato naknadno narebrili ostenje (Haevernick 1958a, 14). V Sloveniji jih poznamo v 5. stoletju pr. n. š. v Mostu na Soči (Haevernick 1958a, Taf. 1: 4-5; 2; 3: 1, 2) in Črnolici pod Rifnikom (*sl. 2*) (Pirkmajer 1994, sl. 40). Izdelane so iz naravno obarvanega, rahlo zelenkastega stekla, iz 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 cikcak linijah. Nekatere iz Mosta na Soči imajo tudi presegajoč, narebren ročaj (Haevernick 1958a, Taf. 2: 3-6).

Nekateri avtorji domnevajo, da so bile te skodelice namenjene shranjevanju kozmetičnih proizvodov (Fossing 1940, 56); glede na velikost in izdelavo ustja pa lahko potrdimo, da niso bile pripravne za pitje.

Razvejani trgovski stiki kultur starejše železne dobe jugovzhodno alpskega prostora s svetom zahodnih in sredozemskih kultur se ne odražajo le v izbranih importih kovinskih in keramičnih izdelkov, ampak tudi v steklenem gradivu. Mednje sodijo posodice, izdelane

(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 ribbed subsequently (Haevernick 1958a, 14). They are known in Slovenia from the 5th century BC from Most na Soči (Haevernick 1958a, Taf. 1: 4-5; 2; 3: 1, 2) and Črnolica beneath Rifnik (*Sl. 2* - Pirkmajer 1994, Fig. 40). They were made from naturally coloured, slightly greenish glass, and from coloured glass of amber brown or blue in various shades. Primarily blue cups were frequently decorated with threads of other coloured glass in straight or zigzag lines. Some from Most na Soči also had an extended, ribbed handle (Haevernick 1958a, Taf. 2: 3-6).

Some authors consider that these cups were intended for the storage of cosmetic products (Fossing 1940, 56); in terms of their size and the formation of the rim it can be stated that they were not intended for drinking.

The developed trading contacts of the early Iron Age Culture of the southeastern Alpine region with the world of the western European and Mediterranean culture is not reflected merely in high quality imported metal and pottery goods, but 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. They were created by dipping a previously prepared core attached to a rod into a mass of molten glass. Glass threads in other colours were added to the base form, formed into various zigzag decorations with a rod, and they were pressed into the base by marvering or rolling. The handles and base were made separately and were then attached to the vessel. When the product cooled, the core was scraped out.

An almost entirely preserved core-made vessel was found at Stična (Kastelic 1960, Pl. 3: 2). The double handled blue flask (*amphorisk*) was decorated with multicoloured glass threads in a zigzag motif, supplemented by simple lines on the neck and shoulders. Fragments of identical products are also known from the tumuli at Šmarjeta (Dular 1991, Pl. 29: 26-28). One of them contained a small dark blue vessel with a handle and the rim bordered with a yellow glass thread. The walls were decorated with yellow and pale blue glass threads, drawn into peacock feather or zigzag motifs. In both cases, on the basis of analogies, these vessels can be classified as products of Mediterranean workshops from the end of the 6th to the beginning of the 4th century (Harden 1981, 77, Pl. 11: 175-190).

The exceptionally variegated palette of glass beads and other decorative objects found in early Iron Age sites in the southeastern Alpine region, which have

na jedru, ki so najbolj razširjen izdelek helenističnih steklarskih delavnic v Sredozemlju. Nastale so z nanašanjem steklene mase na vnaprej pripravljeno jedro, pritrjeno na palico. Na osnovno surovino so dodali steklene niti v drugi barvi, jih s palico oblikovali v različne cik-cak okrase in jih nato z valjanjem vtisnili v podlago. Ročaje in noge so izdelali posebej in jih nato pritrdili na posodo. Ko se je izdelek ohladil, so jedro izpraskali.

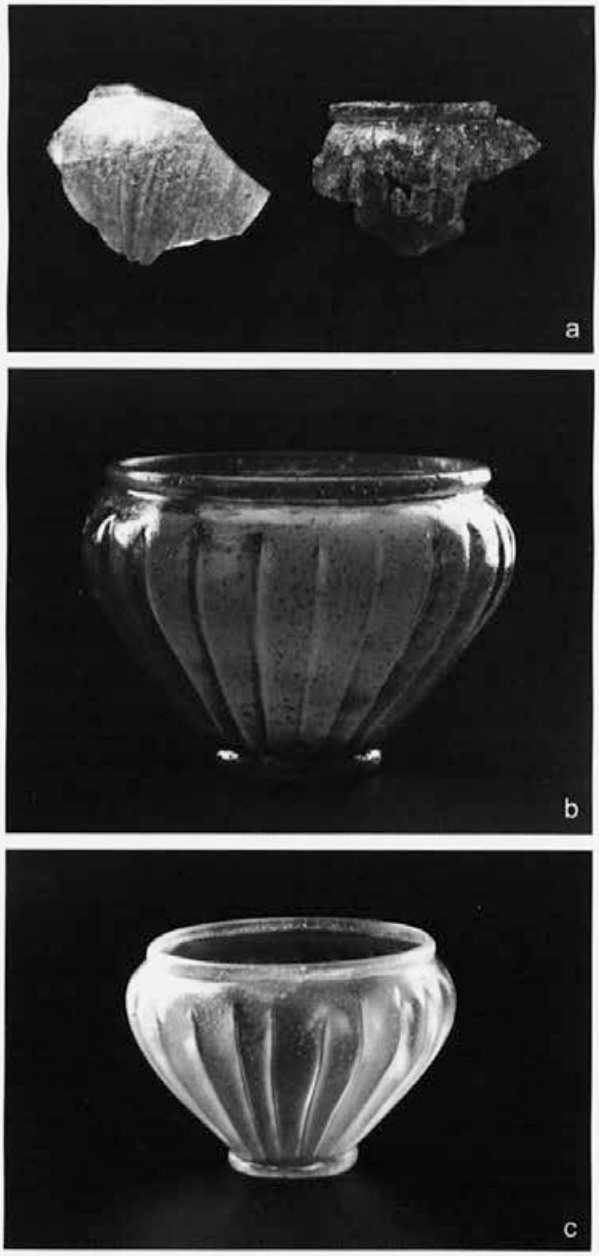
Skoraj v celoti ohranjena posodica, izdelana na jedru, je bila najdena v Stični (Kastelic 1960, t. 3: 2). Dvoročajna modra steklenička (*amforisk*) je po ostenju okrašena z večbarvnimi nitmi stekla v cik-cak motivu, ki ga dopolnjujejo še enostavne linije po vratu in ramenu. Odlomke enakih izdelkov poznamo tudi iz gomile v Šmarjeti (Dular 1991, t. 29: 26-28). Eden od njih je pripadal posodici temno modre barve z ročajem, ustje obroblja rumena steklena nit. Po ostenju je okrašena z rumenimi in svetlo modrimi steklenimi nitmi, potegnjenimi v motiv pavjih peres oziroma cik-caka. V obeh primerih gre po analogijah za izdelke mediteranskih delavnic od konca 6. do začetka 4. stoletja (Harden 1981, 77, t. 11: 175-190).

Izredno pestra paleta steklenih jagod in ostalih okrasnih predmetov v starejši železni dobi na jugovzhodno alpskem prostoru nam s številnimi izvirnimi oblikami, barvami in okrasi, najdenimi samo na tem prostoru, ponuja domnevo, da so tu delovale steklarske delavnice.

Na to možnost je prva opozorila že T. E. Haevernick, ki je proučevala steklene jagode s slovenskih najdišč (1974, 65). Nove najdbe, predvsem iz gomil na Kapiteljski njivi v Novem mestu (Križ 1997, 37), so paleto barv in oblik steklenih jagod iz starejše železne dobe še obogatile (*sl. 3*).

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

Verjetno je, da je steklo kot surovina prišlo v naše kraje oziroma halštatska središča kot import ali rezultat trgovske izmenjave in je tu tekla le proizvodnja jagod. Druga možnost so tudi potujoči obrtniki, ki so se selili iz kraja v kraj, postavili peč in v nekem daljšem časovnem obdobju zadostili potrebam, željam in okusu prebivalcev posameznih naselbin. Jagode bi bile lahko izdelane tudi v delavnicah izven našega ozemlja, vendar po naročilu in okusu odjemalcev z Dolenjske. Morda so služile celo kot neke vrste plačilno sredstvo. Taki primeri so poznani v srednjeveški steklarski industriji (Calvi di Coenzo 1996, 10). Dokler nimamo neposrednih dokazov za izdelavo jagod v prazgodovinskih naselbinah, ostaja ideja o lokalni proizvodnji in steklarski obrti samo hipoteza.



Sl. 2: Odlomka steklenih posodic iz gomile v Črnolici pod Rifnikom (a) in kopiji (b, c) obeh posodic. 5. st. pr. n. š., Pokrajinski muzej Celje (foto: T. Lauko).

Fig. 2: Fragments of glass vessels from the tumulus at Črnolica under Rifnik (a) and copies (b, c) of both vessels. 5th century BC, Pokrajinski muzej Celje (photo: T. Lauko).

forms, colours, and decorations exclisive to this area, leads to the conclusion that glass workshops were active in this region.

This possibility was first noted by T. E. 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) have further enriched the palette of colours and forms of early Iron Age glass beads (*Fig. 3*).

Sl. 3: Raznolike oblike steklenih jagod iz halštatskih grobov v Novem mestu. 6.–5. st. pr. n. š., Dolenjski muzej Novo mesto (foto: B. Križ).

Fig. 3: Various forms of glass beads from Hallstatt graves at Novo mesto. 6th–5th centuries BC, Dolenjski muzej Novo mesto (photo: B. Križ).

Stekleno gradivo mlajše železne dobe kaže značilnosti, ki ga ločijo od izdelkov starejše železne dobe. V ogrlice nanizanih jagod je v tem obdobju zelo malo, velikokrat gre za dediščino staroselskih prebivalcev. V latenskih grobovih na Kapiteljski njivi v Novem mestu prepoznamo številne oblike jagod, ki so bile v uporabi v starejši železni dobi (Križ 2001, 61). V srednjelatenskem obdobju pa se pojavljajo tudi novi tipi, z drugačnim okrasom (Križ 2001, 125 - gr. 471; 126 - gr. 491), kvaliteta izdelave pa je precej slabša kot pri izdelkih iz starejše železne dobe.

Daleč najbolj razširjena oblika v mlajši železni dobi, posebej v srednje latenskem obdobju, so steklene zapestnice (*sl. 4*). Pri izdelavi zapestnic so najprej na palici oblikovali debelejšo stekleno jagodo oziroma prstan in ga nato s pomočjo druge palice in ob stalnem vrtenju raztegnili do željene velikosti; vzorci so nastali z valjanjem prstana po matrici oziroma modelu, preden so zapestnico raztegnili (Korfmann 1966, 53-54). Pojavljajo se različice v prozorni, rumenkasti in temno modri barvi, pogosto so okrašene še s trakovi drugo-

The hypothesis of local production seems yet more likely because of this. Unfortunately, complete excavation has been undertaken primarily in large cemeteries. Research into prehistoric settlements, where traces of glass-working could be discovered, has been quite limited. Additionally, a furnace of small dimensions is sufficient for the production of beads, resulting in little debris, and thus the likelihood that the remains of such a furnace would be discovered is minimal.

It is probable that glass arrived as a raw material in this region, or more specifically at the Hallstatt centers, as an import or a result of trade exchange, and that only the production of beads took place here. Another possibility would be travelling craftsmen who moved from place to place, set up their furnaces, and in some more or less lengthy period satisfied the needs, wishes, and tastes of the inhabitants of individual settlements. The beads could also have been produced in workshops beyond the boundaries of the territory in question, although by order and in accordance with the tastes of the customers in Lower Carniola. They could even have served as some form of means of payment, as such examples are known from the medieval glass industry (Calvi di Coenzo 1996, 10). Until we gain direct proof of the production of beads in the prehistoric settlements, the concept of local production and a glass-working craft remains merely a hypothesis.

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, with different decorations (Križ 2001, 125 - gr. 471; 126 - gr. 491), and the quality of the products also differs from the early Iron Age examples.

By far the widest distributed form in the late Iron Age, particularly in the middle La Tène, was the glass bracelet (*Fig. 4*). To make a bracelet, a thick glass bead or circlet was first formed on a rod, and with the help of a second rod and constant spinning, the glass was stretched to the desired size, and patterns were created by rolling the circlet in a stencil or model before stretching the bracelet (Korfmann 1966, 53-54). Variants appear in transparent, yellowish, and dark blue colours, often decorated with bands of differently coloured glass

Sl. 4: Stekleni zapestnici iz mlajše železne dobe. Novo mesto, Kapiteljska njiva, 3.–2. st. pr. n. š., Dolenjski muzej Novo mesto (foto: B. Križ).

Fig. 4: Glass bracelets from the Late Iron Age. Novo mesto, Kapiteljska njiva, 3rd–2nd centuries BC, Dolenjski muzej Novo mesto (photo: B. Križ).

barvnega stekla na notranji strani, zunanjo stran krasijo geometrijski okrasi v mnogih različicah (Gebhard 1989, 73; Križ 2001, 60).

Tudi lok nekaterih fibul je okrašen s steklom, kot npr. fibule iz Vinice, kjer lok krasi odlomek steklene zapestnice, ki so ga prevrtali in nasadili na žico (Haevernick 1960, Abb. 1: 1-4). Omenimo naj še redke steklene prstane iz Brstja (Pahič 1966, t. 1: 4, 5) in veliko, modro-rumeno stekleno jagodo iz poznolatenskega groba 201 iz Beletovega vrta v Novem mestu (Knez 1992, t. 71: 6). Zanimivo je, da iz tega obdobja na našem prostoru in splošno v latenski kulturi ne poznamo steklenih posod.

on the inner side, while the outside was decorated with 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). Other examples are the rare glass rings from Brstje (Pahič 1966, Pl. 1: 4, 5), and a large, blue-yellow glass bead from the late La Tène grave 201 at Beletov vrt in Novo mesto (Knez 1992, Pl. 71: 6). It is interesting that from this period in Slovenia, and in general in the La Tène Culture, no glass vessels are known.

PREGLED RAZISKAV RIMSKEGA STEKLA V SLOVENIJI

Zgodovina raziskav v Sloveniji je v primerjavi s svetom, kjer so se raziskavam posvečali že od 19. stoletja dalje, manj razgibana in precej krajša (Harden 1984, 10). V 19. stoletju ni bilo objavljenih člankov, ki bi se posvečali le steklu na prostoru današnje Slovenije. V poročilih z nekaterih izkopavanj je bilo gradivo sicer objavljeno, vendar ne posebej opredeljeno. Prvi se je tej tematiki podrobneje posvetil R. Ložar v objavah najdb iz Črnelega in Polhovega Gradca (Steklena čaša iz Črnelega, *Glasnik Muzejskega društva za Slovenijo* 16, 1935; Rimska najdba iz Polhovega Gradca, *Glasnik Muzejskega društva za Slovenijo* 19, 1938). Steklene izdelke je natančno opisal, razložil tehnike izdelave in predmete tudi časovno opredelil.

Publikacije po drugi svetovni vojni so v kataloških izdajah sicer objavljale steklo, vendar dlje od opisa navadno niso segli. Precej steklenega gradiva s področja današnje Slovenije je v svoje članke vključila T. E. Haevernick. Omenimo naj članke o pihanih rebrastih skodelicah s spiralo (Zarte Rippenschalen, *Saalburg Jahrbuch* 17, 1958) in številne raziskave na temo prazgodovinskega stekla (*Beiträge zur Glasforschung*, 1981).

Prvo krajšo sintezo rimskega stekla je z objavo gradiva z Dolenjske pripravila S. Petru (Antično steklo iz dolenjskih grobov, *Razprave I. razreda SAZU* 6, 1969). Steklo je tipološko razdelila in ga časovno opredelila na osnovi primerjav in obstoječih grobnih celot.

Pomemben prispevek k razvoju raziskav o rimskem steklu je pomenil kolokvij ob 150-letnici Narodnega muzeja v Ljubljani na temo Antično steklo v Jugoslaviji. Referati s kolokvija so zbrani v *Arheološkem vestniku* 25 (1976) in prinašajo pregled stanja raziskav v Jugoslaviji in kratek sintetičen pregled rimskega stekla v Sloveniji (S. Petru, Rimsko steklo Slovenije; Z. Šubic, Tipološki in kronološki pregled rimskega stekla v Poetovioni). Kljub obetom pa je bilo nadaljevanje skromno. Z izjemo nekaj krajših člankov S. Petru (Rimska steklena situla, *Situla* 14-15, 1974; Rimska steklena kupa s prizorom cirkuške dirke, *Situla* 20-21, 1980) se v naslednjih letih redko pojavljajo članki, povezani s steklarstvom v rimski dobi. V. Bertoncelj Kučar je zbrala nakitne predmete iz stekla (Nakit iz stekla in jantarja, *Arheološki vestnik* 30, 1979), L. Plesničar Gec je objavila ostanke steklarske delavnice (The production of Glass at Emona, *Archaeologia Iugoslavica* 21-22, 1981) in kratko opredelila gradivo iz starokrščanskega centra v Emoni (*Starokrščanski center v Emoni*, Katalogi in monografije 21, 1983). Kompleks steklarskih delavnic s Ptuja je ostal

A REVIEW OF RESEARCH INTO ROMAN GLASS IN SLOVENIA

The history of research into Roman glass in Slovenia, in comparison to elsewhere, where research began as early as the 19th century, is less developed and considerably shorter (Harden 1984, 10). No articles dedicated exclusively to glass were published in the 19th century on the territory of present-day Slovenia. Material was published in reports from several excavations, but it was not dealt with separately. The first to devote attention in detail to this theme was R. Ložar in the publication of the finds from Črnelo and Polhov Gradec (Steklena čaša iz Črnelega, *Glasnik Muzejskega društva za Slovenijo* 16, 1935; Rimska najdba iz Polhovega Gradca, *Glasnik Muzejskega društva za Slovenijo* 19, 1938). He described the glass products in detail, explained the production techniques, and also chronologically classified the objects.

Publications after the Second World War published glass in catalogue editions, although usually they did not include more than a description. A considerable amount of glass material from the region of present-day Slovenia was covered in the articles of T. E. Haevernick. Here we will mention only the article on free-blown ribbed cups with a spiral (Zarte Rippenschalen, *Saalburg Jarhbuch* 17, 1958), and numerous investigations on the theme of prehistoric glass (*Beiträge zur Glasforschung*, 1981).

The first brief synthesis of Roman glass was prepared by S. Petru in the publication of material from Dolenjska (Antično steklo iz dolenjskih grobov, *Razprave* 6, 1969). She classified the glass typologically, and dated it on the basis of comparisons and existing grave units.

A significant contribution to the development of research on Roman glass was offered by a colloquium on the occasion of the 150th anniversary of the National Museum in Ljubljana on the subject of Roman Glass in Yugoslavia. The papers from the colloquium were collected in *Arheološki vestnik 25 (1976)*, offering an overview of the state of research in Yugoslavia and a brief synthetic review of Roman glass in Slovenia (S. Petru, Rimsko steklo Slovenije; Z. Šubic, Tipološki in kronološki pregled rimskega stekla v Poetovioni). Despite the promising start, advances were modest. With the exception of several brief articles by S. Petru (Rimska steklena situla, *Situla* 14-15, 1974; Rimska steklena kupa s prizorom cirkuške dirke, *Situla* 20-21, 1980), articles dealing with glass production in the Roman period rarely appeared in the following years. V. Bertoncelj Kučar gathered jewellery made of glass (Nakit iz stekla in jantarja, *Arheološki vestnik* 30, 1979), and L. Plesničar Gec published the remains of a glass workshop (The

neobjavljen, če izvzamemo kratko informacijo B. Jevremova v Varstvu spomenikov (*Varstvo spomenikov* 23, 1981, 258).

Zadnji prispevki na temo rimskega steklarstva so zajeti v diplomski nalogi *Prispevek k proučevanju antičnega stekla v Sloveniji* (I. Lazar 1988, Ljubljana, tipkopis) in člankih o steklarski obrti v Celeji ter rimskih rebrastih skodelicah v Sloveniji (I. Lazar, Sledovi steklarske proizvodnje v Celeji, *Celjski zbornik* 1993; Steklene rebraste skodelice v Sloveniji, *Celjski zbornik* 1994; Ribbed glass bowls from the territory of modern Slovenia, *Annales du 14e Congrès de l'AIHV*, 2000). Na verjetno lokalne oblike nekaterih steklenih izdelkov je v zadnjem času opozorila J. Istenič (The »Emona« Glass Beakers, *Arheološki vestnik* 45, 1994), kratek pregled petovionskega stekla je pripravila I. Lazar (Steklo rimske Petovione - novi podatki o oblikah in lokalni proizvodnji, *Archaeologia Poetovionensis* 2, 2001), nekatere izjemne najdbe s Ptuja pa je objavila tudi J. Istenič (*Poetovio, zahodna grobišča* I in II, Katalogi in monografije 32, 1999 in 33, 2000; An early mould-blown pyxis from Poetovio, *Instrumentum* 13, 2001).

Med prispevki, ki govore o steklarski proizvodnji v rimski dobi naj omenimo še objavi M. Sagadina [Late antique glass workshop in Kranj (Slovenia), *Instrumentum* 9, 1999; Poznoantična steklarska delav-nica v Kranju, *Kranjski zbornik* 2000] in širšo predstavitev I. Lazar o stanju raziskav v slovenskem prostoru (The State of Research into Roman Glass production in Slovenia, *Annales du 15e Congrès de l'AIHV*, 2002).

Razveseljivo je, da se v zadnjem času pojavljajo članki o srednjeveškem steklu, kar je nedvomno spodbudil študij mlajših obdobij na Oddelku za arheologijo Filozofske fakultete Univerze v Ljubljani. Omenimo naj prispevke M. Kos (Steklo v obdobju gotike, v: *Gotika na Slovenskem, katalog razstave*, Ljubljana 1995), I. Lazar (Srednjeveško steklo, v: *Grofje Celjski, katalog razstave*, Celje 1998; Srednjeveško steklo iz Celja, v: *Srednjeveško Celje, Archaeologia Historica Slovenica* 3, 2001) in diplomsko nalogo B. Petek, *Poznosrednjeveške in novoveške steklene najdbe iz Turjaške palače v Ljubljani* (1999, Ljubljana, tipkopis).

Prav zaradi skromnega obsega raziskav in člankov o steklarski obrti se pojavljajo težave v terminologiji, neenotnost v poimenovanju tehnik, oblik, okrasov in podobno. Vse to nas opominja, da imamo na tem področju še veliko dela s temeljnimi problemi in smo še daleč od kakršnekoli večje specializacije.

Production of Glass at Emona, *Archaeologia Iugoslavica* 21-22, 1981), and briefly discussed the material from the early Christian center in Emona (*Starokrščanski center v Emoni*, Katalogi in monografije 21, 1983). The complex of glass workshops in Ptuj has remained unpublished, if we exclude short reports by B. Jevremov (*Varstvo spomenikov* 23, 1981, 258).

The most recent contributions on the subject of Roman glass include the BA thesis *Contributions to the Study of Roman Glass in Slovenia* (I. Lazar 1988, Ljubljana, manuscript), and articles about glass production in Celeia and Roman ribbed bowls in Slovenia (I. Lazar, Sledovi steklarske proizvodnje v Celeji, *Celjski zbornik* 1993; Steklene rebraste skodelice v Sloveniji, *Celjski zbornik* 1994; Ribbed glass bowls from the territory of modern Slovenia, *Annales du 14e Congrès de l'AIHV*, 2000). The probable local forms of glass products have been pointed out recently by J. Istenič (The "Emona" Glass Beakers, *Arheološki vestnik* 45, 1994), while a brief review of the glass from Poetovio was prepared by I. Lazar (Steklo rimske Petovione - novi podatki o oblikah in lokalni proizvodnji, *Archaeologia Poetovionensis* 2, 2001), the finds from the western necropolis of Poetovio were published by J. Istenič (*Poetovio, zahodna grobišča* I and II, Katalogi in monografije 32, 1999 and 33, 2000; An early mould-blown pyxis from Poetovio, *Instrumentum* 13, 2001).

Contributions dealing with local glass production in the Roman period include two articles by M. Sagadin [Late antique glass workshop in Kranj (Slovenia), *Instrumentum* 9, 1999; Poznoantična steklarska delavnica v Kranju, *Kranjski zbornik* 2000], and a general presentation by I. Lazar about the state of research in Slovenia (The State of Research into Roman Glass Production in Slovenia, *Annales du 15e Congrès de l'AIHV*, 2002).

It is encouraging that in the recent period articles have appeared about medieval glass, which has undoubtedly been stimulated by the study of later periods at the Department of Archaeology of the Faculty of Arts of the University in Ljubljana. Mention should be made of the contributions by M. Kos (Steklo v obdobju gotike, in: *Gotika na Slovenskem, exhibition catalogue*, Ljubljana 1995), I. Lazar (Srednjeveško steklo, in: *Grofje Celjski, exhibition catalogue*, Celje 1998; Srednjeveško steklo iz Celja, in: *Srednjeveško Celje, Archaeologia Historica Slovenica* 3, 2001) and the BA thesis of B. Petek, *Poznosrednjeveške in novoveške steklene najdbe iz Turjaške palače v Ljubljani* (1999, Ljubljana, manuscript).

The modest scale of the research into and articles about glass production has led to difficulties in terminology, specifically non-uniformity in terms for techniques, forms, decorations, and so forth. This all indicates that a great deal of work on fundamental problems still awaits us in this field, and that we are far from any true form of specialization.

TIPOLOGIJA, KRONOLOGIJA IN KATALOG RIMSKEGA STEKLA SLOVENIJE

TYPOLOGY, CHRONOLOGY AND CATALOGUE OF THE ROMAN GLASS OF SLOVENIA

TERMINOLOGIJA

Predstavitev uporabljenih izrazov in predlog poenotenja nekaterih opisov in poimenovanj

Pri opisovanju in določanju oblik je opaziti veliko neenotnost avtorjev tako pri opisovanju steklarskih tehnik in okrasov kot pri opisovanju posameznih delov posod. Najbolj se to izraža pri opisovanju oblike in izdelave ustja in dna. Deloma gre to pripisati nepoznavanju steklarske proizvodnje in proizvodnih tehnik, večkrat pa gre preprosto za nekritično prepisovanje že uporabljenih izrazov.

V tem poglavju je predstavljena terminologija, ki je uporabljena v katalogu in pri opisovanju posameznih form. V glavnem se opira na izrazoslovje, ki je uveljavljeno pri angleških in nemških avtorjih. Prevedeni izrazi so oblikovani po posvetu s steklarji in steklopihači, tako da je izrazoslovje ustrezno tudi glede na obstoječe izraze v steklarski obrti.

Opozoriti želimo predvsem na najznačilnejše oblike oziroma različice, ki so med objavljenim gradivom tudi najpogostejše. Na začetku predstavljamo tudi poimenovanje, ki smo ga uporabili za posamezne dele posod (*sl. 5*).

TERMINOLOGY

Terms used and suggestions for simplifying some descriptions and names

In describing and determining form, great variety can be seen among authors both in describing glass making techniques and decoration and in describing individual parts of a vessel. This is particularly true in the description of forms and execution of rims and bases. This can partly be attributed to a lack of knowledge of glass production and manufacturing techniques, but often it simply results from uncritical copying of previously used terms.

The introduction presents the terminology that is used in the catalogue and in the description of individual forms. It is mainly based on terminology used by English and German authors. The translated expressions have been formed in consultation with glass workers and glass blowers, so that the terminology also corresponds to existing terms in the glass working craft.

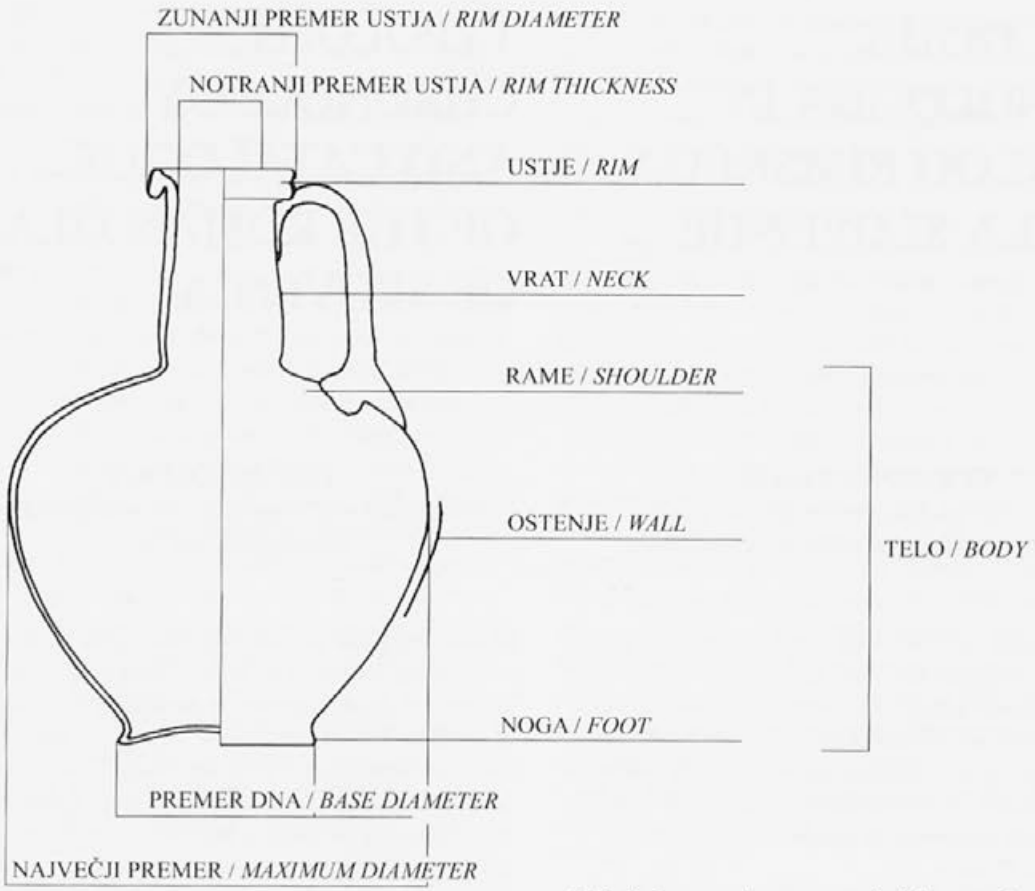
We primarily wish to draw attention to the most characteristic forms or types, which are also the most common among the published material. At the beginning we also present the names used for individual parts of the vessels (*Fig. 5*).

IZDELAVA IN OBDELAVA USTJA POSODE (*sl. 6*)

Rob ustja steklenih posod je lahko izdelan na dva glavna načina: s toplotno ali hladno obdelavo. Toplotna dodelava ustja poteka med izdelovanjem posode, ko je steklo še vroče. Ustja t. i. hladne obdelave so dokončana, ko se posoda ohladi; na ustreznem mestu steklo zarežejo in odlomijo odvečni del. Izpostavljene so samo nekatere najznačilnejše variante, to je predvsem tiste, ki se pojavljajo največkrat. Prevladujejo toplotno obdelana ustja, le pod zaporedno številko 6 (*sl. 6a: 6*) je ustje hladno obdelano. Izdelava in oblika ustja je pri steklu kronološko občutljiva, zato so ponekod dodane okvirne datacije.

THE PRODUCTION AND TREATMENT OF VESSEL RIMS (*Fig. 6*)

The rim of a glass vessel can be made in two main ways, by hot or cold treatment. Hot treatment occurs during the production of the vessel while the glass is still hot. The rims in cold working are finished when the vessel cools; the glass is cut at a suitable place and the excess part is broken off. A limited number of the most characteristic variants are set forth, primarily those that appear most often. Hot worked rims are predominant, only under no. 6 (*Fig. 6a: 6*) was the rim cold worked. The production and form of rims in glass are chronologically sensitive, hence approximate dates are occasionally added.



Sl. 5: Poimenovanje posameznih delov posode.

Fig. 5: The terminology for individual parts of vessels.

GLAVNI NAČINI OBLIKOVANJA ROBA USTJA (*sl. 6a*)

1 - zataljeno ustje
Ustje je odrezano in na kratko ponovno segreto, da se je rob zaoblil. Tako izdelana ustja posod so najpogostejša in jih najdemo na izdelkih od 1. do 4. stoletja; najbolj razširjena pa so od sredine 2. do sredine 3. stoletja (gl. str. 94).

2 - odebeljeno ustje
Ustje je odrezano in ponovno segreto, da je rob zataljen in odebeljen. Takšna ustja so pogosta predvsem pri izdelkih od konca 1. in v 2. stoletju (skodelice, čaše) (gl. str. 102).

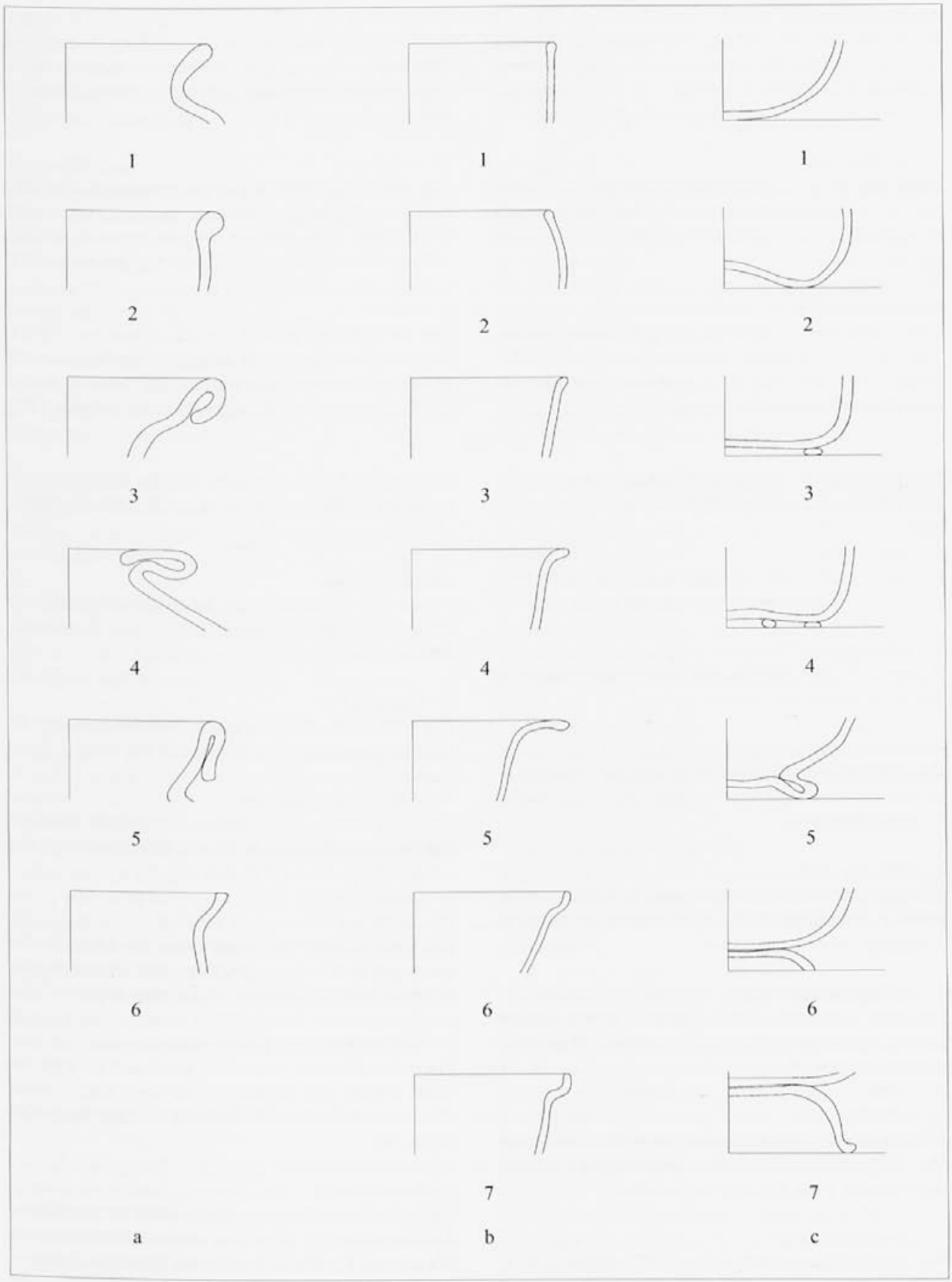
3 - cevasto ustje
Ustje posode je izvihano navzven, rob je nato stisnjen ob zunanjo steno, da nastane cevasta odprtina. Cevasta ustja so pogosta pri izdelkih 1. in 2. stoletja (skodele, lonci) (gl. str. 80).

THE MAIN METHODS OF FORMING A RIM (*Fig. 6a*)

1 - fire-rounded rim
The rim is cut off and briefly heated again, so that the edge becomes rounded. Rims produced in this manner are most common everywhere and they can be found on products from the 1st to the 4th centuries; type is most widespread from the mid 2nd to the mid 3rd century (see page 95).

2 - fire-thickened rim
The rim is cut off and reheated, to leaving the edge is melted and thickened. Such rims are common primarily on products from the end of the 1st cent. and in the 2nd cent. (cups, beakers - see page 102).

3 - tubular rim
The rim of the vessel is curved outwards, the edge is then pressed against the outside wall to create a tubular opening. Tubular rims are frequent on products of the 1st and 2nd centuries (dishes, pots - see page 80).



Sl. 6: Izdelava ustja, nagnjenost in naklon ustja in oblika dna.

Fig. 6: The production of rims, the inclination and angle of the rim, and the form of the base.

4 - sploščeno ustje
Ustje posode je izvihano, nato zapognjeno navznoter in sploščeno na vrhu. Na ta način izdelana ustja najdemo predvsem pri steklenicah in vrčih v 1. in 2. stoletju (gl. str. 149).

5 - zavihano ustje
Ustje posode je zavihano ob zunanji površini stene navzdol in stisnjeno ob vrat posode. Tako izdelana ustja so pogosta predvsem pri loncih in žarah iz 1. in 2. stoletja (gl. str. 158).

6 - odrezano ustje
Ustje je odrezano in obrušeno, rob ni toplotno obdelan. Tako enostavno izdelano ustje imajo že balzamariji v 1. stoletju; zelo razširjeno pa je predvsem v poznorimski dobi pri čašah in svetilkah (gl. str. 119).

OBLIKA USTJA - NAGNJENOST USTJA GLEDE NA OSTENJE POSODE (*slika 6b*)

1 - ravno ustje
Posode s cilindričnim ostenjem, ki se ravno nadaljuje v ustje in rob. Premer ustja in ostenja sta enaka.

2 - uvihano ustje
Rob ustja je rahlo nagnjen navznoter, njegov premer je manjši od največjega premera ostenja.

3 - navzven nagnjeno ustje
Ostenje posode je navadno rahlo nagnjeno navzven in tej liniji sledi tudi ustje, ki je sicer nagnjeno, ni pa posebej izvlečeno iz profila.

4 - izvihano ustje
Rob ustja je izvlečen oziroma izstopa iz profila posode. Premer zunanjega roba ustja je večji od premera notranjega roba.

5 - močno izvihano ustje
Rob ustja je izvlečen oziroma izstopa iz profila posode. Premer zunanjega roba je več kot 1 cm širši od premera notranjega roba ustja.

6 - klekasto ustje
Ostenje posode pred iztekom v rob ustja tvori manjši klek. Tako oblikovano ustje je najpogostejše pri izdelkih poznorimske dobe, pri čašah in svetilkah.

7 - stopničasto ustje
Pod robom ustja je oblikovana izrazita stopnica, ki se nato nadaljuje v ostenje. To obliko ustja srečamo le pri redkih oblikah (kantarosi, čaše na nogi).

4 - flattened rim
The rim of the vessel is everted, then bent inwards and flattened on the top. Rims made in this manner can be found primarily on flasks and jugs from the 1st and 2nd centuries (see page 149).

5 - collar rim
The rim of the vessel is everted downwards along the outside surface of the wall and is pressed up to the neck of the vessel. Such rims are common primarily on pots and urns from the 1st and 2nd centuries (see page 158).

6 - cut rim
The rim is cut and ground, the edge is not heat treated. Such simply made rims are present on balsamaria in the 1st century; the type was widespread, primarily in the late Roman period on beakers and lamps (see page 120).

FORMS OF RIMS - THE POSITION OF THE RIM IN RELATION TO THE WALLS OF THE VESSEL (*Fig. 6b*)

1 - straight rim
Vessels with cylindrical walls that continue straight from the rim and edge. The diameters of the rim and walls are the same.

2 - inturned rim
The edge of the rim is gently curved inwards, and its diameter is less than the diameter of the walls.

3 - slightly out-turned rim
The walls of the vessels usually gently slope outwards and this line is followed by the rim, which is curved and not drawn out from the profile.

4 - out-turned rim
The edge of the rim is everted, meaning it exceeds the vessel profile. The diameter of the outer edge of the rim is greater than the diameter of the inner edge.

5 - highly everted rim (splayed-out rim)
The edge of the rim is everted, meaning it exceeds the vessel profile. The diameter of the outer edge is more than 1 cm wider than the diameter of the interior edge of the rim.

6 - curved rim
The walls of a vessel create a small curve at the transition to the edge of the rim. These rims are more frequent on late Roman period products, in particular beakers and lamps.

7 - stepped rim
Under the edge, the rim has an emphasized step-like form, which continues into the walls. This rim form is

OBLIKA DNA (*slika 6c*)

1 - ravno dno
Dno posode je na osrednjem delu samo sploščeno, da je oblikovana stojna ploskev.

2 - vboklo dno
Dno posode je sploščeno in potisnjeno navznoter, tako da posoda stoji le na zunanjem robu dna.

3 - dno s prstanasto nogo
Na dno posode je prilepljena steklena nit v obliki prstana, ki služi kot nizka noga.

4 - dno z dvojno prstanasto nogo
Nekatere oblike imajo na dnu prilepljena dva kolobarja iz steklene niti, ki sta med seboj ločena. Tako sta oblikovani dve nizki nogi.

5 - izvlečena prstanasta noga
Posamezne posode imajo dno oblikovano tako, da je zunanji rob dna stisnjen in izvlečen iz posode tako, da tvori nogo oziroma stojni prstan.

6 - posebej pihana nizka noga
Izdelana je tako, da je na dno posode prilepljen steklen disk, ki je po robu zapognjen navzdol in tvori nekoliko dvignjeno nogo posode.

7 - posebej pihana visoka noga
Noga posode je pihana posebej in prilepljena na čašo. Navadno je stik med ostenjem in nogo majhen, noga je višja od prej opisanih primerov.

Omeniti je potrebno še eno tehnično značilnost mnogih prosto pihanih rimskih posod - to je sled prijemalke na dnu posod. Steklar je po pihanju posodo prenesel na železen drog - prijemalko, da je do konca obdelal ustje posode, izdelal okras in dodal ročaje (Schuler 1959, 119). Stik prijemalke z dnom posode je opazen kot razmazana sled kaplje stekla, včasih ima nekoliko ostrejši rob. Rimski steklarji so le redko obrusili ostanke stekla na dnu, kjer je sta se stikali posoda in prijemalka.

ROČAJI

Ročaji posod, predvsem steklenic in vrčev, so izdelani na več načinov; večinoma z vlečenjem, nekateri so dodatno še oblikovani z glavnikom. Navadno so jih pritrdili tako, da so ročaj pritalili na vrat ali rame posode in ga nato povlekli navzgor ter natalili na rob ustja ali tik pod njim. Ponekod so ročaj tik ob ustju zapognili v izrastek ali gubo. Tako je nastala opora za palec.

found only on rare vessel forms (kantharoi, footed goblets).

FORM OF THE BASE (*Fig. 6c*)

1 - flat base
The base of the vessel is merely flattened in the central section to form a flat standing surface.

2 - concave base
The base of the vessel is flattened and pressed inwards, so that the vessel stands only on the outside edge of the base.

3 - base with a base ring
A glass coil is attached to the base of the vessel in the form of a ring, serving as a low foot.

4 - base with a double base ring
Some forms have two rings of glass coils (separate from one another) attached to the base. Two low feet were formed in this manner.

5 - base with a tubular base ring
Individual vessels have a base formed by the outer edge of the base being pressed and pulled away from the vessel, creating a foot or a standing ring.

6 - separately blown foot
A glass disc is attached to the base of the vessel, which is pushed down along the edges, creating a somewhat raised foot of the vessel.

7 - separately blown high foot
The foot of the vessel is blown separately and attached to the vessel. The contact between the walls and the foot is usually small, and the foot is taller than the previous examples.

It is necessary to mention yet another technical characteristic of many free-blown Roman vessels: the pontil-mark on the base of the vessel. The glass worker attached the blown vessel onto an iron rod, called a pontil, so as to finish working the rim of the vessel, to decorate it, and to apply any handles (Schuler 1959, 119). The contact point of the pontil and the base of the vessel can be seen as a blurred trace of glass drops, sometimes with somewhat sharper edges. Roman glass workers only rarely ground off the remains of glass on the base where the vessel and pontil had touched.

HANDLES

The handles of vessels, primarily flagons and jugs,

Predstavljamo najbolj pogoste oblike oziroma preseke ročajev (*skica 1*):

were produced using several techniques, mostly by drawing out, but additionally combing. They were usually applied to the shoulder or neck of the vessel and then drawn up and attached to the rim or just below the rim edge. Sometimes the handle was pulled into a protrusion or fold just beneath the rim. Thumb holds were made in this manner.

The following are the most common forms (cross-sections) of handles (*text fig. 1*):

BARVE

Steklarji so že v prazgodovini stekleno maso namerno obarvali z različnimi oksidi, da so dobili čimbolj izrazito barvo steklene taline (gl. npr. Henderson 2000, 29).

Z dodajanjem različnih kovinskih oksidov surovinam za pripravo stekla so tudi steklarji v rimskem obdobju izdelali intenzivno obarvano steklo, npr. temno modro, temno rdeče, temno zeleno, rumeno, rjavo, jantarno in podobno.

Dodajanje bakrovih oksidov je obarvalo steklo temno modro, temno zeleno ali rubinasto rdeče, odvisno od pogojev v peči pri taljenju. Kobalt je bil dodan za steklo intenzivno temno modre barve, mangan so uporabili za rumeno in rdeče obarvano steklo in železo za bledo modre, zelenkaste in jantarne odtenke. Mlečno belo steklo je nastalo z dodajanjem antimona.

Prav tako so dobro obvladali tehniko namernega razbarvanja, da so dobili resnično brezbarvno steklo. Zaradi nečistoč je namreč steklo navadno zelenkastega ali modrikastega odtenka. Da bi nevtralizirali železove okside, ki so najpogostejši vzrok tega obarvanja, so surovemu steklu dodajali mangan ali antimon (Velde, Hochuli-Gysel 1996, 185). Če so bili pri količinah nepazljivi in so uporabili npr. preveč mangana, se je steklo obarvalo vijoličasto (*sl. 7*).

Zaenkrat še ne obstaja splošno uveljavljen način poimenovanja barv stekla pri vizualnem opisovanju izdelkov. Nekateri avtorji so poskušali barve določiti s pomočjo različnih barvnih lestvic. L. Berger (1960, 96) je npr. uporabil lestvico za opis barv pri barvnih svinčnikih, B. Follmann-Schulz (1988, 2) pa se je odločila za lestvico barv, ki jo uporabljajo zbiralci znamk. Nekateri arheologi svetujejo uporabo lestvice po *Munsell Soil Color Charts* (New York 1992). Žal ta za steklo ni primerna, saj je prirejena za zemeljske plasti in ustreza izdelkom iz gline.

COLOURS

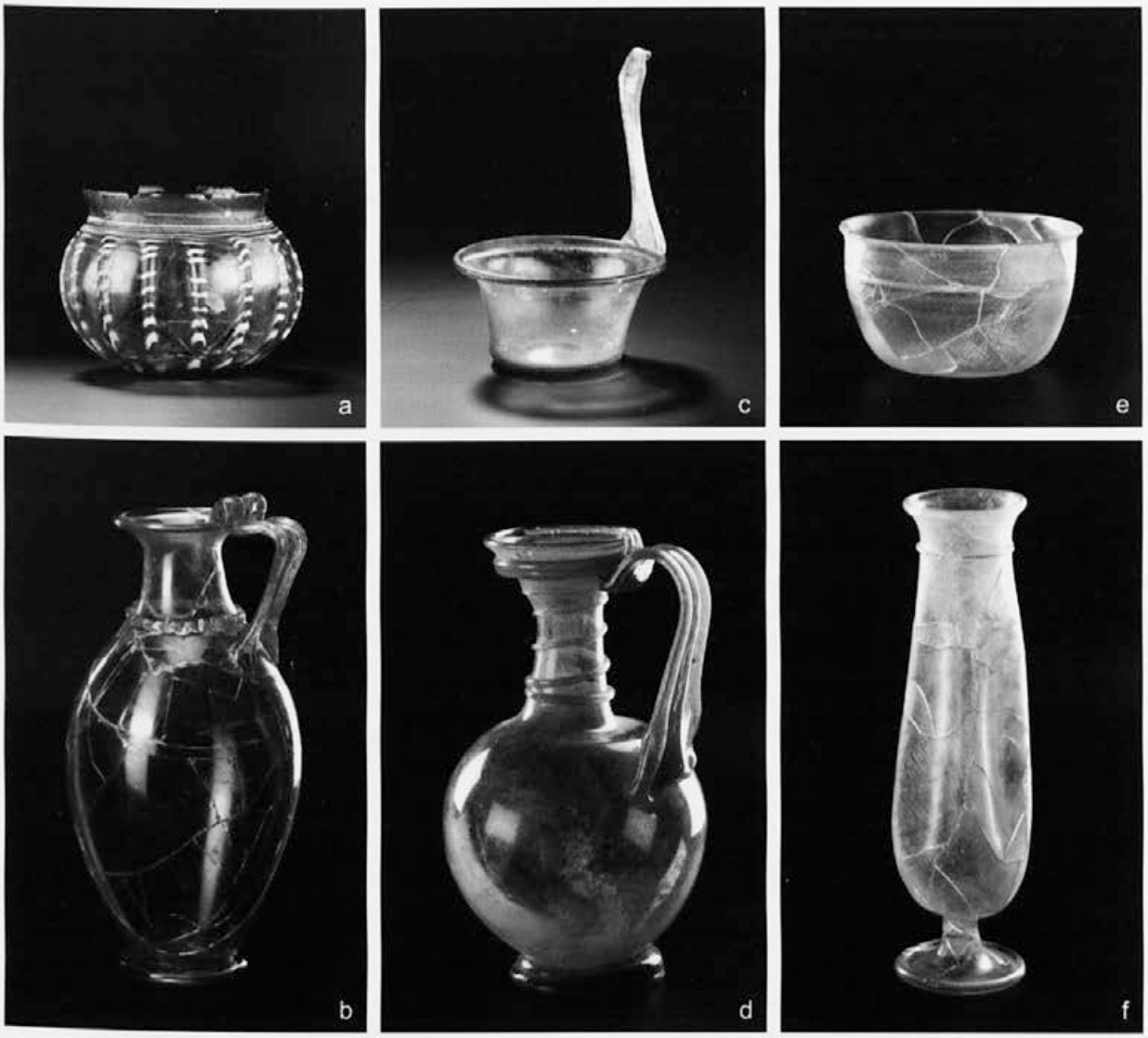
Glass workers deliberately coloured glass, even in the prehistoric period, with various oxides so as to acquire the most intense possible colour of the molten glass (see Henderson 2000, 29).

With the admixture of various metal oxides to the raw materials used to make glass, glass workers in the Roman period also produced intensively coloured glass, such as dark blue, dark red, dark green, yellow, brown, amber, and so forth.

The addition of copper oxides coloured glass dark blue, dark green, or ruby red, depending on the conditions in the furnace during melting. Cobalt was added for glass of an intensive dark blue colour, manganese was used for yellow and red coloured glass, and iron for pale blue, greenish, and amber tones. Milk white glass was created with the addition of antimony.

Glass workers also mastered the technique of deliberate discolouring, so as to acquire a truly uncoloured glass. Glass is naturally greenish or blue toned because of impurities. To neutralize iron oxides, the most common cause of such colouring, glass workers added manganese or antimony to the raw glass (Velde, Hochuli-Gysel 1996, 185). If they were inattentive to the quantities and used, for instance, too much manganese, the glass would be violet coloured (*Fig. 7*).

A generally accepted methodology of distinguishing the colour of glass in the visual description of specimens still does not exist. Several authors have attempted to determine the colour with the aid of various colour scales. L. Berger (1960, 96), for example, used a colour scale for coloured pencils, while B. Follman-Schulz (1988, 2), opted for a colour scale used by stamp collectors. Several archaeologists have advised the use of the *Munsell Soil Color Charts* (New York 1992). Unfortunately, this system is not applicable to glass, as it is or-



Sl. 7: Izdelki iz obarvanega in razbarvanega stekla ter posode iz naravno obarvanega stekla različnih odtenkov: a - jantarne barve (Dobova, gr. 39A, Posavski muzej Brežice), b - modrikasto (Ptuj, Gasilski dom, Pokrajinski muzej Ptuj), c - zelenkasto (Emona, Mestni muzej Ljubljana), d - olivno zeleno (Ptuj, Dijaški dom, Pokrajinski muzej Ptuj), e - namerno razbarvano (Ptuj, Zgornji Breg, Pokrajinski muzej Ptuj), f - mlečno belo (Ptuj, Rimska ploščad, Pokrajinski muzej Ptuj); (foto T. Lauko).

Fig. 7: Products of coloured and decoloured glass, and vessels of naturally coloured glass in various shades: a - amber (Dobova, gr. 39A, Posavski muzej Brežice), b - bluish (Ptuj, Rimska ploščad, Pokrajinski muzej Ptuj), c - greenish (Emona, Mestni muzej Ljubljana), d - olive green (Ptuj, Student Dormitory, Pokrajinski muzej Ptuj), e - decoloured (Ptuj, Zgornji Breg, Pokrajinski muzej Ptuj), f - milk white (Ptuj, Rimska ploščad, Pokrajinski muzej Ptuj); (photo: T. Lauko).

Predvsem angleški raziskovalci zavračajo uporabo teh lestvic, ker so prirejene za neprosojne materiale. Steklo pa je prosojen material in od debeline stene je odvisna tudi intenzivnost barve. Čim debelejša je posoda, toliko temnejša je barva.

Steklo lahko na osnovi barve delimo v tri glavne kategorije:
- obarvano steklo (kolorirano);
- modro-zelenkasto ali naravno obarvano steklo;
- brezbarvno ali razbarvano steklo (dekolorirano).

ganized according to soil layers and best corresponds to clay-based products.

It is mostly English researchers who reject the use of these charts, as they are intended for opaque material. Glass is a transparent material, and the intensity of colour is also dependent upon the thickness of the walls. The thicker the vessel, the darker the colour.

Glass can be divided on the basis of colour into three main categories:
- coloured glass,

Pri opisovanju barv obarvanega stekla so uporabljeni izrazi za širše in enostavne opise. Uporabljeni so npr. opisi temno modro, modro, temno rdeče, temno zeleno, zeleno, rumeno, rjavo, jantarno. Ker je steklo v glavnem prosojno, to v opisovanju ni posebej navedeno. Posebej je v opisih označeno le neprosojno steklo, pri katerem debelina stekla nikjer ne prepušča svetlobe. To je najpogosteje opaziti pri izdelkih iz mozaičnega stekla.

Naravno obarvano steklo ima zaradi železovih oksidov v surovinah navadno modro-zelenkast nadih. V teh opisih so uporabljeni izrazi modrikast, modro-zelen, zelenkast, olivno zelen, zeleno-rumen. Pri uporabi dveh barv v opisu prevladuje barva, ki je prva navedena. Seveda je uporaba teh izrazov nujno subjektivna in zato je verjetno najprimernejši izraz za poimenovanje in opis kar modro-zelenkasto oziroma naravno obarvano steklo. V kataloških opisih pihanega stekla je opisovanje barvnih odtenkov večinoma opuščeno.

Izraz brezbarvno steklo je uporabljen samo pri steklu, ki je bilo namerno razbarvano oziroma dekolorirano. To vrsto stekla so začeli izdelovati v tretji tretjini 1. stoletja, v 2. in 3. stoletju pa so ga uporabljali izključno za boljše izdelke, namenjene namizni uporabi. Dekolorirano steklo rimske dobe je le redko povsem brezbarvno, kakršnega poznamo danes, največkrat ima rahel rumenkast nadih.

OBLIKOVANJE SKUPIN STEKLENIH IZDELKOV

Stekleno posodje smo razvrstili v širše skupine, oblikovane glede na namembnost posodja in sorodnost oblik (*sl. 8*). V zadnjo skupino smo uvrstili različni uporabi namenjene posode izjemnih oblik, ki pa se pojavljajo redko in v majhnih količinah. V tej delitvi smo se opirali na skupine in delitve, ki sta jih opredelila Van Lith in Randsborg (1985, 413). V okviru skupine so oblikovane podskupine, npr. skupina steklenice je deljena v podskupini steklenice in steklenice z ročaji in nato sledijo različice oblik.

Skupine 1 do 5 združujejo posodje za pitje in namizno serviranje hrane, kot shrambeno posodje lahko označimo skupini 6 in 7, kozmetični, medicinski in religiozni uporabi pa so bili namenjeni izdelki v skupinah 8 in 9.

Skupina 1

Krožniki (krožniki in pladnji)

Skupina obsega plitve posode na nizki nogi. Oblika je dokaj redka in v zahodnih provincah večinoma omejena na 1. stoletje.

- blue-green or naturally coloured glass,
- colourless or decoloured glass.

Generalized and simplified expressions are used in describing the colours of coloured glass. Descriptions used include dark blue, blue, dark red, dark green, green, yellow, brown, amber. Since glass is mainly transparent, this is not listed specifically in the descriptions. Only opaque glass, where no light is admitted through the thickness of the glass, is specially designated in the descriptions. This can most often be noted in products made from mosaic glass.

Naturally coloured glass has a natural blue-green tint because of iron oxides in the raw materials. The expressions bluish, blue-green, greenish, olive green, and greenish-yellow are used in these descriptions. When two colours are used in a description, the colour that predominates is cited first. Nonetheless, the use of thus expressions is necessarily subjective, and this probably the most suitable expression in naming and describing would be blue-green or naturally coloured glass. In the catalogue descriptions of blown glass, the descriptions of colour tones have mostly been omitted.

The expression colourless glass is used only for glass that was deliberately decoloured. This type of glass began to be produced in the last third of the 1st century, and in the 2nd and 3rd centuries, it was used exclusively for better quality products intended to be used as table ware. Decoloured glass in the Roman period was rarely entirely colourless, such as we know today; instead most often it had a slight yellowish tinge.

GROUPS OF GLASS PRODUCTS ACCORDING TO FORM

The vessels have been classified into broad groups based upon their purpose and their similarities of form (*Fig. 8*). The final group contains vessels of odd forms intended for various purposes, which appear both rarely and in small quantities. We based this classification on the groups and classifications defined by Van Lith and Randsborg (1985, 413). Sub-groups were formed within individual groups; e.g. the flask group is divided into sub-groups with or without handles, followed by various shapes.

Groups 1 to 5 encompass vessels for beverages and serving food at table, groups 6 and 7 can be defined as storage vessels, while products from groups 8 and 9 were intended for cosmetic, medical, and religious purposes.

Group 1

Plates (plates and platters)

This group contains shallow vessels on a low foot. The form is fairly rare and in the western provinces is mostly limited to the 1st century.

KROŽNIKI / *PLATES*

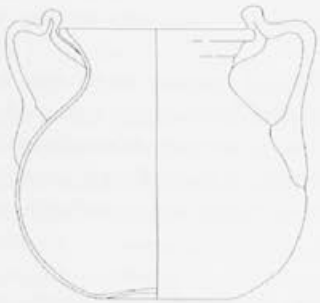
SKODELICE / *BOWLS*

ČAŠE / *CUPS*

ZAJEMALKE / *LADLES*

VRČI / *JUGS*

STEKLENICE / *BOTTLES*



LONCI / *JARS*

POSODICE ZA OLJA IN DIŠAVE / *COSMETIC VESSELS*

SVETILKE / *LAMPS*

OSTALO / *MISCELLANEOUS*

Sl. 8: Skupine steklenih izdelkov.

Fig. 8: The groups of glass products.

Skupina 2
Skodelice (skodelice in skodele ali sklede)
Plitve, odprte steklene posode, katerih širina je vedno večja od višine, kar je pomembno tudi pri ločevanju oblik na čaše in skodelice. Skupina je obsežna, saj je repertoar oblik izredno pester predvsem v 1. stoletju. V teku 2. stoletja je opaziti močan upad števila oblik, dokler jih v pozni rimski dobi ne ostane le še nekaj.

Skupina 3
Čaše (čaše, čaše na nogi in kozarci)
Ta dokaj obsežna skupina zajema steklene posode, ki so služile za pitje. Nekateri ločujejo to skupino izdelkov na visoke čaše (angl. *beakers*), ki so vedno višje kot širše, in čaše (angl. *cups*), ki so skoraj enako visoke kot široke. Ker pri nas tako detajlno poimenovanje ni jasno ločeno in obstajajo razlike v razumevanju pomena izrazov čaša, kozarec ali kupa, smo se odločili vse posode za pitje združiti v skupino čaše.

Skupina 4
Zajemalke
Zbrani so stekleni izdelki za zajemanje tekočin z dolgim pokončnim ali vodoravnim ročajem. Deljeni so v dve podskupini.

Skupina 5
Vrči
V to skupino so uvrščene vse tiste enoročajne in dvoročajne steklene posode, ki imajo dno izrazito ožje od največjega oboda ostenja in vse, ki imajo ustje oblikovano v izliv. Služile so kot namizno posodje, za serviranje različnih tekočin.

Skupina 6
Steklenice (steklenice in steklenice z ročaji)
Širša skupina shrambenega posodja, zbrane so steklenice vseh oblik, z ročaji in brez njih. Tu je ponovno potrebno opozoriti, da ponekod poimensko ločujejo steklenice in steklenice z ročaji, kar je pri nas zaradi skupnega izraza steklenica težje.

Skupina 7
Lonci (shrambene posode in žare)
Posode četverokotne ali kroglaste oblike, s kratkim vratom ali brez njega, ostenje skoraj direktno preide v široko ustje. Služile so za shranjevanje živil in kot žare v grobovih.

Skupina 8
Posodice za olja in dišave
Širša skupina posod, kamor so uvrščene vse miniaturne posodice, stekleničke kvadratne oblike z dolgim vratom (Merkurjeve stekleničke), stekleničke za uporabo v kopališčih in številni balzamariji.

Group 2
Cups and bowls (cups and dishes or bowls)
Group 2 comprises shallow, open glass vessels, whose width is always greater than the height, which is also important in distinguishing the various forms among cups and small bowls. The group is extensive, as the repertory of form is exceptionally varied, particularly in the 1st century. A severe decline in the number of forms can be seen in the 2nd century. By the late Roman period the number of forms is limited to a few examples.

Group 3
Beakers (beakers, footed goblets, and jars)
This somewhat extensive group encompasses glass vessels used for drinking. Some divide this group of products into tall glasses (beakers), which are always taller than wide, and jars (tumblers), which are almost equally tall and wide. Because detailed terminology is not clearly distinguished in Slovenian, and various understandings exist for the meanings of beaker, goblet, and jar, we have decided to unite all vessels for drinking into the beaker group.

Group 4
Ladles
The products in this group were used to scoop liquids with long oblique or horizontal handles. They are divided into two sub-groups.

Group 5
Jugs
These include all types of single and double handled glass vessels that have a base that is significantly narrower than the widest circumference of the walls and all those whose rim is formed into a mouth for pouring. They served as tableware for various liquids.

Group 6
Bottles (flasks and bottles with a handle)
A broad group of storage vessels, which includes flasks of all shapes, with or without a handle. It is again necessary to warn that although flasks and bottle-flagons are distinguished in other areas of Roman world, the commonly used Slovene expression "*steklenica*", often makes distinctions between flasks and bottle-flagons in the Slovene material impossible.

Group 7
Jars (storage vessels and urns)
These group comprises vessels of square or globular form, without a neck or with a short neck, the walls almost directly enter into the wide mouth. They served for food storage and grave urns.

Skupina 9
Svetilke
Vse steklene posodice, ki so jih predvsem v pozno rimski dobi uporabljali za osvetljavo.

Skupina 10
Ostalo (pikside, kapalke, pivski rogovi, mešalne palčke)
V zadnjo skupino so uvrščeni izdelki različnih oblik, ki se pojavljajo le redko. Sem sodijo npr. kapalke v obliki ptic, pivski rogovi, lijaki, pikside in različne mešalne palčke.

OBRAZLOŽITEV KATALOGA IN LEGENDA

V katalogu predstavljene najdbe so najprej deljene v tri osnovne skupine glede na steklarsko tehniko, s pomočjo katere je bila posoda izdelana. Prvo skupino tvorijo posode, izdelane v kalupu, sledijo v kalup pihane in prosto pihane posode. Skupine oblik in njihove različice si sledijo v enakem zaporedju, tako da se npr. krožniki v skupini ulitih izdelkov pojavljajo z različico 1.1.1. in nadaljujejo v skupini prosto pihanih izdelkov s podskupino in različico 1.2.1.

Pri opredelitvi forme smo v oklepaju dodali samo opredelitev oblike po Isingsovi, če le-ta obstaja, ostalih pa ne. Nekatere novejše opredelitve oblik so omenjene v komentarju, če je bilo to potrebno.

Značilnosti oblik so obrazložene v drobnem tisku s predstavitvijo oblikovanja ustij, dnov in ostalih podrobnosti, ki opredeljujejo posamezne različice in na osnovi katerih smo se odločili za opredelitve določene oblike.

Datacije so, kjer je mogoče, opredeljene na osnovi datiranih kontekstov s slovenskih najdišč, drugače pa na osnovi primerjav z najdbami izven našega prostora.

Sledi seznam najdb, ki smo jih opredelili v obravnavano skupino oziroma obliko, s podatki o merah, hrambi in objavah. Posebej so navedene primerjave oblik izven našega prostora.

V komentarju so predstavljene širše značilnosti posameznih oblik in različic, primerjave in razlage oblik z najdišč po Sloveniji in v svetu ter obsežnejše utemeljitve časovnih opredelitev. Risbe gradiva na slikah so izdelane v merilu 1:3, na preglednicah oblik pa ni merila.

Group 8
Vessels for oil and perfume/cosmetics
This is a broad group of vessels, including all miniature vessels, cylindrical long-necked flasks (Mercury flasks), flasks for use in baths, and numerous balsamaria.

Group 9
Lamps
This group consists of all glass vessels that were primarily used in the late Roman period for lighting.

Group 10
Miscellaneous (pyxides, unguentaria, horns, mixing rods)
The last group consists of products of various forms that appear only rarely. We have made distinctions among unguentaria in the form of birds, beer horns, funnel-shaped unguentaria, pyxides, and various mixing rods.

EXPLANATION OF THE CATALOGUE AND CAPTIONS

The finds presented in the catalogue are first divided into three basic groups that reflects the technique used in producing the vessel. The first group consists of vessels made in a mold, followed by those blown into a mold, and free-blown vessels. Within the technique classifications, the vessels are grouped by form and further subdivided into variations of the forms. For examples, molded dishes are placed under variant 1.1.1., while free-blown dishes are placed under sub-group and variant 1.2.1.

In the determination of the form, we have added in parentheses the form as classified by Isings if it exists. Several more recent determinations of form are mentioned in the commentary, if this was considered necessary.

The characteristics of the form are explained in fine print, citing the form of the rim, base, and other details that determine individual variants, which served as the basis for classification.

Where possible, the dating was carried out on the basis of dated contexts from Slovenian sites, and otherwise on the basis of analogies with finds beyond this area.

A list of the finds follows, arranged in the above groups or forms, with metric data, the current location, and publication. Analogies of form from outside Slovenia are cited separately.

The commentary presents the general characteristics of individual forms and variants, analogies and comparisons of forms from sites in Slovenia and throughout Europe, as well as more extensive bases for the chronological determinations. The drawings of the material were made at a 1:3 scale, while the tables of forms are not to scale.

LEGENDA

Oznake skupin, podskupin in njihovih različic:

1. skupina
1.1. podskupina
1.2.1. oblika

Gr.	grob
GN	gomilna najdba
ZN	zakladna najdba
NN	naselbinska najdba
PN	posamična najdba

Mere

Viš.	višina
Pr. ustja	premer ustja
Najv. obseg	največji obseg
Pr. noge	premer dna ali noge
Vel.	velikost odlomka (višina x širina)

SYMBOLS AND ABBREVIATIONS

Symbols for groups, sub-groups, and their variants

1. group
1.1. sub-group
1.2.1. form

gr.	grave
TF	tumulus find
HF	hoard find
SF	settlement find
IF	individual find

Measurements

ht.	height
dia. rim	rim diameter
gr. circ.	greatest circumference
dia. base	diameter of the base or foot
dim.	size of the fragment (height x width)

Kratice muzejev in zavodov, v katerih hranijo gradivo / Abbreviations for the museums and institutions where the material is store:

BM	Belokranjski muzej / Museum of White Carniola, Metlika
DM	Dolenjski muzej / Museum of Lower Carniola, Novo mesto
FF	Oddelek za arheologijo Filozofske fakultete Univerze v Ljubljani / Department of Archaeology, Faculty of Arts, University of Ljubljana
GM	Goriški muzej / Museum of Nova Gorica, Nova Gorica
GMK	Gorenjski muzej / Museum of Upper Carniola, Kranj
KHMW	Umetnostnozgodovinski muzej Dunaj / Kunsthistorisches Museum Wien, Austria
KPM	Koroški pokrajinski muzej / Museum of Carinthia, Slovenj Gradec
LMJ	Deželni muzej Joanneum / Landesmuseum Joanneum Graz, Austria
NHMW	Prirodoslovni muzej Dunaj / Naturhistorisches Museum Wien, Austria
NMP	Notranjski muzej / Museum of Inner Carniola, Postojna
NMS	Narodni muzej Slovenije / National Museum of Slovenia, Ljubljana
PMB	Posavski muzej / Museum of the Sava Basin, Brežice
PMC	Pokrajinski muzej / Regional Museum, Celje
PMK	Pokrajinski muzej / Regional Museum, Koper
PMMb	Pokrajinski muzej / Regional Museum, Maribor
PMMS	Pokrajinski muzej / Regional Museum, Murska Sobota
PMP	Pokrajinski muzej / Regional Museum, Ptuj
PMPi	Pomorski muzej »Sergej Mašera« / Maritime Museum, Piran

Zavod za varstvo kulturne dediščine Republike Slovenije z enotami: / Institute for Protection of the Cultural Heritage of Slovenia with Branches:

ZVKD Ce	OE Celje
ZVKD Lj	OE Ljubljana
ZVKD Mb	OE Maribor
ZVKD NG	OE Nova Gorica
ZVKD NM	OE Novo mesto
ZVKD Pi	OE Piran

IZDELKI, ULITI V KALUP

OPIS TEHNIKE

Vključitev helenističnih držav v okvir rimske države v 2. in 1. st. pr. n. š. je omogočila pogoje, v katerih se je steklarstvo razvilo in razcvetelo v eno najmočnejših industrij rimskega imperija. Helenistični mojstri so imeli v začetnem razvoju glavno vlogo, postopno pa se je razvila samosvoja in samostojna obrt, jasno ločena od zgodnjih helenističnih vplivov. Mnoge helenistične tehnike so rimski steklarji prevzeli in jih izboljšali, včasih poenostavili ali dopolnili z rezultati svojih izkušenj (Grose 1991, 185, 241).

Prve vrste izdelkov so tudi v rimski steklarski obrti še vedno nastajale z ulivanjem. S tem izrazom so zajete vse tehnike, ki vključujejo toplotno obdelavo stekla in uporabo enodelnih odprtih kalupov, večdelnih zaprtih kalupov in kalupov za upogibanje steklenih diskov (gl. npr. Grose 1984). Kalupi so bili izdelani iz različnih materialov, npr. kamna, žgane gline, kovine ali celo lesa. Tehniko ulivanja so že od 3. st. pr. n. š. dalje uporabljali steklarji helenistične dobe.

Ulivanje v enodelne odprte kalupe - na ta način so nastajale steklene geme, žigi, obloge, stekleni okraski ipd. Vroče steklo so vlili v ogret kalup in ga z orodjem valjali in stiskali, dokler se model ni povsem zapolnil. Po ohlajanju so izdelek obrusili in zloščili.

Ulivanje v zaprte večdelne kalupe - ta način so uporabljali pri izdelavi mozaičnih in enobarvnih izdelkov. Pri mozaičnih izdelkih so pripravljene večbarvne steklene ploščice položili po notranji strani kalupa in nato nanje položili gornji del kalupa. Vse skupaj so potisnili v peč, da so se ploščice zlile. Po ohladitvi so posodo dodelali z brušenjem oziroma glajenjem na stružnici. Pri enobarvnih izdelkih so namesto barvnih ploščic prostor med obema kalupoma zapolnili s koščki stekla, steklenimi paličkami. Med segrevanjem so nato dodajali koščke stekla ali staljeno steklo, da se je kalup popolnoma zapolnil.

Posebno skupino, izdelano v večdelnih kalupih, tvorijo enobarvne posode intenzivnih barv, ki s svojimi profili posnemajo sočasno aretinsko keramiko in srebrno posodje julijsko-klavdijske dobe (Grose 1991, 2). Po ulivanju in ohlajanju so bile obrušene in dodelane na stružnici, da so dobili željene izrazito profilirane forme. Ti izdelki so samostojen proizvod rimske steklarske obrti oziroma njenih mojstrov (Grose 1989, 254).

Uvijanje steklenih diskov preko kalupa - postopek zahteva dve stopnji dela. Najprej so pripravili ploščat steklen disk iz enobarvnega ali večbarvnega stekla. Mozaični je bil sestavljen iz večbarvnih ploščic ali paličk.

CAST PRODUCTS

DESCRIPTION OF THE TECHNIQUE

The inclusion of the Hellenistic states into the framework of the Roman state in the 2nd and 1st centuries BC enabled conditions under which glass working developed and flourished into one of the most powerful industries of the Roman Empire. The Hellenistic craftsmen played a major role in the initial development, and gradually an independent and autonomous industry developed, clearly distinguished from the early Hellenistic influences. The Roman glass-workers took over many Hellenistic techniques and improved them, sometimes simplifying or supplementing them according to the results of their own experience (Grose 1991, 185, 241).

The first types of products in the Roman glass-working craft were created by casting. This technique encompasses all forms that include working heated glass and the use of one-part open moulds, multi-part closed moulds, and moulds for curving glass discs (see Grose 1984). The moulds were made from various materials, such as stone, fired clay, metal, or even wood. The technique of casting was used from the 3rd century BC onwards by the glass-workers of the Hellenistic period.

Casting in a one-part open mould - This was used to produce glass gems, seals, linings, glass decorations, et cetera. Molten glass was poured into a heated mould, then rolled and pressed with a tool to completely fill the model. After cooling, the product was ground smooth and polished.

Casting in a closed multi-part mould - This was used in the manufacture of mosaic and single coloured products. Mosaic products were made by placing prepared multicoloured glass lamellas along the inner side of the mould and fitting the upper part of the mould on this. It was all pressed together in the furnace, so that the canes merged. After cooling, the products were completed with burnishing or polishing on a lathe. Single coloured products were made by filling the area between both moulds with fragments of glass, glass canes. While heating, additional pieces of glass or molten glass were added to fill the mould entirely.

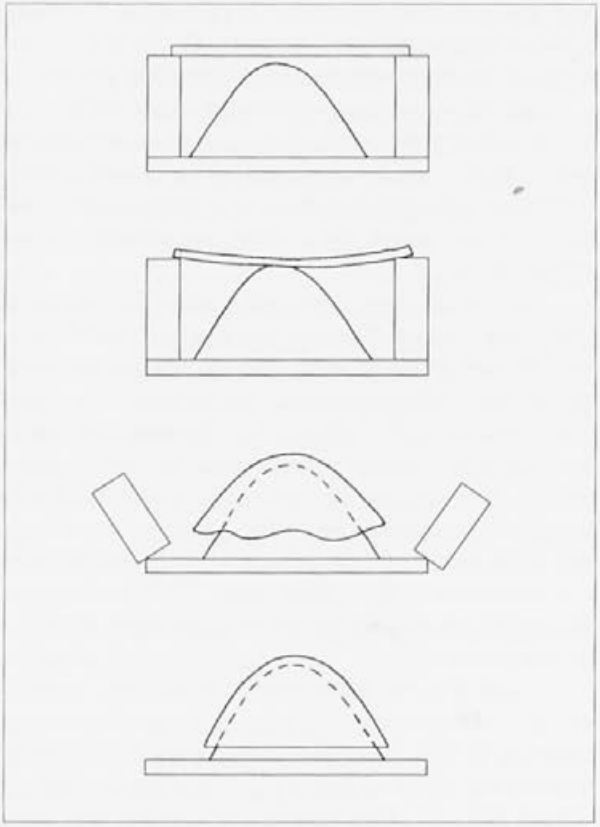
A special group manufactured in multi-part moulds consists of single coloured vessels of intensive colour, imitating in their profiles contemporary Arretine pottery and the silver vessels of the Julio-Claudian period (Grose 1991, 2). After casting and cooling, they were burnished or polished on a lathe, so as to acquire the desired profiled form. These vessels were the independent products of the Roman glass-working industries or rather their craftsmen (Grose 1989, 254).

Na robu je bil navadno zaključen s spiralasto stekleno nitjo, ki je držala koščke skupaj. Disk so nato postavili v peč, da se je segrel, se počasi upognil in se oblikoval po kalupu (*skica 2*).

Zaradi tega je ostenje teh posod pri dnu tanjše kot ob ustju. Ohlajeno posodo so nato obrusili na stružnici. Ker je bila ena stran posode izpostavljena vročini in s tem zglajena, so navadno polirali le notranjost. Tudi enostavne enobarvne polkroglaste skodelice so bile največkrat uvite preko kalupa.

Na podoben način so nastale zelo razširjene rebraste skodelice. Postopek izdelave le-teh je zahteval, da so na disk še pred uvijanjem preko kalupa vtisnili okras reber s posebnim orodjem ali kalupom. Tudi tu je po ohlajevanju sledilo brušenje notranjosti posode na stružnici. Sled poliranja se pogosto opazi tudi na obeh straneh ustja. Razpoznavna je v vodoravnih linijah, tankih kot las.

Med ulitimi izdelki posebej izstopajo posode z raznobarvnimi vzorci, nastalimi z mozaično tehniko. Posode iz večbarvnega oziroma mozaičnega stekla so nastajale že v helenističnih delavnicah. Rimski steklarji so močno razširili repertoar vzorcev večbarvnih paličk, barvna lestvica pa je v glavnem ostala enaka (Grose 1989, Fig.



Skica 2: Uvijanje steklenega diska preko kalupa; (po: Cumings 1980).

Text fig. 2: Curving a glass disc over a mould. (From: Cumings 1980)

Curving glass discs over a mould – This process required two phases of work. First a flat glass disc was prepared of single- or multi-coloured glass. Mosaic discs were composed of multicoloured rods or canes. The edges usually ended in a spiral glass thread that held the canes together. The disc was then placed in a furnace to heat up, was slowly curved, and was shaped into the mold (*text fig. 2*).

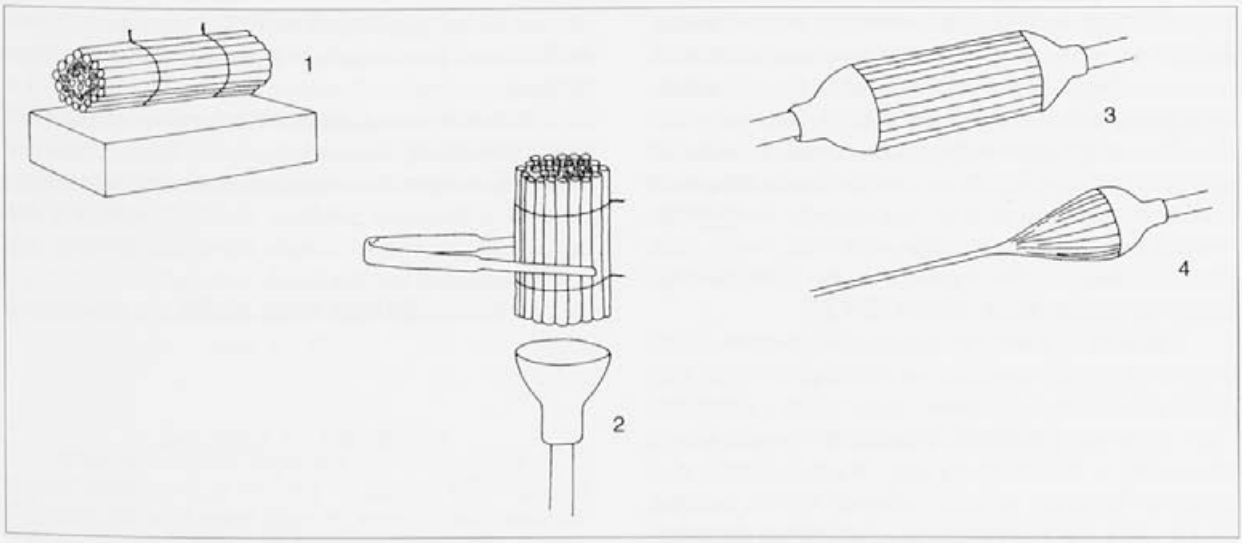
The walls of these vessels are thinner at the base than at the rim due to the production technique. The cooled vessel was polished on a lathe, usually only the interior because the exterior had been subjected to direct heat and smoothed. Simple single coloured hemispherical bowls were most often curved into a mould in this manner.

The widely distributed ribbed bowls were created in a similar manner. The production process required the ribbed decoration be applied to the disc with a special tool or mould before curving it over the mould. After cooling, the interior of the vessel again had to be polished with a lathe. Traces of polishing can often be noted on both sides of the rim and in angles in the form of hair-thin horizontal lines.

Outstanding items among cast products are vessels with multicoloured patterns created in the mosaic technique. Vessels made from multicoloured or mosaic glass had previously been created in the Hellenistic workshops. The Roman glass craftsmen greatly broadened the repertory of patterns of multicoloured canes, while the colour scale essentially remained the same (Grose 1989, Fig. 102, 143); (*text fig.* 3). The dimensions of the plate from which the disc was formed were sometimes considerably larger than for the Hellenistic products, and when onyx vessels were imitated, the disc was composed only of three to four large plates with spiral patterns (Grose 1989, Fig. 125). Such plates were cut from what is known as a "cow-horn". This means that one end of a roll was broadened, with a greater surface, and that it truly did have a horn shape (*text. fig. 4*).

These patterns certainly intermingled every time. In addition to floral (*millefiori*) and marbleized patterns, banded, patchwork, and other composite motifs were also created (*Fig. 9*).

Another special group consists of products with a webbed or lace pattern (*reticella*). The walls of such vessels are composed of transparent or slightly coloured canes, which were wound with thin threads of glass of another colour. The pattern derived directly from the Hellenistic tradition. On the Hellenistic vessels, the pattern wound spirally from the base towards the rim, while the Roman glass-workers placed one rod next to another in straight lines (Grose 1989, 00). The rims of the vessel usually ended in spirally wound glass threads. Then the glass disc was reheated and formed according to the prepared mould.

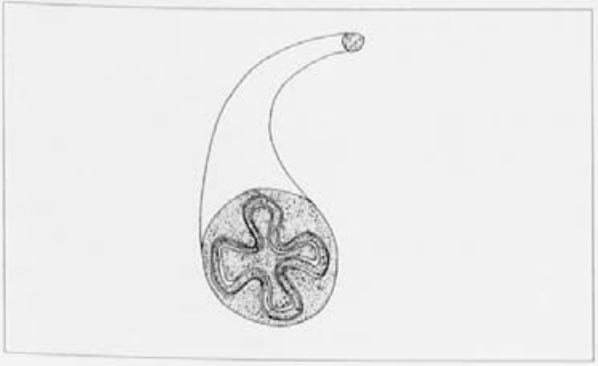


102, 143; *skica 3*). Dimenzija ploščic iz katerih so oblikovali disk, je bila včasih precej večja kot pri helenističnih izdelkih, kadar pa so posnemali posode iz oniksa, je bil disk sestavljen le iz treh do štirih večjih ploščic s spiralastim vzorcem (Grose 1989, Fig. 125). Take ploščice so razrezali iz tako imenovanega kravjega roga (angl. *cowhorn*). To pomeni, da je bil en konec svitka razširjen v večjo površino in je res imel obliko roga (*skica 4*).

Seveda so se ti vzorci sproti dopolnjevali. Poleg cvetnih (*millefiori*) in marmoriranih vzorcev so nastajali še trakasti, kvadratni in drugi sestavljeni motivi (*sl. 9*).

Posebna skupina so tudi izdelki z mrežastim oziroma čipkastim (*reticella*) vzorcem. Ostenje takih posod je sestavljeno iz prozornih ali rahlo obarvanih paličk, ki so ovite s tankimi nitmi drugobarvnega stekla. Motiv ravno tako izvira že iz helenistične tradicije. Pri helenističnih posodah vzorec polžasto raste iz dna proti ustju, rimski steklarji pa so polagali eno paličko poleg druge v ravnih linijah. Ustje posod so navadno zaključili s spiralasto ovito stekleno nitjo in nato stekleni disk s segrevanjem oblikovali po pripravljenem kalupu.

Med luksuzne večbarvne izdelke sodijo tudi posodice z zlatimi trakovi. Njihova posebnost je uporaba tanke zlate folije, stisnjene med dve plasti prozornega stekla. Tako pripravljene ploščice so skupaj z zelenimi, modrimi, rumenimi in belimi sestavili v ploskev. Iz te so z večkratnim



Skica 3: Sestavljanje večbarvnih steklenih paličk (1-2) in raztegovanje, da se vzorec pomanjša (3-4); (po: Moretti 1984).

Text fig. 3: The composition of multicoloured glass rods (1-2), and the process of stretching to reduce the pattern (3-4). (From: Moretti 1985)

Luxurious multicoloured products also include vessels with golden bands. Their special feature is the use of thin gold foil, placed between two layers of transparent glass. Such platelets were placed together with others of green, blue, yellow, and white. The walls of the vessel were formed by multiple bending and twisting. The technique was taken directly from the Hellenistic tradition. The only new elements were the form and bands of dark green (emerald green) glass (Grose 1989, 261).

In describing glass working techniques using casting, the recent theories of Rosemarie Lierke should be mentioned, who argued and proved the use of the potter's wheel in the production of certain glass vessels, such as ribbed bowls, hemispherical bowls from mosaic glass, and others (Lierke 1993; 1996, 55).

For the time being, these theories have not been accepted entirely, as identical products could have been produced in several different ways. Probably we will never be able to claim with certainty that ribbed bowls, for instance, were created only by casting in two-part moulds. The possibility must definitely be allowed that

Skica 4: Tako imenovan »kravji rog« - iz njega so narezali ploščice premera do 10 cm in ostenje posod je bilo sestavljeno le iz štirih ali petih takih ploščic; (po: Grose 1989).

Text fig. 4: The so-called "cow-horn" - from which plates up to 10 cm in diameter were cut, and the walls of vessels were composed only from four or five such plates. (From: Grose 1989)

prepogibanjem in vijuganjem oblikovali ostenje posode. Tehnika je ravno tako prevzeta iz helenistične tradicije, nove so le oblike in trakovi stekla temno zelene (smaragdno zelene) barve (Grose 1989, 261).

Pri opisovanju steklarskih tehnik s pomočjo ulivanja, moramo omeniti tudi novejše teorije Rosemarie Lierke, ki zagovarja in dokazuje uporabo lončarskega vretena pri izdelavi nekaterih steklenih posod, npr. rebrastih skodelic, polkroglastih skodel iz mozaičnega stekla itd. (Lierke 1993; 1996, 55).

Zaenkrat te teorije še niso v celoti sprejete, saj so lahko enaki izdelki nastali na več različnih načinov. Prav zaradi tega verjetno ne bomo mogli nikoli z gotovostjo trditi, da so npr. rebraste skodelice lahko nastale samo z ulivanjem v dvodelne kalupe. Vsekakor moramo dopustiti možnost obstoja različnih tehnik izdelave enakih oblik steklenih posod pred odkritjem pihanja.

Tehnika pi[illegible]a v 1. stoletju prevlada in omogoči proizvodnjo večje količine enakih izdelkov za nižjo, vsem dostopno ceno; zanimanje za obarvane izdelke upade in nastopi moda naravno obarvanih in dekoloriranih posod in tehnika ulivanja počasi zamre.

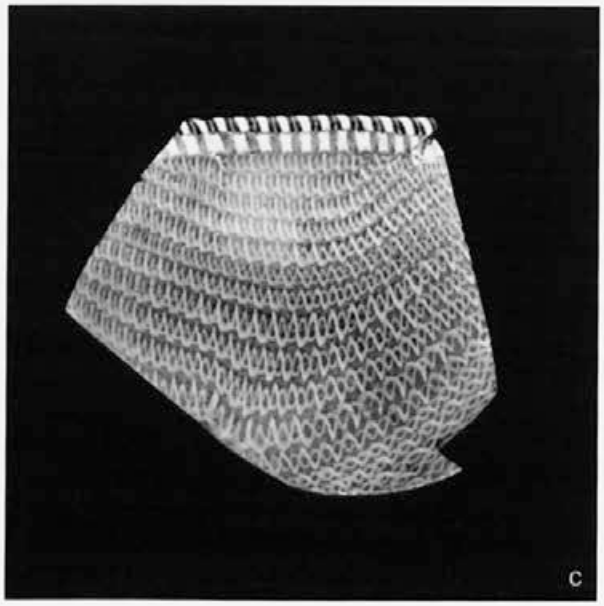
various techniques existed for the production of identical forms of glass vessels before the discovery of glass blowing.

The technique of glass blowing prevailed in the 1st century, enabling the production of a large quantity of identical products for a lower price accessible to all; the interest in coloured products declined, naturally coloured and decoloured vessels came into fashion, and the technique of casting slowly died out.

In the second half of the 1st century, exceptional

Sl. 9: Raznoliki vzorci rimskega mozaičnega stekla: a - marmorirani, b - cvetni, c - mrežasti, d - posnemajoč posode iz oniksa. Polhov Gradec, Narodni muzej Slovenije, Ljubljana (foto: T. Lauko).

Fig. 9: Various patterns of Roman mosaic glass: a - marbled, b - millefiori, c - lace, d - imitation of onyx vessels. Polhov Gradec, Narodni muzej Slovenije, Ljubljana (photo: T. Lauko).



V drugi polovici 1. stoletja nastanejo izjemni izdelki iz namerno razbarvanega (dekoloriranega) stekla, uliti v kalup in okrašeni z brušenjem. Posode visoke kvalitete odražajo okus višjih slojev, ki so v izdelkih iz razbarvanega, povsem prozornega stekla videli nadomestek za dragocene posode iz kamene strele.

PREGLED OBLIK
(*sl. 10-12; 54*)

SKUPINA 1 - KROŽNIKI

1.1.
KROŽNIKI, IZDELANI V KALUPU

1.1.1.
Krožniki z ravnim dnom in izvihanim ustjem (Is 19); (*sl. 10*):

To so uliti izdelki, ustje je navadno rahlo izvihano, dno ravno, na sredini rahlo vboklo, stojni prstan ni oblikovan. Izdelani so iz mozaičnega ali obarvanega stekla.

Datacija: prva polovica 1. st.

Ptuj (NN)
Odlomki iz temno zelenega stekla z rdečimi cvetovi in rumenimi paličkami.
1.1.1. - pr. ustja 17 cm - PMP R 7381.
Lit.: Korošec 1982, sl. 1-4.
Formin (NN)
Odlomek iz temno zelenega stekla z rdečimi, rumenimi in zelenimi paličkami.
1.1.1. - pr. ustja 28 cm - PMP R 7387.
Lit.: Korošec 1982, 34.

Primerjave: Cool, Price 1995, No. 200.

Komentar:
Odlomki krožnikov iz mozaičnega stekla iz Formina in Petovione nimajo povsem ustreznih paralel med gradivom s slovenskih najdišč. V večini primerov gre le za odlomke, ki jim težko določimo vse detajle v obliki.

Primerjave s širšega prostora najdemo med gradivom Štalenske gore, Cose, Vindonisse in Colchestra (Cool, Price 1995, 34). Izdelki so pogosti v avgustejskih do klavdijskih in zgodnje neronijanskih plasteh, potem pa njihova uporaba hitro zamre.

Petovionski odlomek je bil najden v plasti, datirani v prvo polovico 1. stoletja (Korošec 1982, 35).

products were created from deliberately decoloured glass, cast into a mould and decorated with facet-cut ornaments. The high quality vessel reflect the taste of the upper classes, who saw in the decoloured, entirely transparent glass a replacement for valuable vessels made from rock crystal.

REVIEW OF FORMS
(*Figs. 10-12; 54*)

GROUP 1 - PLATES

1.1.
PLATES MADE IN A MOULD

1.1.1.
Plates with a flat base and everted rim (Is 19); (*Fig. 10*):

These are cast products, the rim is usually slightly everted, the base flat, slightly convex in the center, no ring base was formed. They were made from mosaic or coloured glass.

Date: first half of the 1st century

Ptuj (SF)
Fragments of dark green glass with red flowers and yellow rods.
1.1.1. - dia. rim 17 cm - PMP R 7381
Lit.: Korošec 1982, Fig. 1-4.
Formin (SF)
A fragment of dark green glass with red, yellow, and green rods.
1.1.1. - dia. rim 28 cm - PMP R 7387.
Lit.: Korošec 1982, 34.

Analogies: Cool, Price 1995, no. 200.

Comments:
The fragments of dishes made of mosaic glass from Formin and Poetovio do not have entirely adequate parallels among the material from Slovenian sites. In most cases, these are merely fragments and it is difficult to distinguish details of the form.

Analogies in the broader region can be found among the material from Magdalensberg, Cosa, Vindonissa and Colchester (Cool, Price 1995, 34). These vessels are found frequently in Augustan to Claudian and early Neronian layers, declining rapidly thereafter.

The Poetovian fragment was discovered in a stratum dated to the first half of the 1st century (Korošec 1982, 35).

SKUPINA 2 - SKODELICE

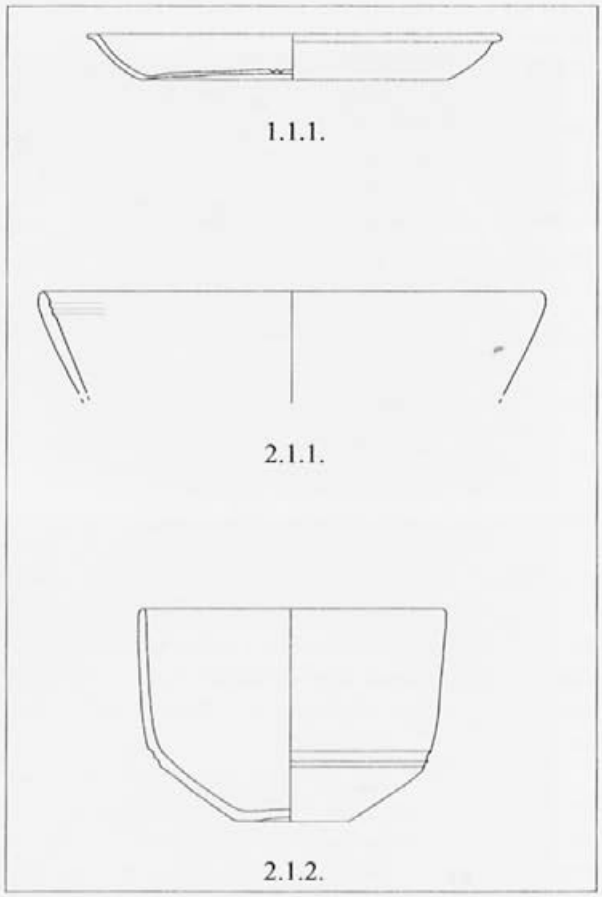
2.1.
SKODELICE, IZDELANE V KALUPU

2.1.1.
Konične skodelice s kanelurami pod ustjem (*sl. 10*):

To so izdelki, nastali z uvijanjem preko kalupa, zato je debelina ostenja pri dnu tanjša kot pri ustju. Ostenje ravno prehaja v zaokroženo ustje. Zunanjost in notranjost posod je zbrušena, dno je zaokroženo, na notranji strani ostenja je okras kanelur v pasovih.

Datacija: druga pol. 2. st. pr. n. š. - 1. st. pr. n. š.

Razdrto - Preval (PN)
Odlomek ustja jantarno rjave barve, pod ustjem na notranji strani dve kaneluri.
2.1.1. - pr. ustja 24 cm - NMP R 3806.
Lit.: neobjavljeno.



Sl. 10: Oblike posod, izdelanih v kalupu (1.1.1.: Korošec 1982, 34; 2.1.1.: Razdrto, neobjavljeno; 2.1.2.: Petru 1976, t. 11: 5). M. = 1:3.

Fig. 10: Forms of cast vessels (1.1.1.: Korošec 1982, 34; 2.1.1: Razdrto, unpublished; 2.1.2.: Petru 1976, Pl. 11: 5). Scale = 1:3.

GROUP 2 - BOWLS

2.1.
BOWLS MADE IN A MOULD

2.1.1.
Conical bowls with channels under the rim (*Fig. 10*):

These products were created by curving over a mould, and thus the walls are thinner towards the back than at the rim. The walls have a direct transition into a rounded rim. The exterior and interior are burnished, the base is rounded, and wheel-cut lines decorate the inner side of the wall.

Date: second half of the 2nd cent. BC - 1st cent. BC

Razdrto - Preval (IF)
A rim fragment of amber brown, two wheel-cut lines below the rim on the inner side.
2.1.1. - dia. rim 24 cm - NMP R 3806.
Lit.: unpublished.

Analogies: Oliver 1967, Fig. 8, 9; Weinberg 1970, 20: nos. 3, 6, 9; Grose 1979, 56.

Comments:
The fragment of a conical bowl was made of yellow-brown or amber coloured glass. The rim is rounded and on the inner side, just below it, are two somewhat deep wheel-cut lines. The walls become thinner towards the base. The bowl can be compared to a group of Hellenistic bowls made in a two-part mould and then polished on a lathe. It was one of the first forms that the Hellenic craftsmen mass-produced in large quantities (Grose 1979, 55-57). The only decoration on these vessels are two or three deep horizontal grooves on the inner side of the walls, in several cases also on the exterior side, around the base. The scale of colour ranges from brownish-yellow or amber brown, through olive green and transparent examples.

Bowls of the 2.1.1. group, or group A according to the classification of Grose (1979, 56) are known from the 2nd and 1st centuries BC. In the earliest contexts (150-100 BC), they were found at the Athenian Agora (Weinberg 1961, 389, Fig. 3:11-12), while in 1st century BC strata they are known from Jerusalem, Delos, Cosa, and Volterra (Grose 1979, 58). Their production probably ceases sometime in the mid 1st century BC.

2.1.2.
Bowls with slightly out-turned walls and horizontal lines on the walls (*Fig. 10*):

The vessels were made in a mould. They outside were polished on a lathe. The upper part of the walls is everted and goes straight into the rim. The walls are decorated

Primerjave: Oliver 1967, Fig. 8,9; Weinberg 1970, 20: No. 3, 6, 9; Grose 1979, 56.

Komentar:
Odlomek konične skodelice je iz rjavo-rumeno oziroma jantarno obarvanega stekla. Ustje je zaobljeno in na notranji strani sta tik pod njim dve dokaj globoki kaneluri. Debelina ostenja se proti dnu tanjša. Skodelico lahko primerjamo s skupino helenističnih skodel, ki so bile delane v dvodelnem kalupu in nato brušene na stružnici. Gre za eno prvih oblik, ki so jih helenistične delavnice proizvajale serijsko in v večjih količinah (Grose 1979, 55-57). Edini okras na teh posodah sta dve ali tri globlje horizontalne kanelure na notranji strani ostenja, v nekaterih primerih tudi na zunanji strani, okrog dna. Barvna lestvica obsega rjavo-rumene oziroma jantarno rjave, olivno zelene in prozorne izdelke.

Skodele 2.1.1. ali skupine A po razvrstitvi Groseja (1979, 56), so znane iz 2. in 1. st. pr. n. š. V najstarejših kontekstih (150-100 pr. n. š.) so bile najdene v atenski Agori (Weinberg 1961, 389, Fig. 3: 11-12), v slojih 1. st. pr. n. š. pa so znane iz Jeruzalema, Delosa, Cose, Volterre (Grose 1979, 58). Njihova proizvodnja preneha verjetno nekje sredi 1. st. pr. n. š.

2.1.2.
Skodelice z navzven nagnjenim ostenjem in s horizontalnimi linijami na ostenju (*sl. 10*):

Posode so nastale v kalupu. Notranjščina je polirana na stružnici. Gornji del ostenja je nagnjen in ravno prehaja v ustje. Ostenje krasi pas brušenih linij. Dno je rahlo vboklo, stojni prstan ni posebej oblikovan.

Datacija: prva polovica 1. st.

Polhov Gradec (gr.)
Skodelica iz temno rdečega stekla, dno rahlo vboklo, ostenje nagnjeno navzven, pas brušenih linij na klekastem prehodu ostenja v dno. Na zunanji strani sledi brušenja.
2.1.2. - viš. 8,5 cm; pr. ustja 10 cm - NMS R 6987.
Lit.: Ložar 1938, sl. 16.
Polhov Gradec (gr.)
Skodelica iz temno rdečega stekla, dno rahlo vboklo, ostenje nagnjeno navzven, pas brušenih linij na klekastem prehodu ostenja v dno. Na zunanji strani sledi brušenja.
2.1.2. - viš. 8,5 cm; pr. ustja 10 cm - NMS R 6986.
Lit.: Ložar 1938, sl. 16.

Primerjave: nepoznane.

Komentar:
Skodelici med objavljenim gradivom zaenkrat nimata ustreznih primerjav. Te vrste posod so navadno izdelovali v dvodelnih kalupih, nato so bile na zunanji in notranji strani zglajene oziroma zbrušene; sledovi brušenja in

with a zone of wheel-cut lines. The base is gently concave, without a base ring.

Date: first half of the 1st century

Polhov Gradec (gr.)
A bowl of dark red glass, the base gently concave, the walls everted, a band of wheel-cut lines at the curved transition from the walls to the base. Traces of polishing on the exterior.
2.1.2. - ht. 8.5 cm; dia. rim 10 cm - NMS R 6987.
Lit.: Ložar 1938, Fig. 16.
Polhov Gradec (gr.)
A bowl of dark red glass, the base gently concave, the walls everted, a band of wheel-cut lines at the curved transition from the walls to the base. Traces of polishing on the exterior.
2.1.2. - ht. 8.5 cm; dia. rim 10 cm - NMS R6986.
Lit.: Ložar 1938, Fig. 16.

Analogies: none indetified.

Comments:
The bowls do not have any corresponding analogies among published material. Such vessels were usually made in two-part moulds, and were then polished or ground on the outer and inner sides; traces of grinding and treatment on a lathe are visible on both bowls from Polhov Gradec.

The bowls were probably part of a grave and are dated to the first half or the middle of the 1st century according to other finds from the cemetery in Polhov Gradec (information from D. Božič; see also Božič 2003).

2.1.3.
Hemispherical bowls (Is 1); (*Fig. 11*):

Simple hemispherical vessels were made in open or closed moulds, or were curved over a mould. The walls merge directly into the rim, the base is flat or gently concave. They were made from mosaic or strongly-coloured glass, rarely also from blue-green glass.

Date: first half of the 1st century

Polhov Gradec (gr.)
A fragment of rim and wall with a lace pattern of transparent and white glass, the rim was made of braided white and brown glass.
2.1.3. - dia. rim 17 cm - NMS R 6988a.
Lit.: Ložar 1938, Fig. 17; Petru 1976, Pl. 11: 11.
Polhov Gradec (gr.)
A fragment with a lace pattern of clear and white glass, the rim of braided white and brown glass threads.
2.1.3. - dim. 6 x 8 cm - NMS R 6988b.
Lit.: Ložar 1938, Fig. 17; Petru 1976, Pl. 11: 3.

obdelave na stružnici so vidni na obeh skodelicah iz Polhovega Gradca.

Skodelici izvirata z grobišča in sta datirani na osnovi ostalih najdb v prvo polovico 1. stoletja (podatek D. Božič; Božič 2003).

2.1.3.
Polkroglaste skodelice (Is 1); (*sl. 11*):

Enostavne polkroglaste posode so nastale v odprtih ali zaprtih kalupih oziroma so bile uvite preko kalupa. Ostenje ravno prehaja v ustje, dno je ravno ali rahlo vboklo. Izdelane so iz mozaičnega ali intenzivno obarvanega stekla, redko tudi iz modro-zelenkastega.

Datacija: začetek 1. st.

Polhov Gradec (gr.)
Odlomek ustja in ostenja z mrežastim vzorcem iz prozorne in bele steklene mase, ustje je iz prepletenih belih in rjavih niti.
2.1.3. - pr. ustja 17 cm - NMS R 6988a.
Lit.: Ložar 1938, sl. 17; Petru 1976, t. 11: 11.
Polhov Gradec (gr.)
Odlomek z mrežastim vzorcem iz prozorne in bele steklene mase, ustje je iz prepletenih belih in rjavih niti.
2.1.3. - vel. 6 x 8 cm - NMS R 6988b.
Lit.: Ložar 1938, sl. 17; Petru 1976, t. 11: 3.

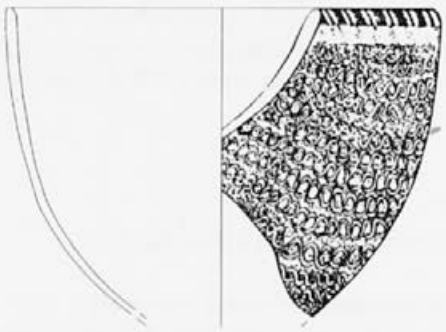
Analogies: Berger 1960, Pl. 1: 4, 5; Grose 1984, Fig. 6, 420: 398-401; Harden 1968, Fig. 18-19; Vitrum 1990, no. 59.

Comments:
The first products with lace patterns (*reticella*) were found in a group of glass vessels from Canossa in Italy (Harden 1968, 27, Fig. 18, 19; 31, Pl. II) from the 3rd century BC, and among the cargo of a shipwreck from Antikythera (Weinberg 1965, 38) from the 1st century BC. In his comparison of closed units with these products, Harden concluded that vessels of mosaic glass with lace patterns were produced from as early as the 3rd century BC onwards (1968, 37, 43).

The Roman glass workers manufactured vessels with lace decoration from the end of the 1st century BC onwards. Their products were somewhat different from the Hellenistic ones, as they placed glass rods next to one another to form a flat disc, which was then reheated and curved over a mould. The distribution of these bowls

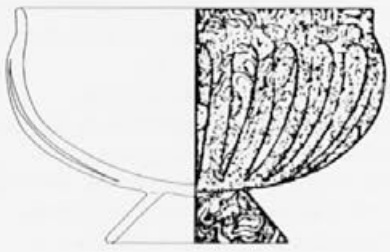
Sl. 11: Oblike posod, izdelanih v kalupu (2.1.3.: Petru 1976, t. 11: 11; 2.1.4.: Petru 1976, t. 11: 8; 2.1.5.: Petru 1976, t. 11: 2; 2.1.6.: Petru 1976, t. 11: 9). M. = 1:3.

Fig. 11: Forms of cast vessels (2.1.3.: Petru 1976, Pl. 11: 11; 2.1.4.: Petru 1976, Pl. 11: 8; 2.1.5.: Petru 1976, Pl. 11: 2; 2.1.6.: Petru 1976, Pl. 11: 9). Scale = 1:3.



2.1.3.

2.1.4.



2.1.5.

2.1.6.

Primerjave: Berger 1960, Taf. 1: 4, 5; Grose 1984, Fig. 6, 420: 398-401; Harden 1968, Fig. 18-19; Vitrum 1990, No. 59.

Komentar:
Prve izdelke z mrežastim oziroma čipkastim (*reticella*) vzorcem najdemo v skupini steklenih posod iz Canosse v Italiji (Harden 1968, 27, Fig. 18, 19; 31, Pl. II;) iz 3. st. pr. n. š. in med gradivom tovora ladje iz Antikythere (Weinberg 1965, 38) iz 1. st. pr. n. š. Harden v svoji primerjavi zaključenih celot s temi izdelki ugotavlja, da so posode iz mozaičnega stekla z mrežastim vzorcem izdelovali že od 3. st. pr. n. š. dalje (1968, 37, 43).

Rimski steklarji proizvajajo posode z mrežastim okrasom od konca 1. st. pr. n. š. dalje. Njihova izdelava je nekoliko drugačna od helenističnih, saj polagajo steklene paličice drugo ob drugo in oblikujejo ploščat disk, ki je nato segret in uvit preko kalupa. Razprostranjenost teh skodel je omejena na območje Italije in njenih zahodnih provinc. Njihov izvor zato pripisujejo italskim delavnicam, proizvodnja traja le kratek čas in je značilna za avgustejsko obdobje (Grose 1989, 253). V celoti ohranjenih posod skoraj ni, najbolje sta ohranjeni posodi, ki jih hranita muzeja v Rimu in Corningu (Grose 1989, 253, Fig. 133, 134).

Polkroglasti skodelici z mrežastim vzorcem sta pri nas zaenkrat znani le z grobišča v Polhovem Gradcu. Obe sta le delno ohranjeni. Izdelani sta iz prozornega stekla z belimi nitmi, ustje je posebej dodano in izdelano iz steklenega traku, prepletenega v beli in rjavo-rumeni barvi.

2.1.4.
Rebraste skodelice (Is 3); (*sl. 11*):

To vrsto izdelkov so najverjetneje izdelovali z uvijanjem pripravljenega diska preko kalupa. Okras reber je bil narejen s šablono ali ročno. Ustje je ravno in na vrhu zaokroženo, dno rahlo vboklo. Notranjost so obrusili na stružnici. Izdelane so iz mozaičnega, obarvanega ali modro-zelenkastega stekla.

Datacija: 1. st.

Polhov Gradec (gr.)
Skodelica iz mozaičnega stekla z belim in modrim marmoriranim vzorcem.
2.1.4. - viš. 5,5 cm; pr. dna 9,5 cm - NMS R 6983.
Lit.: Ložar 1938, sl. 14 levo; Petru 1976, t. 11: 8.
Polhov Gradec (gr.)
Rebrasta skodelica iz mozaičnega stekla z marmoriranim vzorcem.
2.1.4. - pogrešana.
Lit.: Ložar 1938, sl. 21.
Razdrto - Preval (NN)
Odlomek skodelice iz mozaičnega stekla z belo-vijoličastim marmoriranim vzorcem.
2.1.4. - NMP R 3001.
Lit.: neobjavljeno.

was limited to the region of Italy and its western provinces. Their source can thus be attributed to Italic workshops, where production continued for only a short time and was characteristic for the Augustan period (Grose 1989, 253). There are almost no entirely preserved vessels, the best preserved being in museums in Rome and Corning, NY (Grose 1989, 253, Fig. 133, 134).

Hemispherical bowls with lace patterns are known in Slovenia only from Polhov Gradec. Both examples are only partially preserved. They were made from clear glass with white threads, while the rim was separately added, made from a glass band braided in white and brownish-yellow.

2.1.4.
Ribbed bowls (Is 3); (*Fig. 11*):

This type of product was probably manufactured by curving a prepared disk over a mould. The ribbed decoration was made with a stencil or by hand. The rim is straight, rounded on the top, the base gently concave. The interior was polished with a lathe. They were made from mosaic, coloured, or blue-green glass.

Date: 1st century

Polhov Gradec (gr.)
A bowl made from mosaic glass with white and blue marble patterns.
2.1.4. - ht. 5.5 cm; dia. base 9.5 cm - NMS R 6983.
Lit.: Ložar 1938, Fig. 14, left; Petru 1976, Pl. 11: 8.
Polhov Gradec (gr.)
A ribbed bowl of mosaic glass with marble patterns.
2.1.4. - Polhov Gradec.
Lit.: Ložar 1938, Fig. 21.
Razdrto - Preval (SF)
Fragment of a bowl of mosaic glass with white-violet marble patterns.
2.1.4. - NMP R 3001.
Lit.: unpublished.

Analogies - bowls made of mosaic glass: Petru 1972, Pl. 21:17; Plesničar 1983, Pl. 3: 12; Berger 1960, Pl. 1: 16-17; 2: 18-21; Goethert-Polaschek 1977, Pl. 3: 186; Fassold 1985, Fig. 7: 1; Follmann-Schulz 1988, Pl. 48: 423; 49: 443, 445; Grose 1989, 415: 285-86; 416: 288-295; Cool, Price 1995, nos. 1-5.

Hrastnik (SF)
Fragment of a rim of dark blue glass.
2.1.4. - ZVKD Ce.
Lit.: unpublished.
Hrastnik (SF)
Fragment of a rim of amber glass.
2.1.4. - ZVKD Ce.
Lit.: unpublished.
Razdrto - Preval (SF)
Part of a rim of dark blue glass.
2.1.4. - NMP R 3274.
Lit.: unpublished.

Primerjave - skodelice iz mozaičnega stekla: Petru 1972, t. 21: 17; Plesničar Gec 1983, t. 3: 12; Berger 1960, Taf. 1: 16-17; 2: 18-21; Goethert-Polaschek 1977, Taf. 3: 186; Fassold 1985, Abb. 7: 1; Follmann-Schulz 1988, Taf. 48: 423; 49: 443, 445; Grose 1989, 415: 285-86; 416: 288-295; Cool, Price 1995, No. 1-5;

Hrastnik (NN)
Odlomek ustja iz temno modrega stekla.
2.1.4. - ZVKD Ce.
Lit.: neobjavljeno.
Hrastnik (NN)
Odlomek ustja iz stekla jantarne barve.
2.1.4. - ZVKD Ce.
Lit.: neobjavljeno.
Razdrto - Preval (NN)
Del ustja iz temno modrega stekla.
2.1.4. - NMP R 3274.
Lit.: neobjavljeno. 7
Ptuj (NN)
Odlomek rebraste skodelice iz temno modrega stekla.
2.1.4. - pr. ustja 12,2 cm - PM Ptuj.
Lit.: Korošec 1982, t. 2: 1.

Primerjave - skodelice iz obarvanega stekla: Plesničar Gec 1972, t. 97: 6; 1983, t. 3: 15; Berger 1960, Taf. 2: 24-27; Fassold 1985, Abb. 8: 3; Cool, Price 1995, No. 7-21.

Cerknica (gr. 1/1974)
Rebrasta skodelica iz zelenkastega stekla.
2.1.4. - viš. 5,6 cm; pr. ustja 12 cm - NMP.
Lit.: Urleb 1984, t. 1: 8.
Cerknica (gr. 1/1974)
Rebrasta skodelica iz zelenkastega stekla.
2.1.4. - viš. 5,6 cm; pr. ustja 12 cm - NMP.
Lit.: Urleb 1984, t. 1: 9.
Petrušnja vas (gr. 6)
Rebrasta skodelica iz zelenkastega stekla.
2.1.4. - viš. 4,4 cm; pr. ustja 12,5 cm - NMS.
Lit.: Petru P. 1969, t. 29: 2
Verdun (gr. 125)
Rebrasta skodelica iz zelenkastega stekla.
2.1.4. - viš. 4,6 cm; pr. ustja 11,5 cm - DM 2168.
Lit.: Breščak 2002, kat. 76/2, 139.
Celje (NN)
Odlomek ustja iz modro-zelenkastega stekla.
2.1.4. - pr. ustja 12 cm - PMC R 21608.
Lit.: Lazar 1993, t. 2: 7.
Celje (NN)
Del ustja iz modro-zelenkastega stekla, ohranjena vertikalna rebra.
2.1.4. - pr. ustja 17,5 cm - PMC R 21778.
Lit.: Lazar 1994, 21, št. 14.
Celje (NN)
Del ustja iz modro-zelenkastega stekla.
2.1.4. - pr. ustja 17,5 cm - PMC R 21779.
Lit.: Lazar 1994, 21, št. 15.
Celje (NN)
Del dna, ohranjena pokončna rebra.
2.1.4. - pr. dna 6 cm - PMC R 21609.
Lit.: Lazar 1993, t. 2: 5.

Ptuj (SF)
Fragment of a ribbed bowl of dark blue glass.
2.1.4. - dia. rim 12.2 cm - PM Ptuj.
Lit.: Korošec 1982, Pl. 2: 1.

Analogies - bowls of coloured glass: Plesničar Gec 1972, Pl. 97:6; 1983, Pl. 3: 15; Berger 1960, Pl. 2: 24-27; Fassold 1985, Fig. 8: 3; Cool, Price 1995, nos. 7-21.

Cerknica (gr. 1/1974)
Ribbed bowl of greenish glass.
2.1.4. - ht. 5.6 cm; dia. rim 12 cm - NMP.
Lit.: Urleb 1984, Pl. 1: 8.
Cerknica (gr. 1/1974)
Ribbed bowl of greenish glass.
2.1.4. - ht. 5.6 cm; dia. rim 12 cm - NMP.
Lit.: Urleb 1984, Pl. 1: 9.
Petrušnja vas (gr. 6)
Ribbed bowl of greenish glass.
2.1.4. - ht. 4.4 cm; dia. rim 12,5 cm - NMS.
Lit.: Petru P. 1969, Pl. 29: 2
Verdun (gr. 125)
Ribbed bowl of greenish glass.
2.1.4. - ht. 4.6 cm; dia. rim 11.5 cm - DM 2168.
Lit.: Breščak 2002, cat. 76/2, 139.
Celje (SF)
Fragment of a rim of blue-green glass.
2.1.4. - dia. rim 12 cm - PMC R 21608.
Lit.: Lazar 1993, Pl. 2: 7.
Celje (SF)
Part of a rim of blue-green glass, vertical rib preserved.
2.1.4. - dia. rim 17.5 cm - PMC R 21778.
Lit.: Lazar 1994, 21, no. 14.
Celje (SF)
Part of a rim of blue-green glass.
2.1.4. - dia. rim 17.5 cm - PMC R 21779.
Lit.: Lazar 1994, 21, no. 15.
Celje (SF)
Part of a base, preserved upright rib.
2.1.4. - dia. base 6 cm - PMC R 21609.
Lit.: Lazar 1993, Pl. 2: 5.
Celje (SF)
Part of a base of a vessel with upright ribs.
2.1.4. - dia. base 5.5 cm - PMC R 16068.
Lit.: unpublished.
Drnovo (IF)
Ribbed bowl of greenish glass.
2.1.4. - ht. 5.6 cm; dia. rim 12.8 cm - NMS R 727.
Lit.: Petru, Petru 1978, Pl. 25: 12.
Dolga vas (IF)
Frgament of a ribbed bowl of greenish glass.
2.1.4. - PMMS.
Lit.: Mikl Curk 1959, Pl. 29: 2.
Ptuj (IF)
Fragment of a rim and wall of blue-green glass.
2.1.4. - PMP R 1410.
Lit.: Šubic 1976, Fig. 7.
Ptuj (SF)
Fragment of a ribbed bowl of blue-green glass.
2.1.4. - dia. rim 13 cm - PMP R 10686.
Lit.: Vomer Gojkovič 1993, Pl. 10: 1.

Celje (NN)
Del dna posode s pokončnimi rebri.
2.1.4. - pr. dna 5,5 cm - PMC R 16068.
Lit.: neobjavljeno.
Drnovo (PN)
Rebrasta skodelica iz zelenkastega stekla.
2.1.4. - viš. 5,6 cm; pr. ustja 12,8 cm - NMS R 727.
Lit.: Petru, Petru 1978, t. 25: 12.
Dolga vas (PN)
Odlomek rebraste skodelice iz zelenkastega stekla.
2.1.4. - PMMS.
Lit.: Mikl Curk 1959, t. 29: 2.
Ptuj (PN)
Odlomek ustja in ostenja iz modro-zelenkastega stekla.
2.1.4. - PMP R 1410.
Lit.: Šubic 1976, sl. 7.
Ptuj (NN)
Odlomek rebraste skodelice iz modro-zelenkastega stekla.
2.1.4. - pr. ustja 13 cm - PMP R 10686.
Lit.: Vomer Gojkovič 1993, t. 10: 1.
Razdrto - Preval (NN)
Del ustja skodelice iz modro-zelenkastega stekla.
2.1.4. - pr. ustja 9,2 cm - NMP.
Lit.: Bavdek 1996, Abb. 10: 5.
Razdrto - Preval (NN)
Odlomek skodelice iz modro-zelenkastega stekla.
2.1.4. - NMP R 2936.
Lit.: neobjavljeno.
Razdrto - Preval (NN)
Odlomek skodelice iz modro-zelenkastega stekla.
2.1.4. - NMP R 3270.
Lit.: neobjavljeno.
Razdrto - Preval (NN)
Odlomek skodelice iz modro-zelenkastega stekla.
2.1.4. - NMP R 3271.
Lit.: neobjavljeno.
Vrhnika (NN)
Spodnji del rebraste skodelice iz modro-zelenkastega stekla.
2.1.4. - pr. dna 15,4 cm - NMS R J19.
Lit.: Horvat 1990, t. 36: 2.
Ljubljana (NN)
Skodelica iz modro-zelenkastega stekla, dno manjka.
2.1.4. - pr. ustja 13 cm - ZVKD Lj.
Lit.: Vičič 1993, t. 3: 24.
Ljubljana (NN)
Skodelica iz modro-zelenkastega stekla, dno manjka.
2.1.4. - pr. ustja 12,9 cm - ZVKD Lj.
Lit.: Vičič 1993, t. 4: 9.
Ljubljana (NN)
Ustje iz modro-zelenkastega stekla.
2.1.4. - pr. ustja 12,4 cm - ZVKD Lj.
Lit.: Vičič 1994, t. 15: 25.

Primerjave - skodelice iz naravno obarvanega stekla: Petru 1972, t. 8: 22; 50:19; 116:10; Plesničar Gec 1972, t. 24: 7; 87:16; Plesničar Gec 1983, t. 3: 11, 13; 9: 1; Damevski 1976, t. 7: 3; Goethert-Polaschek 1977, Taf. 10: 117d; Czurda-Ruth 1979, Taf. 1: 83, 114, 115, 278; Barkóczi 1988, Taf. 3:31; Follmann-Schulz 1988, Taf. 48: 421-31; 49; Biaggio Simona 1991, Tav. 2: 0024, 156, 001; 3: 001, 013; Cool, Price 1995, fig. 2.2-2.6.

Razdrto - Preval (SF)
Part of the rim of a bowl of blue-green glass.
2.1.4. - dia. rim 9.2 cm - NMP.
Lit.: Bavdek 1996, Fig. 10: 5.
Razdrto - Preval (SF)
Fragment of a bowl of blue-green glass.
2.1.4. - NMP R 2936.
Lit.: unpublished.
Razdrto - Preval (SF)
Fragment of a bowl of blue-green glass.
2.1.4. - NMP R 3270.
Lit.: unpublished.
Razdrto - Preval (SF)
Fragment of a bowl of blue-green glass.
2.1.4. - NMP R 3271.
Lit.: unpublished.
Vrhnika (SF)
Lower part of a ribbed bowl of blue-green glass.
2.1.4. - dia. base 15.4 cm - NMS R J19.
Lit.: Horvat 1990, Pl. 36: 2.
Ljubljana (SF)
Bowl of blue-green glass, base missing.
2.1.4. - dia. rim 13 cm - ZVKD Lj.
Lit.: Vičič 1993, Pl. 3: 24.
Ljubljana (SF)
Bowl of blue-green glass, base missing.
2.1.4. - dia. rim 12.9 cm - ZVKD Lj.
Lit.: Vičič 1993, Pl. 4: 9.
Ljubljana (SF)
Rim of blue-green glass.
2.1.4. - dia. rim 12.4 cm - ZVKD Lj.
Lit.: Vičič 1994, Pl. 15: 25.

Analogies - bowls of blue-green glass: Petru 1972, Pl. 8: 22; 50:19; 116:10; Plesničar Gec 1972, Pl. 24: 7; 87:16; Plesničar Gec 1983, Pl. 3: 11, 13; 9: 1; Damevski 1976, Pl. 7: 3; Goethert-Polaschek 1977, Pl. 10: 117d; Czurda-Ruth 1979, Pl. 1: 83, 114, 115, 278; Barkóczi 1988, Pl. 3:31; Follmann-Schulz 1988, Pl. 48: 421-31; 49; Biaggio Simona 1991, Pl. 2: 0024, 156, 001; 3: 001, 013; Cool, Price 1995, Fig. 2.2-2.6.

Comments:
One large group of products consists of ribbed bowls made from mosaic, coloured, and naturally coloured glass. The source of form should be sought in the Syrian-Palestinian workshops, later copied by workshops throughout the Mediterranean and Italy (Grose 1989, 61). Ribbed bowls were the most widespread among all cast products, and the different variations in modeling and colour prove that they were manufactured by numerous workshops (Grose 1984, 29).

The results of excavation at sites in Cosa, the House of Livia in Rome, and Morgantina on Sicily confirm that the Roman glass-workers produced them from as early as the last decades of the 1st century BC onwards (Grose 1977, 22). The multicoloured products were most widely distributed in the first half of the 1st century, while their popularity afterwards slowly declined, and single-coloured bowls in intensive blue, green, and amber colours predominated. In the mid 1st century the fashion

Komentar:

Večja skupina izdelkov so rebraste skodelice, ki so izdelane iz mozaičnega, obarvanega in naravno obarvanega stekla. Izvor oblike moramo iskati v sirijsko-palestinskih delavnicah, posnemajo pa jo nato še delavnice Sredozemlja in Italije (Grose 1989, 61). Rebraste skodelice so med vsemi ulitimi izdelki najbolj razprostranjene in raznolike variacije v izdelavi in barvi dokazujejo, da so jih proizvajale številne delavnice (Grose 1984, 29).

Rezultati izkopavanj na najdiščih v Cosi, Livijini hiši v Rimu in Morgantini na Siciliji potrjujejo, da so jih rimski steklarji izdelovali že od zadnjih desetletij 1. st. pr. n. š. dalje (Grose 1977, 22). Večbarvni izdelki so najbolj razširjeni v prvi polovici 1. stoletja, njihova priljubljenost nato počasi upade in prevladajo enobarvne skodelice v intenzivni modri, zeleni in jantarni barvi. Sredi prvega stoletja pa moda obarvanih izdelkov preneha in uveljavijo se izdelki iz naravno obarvanega stekla. Ponekod se sicer pojavljajo že od avgustejskega časa dalje (Czurda-Ruth 1979, 31), najbolj razširjeni pa so v drugi polovici 1. stoletja. Edino skodelice iz naravno obarvanega stekla so bile resnično v uporabi pri vseh slojih prebivalstva, njihova proizvodnja počasi preneha v flavijskem obdobju.

Bogato paleto različic rebrastih skodelic poznamo iz Polhovega Gradca. Vse so iz mozaičnega stekla, z marmoriranim vzorcem ali vzorcem rož.

Rebrasti skodelici z enostavnim, rahlo vboklim dnom iz Polhovega Gradca (Ložar 1938, 14, 21) in Razdrtega (Preval) imata v slovenskem prostoru največ primerjav med emonskim gradivom (Petru 1972, t. 21: 17; Plesničar Gec 1983, t. 3: 12). Grob 202 iz Emone (Petru 1972, t. 21: 17), ki je datiran na začetek 2. stoletja in ima med pridatki tudi rebrasto skodelico iz mozaičnega stekla, dokazuje, da so bili izdelki iz obarvanega stekla posebej dragoceni in jih zaradi uporabe skozi daljši čas najdemo kot dediščino še v mlajših grobnih celotah. V evropskem prostoru poznamo primerjave s številnih najdišč, med drugim v Colchestru (Cool, Price 1995, No. 1-5), Vindonissi (Berger 1960, Taf. 1: 16-17; 2: 18-21) in Bonnu (Follmann-Schulz 1988, Taf. 48: 423; 49: 443, 445).

Rebraste skodelice iz obarvanega stekla s Ptuja, Hrastnika in Razdrtega so le delno ohranjene in se pojavljajo v modri in rjavo-rumeni oziroma jantarni barvi. Skodelice iz obarvanega stekla so znane tudi v emonskih grobiščih (Petru 1972, t. 117: 6; Plesničar Gec 1972, t. 29: 1) in na prostoru starokrščanskega centra v Emoni (Plesničar Gec 1983, t. 3:15), najdišča v evropskem prostoru so še Colchester, Vindonissa in Kempten.

Količina in raznolikost skodelic iz naravno obarvanega oziroma modro-zelenkastega stekla dokazujeta, da se uporaba razširi in so izdelki dostopni za nižjo ceno, kot so bili unikatni kosi iz mozaičnega in obarvanega stekla. Število najdišč, kjer se pojavljajo ti izdelki, je

for coloured products ceased, and products of naturally coloured glass predominated. While they occasionally appeared from as early as the Augustan period (Czurda-Ruth 1979, 31), they were most widely distributed in the second half of the 1st century. Only bowls of naturally coloured glass were truly in use in all strata of the population, and their production slowly ceased in the Flavian period.

A rich palette of various ribbed bowls is known from Polhov Gradec. All were made from mosaic glass, with marbled or floral patterns.

The best analogies in Slovenia for the ribbed bowls with simple, slightly concave bases from Polhov Gradec (Ložar 1938, 14, 21) and Razdrto (Preval) come from the Emona material (Petru 1972, Pl. 21: 17; Plesničar-Gec 1983, Pl. 3: 12). Grave 202 from Emona (Petru 1972, Pl. 21: 17), which is dated to the beginning of the 2nd century, included a mosaic glass ribbed bowl among the grave goods. Their extended use proves that these products made of coloured glass were particularly valued, and that they can be found throughout a longer period, even in later grave units as heirlooms. Comparisons can be found in the broader European context at numerous sites, such as Colchester (Cool, Price 1995, nos. 1-5), Vindonissa (Berger 1960, Pl. 1: 16-17; 2: 18-21), and Bonn (Follmann-Schulz 1988, Pl. 48: 423; 49: 443, 445).

Ribbed bowls of coloured glass from Ptuj, Hrastnik, and Razdrto are only partially preserved, and appear in blue and brownish-yellow or amber colours. Bowls of coloured glass are also known from the Emona cemeteries (Petru 1972, Pl. 117: 6; Plesničar Gec 1972, Pl. 19: 1), and from the early Christian center in Emona (Plesničar Gec 1983, Pl. 3: 15), while more distant European sites are Colchester, Vindonissa, and Kempten.

The quantity and variety of bowls made of naturally coloured blue-green glass proves that their use spread and that such products were available for a lower price than that of the unique items of mosaic and coloured glass. The number of sites where such products appears is three times greater in comparison to sites of coloured or multicoloured bowls (Lazar 2000, 64).

Numerous variants in the production and form of ribs (shallow, deep, high with a cup-shaped form) indicate various production centers and perhaps also local manufacture (Lazar 1994, 14). The ribs could be densely or thinly arranged, sometimes extending only halfway up the walls, and exceptionally were separately made from glass threads and attached to the walls (Emona, grave 948; Petru 1972, Pl. 72: 6).

The grave units containing such bowls are mostly classified to the second half of the 1st century, while they can still be found exceptionally in the early 2nd century (Lazar 1994, 16).

trikrat večje v primerjavi z najdišči obarvanih in večbarvnih skodelic (Lazar 2000, 64).

Na različne proizvodne centre in morda tudi na lokalne izdelke opozarjajo številne različice v oblikah (plitve, globoke, visoke s čašasto formo) in izdelavi reber (Lazar 1994, 14). Le-ta so gosto ali redko narebrena, ponekod segajo le do polovice ostenja, izjemoma so celo izdelana iz steklenih niti in prilepljena na ostenje (Emona, grob 948 - Petru 1972, t. 72: 6).

Grobne celote, v katerih se pojavljajo te skodelice večinoma sodijo v drugo polovico 1. stoletja, izjemoma jih poznamo še v zgodnjem 2. stoletju (Lazar 1994, 16).

2.1.5.
Rebraste skodelice na nogi z ravnim ustjem (*sl. 11*):

Posode so izdelane na enak način kot prejšnja oblika, le da imajo dodano votlo nogo. Do sedaj so poznane samo različice izdelane iz mozaičnega stekla. Ostenje ravno preide v ustje.

Datacija: prva polovica 1. st.

Polhov Gradec (gr.)
Skodelica iz mozaičnega stekla. Na modri podlagi so cvetovi z rumenim jedrom in belimi krogi.
2.1.5. - viš. 9,2 cm; pr. ustja 14,5 cm - NMS R 6984.
Lit.: Ložar 1938, sl. 12; Petru 1976, t. 11: 2.

Primerjave: Berger 1960, Taf. 2: 22; Stern, Schlick-Nolte 1994, No. 94.

2.1.6.
Rebraste skodelice na nogi z izvihanim ustjem (*sl. 11*):

Posode so izdelane na enak način kot oblika 2.1.4., le da imajo dodano votlo nogo, ustje je izvihano navzven. Do sedaj so poznane samo različice izdelane iz mozaičnega stekla.

Datacija: prva polovica 1. st.

Polhov Gradec (gr.)
Skodelica iz mozaičnega stekla, ustje izvihano. Na jantarno rjavi podlagi so proge modre in bele barve.
2.1.6. - viš. 12,5 cm; pr. ustja 17 cm - NMS R 6985.
Lit.: Ložar 1938, sl. 13; Petru 1976, t. 11: 9.

Primerjave: Grose 1989, 413: 250-255; 414; 415: 275-283; Stern, Schlick-Nolte 1994, Nr. 93; Leyge 1990, 86, nr. 46.

Komentar za obliki 2.1.5. in 2.1.6.:
Oblika skodelice z ravnim ustjem in vzorcem rož 2.1.5. (Ložar 1938, 12) ima paralele v zbirki E. Wolfa (Stern, Schlick-Nolte 1994, Nr. 94) in Vindonissi (Berger 1960, Taf. 2: 22).

Skodelica na nogi z izvihanim ustjem in marmoriranim vzorcem 2.1.6. (Ložar 1938, sl. 12) ima malo

2.1.5.
Ribbed footed bowls with a straight rim (*Fig. 11*):

These vessels were made in the same manner as the previous form, with the addition of a hollow foot. To date only variants made from mosaic glass are known. The walls pass straight into the rim.

Date: first half of the 1st century

Polhov Gradec (gr.)
Bowl of mosaic glass. Blue background, flowers with a yellow center and white circles.
2.1.5. - ht. 9.2 cm; dia. rim 14.5 cm - NMS R 6984.
Lit.: Ložar 1938, Fig. 12; Petru 1976, Pl. 11: 2.

Analogies: Berger 1960, Pl. 2: 22; Stern, Schlick-Nolte 1994, no. 94.

2.1.6.
Ribbed footed bowls with an everted rim (*Fig. 11*):

These vessels were made in the same manner as the previous form (2.1.4.), with the addition of a hollow foot, and the rim was turned outwards. Only variants made of mosaic glass are known to date.

Date: first half of the 1st century

Polhov Gradec (gr.)
Bowl of mosaic glass, out-turned rim. Blue and white stripes on an amber brown background.
2.1.6. - ht. 12.5 cm; dia. rim 17 cm - NMS R 6985.
Lit.: Ložar 1938, Fig. 13; Petru 1976, Pl. 11: 9.

Analogies: Grose 1989, 413: 250-255; 414; 415: 275-283; Stern, Schlick-Nolte 1994, no. 93; Leyge 1990, 86, no. 46.

Comments - forms 2.1.5. and 2.1.6.:
The form of bowl with a straight rim (2.1.5.) and a floral pattern (Ložar 1938, 12) has parallels in the E. Wolf Collection (Stern, Schlick-Nolte 1994, no. 94) and in the material from Vindonissa (Berger 1960, Pl. 2: 22).

Footed bowls with an out-turned rim (2.1.6.) and a marble pattern (Ložar 1938, Fig. 12) have few parallels among the published material. An identical form is known from Autun (*Augustodunum*) in France (Leyge 1990, 86), and the E. Wolf Collection (Stern, Schlick-Nolte 1994, 93), while several fragments are in the museum in Toledo (Grose 1989, 413: 250-255; 415: 275-283). The motif copies patterns on onyx vessels, as the vessel is composed only from five large multicoloured plates (four for the walls, one for the base - see pp. 32).

These vessels, like the other forms (2.1.4.) and mosaic products, were distributed in the first half of the 1st century, and were then supplanted by naturally coloured products.

paralel med objavljenim gradivom. Enaka oblika je znana iz francoskega Autuna (*Augustodunum*) (Leyge 1990, 86) in zbirke E. Wolfa (Stern, Schlick-Nolte 1994, 93), več odlomkov hrani muzej v Toledu (Grose 1989, 413: 250-255; 415: 275-283). Motiv posnema vzorce posod iz oniksa, saj je posoda sestavljena le iz petih večjih raznobarvnih ploščic (štiri za ostenje, ena za dno - gl. str. 32).

Posode so tako kot skodelice 2.1.4. in ostali mozaični izdelki razširjene še v prvi polovici 1. stoletja, nato pa jih izpodrinejo enobarvni izdelki.

2.1.7.
Skodelice z ovratnikom (*sl. 12*):

Posoda je nastala z ulivanjem v kalup. Zaenkrat je znana samo skodelica iz modro-zelenkastega stekla.

Datacija: 1. st.

Unec (gr. 11)
Skodelica iz naravno obarvanega stekla, izvihano in odebeljeno ustje v obliki ovratnika, noga ni v celoti ohranjena.
2.1.7. - viš. 4,5 cm; pr. ustja 7,6 cm - NMP.
Lit.: neobjavljeno.

Primerjave: nepoznane.

Komentar:
Skodelice z ovratnikom so pogoste med prosto pihanimi izdelki, ulite posode te vrste pa so redkost. Skodelica iz groba 11 v Uncu iz naravno obarvanega stekla je posebnost, saj nima analogij med objavljenim steklenim gradivom. Po obliki bi jo lahko primerjali s sigilatnimi izdelki severno italskih delavnic iz prve polovice 1. stoletja (*Conspectus* 1990, Form 22, 23), predvsem zaradi oblike in profilacije ustja. Skodelice z ovratnikom izdelane s pihanjem so sicer pogosta oblika 1. stoletja, saj se pojavljajo nekako od flavijskega časa dalje.

Grobišče na Uncu obsega grobove od 1. do 4. stoletja, grob 11 pa sodi med najzgodnejše grobove, ki ga glede na pridatke lahko opredelimo v 1. stoletje.

2.1.8.
Plitve skodelice z vrezanim okrasom (*sl. 12*):

Skodelice so bile ulite v dvodelne kalupe in nato dodelane z brušenjem in rezanjem. Izdelane so iz namerno razbarvanega stekla.

Datacija: druga polovica 1. - 2. st.

Logatec (NN)
Skodelica iz dekoloriranega stekla z brušenim okrasom. Ustje je močno izvihano in ostro profilirano; spodnji del ustja,

2.1.7.
Bowls with a collar rim (*Fig. 12*):

The vessel was created by casting in a mould. Only bowls made from blue-green glass are known.

Date: 1st century

Unec (gr. 11)
A bowl of naturally coloured glass, with an everted and thickened rim in the shape of a collar, the base is not preserved in entirety.
2.1.7. - ht. 4.5 cm; dia. rim 7.6 cm - NMP.
Lit.: unpublished.

Analogies: none identified.

Comments:
Bowls with collar rims are common among free-blown products, while cast vessels of this type are rare. The special feature of the bowl from grave 11 at Unec of naturally coloured glass is that it has no analogy among published glass material. In terms of shape it could be compared with the sigillata products of northern Italic workshops from the first half of the 1st century (*Conspectus* 1990, Form 22, 23), primarily because of the form and the profile of the rim. Blown bowls with collar rims are otherwise a common form of the 1st century, appearing from sometime in the Flavian period onwards.

The cemetery at Unec encompassed graves from the 1st to the 4th centuries, and grave 11 was among the earliest graves, which can be dated on the basis of the grave goods to the 1st century.

2.1.8
Shallow bowls with facet-cut decoration (*Fig. 12*):

The bowls were cast in two-part moulds and further worked with grinding and cutting. They were made from deliberately decoloured glass.

Date: second half of the 1st - 2th centuries

Logatec (SF)
A bowl of decoloured glass with facet-cut decoration. The rim is highly out-turned and sharply profiled; the lower part of the rim, the walls, and the base are decorated with a facet-cut decoration in the shape of almonds or wheat grains.
2.1.8. - ht. 3.7 cm; dia. rim 14 cm; dia. base 6.5 cm - NMP.
Lit.: unpublished.
Ptuj (gr. 615)
A shallow bowl of decoloured glass with facet-cut decoration. The rim is highly out-turned and sharply profiled. Rim edge and base are decorated with facet-cut decoration.
2.1.8. - dia. rim 8,3 cm - LMJ 2535.
Lit.: Istenič 2000, Pl. 134: 4.

ostenje in dno so okrašeni z brušenim okrasom v obliki mandljev oziroma žitnih zrn.
2.1.8. - viš. 3,7 cm; pr. ustja 14 cm; pr. dna 6,5 cm - NMP.
Lit.: neobjavljeno.
Ptuj (gr. 615)
Plitva skodelica iz dekoloriranega stekla z brušenim okrasom. Ustje močno izvihano in profilirano. Rob ustja in zunanji del dna okrašena z brušenim okrasom.
2.1.8. - pr. ustja 8,3 cm - LMJ 2535.
Lit. Istenič 2000, t. 134: 4.

Primerjave: Fassold 1985, Abb. 10: 11; Rütti 1991, Taf. 36: 796-801; 37: 804-805; Cool, Price 1995, No. 209-211.

Komentar:
Posebna skupina steklenih izdelkov 1. stoletja so ulite posode iz namerno razbarvanega stekla. To so zadnje oblike, ki so jih še izdelovali s tehniko ulivanja, celo dlje od najbolj razširjenih rebrastih skodelic. Moda brezbarvnega stekla pomeni precejšen preobrat v primerjavi s prvo polovico 1. stoletja, ko so vladali izdelki iz mozaičnega in intenzivno obarvanega stekla. Zanimanje zanje usahne sredi stoletja in od šestdesetih let dalje je, kot piše Plinij Starejši, »najbolj cenjeno brezbarvno in prozorno steklo, ki spominja na izdelke iz kamene strele« (Grose 1991, 14).

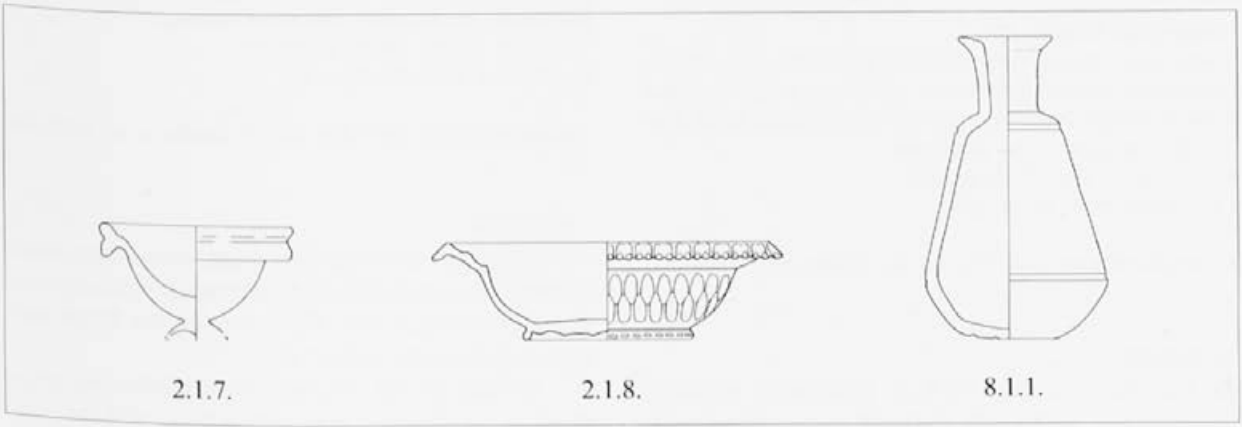
Odlično ohranjena skodelica z vrezanim okrasom iz Logatca je edina te vrste pri nas. Oblike karakterizirajo oglate forme, nova barva (namerno razbarvano steklo) in predvsem izredna kvaliteta izdelave vrezanega okrasa. Grose jih opredeljuje kot izdelke najvišjega kakovostnega razreda v zgodnjem cesarstvu (1991, 1). Oblike so prevzete od bronastih in srebrnih posod, v glavnem prevladujejo tri forme: plitva skodelica s širokim izvihanim ustjem na poudarjeni nogi, krožnik z enako izdelanim ustjem in nogo ter plitev krožnik skoraj pladenj s premerom ustja, večjim od 20 cm. Pladnji so večinoma neokrašeni, ponekod se pojavljajo le fasetirani vzorci v obliki krogov ali žitnih zrn.

Analogies: Fassold 1985, Fig. 10: 11; Rütti 1991, Pl. 36: 796-801; 37: 804-805; Cool, Price 1995, no. 209-211.

Comments:
A special group of glass products of the 1st century consists of cast vessels of decoloured glass. These were the last forms produced in the casting technique, even later than the most widespread type, ribbed bowls. The fashion for colourless glass meant a considerable turn-about in comparison with the first half of the 1st century, when products of mosaic or intensively coloured glass predominated. Interest in them died out mid century and from the sixties onwards, as noted by Pliny the Elder, "colourless and transparent glass is most highly valued, reminiscent of products made from rock crystal" (Grose 1991, 14).

The excellently preserved bowl with cut decoration from Logatec is the only one of its kind in Slovenia. The form is characterized by angular shape, the new colour (deliberately decoloured glass), and particularly the exceptional quality of the cut decoration. Grose defines them as products of the highest quality class in the early Empire (1991, 1). The forms were taken from bronze and silver vessels, with three shapes mostly predominating: shallow bowls with a broad everted rim on an emphasized foot, dishes with an identical rim and foot, and shallow dishes, almost platters, with a rim diameter greater than 20 cm. The platters are mostly undecorated, sometimes only facetted patterns appear in the form of circles or wheat-grains.

The distribution of these products is exceptionally wide, and they can be found from Britain to northern Africa and from Spain to Syria, appearing in dated units from the Flavian period to the reign of Hadrian (Grose 1991, 15). The location of the production centers of these items is still in question. They were first placed in Alexandria. Recent research and the wide distribution pattern suggest that they were probably created in various



Sl. 12: Oblike posod, izdelanih v kalupu (2.1.7.: Unec, gr. 11, neobjavljeno; 2.1.8.: Logatec, neobjavljeno; 8.1.1.: Vodnik 1931, sl. 28b). M. = 1:3.

Fig. 12: Forms of cast vessels (2.1.7.: Unec, gr. 11, unpublished; 2.1.8.: Logatec, unpublished; 8.1.1.: Vodnik 1931, Fig. 28b). Scale = 1:3.

Razprostranjenost teh izdelkov je izredno široka, najdemo jih od Britanije do severne Afrike in od Španije do Sirije, v datiranih celotah se pojavljajo v obdobju od Flavijcev do Hadrijana (Grose 1991, 15). Kje so bili proizvodni centri obravnavanih izdelkov, je zaenkrat še vprašljivo. Prvotno so jih locirali v Aleksandrijo. Zadnje raziskave in široka razprostranjenost pa kažejo, da so verjetno nastajale v različnih centrih (Grose 1991, 16). Novejše najdbe teh izdelkov iz Augsta kažejo (AR 16. 2.), da njihova uporaba in proizvodnja traja dlje kot so prvotno domnevali, saj najdemo tovrstno posodje še v celotnem 2. in celo še na začetku 3. stoletja (Rütti 1991, 82)

Skodelica iz Logatca je bila najdena med izkopavanji postaje *Longaticum* (Logatec), v sloju z novcem cesarja Domicijana (ustni podatek M. Frelih), kar potrjuje časovne okvire najzgodnejših izdelkov te vrste. Skodelica iz ptujskega groba je del grobne celote, ki jo Isteničeva datira v prvo polovico 3. stoletja (Istenič 2000, 203), vendar smemo domnevati, da je skodelica lahko tudi starejši izdelek, nastal še v 2. stoletju.

SKUPINA 8 - POSODICE ZA OLJA IN DIŠAVE

8.1.
POSODE, IZDELANE V KALUPU

8.1.1.
Stekleničke z bikoničnim trupom (Is 7); (*sl. 12*):

Vnaprej pripravljeno večbarvno ploščico stekla so s segrevanjem uvijali in oblikovali željeno formo. Dodelali so jo z brušenjem. Ustje je izvihano, vrat kratek, trup bikoničen, dno rahlo vboklo. Ostenje poudarjajo vodoravne kanelure.

Datacija: prva polovica 1. st.

Hasberg nad Planino (PN)
Steklenička z bikoničnim trupom iz raznobarvnih steklenih trakov. Med steklene trakove bele, vijoličaste, modre in zelene barve so dodani trakovi prozornega stekla z zlato folijo. Dve kaneluri na ramenu, ena nad dnom.
8.1.1. - viš. 12 cm - NMS R 2095.
Lit.: Vodnik 1931, 58, sl. 28b.

Primerjave: Oliver 1967, Fig. 14, 15; Harden *et al.* 1988, Nr. 17;

Komentar:
Že helenistične delavnice so izdelovale posode, sestavljene iz večbarvnih steklenih trakov, ki so imeli vmes dodane trakove z zlato folijo. Najbolj priljubljena oblika so bili različni balzamariji (Oliver 1967, 20).

Izdelki rimskega obdobja imajo dodane zelene trakove v večbarvno kompozicijo teh stekleničk, kar jih

centers (Grose 1991, 16). Recent finds of these products from Augst (AR 16.2) indicate that their use and manufacture continued longer than had originally been thought, as such vessels can be found throughout the entire 2nd century and even at the beginning of the 3rd century (Rütti 1991, 82).

The bowl from Logatec was found during excavations at the *mansio Longaticum* (Logatec), in a stratum with a coin of the emperor Domitian (information from M. Frelih), which confirms the chronological framework for these products. The bowl from Ptuj was part of a grave that Istenič dated to the first half of the 3rd century (2000, 203), although it can be considered that the bowl could be an earlier product, made as early as in the 2nd century.

GROUP 8 - VESSELS FOR OIL AND PERFUME

8.1.
VESSELS MADE IN A MOULD

8.1.1.
Flasks with a biconical body (Is 7); (*Fig. 12*):

Previously prepared multicoloured plates of glass were bent with the application of heat to form the desired shape. They were additionally worked with grinding. The rim is turned out, the neck short, the body biconical, the base slightly concave. The walls are accentuated by horizontal grooves.

Date: first half of the 1st century

Hasberg above Planina (IF)
A flask (*unguentarium*) with a biconical body of multicoloured glass bands. The glass bands of white, violet, blue, and green were joined by bands of clear glass with gold leaf. Two grooves on the shoulder, one above the base.
8.1.1. - ht. 12 cm - NMS R 2095.
Lit.: Vodnik 1931, 58, Fig. 28b.

Analogies: Oliver 1967, Fig. 14, 15; Harden *et al.* 1988, no. 17.

Comments:
As early as the Hellenistic workshops, vessels were manufactured from multicoloured glass bands, with additions of bands with gold leaf. The most popular forms were various balsamaria (Oliver 1967, 20).

Roman period products have additional green bands in the multicoloured composition of these small bottles, which distinguishes them from the Hellenistic products (Grose 1989, 260). The forms are narrowly limited, including vessels with a lid (*pyxides*), biconical, and globular miniature bottles. Biconical unguent bot-

loči od helenističnih izdelkov (Grose 1989, 260). Oblike so ozko omejene, izdelovali so posodice s pokrovom (pikside), bikonične in kroglaste stekleničke. Bikonične stekleničke imajo na zunanji strani po robovih pogosto plitve kanelure, ki poudarjajo bikonično obliko. Najdišča teh izdelkov so skoncentrirana v Italiji in zahodnih provincah. Verjetno so nastali v eni od italskih delavnic, datirani so v prvo polovico 1. stoletja (Grose 1989, 261).

Steklenička iz večbarvnega stekla s trakovi zlate folije s Hasberga je redek in izjemen steklarski izdelek. Med gradivom s slovenskih najdišč nima primerjav, drugje jo najdemo predvsem v večjih zbirkah, kot so Corning in British Museum. Glede na nejasen izvor posodice je vprašljivo, ali gre za ostanek rimske materialne kulture na naših tleh ali za redek primerek iz zasebne zbirke, ki je bil kupljen na trgu starin.

tles often have shallow groves on the exterior side along the edges, which emphasize the biconical shape. Finds of these products are concentrated in Italy and the western provinces. They were probably manufactured in one of the Italic workshops, and are dated to the first half of the 1st century (Grose 1989, 261).

The flask of multicoloured glass with bands of gold leaf from Hasberg is a rare and exceptional glass product. There are no analogies to material from other Slovenian sites, while they can be found elsewhere primarily in major collections, such as those at Corning or the British Museum. Given the unclear provenience of the vessel, it can be debated whether it represents an actual remnant of Roman material culture on Slovenian territory or instead a rare specimen from a private collection, purchased as an antiquity.

IZDELKI, PIHANI V KALUP

OPIS TEHNIKE

Tehnika pihanja v kalup se je razvila po odkritju pihanja stekla. Dolgo časa je bilo uveljavljeno mnenje, da je pihanje v kalup predstopnja v razvoju pihanja stekla (Israeli 1991, 47; Stern 1995, 37, 45). Sodeč po arheoloških najdbah, je pihanje stekla najmanj sedem desetletij starejše od pihanja v kalup. Ob pojavu pihanja v kalup v 1. stoletju je bilo prosto pihanje razširjeno že po vsem rimskem svetu.

V kalup pihano steklo se pojavi v prvi polovici druge četrtine 1. stoletja. Najstarejši izdelki so poznani iz tiberijskega in zgodnje klavdijskega obdobja, niso pa znani iz avgustejskega in zgodnje tiberijskega časa (Price 1991, 64).

Verjetnostt, da so pihanje v kalup razvili kjerkoli na območju rimske države, kažejo primerjave s sorodnimi keramičnimi izdelki. Dokazani vplivi oblik in okrasov v kalupih delanih keramičnih posod na steklene izdelke, podpirajo mnenje, da so tehniko pihanja v kalup lahko razvili tudi na področju severne Italije. Zato ni več umestna trditev, da je sirijsko-palestinsko področje zibelka novo odkrite tehnike (Price 1991, 71).

Možnost, da so s pomočjo kalupa naredili več popolnoma enakih izdelkov, je kmalu vodila do serijske proizvodnje različnih skupin izdelkov. Na steklenih posodah so radi posnemali motive in okrase kovinskih posod in drugih dragocenih materialov.

Kalup za pihanje stekla mora biti kvaliteten in močan, da lahko zdrži vročino in pritisk pihanega stekla. Rimski steklarji so kalupe izdelovali iz različnih materialov: gline, kovine ali kamna in v nekaterih primerih celo lesa. Verjetno pa so bili najbolj razširjeni kalupi iz žgane gline. Med ohranjenimi kalupi je največ glinenih, nekaj pa tudi iz kamna in celo lesa (Stern 1995, 45).

Ker se steklo za razliko od keramike po ohlajanju ne krči in obdrži svojo prvotno velikost, morajo biti kalupi izdelani v dveh ali več delih, da lahko posodo nepoškodovano vzamejo iz njih. Največ informacij o vrstah in kvaliteti kalupov lahko dobimo iz posod samih. Jasne in ostre linije reliefnih okrasov govorijo o uporabi kovinskih kalupov, razbrazdana površina motivov pa je sled stika z zrnatimi površinami kalupov iz keramike in kamna.

Večina kalupov je bila dvodelnih, poznamo pa izdelke, ki so nastali v petdelnih (čaše bogov) ali tridelnih (čaše z mandljastim okrasom) kalupih (*sl. 13*). Mnoge oblike so imele posebne kalupe za spodnje dele, spet druge so bile pihane v enotne modele, kar kažejo vlivni šivi na nogah posod (*sl. 14*).

MOULD-BLOWN PRODUCTS

DESCRIPTION OF THE TECHNIQUE

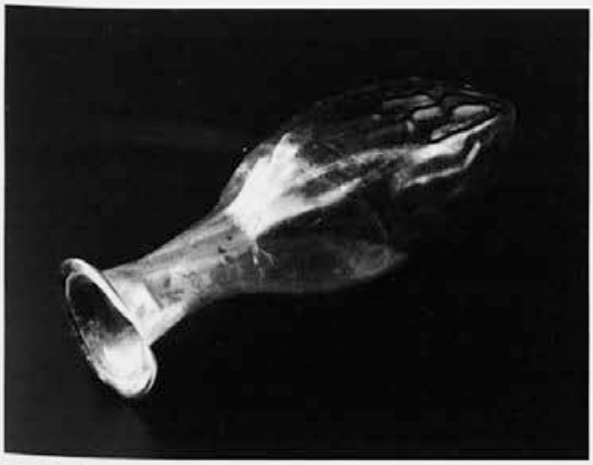
The technique of blowing into a mould developed after the discovery of glass blowing. It was long thought that blowing into a mould represented a stage in the development of blowing glass. Judging from the archaeological finds, blowing glass is at least seven decades older than blowing into a mould. At the date of the appearance of blowing into a mould in the 1st century, free-blowing was already distributed throughout the entire Roman world.

Mould-blown glass appeared in the first half of the second quarter of the 1st century. The earliest products are known from the Tiberian and early Claudian periods, while they are not known from the Augustan and early Tiberian periods (Price 1991, 64).

The probability that mould blowing developed anywhere throughout the Roman state is indicated by comparisons with similar pottery products. The proven influence of the form and decoration of pottery vessels made in a mould on glass products supports the hypothesis that the technique of blowing into a mould could

Sl. 13: Pikside so bile narejene v tridelnih kalupih, dno in pokrov pa sta bila pihana posebej. Ptuj, gr. 773, Landesmuseum Joanneum Graz (Istenič 1999, 76, sl. 61); (foto: T. Lauko).

Fig. 13: The pyxides were made in a tripartite mould, the base and lid were blown separately. Ptuj, gr. 773, Landesmuseum Joanneum Graz (Istenič 1999, 76, Fig. 61); (photo: T. Lauko).



Sl. 14: Balzamarij v obliki mandlja je nastal v dvodelnem kalupu, ob strani je viden šiv. Neznano najdišče, Dolenjski muzej Novo mesto (foto: T. Lauko).

Fig. 14: The almond-shaped balsamarium was made in a two-part mould, seams are visible on the sides. Unknown provenance, Dolenjski muzej Novo mesto (photo: T. Lauko).

Sl. 15: Sredi 1. stoletja so bile priljubljene v kalup pihane skodelice s pokončnimi rebri na ostenju. Trebnje, Narodni muzej Slovenije, Ljubljana (foto: T. Lauko).

Fig. 15: Mould-blown bowls with vertical ribs were popular in the middle of the 1st century. Trebnje, Narodni muzej Slovenije, Ljubljana (photo: T. Lauko).

Kvaliteta v kalup pihanih izdelkov je bila odvisna tako od izdelovalcev in oblikovalcev kalupov kot od steklopihačev. Morda je ves postopek izvedel en sam mojster, še verjetneje pa je, da so bili postopki ločeni in je vsak od delavcev opravil svoj del.

Po raziskavah Sternove so v 1. stoletju razvili osem glavnih tipov kalupov (1995, 47). S proučevanjem mnogokotnih stekleničk je ugotovila, da se ne spreminja samo kvaliteta okrasa, ampak tudi velikost posod. Iz tega

similarly have developed in the region of northern Italy. It has been claimed that the Syrian-Palestinian region had been the cradle of the newly discovered technique, but it is no longer persuasive (Price 1991, 71).

The possibility of manufacturing several completely identical products with the help of a mould soon led to mass production of various groups of products. The glass vessels copied motifs and decorations from vessels of metal and other precious materials.

The mould for blowing glass must be strong and of high quality so as to endure the heat and pressure of the blown glass. The Roman glass-workers made moulds from various materials: clay, metal, or stone, and even wood in some cases. The preserved moulds are mostly of clay, however some are of stone and even wood (Stern 1995, 45). The most widely distributed moulds were probably those of fired clay.

Since glass, as opposed to pottery, does not shrink after cooling, and retains its original size, the moulds had to be formed in two or more parts so the vessel could be removed undamaged from the mould. Primary information about the types and quality of the moulds can be acquired from the vessels themselves. Clear and sharp lines of relief decoration indicate the use of metal moulds, while a wrinkled surface of a motif represents traces of contact with the grainy surfaces of clay or stone moulds.

Most of the moulds were two-part, but products are known that were created in five-part (mythological beakers) or three-part (cups with almond-shaped decorations) moulds (*Fig. 13*). Many forms had special moulds for the lower parts, while others were blown into single models, as is shown by the pouring seams on the legs of vessels (*Fig. 14*).

The quality of products blown into a mould was thus just as dependent on the manufacturer of the mould as on the glass blower. Perhaps the entire process was performed by just one craftsman, although it is more likely that the processes were separate and that each person did his part.

According to Stern's research, eight main types of moulds were developed in the 1st century (1995, 47). Through the study of polygonal flasks, she established that not merely does the quality of the decoration change, but so does the size of the vessel. From this it was concluded that the new moulds took their model from previously made flasks. Due to the contraction of the clay, each new mould was slightly smaller than the previous one, as was true of the product blown into the new mould (Stern 1995, 48).

The spectrum of decoration of these vessels is very broad. They could be manufactured with shallow or deep relief, enlarged if the vessel was later additionally free blown (optic-blowing), and many bear inscriptions of the craftsmen (*Enion, Jason, Aristeas, Meges*), or the names of the winners or competitors on beakers with depictions of circus races or gladiator battles.

je sklepala, da so za nove kalupe vzeli model po že narejenih stekleničkah. Zaradi krčenja gline pa je bil vsak nov kalup komaj opazno manjši od prejšnjega in s tem tudi izdelek, ki je bil pihan v nov kalup (Stern 1995, 48).

Spekter okrasov teh posod je zelo širok, lahko so izdelani v plitvem ali globokem reliefu, povečani, če so posodo kasneje še prosto pihali (optično pihanje), mnoge nosijo napise mojstrov (*Enion, Jason, Aristeas, Meges*), na čašah s prizori cirkuških dirk ali gladiatorskih borb so imena zmagovalcev ali tekmovalcev itd.

V 1. stoletju se pojavljajo tri večje skupine v kalup pihanih izdelkov, ki jih lahko tudi ožje časovno omejimo.

1. skupina

Skupina izdelkov iz tiberijskega in zgodnje klavdijskega obdobja obsega cilindrične Enionove čaše, polkrožne skodelice z rebri (2.2.1.) in čaše s horizontalnim rebri. Pihani so iz obarvanega (npr. modrega, temno zelenega) in iz modro-zelenkastega stekla. Te vrste izdelki so bili odkriti v Italiji, Avstriji, Švici in Nemčiji (Price 1991, 65); (sl. 15).

2. skupina

V času od klavdijskega do srednje neronskega obdobja še vedno proizvajajo nekatere že omenjene oblike, med njimi predvsem rebraste skodelice (2.2.1.). Najpopularnejše pa so čaše s prizori gladiatorskih bojev, tekem z vozovi in drugih športnih dogodkov, ki so obeleženi tudi z imeni udeležencev (Petru 1980, 446, sl. 1). Najdbe iz datiranih kontekstov kažejo, da so te vrste čaš izdelovali v sorazmerno kratkem časovnem obdobju v tretji četrtini 1. stoletja (Price 1991, 68); (sl. 16).

3. skupina

Zadnja skupina posod iz pozno neronskega in flavijskega obdobja obsega vrče z Enionovim podpisom, mnogokotne stekleničke (Emona - gr. 87; Petru 1976, t. 5: 1), še vedno so v uporabi rebraste skodelice (2.2.1.), na novo pa se pojavijo prisekane visoke čaše (3.1.1.) in figuralne steklenice (6.1.1.). Le-te so najpogosteje ulite v kalupe s podobami obrazov, predvsem črncev. Čaše vsebujejo raznolike motive, med njimi mandlje, meandre, mrežo, spirale in podobe božanstev (Ložar 1935, 97); (*sl. 17*).

Razprostranjenost posameznih skupin izdelkov je zelo različna. Nekatere najdemo na vseh straneh imperija

Sl. 16: Odlomek čaše s prizorom cirkuške dirke. Čaše s prizori športnih bojev so bile priljubljene v tretji četrtini 1. stoletja. Emona, insula VII, Narodni muzej Slovenije, Ljubljana (foto: T. Lauko).

Fig. 16: Fragment of a cup with a racing scene. Beakers with scenes of sporting competitions were popular in the third quarter of the 1st century. Emona, insula VII, Narodni muzej Slovenije, Ljubljana (photo: T. Lauko).

Three large groups of mould-blown products appear in the 1st century, which can also be limited to a narrow chronological frame.

Group 1

This group of products from the Tiberian and early Claudian periods includes cylindrical Enion beakers, hemispherical ribbed bowls (2.2.1.), and cups with horizontal ribs. They were blown from coloured (e.g. blue, dark green) glass, and from blue-green glass. Such products have been discovered in Italy, Austria, Switzerland, and Germany (Price 1991, 65); (*Fig. 15*).

Group 2

In the period from the Claudian to the middle Neronian periods some previously mentioned forms were still produced, primarily ribbed bowls (2.2.1.). The most popular items were beakers with scenes of gladiator fights, chariot races, and other sporting events, which were also marked with the names of participants (Petru 1980, 446, Fig. 1). Finds from dated contexts indicate that these cups were produced in a relatively brief chronological period in the third quarter of the 1st century (Price 1991, 68); (*Fig. 16*).

Group 3

The last group of vessels from the late Neronian and Flavian periods encompasses jugs signed by Enion, polygonal bottles (Emona - gr. 87; Petru 1976, Pl. 5: 1), while ribbed bowls (2.2.1.) were still in use, and new elements included truncated high beakers (3.1.1.) and figural bottles (6.1.1.). The latter were most often blown into moulds with images of faces, mostly Negroid. The beakers exhibit various motifs, including almond shapes, meanders, webbing, spirals, and depictions of deities (Ložar 1936, 97); (*Fig. 17*).

The distribution of individual groups of products was highly varied. Some can be found everywhere throughout the Empire (such as ribbed bowls 2.2.1., mythological beakers 3.1.1.), while others were more popular in individual regions, which can be related to

Sl. 17: V flavijskem obdobju so izdelovali čaše s podobami božanstev. Črnelo, gr. 1, Narodni muzej Slovenije, Ljubljana (foto: T. Lauko).

Fig. 17: In the Flavian period, beakers were manufactured with depictions of gods. Črnelo, grave 1, Narodni muzej Slovenije, Ljubljana (photo: T. Lauko).

(npr. rebraste skodelice 2.2.1., čaše bogov 3.1.1.), spet druge so bolj omejene na posamezna področja, kar lahko povežemo s specializiranimi delavnicami ali s potujočimi steklarji.

Pihanje v kalup je vzcvetelo v času, ko je bilo v modi obarvano steklo. V začetku flavijske dobe se okus spremeni, prevlada povpraševanje po brezbarvnih, dekoloriranih izdelkih, ki so posnemali izdelke iz kamene strele. Vendar je tudi ta razcvet trajal le nekaj desetletij. Obe skupini izdelkov v tretji četrtini 1. stoletja počasi izpodrine cenejše in vsem dostopno prosto pihano steklo.

To seveda ne pomeni, da med mlajšim gradivom ne poznamo več izdelkov pihanih v kalup (Stern 1995, 187). Vendar so ti izdelki dokaj redki (stekleničke v obliki človeške glave, školjk, kroglaste stekleničke z enostavnimi geometrijskimi okrasi) in njihovo število nikoli več ne doseže razširjenosti in priljubljenosti posod iz 1. stoletja.

specialized workshops, but also to itinerant glass-workers.

Mould blowing flourished in the period when coloured glass was in fashion. At the beginning of the Flavian period, tastes changed, and the demand increased for colourless products imitating those made from rock crystal. This phase also lasted only a few decades. Both groups of products were slowly supplanted in the third quarter of the 1st century by the cheaper and ever more available free-blown glass.

This nonetheless does not mean that later material does not contain mould-blown products (Stern 1995, 187). Still, these products are somewhat rare (bottles in the shape of a human head or shells, globular bottles with simple geometric decoration) and their numbers no longer approach the wide distribution and popularity of the 1st century vessels.

PREGLED OBLIK
(*sl. 18; 55*)

SKUPINA 2 - SKODELICE

2.2.
SKODELICE, PIHANE V KALUP

2.2.1.
Rebraste skodelice (*sl. 18*):

Izdelki imajo po ostenju okras gostih tankih reber, horizontalna rebra so tudi na prehodu ostenja v rame in dno. Ustje je rahlo izvihano, odrezano in obrušeno, dno ima oblikovan stojni prstan, v sredini je vboklo.

Datacija: sredina - druga polovica 1. st.

Ptuj (gr. 774)
Skodelica iz naravno obarvanega stekla z gostimi rebri.
2.2.1. - pr. ustja 6,6 cm - LMJ 2409.

REVIEW OF FORMS
(*Fig. 18; 55*)

GROUP 2 - BOWLS

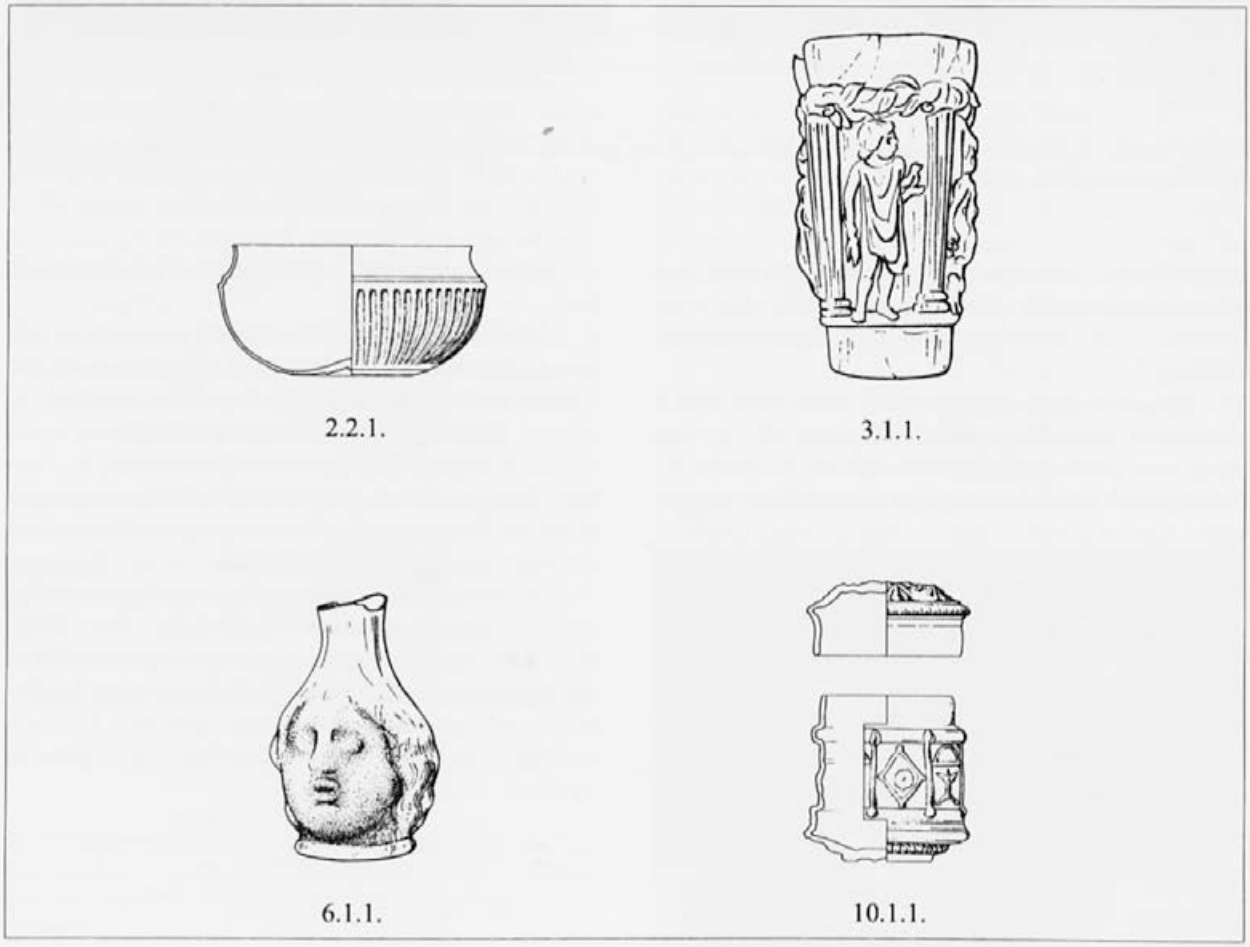
2.2.
MOULD-BLOWN BOWLS

2.1.1.
Ribbed bowls (*Fig. 18*):

They have a decoration on the walls of dense thin ribs, also with horizontal ribs at the transition from the walls to the shoulders and base. The rim is gently everted, cut, and ground, the base has a base ring and is concave in the center.

Date: middle - second half of the 1st century

Ptuj (gr. 774)
A small bowl of naturally coloured glass with dense ribs.
2.2.1. - dia. rim 6.6 cm - LMJ 2409.



Sl. 18: Oblike posod, pihanih v kalup (2.2.1.: Slabe 1977, sl. 2; 3.1.1.: Ložar 1935, t. 1; 6.1.1.: Petru 1976, t. 2: 3; 10.1.1.: Istenič 1999, sl. 61). M. = 1:3.

Fig. 18: Forms of mould-blown vessels (2.2.1.: Slabe 1977, Fig. 2; 3.1.1.: Ložar 1935, Pl. 1; 6.1.1.: Petru 1976, Pl. 2: 3; 10.1.1.: Istenič 1999, Fig. 61). Scale = 1:3.

Lit.: Istenič 2000, t. 174: 5.
Velika Stara vas (gr.)
Skodelica iz temno modrega stekla z gostimi rebri, na dnu tri tanka krožna rebra.
2.2.1. - viš. 5,1 cm; pr. ustja 9, 4 cm - NMS.
Lit.: Slabe 1977, sl. 2.
Ljubljana (NN)
Odlomek ustja temno modre rebraste skodelice.
2.2.1. - pr. ustja 13 cm - LRZVKD.
Lit.: Vičič 1994, t. 15: 26.
Ptuj (NN)
Del skodelice iz naravno obarvanega stekla z gostimi rebri, pri dnu dve prstanasti rebri.
2.2.1. - viš. 3,5 cm - PMP R 10686.
Lit.: Šubic 1976, sl. 45.
Trebnje (PN)
Skodelica iz temno modrega stekla z gostimi pokončnimi rebri, na prehodu v vrat je profilirana, ustje ravno, pri dnu dve tanki horizontalni rebri.
2.2.1. - NMS R 17037.
Lit.: Kastelic 1988, 289.

Primerjave: Berger 1960, Taf. 9: 139-142; Hayes 1975, Fig 2: 82; Czurda-Ruth 1979, Taf. 2: 318; Biaggio Simona 1991, Tav. 4: 017; Rütti 1991, Taf. 44: 972-981; Cool, Price 1995, Fig. 3.3: 243-245.

Komentar:
V kalup pihane rebraste skodelice so nekateri raziskovalci poimenovali sirijske (Berger 1960, 55). Dolgo so jih uvrščali v isto skupino kot ulite rebraste skodelice in tudi Isingsova jih ni opredelila kot samostojno obliko. Prvi jih je natančneje obdelal Berger (1960, 55). Poznamo jih v treh različicah, kot plitve, globoke ali visoke skodelice. Ustje je navadno le rahlo izvihano, rebra so plitva, na spodnji strani jih navadno omejujejo horizontalni prstani, dno je rahlo vboklo. Največ različic se pojavlja pri izdelavi reber. Le-ta so navadno gosto razporejena po vsej površini, pojavljajo pa se tudi posode z redko postavljenimi in širšimi rebri. Izdelane so iz obarvanega stekla modre barve, v zelenih odtenkih in iz naravno obarvanega stekla.

Oblika sodi med najzgodnejše v kalup pihane izdelke. Najstarejši so znani iz Vindonisse, odkriti so bili v tiberijskih in zgodnje klavdijskih plasteh (Berger 1960, 55), in Štalenske gore (Czurda-Ruth 1979, 314). Največje število skodelic je datiranih v klavdijsko-neronsko obdobje in sicer v Vindonissi (Berger 1960, 55), Oberwintherthurju (Rütti 1988, 35), Kölnu (Fremersdorf 1961, 42) in na britanskih najdiščih (Cool, Price 1995, 53), pojavljajo pa se tudi še ponekod v zgodnje flavijskih kontekstih.

Med zbranim gradivom s slovenskega prostora sta dve temno modri skodelici in modro-zelenkasta skodelica iz Petovione v celoti ohranjeni, ostali dve pa le delno. Grob 774 iz Petovione je imel v grobu priložen Domicijanov novec, kar umešča grob na konec 1. stoletja (Istenič 2000, 248). Skodelica iz Velike Stare vasi je

Lit.: Istenič 2000, Pl. 174: 5.
Velika Stara vas (gr.)
A small bowl of dark blue glass with dense ribs, on the base three thin circular ribs.
2.2.1. - ht. 5.1 cm; dia. rim 9.4 cm - NMS.
Lit.: Slabe 1977, Fig. 2.
Ljubljana (SF)
Fragment of the rim of a dark blue ribbed bowl.
2.2.1. - dia. rim 13 cm - LRZVKD.
Lit.: Vičič 1994, Pl. 15: 26.
Ptuj (SF)
Part of a bowl of naturally coloured glass with dense ribs, on the base two annular ribs.
2.2.1. - ht. 3.5 cm - PMP R 10686.
Lit.: Šubic 1976, Fig. 45.
Trebnje (IF)
A bowl of dark blue glass with dense upright ribs, profiled at the transition to the neck, rim straight, two thin horizontal ribs at the base.
2.2.1. - NMS R 17037.
Lit.: Kastelic 1988, 289.

Analogies: Berger 1960, Pl. 9: 139-142; Hayes 1975, Fig 2: 82; Czurda-Ruth 1979, Pl. 2: 318; Biaggio Simona 1991, Pl. 4: 017; Rütti 1991, Pl. 44: 972-981; Cool, Price 1995, Fig. 3.3: 243-245.

Comments:
Some researchers have considered mould-blown, ribbed bowls to be Syrian (Berger 1960, 55). They were long classified in the same group as cast ribbed bowls, and even Isings did not distinguish them as an independent form. They were first discussed in detail by Berger (1960, 55). They are known in three variants, as shallow, deep, or high. The rim is usually only slightly everted, the ribs are shallow, and horizontal rings usually border the ribs on the lower side, while the base is gently convex. The greatest variations occur in the ribbing. The ribs are usually densely arranged on the entire surface, while vessels also appear with infrequent and broader ribs. They were made of coloured glass (blue and green shades), and of naturally coloured glass.

This form is amongst the earliest of mould-blown products. The earliest examples are known from Vindonissa, where they were discovered in Tiberian and early Claudian layers (Berger 1960, 55), and from Magdalensberg (Czurda-Ruth 1979, 314). The greatest number of bowls is dated to the Claudian-Neronian period, at Vindonissa (Berger 1960, 55), Oberwinterthur (Rütti 1988, 35), Köln (Fremersdorf 1961, 42), and British sites (Cool, Price 1995, 53), and they otherwise sometimes appear even in early Flavian contexts.

The material known from Slovenia consists of two entirely preserved dark blue bowls, a blue-green bowl from Poetovio, while the other two are only partial. Grave 774 at Poetovio had a coin of Domitian placed in the grave, which would place the grave at the end of the 1st century (Istenič 2000, 248). The bowl from Velika Stara

ostanek uničene grobne celote in tudi skodelica iz Trebnjega nima točnih podatkov o izvoru, zato je njuna časovna opredelitev v sredino 1. stoletja lahko le tipološka. Posamična najdba je tudi odlomek skodelice iz naravno obarvanega stekla s Ptuja. Iz datiranih slojev izvira le odlomek iz naravno obarvanega stekla iz Ljubljane, ki sodi v fazo IV na Gornjem trgu (Vičič 1994, 34), datirano z novcem cesarja Klavdija kot *terminus post quem*.

SKUPINA 3 - ČAŠE

3.1.
ČAŠE, PIHANE V KALUP

3.1.1.
Prisekane konične čaše z upodobitvami bogov (Is 31); (*sl. 18*):

Nastale so z ulivanjem v večdelne kalupe, štirje deli za ostenje in eden za dno. Steklo je običajno modro-zelenkasto.

Datacija: druga polovica 1. st.

Črnelo pri Stični (gr.)
Čaša iz naravno obarvanega stekla pihana v večdelni kalup. Upodobljene so štiri figure, ki so med seboj ločene s pokončnimi stebri, med njimi visijo na gornjem robu girlande. 3.1.1. - viš. 13 cm - pr. ustja 6,5 cm - pr. dna 4 cm - NMS R 7013.
Lit.: Ložar 1935, t. 1: 1-4.

Primerjave: Weinberg 1972, 26-47; Wight 1994, 37-47.

Komentar:
Redki in izjemni izdelki, nastali s pihanjem v večdelne kalupe, so tudi čaše z mitološkimi prizori oziroma pri nas bolj znane kot čaše bogov. Prva je čaše zbrala Weinbergova (1972, 26-47), ki je v seznam uvrstila tudi najdbo iz Črnelega. Oblikovala je dve skupini, ločeni po obliki ustja, in opredelila upodobljena božanstva kot Neptun, Bakhus, Merkur in neznano boštvo.

Novejšo raziskavo je pripravila Wightova (1994, 24-55), ki je glede na obliko ustja, mere in upodobitve figur oblikoval 4 skupine in na novo določil božanstva, upodobljena na čašah. Po njegovi delitvi sodi najdba iz Črnelega v skupino II (1994, 38), na njej pa so upodobljena naslednja božanstva:

A - figura Bakha stoji frontalno. Oblečen je v hitonisk, v levici ima tirsovo palico, z desnico pa iz kantarosa zliva vino v usta panterja, ki sedi na njegovi desni.

B - Himenaj je oblečen v kratko tuniko, preko levice nosi gorečo baklo, v desnici drži posodo, morda svatbeni leutroforos. Himenaj je bil bog svatbe, njegovi simboli so poročna bakla, piščal in venec vrtnic.

vas was the remnant of a destroyed grave unit, and the bowl from Trebnje also lacks exact data about the site of discovery, so their chronological dating to the middle of the 1st century is only typological. The fragment of naturally coloured glass from Ptuj is also an isolated find. Only the fragment of naturally coloured glass from Ljubljana comes from dated strata, phase IV at the Upper Square (Vičič 1994, 34), dated by a coin of the emperor Claudius as a *terminus post quem*.

GROUP 3 - BEAKERS

3.1.
MOULD-BLOWN BEAKERS

3.1.1.
Truncated conical beakers with depiction of deities (Is 31); (*Fig. 18*):

This vessels were created by blowing into a multi-part mould, with four sections for the walls, and one for the base. The glass was usually blue-green.

Date: second half of the 1st century.

Črnelo pri Stični (gr.)
A beaker of naturally coloured glass blown into a multi-part mould. Four figures were depicted, separated by upright columns, with garlands hanging between them on the upper edge. 3.1.1. - ht. 13 cm - dia. rim 6.5 cm - dia. base 4 cm - NMS R 7013.
Lit.: Ložar 1935, Pl. 1: 1-4.

Analogies: Weinberg 1972, 26-47; Wight 1994, 37-47.

Comments:
Rare and exceptional products created by blowing into multi-part moulds include beakers with mythological scenes, also known in Slovenia as "cups with gods". The beakers were first collected by Weinberg (1972, 26-47), who also included the find from Črnelo in her list. She formed two groups, distinguished by the shape of the rim and determined the depictions of the gods as Neptune, Bacchus, Mercury, and an unknown deity.

A more recent study was made by Wight (1994, 24-55), who formed four groups on the basis of the rim shape, the measurements, and the depictions of the figures, and again distinguished the deities depicted on the beakers. He assigned the find from Črnelo to group II (1994, 38), which included depictions of the following deities:

A - A figure of Bacchus standing frontally. He is dressed in a chiton, holding a thyrsus in his left hand, and pouring wine from a kantharos in his right hand into the mouth of a panther seated to his right.

B - Hymen dressed in a short tunic, holding a burning torch in his left hand, and a vessel in his right,

C - Neptun je frontalno upodobljena figura z brado v dolgem oblačilu, v dvignjeni levici drži trizob, na iztegnjeni desnici pa je delfin, obrnjen navzdol.

D - Bonus Eventus je oseba v tuniki, ki drži v spuščeni desnici tri vejice žitnega klasja ali cvetja, na iztegnjeni levici pa počiva verjetno ptica. Božanstvo je rimska presonifikacija žetve, kasneje pa simbol obilja in sreče.

Kakšen je pomen take kombinacije božanstev na posodi, je nejasno, morda so bile namenjena kot darilo ob posebnih priložnostih ali pa so služile ob verskih ritualih (Wight 1994, 54). Večina čaš sodi v julijsko-klavdijsko obdobje. Grobna celota iz Črnelega (Ložar 1935, 103) vsebuje poleg čaše še rebrasto skodelico s spiralo (2.3.1.), pečatno oljenko z žigom *FRONTO*, kantaros z barbotinskim okrasom, balzamarij in flavijski novec. Iz tega lahko sklepamo, da grob ni starejši od zadnje tretjine 1. stoletja.

SKUPINA 6 - STEKLENICE

6.1.
STEKLENICE, PIHANE V KALUP

6.1.1.
Steklenice, pihane v kalup v obliki glave (Is 78a); (*sl. 18*):

Nastale so v dvodelnih kalupih, o čemer pričajo vlivni šivi ob straneh. Izdelane so iz obarvanega ali modro-zelenkastega stekla.

Datacija: druga pol. 1. - 2. st.

Ptuj (gr. 169)
Vrat in spodnji del v kalup pihane stekleničke iz vijoličastega stekla, vidna usta obraza. Na dnu okras rombov in kroga v sredini.
6.1.1. - pr. ustja 2,8 cm - LMJ 2653.
Lit.: Istenič 2000, t. 37: 1.
Podgraj pri Ilirski Bistrici (PN)
Spodnji del steklenice v obliki človeške glave, del vratu in ustje manjkata.
6.1.1. - Pogrešana.
Lit.: Petru 1976, t. 2: 3.

Primerjave: Vessberg 1956, fig. 49: 9, 1; Calvi 1969, Taf. 16: 6; Cermanović-Kuzmanović 1976, t. 1: 5; Stern 1995, 327: no. 142, 145-46.

Komentar:
V kalup pihane stekleničke so bile razširjene že od sredine 1. stoletja. Večjo skupino tvorijo npr. večkotne stekleničke z reliefnim okrasom. Pihane so bile v kalupe z različnimi motivi, npr. z motivi sadja, mask, ptic ali mešanimi simboli (Stern 1995, 78). K zadnji skupini lahko prištejemo poligonalno stekleničko iz emonskega

perhaps a wedding *leutrophoros*. Hymen was the god of weddings. His symbols were a wedding torch, flute, and rose wreath.

C - Neptune was depicted frontally, with a beard in long clothing, in his raised left hand holding a trident, and in his outstretched right hand a dolphin turned upside down.

D - Bonus Eventus is a figure in a tunic, holding in the lowered right hand three bunches of grain or flowers, while on the extended left hand rests what is probably a bird. The deity was the Roman personification of the harvest, and later the symbol of plenty and felicity.

The meaning of such a combination of gods on a vessel is unclear. Perhaps they were intended as gifts on special occasions or were used in religious rites (Wight 1994, 54). They can mostly be assigned to the Julio-Claudian period. The grave unit from Črnelo (Ložar 1935, 103) additionally contained a ribbed bowl with a spiral decoration (2.3.1.), an oil lamp stamped *FRONTO*, a kantharos with barbotine decoration, balsamaria, and Flavian coin. It can be concluded from this that the grave was not earlier than the last third of the 1st century.

GROUP 6 - BOTTLES

6.1.
MOULD-BLOWN BOTTLES

6.1.1.
Bottles blown into a head-shaped mould (Is 78a); (*Fig. 18*):

They were made in two-part moulds, as is indicated by the seams on the sides. They were produced from coloured or blue-green glass.

Date: second half of the 1st - 2nd century

Ptuj (gr. 169)
The neck and lower part of a mould-blown bottle of violet glass, mouth of the face visible. On the base a decoration of rhombs and a circle in the center.
6.1.1. - dia. rim 2.8 cm - LMJ 2653.
Lit.: Istenič 2000, Pl. 37: 1.
Podgraj near Ilirska Bistrica (IF)
Lower section of a bottle in the shape of a human head, part of the neck and rim missing.
6.1.1. - Missing.
Lit.: Petru 1976, Pl. 2: 3.

Analogies: Vessberg 1956, Fig. 49: 9, 1; Calvi 1969, Pl. 16: 6; Cermanović-Kuzmanović 1976, Pl. 1: 5; Stern 1995, 327: nos. 142, 145-46.

Comments:
Mould-blown bottles were widespread from as early as the middle of the 1st century. A large group consists of

groba, z motivi vrčev, venca in strigila (Plesničar Gec 1967, Y 93: 3; Petru 1976, 15, 28, sl. 1, 2). Upodobljeni simboli so bili večinoma interpretirani kot atletski atributi, zadnje raziskave pa kažejo, da jih je bolj smiselno povezovati z Dionizom (Stern 1995, 81).

Steklenička je iz groba, datiranega v sredino 1. stoletja, in po razvrstitvi Sternove pripada t. i. Generaciji A1b (1995, 83).

Steklenice s podobami obrazov se pojavljajo od druge polovice 1. stoletja dalje, najstarejše najdbe poznamo iz Pompejev (Stern 1995, 202). Nekatere imajo enega ali dva ročaja, največkrat pa so brez njih. Izdelovali so jih v treh osnovnih različicah: s podobo ene glave, dveh (t. i. Janusova glava) ali več glav. Kljub zahtevnemu motivu so bile, sodeč po ohranjenih šivih, pihane le v dvodelne kalupe. Šivi so skriti v kodre las pri enojnih in dvojnih glavah.

Kot kaže, so stekleničke s podobo glave v prvem stoletju izdelovali v italskih in siro-palestinskih delavnicah. V 2. in 3. stoletju primat prevzamejo delavnice vzhodnega Sredozemlja, v 4. stoletju pa ima vodilno vlogo v izdelavi stekleničk Köln (Stern 1995, 203).

V prvem stoletju so nastali štirje tipi (A–D) teh stekleničk, trije z enojno (glava črnca, otroka, otroka z grozdom) in eden z dvojno glavo (podoba Meduze) (Stern 1995, 204). V 2. stoletju prevladajo stekleničke z dvojno glavo s podobami Meduze, ženskega obraza in nedoločljivega spola.

V grobu 169 iz zahodnega petovionskega grobišča so se ohranili deli stekleničke iz vijoličastega stekla, pridobljenega z dodajanjem mangana. Kljub skromni ohranjenosti so na spodnjem delu vidna usta obraza in kodri, ki segajo do dna posodice, ki ga krasi geometrijski okras. Verjetno gre za upodobitev Meduze kot pri skupini B po Sternovi (1995, 208). Odtis okrasa na dnu je zelo redek, taki izdelki so nastali v kalupih MCT VII s posebej pihanim dnom (Stern 1995, 204). Primerjavo najdemo med gradivom iz Toleda, kjer je ohranjena steklenička iz vijoličastega stekla s podobo Meduze in enakim geometrijskim vzorcem na dnu (Stern 1995, 223, Fig. 142). Grobna celota iz Petovione je datirana v drugo polovico 2. oziroma na začetek 3. stoletja (Istenič 2000, 66).

Figuralno oblikovana steklenička v obliki glave iz Podgraja pri Ilirski Bistrici je pogrešana. Okoliščine najdbe so neznane, obstaja le fotografija stekleničke, ki kaže da je bila izdelana verjetno v dvodelnem kalupu, ustje manjka.

Zaradi manjkajočih najdiščnih podatkov lahko stekleničko iz Podgraja opredelimo le na podlagi primerjav, iz katerih po obliki frizure in obliki vratu sklepamo, da verjetno predstavlja obraz Meduze. Glede na to je verjetno nastala v drugi polovici 1. oziroma v 2. stoletju (Stern 1995, 221-223).

polygonal bottles with relief decoration. They were blown into moulds with various motifs, such as fruit, masks, birds, or mixed symbols (Stern 1995, 78). A polygonal bottle from a grave at Emona can be assigned to the latter group, with motifs of jugs, wreaths, and strigils (Plesničar Gec 1967, Y 93: 3; Petru 1976, 15, 28, Fig. 1, 2). The symbols depicted were mostly interpreted as athletic attributes, while the latest research has indicated that they were more likely associated with Dionysus (Stern 1995, 81). The bottle is from a grave dated to the mid 1st century and would belong to Generation A1b according to Stern's classification (1995, 83).

Bottles with depictions of faces appear from the second half of the 1st century onwards, and the earliest finds are known from Pompeii (Stern 1995, 202). Some have one or two handles, but most often they lack them. They were manufactured in three basic variants: with the image of one head, two (i.e. Janus), or more. Despite the difficult motif, it seems, judging from the preserved seams, that they were blown exclusively into two-part moulds. The seams were hidden in the curls of hair of single and double heads.

Four types (A - D) of these bottles were created in the first century (Stern 1995, 204), three with single heads (Negroid, child, child with bunch of grapes), and one with double heads (Medusa). Bottles with double faces predominated in the 2nd century, with images of Medusa, a female face, and of undeterminable sex.

In grave 169 from the western cemetery of Poetovio, fragments were preserved of a bottle of violet-coloured glass, acquired by the addition of manganese. Despite the poor degree of preservation, the mouth of the face and curls are visible in the lower part; the latter extend to the base of the vessel, which has geometric decoration. This was probably a depiction of Medusa, as in group B according to Stern (1995, 208). Impressions of decoration on the base are very rare; such products were created in MCT VII moulds with a separate flat disc-shaped base section (Stern 1995, 204). Analogies can be found among the material from Toledo, where a bottle was preserved of violet glass with an image of Medusa and identical geometric patterns on the base (Stern 1995, 223, Fig. 142). The grave unit from Poetovio is dated to the second half of the 2nd century or the beginning of the 3rd century (Istenič 2000, 66).

The figurally formed bottle in the shape of a head from Podgraj near Ilirska Bistrica is missing. The circumstances of discovery are unknown, and only a photograph of the bottle remains, showing that it was probably made in a two-part mould.

The lack of data about the find means that the bottle from Podgraj can only be classified on the basis of comparisons, and according to the form of the hair and the neck it can be concluded that it probably represents the face of Medusa. Given that, it was probably created

SKUPINA 10 - OSTALO

10.1.
POSODE, PIHANE V KALUP

10.1.1.
Doza s pokrovom - piksida (*sl. 18*):

Posoda je bila pihana v večdelni sestavljen kalup, pokrov je bil delan posebej.

Datacija: prva četrtina 1. st.

Ptuj (gr. 773)
Piksida iz neprosojnega, mlečno belega stekla. Po osmerokotnem ostenju so upodobljeni različni simboli, pokrov manjka.
10.1.1. - pr. ustja 5 cm - LMJ 3690.
Lit.: Istenič 2000, t. 173: 10.

Primerjave: Matheson 1980, 46, no. 12; Harden *et al.* 1988, 158, no. 80.

Komentar:
Posoda je bila pihana v tridelni kalup, dno in pokrov sta bila delana posebej. Robovi ustja in pokrova so bili naknadno dodelani in obrušeni. Dno in pokrov sta okrogla, ostenje je osmerokotno. Krasijo ga različni motivi, deljeni med seboj s pokončnimi letvicami, predstavljeni so: kolo s prečkami, palmeta, romb s krogom v sredini in rastlinski okras. Vsak motiv se dvakrat ponovi. Dno posode krasijo koncentrični krogi, na pokrovu pa so palmete. Doze ali tudi pikside imenovane (*pyksis*), so služile različnim namenom. Po antičnih virih sodeč so jih uporabljali za hranjenje kozmetičnih in medicinskih pripravkov, celo snovi povezanih z magijo, strupov ali medu. Znane so srebrne pikside, ki so služile kot črnilniki. Oblika piksid je različna, okrogla, večkotna, toda vedno imajo pokrov. Izdelovali so jih iz različnih materialov - brona, svinca ali lesa. Bolj dragoceni izdelki pa so bili narejeni iz zlata, srebra, slonovine ali stekla.

Ohranjenih je le malo piksid tega tipa. Večinoma so izdelane iz mlečno belega stekla. Posoda iz ptujskega groba ni v celoti ohranjena, manjka ji pokrov (Istenič 2000, t. 173: 10). Pihana je bila v tridelni kalup. Analiza piksid te vrste je pokazala, da so se ohranile celo nekatere, ki so bile pihane v isti kalup (Matheson 1980, 46).

Posodica iz ptujskega groba je nastala verjetno v Sidonu, v današnjem Izraelu, v prvi četrtini 1. stoletja in kot dragocen kos je bila priložena v grob iz 1. stoletja na Ptuju (Istenič 1999, 76; 2001, 23-24).

in the second half of the 1st century or in the 2nd century (Stern 1995, 221-223).

GROUP 10 - MISCELLANEOUS

10.1.
MOULD-BLOWN VESSELS

10.1.1.
Small case with a lid - a pyxis (*Fig. 18*):

The vessel was blown into a multi-part compound mould, and the lid was made separately.

Date: first quarter of the 1st century

Ptuj (gr. 773)
A pyxis of opaque, milk-white glass. Various symbols were depicted on the octagonal walls, the lid is lacking.
10.1.1. - dia. rim 5 cm - LMJ 3690.
Lit.: Istenič 2000, Pl. 173: 10.

Analogies: Matheson 1980, 46, no. 12; Harden *et al.* 1988, 158, no. 80.

Comments:
The vessel was blown into a three-part mould, while the base and lid were made separately. The edges of the rim and lid were subsequently added and ground. The base and lid are circular, the walls octagonal. It was decorated with various motifs, separated from one another by vertical bands, including: a spoked wheel, a palmette, a rhomb with a circle in the center, while palmettes were depicted on the lid. Small cases, also known as pyxides (pyxis), served various purposes. Classical sources indicate that they were used for storing cosmetics and medical preparations, and even items related to magic, poisons, or honey. Silver pyxides are known that served as ink holders. The forms are varied, circular, polygonal, and they always have a lid. They were made of various materials: bronze, lead, or wood. More valuable specimens were made of gold, silver, ivory, or glass.

Very few pyxides of this type have been preserved. Most were made from milk-white glass. The vessel from the Ptuj grave was not entirely preserved, as the lid is lacking (Istenič 2000, Pl. 173: 10). It was blown into a three-part mould. Analysis of pyxides of this type has shown that several have been preserved that were blown into the same mould (Matheson 1980, 46).

The vessel from the grave at Ptuj was probably created at Sidon, in present day Israel, in the first quarter of the 1st century, and was placed as a valuable item in a grave from the 1st century at Ptuj (Istenič 1999, 76; 2001, 23-24).

PROSTO PIHANI IZDELKI

OPIS TEHNIKE

Poleg iznajdbe stekla kot surovine je v razvoju steklarstva najpomembnejša iznajdba pihanja stekla. Nova tehnika je v razvoju obrti pomenila pravo revolucijo. Pihanje je proizvodnjo poenostavilo in s tem pocenilo izdelke ter jih razširilo kot vsesplošno dobrino. Izum in razvoj nove tehnike sodi v čas, ko so bili v okvir rimske države vključeni tudi najpomembnejši mediteranski steklarski centri, feničansko-sirijska obala (63 pr. n. š.) in Egipt z Aleksandrijo (30 pr. n. š.).

Natančen kraj in čas izuma pihanja stekla je neznan. Nekaj časa je veljalo, da nekatere risbe iz egipčanskih grobnic prikazujejo steklopihalce, vendar so kmalu dokazali, da gre za delavce, ki razpihujejo ogenj (Grose 1977, 10). Spet drugi avtorji, npr. B. Neumann, so dokazovali obstoj pihanja stekla že v Mezopotamiji v 3. st. pr. n. š. (Forbes 1967, 143). Sčasoma pa je večina raziskovalcev povzela mnenje A. Kise, da se je pihanje razvilo malo pred začetkom krščanske ere nekje ob vzhodnem Sredozemlju, čeprav ni bilo znanih arheoloških najdb iz 1. st. pr. n. š. (Harden 1979, 337).

Prve dokaze so prinesla izkopavanja v jami En-Gedi v Izraelu, kjer so med grobnimi pridatki našli majhno pihano stekleničko. Grob je bil datiran v leta 40–37 pr. n. š. in pihana steklenička je bila tako prva najdba iz časa pred 1. st. n. š. (Grose 1977, 11). Kmalu pa je prišlo do novih odkritij, ki so pripomogla k razjasnitvi prvih razvojnih stopenj pihanja stekla.

Izkopavanja v starem delu Jeruzalema v t. i. Židovskem predelu leta 1971 so odkrila ostanke številnih ulitih in pihanih steklenih posod. Pod tlakovano cesto, zgrajeno v času kralja Heroda (37–34 pr. n. š.), so odkrili ostanke opuščenega kopališča, katerega bazeni so bili zasuti z različnimi odpadki. Eden od bazenov je bil zapolnjen pretežno s steklenimi odpadki. Keramika in novci datirajo najdbo v prvo polovico 1. st. pr. n. š. (Israeli 1991, 47). Poleg koščkov ulitih steklenih posod so največ pozornosti pritegnile steklene palice različnih dolžin in debelin, odlomki votlih steklenih palic, delno pihane posodice in nedokončani izdelki. Očitno je šlo za delavniške odpadke neke steklarske delavnice in z njenimi ostanki so zasuli bazen kopališča.

Študij teh zanimivih ostankov je pripeljal izraelske arheologe do naslednjih zaključkov, ki jih na kratko povzemamo (Israeli 1991, 53). Steklene cevi so zvili iz ploščatega kosa stekla, jih segreli in zgladili. Nekatere so po dolgem ovili z nitmi drugobarvnega stekla, če so želeli pripraviti večbarvne izdelke. Nato so en konec cevi zaprli, ga ponovno ogreli in zatem pihali vanjo. Tako

FREE-BLOWN PRODUCTS

DESCRIPTION OF THE TECHNIQUE

After the discovery of glass as a raw material, the most important discovery in the development of glass-working was the blowing of glass. The new technique meant a true revolution in the development of the craft. Glass blowing simplified the production process, thus making the products cheaper and causing their spread as universal goods. The invention and development of the new technique occurred in the period when the most important Mediterranean glass-working centers had been incorporated within the framework of the Roman state, i.e. those of the Phoenician-Syrian coast (63 BC) and Egypt with Alexandria (30 BC).

The exact area and period of the invention of glass blowing is unknown. It was claimed for a time that certain drawings from Egyptian tombs depicted glassblowers. However, it was recently shown that these were workers blowing up a fire (Grose 1977, 10). Other authors, such as B. Neumann, have claimed the existence of glass blowing in Mesopotamia in the 3rd century BC (Forbes 1957, 143). In the course of time, the majority of researchers recapitulated the opinions of A. Kisa, that glass blowing had developed somewhat prior to the beginning of the Christian era somewhere in the eastern Mediterranean, although archaeological finds were not known from the 1st century BC (Harden 1979, 337).

Excavations in the cave of En-Gedi in Israel offered the first proof, where the grave goods included a little blown glass. The grave was dated to 40-37 BC, and a blown bottle was thus the first find from the period prior to the 1st century AD (Grose 1977, 11). Soon new discoveries came to light that aided in explaining the first developmental phases of blowing glass.

Excavations in the old part of Jerusalem in the so-called "Jewish section" in 1971 discovered the remains of numerous cast and blown glass vessels. Under a paved road built in the period of King Herod (37-34 BC), archaeologists discovered the remains of abandoned thermal baths with their pools filled with debris, one of which was filled primarily with glass. Pottery and coins date the find to the first half of the 1st century BC (Israeli 1991, 47). In addition to fragments of cast glass vessels, the most interesting finds were glass rods of various lengths and thickness, fragments of hollow glass rods, partly blown vessels, and unfinished products. This was evidently debris from some glass workshop, and the pool of the baths was filled with these remains.

The study of these interesting remains led Israeli archaeologists to several interesting conclusions, which

napihana steklenička je bila nato odrezana od steklene cevi in dodelana ob ustju.

Pihanje v steklene cevi danes razlagajo kot eno od predstopenj pihanja v pravo kovinsko steklarsko pipo. Vsekakor je bil korak od pihanja v steklene cevi do pihanja v steklopihaško pipo problem inovacije oziroma tehničnega napredka. Prvi pihani izdelki so verjetno nastali z uporabo glinenih pip in šele kasneje so razvili kovinske.

Tako mnenje zagovarja Sternova (Stern, Schlick-Nolte 1994, 133), ki svoje trditve preverja z različnimi poizkusi. Po njenem je bil steklarjem najlaže dostopen material prav glina. Njene lastnosti so dobro poznali, na zalogi je bila v vsaki steklarski delavnici. Poleg tega glina precej slabše prevaja toploto kot kovina, zato je z glino laže delati, posebej če je pipa kratka, npr. 30-60 cm. Izdelava kovinske cevi ni prav enostavna, glineno pa si lahko izdela steklar sam. Zato jim ni bilo potrebno investirati v drage kovinske pripomočke, ampak so si lahko orodje izdelali po svojih željah in potrebah. Enostavna izdelava orodja je bil morda tudi eden od vzrokov za bliskovito razširitev nove tehnike (Stern, Schlick-Nolte 1994, 134).

Trditev, da so bile pipe najprej glinene, deloma potrjujeta upodobitvi pihanja iz rimskega obdobja na oljenkah iz Benkovca (*Asseria*) v Dalmaciji in Ferrare v Italiji (Abramić 1959, 151; Baldoni 1987, 23). Oljenki sta povsem identični in sta verjetno celo nastali v istem kalupu. Predstavljata steklopihača pred pečjo. Pipa, s katero steklar piha, je izredno kratka. S tako kratko kovinsko pipo bi bilo nemogoče rokovati, saj kovina prehitro prevaja toploto in bi bila prevroča; verjetno steklar uporablja glineno pipo (Stern, Schlick-Nolte 1994, 134). Po taki interpretaciji so glinene pipe uporabljali še v drugi pol. 1. stoletja, če upoštevamo datacijo oljenk (Baldoni 1987, 24).

Viri, ki govore o hitrem razvoju in razširitvi nove tehnike, so tako pisni kot arheološki. Nihče sicer direktno ne govori o izumu pihanja, številni pisci pa poročajo o novih izdelkih, steklarski obrti, surovinah zanjo itd. Najizčrpnejši izbor vseh antičnih virov o steklu je še vedno delo M. L. Trowbridge (*Philological Studies in Ancient Glass*, Urbana 1930).

Arheološke najdbe zadnjih let potrjujejo uporabo pihanega stekla v 1. st. pr. n. š. tudi na italskih tleh. Omenimo naj najdbe z območja rimskega foruma in Livijine hiše na Palatinu v Rimu (Grose 1977, 17, 21) ter najdišči Cosa v Etruriji (Grose 1975, 31) in Morgantina na Siciliji (Grose 1982, 26).

we will briefly summarize here (Israeli 1991, 53). The glass tubes were rolled from flat pieces of glass that were heated and smoothed. Sometimes they were wrapped lengthwise with threads of other coloured glass, if glass-workers wanted to create multicoloured products. Then they closed one end of the tube, heated it again, and blew into it. Bottles blown in this manner were cut off the glass tube and the rim was shaped.

Blowing into a glass tube is explained today as one of the preliminary phases of blowing into a metal glass-worker's pipe. Certainly the step from blowing into a glass tube to blowing into a glass blower's pipe was a product of innovation or technical advance. The first blown products were probably created with the use of a clay pipe and only later were metal ones developed.

These opinion is argued by Stern (1994, 133), who has tested this claims in various experiments. According to Stern, the most accessible material for glass workers would be clay. Its qualities were well known, and it was in stock in every glass workshop. Additionally, clay conducts heat more poorly than metal, and thus it is easier to work with clay, particularly if the pipe is short, such as 30-60 cm. The production of a metal pipe is not exactly simple, while a clay pipe could be made by the glass-worker himself. Thus glass-workers did not need to invest in expensive metal instruments, rather they could make tools according to their desires and needs. The simple production of tools was perhaps also one of the reasons for the rapid and swift spread of the new technique (Stern, Schlick-Nolte 1994, 134).

The claim that the pipes were first made of clay is partly confirmed by depictions of Roman period blowing on clay lamps from Benkovac (*Asseria*) in Dalmatia and Ferrara in Italy (Abramič 1959, 151; Baldoni 1987, 23). The lamps are completely identical and were probably made in the same mould. They depict a glass blower in front of a furnace. The pipe with which the glass worker is blowing is exceptionally short. Since a short metal pipe would be impossible to handle, as metal conducts heat too rapidly, and it would be too hot to hold; the glass blower was probably using a clay pipe (Stern, Schlick-Nolte 1994, 134). According to such an interpretation, clay pipes would have been used as late as the second half of the 1st century, if we take the dating of the lamp into account (Baldoni 1987, 24).

The sources that speak of a swift development and spread of the new technique are written as well as archaeological. While no one speaks directly of the invention of glass blowing, numerous writers report on new products, the glass working craft, raw material for it, etc. The most exhaustive collection of all classical sources about glass is still the work of M. L. Trowbridge (*Philological Studies in Ancient Glass*, Urbana 1930).

Archaeological finds in the recent period confirm the blowing of glass in the 1st century BC in Italy itself. Finds are known from the area of the Roman Forum

OKRASI NA PROSTO PIHANIH STEKLENIH IZDELKIH

Nova tehnika izdelave steklenih posod je prinesla tudi novosti v okraševanju izdelkov. Posode so lahko krasili med samo izdelavo, ko je bilo steklo še toplo, ali pa je proces krašenja potekal v ločenih delavnicah, potem ko so bili izdelki že ohlajeni.

I. OKRAŠEVANJE POSOD MED PIHANJEM

Nataljeni koščki stekla, kaplje in niti:
Raznobarvni koščki stekla, nataljeni in vtisnjeni v ostenje, so pogost okras na izdelkih 1. stoletja. Delno napihano stekleno kepo so povaljali po majhnih raznobarvnih koščkih stekla, nato so jo valjali po gladki podlagi, da so se koščki vtisnili v ostenje. Sledilo je ponovno ogrevanje in dodatno pihanje, pri tem pa so se vtisnjeni koščki stekla raztegnili v barvne lise na ostenju posode (Dobova - Petru P. 1969, t. 11: 1; Emona, NMS R 2279); (*sl. 19*).

Koščki stekla enake barve kot posoda so bolj redki, vendar tudi tak okras prepoznamo na izdelkih 1. stoletja (Slovenj Gradec - Egger 1914, 61).

Nataljene kaplje obarvanega stekla, največkrat modre in zelene, so pogost okras na skodelicah in čašah pozno rimske dobe. Njihova značilnost je, da niso

Sl. 19: Enoročajna čaša iz temno modrega stekla z belimi, rumenimi in svetlo modrimi lisami, vtisnjenimi po ostenju. Emona, posamična najdba, Narodni muzej Slovenije, Ljubljana (foto: T. Lauko).

Fig. 19: Cup with a handle of dark blue glass with white, yellow, and pale blue spots marvered into the walls. Emona, individual find, Narodni muzej Slovenije, Ljubljana (photo: T. Lauko).

and the House of Livia on the Palatine in Rome (Grose 1977, 17, 21), as well as the sites of Cosa in Etruria (Grose 1975, 31) and Morgantina on Sicily (Grose 1982, 26).

DECORATIONS ON FREE-BLOWN GLASS PRODUCTS

The new technique of producing glass vessels also brought new elements in the decoration of products. The vessels could be decorated during manufacture itself, while the glass was still hot, or the process of decoration could take place in separate workshops later, when the products had already cooled.

I. DECORATION OF A VESSEL DURING BLOWING

Applying chips of glass, blobs, and trails:
Multicoloured chips of glass, heated and pressed (marvered) into the walls were a common decoration on products of the 1st century. A partly blown glass gather was rolled over small multicoloured glass chips, and this was then rolled over a smooth surface, so that the chips would be imbedded in the walls. The vessel was reheated and blown again, and the impressed chips stretched into coloured spots on the walls of the vessel (Dobova - Petru P. 1969, Pl. 11: 1; Emona NMS R 2279); (*Fig. 19*).

Chips of glass of the same colour as the vessel are more rare, although this decoration can also be found on 1st century products (Slovenj Gradec - Egger 1914, 61).

Blobs of coloured glass, most often blue and green, are frequent decorations on bowls and cups of the late Roman period. Their characteristic is that they are not fully pressed into the vessel surface, and slightly protrude from the walls of the vessel. They were applied in straight lines along the circumference of the vessel or in small groups, such as three drops together (Ptuj - Mikl Curk 1976, Pl. 4: 11); (*Fig. 20*).

A special group of applied decoration consists of glass medallions with masks, for example in the form of Medusa, deities, lion heads, etc. Such applied elements are frequent on jugs in the 1st century, and were applied to the lower part of the handle (Ptuj - Šubic 1976, Pl. 1: 7). Another type of medallion was used in the late Roman period. Gold leaf with figural motifs was pressed between two layers of transparent glass and the medallion created in this manner was applied to the wall or the base of the vessel. These products were widespread in the 3rd and 4th centuries. A fragment of a medallion with a motif of a lamb in gold leaf was preserved among the Ptuj finds (Mikl Curk 1963, 492).

povsem vtisnjene v podlago in rahlo izstopajo iz ostenja posode. Nataljene so bile v ravni vrsti po obodu posode ali v manjših skupinah, npr. po tri kaplje skupaj (Ptuj - Mikl Curk 1976, t. 4: 11); (*sl. 20*).

Posebno skupino nataljenega okrasa predstavljajo stekleni medaljoni z maskami, npr. v obliki meduze, božanstev, levje glave ipd. Take aplike so pogoste na vrčih v 1. stoletju in so nataljene na spodnjem delu ročaja (Ptuj - Šubic 1976, t. 1: 7). Drugo vrsto medaljonov uporabljajo v pozno rimski dobi. Zlato folijo s figuralnim motivom stisnejo med dve plasti prozornega stekla in tako nastali medaljon nalepijo na ostenje ali dno posode. Ti izdelki so razširjeni v 3. in 4. stoletju. Ostanek medaljona z motivom jagnjeta na zlati foliji je ohranjen med ptujskimi najdbami (Mikl Curk 1963, 492).

Okras steklenih niti se na izdelkih pojavlja pretežno med 2. in 4. stoletjem. Najbolj enostaven okras predstavljajo niti stekla enake barve kot posoda, ki so v horizontalnih linijah nataljene po vratu, ostenju ali celi posodi (Ptuj - Vomer Gojkovič 1996, sl. 24; Istenič 1999, 75, sl. 58); (*sl. 21*). Niti raznobarvnega stekla tvorijo že bolj razgiban in dopadljiv okras, ki je pri nas redek (Celje - neobjavljeno), največ pa so ga uporabljali v kölnskih delavnicah.

Sl. 20: Del polkroglaste čaše z nataljenimi kapljami modrega stekla. Ptuj, Pokrajinski muzej Ptuj (foto: T. Lauko).

Fig. 20: Part of a hemispherical cup with applied drops of blue glass. Ptuj, Pokrajinski muzej Ptuj (photo: T. Lauko).

Sl. 21: Vrči z nataljenimi nitmi stekla. Ptuj, gr. 595, 759, Landesmuseum Joanneum Graz (Istenič 1999, 75, sl. 58); (foto: T. Lauko).

Fig. 21: Jugs with applied glass trails. Ptuj, gr. 595, 759, Landesmuseum Joanneum Graz (Istenič 1999, 75, Fig. 58); (photo: T. Lauko).

Sl. 22: Gube na ostenju posode so oblikovali, ko je bilo steklo še toplo. Šahovec, gr. 1, Dolenjski muzej Novo mesto (foto: T. Lauko).

Fig. 22: Indents on the walls of vessels were made while the glass was still hot. Šahovec, grave 1, Dolenjski muzej Novo mesto (photo: T. Lauko).

V redkih primerih so steklene niti razširjene in sploščene v različne vegetabilne ali kačaste okrase, ki jih najdemo na čašah na nogi ali steklenicah v 2. in 3. stoletju (Ptuj, gr. 371: Kujundžić 1982, t. 28: 10; Ptuj, gr. 11/1982: Lazar, Tomanič Jevremov 2000, t. 2: 4).

Oblikovanje površine posode z orodjem:
Gre za okrase, ki niso nastali z dodajanjem stekla, ampak so bili izdelani z oblikovanjem površine še tople posode. S škarjami so npr. iz ostenja potegnili majhne izrastke, s pritiskom na steno posode oblikovali večje in manjše gube ali kroglaste vdolbine ali pa stisnili steklo v gubo, ki je obkrožala npr. skodelico (*sl. 22*). Te gube ponekod izstopajo iz ostenja (Celje - Kolšek 1972, Y 152, 4: 66, 69), lahko pa so stisnjene in tvorijo dvojen cevast rob (Celje - Kolšek 1972, Y 152, 4: 59, 61).

II. OKRAŠEVANJE OHLAJENIH IZDELKOV

Slikanje - emajlna poslikava:
Za poslikavo so uporabili zdrobljeno steklo, zmešano z vezivom (voda ali olje), in s tako dobljeno zmesjo slikali na steno posode (Rütti 1991a, 122). Le-to so nato ponovno nekoliko segreli, da se je poslikava sprijela s podlago.

Ta način krašenja ni bil nikoli zelo razširjen, ohranjenih je le malo izdelkov z ostanki poslikave. Najbolj znane so polkroglaste čaše z motivi ptic in vinske

Decoration with glass threads or trails appeared primarily between the 2nd and 4th centuries. The most simple decoration was trails of glass of the same colour as the vessel, applied in horizontal lines to the neck, walls, or the entire vessel (Ptuj - Vomer Gojkovič 1996, Fig. 24; Istenič 1999, 75, Fig. 58); (*Fig. 21*). Trails of multicoloured glass created an even more lively and attractive decoration, which is rare in Slovenia (Celje - unpublished), and this technique was used most in the Köln production centers.

There are rare examples where the glass trails are broadened and flattened into various floral or snake-like decorations, which can be found on footed goblets and bottles in the 2nd and 3rd centuries (Ptuj, gr. 371: Kujundžić 1982, Pl. 28: 10; Ptuj, gr. 11/1982: Lazar, Tomanič Jevremov 2000, Pl. 2: 4).

Forming the surface of the vessel with tools:
These are decorations that were not created by adding glass, although they were produced by manipulating the surface of still hot vessels. Scissors were used to pull small protrusions out from the walls, and pressure applied to the walls of a vessel caused large or small folds or circular indentations, or glass would be pressed into a fold which would enclose, for example, a bowl (*Fig. 22*). These folds sometimes protrude from the walls (Celje - Kolšek 1972, Y 152, 4: 66, 69), and they could be pressed to form a double tubular fold (Celje - Kolšek 1972, Y 152, 4: 59, 61).

II. THE DECORATION OF COOLED PRODUCTS

Painting - enamel:
Crushed glass mixed with a binding agent (water or oil) was painted on the wall of a vessel (Rütti 1991a, 122). It was then reheated somewhat so the painting would bond with the surface.

This manner of decoration was never very widespread, and only a few specimens have been preserved with remains of painting. The best known are hemispherical cups with motifs of birds and grape vines from the second half of the 1st century. So far, the only fragment of such a cup in Slovenia is known from Emona (Rütti 1991a, 124).

Cutting and grinding:
All types of engraved decoration were made using a rotating stone or metal wheel and points. The majority of vessels with such decoration were made of colourless, deliberately decoloured glass, while some vessels from the 1st century were also from coloured glass.

1. Horizontal lines, wheel-cutting

Simple horizontal lines and wheel-cut bands, made with the help of a rotating stone or metal wheel, were a

trte iz druge polovice 1. stoletja. Pri nas je odlomek take čaše doslej znan samo iz Emone (Rütti 1991a, 124).

Vrezovanje in brušenje:
Vse vrste vrezanih okrasov so izdelali z uporabo vrtečih se kamnitih ali kovinskih koleščkov in konic. Večina posod s temi okrasi je bila izdelana iz brezbarvnega, namerno dekoloriranega stekla, nekatere posode iz 1. stoletja pa so tudi iz obarvanega stekla.

1. Horizontalni vrezi, brušeni pasovi

Preprosti horizontalni vrezi in brušeni pasovi, izdelani s pomočjo vrtečega se kamnitega ali kovinskega koleščka, so bili priljubljen in enostaven način krašenja rimskih posod od prvega do 4. stoletja. Prepoznamo jih tako na izdelkih iz obarvanega ali dekoloriranega stekla kot na posodah iz modro-zelenkastega stekla (Trebnje, Dolenjski muzej Novo mesto, R 47); (*sl. 23*).

Vrezi in brušeni pasovi so včasih kombinirani tudi z drugimi oblikami vrezanih okrasov v raznolike geometrijske vzorce (Ptuj, Zgornji Breg, Pokrajinski muzej Ptuj); (*sl. 24*).

2. Fasetiranje

Okras vdolbinic v obliki mandljev ali žitnih zrn so izdelovali z različno debelimi koleščki, ki so imeli kroglasto zaobljene robove. S površine posode so odbrusili precej stekla, zato je bilo pomembno, da je bilo ostenje debelo nekaj milimetrov.

Ta okras so uporabljali na ulitih izdelkih iz druge

Sl. 23: Horizontalni vrezi po ostenju so bili priljubljen in enostaven okras na steklenih izdelkih. Trebnje, Dolenjski muzej Novo mesto (foto: T. Lauko).

Fig. 23: Horizontal wheel-cut lines on the walls were a popular and simple decoration of glass products. Trebnje, Dolenjski muzej Novo mesto (photo: T. Lauko).

Sl. 24: Od konca 2. stoletja dalje so bile priljubljene polkroglaste čaše z geometrijskimi okrasi, ki so jih izdelali z brušenjem. Ptuj, Zgornji Breg, Pokrajinski muzej Ptuj (foto: T. Lauko).

Fig. 24: From the end of the 2nd century onwards, hemispherical cups with geometric wheel-cut decoration were popular. Ptuj, Zgornji Breg, Pokrajinski muzej Ptuj (photo: T. Lauko).

popular and simple manner of decorating Roman vessels from the 1st to the 4th centuries. They can be found on artifacts of coloured or decoloured glass, as well as on vessels of blue-green glass (Trebnje, Dolenjski muzej Novo mesto, R 47); (*Fig. 23*). Lines and ground bands were occasionally also combined with other forms of incised decoration in various geometrical patterns (Ptuj, Zgornji breg, Pokrajinski muzej Ptuj); (*Fig. 24*).

2. Facet-cutting

A decoration formed of facets in the shape of almonds or grains was made with wheels of varied thickness, which had circular rounded edges. They ground off a considerable amount of glass from the surface of the vessel, and it was hence important that the walls be several millimeters thick.

This decoration was used on cast products from the second half of the 1st century, tall beakers (3.3.4.) of decoloured glass from the end of the 1st and beginning of the 2nd centuries, and on hemispherical bowls (2.6.2.) in the 2nd and 3rd centuries (Ptuj, gr. 289; Istenič 1999, 76, Fig. 62); (*Fig. 25*).

3. Relief-cutting

Decoration in high relief has been preserved only on very few vessels from the Roman period. The surfaces of the vessels were worked with cutting and grinding so that the decoration stood out 1-2 mm in relief

Sl. 25: Čaša z vrezanim okrasom iz Petovione. Ptuj, gr. 289, Landesmuseum Joanneum Graz (Istenič 1999, 76, sl. 62); (foto: T. Lauko).

Fig. 25: A beaker with facet-cut decoration from Poetovio. Ptuj, grave 289, Landesmuseum Joanneum Graz (Istenič 1999, 76, Fig. 62); (photo: T. Lauko).

polovice 1. stoletja, visokih čašah (3.3.4.) iz dekoriranega stekla iz konca 1. in začetka 2. stoletja in na polkroglastih skodelicah (2.6.2.) v 2. in 3. stoletju (Ptuj, gr. 289: Istenič 1999, 76, sl. 62); (*sl. 25*).

3. Okras visokega reliefa

Le na redkih posodah iz rimske dobe se je ohranil okras v visokem reliefu. Z brušenjem in vrezovanjem so obdelali površino posode, da je okras reliefno izstopal 1-2 mm iz ostenja. Motivi navadno predstavljajo vitice, liste vinske trte, bršljan ipd.

Izdelki s tem okrasom so znani iz konca 1. stoletja, nekaj pa tudi iz pozno rimske dobe. Izvrsten in redek izdelek s reliefnim okrasom je kantaros iz groba 11 na Ptuju (3.7.4.; Lazar, Tomanič Jevremov 2000, t. 2: 1); (*sl. 26*).

Posebno skupino posod z reliefnim okrasom tvorijo diatretni izdelki iz 4. in 5. stoletja, ki pa jih zaenkrat med našim gradivom ne poznamo.

from the walls. The motifs usually consisted of tendrils, grave leaves, ivy, etc.

Products with such decoration are known from the end of the 1st century, and some also from the late Roman period. An excellent and rare artifact with relief decoration is the kantharos from grave 11 at Ptuj (Lazar, Tomanič Jevremov 2000, Pl. 2: 1); (*Fig. 26*).

A special group of vessels with relief decoration are the *diatreta* or cage-cup vessels of the 4th and 5th cen-

Sl. 26: Izdelki z okrasom v visokem reliefu so sodili med luksuzno posodje. Ptuj, gr. 11/1982, Pokrajinski muzej Ptuj (foto: T. Lauko).

Fig. 26: Products with decoration cut in high relief can be considered luxury vessels. Ptuj, grave 11/1982, Pokrajinski muzej Ptuj (photo: T. Lauko).

Sl. 27: Na steklenici z brušenim okrasom je verjetno upodobljen aleksandrijski svetilnik. Ptuj, gr. 11/1982, Pokrajinski muzej Ptuj (foto: M. Farič).

Fig. 27: The bottle with wheel-cut decoration probably depicts the lighthouse of Alexandria. Ptuj, grave 11/1982, Pokrajinski muzej Ptuj (photo: M. Farič).

4. Figuralni okras

Za izdelavo figuralnega okrasa so mojstri uporabljali različno debele koleščke s koničastimi ploskimi ali poševnimi robovi in ostre konice za prostoročno krašenje. Na ta način so lahko izdelali najbolj drobne detajle figur in prizorov s katerimi so polepšali skodele, čaše in steklenice v poznorimski dobi. Zaradi zahtevnosti izvedbe in dragocenosti teh posod najdemo figuralni okras predvsem na kvalitetnih dekoloriranih izdelkih. Motivi so pretežno vezani na religiozno tematiko, pogoste so biblijske scene.

Med redke v celoti ohranjene posode s figuralnim okrasom pri nas sodi steklenica iz groba 11 na Ptuju (6.3.7.; Lazar, Tomanič Jevremov 2000, t. 1); (*sl. 27*).

5. Kameo tehnika

Okrasa na izdelkih z dvojno plastjo stekla. Z orodjem - različnimi nožički, ki so jih uporabljali rezalci gem in kamej so izrezovali okras v gornjo, navadno svetlejšo, plast stekla, da je reliefno izstopil od podlage. Le-ta je bila običajno pihana iz temnejšega, npr. modro obarvanega stekla. V Sloveniji zaenkrat ne poznamo posod, izdelanih v tej tehniki.

turies, which are as yet unknown among the Slovenian material.

4. Figural decoration

To produce figural decorations the craftsmen used variously thick wheels with pointed flat or oblique edges and sharp points for free-hand etching. In this manner they could produce the most infinitesimal details of figures and scenes used to beautify bowls, cups, and bottles in the late Roman period. The demanding nature of the decoration and the high value of such vessels mean that figural decoration is found primarily on high quality decoloured products. The motifs are primarily tied to religious themes, and biblical scenes are common.

The rare entirely preserved vessels with figural decoration in Slovenia include a bottle from grave 11 at Ptuj (Lazar, Tomanič Jevremov 2000, Pl. 1); (*Fig. 27*).

5. The cameo technique

This technique involves carving a decoration on products with a double (cased) layer of glass. With tools that consisted of various small knives used by gem and cameo cutters, workers carved a decoration into the upper, usually lighter layer of glass, which stood out in relief against the background. The background was usually blown from a darker coloured glass, such as blue. No vessel produced with this technique is known at present from Slovenia.

PREGLED OBLIK

SKUPINA 1 - KROŽNIKI
(*sl. 28; pril. 1*)

1.2.
KROŽNIKI Z RAVNIM OSTENJEM

1.2.1.
Krožniki z zataljenim ustjem (Is 47); (*sl. 28*):

Plitve posode s pokončnim ali nekoliko navzven nagnjenim ostenjem, ki ravno preide v zataljeno ustje, dno ravno, s prstanasto nogo, ki je nataljena ali izvlečena iz dna.

Datacija: druga polovica 1. - začetek 2. st.

Celje (gr. 4)
Krožnik z zataljenim ustjem in prstanasto nogo.
1.2.1. - pr. ustja 17,6 cm - PMC R 4199.
Lit.: Kolšek 1972, Y 152: 54.
Celje (gr. 4)
Del krožnika z zataljenim ustjem.
1.2.1. - pr. ustja 18 cm - PMC R 4275.
Lit.: Kolšek 1972, Y 152: 55.
Ptuj (gr. 85)
Krožnik z zataljenim ustjem in izvlečeno prstanasto nogo.

REVIEW OF FORMS

GROUP 1 - PLATES
(*Fig. 28; Appendix 1*)

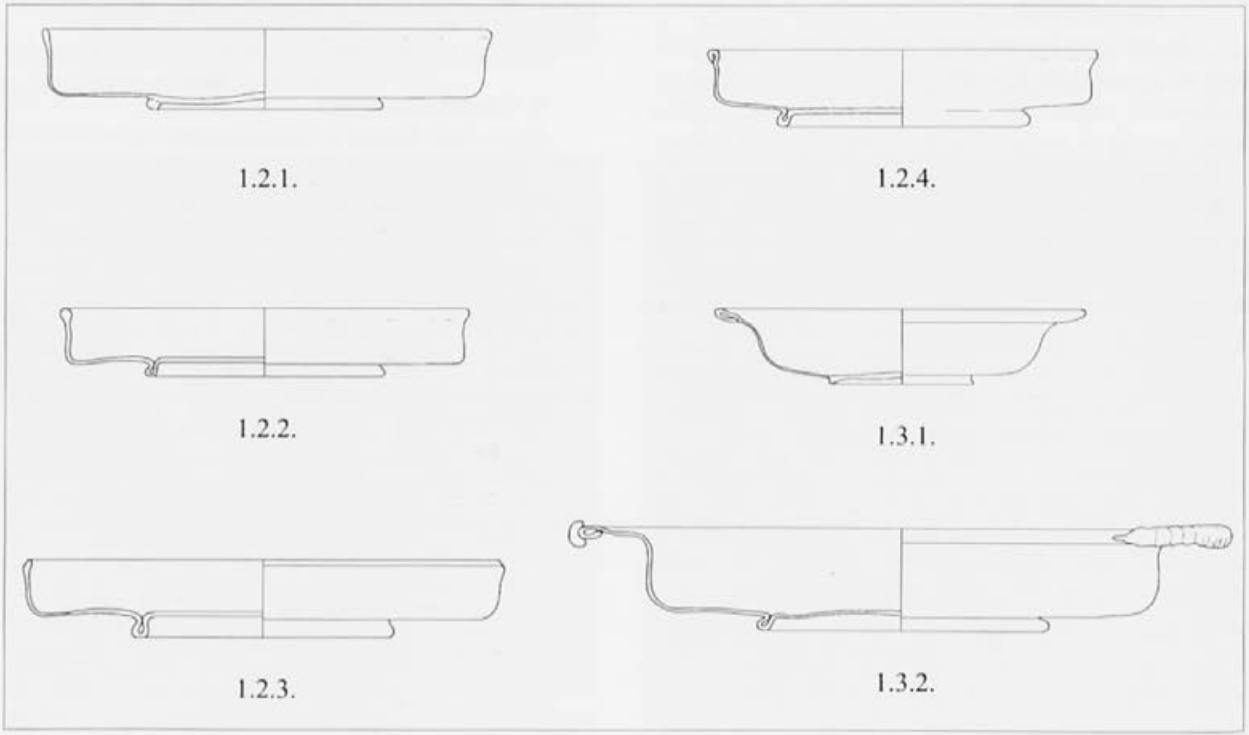
1.2.
PLATES WITH STRAIGHT WALLS

1.2.1.
Plates with a fire-rounded rim (Is 47); (*Fig. 28*):

Shallow vessels with straight or somewhat out-turned walls that extend directly into the fire rounded rim; the base flat with a base ring, which was applied or drawn out from the base.

Date: second half of the 1st - beginning of the 2nd centuries

Celje (gr. 4)
Plate with a fire-rounded rim and a base ring.
1.2.1. - dia. rim 17.6 cm - PMC R 4199.
Lit.: Kolšek 1972, Y 152: 54.
Celje (gr. 4)
Fragment of a plate with a fire-rounded rim.
1.2.1. - dia. rim 18 cm - PMC R 4275.
Lit.: Kolšek 1972, Y 152: 55.



Sl. 28: Skupina 1 - krožniki (1.2.1.: Kolšek 1972, 152: 54; 1.2.2.: Kolšek 1972, 152: 56; 1.2.3.: Kolšek 1972, 152: 53; 1.2.4.: Kolšek 1972, 152: 57; 1.3.1.: Pahič 1969, t. 3: 6; 1.3.2.: Logatec, neobjavljeno). M. = 1:3.

Fig. 28: Group 1 - plates (1.2.1.: Kolšek 1972, 152: 54; 1.2.2.: Kolšek 1972, 152: 56; 1.2.3.: Kolšek 1972, 152: 53; 1.2.4.: Kolšek 1972, 152: 57; 1.3.1.: Pahič 1969, Pl. 3: 6; 1.3.2.: Logatec, unpublished). Scale = 1:3.

1.2.1. - pr. ustja 15,8 cm - LMJ 2178.
Lit.: Istenič 2000, t. 18:7.

Primerjave: Damevski 1976, t. 10: 5; Hayes 1975, Fig. 13: 327; Goethert-Polaschek 1977, Abb. 4; Czurda-Ruth 1979, Taf. 4: 624, 627, 636; Biaggio Simona 1991, Tav. 2: 225.

1.2.2.
Krožniki z odebeljenim ustjem (*sl. 28*):

Plitve posode s pokončnim ali nekoliko navzven nagnjenim ostenjem, ki ravno preide v odebeljeno ustje, dno ravno, s prstanasto nogo, ki je nataljena ali izvlečena iz dna.

Datacija: druga polovica 1. - začetek 2. st.

Celje (gr. 4)
Del krožnika z odebeljenim ustjem.
1.2.2. - pr. ustja 16 cm - PMC R 4276.
Lit.: Kolšek 1972, Y 152: 56.

Primerjave: Plesničar Gec 1972, t. 133:11; 202:10-12; Barkóczi 1988, Taf. 1: 3; Ružić 1994, t. 28: 4.

1.2.3.
Krožniki s profiliranim ustjem (*sl. 28*):

Plitve posode s pokončnim ali nekoliko navzven nagnjenim ostenjem, ki ravno preide v zataljeno in profilirano ustje, dno ravno, s prstanasto nogo, ki je nataljena ali izvlečena iz dna.

Datacija: druga polovica 1. - začetek 2. st.

Celje (gr. 4)
Del krožnika s profiliranim ustjem.
1.2.3. - pr. ustja 18,8 cm - PMC R 4274.
Lit.: Kolšek 1972, Y 152: 53.

Primerjave: Biaggio Simona 1991, Tav. 1:139.2.034.

1.2.4.
Krožniki s cevastim ustjem (Is 46a); (*sl. 28*):

Plitve posode s pokončnim ali nekoliko navzven nagnjenim ostenjem, ki ravno preide v cevasto zavihano ustje, dno ravno, s prstanasto nogo, ki je nataljena ali izvlečena iz dna.

Datacija: druga polovica 1. - začetek 2. st.

Celje (gr. 4)
Del krožnika s cevastim, navznoter zavihanim ustjem.
1.2.4. - pr. ustja 15,2 cm - PMC R 4276a.
Lit.: Kolšek 1972, Y 152: 57.

Primerjave: Goethert-Polaschek 1977, Taf. 30: 52, 53; Czurda-Ruth 1979, Taf. 4: 613; Follmann-Schulz 1988, Taf. 53: 481.

Ptuj (gr. 85)
Plate with a fire-rounded rim and a drawn-out base ring.
1.2.1. - dia. rim 15.8 cm - LMJ 2178.
Lit.: Istenič 2000, Pl. 18: 7.

Analogies: Damevski 1976, Pl. 10: 5; Hayes 1975, Fig. 13: 327; Goethert-Polaschek 1977, Fig. 4; Czurda-Ruth 1979, Pl. 4: 624, 627, 636; Biaggio Simona 1991, Pl. 2: 225.

1.2.2.
Plates with a fire-thickened rim (*Fig. 28*):

Shallow vessels with straight or somewhat out-turned walls that extend directly into the thickened rim; the base flat with a base ring, which was applied or drawn out from the base.

Date: second half of the 1st - beginning of the 2nd centuries

Celje (gr. 4)
Fragment of a plate with a fire-thickened rim.
1.2.2. - dia. rim 16 cm - PMC R 4276.
Lit.: Kolšek 1972, Y 152: 56.

Analogies: Plesničar Gec 1972, Pl. 133: 11; 202: 10-12; Barkóczi 1988, Pl. 1: 3; Ružić 1994, Pl. 28: 4.

1.2.3.
Plates with a profiled rim (*Fig. 28*):

Shallow vessels with upright or somewhat out-turned walls that extend directly into a fire-rounded and profiled rim; the base flat with a base ring, which was applied or drawn out from the base.

Date: second half of the 1st - beginning of the 2nd centuries

Celje (gr. 4)
Fragment of a plate with a profiled rim.
1.2.3. - dia. rim 18.8 cm - PMC R 4274.
Lit.: Kolšek 1972, Y 152: 53.

Analogies: Biaggio Simona 1991, Pl. 1: 139.2.034.

1.2.4.
Plates with a tubular rim (Is 46a); (*Fig. 28*):

Shallow vessels with upright or somewhat out-turned walls that extend directly into a tubular rim; the base flat with a base ring, which was applied or drawn out from the base.

Date: second half of the 1st - beginning of the 2nd centuries

Celje (gr. 4)
Fragment of a plate with a tubular rim, rolled inwards.
1.2.4. - dia. rim 15.2 cm - PMC R 4276a.
Lit.: Kolšek 1972, Y 152: 57.

Komentar za oblike 1.2.1. do 1.2.4.:
Oblika Isings 47 tako na evropskih najdiščih kot med gradivom v Sloveniji ni zelo pogosta. Ostenje posode ravno preide v ustje, dno je lahko ravno ali pa ima prstanasto nogo, ki je nalepljena ali potegnjena iz ostenja. Isingsova navaja najdbe iz Pompejev in Est, datirane od sredine do poznega 1. stoletja (1957, 62), krožnike iz Herculanea pa Scatozza Höricht opredeljuje kot obliko 4 in postavlja v drugo polovico 1. stoletja (1986, 31). Na Štalenski gori se oblika Isings 47 pojavlja že v plasteh, datiranih v prvo polovico 1. stoletja (Czurda-Ruth 1979, 84-87). Tudi v kantonu Ticino v Švici se krožniki oblike Isings 47 in oblike 48 (s cevasto gubo na prehodu iz ostenja v dno) pojavljajo v grobovih 1. stoletja (Biaggio Simona 1991, 52-54).

Krožniki s cevastim ustjem (1.2.4. - Isings 46a, AR 107) se v Augstu pojavljajo v drugi polovici 1. stoletja in v prvih desetletjih 2. stoletja že izginejo iz uporabe (Rütti 1991, 69). Med gradivom s slovenskih najdišč najdemo primerjave v emonskih grobovih iz prvega stoletja (Plesničar Gec 1972, t. 133: 11; 202: 10-12).

Krožniki oblike 1.2.1. do 1.2.4. izvirajo, z izjemo enega krožnika iz Petovione, iz istega groba iz Celeje, razlikujejo se le po različno oblikovanem ustju; prstanasta noga je nataljena ali izvlečena iz dna. Grob je datiran v flavijsko obdobje (Kolšek 1972, Y 152, 2). Edini krožnik s petovionske zahodne nekropole je bil najden v grobu z novcem Domicijana, ki je glede na ostale pridatke datiran v 2. stoletje (Istenič 2000, 40).

1.3.
KROŽNIKI Z NAVZVEN NAGNJENIM OSTENJEM

1.3.1.
Krožniki z izvihanim cevastim ustjem (var. Is 45); (*sl. 28*):

Plitve posode z rahlo navzven nagnjenim ostenjem, ustje izvihano navzven in cevasto zapognjeno, dno prstanasto.

Datacija: 2. st.

Miklavž pri Mariboru (GN)
Krožnik z izvihanim, cevasto zavihanim ustjem, dno prstanasto.
1.3.1. - pr. ustja 14,5 cm - PMM A 2253.
Lit.: Pahič 1969, t. 3: 6.

Primerjave: Hayes 1975, Fig. 6: 195.

Komentar:
Krožnik se od prejšnjih oblik razlikuje predvsem po izvihanem ustju, ki je cevasto zavihano in nekoliko sploščeno. Prstanasta noga je nataljena na dno.

Posode s cevastim ustjem se pojavljajo od 1. stoletja dalje, razpon oblik pa je dokaj širok, saj med njimi

Analogies: Goethert-Polaschek 1977, Pl. 30: 52, 53; Czurda-Ruth 1979, Pl. 4: 613; Follmann-Schulz 1988, Pl. 53: 481.

Comments - forms 1.2.1. to 1.2.4.:
The form is not very common either at European sites in general nor among the Slovenian material. It corresponds to Isings 47, the walls extend directly into the rim, and the base can be flat or have a ring base, which was attached or drawn out from the walls. Isings cited finds from Pompeii and Este dated from the middle to the late 1st century (1957, 62), while plates from Herculaneum were classified by Scatozza Höricht as form 4 and placed in the second half of the 1st century (1986, 31). At Magdalensberg the Isings 47 form also appeared in strata dated to the first half of the 1st century (Czurda-Ruth 1979, 84-87). Plates of Isings types 47 and 48 (with a tubular fold at the transition from the wall to the base) appear in the canton of Ticino in Switzerland in graves of the 1st century (Biaggio Simona 1991, 52-54).

Plates with tubular rims (1.2.4.; Isings 46a, AR 107) appeared at Augst in the second half of the 1st century, and the first decades of the 2nd century already disappeared from use (Rütti 1991, 69). The material from Slovenian sites includes examples from Emona graves of the first century (Plesničar Gec 1972, Pl. 133: 11; 202: 10-12).

The plates of forms 1.2.1. to 1.2.4. all come, with the exception of one plate from Poetovio, from the same grave from Celje, and they differ only in the varied formation of the rims, while the ringed bases were applied or drawn out from the base. The grave is dated to the Flavian period (Kolšek 1972, Y 152, 2). The only plate from the western cemetery of Poetovio was found in a grave with a coin of Domitian, and in terms of the other grave goods was dated to the 2nd century (Istenič 2000, 40).

1.3.
PLATES WITH OUT-TURNED WALLS

1.3.1.
Plates with everted tubular rims (var. Is 45); (*Fig. 28*):

Shallow vessels, the rim is everted outwards and is tubular; ring base.

Date: 2nd century

Miklavž near Maribor (TF)
Plate with an everted tubularly rolled rim, ring base.
1.3.1. - dia. rim 14.5 cm - PMM A 2253.
Lit.: Pahič 1969, Pl. 3: 6.

Analogies: Hayes 1975, Fig. 6: 195.

prepoznamo skodelice, globoke sklede in krožnike (Cool, Price 1995, 94). Med izdelki s cevasto zapognjenim ustjem so krožniki najmanj razširjena oblika, njihova uporaba pa traja do sredine 2. stoletja (Cool, Price 1995, 95).

Najdba iz Miklavža je zaenkrat edina te vrste pri nas, izvira pa iz gomile iz 2. stoletja (Pahič 1969, 74).

1.3.2.
Krožniki z apliko na izvihanem ustju (*sl. 28*):

Nizke posode z močno navzven izvihanim ustjem, na njem nataljeni dve narebreni apliki, dno oblikovano, z nataljeno ali izvlečeno prstanasto nogo.

Datacija: 2. st.

Logatec (NN)
Krožnik z močno izvihanim ustjem z nazobčanima aplikama, ostenje klekasto, dno prstanasto.
1.3.2. - viš. 3,8 cm; pr. ustja 26 cm - Zasebna zbirka.
Lit.: neobjavljeno.
Unec (gr. 24)
Krožnik z močno izvihanim ustjem z dvema nazobčanima aplikama, dno prstanasto.
1.3.2. - NMP.
Lit.: Vičič, Schein 1987, 164.
Unec (gr. 24)
Krožnik z močno izvihanim ustjem z dvema nazobčanima aplikama, prstanasto dno izvlečeno iz posode.
1.3.2. - NMP.
Lit.: Vičič, Schein 1987, 164.

Primerjave: Hayes 1975, fig. 6: 195; Damevski 1976, t. 11: 7.

Komentar:
Krožniki s širokim izvihanim ustjem in narebrenima aplikama na njem med gradivom v Sloveniji niso pogosti. Oblika po velikosti nekoliko odstopa od prejšnjih, prstanasta noga je izvlečena iz ostenja in ne nataljena. Izdelek sodi med proizvode, razširjene predvsem na mediteranskem področju, kjer je bil v 2. in 3. stoletju med steklarskimi centri posebej močan Ciper. Tem delavnicam pripisujejo izdelavo plitvih krožnikov in skodelic z rebrastimi aplikami na ustju (Damevski 1976, 65; Whitehouse 1997, 75). Na Cipru se te oblike pojavljajo v datiranih kontekstih iz konca 1. in v 2. stoletju (Vessberg 1956, 196). Enako so datirane najdbe iz Bakra in posode iz zbirke muzeja v Torontu (Damevski 1976, 65; Hayes 1975, 66).

Krožnik iz Logatca je naselbinska najdba in sodi v 2. stoletje (Frelih 1991, 9). Grob iz Unca je imel priložen novec Antonina Pija (138–161). Na osnovi tega pa lahko datiramo krožnik v sredino ali drugo polovico 2. stoletja (Vičič, Schein 1987, 164).

Comments:
This plate differs from the preceding forms primarily in terms of the everted rim, which was tubularly rolled and somewhat flattened. The ring base was applied to the base.

Vessels with tubular rims appear from the second half of the 1st century onwards. The range of forms is fairly wide, as they also include cups, deep bowls, and dishes (Cool, Price 1995, 94). Plates are the least widespread form among products with tubular rims, and their use continued to the mid 2nd century (Cool, Price 1995, 95).

The find from Miklavž is the only one of its kind in Slovenia so far, and it comes from a 2nd century tumulus (Pahič 1969, 74).

1.3.2.
Plates with corrugated bands on an everted rim (*Fig. 28*):

Shallow plates with a strongly out-turned rim, with two ribbed bands applied, the base formed with an applied or drawn out ring base.

Date: 2nd century

Logatec (SF)
Plate with a highly everted rim with corrugated bands, stepped walls, ring base.
1.3.2. - ht. 3.8 cm; dia. rim 26 cm - Private collection.
Lit.: unpublished.
Unec (gr. 24)
Plate with a highly everted rim with two corrugated bands, ring base.
1.3.2. - NMP.
Lit.: Vičič, Schein 1987, 164.
Unec (gr. 24)
Plate with a highly everted rim with two corrugated bands, ring base drawn out from the vessel.
1.3.2. - NMP.
Lit.: Vičič, Schein 1987, 164.

Analogies: Hayes 1975, Fig. 6: 195; Damevski 1976, Pl. 11: 7.

Comments:
Plates with broad out-turned rims and ribbed applied bands on them are not common among the material from Slovenia. The form differs somewhat in size from the preceding ones, and the ring base is drawn out from the walls, and not applied. These products were distributed primarily throughout the Mediterranean region, where in the 2nd and 3rd centuries Cyprus was particularly powerful among the glass working centers. The production of shallow plates and bowls with ribbed applied elements on the rim is attributed to the workshops there (Damevski 1976, 65; Whitehouse 1997, 75). On Cyprus these forms appear in dated contexts from the end of

SKUPINA 2 - SKODELICE
(*sl. 29, 30; pril. 1*)

2.3.
KROGLASTE SKODELICE

2.3.1.
Kroglaste skodelice z vertikalnimi rebri na ostenju (Is 17); (*sl. 29*):

Kroglaste skodelice z izvihanim, ravno odrezanim ustjem in vboklim dnom. Ostenje krasijo vertikalna plastična rebra in horizontalne niti iz drugobarvnega stekla. Izdelane iz obarvanega ali modro-zelenkastega stekla.

Datacija: 1. st.

Črnelo (gr.)
Skodelica iz modro-zelenkastega stekla z nataljenimi belimi progami, ustje izvihano, dno ravno.
2.3.1. - viš. 6 cm - NMS R 7014.
Lit.: Ložar 1935, t. 2: 1, 2.
Dobova (gr. A 39)
Skodelica iz jantarno rjavega stekla z rumenimi horizontalnimi nitmi, ustje izvihano, dno ravno.
2.3.1. - viš. 6,3 cm; pr. ustja 6,7 cm - PMB.
Lit.: Petru P. 1969, t. 11: 2.
Drnovo (PN)
Skodelica iz jantarno rjavega stekla z belimi vodoravnimi progami, ustje izvihano, dno ravno.
2.3.1. - viš. 6,7 cm - NMS R 731.
Lit.: Petru, Petru 1978, t. 26: 1.
Križna gora (NN)
Odlomek skodelice iz jantarno rjavega stekla z belimi vodoravnimi progami.
2.3.1. - vel. 4,5 x 3,2 cm - NMP 1462, S 3.
Lit.: Urleb 1974, t. 43: 13.
Mihovo (gr. 43)
Skodelica iz temno rdečega stekla z belimi vodoravnimi progami.
2.3.1. - NHMW 52160.
Lit.: Haevernick 1958, no. 51a.
Mihovo (PN)
Jantarno rjava skodelica z belimi vodoravnimi progami.
2.3.1. - NMS 3346.
Lit.: Haevernick 1958, no. 51b.
Mihovo (PN)
Jantarno rjava skodelica z belimi vodoravnimi progami.
2.3.1. - DM.
Lit.: Haevernick 1958, no. 51c.
Ostrog (PN)
Skodelica iz temno rdečega stekla.
2.3.1. - NHMW 55413.
Lit.: Haevernick 1958, 21, no. 53.
Ptuj (gr. 4, Sp. Hajdina)
Skodelica iz temno rdečega stekla z belimi vodoravnimi progami.
2.3.1. - LMJ 2650.
Lit.: Haevernick 1958, 21, no. 54a.

the 1st century and in the 2nd century (Vessberg 1956, 196). The finds from Bakar and Toronto museum are dated similarly (Damevski 1976, 65; Hayes 1975, 66).

The plate from Logatec is a settlement find belonging to the 2nd century (Frelih 1991, 9). The grave from Unec contained a coin of Antoninus Pius (138-161). On the basis of this, we can date the plate to the middle or the second half of the 2nd century (Vičič, Schein 1987, 164).

GROUP 2 - BOWLS
(*Fig. 29, 30; Appendix 1*)

2.3.
GLOBULAR BOWLS

2.3.1.
Small globular bowls with vertical ribs on the walls (Is 17); (*Fig. 29*):

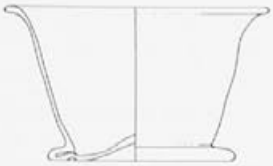
Globular bowls with an everted, straight cut rim and concave base. The walls are decorated with vertical relief ribs and horizontal trails of different coloured glass. They were made of coloured or blue-green glass.

Date: 1st century

Črnelo (gr.)
Small bowl of blue-green glass with applied white trails, everted rim, and flat base.
2.3.1. - ht. 6 cm - NMS R 7014.
Lit.: Ložar 1935, Pl. 2: 1, 2.
Dobova (gr. A 39)
Small bowl of amber brown glass with yellow horizontal threads, everted rim, flat base.
2.3.1. - ht. 6.3 cm; dia. rim 6.7 cm - PMB.
Lit.: Petru P. 1969, Pl. 11: 2.
Drnovo (IF)
Small bowl of amber brown glass with white horizontal trails, everted rim, flat base.
2.3.1. - ht. 6.7 cm - NMS R 731.
Lit.: Petru, Petru 1978, Pl. 26: 1.
Križna gora (SF)
Fragment of a small bowl of amber brown glass with white horizontal trails.
2.3.1. - dim. 4.5 x 3.2 cm - NMP 1462, S 3.
Lit.: Urleb 1974, Pl. 43: 13.
Mihovo (gr. 43)
Small bowl of dark red glass with white horizontal trails.
2.3.1. - NHMW 52160.
Lit.: Haevernick 1958, no. 51a.
Mihovo (IF)
Amber brown cup with white horizontal trails.
2.3.1. - NMS 3346.
Lit.: Haevernick 1958, no. 51b.
Mihovo (IF)
Amber brown bowl with white horizontal trails.
2.3.1. - DM.

2.3.1.

2.3.2.

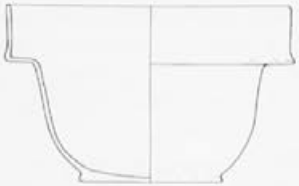


2.4.1.

2.4.2.

2.4.3.

2.4.4.



2.4.5.

2.4.6.

Sl. 29: Skupina 2 - skodelice (2.3.1.: Petru, Petru 1978, t. 26: 1; 2.3.2.: Petru P. 1969, t. 5: 8; 2.4.1.: Petru 1976, t. 2: 4; 2.4.2.: Urleb 1984, t. 13: 2; 2.4.3.: Urleb 1984, t. 25: 4; 2.4.4.: Urleb 1984, t. 9: 6; 2.4.5.: Petru, Petru 1978, t. 28: 22; 2.4.6.: Petru, Petru 1978, t. 25: 17). M. = 1:3.

Fig. 29: Group 2 - bowls (2.3.1.: Petru, Petru 1978, Pl. 26: 1; 2.3.2.: Petru P. 1969, Pl. 5: 8; 2.4.1.: Petru 1976, Pl. 2: 4; 2.4.2.: Urleb 1984, Pl. 13: 2; 2.4.3.: Urleb 1984, Pl. 25: 4; 2.4.4.: Urleb 1984, Pl. 9: 6; 2.4.5.: Petru, Petru 1978, t. 28: 22; 2.4.6.: Petru, Petru 1978, Pl. 25: 17). Scale = 1:3.

Ptuj (NN)
Odlomek skodelice.
2.3.1. - vel. 2, 5 x 2,8 cm - PMP.
Lit.: Korošec 1982, t. 2: 2.
Polhov Gradec (gr.)
Skodelica iz mlečno belega stekla z modrimi horizontalnimi progami, ustje izvihano, dno ravno.
2.3.1. - viš. 5,5 cm; pr. ustja 7,5 cm - NMS R 6982.
Lit.: Ložar 1938, sl. 14 desno.
Polhov Gradec (gr.)
Skodelica iz temno rdečega do vijoličnega stekla z belimi horizontalnimi progami, ustje izvihano, dno ravno.
2.3.1. - viš. 7 cm; pr. ustja 7 cm - NMS R 6981.
Lit.: Ložar 1938, sl. 15.
Slepšek (PN)
Skodelica iz jantarno rjavega stekla.
2.3.1. - NMS 1763.
Lit.: Havernick 1958, no. 57.
Strmec nad Belo cerkvijo (GN)
Odlomek skodelice iz temno modrega stekla z belimi vodoravnimi progami.
2.3.1. - viš. 6,2 cm - NMS 32830.
Lit.: Dular 1991, t. 54: 17.
Strmec nad Belo cerkvijo (GN)
Temno modra skodelica z belimi vodoravnimi progami, ustje izvihano, dno ravno.
2.3.1. - viš. 6 cm; pr. ustja 6,4 cm - NMS 32829.
Lit.: Dular 1991, t. 54: 18.
Strmec nad Belo cerkvijo (GN)
Odlomek posode iz jantarno rjavega stekla z belimi vodoravni progami.
2.3.1. - najv. obseg 8,5 cm - NMS 32806.
Lit.: Dular 1991, t. 54: 22.
Strmec nad Belo cerkvijo (GN)
Odlomek posode iz jantarno rjavega stekla z belimi vodoravnimi progami.
2.3.1. - najv. obseg 9,2 cm - NMS 32807.
Lit.: Dular 1991, t. 54: 23.
Unec (gr. 18)
Skodelica iz jantarno rjavega stekla z belimi horizontalnimi progami, ustje izvihano, dno ravno.
2.3.1. - viš. 8,2 cm - NMP.
Lit.: Vičič, Schein 1987, sl. 4.
Vinji vrh (PN)
Temno modra skodelica z belimi vodoravnimi progami.
2.3.1. - NMS 2934
Lit.: Müllner 1900, t. 49: 4.

Primerjave: Haevernick 1958, 82-89; 1967, 154-161; Rütti 1991, Taf. 43: 931-968.

Komentar:
To skupino skodelic je podrobneje obdelala Haevernickova in jih poimenovala »zarte Rippenschalen« (Haevernick 1958, 76). Opazila je veliko koncentracijo skodelic v jugovzhodnoalpskem alpskem prostoru in domnevala, da gre za lokalno proizvodnjo. Skodelice so izdelane iz obarvanega ali redkeje iz modro-zelenkastega stekla, na ostenju so vtisnjene vodoravne črte belega ali modrega stekla. Razpon barv iz katerih so izdelane je

Lit.: Haevernick 1958, no. 51c.
Ostrog (IF)
Small bowl of dark red glass.
2.3.1. - NHMW 55413.
Lit.: Haevernick 1958, 21, no. 53.
Ptuj (gr. 4)
Cup of dark red glass with white horizontal trails.
2.3.1. - LMJ 2650.
Lit.: Haevernick 1958, 21, no. 54a.
Ptuj (SF)
Fragment of a small bowl.
2.3.1. - dim. 2.5 x 2.8 cm - PMP.
Lit.: Korošec 1982, Pl. 2: 2.
Polhov Gradec (gr.)
Small bowl of milk-white glass with blue horizontal trails, everted rim, flat base.
2.3.1. - ht. 5.5 cm; dia. rim 7.5 cm - NMS R 6982.
Lit.: Ložar 1938, Fig. 14 on right.
Polhov Gradec (gr.)
Small bowl of dark red to violet glass with white horizontal trails, everted rim, flat base.
2.3.1. - ht. 7 cm; dia. rim 7 cm - NMS R 6981.
Lit.: Ložar 1938, Fig. 15.
Slepšek (IF)
Small bowl of amber brown glass.
2.3.1. - NMS 1763.
Lit.: Havernick 1958, no. 57.
Strmec nad Belo cerkvijo (TF)
Fragment of a bowl of dark blue glass with white horizontal trails.
2.3.1. - ht. 6.2 cm - NMS 32830.
Lit.: Dular 1991, Pl. 54: 17.
Strmec nad Belo cerkvijo (TF)
Small bowl of dark blue glass with white horizontal trails, everted rim, flat base.
2.3.1. - ht. 6 cm; dia. rim 6.4 cm - NMS 32829.
Lit.: Dular 1991, Pl. 54: 18.
Strmec nad Belo cerkvijo (TF)
Fragment of a vessel of amber brown glass with white horizontal trails.
2.3.1. - circ. 8.5 cm - NMS 32806.
Lit.: Dular 1991, Pl. 54: 22.
Strmec nad Belo cerkvijo (TF)
Fragment of a vessel of amber brown glass with white horizontal trails.
2.3.1. - circ. 9.2 cm - NMS 32807.
Lit.: Dular 1991, Pl. 54: 23.
Unec (gr. 18)
Small bowl of amber brown glass with white horizontal trails, everted rim, flat base.
2.3.1. - ht. 8.2 cm - NMP.
Lit.: Vičič, Schein 1987, Fig. 4.
Vinji vrh (IF)
Small bowl of dark blue glass with white horizontal trails.
2.3.1. - NMS 2934.
Lit.: Müllner 1900, Pl. 49: 4.

Analogies: Haevernick 1958, 82-89; 1967, 154-161; Rütti 1991, Pl. 43: 931-968.

Comments:
This group of small bowls was analyzed in detail by

širok, med gradivom s slovenskega prostora je najpogostejša jantarna barva.

Novejše najdbe potrjujejo največjo koncentracijo teh skodelic v severni Italiji, Sloveniji in tudi v Švici. Verjetno je, da so na tem področju obstajale delavnice, ki so s svojimi izdelki trgovale širom imperija, saj so najdbe teh izdelkov razširjene od zahodne Evrope do severne Afrike, Grčije in egejskega področja (Haevernick 1967, 155).

Skodelice so izdelovali v prvi polovici 1. stoletja, v drugi polovici pa že počasi izginejo iz uporabe. Najzgodnejše najdbe so znane iz avgustejskih plasti na Štalenski gori (Czurda-Ruth 1979, 46), večinoma pa se pojavljajo od tiberijskega do neronskega časa (Van Lith 1977, 33). V kasnejših desetletjih so vse redkejše, kar kažejo tudi najdbe iz Augsta (Rütti 1991, 66, 69).

Številnost skodelic, najdenih na slovenskem ozemlju, morda lahko povezujemo tudi z bližino delavnic severne Italije in Akvileje kot trgovskega centra, ki je zalagal naš prostor v rimski dobi. Najdene so tako v grobnih celotah kot v naselbinskih plasteh. O zgodnji uporabi (v avgustejskem obdobju) te oblike pri nas govore grobne najdbe iz Mihovega (Haevernick 1958, 80), v mlajših grobnih celotah pa jih srečamo vse do konca 1. stoletja (Petru P. 1969; Ložar 1938) in ponekod še v začetku 2. stoletja (Trebnje, gr. 109 - Slabe 1993, 25).

O lokalni proizvodnji na Slovenskem ne moremo govoriti, ker za to, razen številnosti najdb, ni nobenih drugih dokazov. Steklarske delavnice so našem območju pričele s proizvodnjo šele v mlajšem času, ko te skodelice niso več v uporabi.

2.3.2.

Plitve skodelice s prstanasto nogo in odebeljenim ustjem (Is 44); (*sl. 29*):

Skodelice imajo polkroglasto ostenje, ki ravno preide v odebeljeno ustje, noga je prstanasta.

Datacija: druga polovica 1. st.

Dobova (gr. A 23)
Plitva skodelica iz modro obarvanega stekla, ustje odebeljeno, prstanasta noga.
2.3.2. - viš. 2,8 cm; pr. ustja 5,6 cm - PMB.
Lit.: Petru P. 1969, t. 5: 8.
Verdun (gr. 176)
Plitva skodelica s cevasto zavihanim ustjem in prstanasto nogo.
2.3.2. - viš. 4 cm; pr. ustja 6,9 cm - DM 2343.
Lit.: Breščak 2002, kat. 81, 141.

Primerjave: Sternini 1991, Pl. 59: 346, 347; Whitehouse 1997, No. 113.

Haevernick, who termed them "*zarte Rippenschalen*" (Haevernick 1958, 76). She noted a large concentration of cups in the southeastern Alpine region, and hypothesized local production. The bowls were made of coloured or more rarely from blue-green glass, and horizontal lines of white or blue glass were impressed into the walls. The range of colours from which they were produced is wide, the most common among the Slovenian material being amber brown.

More recent finds confirm the greatest concentration of these vessels in northern Italy, Slovenia, and also in Switzerland. It is probable that workshops existed here that traded their goods throughout the entire Empire, as finds of these products are distributed from western Europe to northern Africa, Greece, and the Aegean region (Haevernick 1967, 155).

The bowls were manufactured in the first half of the 1st century, and in the second half they slowly fell out of use. The latest finds are known from the Augustan strata at Magdalensberg (Czurda-Ruth 1979, 46), while most appeared from the Tiberian to the Neronian period (Van Lith 1977, 33). In later decades they were ever more rare, as is also indicated by the finds from Augst (Rütti 1991, 66, 69).

The great number of bowls found on Slovenian territory can be connected to the near vicinity of the workshops of northern Italy and Aquileia as trade center that provided our region in the Roman period. They were discovered both in grave units and in settlement strata. The early use of this form in Slovenia is indicated by the grave finds from Mihovo (Haevernick 1958, 80), and in later grave units they can be found to the end of the 1st century (Petru P. 1969; Ložar 1938), and sometimes even from the beginning of the 2nd century (Trebnje, gr. 109 - Slabe 1993, 25).

It is not possible to claim some local production in Slovenia as no evidence exists other than the numerous finds. Glass working centers began production in this area only in a later period, when such bowls were no longer in use.

2.3.2

Shallow cups with a ring base and fire-thickened rim (Is 44); (*Fig. 29*):

The cups have hemispherical walls that extend directly into the thickened rim, with a ring base.

Date: second half of the 1st century

Dobova (gr. A 23)
A shallow cup of blue glass, thickened rim, ring base.
2.3.2. - ht. 2.8 cm; dia. rim 5.6 cm - PMB.
Lit.: Petru P. 1969, Pl. 5: 8.
Verdun (gr. 176)
A shallow cup with a tubular rim and ring base.

Komentar:
Primerjave za to skodelico dokaj majhnih dimenzij niso prav številne. Najdemo jih predvsem na območju severne Italije in Švice. Večinoma so izdelane iz naravno obarvanega stekla, n. pr. skodelica iz Verdunskega groba. Tudi ostale najdbe, npr. iz Ticina (Biaggio Simona 1991, 83-85), Sardinije (Roffia 1993, 78) in Herkulanea (Scattozza Höricht 1986, forma 8, 33) so datirane v 1. stoletje, natančneje v čas med neronsko-klavdijskim obdobjem in začetkom 2. stoletja.

Med objavljenimi najdbami s slovenskih najdišč skodelici iz Dobove in Verduna nimata ustreznih primerjav, glede na grobni celoti pa sodita v drugo polovico 1. stoletja (Petru P. 1969, 14; Breščak 2002, 141).

Kot posebno različico te oblike moramo omeniti skodelice z napisom iz zlate niti, ki je bil na medaljonu pritaljen na dno posode. Na gornji površini steklenega diska so najprej izdelali željen napis, nato pa so ga pritrdili na dno skodelice, robove medaljona pa upognili v visoko prstanasto nogo (Filippini 1996, 115). Napisi so bili kratki - napitnice, voščilnice, ipd. Izdelki so bili navadno pihani iz dekoloriranega stekla, oblike skodelic pa niso vedno enake.

Odlomek skodelice, ki je morda pripadal obliki Isings 44 je bil najden na Ptuju (Mikl Curk 1963, 493). Danes je napis iz zlate niti še komaj viden, medtem ko je V. Skrabar še bral *OMO* in *VALE* (Filippini 1996, 124). Ker je ohranjeno samo dno posode in njene oblike ne moremo z gotovostjo določiti, je nismo uvrstili v katalog. Tovrstni izdelki so bili zaradi svoje dragocenosti v uporabi skozi daljši čas (2.-4. st.), le ena skodelica pa je znana iz datiranega konteksta, iz groba iz sredine 3. stoletja na Portugalskem (Alarcão 1968, 71).

2.4.
SKODELICE Z NAVZVEN NAGNJENIM OSTENJEM

2.4.1.
Skodelice z navzven nagnjenim ostenjem in izvihanim ustjem (Is 41b); (*sl. 29*):

Ima prstanasto nogo, ustje je izvihano in odebeljeno ali cevasto zavihano.

Datacija: druga polovica 1. - 2. st.

Dobova (gr. A 23)
Skodelica z navzven nagnjenim ostenjem, ustje izvihano in zataljeno, dno prstanasto.
2.4.1. - viš. 4,6 cm; pr. ustja 8 cm - PMB.
Lit.: Petru P. 1969, t. 5: 7.
Miklavž pri Mariboru (GN)
Skodelica z navzven nagnjenim ostenjem, ustje zataljeno, dno prstanasto.

2.3.2. - ht. 4 cm; dia. rim 6.9 cm - DM 2343.
Lit.: Breščak 2002, cat. 81, 141.

Analogies: Sternini 1991, Pl. 59: 346, 347; Whitehouse 1997, No. 113.

Comments:
Comparisons for these cups of somewhat small dimensions are hardly numerous. They are primarily found in the region of northern Italy and Switzerland. Most were made from naturally coloured glass, such as the cup from the grave at Verdun. Other finds, such as those from Ticino (Biaggio Simona 1991, 83-85), Sardinia (Roffia 1993, 78), and Herculaneum (Scatozza Höricht 1986, form 8, 33), are dated to the 1st century, more exactly to the period between the Neronian-Claudian reigns and the beginning of the 2nd century.

While the published finds from Slovenian sites, the vessels from Dobova and Verdun, have no suitable analogies, in reference to the grave units they can be classified to the second half of the 1st century (Petru P. 1969, 14; Breščak 2002, 141).

Special variants of this form should be mentioned: cups with inscriptions made from gold thread, attached on a medallion to the base of a vessel. On the upper surface of the glass disk, glass workers first made the desired inscription, and they then attached it to the base of the cup, the edges of the medallion were pressed into the high ringed foot (Filippini 1996, 115). The inscriptions were short - toasts, congratulations, etc. The products were usually blown from decoloured glass, and the form of the cups is not always identical.

A fragment of a cup, that may be part of form Is 44 was found at Ptuj (Mikl Curk 1963, 493). Today the inscription in gold is barely visible, but V. Skrabar succeeded in reading *OMO* and *VALE* (Filippini 1996, 124). Only the base was preserved of the vessel from Ptuj. The form could thus not be determined and it was not included in the catalogue. Such items were in use throughout a lengthy period because of their value (2nd-4th centuries), and only one cup is known from a dated context, from a grave of the middle 3rd century in Portugal (Alarcão 1968, 71).

2.4.
BOWLS WITH TURNED-OUT WALLS

2.4.1.
Bowls with out-turned walls and everted rims (Is 41b); (*Fig. 29*):

The vessel has a ring base, and the everted rim is thickened or tubular.

Date: second half of the 1st - 2nd centuries

2.4.1. - viš. 5,5 cm; pr. ustja 11 cm - PMM A 2250.
Lit.: Pahič 1969, t. 3: 9.
Miklavž pri Mariboru (GN)
Skodelica z navzven nagnjenim ostenjem, ustje zataljeno in cevasto zavihano, dno prstanasto.
2.4.1. - viš. 5 cm; pr. ustja 11,5 cm - PMM A 2249.
Lit.: Pahič 1969, t. 3: 8.
Stari trg pri Slovenj Gradcu (gr. 2)
Skodelica z navzven nagnjenim ostenjem, ustje izvihano in zataljeno, dno prstanasto.
2.4.1. - viš. 6,2 cm; pr. ustja 10,8 cm - LMJ 14817.
Lit.: Petru 1976, t. 2: 4.

Primerjave: Biaggio Simona 1991, Tav. 5: 024, 115, 127; Sternini 1991, Pl. 58: 329-331; Whitehouse 1997, No. 150-152.

Komentar:
Oblika je zelo razširjena, največ najdb pa poznamo iz Italije in njej bližnjih najdišč. Skodelice so izdelane iz modro-zelenkastega ali intenzivno obarvanega stekla, predvsem temno modrega.

Med številnimi primerjavami naj omenimo najdbe iz Pompejev, Herkulanea (Scatozza Höricht 1986, forma 10, 35) in Ostije, kjer se pojavljajo v plasteh datiranih v čas Domicijana in Trajana (Scatozza Höricht 1986, 36). V drugo polovico 1. stoletja sodijo tudi najdbe iz Bologne (Meconcelli Notarianni 1979, 40, No. 24).

Najzgodnejšo najdbo take skodelice objavlja Czurda-Ruth s Štalenske gore in jo datira v avgustejski čas (1979, 87, no. 653). Zaenkrat je to edina tako zgodnja najdba. Najdbe iz kantona Ticino v Švici so datirane v drugo polovico prvega in še na začetek 2. stoletja (Biaggio Simona 1991, 78-80).

Najdbe s slovenskih najdišč sodijo v flavijsko obdobje (npr. Dobova - Petru P. 1969, 14) in se pojavljajo tudi še v 2. stoletju (Miklavž pri Mariboru - Pahič 1969, 113).

2.4.2.
Skodelice z vodoravno izvihanim ustjem (Is 42a, b); (*sl. 29*):

Prstanasta noga, izvihano ustje je zataljeno, odebeljeno ali cevasto zavihano.

Datacija: druga polovica 1. - 2. st.

Miklavž pri Mariboru (GN)
Skodelica s polkroglastim ostenjem, izvihanim in zataljenim ustjem, dno prstansto.
2.4.2. - viš. 4,5 cm; pr. ustja 9,8 cm - PMM A 2248.
Lit.: Pahič 1969, t. 3: 2.
Cerknica (gr. 26)
Skodelica z močno izvihanim in cevasto zapognjenim ustjem, dno prstanasto.
2.4.2. - viš. 4,4 cm; pr. ustja 17 cm - NMP.
Lit.: Urleb 1984, t. 13: 2.

Dobova (gr. A 23)
Bowl with out-turned walls, everted and fire-rounded rim, ring-shaped base.
2.4.1. - ht. 4.6 cm; dia. rim 8 cm - PMB.
Lit.: Petru P. 1969, Pl. 5: 7.
Miklavž pri Mariboru (TF)
Bowl with out-turned walls, fire-rounded rim, ring-shaped base.
2.4.1. - ht. 5.5 cm; dia. rim 11 cm - PMM A 2250.
Lit.: Pahič 1969, Pl. 3: 9.
Miklavž pri Mariboru (TF)
Bowl with out-turned walls, fire-rounded and tubular rim, ring-shaped base.
2.4.1. - ht. 5 cm; dia. rim 11.5 cm - PMM A 2249.
Lit.: Pahič 1969, Pl. 3: 8.
Stari trg pri Slovenj Gradcu (gr. 2)
Bowl with out-turned walls, everted and fire-rounded rim, ring-shaped base.
2.4.1. - ht. 6.2 cm; dia. rim 10.8 cm - LMJ 14817.
Lit.: Petru 1976, Pl. 2: 4.

Analogies: Biaggio Simona 1991, Pl. 5: 024, 115, 127; Sternini 1991, Pl. 58: 329-331; Whitehouse 1997, No. 150-152.

Comments:
The form is widely distributed, while the majority of finds are known from Italy and its vicinity. The bowls were made from blue-green or intensively coloured glass, particularly dark blue.

From the numerous examples we should mention the finds from Pompeii, Herculaneum (Scatozza Höricht 1986, form 10, 35), and Ostia, where the form appeared in strata dated to the period of Domitian and Trajan (Scatozza Höricht 1986, 36). The finds from Bologna also belong to the second half of the 1st century (Meconcelli Notariani 1979, 40, No. 24).

The earliest find of such a bowl was published by Czurda-Ruth from Magdalensberg, and was dated to the Augustan period (1979, 87, no. 653). This is the only such early find to date. Finds from the canton of Ticino in Switzerland are dated to the second half of the 1st century, as well as the beginning of the 2nd century (Biaggio Simona 1991, 78-80).

The finds from the Slovenian sites are dated to the Flavian period (Dobova - Petru P. 1969, 14), and they also appear in the 2nd century (Miklavž pri Mariboru - Pahič 1969, 113).

2.4.2.
Bowls with horizontally everted rims (Is 41a, b); (*Fig. 29*):

Ring base, the everted rim is fire-rounded, thickened or tubular.

Date: second half of the 1st - 2nd centuries

Miklavž pri Mariboru (TF)
Bowl with hemispherical walls, everted and fire-rounded rim, ring base.

Formin (gr. 47)
Skodelica z izvihanim in odebeljenim ustjem, dno prstanasto.
2.4.2. - viš. 4 cm; pr. ustja 14 cm - PMP.
Lit.: Mikl Curk 1975, Y 183: 3.
Izola, Simonov zaliv (NN)
Močno izvihano ustje skodelice z vrezanim okrasom riževih zrn.
2.4.2. - pr. ustja 15 cm - MZVKD Pi 1080.
Lit.: neobjavljeno.
Izola, Simonov zaliv (NN)
Močno izvihano ustje skodelice z vrezanim okrasom riževih zrn.
2.4.2. - pr. ustja 15 cm - MZVKD Pi 1065
Lit.: neobjavljeno.
Izola, Simonov zaliv (NN)
Močno izvihano ustje skodelice iz mlečno belega stekla.
2.4.2. - pr. ustja 14 cm - MZVKD Pi 1063.
Lit.: neobjavljeno.
Miklavž pri Mariboru (GN)
Skodelica s polkroglastim ostenjem, izvihanim in zataljenim ustjem, dno prstanasto.
2.4.2. - viš. 4 cm; pr. ustja 8 cm - PMM A 2247.
Lit.: Pahič 1969, t. 3: 1.
Miklavž pri Mariboru (GN)
Skodelica z izvihanim in cevasto zapognjenim ustjem, dno prstanasto.
2.4.2. - viš. 4,5 cm; pr. ustja 14,5 cm - PMM A 2254.
Lit.: Pahič 1969, t. 3: 7.

Primerjave: Hayes 1975, Fig. 5: 177; Damevski 1976, T. 2: 1; Rütti 1991, Taf. 92: 2106; Biaggio Simona 1991, Tav. 6: 131; Cool, Price 1995, Fig. 6.4: 693; Tarpini 2000, Fig. 1.

Komentar:
Ta oblika skodelic je precej manj razširjena kot prej opisana skupina. Pogoste so na italijanskih najdiščih in najdiščih zahodne Evrope (Tarpini 2000, 96, Fig. 2,3). Najdbe iz Štalenske gore kažejo, da se pojavljajo nekako od sredine 1. stoletja dalje (Czurda-Ruth 1979, 57-58). Obliko najdemo tudi med gradivom iz Pompejev in Herkulanea. Tu so bile najdene z ostanki materiala za transport (Scatozza Höricht 1986, 35).

V Švici, v kantonu Ticino, se ta oblika skodelic pojavlja nekako od šestdesetih let prvega stoletja naprej. Njihova uporaba traja vse drugo stoletje in celo v začetku tretjega, vendar so najbolj razširjene med letoma 70-130 (Biaggio Simona 1991, 82). V Augstu so ti izdelki (AR 80) pogosti šele v 2. stoletju (Rütti 1991, 83). Mlajšo različico z okrasom na ustju je Rütti v Augstu označil kot AR 83, razširjena je predvsem v 2. stoletju in se pojavlja še tudi na začetku tretjega (1991, 83). Skodelice z okrasom na ustju so zelo razširjene tudi na najdiščih severne in centralne Italije, kjer so najpogostejše v 2. stoletju (Tarpini 2000, 97).

Skodelice iz gomile v Miklavžu sodijo glede na grobno celoto v 2. stoletje (Pahič 1969, 74), kamor sodi tudi grob iz Cerknice (Urleb 1984, 312). Skodelice z okrasom riževih zrn na ustju, t. i. varianta Limburg (Tarpini 2000, 95), so zaenkrat znane samo med

2.4.2. - ht. 4.5 cm; dia. rim 9.8 cm - PMM A 2248.
Lit.: Pahič 1969, Pl. 3: 2.
Cerknica (gr. 26)
Bowl with a highly everted and tubular rim, ring base.
2.4.2. - ht. 4.4 cm; dia. rim 17 cm - NMP.
Lit.: Urleb 1984, Pl. 13: 2.
Formin (gr. 47)
Bowl with an everted and fire-thickened rim, ring base.
2.4.2. - ht. 4 cm; dia. rim 14 cm - PMP.
Lit.: Mikl Curk 1975, Pl. 183: 3.
Izola, Simonov zaliv (SF)
Highly everted rim of a bowl with incised decoration of grains.
2.4.2. - dia. rim 15 cm - MZVKD Pi 1080.
Lit.: unpublished.
Izola, Simonov zaliv (SF)
Highly everted rim of a bowl with incised decoration of grains.
2.4.2. - dia. rim 15 cm - MZVKD Pi 1065.
Lit.: unpublished.
Izola, Simonov zaliv (SF)
Highly everted rim of a bowl of milk-white glass.
2.4.2. - dia. rim 14 cm - MZVKD Pi 1063.
Lit.: unpublished.
Miklavž pri Mariboru (TF)
Bowl with hemispherical walls, everted and fire-rounded rim, ring base.
2.4.2. - ht. 4 cm; dia. rim 8 cm - PMM A 2247.
Lit.: Pahič 1969, Pl. 3: 1.
Miklavž pri Mariboru (TF)
Bowl with a highly everted and tubular rim, ring base.
2.4.2. - ht. 4.5 cm; dia. rim 14.5 cm - PMM A 2254.
Lit.: Pahič 1969, Pl. 3: 7.

Analogies: Hayes 1975, Fig. 5: 177; Damevski 1976, Pl. 2: 1; Rütti 1991, Pl. 92: 2106; Biaggio Simona 1991, Pl. 6: 131; Cool, Price 1995, Fig. 6.4: 693; Tarpini 2000, Fig. 1.

Comments:
This form of bowl is somewhat less widely distributed than the previously described group. They are common at Italian and western European sites (Tarpini 2000, 96, Fig. 2, 3). The finds from Magdalensberg indicate that it appeared sometime from the middle of the 1st century onwards (Czurda-Ruth 1979, 57-58). This form can also be found among the material from Pompeii and Herculaneum. They were found there together with remains of material for transport (Scatozza Höricht 1986, 35).

This form of bowl appeared in the canton of Ticino in Switzerland sometime from the sixties of the 1st century onwards. Their use continued throughout the second century and even to the beginning of the third, although they were most widely distributed in 70-130 AD (Biaggio Simona 1991, 83). At Augst these products (AR 80) were frequent only in the 2nd century (Rütti 1991, 83). A later variant of this form has a decoration on the rim and Rütti clasified it at Augst as AR 83; it was widely spread primarily in the 2nd century and also appeared at the beginning of the third (1991, 83). Bowls with decoration on the rim are also highly widespread at the sites of northern and central Italy, where they were most frequent in the 2nd century (Tarpini 2000, 97).

gradivom Simonovega zaliva v Izoli in sodijo glede na stratigrafijo najdišča v zgodnje 2. stoletje (ustni podatek M. Stokin).

2.4.3.
Skodelice z apliko na vodoravno izvihanem ustju (Is 43); (*sl. 29*):

Skodelice imajo plitvo polkrožno oblikovano telo na prstanasti nogi, ustje izvihano ali cevasto, na njem dve narebreni apliki v obliki držajev.

Datacija: druga polovica 1. - 2. st.

Cerknica (gr. 39)
Skodelica z izvihanim in cevasto zavihanim ustjem, dno prstanasto, na ustju narebreni apliki.
2.4.3. - viš. 5,2 cm; pr. ustja 18 cm - NMP.
Lit.: Urleb 1984, t. 25: 4.

Primerjave: Hayes 1975, Fig. 5: 179; Damevski 1976, t. 2: 5; Barkóczi 1988, Taf. 2: 9; Follmann-Schulz 1988, Taf. 52: 472; Biaggio Simona 1991, Tav. 6: 001, 072; Whitehouse 1997, 75, No. 93.

Komentar:
Skodelice s svojevrstnimi narebrenimi ročaji sodijo med izdelke, razširjene predvsem na mediteranskem področju (Whitehouse 1997, 75). V 2. in 3. stoletju je bil med steklarskimi centri Sredozemlja posebej močan Ciper. Tem delavnicam pripisujejo izdelavo skodelic in krožnikov z rebrastimi aplikami na ustju (Damevski 1976, 67, t. 11: 7).

Na Cipru se te skodelice pojavljajo v datiranih kontekstih iz konca 1. in v 2. stoletju (Vessberg 1956, 196, Fig. 42: 16, 17). V Evropi najdemo primerjave v Švici, na Kreti, pa tudi v Izraelu in Alžiriji. Tudi na teh najdiščih se ti izdelki pojavljajo od druge polovice 1. in v 2. stoletju (Whitehouse 1997, 75).

Grobna celota iz Cerknice sodi glede na ostale pridatke v drugo polovico 1. oziroma na začetek 2. stoletja (Urleb 1984, 312).

2.4.4.
Plitve skodelice s cevasto zavihanim ustjem (*sl. 29*):

Ostenje se ravno zaključi v cevasto zavihano ustje, prstanasta noga, dno vboklo.

Datacija: druga polovica 1. - začetek 2. st.

Cerknica (gr. 17)
Plitva skodelica, ostenje prehaja v cevasto zavihano ustje, noga prstanasta.
2.4.4. - viš. 3 cm; pr. ustja 15,2 cm - NMP.
Lit.: Urleb 1984, t. 9: 6.

The bowls from the tumulus at Miklavž can be dated to the 2nd century in terms of the grave as a whole (Pahič 1969, 74), which also applies to the grave from Cerkica (Urleb 1984, 312). Bowls with decoration in the form of a grain of rice on the rim, also known as the Limburg variant (Tarpini 2000, 95), are known to date only from Simon Bay at Izola, and belong to the early second century in terms of the stratigraphy of the site (information from M. Stokin).

2.4.3.
Bowls with applied corrugated bands on an everted rim (Is 43); (*Fig. 29*):

The bowls have a shallow hemispherical body on a ring base, the rim everted or tubular, with two ribbed applied elements in the form of handles.

Date: second half of the 1st - 2nd centuries

Cerknica (gr. 39)
Bowl with an everted and tubular rim, ring base, ribbed applied elements on the rim.
2.4.3. - ht. 5.2 cm; dia. rim 18 cm - NMP.
Lit.: Urleb 1984, Pl. 25: 4.

Analogies: Hayes 1975, Fig. 5: 179; Damevski 1976, Pl. 2: 5; Barkóczi 1988, Pl. 2: 9; Follmann-Schulz 1988, Pl. 52: 472; Biaggio Simona 1991, Pl. 6: 001, 072; Whitehouse 1997, 75, No. 93.

Comments:
Bowls with ribbed bands or "handles" are among products primarily distributed throughout the Mediterranean region (Whitehouse 1997, 75). In the 2nd and 3rd centuries, Cyprus was particularly powerful among the larger glass working centers of the Mediterranean. Bowls and plates with ribbed applied elements on the rim are attributed to these workshops along with other products (Damevski 1976, 67, Pl. 11: 7).

These bowls appear on Cyprus in a dated contexts from the end of the 1st and during the 2nd century (Vessberg 1956, 196, Fig. 42: 16, 17). Comparisons can be found in Europe in Switzerland, on Crete, and also in Israel and Algiers. The products similarly appear at these sites from the second half of the 1st century and in the 2nd century (Whitehouse 1997, 75).

The grave unit from Cerknica belongs to the second half of the 1st century or the beginning of the 2nd century on the basis of the grave goods (Urleb 1984, 312).

2.4.4.
Shallow bowls with a tubular rim (*Fig. 29*):

The walls extend directly into a tubular rim, ring foot, concave base.

Primerjave: Hayes 1975, Fig. 12: 463-465; Follmann-Schulz 1988, Taf. 52: 471.

Komentar:
Posode s cevastim ustjem so v uporabi že nekako od sredine 1. stoletja dalje, med njimi so najštevilčnejše skodele in skodelice, manj je krožnikov in ostalih oblik. Tak način izdelave ustja ostane priljubljen še v 2. stoletju (Cool, Price 1995, 94).

Včasih je zaradi slabe ohranjenosti težko določiti, kakšni obliki je pripadalo ohranjeno ustje; ugotovimo pa lahko, da so plitve skodelice, v primerjavi z večjimi, globokimi skodelami med gradivom bolj skromno zastopane.

V Vituduru (Unteres Bühl) najdemo odlomek podobne posode, ki jo lahko opredelimo kot varianto oblike Isings 45 (1957, 60). Najzgodnejše najdbe s švicarskega najdišča sodijo v klavdijski čas, bolj razširjene pa so v obdobju med zadnjo četrtino 1. in v začetku 2. stoletja (Rütti 1988, 34).

Grobna celota iz Cerknice je iz druge polovice 1. in začetka 2. stoletja (Urleb 1984, 313).

2.4.5.
Skodelice z ovratnikom (Is 69a, b); (*sl. 29*):

Razlike v oblikovanju ovratnika, ki je lahko profiliran, ima poudarjeno spodnjo gubo ali pa samo tvori ovratnik okrog ustja. Dno je ravno ali pa ima prstanasto nogo. Ostenje nagnjeno navzven, nekoliko polkrožno.

Datacija: druga polovica 1. - 2. st.

Celje (gr. 4)
Poudarjena guba na spodnjem delu ovratnika, prstanasta noga.
2.4.5. - viš. 7,2 cm; pr. ustja 11 cm; pr. dna 4,6 cm - PMC R 4268.
Lit.: Kolšek 1972, Y 152: 66.
Celje (gr. 4)
Poudarjena guba na spodnjem delu ovratnika, prstanasta noga.
2.4.5. - viš. 4,2 cm; pr. ustja 8,5 cm; pr. dna 2,6 cm - PMC R 4269.
Lit.: Kolšek 1972, Y 152: 64.
Drnovo (PN)
Ovratnik ravno oblikovan, ustje ravno odrezano, prstanasta noga.
2.4.5. - viš. 6,7 cm; pr. dna 10 cm - NMS R 728.
Lit.: Petru, Petru 1978, t. 25: 22.
Ptuj (gr. 774)
Poudarjena guba na spodnjem delu, prstanasta noga.
2.4.5. - pr. ustja 5,9 cm - LMJ 2410.
Lit.: Istenič 2000, t. 174: 4.
Ptuj (PN)
Poudarjena spodnja guba, dno prstanasto.
2.4.5. - viš. 6,2 cm; pr. ustja 9,6 cm - PMP 1235.
Lit.: Mikl Curk 1976, t. 4: 7.
Trebnje (gr. 109)
Poudarjena guba na spodnjem delu ovratnika, prstanasta noga.

Date: second half of the 1st - beginning of the 2nd centuries

Cerknica (gr. 17)
Shallow bowl, the rim extends into a tubular rim, ring base.
2.4.4. - ht. 3 cm; dia. rim 15.2 cm - NMP.
Lit.: Urleb 1984, Pl. 9: 6.

Analogies: Hayes 1975, Fig. 12: 463-465; Follmann-Schulz 1988, Pl. 52: 471.

Comments:
Vessels with tubular rims were in use sometime from the middle 1st century onwards. The most numerous forms were bowls and cups, while there are fewer dishes and other forms. This manner of making rims remains popular even in the 2nd century (Cool, Price 1995, 94).

Occasionally it is difficult because of poor preservation to distinguish to what form the remains of a rim belonged; it is possible to establish that shallow bowls in comparison with larger, deeper bowls are less represented among the material.

A fragment of a similar vessel was found at Vitudurum (Unteres Bühl), which can be classified as a variant of the Isings 45 form (1957, 60). The earliest finds from the Swiss site belong to the Claudian period, while they were more widely distributed in the period between the last quarter of the 1st century and the beginning of the 2nd century (Rütti 1988, 34).

The grave from Cerknica is dated to the second half of the 1st and beginning of the 2nd centuries (Urleb 1984, 313).

2.4.5.
Bowls with a collar rim (Is 69 a, b); (*Fig. 29*):

Differences exist in the formation of the collar, which can be angular, have an emphasized lower fold, or merely form a collar around the rim. The base is flat or has a ringed foot. The walls are out turned, somewhat hemispherical.

Date: second half of the 1st - 2nd centuries

Celje (gr. 4)
Emphasized fold on the lower part of the collar, ring base.
2.4.5. - ht. 7.2 cm; dia. rim 11 cm; dia. base 4.6 cm - PMC R 4268.
Lit.: Kolšek 1972, Y 152: 66.
Celje (gr. 4)
Emphasized fold on the lower part of the collar, ring base.
2.4.5. - ht. 4.2 cm; dia. rim 8.5 cm; dia. base 2.6 cm - PMC R 4269.
Lit.: Kolšek 1972, Y 152: 64.
Drnovo (IF)
Collar formed flatly, straight cut rim, ring base.
2.4.5. - ht. 6.7 cm; dia. base 10 cm - NMS R 728.
Lit.: Petru, Petru 1978, Pl. 25: 22.

2.4.5. - viš. 5,1 cm; pr. ustja 8,9 cm; pr. dna 4 cm - DM 817.
Lit.: Slabe 1993, t. 16: 9.
Trebnje (PN)
Profiliran ovratnik, ravno dno.
2.4.5. - viš. 5 cm; pr. ustja 11,2 cm - DM.
Lit.: Knez 1969, t. 7: 5.
Trebnje (PN)
Profiliran ovratnik, prstanasta noga.
2.4.5. - viš. 6 cm; pr. ustja 11,6 cm - DM.
Lit.: Knez 1969, t. 7: 4.

Primerjave: Petru 1972, t. 27: 2,6; Hayes 1975, Fig. 9: 295; Damevski 1976, t. 9: 4; Czurda-Ruth 1979, Taf. 3: 510, 511, 517; Rutti 1991, Taf. 76: 1672-1674.

Komentar:
Skodelice z ovratnikom ali široko gubo pod ustjem so bile priljubljene že v zgodnjem 1. stoletju, izdelovali so jih v kalupih, največkrat iz intenzivno obarvanega stekla (Whitehouse 1997, 86, no. 120, 121). Po obliki in ostrih formah so posnemale izdelke iz sigilate.

Priljubljena oblika ostane v uporabi še vse 1. stoletje, ko se razširijo pihani izdelki. Ovratnik je lahko izdelan enostavno, s stopničastim prehodom na ostenju, ali pa je steklo oblikovano v gubo, ki izstopa iz ostenja oziroma je ob njem položena. Ti detajli so verjetno značilnost posameznih delavnic ali steklarjev, ki so skodelice izdelovali.

Skodelice so dokaj razširjene predvsem v zahodnem delu imperija, najbolj so pogoste v drugi polovici 1. stoletja (Whitehouse 1997, 84). Njihova priljubljenost ob koncu stoletja očitno upade in s tem preneha tudi njihova proizvodnja.

Najdbe s slovenskih najdišč so zastopane tako v grobnih celotah kot naselbinskih najdbah. Dve skodelici iz Celeje pripadata grobni celoti iz flavijske dobe (Kolšek 1972, Y 151, 2), v isti čas sodi tudi petovionski grob 774 z novcem Domicijana (Istenič 2000, 248); grob iz Trebnjega pa je datiran v drugo polovico 1. in na začetek 2. stoletja (Slabe 1993, 25). Ostale skodelice so posamične najdbe in brez podatkov o najdiščnih kontekstih.

2.4.6.
Miniaturne skodelice z usločenim ostenjem (Is 49); (*sl. 29*):

Ustje izvihano, dno ravno in vboklo ali prstanasto.

Datacija: 2. st.

Bobovek (gr.)
Skodelica z izvihanim in zataljenim ustjem, dno ravno.
2.4.6. - viš. 2,9 cm; pr. ustja 6,9 cm - GMK 558.
Lit.: neobjavljeno.

Ptuj (gr. 774)
Emphasized fold on the lower part, ring base.
2.4.5. - dia. rim 5.9 cm - LMJ 2410.
Lit.: Istenič 2000, Pl. 174: 4.
Ptuj (IF)
Emphasized lower fold, ring base.
2.4.5. - ht. 6.2 cm; dia. rim 9.6 cm - PMP 1235.
Lit.: Mikl Curk 1976, Pl. 4: 7.
Trebnje (gr. 109)
Emphasized fold on the lower part of the collar, ring base.
2.4.5. - ht. 5.1 cm; dia. rim 8.9 cm; dia. base 4 cm - DM 817.
Lit.: Slabe 1993, Pl. 16: 9.
Trebnje (IF)
Profiled collar, flat base.
2.4.5. - ht. 5 cm; dia. rim 11.2 cm - DM.
Lit.: Knez 1969, Pl. 7: 5.
Trebnje (IF)
Profiled collar, ring base.
2.4.5. - ht. 6 cm; dia. rim 11.6 cm - DM.
Lit.: Knez 1969, Pl. 7: 4.

Analogies: Petru 1972, Pl. 27: 2, 6; Hayes 1975, Fig. 9: 295; Damevski 1976, Pl. 9: 4; Czurda-Ruth 1979, Pl. 3: 510, 511, 517; Rütti 1991, Pl. 76: 1672-1674.

Comments:
Bowls with a collar or broad fold under the rim were already popular in the early 1st century. They were made in moulds, most often of intensively coloured glass (Whitehouse 1997, 86, Nos. 120, 121). In shape and angular form they copied sigillata products.

This popular form remained in use throughout the 1st century, when free blown products began to spread. The collar could be made simply, with a stepped transition to the walls, or the glass could be formed into a fold, which jut out from the walls or was sticked to them. These details probably reflect the traits of the individual workshops or glass workers who made the bowls.

The bowls were somewhat widespread primarily in the western part of the empire, and were most frequent in the second half of the 1st century (Whitehouse 1997, 84). Their popularity evidently declined at the end of the century, and their production ceased.

The finds from Slovenian sites come both from graves and settlements. Two bowls from Celje belonged to graves from the Flavian period (Kolšek 1972, Y 151, 2), and grave 774 from Poetovio also belonged to the same period with a coin of Domitian (Istenič 2000, 248), while the grave from Trebnje is dated to the second half of the 1st and beginning of the 2nd centuries (Slabe 1993, 25). The other bowls are isolated finds lacking data about the context of discovery.

2.4.6.
Miniature bowls with concave walls (Is 49); (*Fig. 29*):

Rim everted, base flat and concave or ring-shaped.

Drnovo (PN)
Ustje izvihano, dno ravno, na sredi rahlo vboklo.
2.4.6. - viš. 3 cm; pr. ustja 7 cm - NMS R 729.
Lit.: Petru, Petru 1978, t. 25: 17.
Ptuj (gr. 80)
Ustje izvihano, noga prstanasta.
2.4.6. - viš. 2,6 cm; pr. ustja 9 cm - PMP 1260.
Lit.: Mikl Curk 1976, t. 4: 8.

Primerjave: Scatozza Höricht 1986, Tav. A: 11.

Komentar:
Plitva miniaturna skodelica je varianta oblike Isings 49. Navzven nagnjeno ostenje je rahlo konkavno, dno je vboklo, brez noge. Primerjavo obliki najdemo med kovinskimi skodelicami zaklada Boscoreale. Steklene najdbe so znane iz Pompejev in Herculanea, kjer so opredeljene kot oblika 11 (Scatozza Höricht 1986, 36).

Skodelice s slovenskih najdišč so med seboj precej raz-lične po kvaliteti izdelave. Pri petovionski in skodelici iz Bobovka bi zaradi stekla, polnega mehurčkov ter grobo in nepravilno izdelanega ustja in dna, lahko pomislili na lokalno izdelavo.

Najdba iz Drnovega sodi med najdbe brez ohranjene celote, skodelici iz Petovione in Bobovka pa pripadata grobnima celotama iz 2. stoletja (Mikl Curk 1976, 7; Petru, Valič 1959, 133).

2.4.7.
Globoke skodelice na visoki nogi (*sl. 30*):

Guba pod ustjem, dva držaja na spodnji strani ostenja, noga prstanasta in dvignjena.

Datacija: konec 1. - 2. st.

Trebnje (gr. 109)
Ustje zataljeno, na notranji strani guba, dva polžasta držaja na ostenju, noga visoka.
2.4.7. - viš. 11,5 cm; pr. ustja 14,6 cm - DM 816.
Lit.: Slabe 1993, t. 16: 11.

Primerjave: Hayes 1975, Fig. 13: 472; Whitehouse 1997, No. 420.

Komentar:
Obliki nismo našli povsem ustreznih primerjav. Glede na gubo pod ustjem in nekoliko višjo nogo bi jo morda lahko imenovali kar varianta modiola (lat. *modiolus*), čeprav ima namesto ročaja dva polžasta čepka na ostenju. Oblika je sicer nižja in širša, zato jo umeščamo med skodele in verjetno je posoda služila za serviranje na mizi, kot npr. plitve skodele.

V istem grobu je tudi steklena skodelica z ovratnikom (2.4.5.), kar bi kazalo na časovno primerljivost. Grob 109 ima priloženo bronasto zajemalko kot najmlajšo najdbo, ki sodi v 2. stoletje (Slabe 1993, 25).

Date: 2nd century

Bobovek (gr.)
Small bowl with an everted and fire-rounded rim, flat base.
2.4.6. - ht. 2.9 cm; dia. rim 6.9 cm - GMK 558.
Lit.: unpublished.
Drnovo (IF)
Everted rim, flat base, slightly concave in the center.
2.4.6. - ht. 3 cm; dia. rim 7 cm - NMS R 729.
Lit.: Petru, Petru 1978, Pl. 25: 17.
Ptuj (gr. 80)
Everted rim, ring base.
2.4.6. - ht. 2.6 cm; dia. rim 9 cm - PMP 1260.
Lit.: Mikl Curk 1976, Pl. 4: 8.

Analogies: Scatozza Höricht 1986, Pl. A: 11.

Comments:
Shallow miniature bowls are a variant of the form Isings 49. They have turned out walls that are gently concave, the base is concave, without a ring. Comparative forms can be found among the metal bowls of the Boscoreale Hoard. Finds are known from Pompeii and Herculaneum, where they were classified as form 11 (Scatozza Höricht 1986, 36).

The bowls from Slovenian sites differ considerably in terms of the quality of manufacture. The bowls from Poetovio and Bobovek, given their bubbly glass and coarsely and irregularly worked rim and base, could well be of local manufacture.

The find from Drnovo is among the earlier finds, while the bowls from Poetovio and Bobovek belong to grave units from the 2nd century (Mikl Curk 1976, 7; Valič, Petru 1959, 133).

2.4.7.
Deep bowls on a high foot (*Fig. 30*):

A fold under the rim, two handles on the lower side of the walls, a ring-shaped and high foot.

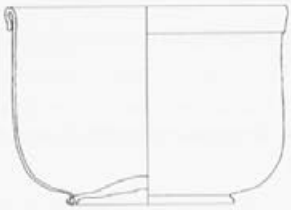
Date: end of the 1st - 2nd centuries

Trebnje (gr. 109)
Rim fire-rounded, fold on the inner side, two snail-shaped handles on the walls, high foot.
2.4.7. - ht. 11.5 cm; dia. rim 14.6 cm - DM 816.
Lit.: Slabe 1993, Pl. 16: 11.

Analogies: Hayes 1975, Fig. 13: 472; Whitehouse 1997, No. 420.

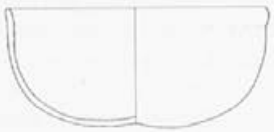
Comments:
No entirely suitable comparisons could be found. In terms of the fold under the rim and the somewhat high foot, it could perhaps be termed a variant of a *modiolus*, although in place of true handles it had two snail-shaped lugs on the walls. The form is otherwise lower and broader.

2.4.7.

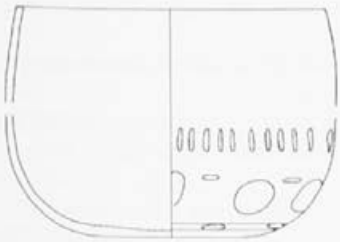


2.5.1.

2.5.2.



2.6.1.



2.6.2.

2.6.3.

2.6.4.

2.6.5.

Sl. 30: Skupina 2 - skodelice (2.4.7.: Slabe 1993, t. 16: 11; 2.5.1.: Urleb 1984, t. 17: 5; 2.5.2.: Slovenj Gradec, neobjavljeno; 2.6.1.: Vomer Gojkovič 1996, t. 21: 19; 2.6.2.: Šubic 1976, t. 6: 47; 2.6.3.: Urleb 1984, t. 20: 8; 2.6.4.: Perko, Bavdek, Lazar 1998, t. 1: 8; 2.6.5.: Vomer Gojkovič 1996, t. 21: 23). M. = 1:3.

Fig. 30: Group 2 - bowls (2.4.7.: Slabe 1993, Pl. 16: 11; 2.5.1.: Urleb 1984, Pl. 17: 5; 2.5.2.: Slovenj Gradec, unpublished; 2.6.1.: Vomer Gojkovič 1996, Pl. 21: 19; 2.6.2.: Šubic 1976, Pl. 6: 47; 2.6.3.: Urleb 1984, Pl. 20: 8; 2.6.4.: Perko, Bavdek, Lazar 1998, Pl. 1: 8; 2.6.5.: Vomer Gojkovič 1996, Pl. 21: 23). Scale = 1:3.

Na osnovi grobne celote smo opredelili tudi datacijo oblike.

2.5.
SKODELICE S CILINDRIČNIM OSTENJEM

2.5.1.
Skodelice s cilindričnim ostenjem in cevastim ustjem (Is 44); (*sl. 30*):

Ostenje ravno prehaja v ustje, ki je odebeljeno ali cevasto zavihano navzdol. Prstanasta noga je lahko prilepljena v obliki stojnega prstana ali izvlečena iz dna in oblikovana v stojni prstan.

Datacija: druga polovica 1. - 2. st.

Cerknica (gr. 31)
Skodelica s cevasto navzdol zavihanim ustjem, noga prstanasta.
2.5.1. - pr. ustja 11cm; pr. dna 6,6 cm - NMP.
Lit.: Urleb 1984, t. 17: 5.
Verdun (gr. 125)
Skodelica s cevasto zavihanim ustjem in prstanasto nogo.
2.5.1. - viš. 8,1 cm - DM 2167.
Lit.: Breščak 2002, kat. 76/1, 139.
Drnovo (PN)
Skodelica z odebeljenim ustjem, ki tvori na ostenju kaneluro, noga prstanasta.
2.5.1. - viš. 5,2 cm; pr. ustja 8,2 cm - NMS R 726.
Lit.: Petru, Petru 1978, t. 25: 18.
Ptuj (PN)
Skodelica z odebeljenim ustjem, noga prstanansta.
2.5.1. - viš. 5,4 cm; pr. ustja. 9 cm - PMP 1242.
Lit.: Mikl Curk 1976, t. 4: 5.

Primerjave: Barkóczi 1988, Taf. 2: 12, 16; 6: 60, 61; Biaggio Simona 1991, Tav. 7: 009, 155, 260; 8: 001; Rütti 1991, Taf. 91; Cool, Price 1995, Fig. 6.2: 649, 651.

Komentar:
Različne oblike skodelic in skodel s cevastim ustjem se pojavljajo po vsem imperiju v 1. in zgodnjem 2. stoletju. Rob ustja je zavihan navzven in navzdol, da tvori cevasto ali sploščeno, ob ostenje stisnjeno ustje. Plitvo skodelico s polkrožnim ostenjem smo že omenili (oblika 2.4.4.), bolj pogoste pa so globlje skodele z ravnim ostenjem, nekatere oblike pa preko kleka bikonično prehajajo v dno (Cool, Price 1995, 94, Fig. 6.3: 677).

Skodele so navadno izdelane iz modro-zelenkastega stekla, pojavljajo pa se tudi različice iz obarvanega stekla.

Oblika skodelic 2.5.1. se ponekod pojavi že ob koncu 1. stoletja pr. n. š. (Grose 1975, 50), zelo razširjene pa so od sredine 1. stoletja dalje in predvsem pogoste v flavijski dobi (Cool, Price 1995, 95). Najdemo jih na najdiščih vse zahodne Evrope in Velike Britanije. Njihova uporaba traja vse do sredine 2. stoletja, kar je vidno tudi na histogramu najdb, zbranih iz evropskih najdišč (Cool,

and thus it has been placed among bowls. The vessel probably served as tableware, as shallow bowls etc.

The same grave contained a bowl with a collar rim (2.4.5.), which would offer a chronological comparison. Grave 109 contained a bronze ladle as the latest find, dated to the 2nd century (Slabe 1993, 25). The form has been dated on the basis of the grave unit.

2.5.
BOWLS AND CUPS WITH CYLINDRICAL WALLS

2.5.1.
Bowls with cylindrical walls and a tubular rim (Isings 44); (*Fig. 30*):

The walls extend directly into the rim, which was fire-thickened or turned down into a tube. The ring base could be attached in the form of a standing ring or drawn out from the base and formed into a foot.

Date: second half of the 1st - 2nd centuries

Cerknica (gr. 31)
Bowl with bent down tubular rim, ring foot.
2.5.1. - dia. rim 11 cm; dia. base 6.6 cm - NMP.
Lit.: Urleb 1984, Pl. 17: 5.
Verdun (gr. 125)
Bowl with a tubular rim and ring foot.
2.5.1. - ht. 8.1 cm - DM 2167.
Lit.: Breščak 2002, cat. 76/1, 139.
Drnovo (IF)
Bowl with a fire-thickened rim, which creates a groove on the walls, ring foot.
2.5.1. - ht. 5.2 cm; dia. rim 8.2 cm - NMS R 726.
Lit.: Petru, Petru 1978, Pl. 25: 18.
Ptuj (IF)
Bowl with a fire-thickened rim, ring foot.
2.5.1. - ht. 5.4 cm; dia. rim 9 cm - PMP 1242.
Lit.: Mikl Curk 1976, Pl. 4: 5.

Analogies: Barkóczi 1988, Pl. 2: 12, 16; 6: 60, 61; Biaggio Simona 1991, Pl. 7: 009, 155, 260; 8: 001; Rütti 1991, Pl. 91; Cool, Price 1995, Fig. 6.2: 649, 651.

Comments:
Various forms of cups and bowls with tubular rims appear throughout the entire empire in the 1st and early 2nd centuries. The edge of the rim is bent out and downwards, creating a tubular or flattened rim pressed against the walls. A shallow bowl with hemispherical walls has already been mentioned (form 2.4.4.), while more frequent types are deep bowls with straight rims, and some forms extend biconically in a stepped form to the base (Cool, Price 1995, 94, Fig. 6.3: 677).

The bowls were usually made from blue-green glass, but variants also appear in coloured glass.

This form of bowl (2.5.1.) sometimes appears as early as the end of the 1st century BC (Grose 1975, 50),

Price 1995, 95, Fig. 6.1). Nekatere najdbe so bile odkrite še v depozitih druge polovice 2. stoletja (Price 1987, 202, Fig. 1: no. 4, 5).

Grob 31 iz Cerknice je imel poleg steklene posode priloženo le še glineno čašo, skodela iz verdunskega groba pa je imela priloženo ulito rebrasto skodelico (2.1.4.). Groba sodita na konec 1. oziroma začetek 2. stoletja in potrjujeta uvrstitev oblike 2.5.1. v 1. in 2. stoletje.

2.5.2.

Skodelice s cilindričnim ostenjem in ravnim dnom (*sl. 30*):

Ustje rahlo izvihano, ravno odrezano ali zataljeno, dno ravno ali v sredini rahlo vboklo. Na ostenju ponekod horizontalne kanelure.

Datacija: druga polovica 1. - 2. st.

Drnovo (PN)
Skodelica z zataljenim ustjem, dno ravno.
2.5.2. - viš. 3 cm; pr. ustja 6 cm - NMS R 730.
Lit.: Petru, Petru 1978, t. 25: 9.
Stari trg pri Slovenj Gradcu (gr. 1)
Skodelica z izvihanim, ravno odrezanim ustjem, dno ravno, na ostenju plitve vodoravne kanelure.
2.5.2. - viš. 9,6 cm; pr. ustja 15,4 cm - LMJ 14803.
Lit.: neobjavljeno.
Stari trg pri Slovenj Gradcu (gr. 1)
Skodelica z izvihanim, zataljenim ustjem, dno v sredini rahlo vboklo.
2.5.2. - viš. 4,5 cm; pr. ustja 7,6 cm - LMJ 14859.
Lit.: neobjavljeno.
Stari trg pri Slovenj Gradcu (gr. 2)
Skodelica z izvihanim ravno odrezanim ustjem, dno ravno, po ostenju horizontalne kanelure.
2.5.2. - viš. 7,6 cm; pr. ustja 12,2 cm - LMJ.
Lit.: neobjavljeno.

Primerjave: Rütti 1991, AR 38; Cool, Price 1995, Fig. 5.10.

Komentar:
Najbolj razširjene čaše za pitje so bile v 2. stoletju posode iz brezbarvnega ali mlečno belega stekla s horizontalnimi vrezi na ostenju. V detajlih se med seboj razlikujejo, a jih družijo nekatere skupne značilnosti, kot so cilindrično ostenje, izvihano in odrezano ustje in ravno ali prstanasto dno.

Variante teh oblik so tudi nekoliko bolj plitve forme, ki jih moramo uvrstiti med skodelice (oblika 2.5.2.). Dno teh posod je navadno ravno, v sredini rahlo vboklo, ponekod ostenje klekasto preide v dno, kot npr. pri posodah iz Augsta (Rütti 1991, AR 38, 73). Na britanskih najdiščih so podobne oblike znane iz trajansko-hadrijanskega obdobja (Cool, Price 1995, 79).

V švicarskem Augstu se tovrstne skodele, opredeljene kot oblika AR 38, pojavljajo od flavijsko-trajanskega

and it was widely distributed from the middle of the 1st century AD onwards, and was particularly common in the Flavian period (Cool, Price 1995, 95). These bowls are found at sites throughout western Europe and Great Britain. They continued in use to the middle of the 2nd century as is evidenced on a histogram of the finds gathered from European sites (Cool, Price 1995, 95, Fig. 6.1.). Some finds have even been discovered in deposits from the second half of the 2nd century (Price 1987, 202, Fig. 1: no. 4, 5).

Grave 31 from Cerknica contained a pottery cup in addition to the glass vessel, while the bowl from the Verdun grave was accompanied by a cast ribbed bowl (2.1.4.). The graves can be dated to the end of the 1st or the beginning of the 2nd century, and confirms the placement of form 2.5.1 in the 1st and 2nd centuries.

2.5.2.

Cups with cylindrical walls and a flat base (*Fig. 30*):

The rim is slightly everted, cut or fire-rounded, the base flat or slightly concave in the center. There are sometimes horizontal wheel-cut lines on the walls.

Date: second half of the 1st - 2nd centuries

Drnovo (IF)
Cup with fire-rounded rim, flat base.
2.5.2. - ht. 3 cm; dia. rim 6 cm - NMS R 730.
Lit.: Petru, Petru 1978, Pl. 25: 9.
Stari trg pri Slovenj Gradcu (gr. 1)
Cup with an everted, cut rim, flat base, shallow horizontal grooves on the walls.
2.5.2. - ht. 9.6 cm; dia. rim 15.4 cm - LMJ 14803.
Lit.: unpublished.
Stari trg pri Slovenj Gradcu (gr. 1)
Cup with an everted, cut rim, base slightly concave in the center.
2.5.2. - ht. 4.5 cm; dia. rim 7.6 cm - LMJ 14859.
Lit.: unpublished.
Stari trg pri Slovenj Gradcu (gr. 2)
Cup with an everted, cut rim, flat base, horizontal grooves on the walls.
2.5.2. - ht. 7.6 cm; dia. rim 12.2 cm - LMJ.
Lit.: unpublished.

Analogies: Rütti 1991, AR 38; Cool, Price 1995, Fig. 5.10.

Comments:
The most widely distributed drinking glasses in the 2nd century were vessels of colourless or milk-white glass with horizontal grooves in the walls. They differ in details, but are united by common characteristics, such as cylindrical walls, everted or straight cut rims, and flat or ring bases.

Variants of these forms consist of somewhat shallower types, which must be placed among cups (form

časa dalje (Rütti 1991, 73). Najbolj pogoste so med gradivom 2. stoletja, proti koncu le-tega pa počasi izginejo iz uporabe in jih med materialom s konca 2. stoletja ni več najti (Rütti 1991, 79).

Skodelice iz te skupine, z izjemo najdbe iz Drnovega, izvirajo z grobišča v Slovenj Gradcu. Skodelice lahko na osnovi podatkov o sestavi grobov iz inventarnih knjig LMJ Graz datiramo v 2. stoletje.

2.6.
POLKROGLASTE SKODELICE

2.6.1.
Polkroglaste skodelice (var. Is 96); (*sl. 30*):

Klekasto, ravno odrezano ustje, dno zaokroženo in ravno, v nekaterih primerih na sredini malo vboklo. Redko se pojavljajo horizontalne plitve in ozke kanelure.

Datacija: konec 3. - 4. st.

Ptuj (gr. 23)
Ostenje skodelice, ravno odrezano ustje je nagnjeno navznoter.
2.6.1. - pr. ustja 8,5 cm - PMP.
Lit.: Vomer Gojkovič 1996, t. 9: 1.
Ptuj (gr. 30)
Polkroglasta skodelica s klekastim ustjem, dno ravno.
2.6.1. - viš. 5 cm; pr. ustja 11,2 cm - PMP.
Lit.: Vomer Gojkovič 1996, t. 11: 2.
Ptuj (gr. 38/9)
Skodelica z ravno odrezanim ustjem in zaokroženim ravnim dnom.
F 2.6.1. - viš. 5,2 cm; pr. ustja 9,2 cm - PMP.
Lit.: Vomer Gojkovič 1996, t. 13: 8.
Ptuj (gr. 45)
Skodelica s klekastim ustjem, na ostenju plitve vodoravne kanelure, dno zaokroženo in ravno.
2.6.1. - viš. 5,6 cm; pr. ustja 10 cm - PMP.
Lit.: Vomer Gojkovič 1996, t. 15: 2.
Ptuj (NN)
Skodelica s klekastim ustjem, dno zaokroženo in na sredini rahlo vboklo.
2.6.1. - viš. 4,8 cm; pr. ustja 10,2 cm - PMP.
Lit.: Vomer Gojkovič 1996, t. 21: 19.
Ptuj (PN)
Klekasto ustje, ravno zaokroženo dno.
2.6.1. - viš. 6 cm; pr. ustja 10,9 cm - PMP 14532.
Lit.: Kujundžić 1982, t. 31: 21.
Ptuj (PN)
Klekasto ustje, trup prehaja zaokroženo v dno.
2.6.1. - viš. 5,7 cm; pr. ustja 9,7 cm - PMP 3501.
Lit.: Mikl Curk 1976, t. 4: 2.
Ptuj (PN)
Klekasto ustje, trup zaokroženo prehaja v dno.
2.6.1. - viš. 4,9 cm; pr. ustja 11,8 cm - PMP 3469.
Lit.: Mikl Curk 1976, t. 4: 3.

2.5.2.). The bases of such vessels are usually flat, slightly concave in the center, and sometimes the walls descend in stepped form to the base, such as on the vessels from Augst (Rütti 1991, AR 38, 73). Similar forms are known at British sites from the Trajan-Hadrian period (Cool, Price 1995, 79).

At Augst in Switzerland, such cups, classified as form AR 38, appear from the Flavian-Trajan period onwards (Rütti 1991, 73). They are most frequent among the material of the 2nd century, towards the end of which they slowly disappear from use. They can no longer be found among the material at the end of the 2nd century (Rütti 1991, 79).

The cups of this group, with the exception of the find from Drnovo, come from the cemetery at Slovenj Gradec. The cups can be dated to the 2nd century on the basis of data about the composition of the graves from the inventory books of the Joanneum Museum in Graz.

2.6.
HEMISPHERICAL BOWLS

2.6.1.
Hemispherical bowls (var. Isings 96); (*Fig. 30*):

A stepped, cut rim, the base rounded and flat, some examples slightly concave in the center. Shallow and narrow horizontal wheel-cut lines appear rarely.

Date: end of the 3rd - 4th centuries

Ptuj (gr. 23)
Wall fragment of a bowl, straight cut rim bent inwards.
2.6.1. - dia. rim 8.5 cm - PMP.
Lit.: Vomer Gojkovič 1996, Pl. 9: 1.
Ptuj (gr. 30)
Hemispherical bowl with a stepped rim, flat base.
2.6.1. - ht. 5 cm; dia. rim 11.2 cm - PMP.
Lit.: Vomer Gojkovič 1996, Pl. 11: 2.
Ptuj (gr. 38/9)
Bowl with a straight cut rim and a rounded flat bottom.
2.6.1. - ht. 5.2 cm; dia. rim 9.2 cm - PMP.
Lit.: Vomer Gojkovič 1996, Pl. 13: 8.
Ptuj (gr. 45)
Bowl with a stepped rim, shallow horizontal grooves on the walls, the base rounded and flat.
2.6.1. - ht. 5.6 cm; dia. rim 10 cm - PMP.
Lit.: Vomer Gojkovič 1996, Pl. 15: 2.
Ptuj (SF)
Bowl with a stepped rim, the base rounded and slightly concave in the center.
2.6.1. - ht. 4.8 cm; dia. rim 10.2 cm - PMP.
Lit.: Vomer Gojkovič 1996, Pl. 21: 19.
Ptuj (IF)
Stepped rim, flat rounded base.
2.6.1. - ht. 6 cm; dia. rim 10.9 cm - PMP 14532.
Lit.: Kujundžić 1982, Pl. 31: 21.

Primerjave: Barkóczi 1988, Taf. 2: 17, 21; Follmann-Schulz 1988, Taf. 44: 80, 83; Ružić 1994, t. 27: 5,6.

2.6.2.
Polkroglaste skodelice z brušenim okrasom (Is 96b); (*sl. 30*):

Oblika je enaka prejšnji, le da se na ostenju pojavlja brušen okras, navadno geometrijski. Ostenje odebeljeno.

Datacija: 3. st.

Celje (NN)
Del ostenja skodelice iz prozornega stekla z brušenim geometrijskim okrasom.
2.6.2. - najv. obseg 13 cm - PMC.
Lit.: neobjavljeno.
Hrušica (NN)
Skodelica z brušenim geometrijskim okrasom na ostenju.
2.6.2. - viš. 6,4 cm - NMS.
Lit.: Giesler 1981, t. 49: 4.
Hrušica (NN)
Skodelica z brušenim geometrijskim okrasom na ostenju.
2.6.2. - viš. 6 cm - NMS.
Lit.: Giesler 1981, t. 49: 5.
Ptuj (PN)
Del ostenja skodelice z brušenim geometrijskim okrasom.
2.6.2. - PMP R 845.
Lit.: Šubic 1976, t. 6: 47.
Ptuj (PN)
Del ostenja skodelice z brušenim geometrijskim okrasom.
2.6.2. - PMP R 10793.
Lit.: Šubic 1976, t. 6: 51.

Primerjave: Barkóczi 1988, Taf. 4: 39, 41, 42; Rütti 1991, Taf. 59-61.

Komentar za obliki 2.6.1. in 2.6.2.:
Polkroglaste skodelice so različica oblike Isings 96 (1957, 113). Ker pa so nižje od čaš te skupine in bolj polkroglaste kot plitve skodelice oblike 2.6.4., smo jih uvrstili v posebno skupino. Osnovne značilnosti so enake kot pri ostalih izdelkih pozno rimske dobe. Ravno odrezano ustje ni posebej obdelano, dno je ravno in le v sredini včasih rahlo vboklo. Pojavljajo se enostavne, neokrašene skodelice (2.6.1.), posebno skupino pa tvorijo izdelki z brušenim geometrijskim okrasom (2.6.2.). Različica 2.6.1. sodi med široko razprostranjene izdelke, ki se pojavljajo od 3. stoletja dalje, najbolj pa so razširjeni v 4. stoletju, na nekaterih najdiščih so znane posamične najdbe že s konca 2. stoletja (Rutti 1991, 95; AR 60). Najdbe s slovenskih najdišč smo na osnovi ptujskih grobov umestili na konec 3. in v 4. stoletje (Vomer Gojkovič 1996, 245).

Skodelice z brušenim okrasom (oblika 2.6.2.) so dokaj razširjene, saj se pojavljajo tako v zahodnem delu Evrope kot na vzhodu, npr. ob Črnem morju, v Libanonu. Izdelane so iz naravno-obarvanega, včasih pa tudi iz

Ptuj (IF)
Stepped rim, the body curves into the base.
2.6.1. - ht. 5.7 cm; dia. rim 9.7 cm - PMP 3501.
Lit.: Mikl Curk 1976, Pl. 4: 2.
Ptuj (IF)
Stepped rim, the body curves into the base.
2.6.1. - ht. 4.9 cm; dia. rim 11.8 cm - PMP 3469.
Lit.: Mikl Curk 1976, Pl. 4: 3.

Analogies: Barkóczi 1988, Pl. 2: 17, 21; Follmann-Schulz 1988, Pl. 44: 80, 83; Ružić 1994, Pl. 27: 5, 6.

2.6.2.
Hemispherical bowls with wheel-cut decoration (Is 96b); (*Fig. 30*):

The form is identical to that above, but wheel-cut decoration, usually geometric, appears on the walls. The walls are thickened.

Date: 3rd century

Celje (SF)
Part of the wall of a bowl of clear glass with wheel-cut geometric decoration.
2.6.2. - greatest circ. 13 cm - PMC.
Lit.: unpublished.
Hrušica (SF)
Bowl with wheel-cut geometric decoration on the walls.
2.6.2. - ht. 6.4 cm - NMS.
Lit.: Giesler 1981, Pl. 49: 4.
Hrušica (SF)
Bowl with wheel-cut geometric decoration on the walls.
2.6.2. - ht. 6 cm - NMS.
Lit.: Giesler 1981, Pl. 49: 5.
Ptuj (IF)
Part of the wall of a bowl with wheel-cut geometric decoration.
2.6.2. - PMP R 845.
Lit.: Šubic 1976, Pl. 6: 47.
Ptuj (IF)
Part of the wall of a bowl with wheel-cut geometric decoration.
2.6.2. - PMP R 10793.
Lit.: Šubic 1976, Pl. 6: 51.

Analogies: Barkóczi 1988, Pl. 4: 39, 41, 42; Rütti 1991, Pl. 59-61.

Comments - forms 2.6.1. and 2.6.2.:
Hemispherical bowls are a variant of the Isings 96 form (1957, 113). As they are lower than the cups of this group and more hemispherical than the shallow bowls of form 2.6.4, they have been placed in a separate group. The basic characteristics are the same as for the other products of the late Roman period. The cut or crackedoff rim was not worked; the base is flat and only sometimes slightly concave in the center. Simple undecorated bowls exist (form 2.6.1.), while a separate group is formed of products with wheel-cut geometric decoration (2.6.2.). Variant 2.6.1. is among widely distributed products that appear from

dekoloriranega (namerno razbarvanega) stekla. Ostenje nekaterih skodelic je dokaj debelo, kar je bilo pomembno zaradi brušenega okrasa.

Pogoste so tudi v panonskem prostoru, kjer lahko glede na obliko okrasa ločimo več skupin (Barkóczi 1986, 186). Najenostavnejši okras ima t. i. prva skupina, kjer je ostenje zapolnjeno s horizontalnimi vrezi, krožci in mandljastimi vdolbinami (Barkóczi 1986, Abb. 4). Pri drugi skupini okras tvorijo krogi in pokončne vrezane linije, oblikovani v geometrijskem redu (Barkóczi 1986, Abb.6), tretja skupina ima najbolj razgiban okras, saj ostenje krasijo vrezane mreže, polkrogi - kombinirani so vsi elementi, ki se posamično pojavljajo v prvih dveh skupinah (Barkóczi 1986, Abb. 9).

Skodelice z brušenim okrasom z najdišč ob Črnem morju umešča Sorokina že na konec 2. in v začetek 3. stoletja (1978, 117). V Panoniji ti izdelki nastopajo šele od 3. stoletja dalje in v začetku 4. stoletja (Barkóczi 1986, 188), enako datira najdbe iz Germanije tudi Fremersdorf (1967, 81).

Skodelici iz Celeje in Petovione nista v celoti ohranjeni, obe pa sodita med naselbinske najdbe. Okras je preprost, vidne so ovalne linije in okras krogov kot pri drugi skupini po Barkócziju (1986, Abb. 6). Njihovo datacijo lahko opredelimo na podlagi primerjav z ostalih najdišč.

Tudi pri tej obliki poznamo izdelke s figuralnim okrasom, datirane v 3. stoletje (Whitehouse 1997, 237, No. 401).

2.6.3.
Polkroglaste skodelice z reliefnim okrasom (*sl. 30*):

Polkroglaste skodelice s spodnjim delom pihanim v kalup.

Datacija: 2. - 3. st.

Cerknica (gr. 36)
Spodnji del skodelice z reliefnim okrasom v obliki križev.
2.6.3. - pr. dna 4 cm - NMP.
Lit.: Urleb 1984, t. 20: 8.

Primerjave: Barkóczi 1988, Taf. 4: 36.

Komentar:
Niso zelo razširjene, največ primerjav je v sosednji Panoniji. Enak okras poznamo s skodelic in tudi s steklenic. Večinoma gre za najdbe iz mlajših obdobij, predvsem iz 3. stoletja (Barkóczi 1988, 63).

Odlomek iz Cerknice je del uničene grobne celote, ki jo je težko časovno opredelili (Urleb 1984, 310). Čeprav Urlebova datira grobišče v drugo polovico 1. in prvo polovico drugega stoletja (Urleb 1984, 315), smemo po najdbah nekaterih steklenih izdelkov (npr. 2.5.1. in 2.6.3.) domnevati, da je grobišče v Cerknici obstajalo v celotnem 2. stoletju in ne samo v njegovi prvi polovici.

the 3rd century onward, and are most widespread in the 4th century, while at some sites individual finds are known from the end of the 2nd century (Rütti 1991, 95; AR 60). The finds from Slovenian sites have been placed at the end of the 3rd and in the 4th centuries on the basis of graves from Ptuj (Vomer Gojkovič 1996, 245).

Bowls with wheel-cut decoration (form 2.6.2.) are somewhat widely distributed. They appear both in the western part of Europe as well as in the east, such as along the Black Sea and in Lebanon. They were made from naturally coloured, and sometimes also from deliberately decoloured glass. The walls of some bowls are quite thick, which was important because of the ground decoration. They are frequently found in the Pannonian region, where several groups have been distinguished on the basis of the decoration (Barkóczi 1986, 186). The simplest decoration was on the first group, where the walls were ornamented with horizontal incisions, circles, and almond-shaped facets (Barkóczi 186, Fig. 4). The second group had decorations of circles and vertical incised lines formed in geometric bands (Barkóczi 1986, Fig. 6). The third group had the most lively decoration, as the walls were ornamented with incised webbing, half-circles - all elements were combined that appear individually in the first two groups (Barkóczi 1986, Fig. 9).

Bowls with wheel-cut decoration from sites along the Black Sea were dated by Sorokina to the end of the 2nd and the beginning of the 3rd centuries (1978, 117). These products were present in Pannonia only from the 3rd century onwards and at the beginning of the 4th century (Barkóczi 1986, 188). The finds from Germania were dated similarly by Fremersdorf (1967, 81).

The bowls from Celeia and Poetovio, both settlement finds, were not preserved completely. The decoration is very simple, oval lines and a decoration of circles are visible, as in the second group of Barkóczi (1986, Fig. 6). Their date can be determined on the basis of comparisons with other sites.

Products of this form with figural decoration are also known, dated to the 3rd century (Whitehouse 1997, 237, No. 401).

2.6.3.
Hemispherical bowls with relief decoration (*Fig. 30*):

Hemispherical bowl with mould-blown walls.

Date: 2nd - 3rd centuries

Cerknica (gr. 36)
Lower part of a bowl with relief decoration in the form of crosses.
2.6.3. - dia. base 4 cm - NMP.
Lit.: Urleb 1984, Pl. 20: 8.

Analogies: Barkóczi 1988, Pl. 4: 36.

2.6.4.
Plitve polkroglaste skodelice (Is 116); (*sl. 30*):

Ustje je klekasto, odrezano in obrušeno, ostenje nagnjeno navzven, dno rahlo vboklo.

Datacija: druga polovica 4. - prva polovica 5. st.

Šmarata (NN)
Gornji del skodelice s klekastim ustjem, ostenje nagnjeno navzven.
2.6.4. - pr. ustja 16,2 cm - NMP.
Lit.: Perko, Bavdek, Lazar 1998, 276, t. 1: 8.

Primerjave: Goethert-Polaschek 1977, Abb. 7: 74, 76, Taf. 31; Follmann-Schulz 1988, Taf. 51; 52: 460-64; Rütti 1991, Taf. 56: 1270-1274.

2.6.5.
Plitve polkroglaste skodelice z gubami na ostenju (Is 117); (*sl. 30*):

Skodelice imajo polkroglasto, navzven nagnjeno ostenje z gubami, klekasto ustje, dno je ravno in včasih rahlo vboklo. Pojavljajo se tudi različice na prstanasti nogi.

Datacija: druga polovica 4. - prva polovica 5. st.

Ptuj (PN)
Skodelica z gubami na ostenju, ustje ravno odrezano, dno prstanasto.
2.6.5. - pr. ustja 12 cm - PMP 1377.
Lit.: Mikl Curk 1976, t. 4: 4.
Ptuj (NN)
Skodelica z gubami na ostenju, ustje ravno odrezano.
2.6.5. - pr. ustja 11cm - PMP.
Lit.: Vomer Gojkovič 1996, t. 21: 23.
Šmarata (NN)
Del ustja in ostenja skodelice z gubami, ustje ravno odrezano.
2.6.5. - pr. ustja 15,6 cm - NMP.
Lit.: Perko, Bavdek, Lazar 1998, 276.

Primerjave: Hayes 1975, Fig. 21: 644; Barkóczi 1988, Taf. 3: 30; Follmann-Schulz 1988, Taf. 50: 453-56; Rütti 1991, Taf. 56: 1275; Ružić 1994, t. 28: 1.

Komentar za obliki 2.6.4. in 2.6.5.:
Obe obliki sodita med značilne izdelke pozno rimske dobe. Ravno odrezano ustje, ki v kleku prehaja v ostenje in preprosta oblika sta značilni za repertoar oblik že od konca 3. stoletja dalje. Plitva skodelica (oblika 2.6.4.) je nižja različica polkroglaste skodelice in ima lahko gladko ostenje ali pa je okrašeno s plitvimi gubami (oblika 2.6.5.).

Primerjave oblikama lahko najdemo med gradivom z grobišč v Kölnu (Friedhoff 1991, t. 3:7), Bonnu (Follmann-Schulz 1988, Taf. 51: 458, 459; 52: 460-462) in Trierju (Goethert-Polaschek 1977, Taf. 25: b; 33: 70),

Comments:
These vessels are not highly widespread, the greatest number coming from neighbouring Pannonia. The same decoration is known from bowls and bottles. Most are finds from later periods, particularly the 3rd century (Barkóczi 1988, 63).

The fragment from Cerknica was part of a destroyed grave, which is difficult to date chronologically (Urleb 1984, 310). Although Urleb dates the cemetery to the second half of the 1st century and the first half of the 2nd century (Urleb 1984, 315), it is possible to suggest on the basis of finds of several glass products (e.g. 2.5.2. and 2.6.3.) that the cemetery at Cerknica in fact existed throughout the entire 2nd century and not merely in the first half.

2.6.4.
Shallow hemispherical bowls (Is 116); (*Fig. 30*):

The rim is curved, cut, and ground, the walls turned outward, and the base slightly concave.

Date: second half of the 4th - first half of the 5th centuries

Šmarata (SF)
The upper part of a bowl with a curved rim, the walls angled outwards.
2.6.4. - dia. rim 16.2 cm - NMP.
Lit.: Perko, Bavdek, Lazar 1998, 276, Pl. 1: 8.

Analogies: Goethert-Polaschek 1977, Fig. 7: 74, 76, Pl. 31; Follmann-Schulz 1988, Pl. 51; 52: 460-64; Rütti 1991, Pl. 56: 1270-1274.

2.6.5.
Shallow hemispherical bowls with indents on the walls (Is 117); (*Fig. 30*):

The bowls have hemispherical, out-turned walls with indents, a curved rim, the base is flat and occasionally slightly concave. Variants are also known with a ring base.

Date: second half of the 4th - first half of the 5th centuries

Ptuj (IF)
Bowl with indents on the walls, cut rim, ring base.
2.6.5. - dia. rim 12 cm - PMP 1377.
Lit.: Mikl Curk 1976, Pl. 4: 4.
Ptuj (SF)
Bowl with indents on the walls, cut rim.
2.6.5. - dia. rim 11 cm - PMP.
Lit.: Vomer Gojkovič 1996, Pl. 21: 23.
Šmarata (SF)
Part of the rim and wall of a bowl with indents, cut rim.
2.6.5. - dia. rim 15.6 cm - NMP.
Lit.: Perko, Bavdek, Lazar 1998, 276.

kjer je oblika Trier 15a datirana v drugo polovico 4. stoletja (Goethert-Polaschek 1977, 28).

Skodelice obeh različic najdemo tudi med izdelki pozno antične steklarske delavnice v Seveglianu, ki je delovala od sredine 4. do začetka 5. stoletja (Termini Storti 1994, 209, 219-Fr. 7, 8). V Franciji, na najdišču Bourse v Marseillu, so tovrstni izdelki značilni za fazo 1, datirano od druge polovice 4. do začetka 5. stoletja (Foy, Bonifay 1989, 290, Fig. 1: 13-21).

Dokaj številno sta ti obliki zastopani tudi med gradivom starokrščanskega centra v Emoni (Plesničar Gec 1983, t. 27: 13, 15; 28: 19) in med t. i. ostanki delavnice v insuli XXXI, ki so datirani v 4. stoletje (Plesničar Gec 1981, 139, t. 3).

Najdbe z ostalih najdišč izvirajo v glavnem iz pozno antičnih naselbin, na Šmarati se najdbe skladajo s keramičnimi ostanki, ki sodijo na konec 4. in v prvo polovico 5. stoletja (Perko, Bavdek, Lazar 1998, 179), najdbe s Ptuja pa pripadajo poznoantičnemu grobišču, datiranemu v 4. stoletje (Vomer Gojkovič 1996, 234).

Omeniti moramo tudi izdelke z vrezanim figuralnim okrasom, ki pa jih zaenkrat med gradivom s slovenskih najdišč ne poznamo, ali pa so odlomki tako majhni, da ni mogoče opredeliti njihove oblike. Skupina skodelic z vrezanim okrasom je posebej številna na najdiščih v Porenju, zato njihov izvor pripisujejo kölnskim delavnicam (Fremersdorf 1967, 160-170, No. 206-229; Harden *et al.* 1988, 197-198, 226-230).

Analogies: Hayes 1975, Fig. 21: 644; Barkóczi 1988, Pl. 3: 30; Follmann-Schulz 1988, Pl. 50: 453-56; Rütti 1991, Pl. 56: 1275; Ružić 1994, Pl. 28: 1.

Comments - forms 2.6.4. and 2.6.5.:
Both forms represent characteristic products of the late Roman period. The straight cut rim, which extends in stepped form to the walls, and the simple form are characteristic for the repertory of forms from as early as the end of the 3rd century onwards. The shallow bowl (form 2.6.4.) is a lower variant of the hemispherical bowl, and can either have smooth walls or is decorated with shallow indents (form 2.6.5.).

Comparative forms can be found among the material from the cemeteries of Köln (Friedhoff 1991, Pl. 3: 7), Bonn (Follmann-Schulz 1988, Pl. 51: 458, 459; 52: 460-462), and Trier (Goethert-Polaschek 1977, Pl. 25: b; 33: 70), where the form Trier 15a was dated to the second half of the 4th century (Goethert-Polaschek 1977, 28).

Both forms can also be found among the products of the late Roman glass workshops at Sevegliano, which was active from the middle of the 4th to the beginning of the 5th centuries (Termini Storti 1994, 209, 219 - Fr. 7, 8). In France, at the site of the Bourse in Marseilles, such products are characteristic for phase 1, dated from the second half of the 4th to the beginning of the 5th centuries (Foy, Bonifay 1989, 290, Fig. 1: 13-21).

These forms were also fairly well represented among the material from the early Christian center in Emona (Plesničar Gec 1983, Pl. 27: 13, 15; 28: 19) and among the so-called workshop remains in *insula* XXXI dated to the 4th century (Plesničar Gec 1981, 136, Pl. 3).

The finds from the other sites mainly come from late Roman settlements. At Šmarata the find corresponds to the pottery remains that belong to the end of the 4th and the first half of the 5th centuries (Perko, Bavdek, Lazar 1998, 179), while the finds from Ptuj come from a late Roman cemetery dated to the 4th century (Vomer Gojkovič 1997, 301).

Products with wheel-cut figured decoration should also be mentioned, as even though to date they have not been recognized among the material from Slovenian sites, or the fragments are often so small that their form cannot be determined. A group of bowls with figural decoration is particularly numerous at sites along the Rhine, and their source is thus attributed to the Köln workshops (Fremersdorf 1967, 160-170, No. 206-229; Harden *et al.* 1988, 197-198, 226-230).

SKUPINA 3 - ČAŠE
(sl. 31-35; pril. 1)

3.2.
ČAŠE S HORIZONTALNIMI VREZI

3.2.1.
Kroglaste čaše s horizontalnimi vrezi (Is 12); *(sl. 31)*:

Polkroglaste čaše, katerih ostenje prehaja v zoženo ustje, ki je ravno odrezano in obrušeno, dno vboklo, po ostenju plitvi pasovi brušenih linij. Izdelane so iz obarvanega ali modro-zelenkastega stekla.

Datacija: 1. st.

Drnovo (PN)
Kroglasta čaša z ravno odrezanim ustjem in vboklim dnom, na ostenju plitve kanelure.
3.2.1. - viš. 7,1 cm; pr. ustja 8 cm - NMS R 725.
Lit.: Petru, Petru 1978, t. 25: 21.
Vrh pri Križu (gr. 1)
Kroglasta čaša z ravno odrezanim ustjem in vboklim dnom, na ostenju dva pasova brušenih linij.
3.2.1. - viš. 7 cm; najv. obseg 8,2 cm - DM.
Lit.: Knez 1969, t. 1: 3.

Primerjave: Hayes 1975, Fig. 3: 132; Czurda-Ruth 1979, Fig. 2: 329, 359, 360; Follmann-Schulz 1988, Taf. 42: 358-375; Biaggio Simona 1991, Tav. 3: 045; Cool, Price 1995, Fig. 5.2.

Komentar:
Čaše oblike 12 po delitvi Isingsove (1957, 28) so poznane tudi pod imenom Hofheim čaše. Ime so dobile po najdišču v Nemčiji, kjer so jih našli v velikem številu in jih tudi prvič opredelili (Ritterling 1913, 365). Oblika variira od polkroglaste do bolj cilindrične.

Ustje je nagnjeno navznoter, odrezano in obrušeno, pod njim so na ostenju plitve brušene linije. Dno je zoženo in ravno ali v sredini vboklo.

Čaše so navadno izdelane iz modro-zelenkastega stekla, poznani pa so tudi izdelki iz modro, zeleno ali jantarno rjavo obarvanega stekla.

Ostenje enako oblikovanih posod je bilo v redkih primerih tudi okrašeno z nataljenimi in vtisnjenimi nitmi drugobarvnega stekla (Cool, Price 1995, 60) ali poslikano z emajlnimi barvami - stekleni prah obarvan s kovinskimi oksidi in pomešan z vodo ali oljem je bil nanesen na posodo, ki so jo potem segreli, da so se barve sprijele s podlago (Rütti 1991a, 122). Odlomek poslikane čaše je znan tudi iz Emone (Rütti 1991a, 124).

Razprostranjenost te oblike je široka in zajema vsa področja imperija, od Britanije, zahodne Evrope preko Akvileje do Cipra in Izraela (Cool, Price 1995, 65).

Čaše so poznane že v avgustejskih kontekstih na Štalenski gori (Czurda-Ruth 1979, 37). Najbolj razširjene so v drugi in tretji četrtini 1. stoletja (Cool, Price 1995,

GROUP 3 - BEAKERS
(Fig. 31-35; Appendix 1)

3.2.
BEAKERS WITH HORIZONTAL WHEEL-CUT LINES

3.2.1.
Spherical beakers with wheel-cut lines (Is 12); *(Fig. 31)*:

Hemispherical beakers whose walls extend into a narrowed rim, which is cut straight and ground, the base concave, shallow bands of wheel-cut lines on the walls. They were made from coloured or blue-green glass.

Date: 1st century

Drnovo (IF)
Spherical beaker with a straight cut rim and concave base, wheel-cut lines on the walls.
3.2.1. - ht. 7.1 cm; dia. rim 8 cm - NMS R 725.
Lit.: Petru, Petru 1978, Pl. 25: 21.
Vrh pri Križu (gr. 1)
Spherical beaker with a straight cut rim and concave base, two wheel-cut lines on the walls.
3.2.1. - ht. 7 cm; greatest circ. 8.2 cm - DM.
Lit.: Knez 1969, Pl. 1: 3.

Analogies: Hayes 1975, Fig. 3: 132; Czurda-Ruth 1979, Fig. 2: 329, 359, 360; Follmann-Schulz 1988, Pl. 42: 358-375; Biaggio Simona 1991, Pl. 3: 045; Cool, Price 1995, Fig. 5.2.

Comments:
Beakers of form 12 according to Isings classification (1957, 28) are also known as Hofheim cups. They received this name from a site in Germany where they were found in great numbers, and where they were first classified (Ritterling 1913, 365). The forms vary from hemispherical to more cylindrical.

The rim is inverted, cut and ground, with shallow wheel-cut lines under it on the walls. The base is narrow and flat or concave in the center.

The beakers were usually made from blue-green glass, while examples are also known of blue, green, or amber brown glass.

The walls of similarly formed vessels in rare examples are also decorated with applied trails of different coloured glass (Cool, Price 1995, 60), or painted with enamels. Crushed glass coloured with metallic oxides and mixed with water or oil - was applied to a vessel (Rütti 1991a, 122). A fragment of a painted beaker is also known from Emona (Rütti 1991a, 124).

The distribution of this form is extensive, encompassing all regions of the Empire, from Britannia and western Europe through Aquileia to Cyprus and Israel (Cool, Price 1995, 65).

The beakers are known even from Augustan con-

65). Berger na osnovi najdb iz Vindonisse domneva, da se njihova uporaba nadaljuje še v pozno 1. stoletje (1960, 43).

Primerjave med emonskim gradivom poznamo med drugim v grobovih 73, 857 (Petru 1972, t. 8: 17; 40: 7) in 365 (Plesničar Gec 1972, t. 95: 24).

Čaša iz Vrha pri Križu je del grobne celote iz 1. stoletja (Knez 1969, 110), drnovska čaša pa sodi med najdbe iz neohranjenih grobnih celot.

3.2.2.

Ovalne čaše s horizontalnimi vrezi (Is 29); (*sl. 31*):

Ovalno ostenje se proti ustju in dnu zoži. Ustje odrezano in obrušeno, dno vboklo. Po ostenju horizontalni pasovi plitvih brušenih linij. Izdelane iz obarvanega ali modro-zelenkastega stekla.

Datacija: 1. st.

Unec (gr. 16)
Ovalna čaša iz medeno rjavega stekla z vrezi pod ustjem in na sredini ostenja, ustje ravno odrezano, dno rahlo vboklo.
3.2.2. - viš. 9,2 cm; pr. ustja 7 cm - NMP.
Lit.: neobjavljeno.

Primerjave: Calvi 1969, Taf. 6: 4; Czurda-Ruth 1979, 99, No. 745-792.

Komentar:
Poleg polkroglastih so istočasno v uporabi tudi druge oblike čaš, katerih skupna značilnost so plitvi horizontalni vrezi po ostenju. Tudi ti izdelki imajo ravno odrezano in obrušeno ustje ter ravno ali v sredini vboklo dno. Izdelani so večinoma iz naravno obarvanega stekla, niso pa redki kosi iz modrega, jantarno ali medeno rjavega in zelenega stekla.

Najzgodnejši izdelki te vrste so znani s Štalenske gore iz tiberijskega obdobja, številne fragmente je Czurda-Ruth (1979, 95) razdelila v tri skupine po obliki: cilindrične, ovalne in stožčaste. Čašam je našla ustrezne paralele med keramičnim gradivom, datiranim od srede do konca 1. stoletja (Czurda-Ruth 1979, 96-97). Na ostalih evropskih najdiščih, kot so Akvileja, Pompeji, Vindonissa, Hofheim, Köln, se čaše pojavljajo od sredine do konca 1. stoletja. Ovalna čaša iz prozornega stekla s horizontalnimi vrezi je poznana tudi s fresk t. i. četrtega stila v Herkulaneu, datiranih v leta 50/60-79 (Naumann-Steckner 1991, 96, pl. 23a). Paralele med emonskim gradivom najdemo v grobovih 34 (Petru 1972, t. 13: 37) in 371 (Plesničar Gec 1972, t. 98: 19). Grob 16 iz Unca po pridatkih sodi v sredino 1. stoletja (ustni podatek T. Schein).

texts at Magdalensberg (Czurda-Ruth 1979, 37). They were most widely distributed in the second and third quarters of the 1st century (Cool, Price 1995, 65). On the basis of finds from Vindonissa, Berger considered that their use continued into the late 1st century (1960, 43).

Comparisons with the material from Emona can be made for graves 73, 857 (Petru 1972, Pl. 8: 17; 40: 7), and 365 (Plesničar Gec 1972, Pl. 95: 24).

The beaker from Vrh near Križ was part of a grave from the 1st century (Knez 1969, 110), while the beaker from Drnovo is a find from unpreserved grave units.

3.2.2.

Oval beakers with wheel-cut horizontal lines (Is 29); (*Fig. 31*):

The oval walls contract toward the rim and base. The rim is cut and ground, the base concave. The walls have horizontal wheel-cut shallow lines. They were made from coloured or blue-green glass.

Date: 1st century

Unec (gr. 16)
An oval beaker of honey brown glass with wheel-cut lines below the rim and in the middle of the walls, the rim cut, the base slightly concave.
3.2.2. - ht. 9.2 cm; dia. rim 7 cm - NMP.
Lit.: unpublished.

Analogies: Calvi 1969, Pl. 6: 4; Czurda-Ruth 1979, 99, No. 745-792.

Comments:
At the same time as hemispherical beakers, other variants of beakers were also in use that had the same characteristic of shallow horizontal lines on the wall. These examples also have cracked-off and ground rims and flat or slightly concave bases. They were mostly made from naturally coloured glass, but fragments of blue, amber or honey brown, and green glass were also fairly common.

The earliest products of this type are known from Magdalensberg from the Tiberian period. The numerous fragments were divided by Czurda-Ruth (1979, 95) into three groups according to form: cylindrical, oval, and conical. Parallels for the beakers were found among the pottery material dated from the middle to the end of the 1st century (Czurda-Ruth 1979, 96-97). At other European sites, Aquileia, Pompeii, Vindonissa, Hofheim, Köln, the beakers appear from the middle to the end of the 1st century. An oval beaker of clear glass with horizontal lines is also known from a fresco of the so-called fourth style at Herculaneum, dated to 50/60-79 (Naumann-Steckner 1991, 96, Pl. 23a). Grave 16 from Unec can be dated to the mid 1st century (information from T. Schein).

3.2.3.
Cilindrične čaše s horizontalnimi vrezi (Is 29); (*sl. 31*):

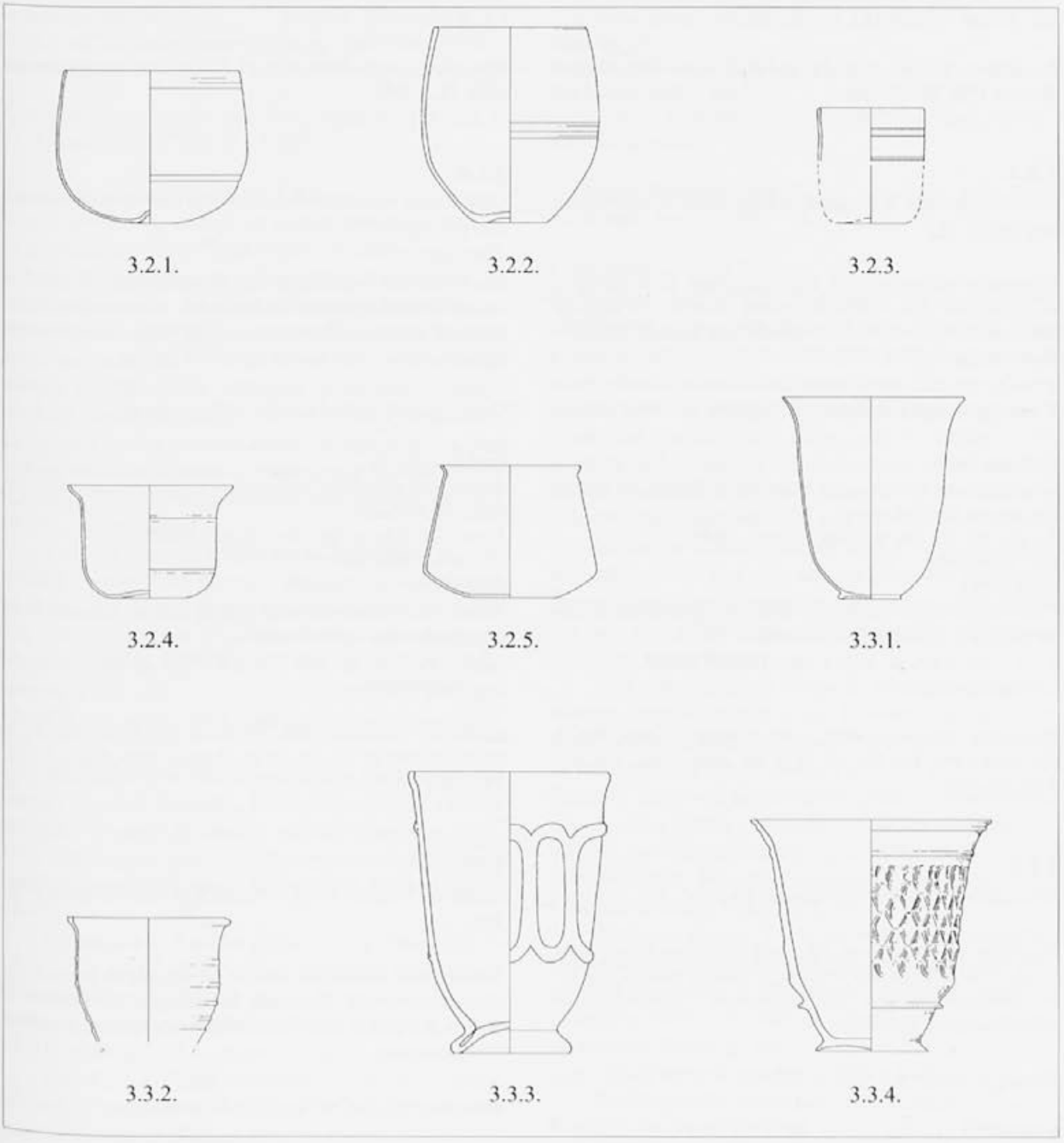
Ostenje cilindrično, ravno prehaja v odrezano in obrušeno ustje, dno vboklo. Po ostenju horizontalne plitve brušene linije.

Datacija: druga polovica 1. - 2. st.

3.2.3.
Cylindrical beakers with horizontal lines (Is 29); (*Fig. 31*):

Walls cylindrical, extending straight into a cut and ground rim, base concave. Shallow horizontal wheel-cut lines on the walls.

Date: second half of the 1st - 2nd centuries



Sl. 31: Skupina 3 - čaše (3.2.1.: Knez 1969, t. 1: 3; 3.2.2.: Unec, gr. 16, neobjavljeno; 3.2.3.: Kolšek 1972, 152: 68; 3.2.4.: Urleb 1984, t. 3: 7; 3.2.5.: Petru, Petru 1978, t. 25: 16; 3.3.1.: Urleb 1984, t. 1: 14; 3.3.2.: Mikl Curk 1975, 182: 6; 3.3.3.: Ptuj, neobjavljeno; 3.3.4.: Istenič 1999, sl. 63). M. = 1:3.

Fig. 31: Group 3 - beakers (3.2.1.: Knez 1969, Pl. 1: 3; 3.2.2.: Unec, gr. 16, unpublished; 3.2.3.: Kolšek 1972, 152: 68; 3.2.4.: Urleb 1984, Pl. 3: 7; 3.2.5.: Petru, Petru 1978, Pl. 25: 16; 3.3.1.: Urleb 1984, Pl. 1: 14; 3.3.2.: Mikl Curk 1975, 182: 6; 3.3.3.: Ptuj, unpublished; 3.3.4.: Istenič 1999, Fig. 63). Scale = 1:3.

Celje (gr. 4)
Gornji del cilindrične čaše z ravno odrezanim ustjem in horizontalnimi vrezi na ostenju.
3.2.3. - pr. ustja 7,6 cm - PMC R 4318.
Lit.: Kolšek 1972, Y 152: 68.
Šempeter (gr. 6)
Del cilindrične čaše s horizontalnimi vrezi na ostenju, dno ravno.
3.2.3. - pr. dna 5 cm - PMC R.
Lit.: Kolšek 1972, Y 153: 8.

Primerjave: Czurda-Ruth 1979, Taf. 5: 734, 735; Biaggio Simona 1991, Tav. 3: 045.

3.2.4.
Cilindrične čaše s horizontalnimi vrezi in izvihanim ustjem (*sl. 31*):

Cilindrično ostenje prehaja v izvihano ustje, ki je odrezano in obrušeno, dno ravno ali rahlo vboklo. Po ostenju horizontalni pasovi plitvih brušenih linij. Prehod ostenja v dno nekoliko klekast.

Datacija: druga polovica 1. - 2. st.

Cerknica (gr. 7)
Čaša s cilindričnim ostenjem in izvihanim ustjem, na ostenju dva pasova plitvih kanelur.
3.2.4. - viš. 5,2 cm; pr. ustja 7,2 cm - NMP.
Lit.: Urleb 1984, t. 3: 7.
Celje (NN)
Čaša s cilindričnim ostenjem in izvihanim ustjem, dno ravno, na ostenju dva pasova plitvih kanelur.
3.2.4. - viš. 6 cm; pr. ustja 8 cm - PMC R 20303.
Lit.: neobjavljeno.

Primerjave: Damevski 1976, t. 10: 4; Barkóczi 1988, Taf. 7: 69; Rütti 1991, Taf. 50: AR 38; Cool, Price 1995, Fig. 5.3: 335, 336, 345.

3.2.5.
Bikonične čaše s horizontalnimi vrezi (*sl. 31*):

Bikonično ostenje se proti vrhu zoži v izvihano in odrezano ustje, dno vboklo. Po ostenju ponekod pasovi plitvih horizontalnih brušenih linij. Izdelane so iz obarvanega ali modro-zelenkastega stekla.

Datacija: druga polovica 1. - 2. st.

Celje (NN)
Spodnji del bikonične čaše, dno ravno, na ostenju pasovi plitvih kanelur.
3.2.5. - pr. dna 4,6 cm - PMC R 20303a.
Lit.: neobjavljeno.
Drnovo (PN)
Bikonična čaša z zoženim zgornjim delom in izvihanim ustjem, dno ravno.

Celje (gr. 4)
Upper part of a cylindrical beaker with a cut rim and horizontal lines on the walls.
3.2.3. - dia. rim 7.6 cm - PMC R 4318.
Lit.: Kolšek 1972, Y 152: 68.
Šempeter (gr. 6)
Part of a cylindrical beaker with horizontal lines on the walls, flat base.
3.2.3. - dia. base 5 cm - PMC R.
Lit.: Kolšek 1972, Y 153: 8.

Analogies: Czurda-Ruth 1979, Pl. 5: 734, 735; Biaggio Simona 1991, Pl. 3: 045.

3.2.4.
Cylindrical beakers with horizontal lines and an everted rim (*Fig. 31*):

The cylindrical walls extend into an out-turned rim, which is cut and ground, the base flat or slightly concave. Horizontal bands of shallow abraded lines on the walls. The transition from the walls to the base is somewhat curved.

Date: second half of the 1st - 2nd centuries

Cerknica (gr. 7)
Beaker with cylindrical walls and an everted rim, two abraded bands on the walls.
3.2.4. - ht. 5.2 cm; dia. rim 7.2 cm - NMP.
Lit.: Urleb 1984, Pl. 3: 7.
Celje (SF)
Beaker with cylindrical walls and an everted rim, flat base, two abraded bands on the walls.
3.2.4. - ht. 6 cm; dia. rim 8 cm - PMC R 20303.
Lit.: unpublished.

Analogies: Damevski 1976, Pl. 10: 4; Barkóczi 1988, Pl. 7: 69; Rütti 1991, Pl. 50: AR 38; Cool, Price 1995, Fig. 5.3: 335, 336, 345.

3.2.5.
Biconical beakers with horizontal wheel-cut lines (*Fig. 31*):

The biconical walls taper towards the top into an everted, cut rim; concave base. The walls occasionally have bands of shallow horizontal lines. They were made from coloured or blue-green glass.

Date: second half of the 1st - 2nd centuries

Celje (SF)
Lower part of a biconical beaker, flat base, bands of shallow wheel-cut lines on the walls.
3.2.5. - dia. base 4.6 cm - PMC R 20303a.
Lit.: unpublished.

3.2.5. - viš. 6,7 cm; pr. ustja 6,8 cm - NMS R 724.
Lit.: Petru, Petru 1978, t. 25: 20.
Drnovo (PN)
Bikonična čaša z zoženim gornjim delom izvihanim ustjem in ravnim dnom.
3.2.5. - viš. 6,1 cm; pr. ustja 7 cm - NMS R 722.
Lit.: Petru, Petru 1978, t. 25: 16.
Unec (gr. 39)
Bikonična čaša iz temno modrega stekla, na klekastem delu ostenja dve kaneluri.
3.2.5. - viš. 6,5 cm; pr. ustja 8,5 cm; pr. dna 5 cm - NMP.
Lit.: neobjavljeno.

Primerjave: Damevski 1976, t. 12: 1; Barkóczi 1988, Taf. 6: 64; Biaggio Simona 1991, Tav. 4: 251.

Komentar za oblike 3.2.3. do 3.2.5.:
V prvi polovici 2. stoletja so najbolj razširjene čaše za pitje izdelki iz brezbarvnega in tudi mlečno-belega stekla z okrasom brušenih horizontalnih linij. Ustja teh čaš so ravno odrezana in obrušena, včasih nekoliko klekasta. Po izdelavi dna in obliki ostenj se razlikujejo le v detajlih, lahko pa jih ločimo v dve glavni skupini; v prvo sodijo posode s cilindričnim ostenjem in ravnim, v sredini vboklim dnom ali dnom oblikovanim v prstanasto oziroma posebej pihano nogo. Druga skupina ima ostenje nekoliko bikonično oblikovano in klekast prehod iz ostenja v dno ter višjo, posebej pihano nogo. Vse čaše so zelo tanko pihane.

Časovni razpon, v katerem se pojavljajo, sega od sredine 1. stoletja do konca 3. stoletja, največji razcvet pa doživijo v sredini 2. stoletja (Cool, Price 1995, 79, Fig. 5.9). Razširjene so po vsej Evropi, med drugim v Vituduru (Rütti 1991, AR 39, 40), na Nizozemskem (Isings 1971, 18), v Kölnu (Fremersdorf, Polónyi-Fremersdorf 1984, 18), Colchestru (Cool, Price 1995, 80).

Bikonične čaše (3.2.5.) so večkrat opredeljene kot izdelki ciprskih delavnic, ki so svoj največji razcvet dosegle v drugem in tretjem stoletju (Vessberg 1952, 119). Calvijeva pa je na drugi strani opozorila na številne najdbe na območju severne Italije, okrog Akvileje (1969, 68-69).

Primerjave iz Emone poznamo v grobu 4 (Petru 1972, t. 1: 6) za obliko 3.2.3., grobovih 253 in 328 (Plesničar Gec 1972, t. 69: 21; 85: 3) za obliko 3.2.4. in grobovih 29, 51 in 1116 (Petru 1972, t. 4: 4; 84: 8,9; 104: 10, 11) za obliko 3.2.5., grobovi sodijo v 2. stoletje.

Časi 3.2.3. iz Celeje in Šempetra pripadata grobnim celotam iz flavijskega časa (Kolšek 1972, Y 152) oziroma začetka 2. stoletja (Kolšek 1972, Y 153).

Grob 7 iz Cerknice je imel kot edini pridatek čašo 3.2.4., grobišče pa nima grobov mlajših od prve polovice 2. stoletja (Urleb 1984, 315).

Bikonične čaše (3.2.5.) so številne, a le ena je iz grobne celote (Unec, gr. 39), ki je z novcem datirana v leta 37-42 (Vičič, Schein 1987, 100).

Drnovo (IF)
Biconical beaker with a narrowed upper section, everted rim, and flat base.
3.2.5. - ht. 6.7 cm; dia. rim 6.8 cm - NMS R 724.
Lit.: Petru, Petru 1978, Pl. 25: 20.
Drnovo (IF)
Biconical beaker with a narrowed upper section, everted rim, and flat base.
3.2.5. - ht. 6.1 cm; dia. rim 7 cm - NMS R 722.
Lit.: Petru, Petru 1978, Pl. 25: 16.
Unec (gr. 39)
Biconical beaker of dark blue glass, two wheel-cut lines on the curved part of the wall.
3.2.5. - ht. 6.5 cm; dia. rim 8.5 cm; dia. base 5 cm - NMP.
Lit.: unpublished.

Analogies: Damevski 1976, Pl. 12: 1; Barkóczi 1988, Pl. 6: 64; Biaggio Simona 1991, Pl. 4: 251.

Comments - forms 3.2.3. to 3.2.5.:
In the first half of the 2nd century the most widely distributed glasses for drinking were products from colourless and also milk-white glass with decoration of wheel-cut and abraded horizontal lines. The rims of such glasses were cut straight and ground, and occasionally somewhat curved. They differ only in details in the working of the base and the shape of the walls, and they can be divided into two main groups. The first contains vessels with cylindrical walls and a flat base concave in the center, or a base formed with a ring-shaped or separately blown foot. The second group has somewhat biconical walls and a curved transition from the walls to the base, and a higher, separately blown foot. All glasses were very thinly blown.

The chronological range in which they appear extends from the middle of the 1st century to the end of the 3rd century, with their greatest popularity occuring in the middle of the 2nd century (Cool, Price 1995, 79, Fig. 5.9). They were distributed throughout all of Europe, among other places at Vitudurum (Rütti 1991, AR 39, 40), in the Netherlands (Isings 1971, 18), at Köln (Fremersdorf, Polonyi-Fremersdorf 1984, 18), and Colchester (Cool, Price 1995, 80).

Biconical glasses (3.2.5.) have often been classified as products of workshops on Cyprus that achieved their greatest prosperity in the second and third centuries (Vessberg 1952, 119). On the other hand, Calvi noted numerous finds in the region of northern Italy, particularly around Aquileia (1969, 68-69).

Parallels can be found among the material at Emona in graves 34 (Petru 1972, Pl. 13:37) and 371 (Plesničar Gec 1972, Pl. 98: 19) for form 3.2.2, in grave 4 (Petru 1972, Pl. 1: 6) for form 3.2.3, graves 253 and 328 (Plesničar Gec 1972, Pl. 69: 21; 85: 3) for form 3.2.4, and in graves 29, 51, and 1116 (Petru 1972, Pl. 4: 4; 84: 8,9; 104: 10, 11) for form 3.2.5. All graves were from the 2nd century.

3.3.
ČAŠE Z ZVONČASTIM IN KONIČNIM OSTENJEM

3.3.1.
Zvončaste čaše (*sl. 31*):

Zvončasto ostenje prehaja v izvihano in zataljeno ustje, prstanasto dno.

Datacija: druga polovica 1. - 2. st.

Cerknica (gr. 2/1974)
Deli čaše z izvihanim ustjem in prstanasto nogo.
3.3.1. - pr. ustja 8,5 cm; pr. dna 4,8 cm - NMP.
Lit.: Urleb 1984, t. 1: 14.
Verdun (gr. 152)
Čaša z izvihanim ustjem in prstanasto nogo.
3.3.1. - viš. 7,9 cm; pr. ustja 8,9 cm - DM 2294.
Lit.: Breščak 2002, kat. 79, 140.
Celje (NN)
Čaša z izvihanim ustjem in ravnim dnom.
3.3.1. viš. 9 cm; pr. ustja 9,8 cm - PMC R 14684.
Lit.: neobjavljeno.
Bobovek (PN)
Čaša z izvihanim ustjem in prstanasto nogo.
3.3.1. - viš. 9,8 cm; pr. ustja 12,6 cm - GMK R 3105.
Lit.: neobjavljeno.
Ptuj (PN)
Čaša z izvihanim ustjem in prstanasto nogo.
3.3.1. - viš. 10 cm; pr. ustja 9 cm - PMP.
Lit.: Mikl Curk 1976, t. 4: 13.

Primerjave: Hayes 1975, Fig. 5: 184; Barkóczi 1988, Taf. 6: 65; Follmann-Schulz 1988, Taf. 35: 281-284.

3.3.2.
Zvončaste čaše z nataljenim okrasom (*sl. 31*):

Ustje izvihano in odebeljeno, po ostenju nataljena steklena nit v več pasovih.

Datacija: druga polovica 1. - 2. st.

Formin (gr. 14)
Gornji del čaše z izvihanim, odebeljenim ustjem, na ostenju nataljena steklena nit.
3.3.2. - pr. ustja 7,5 cm - PMP.
Lit.: Mikl Curk 1975, Y 182: 6.

Primerjave: Hayes 1975, Fig. 5: 186.

Komentar za obliki 3.3.1. in 3.3.2.:
Zvončaste oblike čaš nimajo prav številnih primerjav. Njihova oblika z rahlo izvihanim ustjem in prstanasto nogo bi bila lahko primerljiva z obliko Isings 34 in z najdbami iz Augsta, kjer so sorodne čaše opredeljene kot oblika AR 37 (Rütti 1991, 44) in se pojavljajo od

The beakers 3.2.3. from Celeia and Šempeter belonged to grave units from the Flavian period (Kolšek 1972, Y 152), and the beginning of the 2nd century, respectively (Kolšek 1972, Y 153).

Grave 7 from Cerknica had a beaker 3.2.4. as the only grave good. The cemetery is said to have no graves later than the first half of the 2nd century (Urleb 1984, 315).

Biconical beakers (3.2.5.) are numerous, but only one is from a grave unit (Unec, gr. 39, dated by a coin to AD 37-42 (Vičič, Schein 1987, 100).

3.3.
BEAKERS WITH BELL-SHAPED AND CONICAL WALLS

3.3.1.
Bell-shaped beakers (*Fig. 31*):

The bell-shaped walls extend into an everted and fire-rounded rim, ring base.

Date: second half of the 1st - 2nd centuries

Cerknica (gr. 2/1974)
Part of a beaker with an everted rim and ring base.
3.3.1. - dia. rim 8.5 cm; dia. base 4.8 cm - NMP.
Lit.: Urleb 1984, Pl. 1: 14.
Verdun (gr. 152)
Beaker with an everted rim and ring base.
3.3.1. - ht. 7.9 cm; dia. rim 8.9 cm - DM 2294.
Breščak 2002, cat. 79, 140.
Celje (SF)
Beaker with an everted rim and flat base.
3.3.1. ht. 9 cm; dia. rim 9.8 cm - PMC R 14684.
Lit.: unpublished.
Bobovek (IF)
Beaker with an everted rim and ring base.
3.3.1. - ht. 9.8 cm; dia. rim 12.6 cm - GMK R 3105.
Lit.: unpublished.
Ptuj (IF)
Beaker with an everted rim and ring base.
3.3.1. - ht. 10 cm; dia. rim 9 cm - PMP.
Lit.: Mikl Curk 1976, Pl. 4: 13.

Analogies: Hayes 1975, Fig. 5: 184; Barkóczi 1988, Pl. 6: 65; Follmann-Schulz 1988, Pl. 35: 281-284.

3.3.2.
Bell-shaped beakers with applied decoration (*Fig. 31*):

The rim is everted and fire-thickened, the walls have applied glass trails in several bands.

Date: second half of the 1st - 2nd century

tiberijsko-klavdijskega obdobja do zgodnjega 2. stoletja (Rütti 1991, 71).

Tej dataciji bi ustrezala tudi grobna celota iz Cerknice (Urleb 1984, 315), grob iz Formina, kjer se pojavlja čaša z nataljenim okrasom in odebeljenim ustjem pa verjetno ni starejši od 2. stoletja (Mikl Curk 1975, Y 182).

3.3.3.

Konične čaše z arkadnim okrasom (Is 33); (*sl. 31*):

Čaše na prstanasti nogi, ki imajo po ostenju okras, ki posnema arkade oz loke. Okras je lahko nataljen ali pihan v kalup.

Datacija: druga polovica 1. st.

Ptuj (NN)
Odlomek konične čaše z nataljenim arkadnim okrasom.
3.3.3. - ZVKD Mb.
Lit.: neobjavljeno.

Primerjave: Biaggio Simona 1991, Tav. 11; Rütti 1991, AR 48-52.

Komentar:
Ta oblika čaše je lahko izdelana iz modro-zelenkastega ali brezbarvnega stekla. Nekoliko navzven nagnjeno ostenje preide v ravno, odrezano in obrušeno ustje. Ostenje je okrašeno z nitmi, nataljenimi v podolgovate ovale. Le-ti so lahko med seboj ločeni ali pa se držijo skupaj in dajejo vtis arkadnega okrasa [zato jih ponekod imenujejo *Arkadenbecher* (nem.) ali *arcaded beaker* (angl.)]. Dno je zoženo in izvlečeno v prstanasto nogo.

Čaše so bile v uporabi istočasno kot zgodnje oblike gubank, v flavijski dobi. Največ najdb poznamo iz Italije in Švice (Biaggio Simona 1991, 104-112; Rütti 1991, AR 48-52), najdemo pa jih tudi med gradivom v južni Franciji in Španiji ter Veliki Britaniji (Cool, Price 1995, 71).

Med gradivom s slovenskih najdišč je oblika zaenkrat zastopana le z odlomkom iz Petovione in med emonskim gradivom (Petru 1972, gr. 482, 1080). Odlomek iz petovionskih plasti sodi glede na ostalo gradivo v 1. stoletje (ustni podatek M. Lubšina Tušek).

3.3.4.

Konične čaše z vrezanim okrasom (Is 21); (*sl. 31*):

Čaše z navzven nagnjenim ostenjem, ustje izvihano in obrušeno, prstanasta noga, po ostenju vrezan okras v več vrstah. Čaše so izdelane iz brezbarvnega stekla.

Datacija: flavijsko obdobje - zač. 2. st.

Formin (gr. 14)
Upper part of a beaker with an everted, fire-thickened rim, glass trails on the walls.
3.3.2. - dia. rim 7.5 cm - PMP.
Lit.: Mikl Curk 1975, Y 182: 6.

Analogies: Hayes 1975, Fig. 5: 186.

Comments - forms 3.3.1. and 3.3.2.:
There are not many examples of the bell-shaped form. Their form with a slightly everted rim and ring foot could be compared to the Isings 34 form and the finds from Augst, where related beakers were defined as form AR 37 (Rütti 1991, 44). They appear from the Tiberian-Claudian period to the early 2nd century (Rütti 1991, 71).

This dating would also correspond to the grave unit from Cerknica (Urleb 1984, 315), and the grave from Formin, where the glass with the applied decoration and thickened rim was probably not earlier than the 2nd century (Mikl Curk 1975, Y 182).

3.3.3.

Conical beakers with arcade decoration - arcaded beakers (Is 33); (*Fig. 31*):

Beakers on a ring base, with decoration on the walls that imitates arcades or arches. The decoration could be applied or blown into a mould.

Date: second half of the 1st century

Ptuj (SF)
Fragment of a conical beaker with applied arcaded decoration.
3.3.3. - ZVKD Mb.
Lit. unpublished.

Analogies: Biaggio Simona 1991, Pl. 11; Rütti 1991, AR 48-52.

Comments:
This form of beaker could be made from blue-green or decoloured glass. The somewhat outwardly turned walls extend to a straight, cut, and ground rim. The walls are decorated with trails, applied in elongated ovals. They could be separated or joined, giving the impression of an arcaded decoration (hence they are sometimes called *Arkadenbecher* (Ger.) or arcaded beaker). The base is narrowed and drawn out into a ringed foot.

The beakers were in use at the same time as the early forms of indented beakers, in the Flavian period. The greatest numbers of finds are known from Italy and Switzerland (Biaggio Simona 1991, 104-112; Rütti 1991, AR 48-52), but they can also be found among the material from southern France and Spain, as well as Great Britain (Cool, Price 1995, 71).

This form has been represented to date among the

Ptuj (gr. 289)
Čaša iz brezbarvnega stekla na prstanasti nogi, po ostenju vrezan fasetiran okras v šestih vrstah.
3.3.4. - pr. ustja 10,7 cm - LMJ 2428.
Lit.: Istenič 1999, 76, sl. 62, 63.

Primerjave: Oliver 1984, 55, Fig. 68.

Komentar:
Pri izdelavi teh čaš je steklar najprej napihal osnovno formo. Da je pihana, je opaziti na notranji strani čaš, kjer je površina gladka in sijoča, značilna za pihano steklo. Prav tako ni sledov brušenja, ki je opazno pri izdelkih, ulitih v kalup. Polizdelek z debelimi stenami je nato steklorezec na stružnici obrusil, spoliral čašo v želeno obliko in vrezal fasetiran okras po ostenju. Okras v več vrstah navadno enakomerno zapolnjuje vse ostenje, redko pa je le-ta členjen z vmesnimi kanelurami (Oliver 1984, Fig. 3, 4).

Z raziskovanjem teh čaš so se ukvarjali mnogi avtorji, njihove ugotovitve je strnila Welkerjeva (1974, 56), Oliver (1984, 35) pa jih je razdelil v dve skupini. Čaše se pojavljajo v dveh različicah, nizki in visoki. Pri visokih čašah je razmerje med višino in premerom ustja navadno 1: 2, pri nizkih čašah pa je premer ustja približno enak višini posode.

Raziskave so pokazale, da je izvor teh izdelkov verjetno treba iskati v vzhodnih delavnicah (Oliver 1984, 38). Iz Egipta in Grčije so namreč poznane čaše te oblike s slikano dekoracijo (Oliver 1984, Fig. 11). Glavni časovni okvir izdelave teh posod je zadnja tretjina 1. stoletja, a so kot dragoceni in modni izdelki verjetno nastajale še tudi v začetku 2. stoletja (Oliver 1984, 41).

Med gradivom s slovenskih najdišč so te čaše zaenkrat skromno zastopane. Odlomek čaše iz Emone iz naravno obarvanega stekla modrikastega odtenka, najden pri izkopavanjih 1997, po obliki pripada prvi skupini, torej visokim čašam (ustni podatek V. Vidrih Perko).

Petovionska čaša ima fasetiran okras razporejen v šestih vrstah in sodi med nizke različice, je del grobne celote iz flavijsko-hadrijanskega časa (Istenič 2000, 99).

3.4.
ČAŠE JAJČASTE OBLIKE

3.4.1.
Jajčaste čaše na prstanasti nogi (*sl. 32*):

Ostenje jajčaste oblike, ustje izvihano in zataljeno, pod njim plastično rebro, prstanasto dno, v sredini vboklo.

Datacija: konec 1. - prva polovica 2. st.

material from Slovenian sites only by this fragment from Poetovio and finds from Emona (Petru 1972, gr. 482, 1080). The fragment from the strata of Poetovio would belong to the 1st century, given the date of the other material (information from M. Lubšina Tušek).

3.3.4.
Conical beakers with facet-cut decoration (Is 21); (*Fig. 31*):

Beakers with out-turned walls, the rim everted and ground, ring base, facet-cut decoration in several rows on the walls. The beakers were made of colourless glass.

Date: Flavian period - beginning of the 2nd century

Ptuj (gr. 289)
Beaker of colourless glass on a ringed foot, six rows of facetted decoration on the walls.
3.3.4. - dia. rim 10.7 cm - LMJ 2428.
Lit.: Istenič 1999, 76, Fig. 62, 63.

Analogies: Oliver 1984, 55, Fig. 68.

Comments:
To produce this beaker, the glass worker first blew the basic form. The state of the inner side, where the surface is smooth and shiny, a trait of blown glass, is evidence for the beaker having been blown. Similarly, there were no traces of grinding, which can be found in cast products. The semi-finished vessel with thick walls was then ground off on the lathe, the beaker was polished into the desired shape, and a facetted decoration was cut into the walls. The decoration in several rows usually filled the entire surface of the walls, and only rarely was it divided by intermediate grooves (Oliver 1984, Fig. 3, 4).

Many authors have become involved in research into these beakers, and their establishment was summarized by Welker (1974, 56), while Oliver (1984, 35) classified them into two groups. The beakers appear in two variants, short and tall. The ration between the height and the diameter of the rim is usually 1: 2 for the tall beakers, while the diameter of the rim is approximately the same as the height of the vessel for the short beakers.

Research has shown that the source of these products should probably be sought in the eastern workshops (Oliver 1984, 38). Beakers of this form with painted decoration are known from Egypt and Greece (Oliver 1984, Fig. 11). The main chronological framework for the production of these vessels is the last third of the 1st century, and as valuable and fashionable products they probably continued to be produced at the beginning of the 2nd century (Oliver 1984, 41).

At present these beakers are modestly represented among the material from the Slovenian sites. A fragment of a beaker from Emona of naturally coloured glass with

Cerknica (gr. 32)
Čaša z izvihanim, zataljenim ustjem, pod njim rebro, dno prstanasto, v sredini vboklo.
3.4.1. - pr. ustja 6,7 cm; pr. dna 4,4 cm - NMP.
Lit.: Urleb 1984, t. 20: 1.
Ptuj (gr. 495)
Čaša z izvihanim ustjem, pod njim rebro, dno prstanasto.
3.4.1. - pr. ustja 6, 3 cm - LMJ 2667.
Lit.: Istenič 2000, t. 103: 5.
Ptuj (PN)
Čaša z izvihanim ustjem, pod njim rebro, dno prstanasto.
3.4.1. - viš. 9,5 cm; pr. ustja 8,5 cm - PMP R 1241.
Lit.: Šubic 1976, sl. 9.
Strehovec (gr.)
Čaša z izvihanim, zataljenim ustjem, pod njim rebro, dno prstanasto, v sredini vboklo.
3.4.1. - viš. 8 cm; pr. ustja 6,7 cm - PMMS.
Lit.: Šavel 1990, t. 2: 4.
Štrekljevec (gr. 7)
Čaša z izvihanim ustjem, pod njim rebro, dno prstanasto, v sredini vboklo.
3.4.1. - viš. 8,8 cm; pr. ustja 7,6 cm; pr. dna 7,6 cm - BMM R 158.
Lit.: Dular 1977, t. 11: 2.
Trebnje (gr. 27)
Čaša z izvihanim, zataljenim ustjem, pod ustjem rebro, dno prstanasto, v sredi vboklo.
3.4.1. - viš. 9,2 cm; pr. ustja 7,2 cm - DM R 679.
Lit.: Slabe 1993, t. 2: 5.
Žalna (gr. 1)
3.4.1. - pr. ustja 7,6 cm - NMS R 8491.
Lit.: Istenič 1994, 97.
Žalna (gr. 2)
3.4.1. - pr. ustja 7,8 cm - NMS R 8493.
Lit.: Istenič 1994, 97.

Primerjave: Szõnyi 1973, Taf. 10: 1; Fuchs 1980, Taf. 41: 3; Urban 1984, Taf. 53: 7; 57: 12.

3.4.2.
Jajčaste čaše z gubami na ostenju (*sl. 32*):

Čaše z jajčastim ostenjem, izvihano in zataljeno ustje, pod njim rebro, noga prstanasta, na ostenju gube.

Datacija: konec 1. - prva polovica 2. st.

Ptuj (gr. 698)
Čaša z izvihanim ustjem pod njim rebro, dno prstanasto, na ostenju štiri vbokline.
3.4.2. - pr. ustja 7,1 cm - LMJ 2480.
Lit.: Istenič 2000, t. 159: 1.
Trebnje (PN)
Čaša z izvihanim, zataljenim ustjem, pod njim rebro, dno prstanasto, na ostenju štiri vbokline.
O - 3.4.2. - viš. 8,9 cm; pr. ustja 6,6 cm - DM R 1741.
Lit.: Slabe 1993, T. 21: 7.

Primerjave: nepoznane.

a bluish tone was found during excavations in 1997, and in terms of form it belongs to the first group, meaning tall beakers (information from V. Vidrih Perko).

The beaker from Poetovio has a facetted decoration arranged in six rows and belongs to the short form. It was part of a closed grave unit from the Flavian-Hadrian period (Istenič 2000, 99).

3.4.
OVIFORM BEAKERS

3.4.1.
Oviform beakers on a ring base (*Fig. 32*):

Oviform walls, turned-out and fire-rounded rim, a relief rib beneath it; ring base, concave in the center.

Date: end of the 1st - first half of the 2nd centuries

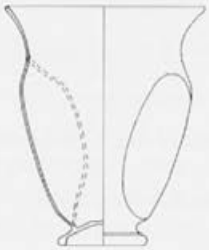
Cerknica (gr. 32)
Beaker with an everted, fire-rounded rim, a rib beneath, ring base, center concave.
3.4.1. - dia. rim 6.7 cm; dia. base 4.4 cm - NMP.
Lit.: Urleb 1984, Pl. 20: 1.
Ptuj (gr. 495)
Beaker with an everted rim, a rib beneath, ring base.
3.4.1. - dia. rim 6.3 cm - LMJ 2667.
Lit.: Istenič 2000, Pl. 103: 5.
Ptuj (IF)
Beaker with an everted rim, a rib beneath, ring base.
3.4.1. - ht. 9.5 cm; dia. rim 8.5 cm - PMP R 1241.
Lit.: Šubic 1976, Fig. 9.
Strehovec (gr.)
Beaker with an everted, fire-rounded rim, a rib beneath, ring base, center concave.
3.4.1. - ht. 8 cm; dia. rim 6.7 cm - PMMS.
Lit.: Šavel 1990, Pl. 2: 4.
Štrekljevec (gr. 7)
Beaker with an everted rim, a rib beneath, ring base, center concave.
3.4.1. - ht. 8.8 cm; dia. rim 7.6 cm; dia. base 7.6 cm - BMM R 158.
Lit.: Dular 1977, Pl. 11: 2.
Trebnje (gr. 27)
Beaker with an everted, fire-rounded rim, a rib beneath, ring base, center concave.
3.4.1. - ht. 9.2 cm; dia. rim 7.2 cm - DM R 679.
Lit.: Slabe 1993, Pl. 2: 5.
Žalna (gr. 1)
3.4.1. - dia. rim 7.6 cm - NMS R 8491.
Lit.: Istenič 1994, 97.
Žalna (gr. 2)
3.4.1. - dia. rim 7.8 cm - NMS R 8493.
Lit.: Istenič 1994, 97.

Analogies: Szõnyi 1973, Pl. 10: 1; Fuchs 1980, Pl. 41: 3; Urban 1984, Pl. 53: 7; 57: 12.

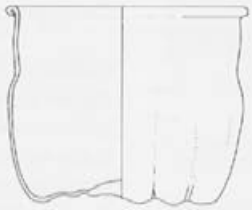
3.4.1.

3.4.2.

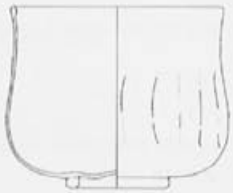
3.5.1.



3.5.2.

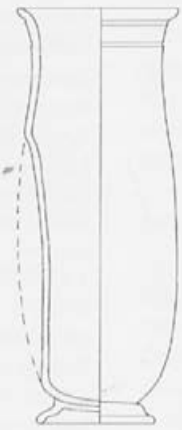


3.5.3.

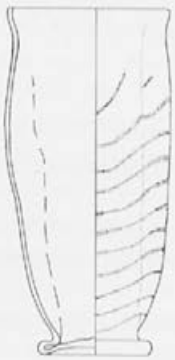


3.5.4.

3.5.5.



3.5.6.



3.5.7.

Sl. 32: Skupina 3 – čaše (3.4.1.: Slabe 1993, t. 2: 5; 3.4.2.: Slabe 1993, t. 21: 7; 3.5.1.: Urleb 1984, t. 6: 6; 3.5.2.: Gabrovec 1954, t. 3: 1; 3.5.3.: Urleb 1984, t. 16: 2; 3.5.4.: Slabe 1976, t. 2: 2; 3.5.5.: Petru, Valič 1959, t. 8: 4; 3.5.6.: Tomanič Jevremov 1998, št. 18; 3.5.7.: Breščak 1990, 25). M. = 1:3.

Fig. 32: Group 3 – beakers (3.4.1.: Slabe 1993, Pl. 2: 5; 3.4.2.: Slabe 1993, Pl. 21: 7; 3.5.1.: Urleb 1984, Pl. 6: 6; 3.5.2.: Gabrovec 1954, Pl. 3: 1; 3.5.3.: Urleb 1984, Pl. 16: 2; 3.5.4.: Slabe 1976, Pl. 2: 2; 3.5.5.: Petru, Valič 1959, Pl. 8: 4; 3.5.6.: Tomanič Jevremov 1998, no. 18; 3.5.7.: Breščak 1990, 25). Scale = 1:3.

Komentar za obliki 3.4.1. in 3.4.2.:
Čaše z značilnim jajčasto oblikovanim ostenjem, izvihanim ustjem in prstanasto nogo so znane predvsem z najdišč v JV alpskem in panonskem prostoru, zato oblika tudi ni vključena v tipologije objavljenega steklenega gradiva. Poleg čaš z gladkim ostenjem sta znani tudi dve čaši z gubami, ki ju lahko umestimo v isto skupino, glede na način izdelave in detajle v obliki. Največ čaš je znanih iz Emone, primerjave obliki pa poznamo še v Avstriji, na Madžarskem in na Hrvaškem (Istenič 1994, 96).

Ker je po številu največ čaš poznanih iz Emone, jih je Isteničeva poimenovala kar »emonske čaše« (1994, 94). Glede na razprostranjenost oblike v panonskem prostoru bi kvečjemu lahko domnevali, da gre za proizvod ene od lokalnih delavnic na tem območju. Hkrati velja tudi omeniti, da delni dokazi o steklarski proizvodnji v Emoni obstajajo šele za poznorimsko obdobje, čeprav so izražene domneve o možni lokalni proizvodnji že v 1. stoletju (Plesničar Gec 1981, 136).

Čaše obeh oblik se pojavljajo v grobovih od druge polovice 1. do prve polovice 2. stoletja, pogoste so predvsem v grobovih trajanskega obdobja (Istenič 1994, 95). Če sklepamo po grobu 698 iz zahodne petovionske nekropole, kjer se čaša pojavlja skupaj s plitvim krožnikom, pa je verjetno, da traja uporaba teh izdelkov še skozi celotno drugo stoletje.

3.5.
ČAŠE Z GUBAMI NA OSTENJU

3.5.1.
Čaše gubanke z ravnim dnom in izvihanim ustjem (Is 32); (*sl. 32*):

Čaše z navzven nagnjenim ostenjem, ki prehaja v izvihano in zataljeno ustje. Dno vboklo, po ostenju vdolbine, navadno štiri.

Datacija: druga polovica 1. - prva polovica 2. st.

Ajdovščina (NN)
Dno čaše gubanke z odtisom novca (avers, Hadrijan, 117-138).
3.5.1. - ZVKD NG.
Lit.: neobjavljeno.
Cerknica (gr. 10)
Deli izvihanega ustja in ravnega dna čaše gubanke.
3.5.1. - pr. ustja 10,6 cm; pr. dna 1,8 cm - NMP.
Lit.: Urleb 1984, t. 6: 6.
Drnovo (PN)
Dno čaše gubanke z odtisom novca (rever, druga polovica 2. stoletja).
3.5.1.- pr. dna 4,3 cm - NMS.
Lit.: neobjavljeno.

3.4.2.
Oviform beakers with indents on the walls (*Fig. 32*):

Beakers with oviform walls, turned-out and fire-rounded rim, a rib beneath, ring base, indentations in the walls.

Date: end of the 1st - first half of the 2nd centuries

Ptuj (gr. 698)
Beaker with an everted rim, a rib beneath, ring base, four indents on the walls.
3.4.2. - dia. rim 7.1 cm - LMJ 2480.
Lit.: Istenič 2000, Pl. 159: 1.
Trebnje (IF)
Beaker with an everted, fire-rounded rim, a rib beneath, ring base, four indents on the walls.
O - 3.4.2. - ht. 8.9 cm; dia. rim 6.6 cm - DM R 1741.
Lit.: Slabe 1993, Pl. 21: 7.

Analogies: none identified.

Comments - forms 3.4.1. and 3.4.2.:
Beakers with characteristic egg-shaped form to the walls, an everted rim and ring base are known primarily from sites in the southeastern Alpine and Pannonian region, and thus the form has not been included in standard typologies of published glass material. In addition to beakers with smooth walls, two beakers are also known with indentations, which can be placed in the same group in terms of the manner of production and details of the form. The greatest number of beakers is known from Emona, and comparative forms can further be found in Austria, Hungary, and Croatia (Istenič 1994, 96).

As the greatest quantity of these beakers comes from Emona, Istenič called them "Emona beakers" (1994, 94). In terms of the distribution of the form in the Pannonian region, at the most it would be possible to conclude that these beakers were the product of one of the local workshops in this area. It should also be mentioned that partial proof of glass production in Emona exists only for the late Roman period, although hypotheses have been set forth about extensive local production as early as the 1st century (Plesničar Gec 1981, 136).

Beakers of both forms appear in graves from the second half of the 1st to the first half of the 2nd century, and they are frequent finds primarily in the graves of the period of the reign of Trajan (Istenič 1994, 95). If we can infer from grave 698 from the western cemetery of Poetovio, where the beaker was found together with a shallow dish, it is probable that the use of these products extended throughout the entire second century.

Ivanci (NN)
Spodnji del čaše gubanke z ravnim dnom.
3.5.1. - pr. dna 5 cm - PMMS 397.
Lit.: Horvat Šavel 1978, t. 8: 7.
Logatec (NN)
Spodnji del čaše gubanke z vboklim dnom, na dnu odtis novca (Antoninus Pius, as, 139-161, kovnica Rim).
3.5.1. - pr. dna 4,6 cm - Privatna zbirka.
Lit.: neobjavljeno.
Logatec (NN)
Spodnji del čaše gubanke z vboklim dnom.
3.5.1. - pr. dna 4,6 cm - Privatna zbirka.
Lit.: neobjavljeno.
Stari trg pri Slovenj Gradcu (gr. 1/1977)
Čaša gubanka z izvihanim ustjem in ravnim, v sredini vboklim dnom.
3.5.1. - viš. 10,4 cm; pr. ustja 9 cm - KPM.
Lit.: Strmčnik Gulič 1981, t. 18: 2.
Šempeter (gr. 12)
Spodnji del čaše gubanke z ravnim dnom.
3.5.1. - pr. dna 4,4 cm - PMC R 1967.
Lit.: Kolšek 1977, t. 7: 5.

Primerjave: Damevski 1976, t. 10. 33; Barkóczi 1988, Taf. 11: 120, 121; Biaggio Simona 1991, Tav. 10: 046, 068.

3.5.2.
Čaše gubanke s prstanastim dnom in izvihanim ustjem (*sl. 32*):

Čaše z navzven nagnjenim ostenjem in izvihanim, zataljenim ustjem. Noga prstanasta, v sredini vbokla. Po ostenju gube.

Datacija: druga polovica 2. st.

Straža pri Šentrupertu (GN)
Čaša z izvihanim ustjem, štirimi vboklinami na ostenju in prstanastim dnom.
3.5.2. - viš. 9,5 cm; pr. ustja 7,4 cm - DM R 8086.
Lit.: Gabrovec 1954, t. 3: 1.

Primerjave: Scatozza Höricht 1986, forma 21.

3.5.3.
Čaše gubanke z ravnim dnom in cevastim ustjem (*sl. 32*):

Čaše s skoraj cilindričnim ostenjem, ki prehaja v cevasto, navzven zavihano ustje. Gosto nagubano ostenje prehaja v vboklo dno.

Datacija: prva polovica 2. st.

Cerknica (gr. 28)
Čaša gubanka z gosto nagubanim ostenjem, ravnim dnom in cevasto zavihanim ustjem.
3.5.3. - viš. 7,8 cm; pr. ustja 9,2 cm - NMP.
Lit.: Urleb 1984, t. 16: 2.

3.5.
INDENTED BEAKERS

3.5.1.
Indented beakers with a flat base and everted rim (Is 32); (*Fig. 32*):

Beakers with out-turned walls extending to an everted and fire-rounded rim. The base concave, indentations in the walls, usually four.

Date: second half of the 1st - first half of the 2nd centuries

Ajdovščina (SF)
Base of an indented beaker with the impression of a coin (obverse, Hadrian - 117-138).
3.5.1. - ZVKD NG.
Lit.: unpublished.
Cerknica (gr. 10)
Parts of the everted rim and flat base of an indented beaker.
3.5.1. - dia. rim 10.6 cm; dia. base 1.8 cm - NMP.
Lit.: Urleb 1984, Pl. 6: 6.
Drnovo (IF)
Base of an indented beaker with the impression of a coin (reverse, second half of the 2nd century).
3.5.1.- dia. base 4.3 cm - NMS.
Lit.: unpublished.
Ivanci (SF)
Lower part of an indented beaker with a flat base.
3.5.1. - dia. base 5 cm - PMMS 397.
Lit.: Horvat Šavel 1978, Pl. 8: 7.
Logatec (SF)
Lower part of an indented beaker with a concave base, impression of a coin on the base (Antoninus Pius, as, 139-161, Rome).
3.5.1. - dia. base 4.6 cm - Private collection.
Lit.: unpublished.
Logatec (SF)
Lower part of an indented beaker with a concave base.
3.5.1. - dia. base 4.6 cm - Private collection.
Lit.: unpublished.
Stari trg pri Slovenj Gradcu (gr. 1/1977)
Indented beaker with an everted rim and a flat base, concave in the center.
3.5.1. - ht. 10.4 cm; dia. rim 9 cm - KPM.
Lit.: Strmčnik Gulič 1981, Pl. 18: 2.
Šempeter (gr. 12)
Lower part of an indented beaker with a flat base.
3.5.1. - dia. base 4.4 cm - PMC R 1967.
Lit.: Kolšek 1977, Pl. 7: 5.

Analogies: Damevski 1976, Pl. 10: 33; Barkóczi 1988, Pl. 11: 120, 121; Biaggio Simona 1991, Pl. 10: 046, 068.

3.5.2.
Indented beakers with a ring base and everted rim (*Fig. 32*):

Beakers with out-turned walls, and an everted, fire-rounded

Primerjave: nepoznane.

3.5.4.
Čaše gubanke s prstanastim dnom in odebeljenim ustjem (*sl. 32*):

Čaša s skoraj cilindričnim ostenjem, ki preide v odebeljeno ustje, pod ustjem nataljena steklena nit. Ostenje gosto nagubano, noga prstanasta.

Datacija: druga polovica 2. st.

Šahovec pri Dobrniču (gr.)
Čaša z gosto narebrenim ostenjem, ki ravno prehaja v odebeljeno ustje, pod njim nalepljena steklena nit, noga prstanasta.
3.5.4. - viš. 7 cm; pr. ustja 8,3 cm - DM.
Lit.: Slabe 1976, t. 2: 2.

Primerjave: Barkóczi 1988, Taf. 11: 113.

3.5.5.
Čaše gubanke z visokim, cilindričnim ostenjem in prstanasto nogo (Is 35); (*sl. 32*):

Visoke cilindrične čaše z izvihanim in odrezanim ustjem. Ostenje nagubano, noga prstanasta ali oblikovana v nizek stojni prstan izvlečen iz ostenja. Pod ustjem plitva kanelura ali nataljena steklena nit. Pogosto iz mlečno-belega stekla.

Datacija: 2. st.

Bobovek (gr. 17)
Visoka čaša z gubami na ostenju, ustje izvihano in ravno odrezano, pod njim dve kaneluri, dno ravno.
3.5.5. - viš. 13,2 cm; pr. ustja 6,5 cm - GMK R 601.
Lit.: Petru, Valič 1959, t. 18: 4.
Cerknica (gr. 2/1974)
Deli visoke čaše z gubami, ustje zoženo in ravno odrezano, dno prstanasto.
3.5.5. - pr. ustja 4,3 cm; pr. dna 3,8 cm - NMP.
Lit.: Urleb 1984, t. 1: 17.
Ptuj (gr. 2/1975)
Čaša gubanka iz dekoloriranega stekla, ustje izvihano, pod njim nalepljena steklena nit, noga prstanasta.
3.5.5. - pr. ustja 6 cm - PMP AT 5276.
Lit.: Tomanič Jevremov 1998, št. 19.

Primerjave: Barkóczi 1988, Taf. 11: 117.

rim. Ring base, in the center concave. Indentations in the walls.

Date: second half of the 2nd century

Straža pri Šentrupertu (TF)
Beaker with an everted rim, four indentations in the walls, and a ring base.
3.5.2. - ht. 9.5 cm; dia. rim 7.4 cm - DM R 8086.
Lit.: Gabrovec 1954, Pl. 3: 1.

Analogies: Scatozza Höricht 1986, form 21.

3.5.3.
Indented beakers with a flat base and tubular rim (*Fig. 32*):

Beakers with almost cylindrical walls, extending into a tubular, outwardly rolled rim. The densely indented walls descend to a concave base.

Date: first half of the 2nd century

Cerknica (gr. 28)
Indented beaker with densely indented walls, flat base, and tubular rolled rim.
3.5.3. - ht. 7.8 cm; dia. rim 9.2 cm - NMP.
Lit.: Urleb 1984, Pl. 16: 2.

Analogies: none identified.

3.5.4.
Indented beakers with a ring base and thickened rim (*Fig. 32*):

Beakers with almost cylindrical walls that extend to a thickened rim, with an applied glass trail under the rim. The walls densely indented, ring base.

Date: second half of the 2nd century

Šahovec pri Dobrniču (gr.)
Beaker with densely ribbed walls, with a straight transition to the thickened rim, under it an applied glass trail; ring base.
3.5.4. - ht. 7 cm; dia. rim 8.3 cm - DM.
Lit.: Slabe 1976, Pl. 2: 2.

Analogies: Barkóczi 1988, Pl. 11: 113.

3.5.5.
Indented beakers with tall, cylindrical walls and a ring base (Is 35); (*Fig. 32*):

Tall cylindrical beakers with everted and cut rims. The walls indented, the base ring-shaped or formed into a low standing ring drawn out from the walls. A shallow groove or applied glass trail under the rim. Often made of milk-white glass.

3.5.6.
Čaše gubanke z visokim cilindričnim ostenjem na visoki nogi (*sl. 32*):

Čaše s skoraj cilindričnim ostenjem, ustje izvihano in odrezano, pod njim nataljena steklena nit, ostenje nagubano. Noga pihana posebej in dodana. Izdelane iz brezbarvnega ali mlečno-belega stekla.

Datacija: prva polovica 2. st.

Ptuj (gr. 2/1975)
Čaša gubanka iz dekoloriranega stekla, ustje izvihano, pod njim steklena nit, noga visoka in posebej pihana.
3.5.6. - viš. 16,5 cm; pr. ustja 4,2 cm; pr. dna 4,5 cm - PMP AT 5275.
Lit.: Tomanič Jevremov 1998, št. 18.

Primerjave: Barkóczi 1988, Taf. 11: 115.

3.5.7.
Čaše gubanke z narebrenim ostenjem pihanim v kalup (*sl. 32*):

Visoka čaša s poševno narebrenim ostenjem, pihanim v kalup, ustje izvihano in odrezano. Dno oblikovano v stojni prstan izvlečen iz ostenja. Ostenje nagubano.

Datacija: 2. - 3. st.

Verdun (gr. 61)
Visoka čaša gubanka, ostenje pihano v rebrast kalup, ustje ravno odrezano, dno prstanasto.
3.5.7. - viš. 13,7 cm - DM 1943.
Lit.: Breščak 1990, 25.

Primerjave: nepoznane.

Komentar za oblike 3.5.1. do 3.5.7.:
Čaše gubanke so pogoste najdbe med rimskim steklom in se pojavljajo v mnogih različicah. Vdolbine oziroma gube na ostenju so vertikalne in so najpogosteje le štiri, ponekod pa je ostenje tudi bolj gosto nagubano.

Najzgodnejše gubanke imajo cilindrično ali rahlo navzven nagnjeno ostenje, ustje je ravno odrezano ali zataljeno, dno je vboklo ali oblikovano v prstanasto nogo. Ostenje je največkrat okrašeno le s štirimi večjimi gubami. Tej skupini izdelkov lahko pripišemo obliki 3.5.1. in 3. 5.2. Čaše so izdelane iz modro-zelenkastega in brezbarvnega stekla.

Te oblike čaš se pojavljajo od sredine 1. stoletja dalje in so pogoste predvsem v flavijskem obdobju, pojavljajo pa se tudi še v začetku 2. stoletja (Cool, Price 1995, 70). Gubanke so pogoste najdbe tako v severnih provincah kot v Italiji in mediteranskem področju, izdelovali so jih v različnih centrih od Kampanije do Cipra.

Date: 2nd century

Bobovek (gr. 17)
Tall beaker with indentations in the walls, the rim everted and cut straight, two grooves underneath, flat base.
3.5.5. - ht. 13.2 cm; dia. rim 6.5 cm - GMK R 601.
Lit.: Petru, Valič 1959, Pl. 18: 4.
Cerknica (gr. 2/1974)
Parts of a tall indented beaker, rim tapered and cut straight, ring base.
3.5.5. - dia. rim 4.3 cm; dia. base 3.8 cm - NMP.
Lit.: Urleb 1984, Pl. 1: 17.
Ptuj (gr. 2/1975)
Indented beaker of decoloured glass, turned out rim, glass trail under it, ring base.
3.5.5. - dia. rim 6 cm - PMP AT 5276.
Lit.: Tomanič Jevremov 1998, no. 19.

Analogies: Barkóczi 1988, Pl. 11: 117.

3.5.6.
Indented beakers with tall cylindrical walls on a high foot (*Fig. 32*):

Beakers with almost cylindrical walls, the rim everted and cut, a glass trail underneath, the walls indented. The base was separately blown and added. They were made of colourless or milk-white glass.

Date: first half of the 2nd century

Ptuj (gr. 2/1975)
Indented beaker of decoloured glass, rim everted with a glass trail underneath, separately blown high foot.
3.5.6. - ht. 16.5 cm; dia. rim 4.2 cm; dia. base 4.5 cm - PMP AT 5275.
Lit.: Tomanič Jevremov 1998, no. 18.

Analogies: Barkóczi 1988, Pl. 11: 115.

3.5.7.
Indented beaker with ribbed walls blown into a mould (*Fig. 32*):

A tall beaker with obliquely ribbed walls, blown into a mould, the rim everted and cut. The base formed into a standing ring drawn out from the walls. The walls indented.

Date: 2nd - 3rd centuries

Verdun (gr. 61)
Tall indented beaker, the walls blown into a ribbed mould, the rim cut, ring base.
3.5.7. - ht. 13.7 cm - DM 1943.
Lit.: Breščak 1990, 25.

Analogies: none identified.

V 2. stoletju se oblike gubank nekoliko spremenijo. Pogosti so izdelki iz brezbarvnega stekla, forme postajajo višje, ustje je odrezano in obrušeno (3.5.5.), poleg prstananste noge se pojavljajo tudi čaše s posebej pihano in dodano nogo (3.5.6.). Te oblike so znane v kontekstih 2. in tudi še 3. stoletja (Cool, Price 1995, 88).

Posebej zanimiva je kombinacija dvojnega okrasa, pihanja v kalup in gubanja, ki jo srečamo na čaši iz Verduna (3.5.7.).

Med gubankami izstopajo čaše z odtisom novcev na dnu. V Sloveniji so zaenkrat redke, saj poznamo le odlomke iz Logatca, Drnovega in Ajdovščine. Čaša iz Logatca nosi odtis prednje strani asa Antonina Pija (138–161), drnovska ima odtisnjeno zadnjo stran novca iz druge polovice 2. stoletja, odlomek iz Ajdovščine pa ima odtisnjen novec Hadrijana (117–138) (novce je opredelil A. Šemrov).

Primerjave tem gubankam moramo iskati v širšem evropskem prostoru, večino najdb z italijanskega ozemlja je zbral Taborelli (1982, 315-340; 1992, 95-97), precej jih poznamo tudi s sosednje Hrvaške (Gluščević 1995, 221-242).

Žigosanje dna z novci je posebnost, ki jo najpogosteje prepoznamo prav pri čašah gubankah. Verjetno so s tem označevali delavnice ali posebno vrsto proizvodov. Kot je ugotovil Taborelli, se žigi novcev pojavljajo od vlade Nerona do Aleksandra Severa (1982, 323). Navadno je odtisnjena prednja stran, le redko se pojavljajo odtisi revera (Gluščević 1995, 236). Te oblike gubank niso bile namenjene pitju, ampak hranjenju in transportu dišečih snovi, balzamov in kozmetičnega prahu. Iz njih so vsebino pretresli v manjše posodice.

Za obliko 3.5.1. najdemo primerjave v Emoni v grobu 301 (Petru 1972, t. 27: 25), 159 in 332 (Plesničar Gec 1972, t. 44: 6; 86: 10), za obliko 3.5.2. v grobu 253 (Petru 1972, t. 25: 15) in za obliko 3.5.4. v grobovih 885 in 921 (Plesničar Gec 1972, t. 53: 19; 69: 3), po grobnih celotah iz Cerknice, Šempetra in Starega trga je različica 3.5.1. datirana na konec 1. in v 2. stoletje. Vsi odlomki gubank z odtisom novca s slovenskih najdišč so iz 2. stoletja.

Gubanka oblike 3.5.2. je bila najdena le v grobu v Straži iz druge polovice 2. stoletja, v katerem je bil novec Lucija Vera (Gabrovec 1954, 144), gubanka z gosto nagubanim ostenjem (3.5.3.) pa je del grobne celote iz prve polovice 2. stoletja (Urleb 1984, 315). V drugo polovico 2. stoletja sodi tudi grob iz Šahovca (gosto nagubana čaša na prstanasti nogi 3.5.4.) z novcem Antonina Pija (Slabe 1976, 245).

V 2. stoletje sodita tudi obe čaši iz mlečno belega stekla s Ptuja (3.5.5.; 3.5.6.), najdeni sta bili skupaj v žganem grobu (Tomanič Jevremov 1998).

Gubanka s poševno narebrenim ostenjem (3.5.7.) ni zelo pogosta oblika. Optičen okras poševnih reber se pojavlja od 3. stoletja dalje, najbolj pogost pa je v naslednjem. Podobne čaše z v kalup pihanim ostenjem

Comments - forms 3.5.1. to 3.5.7.:
Indented beakers are frequent finds among Roman glass and appear in many variants. The hollows or indentations in the walls are vertical and most often there are only four, although sometimes the walls are also more densely indented.

The earliest indented beakers have cylindrical or slightly out-turned walls, the rim is straight cut or fire-rounded, and the base is concave or formed into a ringed foot. The walls are most often decorated with four large indentations. Forms 3.5.1. to 3.5.2. can be attributed to this group of products. The beakers were made form blue-green and colourless glass.

These forms of beakers appear from the middle of the 1st century onwards, and are common primarily in the Flavian period, while they also appear at the beginning of the 2nd century (Cool, Price 1995, 70). Indented beakers are frequent finds in the northern provinces as well as in Italy and the Mediterranean region. They were produced in various centers from Campagnia to Cyprus.

The form of indented beakers changed somewhat in the 2nd century. Products made from colourless glass are common, the forms become taller, the rim is cut and ground (3.5.5.), and in addition to ring bases, beakers also appear with separately blown and added feet (3.5.6.). These forms are known from contexts dated to the 2nd century and even the 3rd century (Cool, Price 1995, 88).

A particularly interesting combination is the double decoration of blowing into a mould (optic-blown) and indentation that can be found on the beaker from Verdun (3.5.7.).

Special examples are indented beakers with impressions of coins on the base. They are rare in Slovenia at present, as only fragments are known from Logatec, Drnovo, and Ajdovščina. The beaker from Logatec bears the impression of the obverse of an as of Antoninus Pius (138–161), the example from Drnovo has the impression of the reverse of a coin from the second half of the 2nd century, while the fragment from Ajdovščina bears an impression of the obverse of a coin of Hadrian (117–138) (coin determination by A. Šemrov).

Comparisons for these indented beakers must be sought in the broader European context. The majority of finds from Italy were collected by Taborelli (1982, 315-340; 1992, 95-97), and some are also known from neighbouring Croatia (Gluščević 1995, 221-242).

Stamping the bases with coins is a special feature that is most often found specifically on indented beakers. In this manner they probably marked workshops or a particular type of product. As was noted by Taborelli, coin stamps appear from the reign of Nero to that of Alexander Severus (1982, 323). Usually the obverse is stamped, and only rarely does an impression of a reverse appear (Gluščević 1995, 236). These forms of indented beakers were not intended for beverages, but

iz Trierja so datirane v prvo polovico 4. stoletja (Goethert-Polaschek 1977, 350).

Grobna celota iz Verduna sodi na konec 1. oziroma v 2. stoletje (Breščak 2002, 148), verjetno je čaša gubanka v grobu najmlajši element.

3.6.
ČAŠE S PRSTANASTO NOGO

3.6.1.
Cilindrične čaše s prstanasto nogo (Is 85a); (*sl. 33*):

Cilindrično ostenje ravno prehaja v ustje, ki je zataljeno, odebeljeno ali ravno odrezano, noga prstanasta, v obliki nalepljene steklene niti.

Datacija: 2. - 3. st.

Ptuj (gr. 38)
Čaša s cilindričnim ostenjem, ustje odebeljeno, noga prstanasta.
3.6.1. - viš. 6, 5 cm; pr. ustja 8 cm - PMP 13773.
Lit.: Kujundžić 1982, t. 4: 20.
Ptuj (gr. 90)
Čaša s cilindričnim ostenjem, ustje odrezano, dno prstanasto.
3.6.1. - viš. 6 cm; pr. ustja 8,5 cm - PMP 14028.
Lit.: Kujundžić 1982, t. 9: 18.
Ptuj (gr. 87)
Čaša s cilindričnim ostenjem, ustje odrezano, noga prstanasta.
3.6.1. - viš. 5,3 cm; pr. ustja 8,3 cm - PMP 14018.
Lit.: Kujundžić 1982, T. 9: 17.
Šempeter (gr. 6)
Spodnji del cilindrične čaše s prstanasto nogo.
3.6.1. - pr. dna 3,2 cm - PMC R 1158.
Lit.: Kolšek 1977, t. 4: 6.
Logatec (NN)
Dno cilindrične čaše s prstanasto nogo.
3.6.1. - pr. dna 3,2 cm - Privatna zbirka.
Lit.: neobjavljeno.
Vransko (NN)
Dno cilindrične čaše s prstanasto nogo.
3.6.1. - pr. dna 3,9 cm - PMC R 22079.
Lit.: neobjavljeno.
Vransko (NN)
Dno cilindrične čaše s prstanasto nogo.
3.6.1. - pr. dna 3,9 cm - PMC R 22078.
Lit.: neobjavljeno.
Vransko (NN)
Dno cilindrične čaše s prstanasto nogo.
3.6.1. - pr. dna 4,3 cm - PMC R 22076.
Lit.: neobjavljeno.
Vransko (NN)
Dno cilindrične čaše s prstanasto nogo.
3.6.1. - pr. dna 3,7 cm - PMC R 22065.
Lit.: neobjavljeno.
Vransko (NN)
Dno cilindrične čaše s prstanasto nogo.
3.6.1. - pr. dna 4 cm - PMC R 22037.
Lit.: neobjavljeno.

rather for the storage and transport of perfumed items, balsams, and cosmetic powders. The contents would be shifted to small vessels as needed.

Comparisons can be found for form 3.5.1. at Emona in graves 301 (Petru 1972, T. 27: 25), 159, and 332 (Plesničar Gec 1972, T. 44: 6; 86: 10), for form 3.5.2. in grave 253 (Petru 1972, T. 25: 15), and for form 3.5.4. in graves 885 and 921 (Plesničar Gec 1972, T. 53: 19; 69: 3), while on the basis of closed grave units from Cerknica, Šempeter, and Stari trg, the form (3.5.1.) is dated to the end of the 1st and in the 2nd century. All fragments of indented beakers with coin impressions from Slovenian sites are from the 2nd century.

An indented beaker of form 3.5.2 was found only in a grave at Straža from the second half of the 2nd century, which contained a coin of Lucius Verus (Gabrovec 1954, 144), while an indented beaker with densely indented walls (3.5.3.) was part of a closed grave unit from the first half of the 2nd century (Urleb 1984, 315). The grave from Šahovec, which included a coin of Antoninus Pius (Slabe 1976, 245) also belonged to the second half of the 2nd century (densely indented beaker on a ring base 3.5.4.).

Both beakers of milk-white glass from Ptuj are dated to the 2nd century (3.5.5.; 3.5.6.); they were found together in a cremation grave (Tomanič Jevremov 1998).

Indented beakers with obliquely ribbed walls (3.5.7.) are not a very common form. Optical decoration of oblique ribs appears from the 3rd century onwards, but they were most frequent in the next. Similar beakers with mould-blown walls from Trier are dated to the first half of the 4th century (Goethert-Polaschek 1977, 350).

The grave from Verdun belonged to the end of the 1st or in the 2nd century (Breščak 2002, 148). The indented beaker was probably the youngest element in the grave.

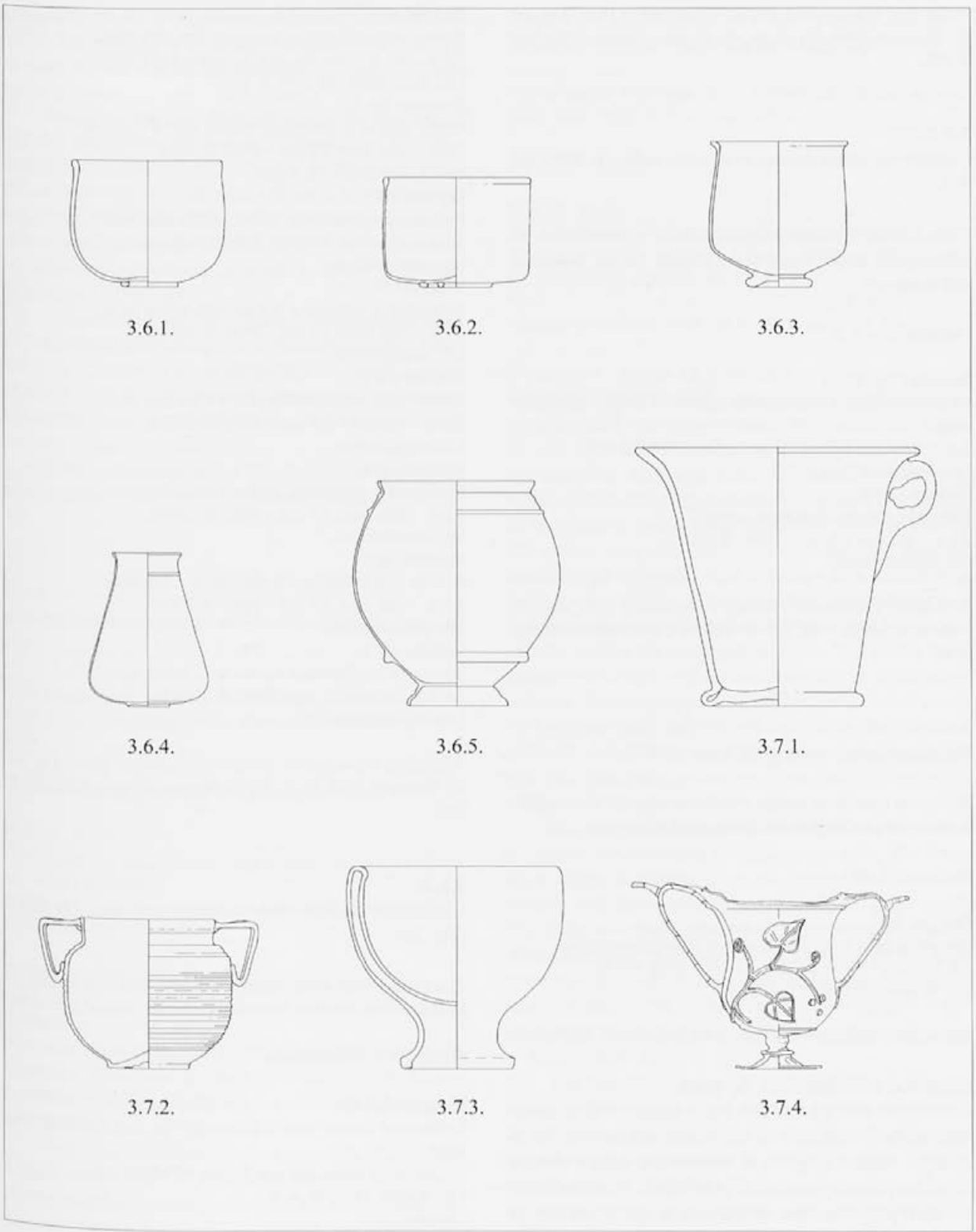
3.6.
BEAKERS WITH A RING BASE

3.6.1.
Cylindrical beakers with a ring base (Is 85a); (*Fig. 33*):

The cylindrical walls extend straight into the rim, which was rounded, thickened, or cut straight, the base was ringed, in the form of attached glass trails.

Date: 2nd - 3rd centuries

Ptuj (gr. 38)
Beaker with cylindrical walls, thickened rim, ring base.
3.6.1. - ht. 6.5 cm; dia. rim 8 cm - PMP 13773.
Lit.: Kujundžić 1982, Pl. 4: 20.
Ptuj (gr. 90)
Beaker with cylindrical walls, cut rim, ring base.
3.6.1. - ht. 6 cm; dia. rim 8.5 cm - PMP 14028.
Lit.: Kujundžić 1982, Pl. 9: 18.



Sl. 33: Skupina 3 - čaše (3.6.1.: Kujundžić 1982, t. 4: 20; 3.6.2.: Kolšek 1977, t. 4: 3; 3.6.3.: Kujundžić 1982, t. 30: 8; 3.6.4.: Tušek 1993, t. 15: 5; 3.6.5.: Mikl Curk 1996, t. 9: 3; 3.7.1.: Pahič 1969, t. 1: 6; 3.7.2.: Kolšek 1972, 152: 65; 3.7.3.: Kolšek 1978, sl. 10; 3.7.4.: Lazar, Tomanič Jevremov 2000, t. 2: 1). M. = 1:3.

Fig. 33: Group 3 - beakers (3.6.1.: Kujundžić 1982, Pl. 4: 20; 3.6.2.: Kolšek 1977, Pl. 4: 3; 3.6.3.: Kujundžić 1982, Pl. 30: 8; 3.6.4.: Tušek 1993, Pl. 15: 5; 3.6.5.: Mikl Curk 1996, Pl. 9: 3; 3.7.1.: Pahič 1969, Pl. 1: 6; 3.7.2.: Kolšek 1972, 152: 65; 3.7.3.: Kolšek 1978, Fig. 10; 3.7.4.: Lazar, Tomanič Jevremov 2000, Pl. 2: 1). Scale = 1:3.

Primerjave: Fremersdorf, Polónyi-Fremersdorf 1984, Abb. 20-21; Barkóczi 1988, Taf. 6: 60, 61; Biaggio Simona 1991, Tav. 8: 001.

3.6.2.

Cilindrične čaše z dvojno prstanasto nogo (Is 85b); (*sl. 33*):

Cilindrično ostenje ravno prehaja v zataljeno ali odebeljeno ustje, nogo tvori dvojni stojni prstan iz steklenih niti.

Datacija: 2. - 3. st.

Šempeter (gr. 6)
Cilindrična čaša z odebeljenim ustjem in dvojno prstanasto nogo.
3.6.2. - viš. 5,5 cm; pr. ustja 7,1 cm - PMC R 956.
Lit.: Kolšek 1977, t. 4: 3.
Vransko (NN)
Dno čaše z dvojno prstanasto nogo.
3.6.1. - pr. dna 3,8 cm - PMC R 22077.
Lit.: neobjavljeno.

Primerjave: Fremersdorf, Polónyi-Fremersdorf 1984, Abb. 24; Follmann-Schulz 1988, Taf. 41: 340-46; Cool, Price 1995, Fig. 5. 12.

3.6.3.

Bikonične čaše s prstanasto nogo (*sl. 33*):

Bikonično ostenje se zožuje v izvihano ustje, ki je odrezano in obrušeno, redko tudi zataljeno, noga prstanasta.

Datacija: 2. st.

Ptuj (gr. 391)
Bikonična čaša z izvihanim ustjem in prstanasto nogo.
3.6.3. - viš. 7,5 cm; pr. dna 3,5 cm - PMP 16729.
Lit.: Kujundžić 1982, t. 30: 8.

Primerjave: Barkóczi 1988, Taf. 6: 59; Price 1987, Fig. 2: 8, 9.

Komentar za oblike 3.6.1. do 3.6.3.:
Cilindrične čaše (3.6.1. in 3.6.2. - Isings 85 a,b) sodijo med najbolj značilne in razširjene oblike v 2. in 3. stoletju. Najbolj pogosta je neokrašena čaša z ravnim ali rahlo uvihanim ustjem, ki je zataljeno ali odebeljeno. Na dno je prilepljena prstanasta noga, v sredini je pogosto opazna sled prijemalke. Prstanasta noga je pogosto kombinirana še z eno nitjo, tako da nastane t. i. dvojna prstanasta noga. Redkejše variante teh čaš imajo izvihano in zataljeno ustje in pod njim nataljeno tanko stekleno nit, enaka nit je na prehodu iz ostenja v dno. Redko se pojavljajo horizontalne nataljene niti v kontrastni barvi. Kvalitetnejši izdelki so okrašeni tudi s

Ptuj (gr. 87)
Beaker with cylindrical walls, cut rim, ring base.
3.6.1. - ht. 5.3 cm; dia. rim 8.3 cm - PMP 14018.
Lit.: Kujundžić 1982, Pl. 9: 17.
Šempeter (gr. 6)
Lower part of a cylindrical beaker with a ring base.
3.6.1. - dia. base 3.2 cm - PMC R 1158.
Lit.: Kolšek 1977, Pl. 4: 6.
Logatec (SF)
Bottom of a cylindrical beaker with a ring base.
3.6.1. - dia. base 3.2 cm - Private collection.
Lit.: unpublished.
Vransko (SF)
Bottom of a cylindrical beaker with a ring base.
3.6.1. - dia. base 3.9 cm - PMC R 22079.
Lit.: unpublished.
Vransko (SF)
Bottom of a cylindrical beaker with a ring base.
3.6.1. - dia. base 3.9 cm - PMC R 22078.
Lit.: unpublished.
Vransko (SF)
Bottom of a cylindrical beaker with a ring base.
3.6.1. - dia. base 4.3 cm - PMC R 22076.
Lit.: unpublished.
Vransko (SF)
Bottom of a cylindrical beaker with a ring base.
3.6.1. - dia. base 3.7 cm - PMC R 22065.
Lit.: unpublished.
Vransko (SF)
Bottom of a cylindrical beaker with a ring base.
3.6.1. - dia. base 4 cm - PMC R 22037.
Lit.: unpublished.

Analogies: Fremersdorf, Polónyi-Fremersdorf 1984, Fig. 20-21; Barkóczi 1988, Pl. 6: 60, 61; Biaggio Simona 1991, Pl. 8: 001.

3.6.2.

Cylindrical beakers with a double ring base (Is 85b); (*Fig. 33*):

The cylindrical walls extend straight into a rounded or thickened rim, the base is formed from two rings of glass coils.

Date: 2nd - 3rd centuries

Šempeter (gr. 6)
Cylindrical beaker with a thickened rim and a double ring base.
3.6.2. - ht. 5.5 cm; dia. rim 7.1 cm - PMC R 956.
Lit.: Kolšek 1977, Pl. 4: 3.
Vransko (SF)
The bottom of a beaker with a double ring base.
3.6.1. - dia. base 3.8 cm - PMC R 22077.
Lit.: unpublished.

Analogies: Fremersdorf, Polónyi-Fremersdorf 1984, Fig. 24; Follmann-Schulz 1988, Pl. 41: 340-46; Cool, Price 1995, Fig. 5. 12.

slikanimi motivi in brušenim okrasom (Fremersdorf 1970, Taf. 4-8). Čaše so delane iz modro-zelenkastega in pogosto tudi iz brezbarvnega stekla, navadno so zelo tanko pihane.

Služile so kot posode za pitje in so jih uporabljali kot del namiznega servisa (Charlesworth 1971, 35). Razširjene so bile v 2. in 3. stoletju (Cool, Price 1995, 83). Zelo številno so zastopane v Britaniji in na porenskih najdiščih, v Franciji, Švici, redko pa v severni Italiji in vzhodnem Sredozemlju (Welker 1974, 113). Fremersdorf je najdbe s porenskih najdišč pripisal kölnskim delavnicam (1970, 59).

Cilindrične čaše (3.6.1. in 3.6.2.) iz ptujskih grobov so del grobnih celot iz 2. in 3. stoletja (Kujundžić 1982, 13), čaši iz Šempetra pa sta del grobne celote iz 2. stoletja (Kolšek 1972, Y 153). Številni fragmenti čaš iz Logatca in Vranskega so naselbinske najdbe, na Vranskem sodijo v drugo polovico 2. stoletja.

Čašo iz ptujskega groba 391 (3.6.3.) lahko glede na grobno celoto umestimo v 2. stoletje (Kujundžić 1982, 13).

3.6.4.
Hruškaste čaše z zoženim ustjem in prstanasto nogo (*sl. 33*):

Čaše z razširjenim spodnjim delom trupa, ki preide v zoženo ustje. Pod ustjem nataljena nit, noga prstanasta. Mlečno belo steklo.

Datacija: druga polovica 2. - prva polovica 3. st.

Ptuj (gr. 7)
Čaša iz mlečno belega stekla, ustje zoženo, na vratu nataljena nit, noga prstanasta.
3.6.4. - viš. 7, 8 cm; pr. ustja 3, 6 cm - ZVKD Mb.
Lit.: Tušek 1993, t. 15: 5.

Primerjave: Rütti 1991, 91, AR 53.3.

Komentar:
Nenavadna oblika čaše nima povsem ustreznih primerjav. Posoda je izdelana iz mlečno belega stekla, ki je bilo posebej priljubljeno pri izdelkih iz 2. stoletja (gl. str. 22).

Najbližja obliki ptujske čaše je oblika AR 53.3. iz Augsta (Rütti 1991, 91). Tam so čaše tudi okrašene z enostavnimi horizontalnimi linijami, okras na ptujski čaši pa predstavlja le nataljena steklena nit pod ustjem.

Čaše iz Augsta se pojavijo ob koncu 2. stoletja in trajajo do tretje četrtine 3. stoletja, med gradivom poznega 3. stoletja se ne pojavljajo več (Rütti 1991, 100).

Grobna celota iz Ptuja sodi med bogatejše grobove, saj so bili v grob položeni tudi številni jantarni predmeti. Na osnovi grobne celote, v kateri je tudi kroglasta

3.6.3.
Biconical beakers with a ring base (*Fig. 33*):

The biconical walls taper to an everted rim, cut and ground, rarely also fire-thickened, ring base.

Date: 2nd century

Ptuj (gr. 391)
Biconical beaker with an everted rim and a ring base.
3.6.3. - ht. 7.5 cm; dia. base 3.5 cm - PMP 16729.
Lit.: Kujundžić 1982, Pl. 30: 8.

Analogies: Barkóczi 1988, Pl. 6: 59; Price 1987, Fig. 2: 8, 9.

Comments - forms 3.6.1. to 3.6.3.:
Cylindrical beakers (3.6.1. and 3.6.2. - Isings 85 a, b) are among the most characteristic and widespread forms of the 2nd and 3rd centuries. Most often they are undecorated, with a straight or slightly everted rim, which is rounded or thickened. A ring base is attached to the bottom, and a pontil mark can often be seen in the center. The ring base is often combined with yet another coil to create what is known as a double ring base. Some variants of these beakers have everted and rounded rims, with an applied thin glass trail beneath it, and the trail at the transition from the wall to the base. Rarely horizontal applied trails appear in contrasting colours. Higher quality products were also decorated with painted motifs and ground decoration (Fremersdorf 1970, Pl. 4-8). The beakers were made from blue-green and also often from colourless glass, and they were usually very thinly blown.

They served as vessels for beverages, and were used as part of tableware sets (Charlesworth 1971, 35). They were widely distributed from the second half of the 2nd century and during the 3rd century (Cool, Price 1995, 83). They were well represented in Britannia and at the Rhineland sites, in France and in Switzerland, but they were rare in northern Italy and the eastern Mediterranean (Welker 1974, 113). Fremersdorf attributed the finds from the sites along the Rhine to the workshops of Köln (1970, 59).

The cylindrical beakers (3.6.1. and 3.6.2.) from the graves at Ptuj were parts of grave units from the 2nd and 3rd centuries (Kujundžić 1982, 13), while the beakers from Šempeter were found in graves from the 2nd century (Kolšek 1972, Y 153). Numerous fragments of beakers from Logatec and Vransko were settlement finds, and at Vransko they belonged to the second half of the 2nd century.

The beaker from Ptuj grave 391 (3.6.3.) can be placed in the 2nd century on the basis of the grave unit (Kujundžić 1982, 13).

steklenička z zajedo na vratu, bi čašo lahko umestili v pozno 2., morda pa celo že na začetek 3. stoletja (Tušek 1993, 408).

3.6.5.
Kroglaste čaše na visoki prstanasti nogi (*sl. 33*):

Čaše s kroglastim ostenjem, ki se proti ustju zoži, visoka prstanasta noga, na ostenju pod ustjem in nad nogo plastično rebro.

Datacija: 2. st.

Ptuj (gr. 32)
Kroglasta čaša, ustje zoženo in ravno odrezano, noga visoka, prstanasta, pod ustjem in nad nogo plastično rebro.
3.6.5. - viš. 11 cm; pr. ustja 8,4 cm; najv. obseg 11 cm - PMP R 10551.
Lit.: Šubic 1976, t. 7: 60.

Primerjave: nepoznane.

Komentar:
Kroglasta čaša iz petovionskega groba nima primerjav. Izdelana je iz modro-zelenkastega stekla. Kroglast trup preide v izvihano in zataljeno ustje, pod njim je nataljena steklena nit, debelejše rebro je nataljeno tudi na prehodu v dno. Čaša stoji na visoki, posebej pihani nogi.

Zaradi nenavadne oblike smemo domnevati, da gre v tem primeru za izdelek lokalnih delavnic, glede na grobno celoto, v kateri je bil priložen tudi Hadrijanov novec, pa lahko opredelimo posodo v prvo polovico oziroma v sredino 2. stoletja (Mikl Curk 1996, 164).

3.7.
ČAŠE Z ROČAJI

3.7.1.
Enoročajne čaše (Is 37); (*sl. 33*):

Čaše konične oblike, ki se proti ustju razširijo, ustje izvihano in zataljeno; dno prstanasto, tik pod ustjem ročaj.

Datacija: druga polovica 1. - prva polovica 2. st.

Miklavž pri Mariboru (GN)
Konična čaša, proti ustju razširjena, dno prstanasto, pod ustjem ročaj.
3.7.1. - viš. 13 cm; pr. ustja 13, 3 cm - PMM A 2244.
Lit.: Pahič 1969, t. 1: 6.

Primerjave: Hayes 1975, Fig. 7: 203; Damevski 1976, t. 6: 2; Czurda-Ruth 1979, Taf. 2: 474.

Komentar:
Posode tega tipa so navadno poimenovane *modiolus*. To

3.6.4.
Pear-shaped beakers with a tapered rim and ring base (*Fig. 33*):

Beakers with a broadened lower section of the body, which merges into the tapered rim. An applied trail under the rim, ring base. Milk-white glass.

Date: second half of the 2nd - first half of the 3rd centuries

Ptuj (gr. 7)
Beaker of milk-white glass, narrow rim, applied trail on the neck, ring base.
3.6.4. - ht. 7.8 cm; dia. rim 3.6 cm - ZVKD Mb.
Lit.: Tušek 1993, Pl. 15: 5.

Analogies: Rütti 1991, 91, AR 53.3.

Comments:
The unusual shape of this beaker has no entirely suitable comparisons. The vessel was made of milk-white glass, which was particularly popular for products of the 2nd century (see pp. 22).

The closest form to the beaker from Ptuj is AR 53.3 from Augst (Rütti 1991, 91). The beakers there were also decorated with simple horizontal lines, while the decoration on the Ptuj beaker was an applied glass trail below the rim.

The beakers from Augst appear at the end of the 2nd century and continue to the third quarter of the 3rd century, but they no longer appear among the material of the later 3rd century (Rütti 1991, 100).

The grave from Ptuj was among the richer graves, as it also contained numerous amber objects. On the basis of the grave contents, which also included a globular bottle with a constriction on the neck, the beaker could be placed in the late 2nd century, and perhaps even at the beginning of the 3rd century (Tušek 1993, 408).

3.6.5.
Globular beakers on a high ringed base (*Fig. 33*):

Beakers with globular walls, narrowing towards the rim, a high ring base, on the walls below the rim and above the foot a relief rib.

Date: 2nd century

Ptuj (gr. 32)
Spherical beaker, the rim narrow and straight cut, high ring base, relief ribs below the rim and above tha base.
3.6.5. - ht. 11 cm; dia. rim 8.4 cm; greatest circ. 11 cm - PMP R 10551.
Lit.: Šubic 1976, Pl. 7: 60.

Analogies: none identified.

je pomanjševalnica iz lat. besede *modius* - mera, navadno za količino žita. Vendar posode variirajo v obliki in velikosti, tako da z njimi vsekakor niso merili le količine žita. Hilgers označuje to obliko kot pivsko posodo (1969, 223-224).

Značilnost oblike je en sam ročaj, pritrjen tik pod ustjem ali na zgornji polovici posode, izvihano ustje, ki je navadno odebeljeno, ostenje se proti dnu zoži in zaključi s prstanasto nogo ali tudi z ravnim dnom. Redko najdemo na teh posodah tudi okras brušenih horizontalnih linij in rastlinski motiv (Whitehouse 1997, no. 389, 390).

Poleg steklenih izdelkov so znane številne variante iz gline in srebra, med njimi izdelki iz Boscoreala in Pompejev (Scatozza Höricht 1986, 42 - forma 22).

Isingsova je zbrala poznane najdbe iz datiranih kontekstov in ugotovila, da večina sodi v drugo polovico 1. stoletja (1957, 52-53), najdbe s Štalenske gore pa se pojavljajo že v tiberijskih in klavdijskih slojih (Czurda-Ruth 1979, 52). Razprostranjenost oblike je po ugotovitvah Welkerjeve pretežno vezana na zahodni del imperija (1974, 27-30), vendar so znane tudi najdbe z vzhoda, npr. Jordanije, Turčije, Izraela (Whitehouse 1997, 229).

Med gradivom iz emonskih nekropol najdemo številne in raznolike forme enoročajnih čaš (v več kot dvajsetih grobovih), navajamo le nekatere, npr. grobovi 35, 75, 101, 320, 380, 973 (Plesničar Gec 1972, t. 9: 15; 18: 19; 25: 17; 82: 7; 102: 4; 193: 7). Pojavljajo se tudi v grobovih prve polovice 2. stoletja - grobova 325 in 380 z novcema Trajana oz. Hadrijana (Plesničar Gec 1972, 64, 75).

Čaša iz Miklavža je del gomilnega pokopa, datiranega na začetek 2. stoletja (Pahič 1969,74).

3.7.2.

Dvoročajne čaše (*sl. 33*):

Nizke čaše z vodoravno narebrenim ostenjem in dvema trakastima ročajema tik pod ustjem, ustje zataljeno, dno vboklo, nakazan stojni prstan.

Datacija: druga polovica 1. st.

Celje (gr. 4)
Nizka čaša z vodoravno narebrenim ostenjem, dva trakasta ročaja, dno v sredini vboklo.
3.7.2. - viš. 7,6 cm; pr. ustja 6,6 cm - PMC R 4198.
Lit.: Kolšek 1972, Y 152: 65.
Celje (gr. 4)
Nizka čaša z vodoravno narebrenim ostenjem, dva trakasta ročaja, dno v sredini vboklo.
3.7.2. - pr. ustja 7 cm - PMC R 4285.
Lit.: Kolšek 1972, Y 152: 67.

Primerjave: nepoznane.

Comments:
The globular beaker from a grave at Poetovio has no analogies. It was made of blue-green glass. The spherical body extends into an everted and rounded rim, with an applied glass trail under it, while a thicker rib was also applied at the transition to the base. The beaker stands on a high, separately blown foot.

The unusual shape leads us to believe that this was the product of a local workshop, and in terms of the grave where it was found, where a coin of Hadrian was also placed, the vessel can be dated to the first half or the middle of the 2nd century (Mikl Curk 1996, 164).

3.7.
BEAKERS WITH HANDLES

3.7.1.

Single handled beakers (Is 37); (*Fig. 33*):

Beakers of conical form that widen toward the rim; the rim everted and fire-rounded; ring base, the handle just under the rim.

Date: second half of the 1st - first half of the 2nd centuries

Miklavž pri Mariboru (TF)
Conical beaker, broadened towards the rim, ring base, handle under the rim.
3.7.1. - ht. 13 cm; dia. rim 13,3 cm - PMM A 2244.
Lit.: Pahič 1969, Pl. 1: 6.

Analogies: Hayes 1975, Fig. 7: 203; Damevski 1976, Pl. 6: 2; Czurda-Ruth 1979, Pl. 2: 474.

Comments:
Vessels of this type are usually called *modiolus*. This is a diminutive from the Latin world *modius* - measure, usually for a certain quantity of grain. The vessels, however, varied in form and size, and certainly were not used merely to measure a quantity of grain. Hilgers termed this form beer mugs (1969, 223-224).

The characteristic of the form is the single handle attached just under the rim or on the upper half of the vessel, the everted rim, which was usually thickened, while the walls taper towards the bottom and end in a ring base or occasionally in a flat base. Such vessels rarely also can have a decoration of ground horizontal lines and floral motifs (Whitehouse 1997, No. 389, 390).

Numerous variants in clay and silver are known in addition to the glass products, including examples from Boscoreale and Pompeii (Scatozza Höricht 1986, 42 - form 22).

Isings gathered the known finds from dated contexts and concluded that most belonged to the second half of the 1st century (1957, 52-53). The finds from Magdalensberg appear even in the Tiberian and Claudian

Komentar:
Dve čaši iz Celeje nimata primerjav. Njuno ostenje je narebreno, kar pomeni, da je bilo pihano v kalup. Ustje je ravno in zataljeno, dno je v sredini rahlo vboklo.

Izdelani sta zelo kvalitetno, steklo modrikastega odtenka je enako kot pri ostalih steklenih posodah v grobu, kar lahko pomeni, da so nastale v isti delavnici, težko pa bi rekli, da gre za izdelke domačih delavnic. Grobna celota je iz flavijske dobe (Kolšek 1972, Y 152, 2).

3.7.3.
Čaše na nogi z dvojno steno (*sl. 33*):

Polkroglasta čaša z dvojno steno, zunanja stena preide v votlo nogo z odebeljenim robom.

Datacija: druga polovica 1. st.

Celje (gr. 5)
Čaša na nogi, kroglast trup je potisnjen navznoter, da tvori dvojno steno pokroglasti čaši.
3.7.3. - viš. 10,3 cm; pr. ustja 10, 6 cm - PMC R 4323.
Lit.: Kolšek 1978, sl. 10.

Primerjave: Hayes 1975, Fig. 2: 117; Auth 1976, 91, no. 98; Whitehouse 1997, No.159.

Komentar:
Čaša na nogi z dvojno steno je oblika, ki je morda nastala kot rezultat eksperimentiranja steklarja. Napihano posodo oziroma steklenico kroglaste oblike je steklar obrnil in spodnji del dna potisnil navznoter. Nastala je dvojna stena. Polkroglasta posoda je nato obrnjena, da stoji na ustju, ki služi kot votla noga. Dva trakasta ročaja sta pritrjena na zgornji del ostenja, vendar sta iz stekla drugačnega odtenka zato domnevamo, da gre za napačno rekonstrukcijo in čaša ni imela ročajev. Posoda je bila najdena v uničenem grobu, v profilu izkopa in je mogoče, da je prišlo do napake.

Oblika je izjemna in ji najdemo le malo primerjav, nobene pa v dobro datiranih celotah. Najbliže ji je čaša iz muzeja v Newarku (ZDA), datirana v 1.-2. stoletje (?) (Auth 1976, 91, no. 98) in steklenička, ki jo objavlja Hayes (1975, Fig. 2: 117) iz 2. oz. začetka 3. stoletja. Čašo z dvojno steno hrani tudi muzej v Corningu (New York, ZDA). Whitehouse jo kot čašo na nogi umešča v 4.-6. stoletje, z opombo, da je datacija sporna (1997, 106, No. 159). Smith je razložil funkcijo teh posod kot »obrnjena steklenica. Ko je napolnjena, ji zamašijo vrat in jo obrnejo. Tekočina je ujeta med steni in daje vtis do vrha polne čaše. Ko jo pivec dvigne k ustom, da bi jo izpraznil, se ne zgodi nič.« (1957, 129). Velja omeniti, da še danes steklarji poznajo ta trik in z njim radi ponagajajo novincem.

Čaša iz Celeje je del uničene grobne celote z

strata (Czurda-Ruth 1979, 52). According to Welker, the distribution of forms was primarily tied to the western part of the empire (1974, 27-30), although finds are also known from the east, such as from Jordan, Turkey, and Israel (Whitehouse 1997, 229).

The material from the cemeteries of Emona includes numerous and varied forms of single handled beakers (in more than twenty graves), only some can be cited, such as graves 35, 75, 101, 320, 380, 973 (Plesničar Gec 1972, T. 9: 15; 18: 19; 25: 17; 82: 7; 102: 4; 193: 7). They also appeared in graves of the first half of the 2nd century (graves 325 and 380 with coins of Trajan and Hadrian, respectively) (Plesničar Gec 1972, 64, 75).

The beaker from Miklavž was part of a tumulus burial, date to the beginning of the 2nd century (Pahič 1969, 74).

3.7.2.
Double handled beakers (*Fig. 33*):

Low beakers with horizontally ribbed walls and two ribbon handles just below the rim, rounded rim, concave base, standing ring.

Date: second half of the 1st century

Celje (gr. 4)
Low beaker with horizontally ribbed walls, two ribbon handles, base concave in center.
3.7.2. - ht. 7.6 cm; dia. rim 6.6 cm - PMC R 4198.
Lit.: Kolšek 1972, Y 152: 65.
Celje (gr. 4)
Low beaker with horizontally ribbed walls, two ribbon handles, base concave in center.
3.7.2. - dia. rim 7 cm - PMC R 4285.
Lit.: Kolšek 1972, Y 152: 67.

Analogies: none identified.

Comments:
The two beakers from Celeia have no analogies. The walls are ribbed, evidence for their walls having been blown in a mould. The rim is straight and fire-rounded, while the base was slightly concave in the center.

They are very well made, and the glass with a blue nuance is the same as that used for the other glass vessels in the grave, which could mean that they were created in the same workshop, but it would be difficult to say that these had been the products of local production centers. The grave is from the Flavian period (Kolšek 1972, Y 152, 2).

3.7.3.
Footed beakers with double walls (*Fig. 33*):

A hemispherical beaker with double walls, the outside wall descends to a hollow foot with a thickened edge.

grobišča iz flavijske dobe oziroma druge polovice 1. stoletja (Kolšek 1972, Y 152).

3.7.4.
Čaše na nogi s presegajočima ročajema in reliefnim okrasom (Is 38); (*sl. 33*):

Čaše z izvihanim ustjem, ročaj presegajoč in perforiran, z opornikom za palec, noga v sredini prstanasto odebeljena. Ostenje krasi plastičen rastlinski okras. Dekolorirano steklo.

Datacija: prva polovica 3. stoletja

Ptuj (gr. 11)
Čaša iz brezbarvnega stekla z izvihanim ustjem in presegajočima ročajema, noga ima prstanasto odebelitev. Ročaja perforirana, ostenje krasi reliefen rastlinski okras.
3.7.4. - viš. 8,4 cm; pr. ustja 7,2 cm; pr. dna 4,3 cm - PMP AR 55386.
Lit.: Lazar, Tomanič Jevremov 2001, t. 2: 1.

Primerjave: von Saldern 1991, Pl. 29.

Komentar:
Te vrste posod lahko zaradi izredne zahtevnosti tehnike (brušenje in rezanje površine debelo pihanega stekla) uvrstimo med t. i. luksuzno steklo. Ločene so tri glavne skupine tovrstnih izdelkov: prva skupina je istočasna z izdelki s t. i. fasetiranim okrasom (3.3.4.) (Koster, Whitehouse 1989, 25, Fig. 1-6), druga skupina zajema maloštevilne izdelke iz 3. stoletja z reliefnim okrasom, tretja in najbolj znana skupina pa so diatreta izdelki iz 4. stoletja, ki jih v Sloveniji zaenkrat ne poznamo.

Med oblikami so čaše najpogostejše, druge forme, npr. skifosi, kantarosi ipd., pa posnemajo kvalitetne izdelke iz srebra, kamene strele in agata tako v obliki kot okrasu (von Saldern 1991, 117).

Mlajše izdelke, znane iz Trierja, Krefeld-Gellepa in Kölna, lahko v celoti umestimo v 3. stoletje (von Saldern 1991, 118). Okras dopolnjujejo poleg že omenjenih motivov tudi listi in vitice, kar prepoznamo tudi na okrasu ptujskega kantarosa.

Čašo iz Petovione lahko glede okrasa primerjamo z najdbo iz Trierja (Goethert-Polaschek 1977, 340, no. 144) in skifosom iz Kölna (von Saldern 1991, Pl. 29a), datirano v 3. stoletje.

Oblika ptujskega kantarosa je brez dvoma povzeta po kovinskih predlogah, posebej zanimiva sta ročaja izdelana v predrti tehniki z opornikoma za palec na vrhu ročaja. Grobna celota s kantarosom je datirana v zgodnje 3. stoletje in vsebuje tudi visoko cilindrično steklenico z brušenim figuralnim okrasom (Tomanič Jevremov 1998, št. 16, 17; Lazar, Tomanič Jevremov 2000, t. 1).

Date: second half of the 1st century

Celje (gr. 5)
Footed beaker, the spherical body was pressed inwards to create the double walls of a hemispherical beaker.
3.7.3. - ht. 10.3 cm; dia. rim 10.6 cm - PMC R 4323.
Lit.: Kolšek 1978, Fig. 10.

Analogies: Hayes 1975, Fig. 2: 117; Auth 1976, 91, No. 98; Whitehouse 1997, No. 159.

Comments:
The footed beaker with double walls is a form that perhaps originated as the result of experimentation by glass workers. The blown vessel, a bottle of spherical form, was inverted by the glass worker and the lower section of the base was pressed inside. A double wall resulted. The hemispherical vessel was then again turned over, to stand on its rim, which served as a hollow foot. Two ribbon handles were attached to the upper part of the walls, although they are of a different shade, and thus it can be concluded that this resulted from an incorrect reconstruction and that the beaker did not originally have handles. The vessel was discovered in a destroyed grave in the profile of a trench, and it is possible that a mistake was made.

The form is exceptional, and only a few examples can be found, none in well-dated contexts. The closest chronologically is from the museum in Newark (New Jersey, USA), dated to the 1st–2nd centuries (Auth 1976, 91, no. 98), and a small bottle, published by Hayes (1975, Fig. 2: 117), from the 2nd or the beginning of the 3rd centuries. A beaker with double walls is also in the collections of the museum in Corning (New York, USA). Whitehouse dated it as a footed goblet to the 4th–6th centuries, with a note that the dating is questionable (1997, 106, no. 159). Smith explained the function of these vessels as an inverted bottle. "When it was filled, the neck was stoppered, and it was turned over. The liquid flowed between the walls, given the impression that the glass was full to the top. When the drinker would raise it to his mouth to drain it, nothing would happen." (1957, 129). It should be noted that even today glass workers know of this trick and use it to tease novices.

The beaker from Celeia was part of a destroyed grave from a cemetery from the Flavian period, meaning the end of the 1st century (Kolšek 1972, Y 152).

3.7.4.
Footed beakers with curved handles and relief decoration (Is 38); (*Fig. 33*):

Beakers with an everted rim, curved and perforated handles, with a thumb rest, the base with a ring-like thickening in the center. The walls decorated with relief floral decoration. Decoloured glass.

3.7.5.
Čaše na nogi z ročajema (Is 39); (*sl. 34*):

Skoraj cilindrično ostenje preide v zataljeno ali odebeljeno ustje, ponekod pod njim rebro, noga pihana posebej in dodana, spodaj ravno odrezana. Na ostenju dva ročaja, ki se ob ustju končata z izrastkom.

Datacija: druga polovica 1. st.

Celje (gr. 4)
Čaša na nogi z navzven nagnjenim ostenjem, ustje odebeljeno in profilirano, dva ročaja z izrastki nad ustjem.
3.7.5. - viš. 8 cm; pr. ustja 8,4 cm - PMC R 4271.
Lit.: Kolšek 1972, Y 152: 63-62.

Primerjave: Price 1987, Fig. 2; Sternini 1991, Pl. 55: 308, 309; Tirelli 1995, Tav. 15; Whitehouse 1997, No. 132-134.

Komentar:
Dvoročajne čaše na visoki ali nizki prstanasti nogi z dvema ročajema, poimenovane tudi skifos, imajo svoje vzore v kovinskem posodju in keramiki (Hilgers 1969, 75, sl. 65, 66). Ročaji imajo navadno obliko črke M ali vsaj na zgornji strani izrastek oziroma ploščico za oporo palcu.

Najzgodnejši stekleni izdelki te oblike so bili narejeni že v 1. st. pr. n. š. v kalupih, pihane čaše pa se pojavijo sredi 1. stoletja n. š. (Czurda-Ruth 1979, 56). Tudi ta oblika je znana s fresk v Pompejih, kjer je upodobljen skifos iz prozornega stekla, napolnjen z vinom (?) (Naumann-Steckner 1991, 95).

Med bolj zanimive izdelke sodijo čaše z napisi izdelovalcev na ročaju, ki so se podpisovali z grško ali latinsko obliko imen (Whitehouse 1997, 93). Obliko so prvotno prav zaradi teh napisov pripisovali vzhodnim delavnicam. Zadnje raziskave pa kažejo, da je večina posod nastala v Italiji in napis označuje le izvor izdelovalca, ne pa kraja delavnice (Whitehouse 1997, 94).

Posode se med seboj razlikujejo v obliki ustja, izdelavi noge ipd., kar kaže, da so jih proizvajali v različnih delavnicah. Oblika je najbolj razširjena v 1. stoletju (Rütti 1988, 64).

Skifos iz Celeje je del grobne celote iz flavijskega obdobja (Kolšek 1972, Y 152).

3.8.
ČAŠE NA NOGI

3.8.1.
Čaše na nogi s stopničastim ustjem (Is 36a); (*sl. 34*):

Čaša s cilindričnim ostenjem, ki prehaja v stopničasto ustje, noga posebej pihana in dodana, pod dnom ponekod prstansto

Date: first half of the 3rd century

Ptuj (gr. 11)
Beaker of colourless glass with an everted rim and curved handles, the base has a ring-shaped thickening. The handles perforated, the walls ornamented with relief floral decoration.
3.7.4. - ht. 8.4 cm; dia. rim 7.2 cm; dia. base 4.3 cm - PMP AR 55386.
Lit.: Lazar, Tomanič Jevremov 2001, Pl. 2: 1.

Analogies: von Saldern 1991, Pl. 29.

Comments:
This type of vessel, also called a *kantharos*, can be classified among luxurious glass products because of the exceptional demands of the technique of manufacture (grinding and cutting the surface of thickly blown glass). Three main groups of such products are distinguished: the first group is contemporary with products with facetted decoration (3.3.4.) (Koster, Whitehouse 1989, 25, Fig. 1-6), the second group encompasses scarce products of the 3rd century with relief decoration, and the third and best known group are the diatreta (cage-cup) products of the 4th century, unknown in Slovenia to date.

Beakers are most common among the forms, and other types, such as skyphoi, kantharoi, etc, copied high quality products made from silver, rock crystal, and agate both in form and decoration (von Saldern 1991, 117).

Later products, known from Trier, Krefeld-Gellep, and Köln, can be placed in the 3rd century (von Saldern 1991, 118). The decoration, in addition to the previously mentioned motifs, was supplemented by leaves and tendrils, which can also be recognized on the decoration of the kantharos from Ptuj.

The beaker from Poetovio can be compared in terms of decoration to the find from Trier (Goethert-Polaschek 1977, 340, no. 144) and the skyphos from Köln (von Saldern 1991, Pl. 29a), dated to the 3rd century.

The form of the kantharos from Ptuj was undoubtedly taken from metal models, and the handles are particularly interesting. They were made in a perforated technique with thumb rests on the top of the handles. The grave with the kantharos is dated to the early 3rd century and also contained a tall cylindrical bottle with wheel-cut figured decoration (Tomanič Jevremov 1998, no. 16, 17; Lazar, Tomanič Jevremov 2000, Pl. 1).

3.7.5.
Footed beakers with handles (Is 39); (*Fig. 34*):

The almost cylindrical walls extend into a fire-rounded or thickened rim, sometimes with a rib underneath, the foot was blown separately and added, cut off straight below. Two handles are attached to the walls, which end at the rim with protrusions.

odebeljena. Na prehodu ostenja v dno cevasta guba, ki tvori rebro.

Datacija: druga polovica 1. st.

Celje (gr. 4)
Čaša na nogi, ostenje cilindrično, ustje stopničasto, na prehodu v dno odebelitev, ki jo tvori zaprta cevasta guba.
3.8.1. - viš. 14,4 cm; pr. ustja 14,5 cm - PMC R 4277.
Lit.: Kolšek 1972, Y 152: 61.
Celje (gr. 4)
Čaša na nogi, ostenje cilindrično, ustje stopničasto, na prehodu v dno odebelitev, ki jo tvori zapognjeno ostenje.
3.8.1. - viš. 14 cm; pr. ustja 13,6 cm - PMC R 4278.
Lit.: Kolšek 1972, Y 152: 59.
Celje (gr. 4)
Čaša na nogi, ki je v sredini prstanasto odebeljena, ostenje nagnjeno navzven, ustje odebeljeno in profilirano.
3.8.1. - viš. 8,6 cm; pr. ustja 8,4 cm - PMC R 4272.
Lit.: Kolšek 1972, Y 152: 60.

Primerjave: Cool, Price 1995, Fig. 6.5; Whitehouse 1997, no. 130.

Komentar:
Posode na nogi, bolj znane pod imenom kelih (*carchesium*), imajo značilno stopničasto oblikovano ustje in večinoma tudi dva manjša ročaja ali samo nakazana izrastka. Noga je izdelana posebej in pritrjena na dno posode, včasih se zaključuje s prstanasto odebelitvijo tik ob dnu. Posodo opredeljujejo kot čašo za pitje vina in tudi za uporabo pri verskih obredih - libacijah (Hilgers 1969, 140).

Med najbolj reprezentančne izdelke sodijo posode iz stekla intenzivnih barv, z drugobarvnim nataljenim ali vtisnjenim okrasom (Van Lith 1991, 101) ter z živobarvnim kačastim okrasom, ki pa že sodijo v 3. stoletje. Navedemo lahko primere iz Kölna (Harden *et al.* 1988, 109, no. 42), Vitudura (Rütti 1988, 932-947), dva v celoti ohranjena keliha z nataljenim večbarvnim okrasom iz 1. stoletja sta poznana tudi iz Emone (Petru 1972, t. 18: 15; Plesničar Gec 1972, t. 218: 1).

Oblika 36a po Isingsovi (1957, 50) je v glavnem vezana na 1. stoletje, saj je iz datiranih kontekstov 2. stoletja ne poznamo več (Isings 1957, 51).

Vse tri posode iz Celeje so bile najdene v enem grobu, datiranem v flavijsko obdobje (Kolšek 1972, Y 152). Omeniti velja tudi fragment stopničastega ustja iz modro-zelenkastega stekla z modro nataljeno nitjo na robu ustja (neobjavljeno). Najden je bil v istem grobu in je verjetno pripadal isti obliki.

Date: second half of the 1st century

Celje (gr. 4)
Footed beaker outturned walls, the rim thickened and profiled, two handles with protrusions under the rim.
3.7.5. - ht. 8 cm; dia. rim 8.4 cm - PMC R 4271.
Lit.: Kolšek 1972, Y 152: 63-62.

Analogies: Price 1987, Fig. 2; Sternini 1991, Pl. 55: 308, 309; Tirelli 1995, Pl. 15; Whitehouse 1997, No. 132-134.

Comments:
Beakers on high or low ring bases with two handles, also known as skyphoi, had their models in metal and pottery vessels (Hilgers 1969, 75, Fig. 65, 66). The handles are usually M-shaped, or at the least have a protuberance or a thumb rest on the upper surface.

The earliest glass products of this form were made as early as the 1st century BC in moulds, while blown beakers appear in the mid 1st century AD (Czurda-Ruth 1979, 56). This form is also known from the frescoes in Pompeii, where a skyphos of clear glass was depicted, filled with wine (?) (Naumann-Steckner 1991, 95).

Interesting examples include beakers with the inscriptions of the glass workers on the handles, who signed themselves with Greek or Latin forms of their names (Whitehouse 1997, 93). These signatures originally caused this form to be attributed to eastern workshops. The most recent research has shown that most of the vessels were created in Italy, the signatures marking merely the source of the craftsmen, and not the region of the production center (Whitehouse 1997, 94).

The vessels vary in the form of the rim, the manufacture of the foot, etc., which indicates that they were produced in different workshops. The form was most widespread in the 1st century (Rütti 1988, 64).

The skyphos from Celeia was part of a grave unit from the Flavian period (Kolšek 1972, Y 152).

3.8.
FOOTED GOBLETS

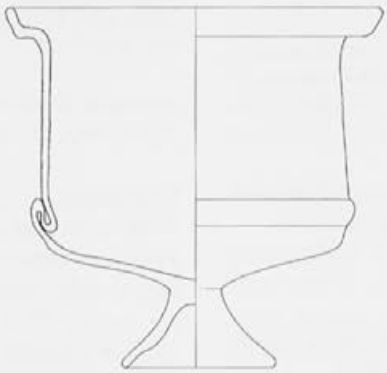
3.8.1.
Footed goblets with a stepped rim (Is 36a); (*Fig. 34*):

Goblets with cylindrical walls that extend to a stepped rim, the foot was separately blown and added, occasionally there is a ring-shaped thickening below the base. At the transition from the walls to the base, a tubular fold creating a rib.

Date: second half of the 1st century

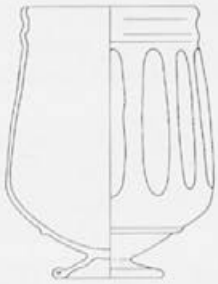
Celje (gr. 4)
Footed goblet, cylindrical walls, stepped rim, a thickening at the transition to the base created by a tubular fold.
3.8.1. - ht. 14.4 cm; dia. rim 14.5 cm - PMC R 4277.
Lit.: Kolšek 1972, Y 152: 61.

3.7.5.



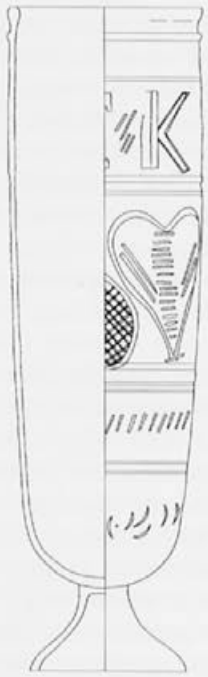
3.8.1.

3.8.2.



3.8.3.

3.8.4.



3.8.5.

Sl. 34: Skupina 3 - čaše (3.7.5.: Kolšek 1972, 152: 63; 3.8.1.: Kolšek 1972, 152: 61; 3.8.2.: Šribar 1959, t. 1: 4; 3.8.3.: Kujundžić 1982, t. 5: 6; 3.8.4.: Kujundžić 1982, t. 28: 10; 3.8.5.: Sunkovsky 1956, sl. 20). M. = 1:3.

Fig. 34: Group 3 - beakers (3.7.5.: Kolšek 1972, 152: 63; 3.8.1.: Kolšek 1972, 152: 61; 3.8.2.: Šribar 1959, Pl. 1: 4; 3.8.3.: Kujundžić 1982, Pl. 5: 6; 3.8.4.: Kujundžić 1982, Pl. 28: 10; 3.8.5.: Sunkovsky 1956, sl. 20). Scale = 1:3.

3.8.2.
Čaše na nogi z ovalnim ostenjem (*sl. 34*):

Ovalno ostenje prehaja v rahlo izvihano in zataljeno ustje, pod njim dve kaneluri, noga pihana posebej in dodana, rob odebeljen.

Datacija: druga polovica 2. - 3. st.

Žalna pri Veliki Loki (gr.)
Čaša z ovalnim ostenjem, ki se ravno konča v odebeljeno ustje, pod njim dve tanjši rebri, noga posebej pihana.
3.8.2. - viš. 10,5 cm; pr. ustja 7,5 cm - NMS.
Lit.: Šribar 1959, t. 1: 4.

Primerjave: nepoznane.

3.8.3.
Čaše na nizki nogi z okrasom ovalov (Is 33); (*sl. 34*):

Čaše rahlo bikonične oblike se proti ustju zožijo, ustje zataljeno, pod ustjem in pri dnu rebro, noga pihana posebej in dodana, rob cevasto zavihan. Po ostenju okras podolgovatih ovalov.

Datacija: druga polovica 1. - začetek 2. st.

Ptuj (gr. 41)
Čaša z bikoničnim ostenjem, ki se proti ustju oži, pod ustjem in nad dnom plastični rebri, noga posebej pihana.
3.8.3. - viš. 10,9 cm; pr. ustja 6 cm - PMP R 13792.
Lit.: Kujundžić 1982, t. 5: 6.

Primerjave: Berger 1960, Taf. 19: 52, 53; Rütti 1991, Taf. 52: 1215-1216.

Komentar:
Za različico 3.8.2. med objavljenim gradivom nismo našli ustreznih primerjav. Izvira iz grobne celote, ki sodi v drugo polovico 2. in morda še na začetek 3. stoletja (Šribar 1959, 000).

Čaše oblike 3.8.3. so istočasne z gubankami oblik 3.5.1.-2., saj so v uporabi v drugi polovici 1. stoletja, najbolj popularne pa so v flavijskem obdobju. Okras je lahko namesto z vrezi ali nanešenimi nitmi izveden tudi z gubanjem, ki pa je zelo plitvo, primeri so znani npr. v Britaniji (Cool, Price 1995, 71).

Največja koncentracija teh čaš je znana na področju Italije in Švice (Berger 1960, 47). V severozahodnih delih imperija niso tako razširjene, primerjave pa lahko navedemo iz Nemčije (Heddernheim), Nizozemske (Nijmegen) in Velike Britanije (Welker 1974, 25; Cool, Price 1995, 71).

V Augstu je Rütti to vrsto čaš opredelil kot formo AR 48 in jih datira v čas med drugo polovico 1. in na začetek 2. stoletja (1991, 60).

Grobna celota s Ptuja vsebuje volutno oljenko in

Celje (gr. 4)
Footed goblet, cylindrical walls, stepped rim, a thickening at the transition to the base created by pushing the walls.
3.8.1. - ht. 14 cm; dia. rim 13.6 cm - PMC R 4278.
Lit.: Kolšek 1972, Y 152: 59)
Celje (gr. 4)
Footed goblet, a ring-shaped thickening in the center of the base, wall out turned, rim thickened and profiled.
3.8.1. - ht. 8.6 cm; dia. rim 8.4 cm - PMC R 4272.
Lit.: Kolšek 1972, Y 152: 60.

Analogies: Cool, Price 1995, Fig. 6.5; Whitehouse 1997, No. 130.

Comments:
Footed beakers, better known as goblets or chalices (*carchesium*), have a characteristic stepped rim and most also have two small handles or merely misshapen protuberances. The foot was made separately and attached to the base of the vessel. Sometimes it concludes with a ring-shaped thickening adjacent to the base. The vessel type is often considered a wine glass and was also used in religious ceremonies for libations (Hilgers 1969, 140).

The most luxurious examples are vessels of intensively coloured glass, with molten applied or impressed decoration in other colours (Van Lith 1991, 101), as well as brightly coloured snake-thread decoration, which was typical for the 3rd century. Examples can be cited from Köln (Harden *et al.* 1988, 109, no. 42), and Vitudurum (Rütti 1988, 932-947). Two entirely preserved chalices with applied multicoloured decoration are also known from Emona (Petru 1972, Pl. 18: 15; Plesničar Gec 1972, Pl. 218: 1).

Form 36a, according to Isings (1957, 50), is mainly tied to the 1st century, as examples are no longer known from dated contexts of the 2nd century (Isings 1957, 51).

All three vessels from Celeia were found in one grave, dated to the Flavian period (Kolšek 1972, Y 152). A fragment should also be mentioned of a stepped rim of blue-green glass with a blue applied trail on the edge of the rim (unpublished). It was found in the same grave and probably belonged to a vessel of the same form.

3.8.2.
Footed goblets with oval walls (*Fig. 34*):

The oval walls extend into a slightly out turned and fire-rounded rim with two grooves beneath it, the foot was blown separately and added, the edge thickened.

Date: second half of the 2nd - 3rd centuries

Žalna pri Veliki Loki (gr.)
Goblet with oval walls, which end directly in a thickened rim, under it two thin ribs, the foot blown separately.
3.8.2. - ht. 10.5 cm; dia. rim 7.5 cm - NMS.
Lit.: Šribar 1959, Pl. 1: 4.

zlat uhan s steklenim vložkom in jo lahko umestimo na konec 1. ali začetek 2. stoletja (Kujundžić 1982, 18).

3.8.4.

Cilindrične čaše na nogi z nataljenim okrasom (Is 86); (*sl. 34*):

Visoke cilindrične čaše na nogi, ustje zataljeno ali odebeljeno, noga posebej pihana. Ostenje krasi nataljen geometrijski ali rastlinski okras iz enakega stekla kot čaša, pod ustjem nataljena steklena nit. Brezbarvno ali naravno obarvano steklo.

Datacija: druga polovica 2. - 3. st.

Ptuj (gr. 371)
Visoka cilindrična čaša na posebej pihani nogi, ustje odebeljeno, pod njim rebro, na ostenju plastičen rastlinski okras.
3.8.4. - viš. 14, 8 cm; pr. ustja 6 cm - PMP R 16239.
Lit.: Kujundžić 1982, t. 28: 10.
Ptuj (gr. 11)
Odlomki ostenja visoke cilindrične čaše za nataljenim rastlinskim okrasom.
3.8.4. - PMP AR 55389.
Lit.: Lazar, Tomanič Jevremov 2000, t. 2: 4.

Primerjave: Barkóczi 1988, Abb. 7, 8.

Komentar:
Značilen plastičen okras, ki krasi ptujski čaši, je znan tudi s steklenic in drugih steklenih izdelkov (Harden *et al.* 1988, No. 59-62). Čaše na nogi so razen z enostavnimi geometrijskimi okrasi pogosto okrašene še z listi, motivi ptic in celo delfinov. Te izdelke nekateri avtorji pripisuje sirijskim delavnicam in jih uvrščajo v prvo polovico 3. stoletja (Barkóczi 1981, 57), nekateri zgodnji izdelki pa se pojavijo že konec 2. stoletja (Barag 1967, 59).

Največ primerjav petovionskima čašama poznamo v Panoniji in Porenju. Barkóczi jih je zbral in razvrstil v štiri skupine glede na obliko in sedem skupin glede na okras (Barkóczi 1981, 36). Čaša iz groba 371 ima v okrasu kombiniran motiv paličk in podolgovatih listov, ki se po do sedaj zbranem gradivu pojavljajo le na čašah v panonskem prostoru (Barkóczi 1981, 52).

Kölnske delavnice, kjer so nastajali podobni izdelki, so delovale od konca 2. in v 3. stoletju, njihove proizvode povezujejo z dotokom prebivalcev z vzhoda konec 2. stoletja, med njimi tudi steklarskih mojstrov (Fremersdorf 1959, 15). Barkóczi zaradi številnih odlomkov in na panonska najdišča vezanih okrasnih motivov teh čaš zagovarja lokalno proizvodnjo v Intercisi, kjer je v 3. stoletju delovala steklarska delavnica (1981, 56).

Grob 371 je datiran na konec 2. oziroma v prvo polovico 3. stoletja, grob 11 pa na začetek 3. stoletja (Lazar, Tomanič Jevremov 2000, 200).

Analogies: none identified.

3.8.3.

Goblets on a low foot with a decoration of ovals (Is 33); (*Fig. 34*):

Goblets of a slightly biconical form narrow toward the rim, the rim rounded, under the rim and at the base a rib, the foot blown separately and added, the edge curled into a tube. A decoration of elongated ovals on the walls.

Date: second half of the 1st - beginning of the 2nd centuries

Ptuj (gr. 41)
Goblet with biconical walls that taper toward the rim, relief ribs under the rim and above the base, the foot blown separately.
3.8.3. - ht. 10.9 cm; dia. rim 6 cm - PMP R 13792.
Lit.: Kujundžić 1982, Pl. 5: 6.

Analogies: Berger 1960, Pl. 19: 52, 53; Rütti 1991, Pl. 52: 1215-1216.

Comments - forms 3.8.2. and 3.8.3.:
Form 3.8.2. has no exact comparisons among published material. It is part of a grave unit dated to the second half ob the 2nd and beginning of the 3rd century (Šribar 1959, 235).

Goblets of form 3.8.3. are contemporary to indented beakers of forms 3.5.1-2., as they were in use in the second half of the 1st century, while they were most popular in the Flavian period. In place of webbing or overlapping trails, the decoration could also be carried out with indentation, very shallow, examples of which are known, for example, from Britannia (Cool, Price 1995, 71).

The greatest concentration of these goblets is known from Italy and Switzerland (Berger 1960, 47). They are not as widespread in the northwestern parts of the Empire, but examples can be cited from Germany (Heddernheim), the Netherlands (Nijmegen), and Great Britain (Welker 1974, 25; Cool, Price 1995, 71).

At Augst, Rütti classified this beaker type as form AR 48, and dated it to the period between the second half of the 1st and the beginning of the 2nd century (1991, 60).

The grave from Ptuj contained a volute lamp and a gold earring with glass inlay, which can be assigned to the end of the 1st or the beginning of the 2nd century (Kujundžić 1982, 18).

3.8.5.

Cilindrične čaše na nogi z brušenim okrasom (*sl. 34*):

Visoka cilindrična čaša na nogi, ustje zataljeno ali odebeljeno, noga pihana posebej. Ostenje okrašeno z vrezanimi geometrijskimi okrasi in ponekod tudi z napisi.

Datacija: druga polovica 3. - 4. st.

Novo mesto - Bršljin (gr.)
Visoka cilindrična čaša, ustje odrezano, na ostenju brušen okras in napis v grščini »Na (mnoga) leta«, noga manjka. Okras v več vodoravnih poljih.
3.8.5. - viš. 24 cm; pr. ustja 7 cm - KHMW AS 975.
Lit.: Sunkowsky 1956, Abb. 20.

Primerjave: Barkóczi 1981, Abb. 12; Whitehouse 1997, no. 429.

Komentar:
Oblika visoke cilindrične čaše je dokaj pogosta. Poleg že opisanih nataljenih okrasov jih včasih krasijo le vodoravni vrezi ali pa je ostenje neokrašeno (Whitehouse 1997, no.128, 429; Leclant 1973, 52).

Bolj znani so izdelki z različnimi napisi, najpogosteje v grščini. Črke so navadno izdelane v več linijah, motiv okrasa je razdeljen v več polj, ki so izpolnjena z geometrijskimi ali rastlinskimi okrasi. Okras je izdelan s plitvim ali globokim vrezom s pomočjo stružnice. Primerjave poznamo tudi ob Črnem morju, z najdišč Tanais in Pantikapaion, kjer je figuralni okras naslikan na površino čaše (Sorokina 1979, Abb. 2).

V Kölnu je ohranjena čaša s figuralnim okrasom, ki predstavlja Prometeja (Fremersdorf 1951, Taf. 10).

Prvotno so te čaše predvsem zaradi grških napisov pripisovali aleksandrijskim delavnicam (Morin-Jean 1913, 240; Harden 1936, 101). Kasneje je Fremersdorf ugotovil, da več kot tretjina ohranjenih posod s figuralnim okrasom izhaja s kölnskega področja, ostala najdišča pa so tudi vezana na območje izvoza tega mesta (1951, 22). Iz teh ugotovitev je zaključil, da je večina izdelkov nastala v kölnskih delavnicah, grški napisi pa izpričujejo močan dotok prebivalcev z vzhoda v 2. in 3. stoletju (1951, 23).

Čaše so datirane v pozno 3. in 4. stoletje (Whitehouse 1997, 89), v Tanaisu celo že na začetek 3. stoletja (Sorokina 1979, 149). Odlomek iz Intercise je iz grobne celote iz konca 4. in začetka 5. stoletja (Barkóczi 1981, 54).

Bršljinska čaša je iz uničene grobne celote, zato je njena datacija le tipološka.

3.8.4.

Cylindrical footed goblets with applied decoration (Is 86); (*Fig. 34*):

High cylindrical footed goblets, the rim fire-rounded or thickened, the foot blown separately. The walls are ornamented with snake-thread geometric or floral decorations of the same colour as the goblet, with an applied glass thread below the rim. Colourless or naturally coloured glass.

Date: second half of the 2nd - 3rd centuries

Ptuj (gr. 371)
High cylindrical goblet on a separately blown foot, rim thickened with a rib underneath, snake-thread decoration on the walls.
3.8.4. - ht. 14.8 cm; dia. rim 6 cm - PMP R 16239.
Lit.: Kujundžić 1982, Pl. 28: 10.
Ptuj (gr. 11)
Wall fragments of a high cylindrical goblet with applied snake-thread decoration.
3.8.4. - PMP AR 55389.
Lit.: Lazar, Tomanič Jevremov 2000, Pl. 2: 4.

Analogies: Barkóczi 1988, Abb. 7, 8.

Comments:
The characteristic snake-thread decoration made of colourless glass on the Ptuj goblets is also known from bottles and other glass products (Harden *et al.* 1988, No. 59-62). Footed goblets were decorated with simple geometric ornaments, with leafs, motifs of birds, and even dolphins. Some authors attributed these products to Syrian workshops and placed them in the first half of the 3rd century (Barkóczi 1981, 57), while several earlier products appear as early as the end of the 2nd century (Barag 1967, 59).

The greatest number of these goblets is known from Pannonia and the Rhineland. Barkóczi collected and classified them into four groups in terms of form and seven groups in terms of decoration (Barkóczi 1981, 36). The goblet from grave 371 had a decoration of combined motifs of rods and elongated leaves, which in terms of material gathered to the present, appears only on beakers in the Pannonian region (Barkóczi 1981, 52). The workshops of Köln, where similar products were made, were active from the end of the 2nd century into the 3rd century, and their manufacture is related to the arrival of inhabitants from the east at the end of the 2nd century, among them glass workers (Fremersdorf 1959, 15). The numerous fragments and the related decorative motives at the Pannonian sites at this time caused Barkóczi to suggest local production at Intercisa, where a glass workshop was active in the 3rd century (1981, 56).

Grave 371 was dated to the end of the 2nd or the first half of the 3rd century, and grave 11 to the beginning of the 3rd century (Lazar, Tomanič Jevremov 2000, 200).

3.8.6.
Konične čaše z dnom oblikovanim v nogo (Is 109a); (*sl. 35*):

Visoke čaše z nekoliko navzven nagnjenim ostenjem in izvihanim ustjem, ki je ravno odrezano in obrušeno. Dno je oblikovano v nogo.

Datacija: druga polovica 3. - 4. st.

Ptuj (PN)
Visoka konična čaša, ustje nagnjeno navzven in odrezano, dno oblikovano v nizko nogo, dekolorirano steklo.
3. 8.6. - viš. 20,8 cm; pr. ustja 9,9 cm - PMP R 3489.
Lit.: Mikl Curk 1976, t. 4: 14.

Primerjave: Fremersdorf, Polónyi-Fremersdorf 1984, Abb. 38-40; Barkóczi 1988, Taf. 8: 88.

Komentar:
Poleg čaš, ki v poznorimski dobi nimajo več široke stojne ploskve ali noge, ampak so navadno konično zaključene, se pojavljajo tudi čaše, katerih dno je oblikovano v višjo nogo. Ostenje prehaja v odrezano ustje, ki je nekoliko klekasto, proti dnu je močno zoženo. Ponekod je na čašah okras brušenih horizontalnih linij, izdelane so tudi iz razbarvanega stekla.

V Augstu se te čaše (oblika AR 70) pojavijo v poznem 3. stoletju in so v rabi še v 4. stoletju, njihov časovni razpon je dokaj ozko omejen med letoma 270 in 350 (Rütti 1991, 104, 34, Abb. 20). Tudi najdbe s kölnskih grobišč dokazujejo pojav te oblike že v poznem 3. stoletju in trajanje do sredine 4. stoletja (Friedhoff 1991, 143). V Trierju so čaše pogoste v zadnji tretjini 4. stoletja (Goethert-Polaschek 1977, 350).

Ptujsko čašo smo kot posamično najdbo datirali na osnovi opisanih datacij.

3.9.
KONIČNE ČAŠE

3.9.1.
Konične čaše z ravnim dnom (Is 106a); (*sl. 35*):

Čaše z navzven nagnjenim ostenjem, ki ravno prehaja v odrezano ali zataljeno ustje. Dno ravno ali vboklo.

Datacija: 4. st.

Drnovo (PN)
Konična čaša z navzven nagnjenim ostenjem, ki ravno prehaja v odebeljeno ustje, dno ravno.
3.9.1. - viš. 11,4 cm; pr. ustja 8 cm - NMS R 720.
Lit.: Petru, Petru 1978, t. 25: 9.
Ptuj (gr. 14/15)
Konična čaša z navzven nagnjenim ostenjem, ki prehaja v odebeljeno ustje, dno rahlo vboklo.

3.8.5.
Cylindrical footed goblets with wheel-cut decoration (*Fig. 34*):

High cylindrical footed goblets, the rim fire-rounded or thickened, the foot blown separately. The walls are decorated with wheel-cut geometric forms and occasionally also with inscriptions.

Date: second half of the 3rd - 4th centuries

Novo mesto - Bršljin (gr.)
High cylindrical goblet, cut rim, ground decoration on the walls, with the Greek inscription "For many years", foot missing. Decoration in several horizontal fields.
3.8.5. - ht. 24 cm; dia. rim 7 cm - KHMW AS 975.
Lit.: Sunkowsky 1956, Fig. 20.

Analogies: Barkóczi 1981, Fig. 12; Whitehouse 1997, No. 429.

Comments:
This form of high cylindrical goblets is somewhat common. In addition to the already described snake-thread decorations (form 3.8.4.), they are also occasionally decorated merely with horizontal lines or the walls were undecorated (Whitehouse 1997, No. 128, 429; Leclant 1973, 52).

Products with various inscriptions are better known, most often in Greek The letters were usually executed in several lines, while the decorative motif was divided into several fields, filled with geometric or floral decoration. The decoration was carried out in shallow or deep wheel-cut with the aid of a lathe. Examples are also known from the Black Sea, from the sites of Tanais and Pantikapaion, where a figural decoration was painted on the surface of the vessels (Sorokina 1979, Fig. 2).

A goblet with a figural decoration depicting Prometheus was preserved from Köln (Fremersdorf 1951, Pl. 10).

Originally these goblets were attributed to the Alexandrian workshops because of the inscriptions in Greek (Morin-Jean 1913, 240; Harden 1936, 101). Fremersdorf established that more than a third of the preserved vessels with figural decoration came from the Köln region, while the others sites were also related to regions of export from this city (1951, 22). On the basis of this, it was concluded that the majority of such products had been created in the Köln workshops, while the Greek inscriptions merely documented an increased influx of inhabitants from the east during the 2nd and 3rd centuries (1951, 23).

The goblets have been dated to the late 3rd and 4th centuries (Whitehouse 1997, 89), and at Tanais even to the beginning of the 3rd century (Sorokina 1979, 149). The fragment from Intercisa came from a grave from the end of the 4th and the beginning of the 5th century (Barkóczi 1981, 54).

3.9.1. - viš. 14 cm; pr. ustja 8 cm - PMP.
Lit.: Vomer Gojkovič 1996, t. 6: 3.
Ptuj (gr. 23)
Konična čaša z navzven nagnjenim ostenjem, ki ravno prehaja v odrezano ustje, dno vboklo.
3.9.1. - viš. 13,6 cm; pr. ustja 10 cm - PMP.
Lit.: Vomer Gojkovič 1996, t. 9: 5.
Ptuj (gr. 43)
Konična čaša z navzven nagnjenim ostenjem, ki ravno prehaja v odebeljeno ustje, dno rahlo vboklo.
3.9.1. - viš. 11,2 cm; pr. ustja 5,2 cm - PMP.
Lit.: Vomer Gojkovič 1996, t. 14: 7.
Ptuj (gr. 57)
Konična čaša z navzven nagnjenim ostenjem, ki prehaja v odebeljeno ustje, dno rahlo vboklo.
3.9.1. - viš. 13,6 cm;pr. ustja 8 cm - PMP.
Lit.: Vomer Gojkovič 1996, t. 19: 1.
Ravno brdo (gr. 5)
Konična čaša z navzven nagnjenim ostenjem, ustje odrezano, dno rahlo vboklo.
3.9.1. - viš. 8,2 cm; pr. ustja 8,9 cm - NMS.
Lit.: Stare 1952, sl. 1: 2.

Primerjave: Goethert-Polaschek 1977, Taf. 42: 291, 292; Fremersdorf, Polónyi-Fremersdorf 1984, Abb. 18; Barkóczi 1988, Taf. 9: 98, 100, 101; Follmann-Schulz 1988, Taf. 37: 294-301.

Komentar:
Konične čaše (Isings 106 in 109) so v uporabi v istem obdobju kot polkroglaste čaše. Tudi v tem primeru gre za posodo, namenjeno pitju.

Ustje čaš je rahlo klekasto ali nagnjeno navzven, navadno je odrezano in obrušeno. Dno je ravno ali vboklo, ima pa tudi prstanasto nogo ali dno oblikovano v nogo, kot smo videli pri prejšnjih oblikah. Ostenje čaš je gladko ali okrašeno s horizontalnimi brušenimi linijami. Spodnji del je ponekod zelo zožen in včasih je težko definirati, ali gre za čašo ali svetilko.

Čaše 3.9.1. so v uporabi od 4. stoletja dalje. Oblika se je verjetno razvila že konec 3. stoletja, a je dosegla vrh uporabe v naslednjem stoletju (Cool, Price 1995, 90). Najdbe so razširjene po vsem zahodnem delu imperija (Cool, Price 1995, 90; gl. Primerjave).

Najštevilneje so zastopane čaše z ravnim ali vboklim dnom (3.9.1.). Na grobišču pri Dijaškem domu na Ptuju se čaše pojavljajo v grobnih celotah 4. in začetka 5. stoletja (Vomer Gojkovič 1996, 240, 247).

3.9.2.
Konične čaše s prstanasto nogo (Is 109c); (*sl. 35*):

Čaše z navzven nagnjenim ostenjem, ki ravno prehaja v odrezano in obrušeno ali zataljeno ustje, dno prstanasto.

Datacija: 4. st.

The goblet from Bršljin came from a destroyed grave, and thus its dating is merely on the basis of typology.

3.8.6.
Conical goblets with a base formed into a foot (Is 109a); (*Fig. 35*):

High goblets with somewhat out-turned walls and an everted rim, straight cut and ground. The base was formed into a foot.

Date: second half of the 3rd - 4th centuries

Ptuj (IF)
High conical goblet, the rim out turned and cut, the base formed into a low foot, decoloured glass.
3.8.6. - ht. 20.8 cm; dia. rim 9.9 cm - PMP R 3489.
Lit.: Mikl Curk 1976, Pl. 4: 14.

Analogies: Fremersdorf, Polónyi-Fremersdorf 1984, Fig. 38-40; Barkóczi 1988, Pl. 8: 88.

Comments:
In addition to goblets that in the late Roman period did not have wide standing platforms or feet, rather they usually ended conically, beakers also appeared whose base was formed into a high foot. The walls extended into a cut rim, which was somewhat curved, while the walls were strongly tapered toward the base. The vessels sometimes bore a decoration of wheel-cut horizontal lines, and they were made from decoloured glass.

These goblets (form AR 70) appeared at Augst in the late 3rd century, and were in use throughout the entire 4th century, while their chronological span was somewhat limited to between AD 270 and 350 (Rütti 1991, 104, 34, Fig. 20). The finds from the Köln cemeteries prove the appearance of this form as early as the late 3rd century and its continuance to the middle 4th century (Friedhoff 1991, 143). At Trier, such goblets are frequently found in contexts from the last third of the 4th century (Goethert-Polaschek 1977, 350).

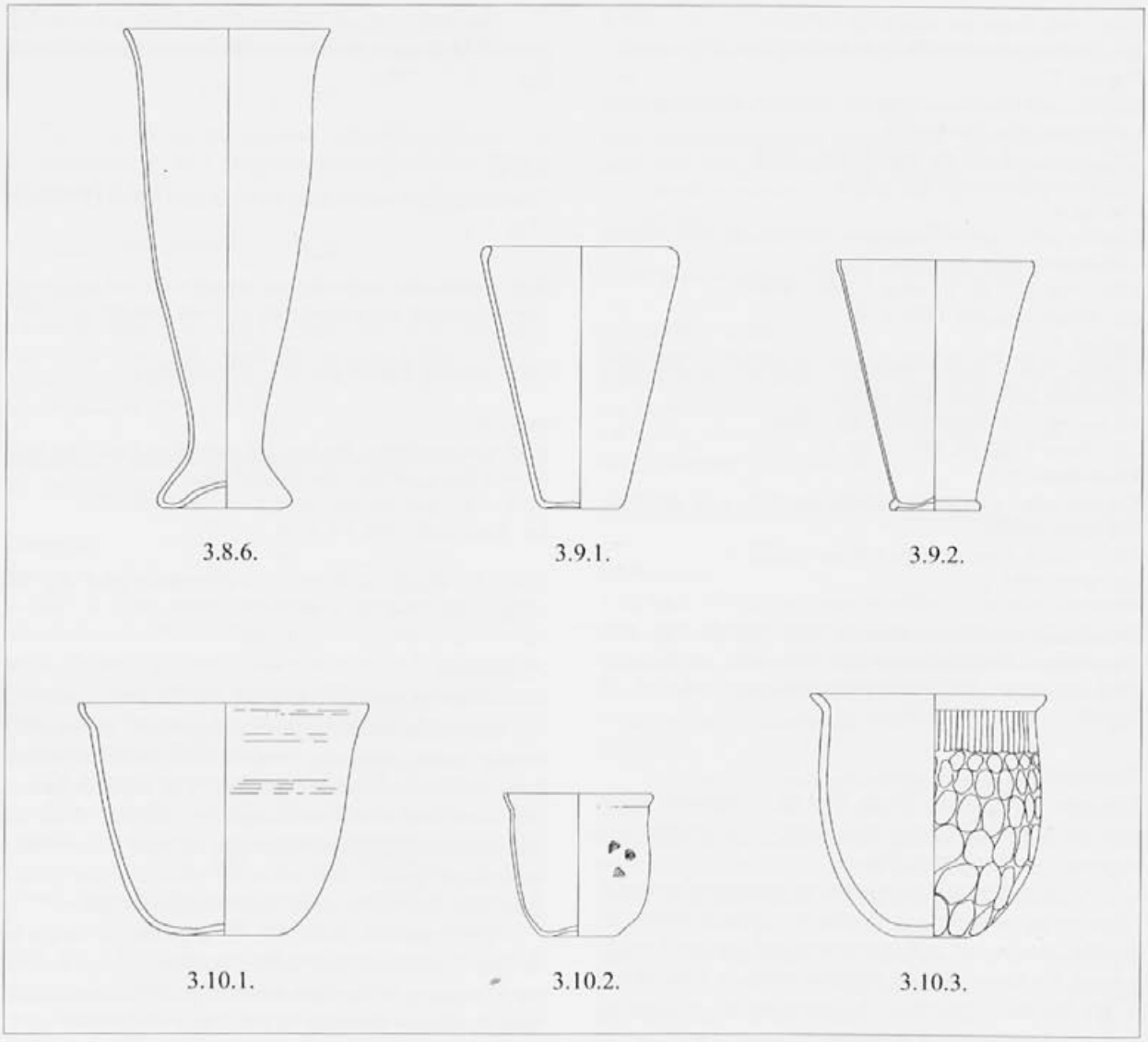
The goblet from Ptuj can also be dated to the same period as an individual find.

3.9.
CONICAL BEAKERS

3.9.1.
Conical beakers with a flat base (Is 106a); (*Fig. 35*):

Beakers with out turned walls that extend directly into a cut or fire-rounded rim. The base was flat or concave.

Date: 4th century



Sl. 35: Skupina 3 - čaše (3.8.6.: Mikl Curk 1976, t. 4: 14; 3.9.1.: Petru, Petru 1978, t. 25: 9; 3.9.2.: Jevremov 1990, t. 1: 4; 3.10.1.: Kujundžić 1982, t. 1: 14; 3.10.2.: Stare 1952, sl. 1: 1; 3.10.3.: Knez 1969, t. 11: 1). M. = 1:3.

Fig. 35: Group 3 - beakers (3.8.6.: Mikl Curk 1976, Pl. 4: 14; 3.9.1.: Petru, Petru 1978, Pl. 25: 9; 3.9.2.: Jevremov 1990, Pl. 1: 4; 3.10.1.: Kujundžić 1982, Pl. 1: 14; 3.10.2.: Stare 1952, Fig. 1: 1; 3.10.3.: Knez 1969, Pl. 11: 1). Scale = 1:3.

Ptuj (gr. 5)
Konična čaša z navzven nagnjenim ostenjem, ki ravno prehaja v odrezano in obrušeno ustje, dno prstanasto.
3.9.2. - viš. 10,9 cm; pr. ustja 8,4 cm - PMP R 13555.
Lit.: Jevremov 1990, t. 1: 4.

Primerjave: Barkóczi 1988, Taf. 9: 94, 96.

Komentar:
Tudi to obliko prepoznamo med poznorimskimi izdelki. Gre za različico prejšnje oblike 3.9.1, le da stoji na prstanasti nogi, ostenje pa je ponekod tudi okrašeno z brušenimi linijami. Primerjave s poznorimskih grobišč v Kölnu umeščajo obliko na konec 3. in v 4. stoletje

Drnovo (IF)
Conical beaker with out turned walls that extend directly into a thickened rim, flat base.
3.9.1. - ht. 11.4 cm; dia. rim 8 cm - NMS R 720.
Lit.: Petru, Petru 1978, Pl. 25: 9.
Ptuj (gr. 14/15)
Conical beaker with out turned walls that extend into a thickened rim, base slightly concave.
3.9.1. - ht. 14 cm; dia. rim 8 cm - PMP.
Lit.: Vomer Gojković 1996, Pl. 6: 3.
Ptuj (gr. 23)
Conical beaker with out turned walls that extend directly into a thickened rim, base concave.
3.9.1. - ht. 13.6 cm; dia. rim 10 cm - PMP.
Lit.: Vomer Gojković 1996, Pl. 9: 5.

(Friedhoff 1991, 143), najdbe iz Trierja pa sodijo v prvo polovico 4. stoletja (Goethert-Polaschek 1977, 80). V Augstu so prav tako pogoste v prvi polovici 4. stoletja (Rutti 1991, 47).

Čaša iz petovionskega groba je s priloženimi predmeti v grobu datirana v drugo polovico 4. stoletja (Jevremov 1990, 395).

3.10.
POLKROGLASTE ČAŠE

3.10.1.
Polkroglaste čaše s klekastim ustjem (Is 96); (*sl. 35*):

Čaše s polkroglastim ostenjem, ustje klekasto, ravno odrezano in obrušeno, dno vboklo.

Datacija: druga polovica 3. - 4. st.

Ptuj (gr. 12)
Polkroglasta čaša, ostenje prehaja v klekasto, ravno odrezano ustje, dno rahlo vboklo.
3.10.1. - viš. 5,9 cm - PMP R 13646.
Lit.: Kujundžić 1982, t. 1: 8.
Ptuj (gr. 17)
Polkroglasta čaša, ostenje prehaja v klekasto, ravno odrezano ustje, dno rahlo vboklo.
3.10.1. - viš. 10 cm; pr. ustja 10 cm - PMP R 13663.
Lit.: Kujundžić 1982, t. 1: 14.
Ptuj (PN)
Polkroglasta čaša, ostenje prehaja v klekasto, ravno odrezano ustje, dno rahlo vboklo.
3.10.1. - viš. 7,5 cm; pr. ustja 8,6 cm - PMP 3457.
Lit.: Mikl Curk 1976, t. 4: 12.
Martinj Hrib (NN)
Odlomki polkroglastih čaš.
3.10.1. - viš. 5,9 cm - NMS.
Lit.: Leben, Šubic 1990, t. 5; 6; 7.

Primerjave: Damevski 1976, t. 15: 1-3; Fremersdorf, Polónyi-Fremersdorf 1984, Abb. 33; Barkóczi 1988, Taf. 14: 148, 152, 155, 156.

3.10.2.
Pokroglaste čaše z nataljenim okrasom (Is 107b); (*sl. 35*):

Polkroglaste čaše s klekastim, ravno odrezanim in obrušenim ustjem, dno vboklo. Po gornji polovici ostenja nataljene kaplje modrega stekla. Nataljene so v ravni liniji ali v skupinah po več kapelj.

Datacija: druga polovica 3. - 4. st.

Ravno brdo (gr. 3)
Polkroglasta čaša s klekastim ustjem, dno rahlo vboklo, po obodu kaplje modrega stekla, nad njimi brušena linija.

Ptuj (gr. 43)
Conical beaker with out turned walls that extend directly into a thickened rim, base slightly concave.
3.9.1. - ht. 11.2 cm; dia. rim 5.2 cm - PMP.
Lit.: Vomer Gojkovič 1996, Pl. 14: 7.
Ptuj (gr. 57)
Conical beaker with out turned walls that extend into a thickened rim, base slightly concave.
3.9.1. - ht. 13.6 cm; dia. rim 8 cm - PMP.
Lit.: Vomer Gojkovič 1996, Pl. 19: 1.
Ravno brdo (gr. 5)
Conical beaker with out turned walls, cut rim, base slightly concave.
3.9.1. - ht. 8.2 cm; dia. rim 8.9 cm - NMS.
Lit.: Stare 1952, Fig. 1: 2.

Analogies: Goethert-Polaschek 1977, Pl. 42: 291, 292; Fremersdorf, Polónyi-Fremersdorf 1984, Fig. 18; Barkóczi 1988, Pl. 9: 98, 100, 101; Follmann-Schulz 1988, Pl. 37: 294-301.

Comments:
Conical beakers (Isings 106 and 109) were in use in the same period as hemispherical cups. In both cases, these were vessels intended for beverages.

The rim of the beakers is slightly curved or everted, usually cut and ground. The base is flat or concave, and there are also ring bases or a base formed into a foot, as was seen for the previous forms. The walls of the beakers are smooth or decorated with horizontal wheel-cut lines. The lower part is sometimes highly tapered and occasionally it is difficult to define whether the product was a beaker or a lamp.

The beakers 3.9.1. were in use from the 4th century onwards. The form probably developed as early as the end of the 3rd century, reaching its peak of use in the following century (Cool, Price 1995, 90). The finds are spread throughout the entire western part of the Empire (Cool, Price 1995, 9; see the Analogies).

Beakers with flat or concave bases (3.9.1) are most numerous. At the cemetery at the Students' Dormitory in Ptuj, the beakers appeared in graves from the 4th and beginning of the 5th centuries (Vomer Gojkovič 1996, 240, 247).

3.9.2.
Conical beakers with a ring base (Is 109c); (*Fig. 35*):

Beakers with out turned walls that extend directly into a cut and ground or fire-rounded rim, ring base.

Date: 4th century

Ptuj (gr. 5)
Conical beaker with out turned walls, rim cut and ground, ring base.
3.9.2. - ht. 10.9 cm; dia. rim 8.4 cm - PMP R 13555.
Lit.: Jevremov 1990, Pl. 1: 4.

3.10.2. - viš. 6,2 cm; pr. ustja 6 cm - NMS.
Lit.: Stare 1952, sl. 1: 1.
Ptuj (PN)
Čaša z izvihanim, ravno odrezanim ustjem, dno vboklo, po ostenju skupine s po tremi pikami modrega stekla.
3.10.2. - viš. 6,1 cm; pr. ustja 6,7 cm - PMP 3502.
Lit.: Mikl Curk 1976, t. 4: 11.
Ptuj (PN)
Del čaše z ravno odrezanim ustjem, po ostenju linija pik iz modrega stekla, nad njimi kanelura.
3.10.2. - PMP 1166.
Lit.: Mikl Curk 1976, t. 5: 9.
Martinj Hrib (NN)
Odlomki polkroglastih čaš z nataljenimi modrimi kapljami.
3.10.2. - NMS.
Lit.: Leben, Šubic 1990, T. 8: 100-114; 9: 115-122.
Hrušica (NN)
Odlomek polkroglaste čaše z nataljenim okrasom.
3.10.2. - NMS.
Lit.: Giesler 1981, T. 49: 1-3.

Primerjave: Barkóczi 1988, Taf. 14: 144, 148, 152, 155.

3.10.3.
Polkroglaste čaše z ostenjem, pihanim v kalup (Is 107a); (*sl. 35*):

Polkroglaste čaše z ravno odrezanim in obrušenim ustjem, dno vboklo, ostenje pihano v kalup v obliki satovja. Okras zaključuje linija pokončnih kanelur.

Datacija: 4. st.

Trebnje (gr. 5)
Polkroglasta čaša z ravno odrezanim ustjem, spodnji del pihan v kalup v obliki satovja, nad njim navpične kanelure, dno vboklo.
3.10.3. - viš. 10,6 cm; pr. ustja 11 cm - DM.
Lit.: Knez 1969, t. 11: 1.

Primerjave: Goethert-Polaschek 1977, Taf. 25: 309a; Matheson 1980, 109, no. 284.

Komentar za oblike 3.10.1. do 3.10.3.:
Polkroglaste čaše (3.10.1.) oblike 96 po Isingsovi imajo klekasto ali navzven nagnjeno ustje, ki je odrezano in obrušeno. Polkroglasto ostenje se pri dnu zoži v rahlo vboklo dno. Čaše so izdelane iz olivno zelenkastega stekla, redki pa so izdelki iz brezbarvnega stekla. Tudi te čaše so tako kot čaše konične oblike služile kot glavno pivsko posodje v 4. stoletju. Poleg neokrašenih izdelkov so pogoste čaše z nataljenim okrasom pik (3.10.2.), horizontalnimi vrezi in vrezanim figuralnim ali geometrijskim okrasom. Redkejši so primeri čaš z ostenjem, pihanim v kalup (3.10.3.), razširjen je bil motiv satovja (Isings 107a).

Najpogostejši je okras nataljenih pik drugobarvnega stekla, ki so ga nanesli na podlago, dokler je bila ta še

Analogies: Barkóczi 1988, Pl. 9: 94, 96.

Comments:
This form can also be found among late Roman products. It is a variant of the previous form 3.9.1, but it stands on a ring base, while the walls are sometimes decorated with wheel-cut lines. Comparison from the late Roman cemeteries in Köln place the form at the end of the 3rd and in the 4th centuries (Friedhoff 1991, 143), while the finds from Trier belong to the first half of the 4th century (Goethert-Polaschek 1977, 80). At Augst they are similarly frequent in the first half of the 4th century (Rütti 1991, 47).

The beaker from the grave at Poetovio was dated along with the other grave goods to the second half of the 4th century (Jevremov 1990, 395).

3.10.
HEMISPHERICAL CUPS

3.10.1.
Hemispherical cups with curved rims (Is 96); (*Fig. 35*):

Cups with hemispherical walls, rim curved, cut and ground, base concave.

Date: second half of the 3rd - 4th centuries

Ptuj (gr. 12)
Hemispherical cup, the walls extend into a curved, cracked-off rim, base slightly concave.
3.10.1. - ht. 5.9 cm - PMP R 13646.
Lit.: Kujundžić 1982, Pl. 1: 8.
Ptuj (gr. 17)
Hemispherical cup, the walls extend into a curved, cracked-off rim, base slightly concave.
3.10.1. - ht. 10 cm; dia. rim 10 cm - PMP R 13663.
Lit.: Kujundžić 1982, Pl. 1: 14.
Ptuj (IF)
Hemispherical cup, the walls extend into a curved, cracked-off rim, base slightly concave.
3.10.1. - ht. 7.5 cm; dia. rim 8.6 cm - PMP 3457.
Lit.: Mikl Curk 1976, Pl. 4: 12.
Martinj Hrib (SF)
Fragments of hemispherical cups.
3.10.1. - ht. 5.9 cm - NMS.
Lit.: Leben, Šubic 1990, Pl. 5; 6; 7.

Analogies: Damevski 1976, Pl. 15: 1-3; Fremersdorf, Polónyi-Fremersdorf 1984, Fig. 33; Barkóczi 1988, Pl. 14: 148, 152, 155, 156.

3.10.2.
Hemispherical cups with applied decoration (Is 107b); (*Fig. 35*):

Hemispherical cups with a curved, cut and ground rim, base

vroča, da se je nanešeno steklo sprijelo s podlago. Obstajata dve osnovni skupini: posode z enobarvnimi kapljami in posode s kapljami različnih barv (temno modrih, zelenih, rjavo-rumenih in prozornih; Harden *et. al.* 1988, 103).

Na zahodu imperija, predvsem v Porenju, se polkroglaste čaše ne pojavijo pred sredino 3. stoletja, proizvodnja doseže višek v zgodnjem 4. stoletju in traja še do konca 4. in začetka 5. stoletja (Harden *et al.* 1988, 102).

Čaše z modrimi pikami se pojavljajo v vsem rimskem imperiju. V Egiptu so pogoste konične oblike, ki so služile kot svetilke (Harden 1936, 156; Whitehouse 1997, no. 366-370). V Italiji in zahodnih provincah imperija imajo čaše bolj polkroglasto obliko in širšo stojno ploskev. Seveda se enak okras pojavlja izjemoma tudi na drugačnih oblikah, npr. steklenicah, skodelah, rogovih (Harden *et al.* 1988, št. 48, 49). Vrezan okras na čašah se pojavlja v geometrijski in figuralni obliki (Harden *et al.* 1988, 183).

Med gradivom s slovenskega prostora se pojavljajo čaše brez okrasa, izdelki z modrimi pikami in v kalup pihani izdelki.

Čaše z nataljenimi kapljami so zastopane tudi med emonskim gradivom (Plesničar Gec 1983, 8), številne najdbe pa poznamo s poznoantičnih postojank, kot so npr. Martinj hrib in Hrušica (Leben, Šubic 1990, 329; Giesler 1981, 102).

Čaši iz Trebnjega najdemo primerjavo med najdbami v Trierju, kjer je enaka čaša priložena v grobu iz 4. stoletja (Goethert-Polaschek 1977, 62, Taf. 25: 309a).

concave. On the upper half of the walls applied blobs of coloured glass. They were applied in a straight line or in groups of several blobs.

Date: second half of the 3rd - 4th centuries

Ravno brdo (gr. 3)
Hemispherical cup with a curved rim, the base slightly concave, blobs of blue glass on the circumference, wheel-cut lines above them.
3.10.2. - ht. 6.2 cm; dia. rim 6 cm - NMS.
Lit.: Stare 1952, Fig. 1: 1.
Ptuj (IF)
Cup with an everted, cut rim, base concave, on the walls groups of three dots of blue glass.
3.10.2. - ht. 6.1 cm; dia. rim 6.7 cm - PMP 3502.
Lit.: Mikl Curk 1976, Pl. 4: 11.
Ptuj (IF)
Part of a cup with a straight cut rim, on the walls a line of dots of blue glass, a groove above it.
3.10.2. - PMP 1166.
Lit.: Mikl Curk 1976, Pl. 5: 9.
Martinj Hrib (SF)
Fragments of hemispherical cups with applied blue blobs.
3.10.2. - NMS.
Lit.: Leben, Šubic 1990, Pl. 8: 100-114; 9: 115-122.
Hrušica (SF)
A fragment of a hemispherical cup with applied decoration.
3.10.2. - NMS.
Lit.: Giesler 1981, Pl. 49: 1-3.

Analogies: Barkóczi 1988, Pl. 14: 144, 148, 152, 155.

3.10.3.
Hemispherical cups with mould-blown walls (Is 107a); (*Fig. 35*):

Hemispherical cups with a straight cut and ground rim, base concave, the walls mould-blown in the shape of a honeycomb. The decoration ends with a line of upright grooves.

Date: 4th century

Trebnje (gr. 5)
Hemispherical cup with a straight cut rim, the lower part blown into a mould in the shape of a honeycomb, above this vertical grooves, base concave.
3.10.3. - ht. 10.6 cm; dia. rim 11 cm - DM.
Lit.: Knez 1969, Pl. 11: 1.

Analogies: Goethert-Polaschek 1977, Pl. 25: 309a; Matheson 1980, 109, no. 284.

Comments - forms 3.10.1. to 3.10.3.:
The hemispherical cups (3.10.1.) of form Isings 96 have curved or out turned rims, which were cut and ground. The hemispherical walls narrowed at the bottom into a slightly concave base. The cups were usually made from olive green glass; vessels of colourless glass were rare.

SKUPINA 4 - ZAJEMALKE
(sl. 36; pril. 2)

4.1.
ZAJEMALKE Z VODORAVNIM ROČAJEM

4.1.1.
Zajemalke z vodoravnim ročajem in cilindričnim ostenjem (Is 75b); *(sl. 36)*:

Ostenje je cilindrično in ravno prehaja v ustje, ki je cevasto zavihano navzven. Na ustje je nataljen trakast horizontalen ročaj. Dno je v sredini vboklo.

Datacija: druga polovica 1. - prva polovica 2. st.

Ptuj (gr. 759)
Gornji del zajemalke s cevastim ustjem in vodoravnim trakastim ročajem.
4.1.1. - pr. ustja 10 cm - LMJ 2401.
Lit.: Istenič 2000, t. 170: 2.
Ptuj - Videm (GN)
Zajemalka s cevastim ustjem, ročaj trakast, dno rahlo vboklo.
4.1.1. - viš. 5 cm, pr. ustja 10, 6cm - PMP R 10443.
Lit.: Šubic 1976, t. 6: 52.

Primerjave: nepoznane.

4.1.2.
Zajemalke z vodoravnim ročajem in navzven nagnjenim ostenjem *(sl. 36)*:

Ostenje je nekoliko nagnjeno navzven in nepravilno oblikovano, ustje je rahlo izvihano in cevasto zapognjeno, nanj je pritrjen vodoraven ročaj. Dno je v sredini rahlo vboklo.

Datacija: druga polovica 1. - prva polovica 2. st.

Miklavž pri Mariboru (GN)
Zajemalka s cevastim ustjem, navzven nagnjenim ostenjem in trakastim ročajem, dno rahlo vboklo.
4.1.2. - viš. 4,4 cm; pr. ustja 10 cm - PMM A 2251.
Lit.: Pahič 1969, t. 3: 3.
Miklavž pri Mariboru (GN)
Zajemalka s cevastim ustjem, navzven nagnjenim ostenjem, horizontalen ročaj delno ohranjen.
4.1.2. - viš. 5 cm; pr. ustja 10,2 cm - PMM A 2252.
Lit.: Pahič 1969, t. 3: 4.

Primerjave: Scatozza Höricht 1986, forma 15; Biaggio Simona 1991, Tav. 8: 139.2.036.

These glasses, along with beakers of conical shape, served as the main drinking vessels in the 4th century. In addition to undecorated examples, cups with applied decorations of dots (3.10.2.), horizontal lines, and cut figural and geometric decoration were common. Examples of cups with mould-blown walls were rarer (3.10.3.), whereas the honeycomb motif was widespread (Isings 107a).

The most common decoration was applied dots of coloured glass, which were applied to the background while it was still hot so that the attached glass would fuse with the walls. Two basic groups existed: vessels with single coloured drops and vessels with drops of different colours (dark blue, green, yellow-brown, and clear).

In the western part of the Empire, and particularly along the Rhine, this type of vessel do not appear before the mid 3rd century. Production reaches its peak in the early 4th century, continuing to the end of the 4th and the beginning of the 5th centuries (Harden *et al.* 1988, 102).

Cups with blue dots appeared throughout the entire Roman Empire. Conical forms that served as lamps are frequent in Egypt (Harden 1936, 156; Whitehouse 1997, No. 366-370). In Italy and the western provinces of the Empire, the cups had a more hemispherical shape and a broader base. The identical decoration occasionally also appears on other forms, such as bottles, bowls, or horns (Harden *et al.* 1988, No. 48, 49). Incised decoration on the cups appears in geometric and figural forms (Harden *et al.* 1988, 183).

The material from the Slovenian sites includes cups without decoration, products with blue dots, and mould-blown examples.

Cups with applied blobs are also represented among the material from Emona (Plesničar Gec 1983, 8), and numerous finds are known from Late Roman fortresses, such as Martinj hrib and Hrušica (Leben, Šubic 1990, 329; Giesler 1981, 102).

Comparisons for the cup from Trebnje can be found among the finds from Trier, where an identical cup was placed in a grave from the 4th century (Goethert-Polaschek 1977, 62, Pl. 25: 309a).

4.2.
ZAJEMALKE S POKONČNIM ROČAJEM

4.2.1.
Zajemalke s pokončnim ročajem in gubo pod ustjem (*sl. 36*):

Posode imajo nekoliko navzven nagnjeno ustje, ki je zataljeno. Nanj je nataljen pokončen trakast ročaj. Pod ustjem na ostenju ovratnikasta guba. Dno v sredini rahlo vboklo.

Datacija: druga polovica 1. st.

Celje (gr. 4)
Zajemalka z gubo pod ustjem, vertikalen ročaj odlomljen, dno rahlo vboklo.
4. 2.1. - viš. 2,7 cm; pr. ustja 5,3 cm - PMC R 4200.
Lit.: Kolšek 1972, Y 152-4: 69.

Primerjave: nepoznane.

GROUP 4 - LADLES
(*Fig. 36; Appendix 2*)

4.1.
LADLES WITH A HORIZONTAL HANDLE

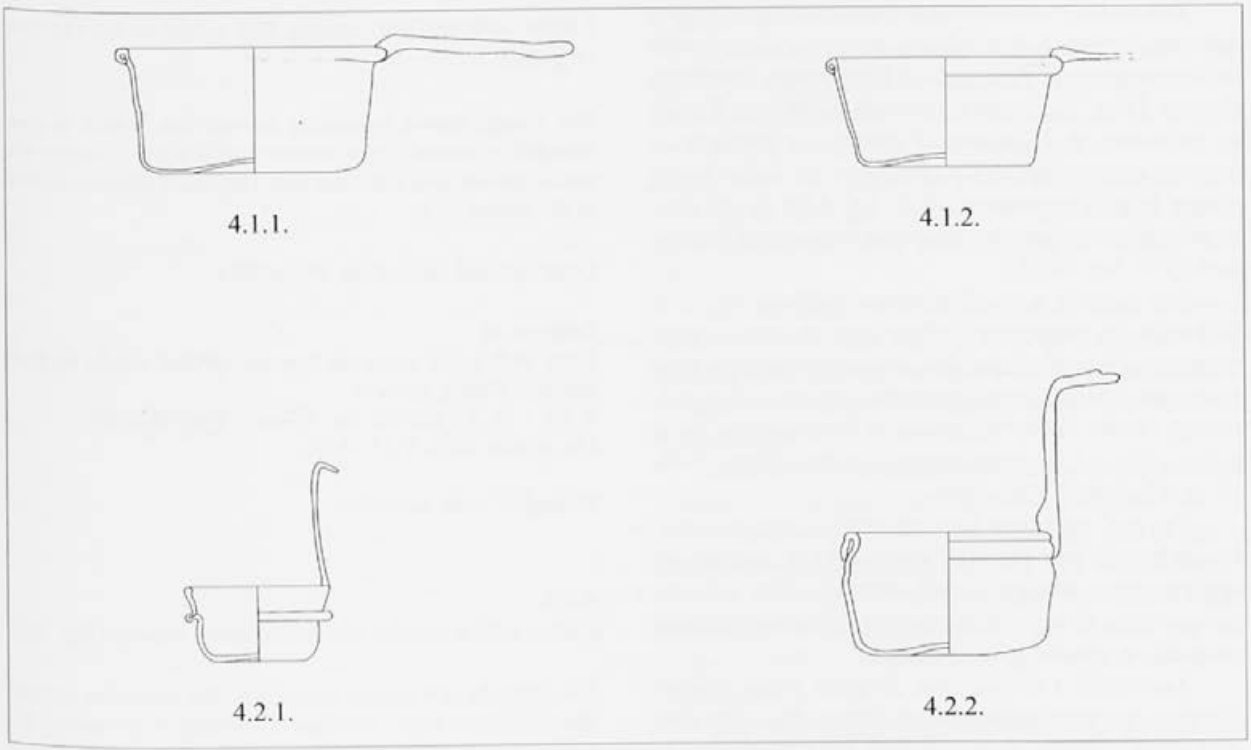
4.1.1.
Ladles with a horizontal handle and cylindrical walls (Is 75b); (*Fig. 36*):

The walls are cylindrical and extend straight into the rim, which is bent outwards into a tube. A horizontal ribbon handle was applied to the rim. The base is concave in the center.

Date: second half of the 1st - first half of the 2nd centuries

Ptuj (gr. 759)
Upper part of a ladle with a tubular rim and a horizontal ribbon handle.
4.1.1. - dia. rim 10 cm - LMJ 2401.
Lit.: Istenič 2000, Pl. 170: 2.
Ptuj - Videm (TF)
Ladle with a tubular rim, ribbon handle, base slightly concave.
4.1.1. - ht. 5 cm, dia. rim 10.6 cm - PMP R 10443.
Lit.: Šubic 1976, Pl. 6: 52.

Analogies: none identified.



Sl. 36: Skupina 4 - zajemalke (4.1.1.: Šubic 1976, t. 6: 52; 4.1.2.: Pahič 1969, t. 3: 3; 4.2.1.: Kolšek 1972, 152: 69; 4.2.2.: Pahič 1969, t. 3: 10). M. = 1:3.

Fig. 36: Group 4 - ladles (4.1.1.: Šubic 1976, Pl. 6: 52; 4.1.2.: Pahič 1969, Pl. 3: 3; 4.2.1.: Kolšek 1972, 152: 69; 4.2.2.: Pahič 1969, Pl. 3: 10). Scale = 1:3.

4.2.2.
Zajemalke s cevastim ustjem in pokončnim ročajem (*sl. 36*):

Zajemalke imajo cevasto zavihano ustje, ki se ravno nadaljuje v cilindrično ostenje. Dno v sredini vboklo, ročaj vertikalno pritaljen na ustje.

Datacija: druga polovica 1. - 2. st.

Miklavž pri Mariboru (GN)
Zajemalka s cevasto zavihanim ustjem in pokončnim ročajem, dno rahlo vboklo.
4.2.2. - viš. 5,3 cm; pr. ustja 6,5 cm - PMM A 2246.
Lit.: Pahič 1969, t. 3: 10.

Primerjave: de Franciscis 1963, Fig. 1: 1, 4; Plesničar Gec 1976, t. 1: 4; Scatozza Höricht 1986, forma 17b.

Komentar za oblike 4.1.1. do 4.2.2.:
V skupini so zajeti tako izdelki z vodoravnim kot pokončnim ročajem. Posode imajo trakast ročaj, pritrjen na robu ustja. Zajemalke s pokončnim ročajem (*cyathus*) in posode s horizontalnim ročajem (*trulla*) so uporabljali v različne namene: v hiši kot del servisa pri pivskem posodju, kot obredne posode pri daritvenih in pogrebnih običajih, morda celo v kopališčih pri umivanju (Whitehouse 1997, 198). Tako ena kot druga oblika posnemata vzore v kovinskem posodju (Hilgers 1969, 56).

Zajemalke z vodoravnim ročajem (4.1.) so običajno datirane od srede 1. do sredine 2. stoletja. Najzgodnejše najdbe so znane iz Pompejev in Herkulanea (Scatozza Höricht 1986, 38), najdbe z ostalih najdišč po Evropi so večinoma iz 3. stoletja. Pretežno so izdelane iz naravno obarvanega stekla, poznamo pa tudi v kalup pihane kose (Fremersdorf 1958, Taf. 133) in nekatere bogato okrašene posode s kačastim okrasom (Fremersdorf 1959, Taf. 50-53).

Vse posode s horizontalnim ročajem (4.1.) iz Slovenije so preproste oblike, dno je ravno, brez prstanaste noge, ki je običajna pri mnogih izdelkih. Obe zajemalki iz Miklavža sta del grobne najdbe iz konca 1. stoletja (Pahič 1969, 74), posodi iz Petovione pa sta iz grobov s konca 1. in prve polovice 2. stoletja (Šubic 1976, 43, št. 37; Istenič 2000, 244).

Vse štiri zajemalke so si po izdelavi zelo sorodne, dno je ravno, brez stojnega prstana, ki je značilen za ostale tovrstne izdelke. Morda bi lahko v tem primeru zaradi enotne izdelave in geografske bližine najdišč tudi pomislili na lokalno proizvodnjo.

Zajemalke s pokončnim ročajem imajo največ primerjav kar med emonskim gradivom (Plesničar Gec 1976, 35). Obliko najdemo tudi med gradivom iz Pompejev in Herkulanea, datirano v sredino 1. stoletja (Scatozza Höricht 1986, forma 17b) in v Vituduru, datirano na konec 1. in začetek 2. stoletja (Rütti 1988, 63).

4.1.2.
Ladles with a horizontal handle and out turned walls (*Fig. 36*):

The walls are somewhat turned out and irregularly formed, the rim is slightly everted and tubular, and the horizontal handle is attached to it. The base is slightly concave in the center.

Date: second half of the 1st - first half of the 2nd centuries

Miklavž pri Mariboru (TF)
Ladle with a tubular rim, turned out walls and a ribbon handle, the base slightly concave.
4.1.2. - ht. 4.4 cm; dia. rim 10 cm - PMM A 2251.
Lit.: Pahič 1969, Pl. 3: 3.
Miklavž pri Mariboru (TF)
Ladle with a tubular rim and turned out walls, the horizontal handle partly preserved.
4.1.2. - ht. 5 cm; dia. rim 10.2 cm - PMM A 2252.
Lit.: Pahič 1969, Pl. 3: 4.

Analogies: Scatozza Höricht 1986, form 15; Biaggio Simona 1991, Pl. 8: 139.2.036.

4.2.
LADLES WITH VERTICAL HANDLES

4.2.1.
Ladles with vertical handles and a fold under the rim (*Fig. 36*):

The vessels have a somewhat everted rim, which is fire-rounded. A vertical ribbon handle is attached to it. Under the rim on the wall iss a collar-like fold. The base is slightly concave in the center.

Date: second half of the 1st century

Celje (gr. 4)
Ladle with a fold under the rim, the vertical handle broken, the base slightly concave.
4. 2.1. - ht. 2.7 cm; dia. rim 5.3 cm - PMC R 4200.
Lit.: Kolšek 1972, Y 152-4: 69.

Analogies: none identified.

4.2.2.
Ladles with a tubular rim and vertical handle (*Fig. 36*):

The ladles have a tubular curled rim that continues further into cylindrical walls. The base is concave in the center, the vertical handle attached to the rim.

Date: second half of the 1st - 2nd centuries

Izstopajoče število zajemalk s pokončnimi ročaji v grobovih severnega emonskega grobišča je omogočilo kronološko opredelitev posameznih skupin izdelkov, ki se pojavljajo v grobovih od klavdijskega obdobja do sredine 2. stoletja (Plesničar 1976, 35). Plesničarjeva domneva lokalno proizvodnjo mlajših variant teh izdelkov, a vseeno ne izključuje možnosti importa iz severnoitalskih delavnic (1976, 37). Glede na trenutno stanje raziskav zaenkrat ni dokazov o zgodnji steklarski proizvodnji v Emoni in bolj verjetno je, da so številne najdbe vezane na okus priseljenih italskih prebivalcev Emone, ki so se z boljšimi izdelki oskrbovali preko Akvileje.

Obe zajemalki pripadata zaključenim grobnim celotam. Oblika 4.2.1. je iz groba v Celeji, datiranega v flavijsko obdobje (Kolšek 1972, Y 152), oblika 4.2.2., ki ima med emonskim gradivom več primerjav (Plesničar 1976, t. 1: 2, 4), pa je iz gomile datirane na konec 1. in začetek 2. stoletja (Pahič 1969, 114).

Miklavž pri Mariboru (TF)
Ladle with a tubular curled rim and a vertical handle, the base slightly concave.
4.2.2. - ht. 5.3 cm; dia. rim 6.5 cm - PMM A 2246.
Lit.: Pahič 1969, Pl. 3: 10.

Analogies: de Franciscis 1963, Fig. 1: 1, 4; Plesničar Gec 1976, Pl. 1: 4; Scatozza Höricht 1986, form 17b.

Comments - forms 4.1.1. to 4.2.2.:
This group encompasses products with horizontal as well as vertical handles. Both types of vessels have a ribbon handle attached to the edge of the rim. Ladles with vertical handles (*cyathus*) and vessels with horizontal handles (*trulla*) were used for different purposes: in the house as part of a serving set with a beverage vessel, with ritual vessels used in votive and funerary customs, and perhaps even in baths while bathing (Whitehouse 1997, 198). Both forms copied metal vessels (Hilgers 1969, 56).

Ladles with horizontal handles (4.1.) are usually dated from the middle of the 1st to the middle of the 2nd centuries. The earliest finds are known from Pompeii and Herculaneum (Scatozza Höricht 1986, 38), while the finds from other finds in Europe are mostly from the 3rd century. They were primarily made of naturally coloured glass. Mould-blown pieces are also known (Fremersdorf 1958, Pl. 133), as well as several richly decorated vessels with snake-thread decoration (Fremersdorf 1959, Pl. 50-53).

All vessels with horizontal handles (4.1.) have simple forms, the base is flat, without a ring base, which is usual for many products. Both such ladles from Miklavž were part of grave finds from the end of the 1st century (Pahič 1969, 74), while the vessels from Poetovio were from graves from the end of the 1st and the first half of the 2nd centuries (Šubic 1976, 43, no. 37; Istenič 2000, 244).

All four ladles were very similar in terms of manufacture, and the base was flat without a standing ring, which is otherwise characteristic for the other products of this type. Perhaps in this case local production could be considered.

Ladles with vertical handles have the greatest number of comparisons among the material from Emona (Plesničar Gec 1976, 35). This form can also be found among the material from Pompeii and Herculaneum, dated to the middle of the 1st century (Scatozza Höricht 1986, form 17b), and from Vitudurum, dated to the end of the 1st and the beginning of the 2nd century (Rütti 1988, 63).

The exceptional number of ladles with vertical handles in the graves of the northern cemetery of Emona has enabled the chronological determination of individual groups of products that appear in the graves from the Claudian period to the middle of the 2nd century (Plesničar 1976, 35). Plesničar suggested the local pro-

SKUPINA 5 - VRČI
(*sl. 37-40; pril. 2*)

5.1.
ENOROČAJNI VRČI

5.1.1.
Vrči s stožčasto oblikovanim ostenjem (Is 55a); (*sl. 37*):

Posode imajo ostenje stožčasto oblikovano, dno je dokaj široko, brez posebej oblikovane stojne ploskve oziroma noge, rahlo vboklo.

Datacija: sredina - druga polovica 1. st.

Ptuj (gr. 741)
Spodnji del enoročajnega vrča s stožčastim ostenjem, dno vboklo.
5.1.1. - pr. dna 7,7 cm - LMJ 2515.
Lit.: Istenič 2000, t. 165: 6.

Primerjave: Cool, Price 1995, fig. 8.3.

Komentar:
Najpogostejša oblika vrčev v 1. stoletju so posode s kroglastim ali stožčasto oblikovanim ostenjem, opredeljene kot oblika Isings 52 in 55 (Isings 1957, 69, 72). Izdelani so iz modro-zelenkastega ali tudi iz obarvanega stekla. Vrči 5.1.1. (Is 55) imajo dolg vrat, ki je navadno na prehodu v ostenje poudarjen z zajedo, ostenje ravno prehaja v nekoliko vboklo dno. Ostenje je pri nekaterih posodah pihano v rebrast kalup. Narebreni ročaji so pritrjeni na vrat in ostenje, ponekod je na spodnji zaključek pritrjena aplika oziroma medaljon s podobo meduze, leva ipd.

Med petovionskim gradivom je ohranjena steklena aplika v obliki levje glave, ki je morda pripadala podobnemu vrču (Šubic 1976, t. 1: 7).

Vrči s koničnim oziroma stožčasto oblikovanim ostenjem so pogosti med grobnimi in naselbinskimi najdbami v drugi polovici 1. stoletja, njihova uporaba pa se nadaljuje tudi še v 2. stoletje (Cool, Price 1995, 123).

Vrč iz groba 741 zahodne petovionske nekropole je bil najden v grobu z novcem Klavdija in sodi v drugo polovico 1. stoletja, morda še na začetek 2. stoletja (Istenič 2000, 240).

5.1.2.
Vrči s hruškastim ostenjem (Is 13); (*sl. 37*):

Posode z bikonično razširjenim spodnjim delom ostenja, ustje izvihano in odebeljeno, dno oblikovano v stojni prstan, v sredini vboklo. Profiliran ročaj z zanko (oporo za palec) je pritrjen na rame in vrat posode.

duction of the later variants of these products, but nonetheless did not exclude the possibility of imports from the northern Italic workshops (1976, 37). Given the present state of research, no evidence exists momentarily about early glass production in Emona, and it is more likely that the numerous finds were tied to the tastes of the newly settled Italic inhabitants of Emona, who acquired better quality products through Aquileia.

Both ladles belonged to closed grave units. Form 4.2.1. was from a grave at Celeia dated to the Flavian period (Kolšek 1972, Y 152), and form 4.2.2., for which there are several examples among the material from Emona (Plesničar 1976, Pl. 1: 2, 4), came from a tumulus dated to the end of the 1st and the beginning of the 2nd century (Pahič 1969, 114).

GROUP 5 - JUGS
(*Fig. 37-40; Appendix 2*)

5.1.
SINGLE HANDLED JUGS

5.1.1.
Jugs with conical walls (Is 55a); (*Fig. 37*):

The vessels have conicaly shaped walls; the base is somewhat broad, without a specially formed foot, slightly concave.

Date: middle - second half of the 1st century

Ptuj (gr. 741)
Lower part of a single handled jug with a conical body, base concave.
5.1.1. - dia. base 7.7 cm - LMJ 2515.
Lit.: Istenič 2000, Pl. 165: 6.

Analogies: Cool, Price 1995, Fig. 8.3.

Comments:
The most common form of jugs in the 1st century consists of vessels with spherical or conical walls, classified as the forms Isings 52 and 55 (Isings 1957, 69, 72). They were made of blue-green and also coloured glass. The jugs of form 5.1.1. (Is 55) have a long neck, which is usually emphasized with a constriction at the transition to the walls, which extend straight downwards to the somewhat concave base. The walls of several vessels were blown into a ribbed mould. The ribbed handles were attached to the neck and the body, and sometimes a medallion with an image of Medusa, a lion, etc., was applied to the lower joint. A glass applied element in the form of a lion's head is preserved among the material from Poetovio, which perhaps belonged to a similar jug (Šubic 1976, Pl. 1: 7).

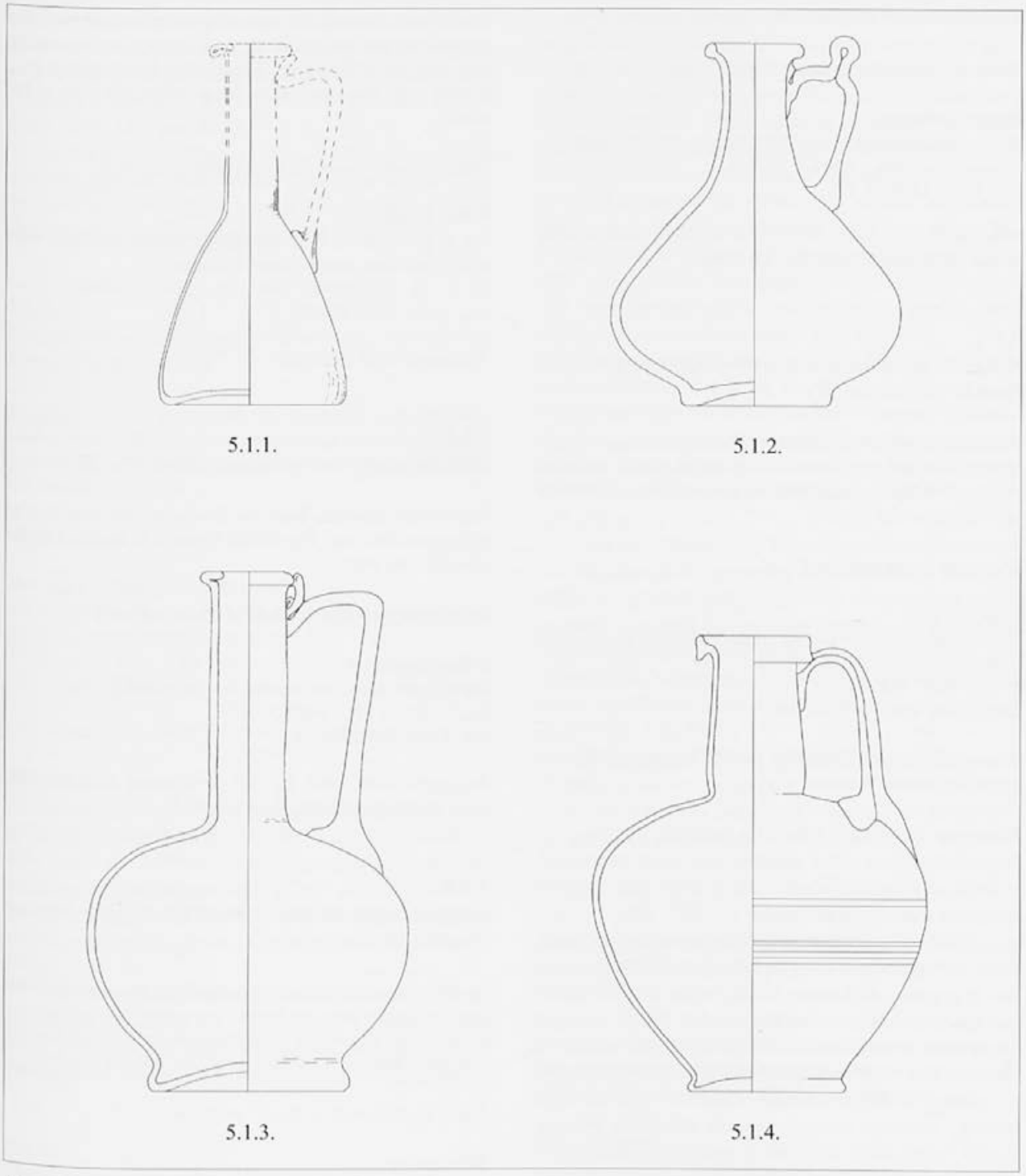
Jugs with conical or triangular bodies are frequent

Datacija: sredina - druga polovica 1. st.

Polhov Gradec (gr.)
Vrč iz zelenkastega stekla, trup pri dnu razširjen, dno rahlo vboklo, ročaj v obliki črke omega.
5.1.2. - viš. 17,5 cm, pr. dna 7 cm - NMS R 6980.
Lit.: Ložar 1938, sl. 19.

among cemetery and settlement finds in the second half of the 1st century, and their use continued even into the 2nd century (Cool, Price 1995, 123).

The jug from grave 741 of the western necropolis of Poetovio was found in a grave together with a coin of Claudius, and can be dated to the second half of the 1st



Sl. 37: Skupina 5 - vrči (5.1.1.: Istenič 2000, t. 165: 6; 5.1.2.: Ložar 1938, sl. 19; 5.1.3.: Ložar 1938, sl. 18; 5.1.4.: Kolšek 1972, 152: 83). M. = 1:3.

Fig. 37: Group 5 - jugs (5.1.1.: Istenič 2000, Pl. 165: 6; 5.1.2.: Ložar 1938, sl. 19; 5.1.3.: Ložar 1938, sl. 18; 5.1.4.: Kolšek 1972, 152: 83). Scale = 1:3.

Primerjave: nepoznane

5.1.3.
Kroglasti enoročajni vrči (Is 52a); (*sl. 37*):

Posode s kroglastim ostenjem, ustje izvihano, dno oblikovano v stojni prstan. Profiliran ročaj je pritrjen na rame in vrat.

Datacija: sredina - druga polovica 1. st.

Polhov Gradec (gr.)
Vrč iz zelenkastega stekla, ustje izvihano, ročaj manjka.
5.1.3. - viš. 25 cm - NMS R 6979.
Lit.: Ložar 1938, sl. 18.

Primerjave: Calvi 1969, Taf. 7: 3, 4; Scatozza Höricht 1986, forma 28; Barkóczi 1988, Taf: 45: 459-61.

5.1.4.
Kroglasti enoročajni vrči s horizontalnimi vrezi na ostenju (Is 52a); (*sl. 37*):

Posode kroglaste oblike, stopničasto ustje je izvihano navzdol in nato navzgor, dno oblikovano v stojni prstan, v sredini vboklo. Narebren ročaj je pritrjen na rame in vrat. Po ostenju plitvi horizontalni vrezi.

Datacija: druga polovica 1. st.

Celje (gr. 4)
Enoročajni vrč iz zelenkastega stekla, na ostenju horizontalni pasovi tankih vrezov, ročaj rebrast.
5.1.4. - PMC R 4284.
Lit.: Kolšek 1972, Y 152-5: 83.

Primerjave: Berger 1960, Taf. 20: 76; Goethert-Polaschek 1977, Taf. 7: 85g; 9: 106d.

Komentar za oblike 5.1.2., 5.1.3. in 5.1.4.:
Najbolj razširjeni vrči v poznem 1. in v prvi polovici 2. stoletja so kroglasti, včasih tudi konični vrči, ki jih je Isingsova opredelila kot obliko 52 (1957, 69).

Vrči imajo zapognjeno ali trikotno oblikovano ustje, vitke, precej dolge vratove in v sredini vboklo dno. Rob dna je pogosto oblikovan v stojni prstan, prehod vratu v ostenje je poudarjen z rahlo zajedo. Ročaji so ostro zapognjeni in pritrjeni na vrat vrča, tik pod ustjem, in na rame, kjer se rebra ročaja pogosto kot šapa podaljšajo na ostenje. Ročaji so navadno narebreni, srednje rebro pogosto nekoliko izstopa. Ostenje nekaterih vrčev je včasih narebreno, izdelano z optičnim pihanjem, z nataljenimi ali z orodjem oblikovanimi pokončnimi rebri. Izdelki iz obarvanega stekla so pogosto okrašeni z večbarvnimi lisami, vtisnjenimi v ostenje.

Vrči so v uporabi že od prve polovice 1. stoletja (Berger 1960, 42, no. 89), bolj razširjeni pa postanejo

century, and perhaps even to the beginning of the 2nd century (Istenič 2000, 240).

5.1.2.
Jugs with pear-shaped walls (Is 13); (*Fig. 37*):

Vessels with a biconically widened lower part of the body, the rim everted and thickened, the base formed into a standing ring, concave in the center. The profiled handle with a loop (thumb rest) was attached to the shoulder and neck of the vessel.

Date: middle - second half of the 1st century

Polhov Gradec (gr.)
Jug of green glass, body broadened toward the base, base slightly concave, omega shaped handle.
5.1.2. - ht. 17.5 cm, dia. base 7 cm - NMS R 6980.
Lit.: Ložar 1938, Fig. 19.

Analogies: none identified.

5.1.3.
Globular single handled jugs (Is 52a); (*Fig. 37*):

Vessels with a globular body, the rim everted, the base formed into a standing ring. The profiled handle is attached to the shoulder and neck.

Date: middle - second half of the 1st century

Polhov Gradec (gr.)
Jug of green glass, rim everted, handle missing.
5.1.3. - ht. 25 cm - NMS R 6979.
Lit.: Ložar 1938, Fig. 18.

Analogies: Calvi 1969, Pl. 7: 3, 4; Scatozza Höricht 1986, form 28; Barkóczi 1988, Pl.: 45: 459-61.

5.1.4.
Globular single handled jugs with horizontal lines on the walls (Is 52a); (*Fig. 37*):

Vessels of globular form, the stepped rim was everted down and then up, the base was formed into a standing ring, concave in the center. The ribbed handle was attached to the shoulder and neck. Shallow horizontal wheel-cut lines on the body.

Date: second half of the 1st century

Celje (gr. 4)
Single handled jug of green glass, horizontal bands of thin lines on the body, ribbed handle.
5.1.4. - PMC R 4284.
Lit.: Kolšek 1972, Y 152-5: 83.

od sredine 1. stoletja dalje. Najdbe dokazujejo, da njihova uporaba traja še v prvi polovici 2. stoletja, nato pa jih počasi izpodrinejo nove oblike (Cool, Price 1995, 123, Fig. 8.2).

Vrč iz Polhovega Gradca oblike 5.1.2. zaradi svojega nenavadno oblikovanega ročaja nima povsem ustreznih primerjav. Vendar sama oblika ustja (zapognjeno in trikotno v preseku), enostavno vboklo dno, ki ima rob oblikovan v stojni prstan, in pritrditev ročaja na vrat posode kažejo, da gre za zgodnjo obliko vrča, ki je najbolj razširjen v sredini in drugi polovici 1. stoletja (Cool, Price 1995, 122, Fig. 8. 2).

Vrča iz Polhovega Gradca (oblika 5.1.3.) ne moremo datirati pred sredino 1. stoletja (Petru 1976, 14), vrč iz Celeje (5.1.4.) pa je del grobne celote iz flavijskega obdobja (Kolšek 1972, Y 152, 2).

5.1.5.
Kroglasti enoročajni vrči z nataljenim okrasom na ostenju (Is 14); (*sl. 38*):

Kroglaste posode z izvihanim in zataljenim ustjem, dno v sredini vboklo. Profiliran ročaj z oporo za palec je pritrjen na rame in ustje. Po ostenju nataljeni koščki stekla enake barve kot posoda.

Datacija: 2. st.

Stari trg pri Slovenj Gradcu (gr. 8)
Vrč z izvihanim ustjem, vboklim dnom in trakastim ročajem, po trupu nataljene bunčice stekla.
5.1.5. - viš. 7 cm - LMJ 14841.
Lit.: Egger 1914, 61.

Primerjave: Calvi 1969, Taf. 2: 8.

Komentar:
Miniaturni vrček ima med objavljenim gradivom malo primerjav. Edina podobna najdba je znana iz Akvileje, kjer ima skoraj enak enoročajni vrček po ostenju nataljene koščke belega stekla (Calvi 1969, Taf. 2: 8). Po načinu okrasa in izdelavi ustja in dna sodita obe najdbi med izdelke s konca 1. in prve polovice 2. stoletja (Calvi 1969, 16).

Vrček iz Starega trga pri Slovenj Gradcu (rimski *Colatio*) je del groba 8, ki je bil izkopan v začetku tega stoletja. Glede na ostale ohranjene grobne pridatke (rokopis inv. knjige LMJ Graz) sodi grob v 2. stoletje.

5.1.6.
Vrči z ovalnim ostenjem (Is 52c); (*sl. 38*):

Posode z izvihanim in zataljenim ali odebeljenim ustjem, noga prstanasta, trakast ali rebrast ročaj pritrjen na rame in ustje. Nekateri vrči imajo po ostenju pasove plitvih brušenih linij.

Analogies: Berger 1960, Pl. 20: 76; Goethert-Polaschek 1977, Pl. 7: 85g; 9: 106d.

Comments - forms 5.1.2., 5.1.3. and 5.1.4.:
The most widespread jugs in the late 1st and in the first half of the 2nd century are spherical, sometimes also conical jugs, which Isings classified as form 52 (1957, 69).

The jugs have folded or triangular rims, slim, fairly long necks, and the base concave in the center. The edge of the base is often formed into a standing foot, and the transition from the neck to the body is emphasized by a slight constriction. The handles are strongly pinched and applied to the neck of the jug, just under the rim, and on the shoulder, where the ribs of the handle often elongate like a paw on the walls. The handles are usually ribbed, and the central rib often stands out somewhat. The walls of some jugs are occasionally ribbed, made with optic blowing, with applied or tool formed vertical ribs. Jugs of coloured glass are frequently decorated with multicoloured spots impressed into the walls.

Jugs were in use as early as the first half of the 1st century (Berger 1960, 42, no. 89), and became more widespread from the middle of the 1st century onwards. The finds show that that their use continued at least into the first half of the 2nd century, after which they were slowly supplanted by new forms (Cool, Price 1995, 123, Fig. 8, 2).

The jug of form 5.1.2. has no entirely suitable analogies because of the unusually formed handle. The form of the rim (folded and triangular in section), the simple concave base that has an edge formed into a standing foot, and the attachment of the handle on the neck indicate that this was an early form of jug, most widespread in the middle and second half of the 1st century (Cool, Price 1995, 122, Fig. 8: 2).

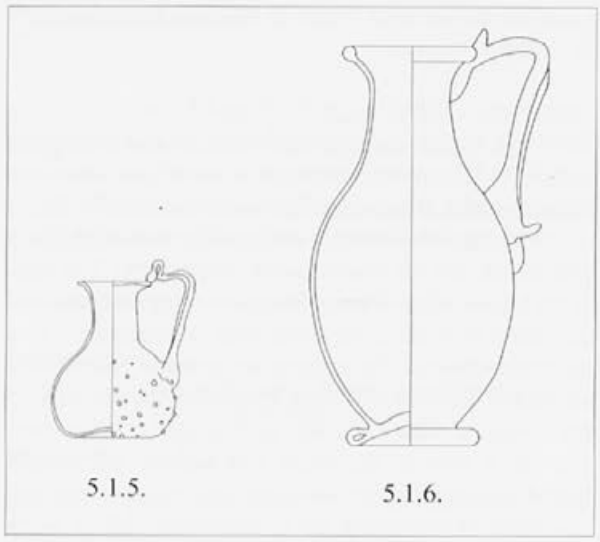
The jug from Polhov Gradec (form 5.1.3.) cannot be dated prior to the middle of the 1st century (Petru 1976, 14), while the jug from Celeia (5.1.4.) is part of a grave from the Flavian period (Kolšek 1972, Y 152, 2).

5.1.5.
Globular single handled jugs with applied decoration on the walls (Is 14); (*Fig. 38*):

Globular vessels with everted and rounded rims, the base concave in the center. The profiled handle with a thumb rest was attached to the shoulder and rim. The walls have applied chips of glass of the same colour as the vessel.

Date: 2nd century

Stari trg pri Slovenj Gradcu (gr. 8)
Jug with an everted rim, concave base, and ribbon handle, chips of glass applied to the body.
5.1.5. - ht. 7 cm - LMJ 14841.
Lit.: Egger 1914, 61.



Sl. 38: Skupina 5 - vrči (5.1.5.: Egger 1914, 61; 5.1.6.: Urleb 1984, t. 13: 1). M. = 1:3.

Fig. 38: Group 5 - jugs (5.1.5.: Egger 1914, 61; 5.1.6.: Urleb 1984, Pl. 13: 1). Scale = 1:3.

Datacija: 2. st.

Cerknica (gr. 26)
Vrč z odebeljenim ustjem, prstanasto nogo in rebrastim ročajem.
5.1.6. - viš. 15,8 cm - NMP.
Lit.: Urleb 1984, t. 13: 1.
Ptuj - Sp. Breg (gr. 1)
Enoročajni vrček z izvihanim cevastim ustjem, dno s prstanasto nogo, ročaj narebren.
5.1.6. - viš. 14,5 cm - PMP R 11308.
Lit.: Šubic 1972, Y 137-2: 10.
Trebnje (gr. 22)
Vrč iz zelenkastega stekla, ustje izvihano in odebeljeno, noga prstanasta, ročaj trakast.
5.1.6. - viš. 19,7 cm - DM R 671.
Lit.: Slabe 1993, t. 1: 3.
Velenik (GN)
Deli vrča iz zelenkastega stekla, ustje izvihano, noga prstanasta, ročaj trakast.
5.1.6. - viš. 23,5 cm - PMM R 7095.
Lit.: Pahič 1978, t. 18: 10.

Primerjave: Šaranović-Svetek 1986, t. 17: 5; Barkóczi 1988, Taf. 36: 394.

5.1.7.
Vrči z ovalnim ostenjem in nataljenim okrasom (*sl. 39*):

Oblika je identična gornji, le da imajo v tem primeru vrči na ostenje nataljene niti stekla ali samo okrasno narebreno apliko na ročaju.

Datacija: 2. st.

Analogies: Calvi 1969, Pl. 2: 8.

Comments:
This miniature jug has few comparisons among published material. The only similar find comes from Aquileia, in the form of an almost identical single handled jug with applied little pieces of white glass (Calvi 1969, Pl. 2: 8). According to the manner of decoration and the form of the rims and bases, both finds can be classified among products from the end of the 1st and the first half of the 2nd century (Calvi 1969, 16).

The small jug from Stari trg near Slovenj Gradec (Roman *Colatio*) was a part of grave 8, which was excavated at the beginning of the last century. In terms of the other preserved grave goods (manuscript inventory book of the Landesmuseum Joanneum, Graz), the grave was dated to the 2nd century.

5.1.6.
Jugs with oval walls (Is 52c); (*Fig 38*):

Vessels with everted and rounded or thickened rims, ring base, ribbon or ribbed handle attached to the shoulder and rim. Some jugs have bands of shallow ground lines on the walls.

Date: 2nd century

Cerknica (gr. 26)
Jug with a thickened rim, ring base, and ribbed handle.
5.1.6. - ht. 15.8 cm - NMP.
Lit.: Urleb 1984, Pl. 13: 1.
Ptuj - Sp. Breg (gr. 1)
Single handled small jug with an everted tubular rim, ring base, and ribbed handle.
5.1.6. - ht. 14.5 cm - PMP R 11308.
Lit.: Šubic 1972, Y 137-2: 10.
Trebnje (gr. 22)
Jug of green glass, rim everted and thickened, ring base, ribbon handle.
5.1.6. - ht. 19.7 cm - DM R 671.
Lit.: Slabe 1993, Pl. 1: 3.
Velenik (TF)
Parts of a jug of green glass, everted rim, ring base, ribbon handle.
5.1.6. - ht. 23.5 cm - PMM R 7095.
Lit.: Pahič 1978, Pl. 18: 10.

Analogies: Šaranović-Svetek 1986, Pl. 17: 5; Barkóczi 1988, Pl. 36: 394.

5.1.7.
Jugs with oval walls and applied decoration (*Fig. 39*):

The form is identical to that above, however the jugs have applied trails of glass on the walls or decorative ribbed applied elements on the handle.

Ptuj (gr. 4)
Vrč iz temnega, skoraj črnega stekla, ustje odebeljeno, dno prstanasto, na ročaju gosto narebrena aplika po vsej dolžini.
5.1.7. - viš. 23,2 cm - PMP.
Lit.: Tušek 1993, t. 6: 1.
Ptuj (gr. 759)
Vrč z ovalnim ostenjem in nataljenim okrasom po ostenju, ustje cevasto zavihano navznoter, izvlečena prstanasta noga, ročaj profiliran.
5.1.7. - pr. ustja 4,6 cm - LMJ 2399.
Lit.: Istenič 2000, t. 170: 4.

Primerjave: nepoznane.

Komentar za obliki 5.1.6. in 5.1.7.:
Med drugim in četrtim stoletjem so bili v uporabi vrči z ovalnim in kroglastim ostenjem različnih oblik. Od zgodnejših izdelkov jih ločijo predvsem razlike v izdelavi ustja in dna, pa tudi način krašenja. Ustje je pogosto izvihano in zataljeno ali zavihano navznoter, vratovi so krajši in nekoliko konkavni, dno ima pogosto prstanasto nogo. Ročaji so zelo pogosto trakasti ali profilirani z odebelitvijo na straneh. Gornji del ročaja, ki je navadno pritrjen na ustje vrča, ima oblikovano oporo za palec. Le-ta ni več oblikovana kot zanka, ampak stisnjena v ploščico, ki izstopa iz ročaja.

Vrči z ovalnim ostenjem so izdelani najpogosteje iz modro-zelenkastega stekla, pojavljajo pa se tudi vrči iz obarvanega stekla, kakršen je npr. ptujski (Tušek 1993, t. 6: 1). Vratovi teh posod so konkavni in enakomerno prehajajo v ostenje, po velikosti pa presegajo vrče s kroglastim ostenjem in so na pogled elegantnejši. Oblika in njene različice so v uporabi skozi 2. in 3. stoletje, kasneje pa njihova uporaba zamre in prevladajo druge oblike (Cool, Price 1995, 134).

Vrč iz groba v Trebnjem je del grobne celote iz 2. ali začetka 3. stoletja (Slabe 1993, 17). Vrč z nataljenim okrasom iz zahodne petovionske nekropole je iz groba iz konca 1. in prve polovice 2. stoletja (Istenič 2000, 244), vrč, ki ga krasi še horizontalno narebrena aplika na ročaju pa sodi glede na grobno celoto v 2. stoletje (Tušek 1993, 407).

5.1.8.
Kroglasti enoročajni vrči z nataljenim okrasom (*sl. 39*):

Posode s kroglastim ostenjem, ustje izvihano in zataljeno, pod njim prilepljena nit stekla, noga prstanasta. Trakast ročaj pritrjen na rame in pod ustje. Po vratu ponekod nataljena steklena nit ali celo girlanda.

Datacija: 3. - 4. st.

Date: 2nd century

Ptuj (gr. 4)
Jug of dark, almost black glass, rim thickened, ring base, on the handle densely ribbed applied elements along the entire length.
5.1.7. - ht. 23.2 cm - PMP.
Lit.: Tušek 1993, Pl. 6:1.
Ptuj (gr. 759)
Jug with oval walls with applied decoration, tubular rim curved inwards, drawn out ring base, profiled handle.
5.1.7. - dia. rim 4.6 cm - LMJ 2399.
Lit.: Istenič 2000, Pl. 170: 4.

Analogies: none identified.

Comments - forms 5.1.6. to 5.1.7.:
Jugs with oval and globular bodies of various forms were in use between the 2nd and the 4th centuries. They are distinguished from the earlier products primarily in terms of differences of the rim and base, as well as the manner of decoration. The rim is often everted and rounded or bent inwards, the necks are shorter and somewhat concave, and the base often has a ring base. The handles are very frequently banded or profiled with thickenings on the sides. The upper part of the handle, which is usually attached to the rim of the jug, features a thumb rest. The latter is no longer formed as a loop, but is rather pressed into a small flat surface that protrudes from the handle.

Oval jugs were most often made of blue-green glass, but jugs also appear of coloured glass, such as the example from Ptuj (Tušek 1993, Pl. 6: 1). The necks of these vessels are concave and merge regularly into the walls, in size they exceed the jugs with spherical walls, and they appear more elegant. These jugs were in use throughout the 2nd and 3rd centuries, while other forms predominated later (Cool, Price 1995, 134).

The jug from Trebnje was found in a grave from the 2nd or the beginning of the 3rd centuries (Slabe 1993, 17). The jug with applied decoration from the western cemetery of Poetovio was from a grave from the end of the 1st and first half of the 2nd centuries (Istenič 2000, 244), while the jug decorated with horizontal ribbed element on the handle is dated to the 2nd century (Tušek 1993, 407).

5.1.8.
Globular single handled jugs with applied decoration (*Fig. 39*):

Vessels with a globular body, the rim everted and fire-rounded, a trail of glass applied beneath, ring base. The ribbon handle is attached to the shoulder and under the rim. A glass trail or even garland occasionally applied to the neck.

Date: 3rd - 4th centuries

Brezje nad Zrečami (gr. 31)
Vrč iz zelenkastega stekla, na vratu rob, prstanasta noga, rebrast ročaj.
5.1.8. - viš. 13,5 cm - PMM A 1702.
Lit.: Pahič 1969a, t. 7: 1.
Ptuj (gr. 595)
Enoročajni vrč z izvlečeno prstanasto nogo, profiliranim ročajem in girlandasto apliko na vratu.
5.1.8. - pr. ustja 5, 3 cm - LMJ 2263.
Lit.: Istenič 2000, t. 127: 2.
Ptuj (gr. 595)
Enoročajni vrč z izvlečeno prstanasto nogo, profiliranim ročajem in girlandasto apliko na vratu.
5.1.8. - pr. ustja 5, 9 cm - LMJ 2262.
Lit.: Istenič 2000, t. 127: 2.
Ptuj (PN)
Kroglast vrč z odebeljenim ustjem ročaj trakast, dno manjka.
5.1.8. - viš. 12 cm - PMP 3494.
Lit.: Mikl Curk 1976, t. 2: 10.
Ptuj (PN)
Vrč z izvihanim ustjem in prstanasto nogo, ročaj manjka.
5.1.8. - viš. 18,7 cm - PMP 3461.
Lit.: Mikl Curk 1976, t. 2: 11.
Ptuj (PN)
Vrč z izvihanim in odebeljenim ustjem, ročaj profiliran, dno manjka.
5.1.8. - viš. 16 cm - PMP 3474.
Lit.: Mikl Curk 1976, t. 2: 8.
Ptuj (PN)
Vrč iz zelenkastega stekla, ustje izvihano, dno prstanasto, ročaj manjka.
5.1.8. - viš. 18,4 cm - PMP R 11180.
Lit.: Šubic 1976, t. 4: 38.
Ptuj (PN)
Vrč iz zelenkastega stekla, ustje izvihano, dno prstanasto, ročaj narebren, sega preko ustja.
5.1.8. - PMP R 12096.
Lit. Šubic 1976, sl. 5.
Ptuj (PN)
Vrček iz zeleno rumenkastega stekla, ročaj trakast, dno prstanasto.
5.1.8. - viš. 7 cm - PMP.
Lit.: Vomer Gojkovič 1996, t. 21: 20.

Primerjave: Barkóczi 1988, Taf. 47: 469; 49: 477; Biaggio Simona 1991, Tav. 42: 176.2.217; Follmann-Schulz 1988, Taf. 23: 196, 197; Fremersdorf, Polónyi-Fremersdorf 1984, No. 164-167; Goethert-Polaschek 1977, Taf. 15: 169a; 20: 208d; 23: 258c.

5.1.9.
Kroglasti vrči z nataljenim okrasom in narebrenim ostenjem (*sl. 39*):

Posode z izvihanim, odebeljenim ustjem, noga prstanasta, trakast ročaj prilepljen na rame in ustje. Po vratu nataljena steklena nit, spodnji del posode je pihan v kalup in poševno narebren.

Datacija: druga polovica 3. - 4. st.

Brezje nad Zrečami (gr. 31)
Jug of green glass, ring base, ribbed handle.
5.1.8. - ht. 13.5 cm - PMM A 1702.
Lit.: Pahič 1969, Pl. 7: 1.
Ptuj (gr. 595)
Single handled jug with a drawn our ring base, profiled handle, and a garland-like applied element on the neck.
5.1.8. - dia. rim 5.3 cm - LMJ 2263.
Lit.: Istenič 2000, Pl.127: 2.
Ptuj (gr. 595)
Single handled jug with a drawn our ring base, profiled handle, and a garland-like applied element on the neck.
5.1.8. - dia. rim 5.9 cm - LMJ 2262.
Lit.: Istenič 2000, Pl. 127: 2.
Ptuj (IF)
Spherical jug with a thickened rim, ribbon handle, base missing.
5.1.8. - ht. 12 cm - PMP 3494.
Lit.: Mikl Curk 1976, Pl. 2: 10.
Ptuj (IF)
Jug with an everted rim and ring base, handle missing.
5.1.8. - ht. 18.7 cm - PMP 3461.
Lit.: Mikl Curk 1976, Pl. 2: 11.
Ptuj (IF)
Jug with an everted and thickened rim, profiled handle, base missing.
5.1.8. - ht. 16 cm - PMP 3474.
Lit.: Mikl Curk 1976, Pl. 2: 8.
Ptuj (IF)
Jug of green glass, everted rim, ring base, handle missing.
5.1.8. - ht. 18.4 cm - PMP R 11180.
Lit.: Šubic 1976, Pl. 4: 38.
Ptuj (IF)
Jug of green glass, everted rim, ring base, handle ribbed and extending above the rim.
5.1.8. - PMP R 12096.
Lit. Šubic 1976, Fig. 5.
Ptuj (IF)
Small jug of yellow-green glass, ribbon handle, ring base.
5.1.8. - ht. 7 cm - PMP.
Lit.: Vomer Gojkovič 1996, Pl. 21: 20.

Analogies: Barkóczi 1988, Pl. 47: 469; 49: 477; Biaggio Simona 1991, Pl. 42: 176.2.217; Follmann-Schulz 1988, Pl. 23: 196, 197; Fremersdorf 1984, No. 164-167; Goethert-Polaschek 1977, Pl. 15: 169a; 20: 208d; 23: 258c.

5.1.9.
Globular jugs with applied decoration and ribbed walls (*Fig. 39*):

Vessels with an everted and thickened rim, ring base, and ribbon handle attached to the shoulder and rim. Glass trails applied to the neck. The lower part of the vessel was optic-blown and is obliquely ribbed.

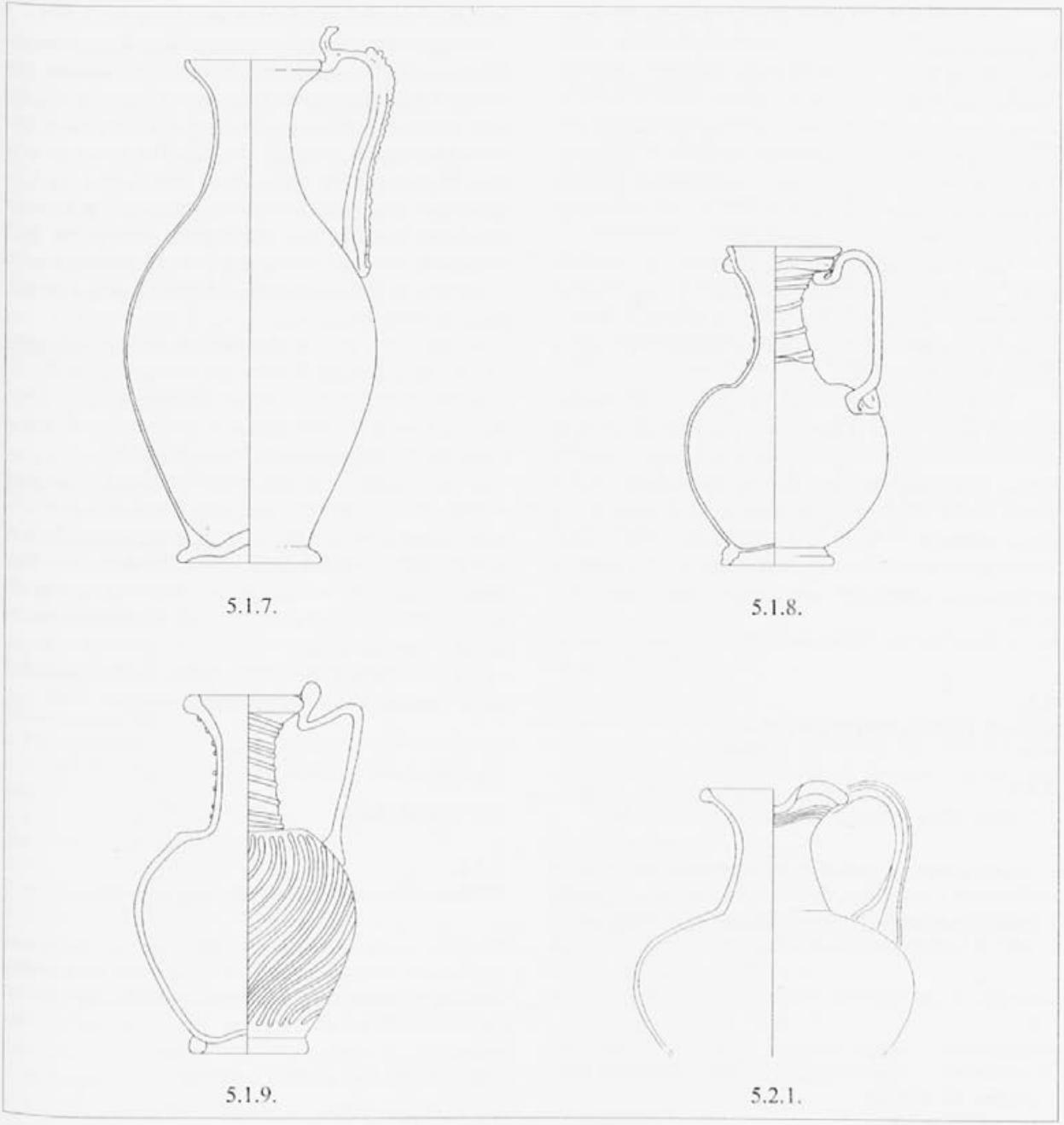
Date: second half of the 3rd - 4th centuries

Ptuj (PN)
Vrč z izvihanim odebeljenim ustjem, noga prstanasta, ročaj trakast. Ostenje poševno narebreno.
5.1.9. - viš. 16,8 cm - PMP 14655.
Lit.: Kujundžić 1982, t. 31: 22.

Primerjave: Šaranović-Svetek 1986, t. 5: 2; 6: 2, 3; Barkóczi 1988, Taf. 47: 467; 55: 492, 493, 496a; Follmann-Schulz 1988, Taf. 23: 199; Cool, Price 1995, Fig. 8.11: 1161.

Ptuj (IF)
Jug with an everted thickened rim, ring base, ribbon handle. The walls obliquely ribbed.
5.1.9. - ht. 16.8 cm - PMP 14655.
Lit.: Kujundžić 1982, Pl. 31: 22.

Analogies: Šaranović-Svetek 1986, Pl. 5: 2; 6: 2, 3; Barkóczi 1988, Pl. 47: 467; 55: 492, 493, 496a; Follmann-Schulz 1988, Pl. 23: 199; Cool, Price 1995, Fig. 8.11: 1161.



Sl. 39: Skupina 5 - vrči (5.1.7.: Tušek 1993, t. 6: 1; 5.1.8.: Vomer Gojkovič 1996, t. 21: 20; 5.1.9.: Kujundžić 1982, t. 31: 22; 5.2.1.: Kolšek 1972, 152: 80). M. = 1:3.

Fig. 39: Group 5 - jugs (5.1.7.: Tušek 1993, Pl. 6: 1; 5.1.8.: Vomer Gojkovič 1996, Pl. 21: 20; 5.1.9.: Kujundžić 1982, Pl. 31: 22; 5.2.1.: Kolšek 1972, 152: 80). Scale = 1:3.

Komentar za obliki 5.1.8. in 5.1.9.:
Kroglasti vrči se prav tako kot obliki 5.1.6. in 5.1.7. pojavljajo že od drugega stoletja dalje. Njihove značilnosti v izdelavi ustja in dna so enake kot pri ovalnih vrčih, le da vrat prehaja v ostenje bolj ostro. Prstanasto nogo pri mlajših izdelkih tvorita dve niti, nataljeni ena na drugo (Vomer Gojkovič 1996, T. 21: 20).

Izvihano in navzven nagnjeno ustje ima pod robom ponekod prilepljeno stekleno nit, kar je posebej značilno pri izdelkih 4. stoletja (Cool, Price 1995, 134).

Nataljene niti so najbolj pogost okras na teh vrčih, ki lahko krasijo samo vrat, ostenje ali posodo v celoti. Pojavljajo se že od 2. stoletja dalje. Nekateri imajo po ostenju tudi poševna rebra (Kujundžić 1982, t. 31: 22). Le-ta so nastala s pihanjem ostenja v kalup, nato pa so s sukanjem pipe rebra diagonalno zasukali. S končnim pihanjem je vzorec postal mehkejši in razvlečen. Izjemna sta dva petovionska vrča iz groba 595, ki imata nataljeno nit narezano v girlando (Istenič 2000, t. 127).

Vrči z nataljenim okrasom in rebrastim ostenjem so v Trierju datirani v drugo polovico 3. in v 4. stoletje (Goethert-Polaschek 1977, 204), na najdiščih Velike Britanije pa enaki izdelki izvirajo večinoma iz 4. stoletja (Cool, Price 1995, 136).

Med zbranimi najdbami le tri izvirajo iz ohranjenih grobnih celot. Vrček iz Brezij je del grobne celote, ki je z novcem Avrelijana datirana v drugo polovico 3. stoletja (Pahič 1969, 244). Ptujska vrča sta bila najdena v istem grobu in sta edini pridatek. Isteničeva ponuja dokaj široko datacijo 3. do 5. stoletja (Istenič 2000, 193), vendar glede na izdelavo in sorodne oblike vrča verjetno izvirata iz 3. stoletja (gl. npr. Tomanič Jevremov 1998, št. 15).

5.2.
VRČI Z USTJEM Z IZLIVOM

5.2.1.
Kroglasti vrči z ustjem z izlivom (Is 56a); (*sl. 39*):

Kroglaste posode z izvihanim in odebeljenim ustjem, ki je oblikovano v izliv, dno vboklo ali s stojnim prstanom, izvlečenim iz posode. Trakast ali rebrast ročaj, ki presega ustje, je pritrjen na ramenu in tik pod ustjem.

Datacija: druga polovica 1. st.

Celje (gr. 4)
Gornji del vrča iz modrikastega stekla, ustje odebeljeno, ročaj narebren, dno manjka.
5.2.1. - PMC R 4267.
Lit.: Kolšek 1972, Y 152-5: 80.

Primerjave: Calvi 1969, Taf. 7: 2; Czurda-Ruth 1979, Taf. 8: 1049,1051; Fassold 1985, Abb. 16: 1.

Comments - forms 5.1.8. and 5.1.9.:
Globular jugs, just like the previous two forms (5.1.6. and 5.1.7.), appear as early as the second century onwards. Their characteristics in the formation of the rim and base are identical to that of the oval jugs, only the transition of the neck to the body is sharper. The ring base on later products was formed from two glass coils, applied one on the other (Vomer Gojkovič 1996, Pl. 21: 20).

The everted and out turned rims sometimes have an applied glass trail under the edge, which is characteristic of 4th century products (Cool, Price 1995, 134).

Applied trails are the most common decoration on these jugs (5.1.8.), which can decorate just the neck, the walls, or the entire vessel. They appear from the 2nd century onwards. Some jugs also have oblique ribs on the walls (Kujundžić 1982, Pl. 31: 22). The ribs were created by blowing the walls into a mould, and the ribs were then diagonally twisted by spinning the pipe. In the final blowing, the pattern became softer and stretched. Two jugs from grave 595 at Poetovio are exceptional, as they have applied trails cut into garlands (Istenič 2000, Pl. 127).

Jugs with applied decoration and ribbed walls (5.1.9.) were dated at Trier to the second half of the 3rd and the 4th centuries (Goethert-Polaschek 1977, 204), while at sites in Great Britain such products mostly come from the 4th century (Cool, Price 1995, 136).

Only three of the gathered finds come from preserved graves. The small jug from Brezje was part of a grave dated by a coin of Aurelian to the second half of the 3rd century (Pahič 1969, 244). The jugs from Ptuj were found in the same grave and were the only grave goods. Istenič offered a fairly broad dating from the 3rd to the 5th centuries (Istenič 2000, 193), although in terms of the manufacture and similar forms, the jugs probably came from the 3rd century (Tomanič Jevremov 1998, 15).

5.2.
SPOUTED JUGS

5.2.1.
Globular jugs with a spout (Is 56a); (*Fig. 39*):

Globular vessels with an everted and thickened rim formed into a spout, the base concave or with a drawn out standing ring. The ribbon or ribbed handle was attached to the shoulder and just under the rim.

Date: second half of the 1st century

Celje (gr. 4)
Upper part of a jug of bluish glass, the rim thickened, handle ribbed, base missing.
5.2.1. - PMC R 4267.
Lit.: Kolšek 1972, Y 152-5: 80.

Komentar:
Elegantni kroglasti vrči s presegajočim ročajem in deteljasto oblikovanim ustjem z izlivom, posnemajo grško *oinochoe* in so služili za serviranje pijač. Oblika se v več različicah ohrani v uporabi skozi daljši čas.

Zgodnejši vrči imajo nekoliko širši vrat, dno običajno vboklo ali oblikovano v stojni prstan, izvlečen iz ostenja, izliv je zaokrožen in deteljasto oblikovan, ponekod je vrh izliva rahlo zavihan navzgor. Izdelali so ga tako, da so rob ustja z dveh strani potisnili skupaj.

Prvotno so pojav oblike postavljali v flavijsko obdobje na osnovi najdb iz Italije - Este (Isings 1957, 74). Najdbe s Štalenske gore (odlomki vrčev iz jantarno rjavega in modrega stekla, Czurda-Ruth 1979, Taf. 16: 1049, 1051) pa kažejo, da so jih verjetno izdelovali že v prvi polovici 1. stoletja (Czurda-Ruth 1979, 142). V uporabi ostanejo do zgodnjega 3. stoletja (Cool, Price 1995, 131). Primerjave v Emoni poznamo v grobovih 906, 1028 (Petru 1972, t. 66: 1; 81: 6) in 326 (Plesničar Gec 1972, t. 84: 26). V mlajših obdobjih jih zamenjajo izdelki nekoliko drugačnih oblik, npr. 5.2.3. in 5.2.4.

Vrč iz Celeje je del grobne celote iz flavijskega obdobja (Kolšek 1972, Y 52: 2).

5.2.2.
Vrči z ustjem z izlivom in vtisnjenimi večbarvnimi lisami na ostenju (*sl. 40*):

Posode z izvihanim in zataljenim ustjem, oblikovanim v izliv, dno v sredini vboklo, trakast ročaj prilepljen na rame in vrat. Po ostenju nataljene in vtisnjene v podlago kaplje drugobarvnega stekla.

Datacija: 1. st.

Dobova (gr. A 39)
Vrč iz zelenkastega stekla, ustje izvihano, dno vboklo, ročaj narebren. Po ostenju vtisnjene rumene, rdeče in rjave lise stekla.
5.2.2. - viš. 8 cm - PMB.
Lit.: Petru P. 1969, t. 11: 1.

Primerjave: Fassold 1985, Abb. 13: 2; Biaggio Simona 1991, Tav. 41: 176.2.019.

Komentar:
Vrč je po obliki soroden prejšnji različici, a ga časovno opredeljuje predvsem značilen okras raznobarvnih steklenih lis po ostenju. Največja koncentracija izdelkov z okrasom pisanih kapelj je opazna v severni Italiji in sosednjih pokrajinah, čeprav so znane najdbe tudi z mediteranskega in egejskega območja (Whitehouse 1997, 207; Harden *et al.* 1988, 102).

Grose ugotavlja, da sodijo ti izdelki med najzgodnejše pihano steklo in so verjetno posnemali posodje iz mozaičnega stekla (Grose 1984, 45). Njihova proizvod-

Analogies: Calvi 1969, Pl. 7: 2; Czurda-Ruth 1979, Pl. 8: 1049, 1051; Fassold 1985, Fig. 16: 1.

Comments:
The elegant spherical jugs with an extending handle and a trefoil shaped rim with a spout imitate the Greek *oinochoe* form, and were used to serve drinks. The form remained in use throughout a long period with several variants.

The earlier jugs have a somewhat broader neck, the base was usually concave or drawn out from the walls into a standing ring, the rim was rounded and trefoil shaped, and sometimes the top of the rim was slightly turned upwards. It was made by pressing the edges of the rim together from two sides.

Originally the appearance of this form was placed in the Flavian period on the basis of the finds from Italy - from Este (Isings 1957, 74). The finds from Magdalensberg (fragments of jugs of amber brown and blue glass; Czurda-Ruth 1979, Pl. 16: 1049, 1051) show that they were probably manufactured as early as the first half of the 1st century (Czurda-Ruth 1979, 142). They remained in use to the early 3rd century (Cool, Price 1995, 131). Examples from Emona are known from graves 906, 1028 (Petru 1972, Pl. 66: 1; 81: 6), and 326 (Plesničar Gec 1972, Pl. 84: 26). In later periods they were replaced by products of a somewhat different form, e.g. forms 5.2.3. and 5.3.4.

The jug from Celeia is part of a grave from the Flavian period (Kolšek 1972, Y 52: 2)

5.2.2.
Spouted jugs with impressed multicoloured spots on the walls (*Fig. 40*):

Vessels with an everted and fire-rounded rim formed into a spout, the base concave in the center, the ribbon handle attached to the shoulder and neck. Applied and marvered blobs of multicoloured glass on the walls.

Date: 1st century

Dobova (gr. A 39)
Jug of green glass, rim everted, base concave, handle ribbed. Marvered yellow, red, and brown spots of glass.
5.2.2. - ht. 8 cm - PMB.
Lit.: Petru P. 1969, Pl. 11: 1.

Analogies: Fassold 1985, Fig. 13: 2; Biaggio Simona 1991, Pl. 41: 176.2.019.

Comments:
The jug is related in shape to the previous variants, and it is dated primarily on the basis of the characteristic decoration of multicoloured spots on the walls. The greatest concentration of products with a decoration of variegated glass blobs was noted for northern Italy and

nja naj bi se pričela že na začetku 1. stoletja, dosegla vrh okrog leta 50 in trajala do sedemdesetih let 1. stoletja (Biaggio Simona 1991, 238). Izdelki z enakim okrasom so znani med drugim tudi v Emoni (Petru 1972, t. 16: 6; 18: 15; 104: 16; Plesničar Gec 1972, t. 218: 1).

Grob iz Dobove, v katerem je bil najden vrček z nataljenim okrasom pisanih kapelj, sodi po grobni celoti v drugo četrtino 1. stoletja oziroma bolj verjetno v sredino 1. stoletja (Petru P. 1969, 36).

5.2.3.
Vrči z ustjem z izlivom in nalepljenimi nitmi po ostenju (Is 88b); (*sl. 40*):

Kroglaste posode z močno izvihanim in odebeljenim ustjem, oblikovanim v izliv, dno v sredini vboklo. Trakast ročaj pritrjen na rame in ustje, zgoraj se zaključi z razširitvijo. Po ostenju posode nataljena steklena nit.

Datacija: sredina 2. - prva polovica 3. st.

Ptuj (GN)
Enoročajni vrč s kroglastim ostenjem, ustje z izlivom, po ostenju nalepljena steklena nit, dno vboklo.
5.2.3. - ZVKDMb.
Lit.: Tušek 1985, sl. 67.

Primerjave: Welker 1974, 102-16a; Fassold 1985, Abb. 16: 1.

5.2.4.
Vrči z ustjem z izlivom in rebrom na ramenu (var. Is 53); (*sl. 40*):

Kroglaste posode z izvihanim in odebeljenim ustjem oblikovanim v izliv, noga prstanasta. Trakast ročaj pritrjen na rame in ustje, kjer se razširi v ščitnik za palec. Na ramenu rebro.

Datacija: 3. st.

Ptuj (gr. 672)
Vrč z ustjem z izlivom, na ramenu rebro, ročaj trakast in presegajoč.
5.2.4. - viš. 10 cm - LMJ.
Lit.: Šubic 1976, t. 3: 22.

Primerjave: Fremersdorf, Polónyi-Fremersdorf 1984, No. 185.

Komentar za obliki 5.2.3. in 5.2.4.:
Gre za mlajšo različico vrčev z izlivom, ki so v uporabi že od 1. stoletja dalje (Isings 1957, 56). Ročaj je postavljen nasproti izliva ali pravokotno nanj, ob ustju ima navadno oblikovan ploščat disk oziroma izrastek, ki služi kot ščitnik ali opora za palec. Dno je pri obliki 5.2.3. ravno in v sredini vboklo, pri obliki 5.2.4. pa se

neighboring regions, although finds are also known from the Mediterranean and Aegean areas (Whitehouse 1997, 207; Harden *et al.* 1988, 102).

Grose established that these products were among the earliest blown glass, and that they probably imitated vessels of mosaic glass (Grose 1984, 45). Their production would have begun as early as the beginning of the 1st century, reached its peak around the year AD 50, and extended through the seventh decade of the 1st century (Biaggio Simona 1991, 238). Products with identical decoration are known from Emona (Petru 1972, Pl. 16: 6; 18: 15; 104: 16; Plesničar Gec 1972, Pl. 218: 1)

The grave from Dobova where the small jug with marvered decoration of multicoloured blobs was found is dated to the second quarter of the 1st century, or more likely to the middle of the 1st century (Petru P. 1969, 36).

5.2.3.
Spouted jugs with applied trails on the walls (Is 88b); (*Fig. 40*):

Globular vessels with a highly everted and thickened rim shaped into a spout, the base concave in the center. The ribbon handle was attached to the shoulder and rim, ending above in a broadened section. Applied glass trails on the walls.

Date: middle of the 2nd - first half of the 3rd centuries

Ptuj (TF)
Single handled jug with a globular body, rim with a spout, applied glass trails on the walls, base concave.
5.2.3. - ZVKD Mb.
Lit.: Tušek 1985, Fig. 67.

Analogies: Welker 1974, 102 - 16a; Fassold 1985, Fig. 16: 1.

5.2.4.
Spouted jugs with a rib on the shoulder (var. Is 53); (*Fig. 40*):

Globular vessels with an everted and thickened rim formed into a spout, ring base. The ribbon handle was attached to the shoulder and rim, where it spread into a thumb rest. A rib on the shoulder.

Date: 3rd century

Ptuj (gr. 672)
Jug with a spout, a rib on the shoulder, extending ribbon handle.
5.2.4. - ht. 10 cm - LMJ.
Lit.: Šubic 1976, Pl. 3: 22.

Analogies: Fremersdorf, Polónyi-Fremersdorf 1984, No. 185.

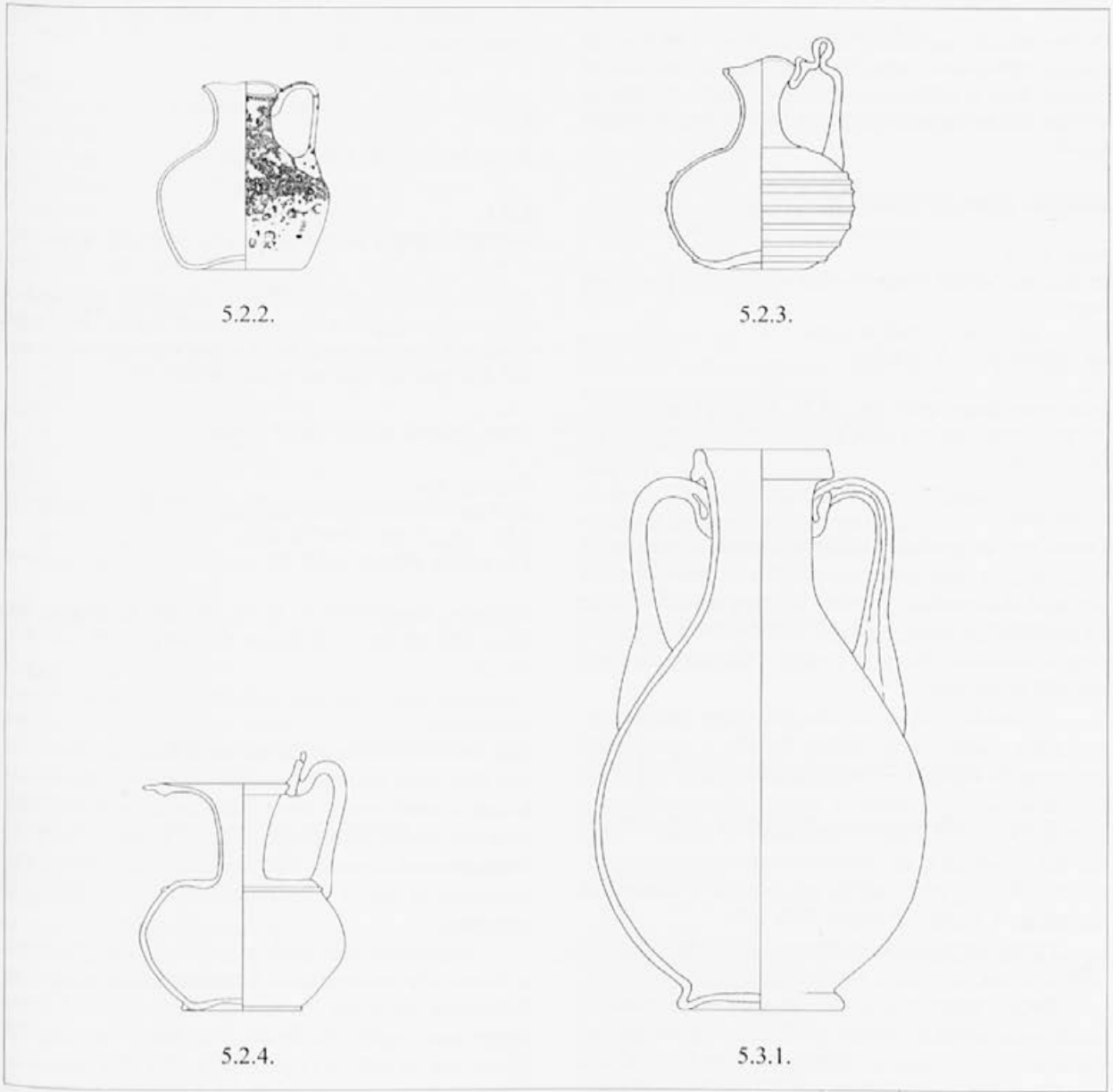
pogosto zaključi s prstanasto nogo. Obliko 5.2.4. opredeljuje značilno nataljeno rebro na ramenu, ki se pojavlja tudi pri nekaterih različicah steklenic (Isings 53 - 1957, 71).

Od 2. stoletja dalje se na teh vrčih pojavljajo različne kombinacije okrasov nataljenih steklenih niti in rebrasto ostenje, poznani že na prejšnjih oblikah. Pri mlajših vrčih je izliv koničasto povlečen iz ustja, ki je ponekod nekoliko dvignjeno. Te oblike so pogoste v drugi polovici 2. in v 3. stoletju (Cool, Price 1995, 130).

Vrči z nataljenim okrasom (5.2.3.) se v datiranih celotah pojavljajo od sredine 2. stoletja in še v prvi

Comments - forms 5.2.3. and 5.2.4.:
This was a later variant of the jugs with a spout, which was in use from the 1st century onwards (Isings 1957, 56). The handle was placed opposite the spout or perpendicularly to it, and next to the rim usually had a flat disc or protrusion, which served as a thumb rest or guard. The base was flat in form 5.2.3. and concave in the center, while in form 5.2.4. it often concludes in a ring base. Form 5.3.4. is classified primarily by the characteristic applied rib on the shoulder, which also appears on several variants of bottles (Isings 52 - 1957, 71).

From the 2nd century onwards, various combina-



Sl. 40: Skupina 5 - vrči (5.2.2.: Petru P. 1969, t. 11: 1; 5.2.3.: Tušek 1985, sl. 67), 5.2.4.: Šubic 1976, t. 3: 22; 5.3.1.: Kolšek 1972, 152: 82). M. = 1:3.

Fig. 40: Group 5 - jugs (5.2.2.: Petru P. 1969, Pl. 11: 1; 5.2.3.: Tušek 1985, sl. 67), 5.2.4.: Šubic 1976, Pl. 3: 22; 5.3.1.: Kolšek 1972, 152: 82). Scale = 1:3.

polovici 3. stoletja (Fremersdorf, Polónyi-Fremersdorf 1984, 81; Fassold 1985, 223).

Vrč oblike 5.2.3. izhaja iz grobne celote datirane v 2.-3. stoletje (Tušek 1985, 242), drugo obliko (5.2.4.) iz groba 672 pa lahko datiramo na osnovi primerjav v 3. stoletje (Fremersdorf, Polónyi-Fremersdorf 1984, 81).

5.3.
DVOROČAJNI VRČI

5.3.1.
Dvoročajni vrči z ovalnim ostenjem (Is 15); (*sl. 40*):

Ovalne posode, vrat skoraj ravno prehaja v zataljeno ali trikotno oblikovano ustje, izvihano navzven, navzdol in navzgor. Dno je oblikovano v prstanasto nogo, izvlečeno iz ostenja. Dva ročaja sta pritrjena na rame in na vrat tik pod ustjem.

Datacija: druga polovica 1. st.

Celje (gr. 4)
Ovalni vrč z dvema ročajema, dno oblikovano v prstanasto nogo.
5.3.1. - viš. 25 cm - PMC R 4283.
Lit.: Kolšek 1972, Y 152-5: 82.

Primerjave: Berger 1960, Taf. 20: 79, 80; Calvi 1969, Taf. 1: 79; Rütti 1988, Taf. 23: 1624; Biaggio Simona 1991, Tav. 44: 003; 45:111.

Komentar:
Dvoročajni vrč posnema obliko amfore, zato ga nekateri poimenujejo tudi amforisk. Oblika je znana tudi v kovinski in keramični izvedbi. Stekleni izdelki te vrste so razširjeni po vsem imperiju. Telo je navadno ovalno, ustje je značilno trikotno v profilu - izvihano navzven, navzdol in navzgor.

Amforiske so izdelovali iz večbarvnega, obarvanega in naravno obarvanega stekla. Izdelki z nataljenimi večbarvnimi kapljami so najzgodnejši. Izdelovati so jih pričeli nekje v prvi polovici 1. stoletja (med leti 20-50); (Grose 1975, 42). Posebej popularna je oblika v tretji četrtini 1. stoletja in se ohrani v uporabi vse do konca 1. stoletja. Redko so ti izdelki poznani še v kontekstih zgodnjega 2. stoletja (Welker 1974, 69).

Primerjave tej obliki poznamo tudi v Emoni, v grobu 1080 iz druge polovice 1. stoletja (Petru 1972, t. 87: 16).

Dvoročajni vrč iz Celeje je izdelan iz naravno obarvanega stekla in izredno tanko pihan, je del grobne celote datirane v flavijsko obdobje (Kolšek 1972, Y 152: 2).

tions of decoration known from the previous forms also appear on these jugs, such as applied glass trails and ribbed walls. On the later jugs, the spout was conically pulled from the rim, which was sometimes somewhat raised. These forms were common in the second half of the 2nd and in the 3rd centuries (Cool, Price 1995, 130).

Jugs with applied decoration (5.2.3.) appear in dated contexts from the middle of the 2nd century and even in the first half of the 3rd century (Fremersdorf, Polónyi-Fremersdorf 1984, 81; Fassold 1985, 223).

The jug of form 5.2.3. comes from a grave dated to the 2nd-3rd centuries (Tušek 1985, 242), while the other form (5.2.4.) from grave 672 can be dated on the basis of comparisons to the 3rd century (Fremersdorf, Polónyi-Fremersdorf 1984, 81).

5.3.
JUGS WITH TWO HANDLES

5.3.1.
Two handled jug with oval body (Is 15); (*Fig. 40*):

Oval vessels, the neck almost directly extends into the rounded or triangular rim, bent outwards, down, and up. Ring base drawn out from the walls. Two handles were attached to the shoulder and the neck, just under the rim.

Date: second half of the 1st century

Celje (gr. 4)
Oval jug with two handles, ring base.
5.3.1. - ht. 25 cm - PMC R 4283.
Lit.: Kolšek 1972, Y 152-5: 82.

Analogies: Berger 1960, Pl. 20: 79, 80; Calvi 1969, Pl. 1: 79; Rütti 1988, Pl. 23: 1624; Biaggio Simona 1991, Pl. 44: 003; 45:111.

Comments:
The two-handled jug imitated the form of an amphora, and thus some also call it *amphoriskos*. The form is also known in metal and pottery. Glass products of this type were distributed throughout the entire Empire. The body is usually oval (convex), and the rim is characteristically triangular in profile - bent outwards, downwards, and upwards.

Amphorisks were made of multicoloured, coloured, and naturally coloured glass. Examples with applied multicoloured drops are the earliest. Production of them began sometime in the first half of the 1st century, between AD 20 and 50 (Grose 1974, 42). The form was particularly popular in the third quarter of the 1st century, and it remained in use up to the end of the 1st century. These products are only rarely known in contexts from the early 2nd century (Welker 1974, 69).

This form is also known from Emona, found in

SKUPINA 6 - STEKLENICE
(*sl. 41-45; pril. 2, 3*)

6.2.
STEKLENICE BREZ ROČAJEV

6.2.1.
Kroglaste steklenice z brušenimi pasovi na ostenju (Is 16); (*sl. 41*):

Trup kroglast, ustje zapognjeno navzdol, dno ravno, na ostenju pasovi horizontalnih brušenih linij.

Datacija: 1. st.

Celje (gr. 4)
Del ostenja in vrat kroglaste steklenice s pasovi brušenih linij po ostenju.
6.2.1. - viš. 11,6 cm - PMC R 4287.
Lit.: Kolšek 1972, Y 152: 84.
Ptuj (PN)
Ostenje in del vratu kroglaste steklenice s pasovi brušenih linij na ostenju, dno ravno.
6.2.1. - viš. 10 cm - PMP 1254.
Lit.: Mikl Curk 1976, t. 1: 14.

Primerjave: Czurda-Ruth 1979, Taf. 7: 978; Rütti 1988, Taf. 19: 1320.

6.2.2.
Kroglaste steklenice z izvihanim ustjem (*sl. 41*):

Trup okrogel, ustje izvihano, dno ravno ali rahlo vboklo.

Datacija: 1. st.

Celje (gr. 4)
Steklenica s kroglastim trupom, ustje izvihano in okrašeno z nataljeno modro nitjo, dno ravno.
6.2.2. - viš. 21 cm; najv. obseg 16 cm - PMC R 4279.
Lit.: Kolšek 1972, Y 152: 81.
Ptuj (gr. 314)
Ostenje kroglaste steklenice, dno rahlo vboklo.
6.2.2. - viš. 8,3 cm - PMP 15936.
Lit.: Kujundžić 1982, t. 23: 24.
Ptuj (PN)
Ostenje in del vratu kroglaste steklenice, dno rahlo vboklo.
6.2.2. - viš. 9,4 cm - PMP R 1251.
Lit.: Mikl Curk 1976, t. 1: 13.

Primerjave: Barkóczi 1988, Taf. 24: 290-94.

Komentar za obliki 6.2.1. in 6.2.2.:
Steklenice s kroglastim ostenjem 6.2.1. so po obliki podobne balzamarijem Isings 26, vendar jih od njih loči predvsem višina. Ustje steklenic je zapognjeno navzdol

grave 1080 from the second half of the 1st century (Petru 1972, Pl. 87:16).

The two-handled jug from Celeia was made of naturally coloured glass and was exceptionally thinly blown. It was found in a grave dated to the Flavian period (Kolšek 1972, Y 152: 2).

GROUP 6 - BOTTLES
(*Fig. 41-45; Appendices 2, 3*)

6.2.
BOTTLES WITHOUT HANDLES

6.2.1.
Globular bottles with wheel-cut bands on the walls (Is 16); (*Fig. 41*):

Globular body, rim bent downward, flat base, bands of horizontal wheel-cut lines on the walls.

Date: 1st century

Celje (gr. 4)
Part of the walls and neck of a spherical bottle with bands of wheel-cut lines on the walls.
6.2.1. - ht. 11.6 cm - PMC R 4287.
Lit.: Kolšek 1972, Y 152: 84.
Ptuj (IF)
Walls and part of the neck of a spherical bottle with bands of wheel-cut lines on the walls, flat base.
6.2.1. - ht. 10 cm - PMP 1254.
Lit.: Mikl Curk 1976, Pl. 1: 14.

Analogies: Czurda-Ruth 1979, Pl. 7: 978; Rütti 1988, Pl. 19: 1320.

6.2.2.
Globular bottles with an everted rim (*Fig. 41*):

Globular body, everted rim, base flat or slightly concave.

Date: 1st century

Celje (gr. 4)
Bottle with a globular body, the rim everted and decorated with an applied blue trail, base flat.
6.2.2. - ht. 21 cm; greatest circ. 16 cm - PMC R 4279.
Lit.: Kolšek 1972, Y 152: 81.
Ptuj (gr. 314)
Walls of a spherical bottle, base slightly concave.
6.2.2. - ht. 8.3 cm - PMP 15936.
Lit.: Kujundžić 1982, Pl. 23: 24.
Ptuj (IF)
Walls and part of the neck of a spherical bottle, base slightly concave.

in nato navzgor, pod vratom je včasih rahla zajeda, ostenje pa krasijo plitve horizontalne brušene linije.

Isingsova te steklenice umešča že v prvo četrtino 1. stoletja (1957, 34). Najdbe s Štalenske gore pa kažejo še zgodnejšo datacijo, saj jih umeščajo že na konec 1. st. pr. n. š., medtem ko je večina najdb iz tiberijsko-klavdijskega obdobja (Czurda-Ruth 1979, 126).

Obe steklenici različice 6.2.1. sta le delno ohranjeni, celjska najdba pa je iz grobne celote datirane v flavijsko obdobje (Kolšek 1972, Y 152).

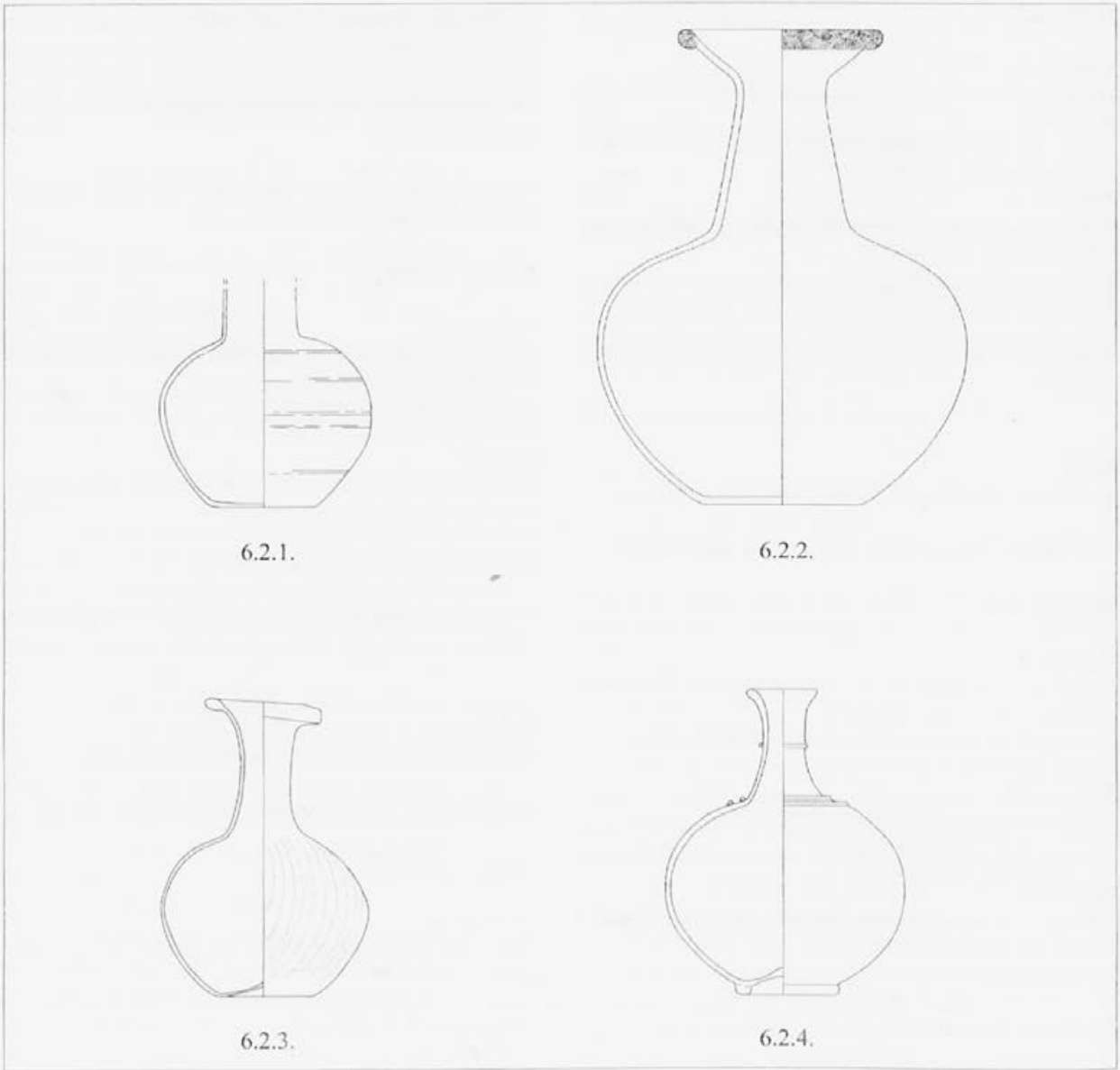
Tudi različica 6.2.2. izhaja iz groba v Celju, ki sodi v drugo polovico 1. stoletja (Kolšek 1972, Y 152), ptujski grob 314 pa ima poleg delno ohranjene steklenice

6.2.2. - ht. 9.4 cm - PMP R 1251.
Lit.: Mikl Curk 1976, Pl. 1: 13.

Analogies: Barkóczi 1988, Pl. 24: 290-94.

Comments - forms 6.2.1. and 6.2.2.:
Bottles with spherical walls (6.2.1.) are similar in form to the balsamaria type Isings 26, although they are distinguished from them in terms of height. The rim of the bottles is bent downwards and then up, occasionally there is a slight constriction under the neck, and the walls are decorated with shallow horizontal wheel-cut lines.

Isings placed these bottles in the first quarter of



Sl. 41: Skupina 6 - steklenice (6.2.1.: Mikl Curk 1976, t. 1: 14; 6.2.2.: Kolšek 1972, 152: 81; 6.2.3.: Mikl Curk 1976, t. 2: 7; 6.2.4.: Kujundžić 1982, t. 20: 9). M. = 1:3.

Fig. 41: Group 6 - bottles (6.2.1.: Mikl Curk 1976, Pl. 1: 14; 6.2.2.: Kolšek 1972, 152: 81; 6.2.3.: Mikl Curk 1976, Pl. 2: 7; 6.2.4.: Kujundžić 1982, Pl. 20: 9). Scale = 1:3.

priložen samo še žebelj in ga ne moremo točneje datirati (Kujundžić 1982, t. 23: 23, 24).

6.2.3.
Kroglaste steklenice z ostenjem pihanim v kalup (Is 101); (*sl. 41*):

Kroglast trup, ostenje pihano v enostaven rebrast kalup, ustje izvihano in odebeljeno, dno na sredini rahlo vboklo.

Datacija: konec 3. - 4. st.

Ptuj (gr. 9)
Steklenica s kroglastim, v kalup pihanim trupom, ustje izvihano in odebeljeno, noga prstanasta.
6.2.3. - viš. 15, 4 cm; pr. ustja 5 cm - ZVKD Mb.
Lit.: Tušek 1997, t. 4: 7.
Ptuj (gr. 41)
Steklenička s kroglastim, v kalup pihanim trupom, ustje izvihano in odebeljeno, dno vboklo.
6.2.3. - viš. 16,4 cm - PMP.
Lit.: Vomer Gojkovič 1997, t. 4: 2.
Ptuj (PN)
Steklenica s kroglastim, v rebrast kalup pihanim trupom, ustje izvihano in odebeljeno, dno ravno, na sredi vboklo.
6.2.3. - viš. 13,1 cm - PMP 3422.
Lit.: Mikl Curk 1976, t. 2: 7.
Ptuj (PN)
Steklenica s kroglastim, v rebrast kalup pihanim trupom, dno ravno, v sredini vboklo.
6.2.3. - viš. 9,9 cm - PMP 3472.
Lit.: Mikl Curk 1976, t. 2: 9.
Ptuj (PN)
Kroglast trup steklenice s stiliziranim žlebljenim okrasom, dno na sredini vboklo.
6.2.3. - viš. 8,4 cm - PMP 16533.
Lit.: Kujundžić 1982, t. 31: 20.

Primerjave: Damevski 1976, t. 13: 4; Barkóczi 1988, Taf. 24: 297; 29: 324.

Komentar:
Steklenice s plitvim žlebljenim okrasom niso tako pogoste kot posode z nataljenim okrasom. Optično pihan okras (najprej pihano v kalup in nato dopihano ter sukano na steklarski pipi) srečamo razen na steklenicah tudi na vrčih in nekaterih čašah.

Okras se ne pojavlja na zgodnjih izdelkih, najbolj razširjen je v 4. stoletju, tehnika pa se nadaljuje še v zgodnjesrednjeveškem obdobju, ko na ta način krasijo predvsem številne čaše (izdelki frankovske in merovinške dobe - Cabart, Feyeux 1995, 75, Fig. 43).

Najdbe iz Velike Britanije se pojavljajo v kontekstih poznega 3. in v 4. stoletju (Cool, Price 1995, 136). Na nemških najdiščih so steklenice s tem okrasom datirane v zadnja desetletja 4. in v zgodnje 5. stoletje (Haberey 1942, 263), najdbe iz Madžarske pa v 4. stoletje (Barkóczi 1988, 139).

the 1st century (1957, 34). The finds from Magdalensberg indicate even earlier date, which would assign them as early as the end of the 1st century BC, however most of the finds are from the Tiberian-Claudian period (Czurda-Ruth 1979, 126).

Both bottles of variant 6.2.1. are only partly preserved; the find from Celje comes from a grave dated to the Flavian period (Kolšek 1972, Y 152).

Variant 6.2.2. also comes from a grave in Celje, dated to the second half of the 1st century (Kolšek 1972, Y 152), while grave 314 from Ptuj contained only a nail in addition to the partly preserved bottle and cannot be more exactly dated (Kujundžić 1982, t. 23: 23, 24).

6.2.3.
Globular bottle with mould-blown body (Is 101); (*Fig. 41*):

Globular body, walls blown into a simple ribbed mould, the rim everted and thickened, the base slightly concave in the center.

Date: end of the 3rd - 4th centuries

Ptuj (gr. 9)
Bottle with a globular mould-blown body, the rim everted and thickened, ring base.
6.2.3. - ht. 15.4 cm; dia. rim 5 cm - ZVKD Mb.
Lit.: Tušek 1997, Pl. 4: 7.
Ptuj (gr. 41)
Bottle with a globular mould-blown body, the rim everted and thickened, base concave.
6.2.3. - ht. 16.4 cm - PMP.
Lit.: Vomer Gojkovič 1997, Pl. 4: 2.
Ptuj (IF)
Bottle with a globular body blown into a ribbed mould, the rim everted and thickened, the base flat and concave in the center.
6.2.3. - ht. 13.1 cm - PMP 3422.
Lit.: Mikl Curk 1976, Pl. 2: 7.
Ptuj (IF)
Bottle with a globular body blown into a ribbed mould, flat base, concave in the center.
6.2.3. - ht. 9.9 cm - PMP 3472.
Lit.: Mikl Curk 1976, Pl. 2: 9.
Ptuj (IF)
Globular bottle with a stylized ribbed decoration, the base concave in the center.
6.2.3. - ht. 8.4 cm - PMP 16533.
Lit.: Kujundžić 1982, Pl. 31: 20.

Analogies: Damevski 1976, Pl. 13: 4; Barkóczi 1988, Pl. 24: 297; 29: 324.

Comments:
Bottles with shallow ribbed decoration are not as common as vessels with applied decoration. The optic-blown decoration (first blown into a mould and then again free

Dve steklenički iz Petovione sta iz ohranjenih grobnih celot, ena je z novcem datirana v drugo polovico 4. stoletja (Tušek 1997, 293), grob iz Rabelčje vasi - Dijaški dom pa tudi sodi v 4. stoletje (Vomer Gojkovič 1996, 312). Ostale stekleničke so posamične najdbe in jih lahko datiramo le tipološko.

6.2.4.
Kroglaste steklenice z okrasom niti (*sl. 41*):

Kroglast trup, ustje ravno ali rahlo izvihano, zataljeno ali odebeljeno, dno ravno ali prstanasto, nataljena nit na vratu in ramenu enojna ali v več pasovih.

Datacija: druga polovica 2. - 3. st.

Ptuj (gr. 1)
Stekleničkа s kroglastim trupom, ustje izvihano in odebeljeno, dno ravno, okrog vratu ovita steklena nit.
6.2.4. - viš. 7,2 cm; najv. obseg 5,3 cm - PMP.
Lit.: Šubic 1972, Y 137: 9.
Ptuj (gr. 1)
Kroglasta steklenica, ustje rahlo izvihano in odebeljeno, dno ravno, na sredi vboklo, nit na vratu in ramenu.
6.2.4. - viš. 11,2 cm; najv. obseg 9,2 cm - PMP 11309.
Lit.: Šubic 1972, Y 137: 11.
Ptuj (gr. 132)
Kroglasta steklenica, ustje ravno in zataljeno, dno prstanasto, nit na vratu in ramenu.
6.2.4. - viš. 11,4 cm; najv. obseg 9,2 cm - PMP 14873.
Lit.: Kujundžić 1982, t. 12: 1.
Ptuj (gr. 255)
Kroglasta steklenica, ustje izvihano in zataljeno, dno prstanasto, nit na vratu in dve niti na ramenu.
6.2.4. - viš. 13,5 cm; najv. obseg 10 cm - PMP 15617.
Lit.: Kujundžić 1982, t. 20: 9.
Ptuj (gr. 785)
Kroglasta steklenica s prstanasto nogo, na ramenu nataljena nit, ustje manjka.
6.2.4. - viš. 10 cm - LMJ 2171.
Lit. Istenič 2000, t. 177: 11.
Drnovo (PN)
Kroglasta steklenica, ustje izvihano in zataljeno, dno prstanasto, nit na spodnjem delu vratu in ramenu, nad dnom rebro na ostenju.
6.2.4. - viš. 12,7 cm - NMS R 706.
Lit.: Petru, Petru 1978, t. 25: 2.

Primerjave: Goethert-Polaschek 1977, Taf. 59: 898; Fremersdorf, Polónyi-Fremersdorf 1984, Abb. 105; Barkóczi 1988, Taf. 25: 303-305.

blown and sometimes twisted on a glass blower's pipe) can be found on jugs and some beakers as well as bottles.

This decoration does not appear on early products, rather it is most widespread in the 4th century, and the technique continued even in the early medieval period, when it was used to decorate numerous beakers (Frankish and Merovingian periods - Cabart, Feyeux 1995, 75, Fig. 43).

The finds from Great Britain appear in the context of the late 3rd and 4th centuries (Cool, Price 1995, 136). At German sites, bottles with such decoration are dated to the last decades of the 4th and the early 5th centuries (Haberey 1942, 263), while the Hungarian finds are classified to the 4th century (Barkóczi 1988, 139).

Two of the bottles from Poetovio are from preserved graves, one with a coin dated to the second half of the 4th century (Tušek 1997, 293), and grave 41 from the Ptuj site of Rabelčja vas - Student Dormitory was also from the 4th century (Vomer Gojkovič 1996, 312). The other bottles were isolated finds and they can only be dated typologically.

6.2.4.
Globular bottles with trailed decoration (*Fig. 41*):

Globular body, the rim straight or slightly everted, rounded or thickened, flat or ring base, applied trails on the neck and shoulder in single or multiple bands.

Date: second half of the 2nd - 3rd centuries

Ptuj (gr. 1)
Bottle with a globular body, rim everted and thickened, base flat, a glass trail wound around the neck.
6.2.4. - ht. 7.2 cm; greatest circ. 5.3 cm - PMP.
Lit.: Mikl Curk 1972, Y 137: 9.
Ptuj (gr. 1)
Spherical bottle, rim slightly everted and thickened, base flat, concave in the center, glass trail on the neck and shoulder.
6.2.4. - ht. 11.2 cm; greatest circ. 9.2 cm - PMP 11309.
Lit.: Mikl Curk 1972, Y 137: 11.
Ptuj (gr. 132)
Spherical bottle, rim straight and rounded, ring base, glass trail on the neck and shoulder.
6.2.4. - ht. 11.4 cm; greatest circ. 9.2 cm - PMP 14873.
Lit.: Kujundžić 1982, Pl. 12: 1.
Ptuj (gr. 255)
Spherical bottle, rim everted and rounded, ring base, glass trail on the neck and two on the shoulder.
6.2.4. - ht. 13.5 cm; greatest circ. 10 cm - PMP 15617.
Lit.: Kujundžić 1982, Pl. 20: 9.
Ptuj (gr. 785)
Spherical bottle with a ring base, applied trail on the shoulder, rim missing.
6.2.4. - ht. 10 cm - LMJ 2171.
Lit. Istenič, Pl. 177: 11.

6.2.5.
Bikonične steklenice z okrasom niti (*sl. 42*):

Trup bikoničen, ustje nagnjeno navzven in zataljeno, noga prstanasta, okrog vratu nataljena nit v eni ali več linijah.

Datacija: druga polovica 2. - 3. st.

Ptuj (PN)
Steklenica, ustje odebeljeno, noga prstanasta, na vratu ovita nit v več pasovih.
6.2.5. - viš. 13 cm; najv. obseg 9,4 cm - PMP 1253.
Lit.: Mikl Curk 1976, t. 2: 6.
Ptuj (PN)
Steklenica z bikoničnim trupom, ustje izvihano in odebeljeno, dno prstanasto, okrog vratu ovita nit.
6.2.5. - viš. 13, 5 cm; najv. obseg 7,1 cm - PMP 1248.
Lit.: Mikl Curk 1976, t. 1: 9.

Primerjave: Hayes 1975, Fig. 6: 201; Fremersdorf, Polónyi-Fremersdorf 1984, Abb. 111; Barkóczi 1988, Taf. 31: 344, 345.

Komentar za obliki 6.2.4. in 6.2.5.:
Med drugim in četrtim stoletjem so v uporabi steklenice kroglaste ali ovalne oblike, ki se med seboj ločijo predvsem po načinu izdelave ustja ali dna, za lažjo časovno opredelitev pa je pogosto pomemben tudi način okrasa. Okras nataljenih niti se na steklenih izdelkih pojavlja od konca 1. stoletja, najbolj pa je priljubljen v 2. in 3. stoletju. Na steklenicah in vrčih je okras niti ponekod omejen le na vrat, drugje je okrašeno ostenje ali pa posoda v celoti.

Kroglaste steklenice z nataljenimi nitmi in rebrom na vratu (6.2.4.) so po okrasu blizu enoročajnim vrčem z rebrom na ramenu, ki so v uporabi od konca 1. in v prvi polovici 2. stoletja (Isings 1957, 53; Welker 1974, 89). V detajlih izdelave obeh ptujskih steklenic pa opazimo značilnosti, ki kažejo na mlajši nastanek teh oblik. Ustje je zataljeno in rahlo nagnjeno navzven, na dno je prilepljena nit, ki tvori nizko prstanasto nogo. Tudi glede na primerjave z drugih evropskih najdišč lahko vidimo, da gre za izdelke, pogoste v drugi polovici 2. in v 3. stoletju (Barkóczi 1988, 141; Fremersdorf, Polónyi-Fremersdorf 1984, 42).

Grobni celoti s Ptuja bi po pridatkih lahko postavili v drugo polovico 2. stoletja (Kujundžić 1982, 12-14).

Bikoničnim oblikam (6.2.5.) najdemo nekoliko manj primerjav, najbližje so na Madžarskem in v Nemčiji, nekaj celo v daljni Tripolitaniji (Price 1985, 80). Med luksuzne izdelke te oblike sodijo posode z nataljenim okrasom niti, ki so priljubljene v začetku 3. stoletja in navadno izdelane iz brezbarvnega stekla (Barkóczi 1988, 154, No. 344).

Pri nas zbrane steklenice ne izvirajo iz grobnih celot, vendar bi glede na primerjave sodile v drugo polovico 2. in v 3. stoletje.

Drnovo (IF)
Spherical bottle, rim everted and rounded, ring base, trail on the lower part of the neck and the shoulder, a rib on the walls above the base.
6.2.4. - ht. 12.7 cm - NMS R 706.
Lit.: Petru, Petru 1978, Pl. 25: 2.

Analogies: Goethert-Polaschek 1977, Pl. 59: 898; Fremersdorf, Polónyi-Fremersdorf 1984, Fig. 105; Barkóczi 1988, Pl. 25: 303-305.

6.2.5.
Biconical bottles with trailed decoration (*Fig. 42*):

Biconical body, rim bent outwards and fire-rounded, ring base, around the neck an applied trail in one or more lines.

Date: second half of the 2nd - 3rd centuries

Ptuj (IF)
Bottle, thickened rim, ring base, a trail applied around the neck in several bands.
6.2.5. - ht. 13 cm; greatest circ. 9.4 cm - PMP 1253.
Lit.: Mikl Curk 1976, Pl. 2: 6.
Ptuj (IF)
Bottle with a biconical body, rim everted and thickened, ring base, trail applied around the neck.
6.2.5. - ht. 13.5 cm; greatest circ. 7.1 cm - PMP 1248.
Lit.: Mikl Curk 1976, Pl. 1: 9.

Analogies: Hayes 1975, Fig. 6: 201; Fremersdorf, Polónyi-Fremersdorf 1984, Fig. 111; Barkóczi 1988, Pl. 31: 344, 345.

Comments - forms 6.2.4. and 6.2.5.:
Spherical and oval bottles were in use between the second and fourth centuries. They can be distinguished primarily according to the manner of forming the rim or the base. The decoration is also frequently important for easier chronological classification. Decoration with glass trails appeared on glass products from the end of the 1st century, and was most popular in the 2nd and 3rd centuries. The decoration is sometimes limited to the neck on bottles and jugs, and otherwise the walls or even the entire vessel could be decorated.

Globular bottles with applied trails and a rib on the neck (6.2.4.) are close in decoration to the single handled jugs with a rib on the shoulder, which were in use from the end of the 1st and in the first half of the 2nd centuries (Isings 1957, 53; Welker 1974, 89). The details of the manufacture of both bottles from Ptuj show characteristics pointing to a later creation of this form. The rim is fire-rounded and slightly out turned, while a glass coil was attached to the base, creating a low ring foot. In comparison with other European sites, it can also be seen that these products were common in the second half of the 2nd and the 3rd centuries (Barkóczi 1988, 141; Fremersdorf, Polónyi-Fremersdorf 1984, 42).

6.2.6.
Kroglaste steklenice z zajedo pod vratom (Is 103); (*sl. 42*):

Stekleničke s kroglastim trupom, prehod med vratom in ostenjem loči zajeda, ustje ravno odrezano in obrušeno, dno vboklo.

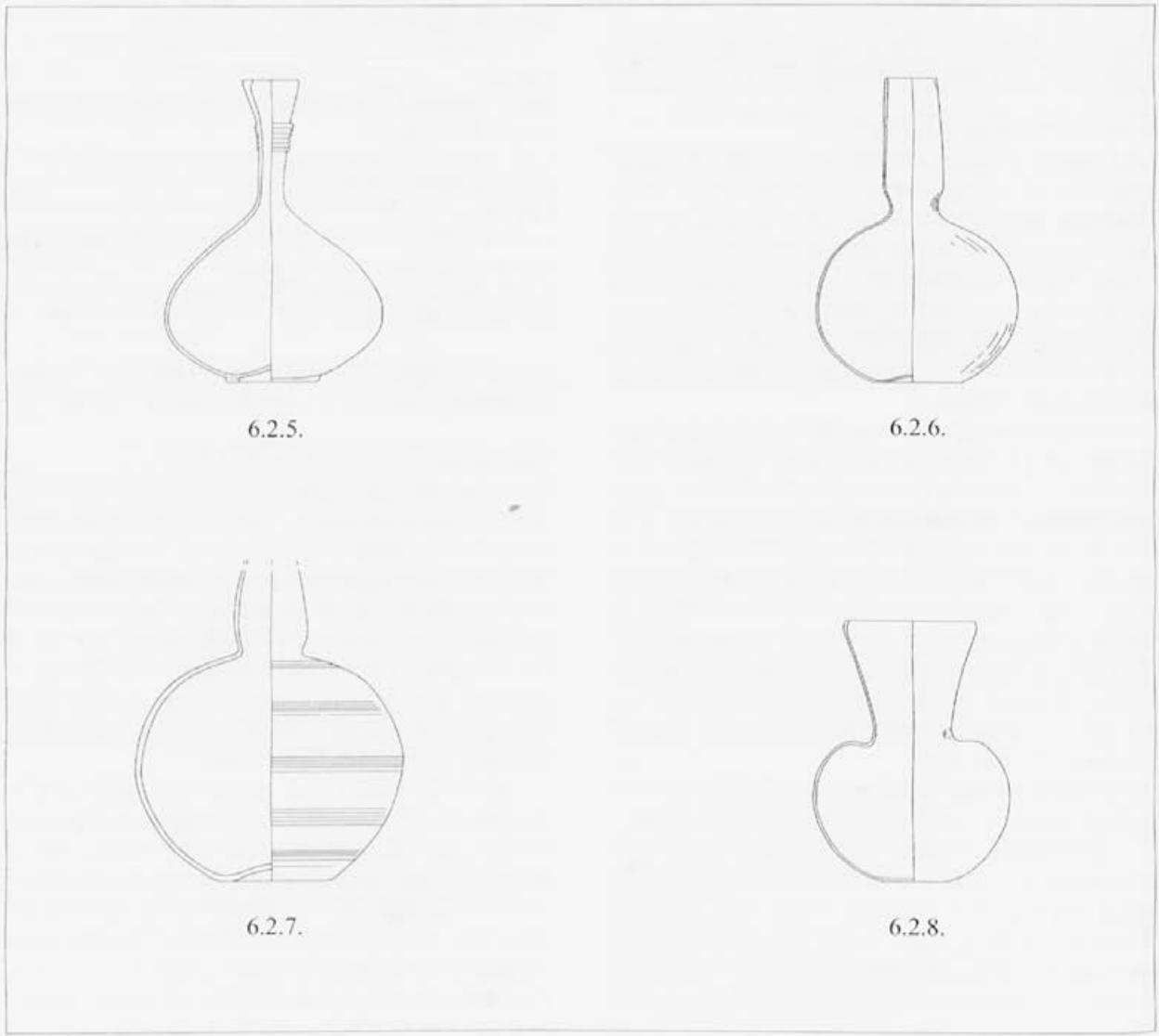
Datacija: druga polovica 3. - prva polovica 4. st.

Celje (gr. 13)
Kroglasta steklenička z zajedo pod vratom, ustje ravno odrezano, dno v sredi rahlo vboklo.
6.2.6. - viš. 13,2 cm; najv. obseg 8,3 cm - PMC R 342.
Lit.: Bolta 1957, sl. 6.

The graves from Ptuj could be dated on the basis of the grave goods to the second half of the 2nd century (Kujundžić 1982, 12-14).

Somewhat fewer comparisons have been found for the biconical form (6.2.5.), the closest are in Hungary and Germany, while some are known even from distant Tripolitania (Price 1985, 80). Luxurious forms of these biconical bottles include vessels with an applied snake-thread decoration, which was popular at the beginning of the 3rd century and was usually made of colourless glass (Barkóczi 1988, 154, No. 344).

The bottles collected from Slovenian sites do not come from graves, but nonetheless in terms of comparative material, they can be dated to the second half of the 2nd and the 3rd centuries.



Sl. 42: Skupina 6 - steklenice (6.2.5.: Mikl Curk 1976, t. 2: 6; 6.2.6.: Lazar 1997a, t. 1: 5; 6.2.7.: Mikl Curk 1976, t. 1: 12; 6.2.8.: Lazar 1997a, t. 1: 6). M. = 1:3.

Fig. 42: Group 6 - bottles (6.2.5.: Mikl Curk 1976, Pl. 2: 6; 6.2.6.: Lazar 1997a, Pl. 1: 5; 6.2.7.: Mikl Curk 1976, Pl. 1: 12; 6.2.8.: Lazar 1997a, Pl. 1: 6). Scale = 1:3.

Celje (gr. 13)
Kroglasta steklenička z zajedo pod vratom, ustje poškodovano, dno v sredini rahlo vboklo.
6.2.6. - viš. 12 cm - PMC R 343.
Lit.: Bolta 1957, sl. 7.
Ptuj (PN)
Steklenica s kroglastim trupom, pod vratom zajeda, dno na sredini rahlo vboklo.
6.2.6. - viš. 12,5 cm; najv. obseg 10,3 cm - PMP 1258.
Lit.: Mikl Curk 1976, t. 1: 15.
Ptuj (PN)
Steklenica s kroglastim trupom, pod vratom zajeda, dno v sredini rahlo vboklo.
6.2.6. - viš. 13,4 cm; najv. obseg 11 cm - PMP 1257.
Lit.: Mikl Curk 1976, t. 1: 12.

Primerjave: Fremersdorf, Polónyi-Fremersdorf 1984, No. 89-100; Barkóczi 1988, Taf. 26: 311, 313; 27: 317, 318.

6.2.7.
Kroglaste steklenice z zajedo pod vratom in brušenim okrasom (Is 103); (*sl. 42*):

Steklenice s kroglastim trupom, prehod med vratom in ostenjem je zajeden, ustje ravno odrezano in obrušeno, dno vboklo. Ostenje krasijo pasovi brušenih horizontalnih linij.

Datacija: druga polovica 3. - prva polovica 4. st.

Ptuj (gr. 615)
Steklenica s kroglastim trupom iz dekoloriranega stekla, zajeda pod vratom, horizontalne brušene kanelure na vratu in ostenju, okras brušenih krogov po ostenju.
6.2.7. - pr. ustja 2,2 cm - LMJ 2533.
Lit.: Istenič 2000, t 134: 6.
Ptuj (gr.)
Steklenica s kroglastim trupom, pod vratom zajeda, po ostenju in vratu pasovi brušenih linij.
6.2.7. - ZVKDMb.
Lit.: Tušek 1985, sl. 67.
Ptuj (PN)
Steklenica s kroglastim trupom, pod vratom zajeda, dno na sredini rahlo vboklo.
6.2.7. - viš. 12,5 cm; najv. obseg 10,3 cm - PMP 1258.
Lit.: Mikl Curk 1976, t. 1: 15.
Ptuj (PN)
Steklenica s kroglastim trupom, pod vratom zajeda, dno v sredini rahlo vboklo.
6.2.7. - viš. 13,4 cm; najv. obseg 11 cm - PMP 1257.
Lit.: Mikl Curk 1976, t. 1: 12.

Primerjave: Goethert-Polaschek 1977, Taf. 58: 913; Fremersdorf, Polónyi-Fremersdorf 1984, Abb. 89-100; Barkóczi 1988, Taf. 26: 314; Follmann-Schulz 1988, Taf. 7: 86, 87; 8: 89.

Komentar za obliki 6.2.6. in 6.2.7.:
Stekleničke z izrazito zajedo na prehodu iz ostenja v vrat so razširjena in značilna oblika pozno rimske dobe. Izdelane so iz naravno obarvanega ali brezbarvnega

6.2.6.
Globular bottles with a constriction beneath the neck (Is 103); (*Fig. 42*):

Bottle with a globular body, the transition between the neck and the walls is separated by a constriction, the rim cut and ground, the base concave.

Date: second half of the 3rd - first half of the 4th centuries

Celje (gr. 13)
Globular bottle with an indentation below the neck, the rim straight cut, the base slightly concave in the center.
6.2.6. - ht. 13.2 cm; greatest circ. 8.3 cm - PMC R 342.
Lit.: Bolta 1957, Fig. 6.
Celje (gr. 13)
Globular bottle with a constriction below the neck, the rim damaged, the base slightly concave in the center.
6.2.6. - ht. 12 cm - PMC R 343.
Lit.: Bolta 1957, Fig. 7.
Ptuj (IF)
Bottle with a globular body, constriction below the neck, the base slightly concave in the center.
6.2.6. - ht. 12.5 cm; greatest circ. 10.3 cm - PMP 1258.
Lit.: Mikl Curk 1976, Pl. 1: 15.
Ptuj (IF)
Bottle with a globular body, constriction below the neck, the base slightly concave in the center.
6.2.6. - ht. 13.4 cm; greatest circ. 11 cm - PMP 1257.
Lit.: Mikl Curk 1976, Pl. 1: 12.

Analogies: Fremersdorf, Polónyi-Fremersdorf 1984, No. 89-100; Barkóczi 1988, Pl. 26: 311, 313; 27: 317, 318.

6.2.7.
Globular bottles with a constriction on the neck and wheel-cut decoration (Is 103); (*Fig. 42*):

Bottles with a globular body, the transition between the neck and the body is constricted, the rim straight cut and ground, the base concave. The walls are decorated with bands of wheel-cut horizontal lines.

Date: second half of the 3rd - first half of the 4th centuries

Ptuj (gr. 615)
Bottle with a globular body of decoloured glass, constriction under the neck, horizontal wheel-cut lines on the neck and the walls, decoration of circles on the walls.
6.2.7. - dia. rim 2.2 cm - LMJ 2533.
Lit.: Istenič 2000, Pl. 134: 6.
Ptuj (gr.)
Bottle with a globular body, constriction under the neck, wheel-cut lines on the walls and neck.
6.2.7. - ZVKDMb.
Lit.: Tušek 1985, Fig. 67.
Ptuj (IF)
Bottle with a globular body, constriction under the neck, the base slightly concave in the center.

stekla, dolg vrat se proti ustju zoži, ustje je značilno ravno odrezano.

Nekateri kvalitetnejši izdelki (6.2.7.) imajo ostenje okrašeno z brušenimi horizontalnimi pasovi, geometrijskimi okrasi ali figuralnimi motivi, nekatere celo krasijo različni napisi (Harden *et al.* 1988, 208, sl. 116; Fünfschilling 1999, 81, Abb.6).

Najdbe iz grobov v Trierju (oblika 93) so datirane v drugo polovico 3. in prvo polovico 4. stoletja (Goethert-Polaschek 1977, 351), najdbe iz Kölna pa pretežno v drugo polovico 3. stoletja (Fremersdorf, Polónyi-Fremersdorf 1984, 36-39). Nove grobne najdbe z istega najdišča pa kažejo, da tudi tu sega časovni razpon še v prvo polovico 4. stoletja (Friedhoff 1991, 158).

Dve steklenički iz Celeje (6.2.6.) pripadata skromnemu pozno rimskemu grobu iz 4. stoletja (Lazar 1997a, 326), ptujska steklenička z brušenim okrasom krogov in vodoravnih kanelur (6.2.7.) je iz groba iz prve polovice 3. stoletja in verjetno import iz kölnskih delavnic (Istenič 2000, 203), steklenička s pasovi horizontalnih brušenih linij pa pripada grobu, ki ga lahko umestimo na konec 3. stoletja (Tušek 1985, 242).

6.2.8.

Kroglaste steklenice z navzven nagnjenim vratom (Is 104); (*sl. 42*):

Trup steklenice je kroglast, vrat nagnjen navzven, ravno prehaja v ustje, ki je odrezano in obrušeno, dno je v sredini rahlo vboklo ali ravno.

Datacija: druga polovica 3. - 4. st.

Ptuj (gr. 466)
Gornji del stekleničke z navzven nagnjenim vratom.
6.2.8. - viš. 6,3 cm - LMJ 2570.
Lit.: Istenič 2000, t. 95: 8.
Ptuj (gr. 499)
Gornji del stekleničke z navzven nagnjenim vratom.
6.2.8. - pr. ustja 6,6 cm - LMJ 2584.
Lit.: Istenič 2000, t. 105: 4.
Ptuj (gr.)
Steklenica s kroglastim trupom, vrat nagnjen navzven ustje ravno odrezano, dno na sredini vboklo.
6.2.8. - viš. 14, 7 cm; najv. obseg 10,4 cm - PMP 16924.
Lit.: Jevremov 1990, t. 3.
Celje (PN)
Steklenica s kroglastim trupom, vrat nagnjen navzven, ustje ravno odrezano, dno ravno.
6.2.8. - viš. 11 cm; najv. obseg 8 cm - PMP R 404.
Lit.: Lazar 1997a, t. 1: 6.

Primerjave: Goethert-Polaschek 1977, Taf. 62; Fremersdorf, Polónyi-Fremersdorf 1984, Abb. 101-103; Barkóczi 1988, Taf. 26: 308, 308a; Follmann-Schulz 1988, Taf. 29: 243, 244, 247.

6.2.7. - ht. 12.5 cm; greatest circ. 10.3 cm - PMP 1258.
Lit.: Mikl Curk 1976, Pl. 1: 15.
Ptuj (IF)
Bottle with a globular body, constriction under the neck, the base slightly concave in the center.
6.2.7. - ht. 13.4 cm; greatest circ. 11 cm - PMP 1257.
Lit.: Mikl Curk 1976, Pl. 1: 12.

Analogies: Goethert-Polaschek 1977, Pl. 58: 913; Fremersdorf, Polónyi-Fremersdorf 1984, Fig. 89-100; Barkóczi 1988, Pl. 26: 314; Follmann-Schulz 1988, Pl. 7: 86, 87; 8: 89.

Comments - forms 6.2.6. and 6.2.7.:
Bottles with an emphasized constriction at the transition from the neck to the walls are a widespread and characteristic form of the late Roman period. They were made of naturally coloured or colourless glass, the long neck narrowed toward the rim, and the rim was characteristically cut straight.

Several luxurious products (6.2.7.) have walls decorated with wheel-cut horizontal bands, geometric decorations, or figural motifs, and some examples are even decorated with various inscriptions (Harden *et al.* 1988, 208, Fig. 116; Funfschilling 1999, 81, Fig. 6).

The finds from graves at Trier (form 93) are dated to the second half of the 3rd and the first half of the 4th centuries (Goethert-Polaschek 1977, 351), while the finds from Köln were mostly from the second half of the 3rd century (Fremersdorf, Polónyi-Fremersdorf 1984, 36-39). New grave finds from the same site indicate that the chronological range extends into the first half of the 4th century (Friedhoff 1991, 158).

The two bottles from Celeia (6.2.6.) belonged to a modest late Roman grave from the 4th century (Lazar 1997a, 326). The bottle from Ptuj with a wheel-cut decoration of circles and bands (6.2.7.) was from a grave from the first half of the 3rd century (Istenič 2000, 203), while the bottle with bands of horizontal wheel-cut lines belonged to a grave that can be placed at the end of the 3rd century (Tušek 1985, 242).

6.2.8.

Globular bottles with a funnel mouth and neck (Is 104); (*Fig. 42*):

Bottles with globular bodies, the neck turned out, straight transition to the rim, which was cut and ground, the base flat or slightly concave in the center.

Date: second half of the 3rd - 4th century

Ptuj (gr. 466)
Upper part of a bottle with a funnel mouth and neck.
6.2.8. - ht. 6.3 cm - LMJ 2570.
Lit.: Istenič 2000, Pl. 95: 8.
Ptuj (gr. 499)
Upper part of a bottle with a funnel mouth and neck.

Komentar:
Kroglaste stekleničke z navzven nagnjenim vratom, ki z zajedo prehaja iz trupa v vrat, so lahko izdelane iz naravno-obarvanega ali brezbarvnega stekla. Ravno odrezano ustje je značilnost, ki jo prepoznamo na številnih čašah, skodelah in tudi steklenicah v poznorimski dobi. Enostavna steklenička se pojavlja na različnih najdiščih v skoraj enaki izvedbi; ponekod je le ostenje razčlenjeno z gubami, dno pa je ponekod ravno in v sredi vboklo, drugje pa je na dno prilepljena nit, ki tvori prstanasto nogo.

Redko na teh stekleničkah prepoznamo tudi brušen okras, znan je npr. motiv pogrebnega sprevoda s stekleničke iz severne Francije (Harden et al. 1988, 236), nekatere krasijo celo napisi (Fünfschilling 1999, 81, Abb. 5).

Primerjave obliki najdemo na mnogih pozno rimskih grobiščih in med naselbinskimi najdbami. Omenimo naj najdbe iz Kölna (Fremersdorf, Polónyi-Fremersdorf 1984, 40, no. 101-103), datirane v drugo polovico 3. stoletja, Osijeka (Bulat 1976, t. 1: 1), Akvileje (Calvi 1969, t. 23), v Trierju je ta steklenička kot oblika 101 (Form 101 a-c) datirana v 4. stoletje (Goethert-Polaschek 1977, 156, 351).

Stekleničke iz petovionskih grobov so datirane glede na sestavo grobnih celot na konec 3. in v prvo polovico 4. stoletja (Jevremov 1990, 395; Istenič 2000, 151, 163), celjska steklenička pa je posamična najdba s pozno rimskega grobišča, kjer so bili odkriti grobovi iz 4. stoletja (Lazar 1997a, 326).

6.2.9.
Cilindrične steklenice (Is 102); (*sl. 43*):

Ustje izvihano in odebeljeno ali zataljeno, dno vboklo, ostenje cilindrično.

Datacija: 2. - 4. st.

Ptuj (gr. 167)
Steklenica s cilindričnim ostenjem, ustje izvihano in zapognjeno navznoter, dno vboklo, ročaj profiliran.
6.2.9. - pr. ustja 3,6 cm - LMJ 2652.
Lit.: Istenič 2000, t. 36: 3.
Ptuj (gr. 499)
Steklenica s cilindričnim ostenjem, ustje izvihano in zapognjeno navznoter, dno vboklo, ročaj gosto narebren.
6.2.9. - pr. ustja 5,2 cm - LMJ 2355.
Lit.: Istenič 2000, t. 128: 8.
Ptuj (gr.)
Steklenica s cilindričnim ostenjem, ustje izvihano, dno vboklo.
6.2.9. - viš. 16 cm; pr. dna 7,2 cm - PMP R 3462.
Lit.: Šubic 1976, t. 2: 20.
Ptuj (PN)
Steklenica s cilindričnim ostenjem, ustje izvihano in odebeljeno, dno vboklo.

6.2.8. - dia. rim 6.6 cm - LMJ 2584.
Lit.: Istenič 2000, Pl. 105: 4.
Ptuj (gr.)
Bottle with a globular body, the neck angled outward, the rim cut straight, the base concave in the center.
6.2.8. - ht. 14.7 cm; greatest circ. 10.4 cm - PMP 16924.
Lit.: Jevremov 1990, Pl. 3.
Celje (IF)
Bottle with a globular body, the neck angled outward, the rim cut straight, the base flat.
6.2.8. - ht. 11 cm; greatest circ. 8 cm - PMP R 404.
Lit.: Lazar 1997a, Pl. 1: 6.

Analogies: Goethert-Polaschek 1977, Pl. 62; Fremersdorf, Polónyi-Fremersdorf 1984, Fig. 101-103; Barkóczi 1988, Pl. 26: 308, 308a; Follmann-Schulz 1988, Pl. 29: 243, 244, 247.

Comments:
Globular bottles with a funnel mouth and neck and a constriction at the transition from the neck to the walls could be made from naturally coloured or colourless glass. The straight cut rim is a characteristic that can be recognized on numerous beakers, bowls, and also bottles in the late Roman period. Simple bottles appeared at various sites in an almost identical form; sometimes the wall is made with indentations, the base is sometimes flat and concave in the center, and a coil is attached to the base, creating a ring base.

Rarely on such bottles can we also find wheel-cut decoration; a motif is known, for example, of a funerary procession on a bottle from northern France (Harden *et al.* 1988, 236), and some even have inscriptions (Fünfschilling 1999, 81, Fig. 5).

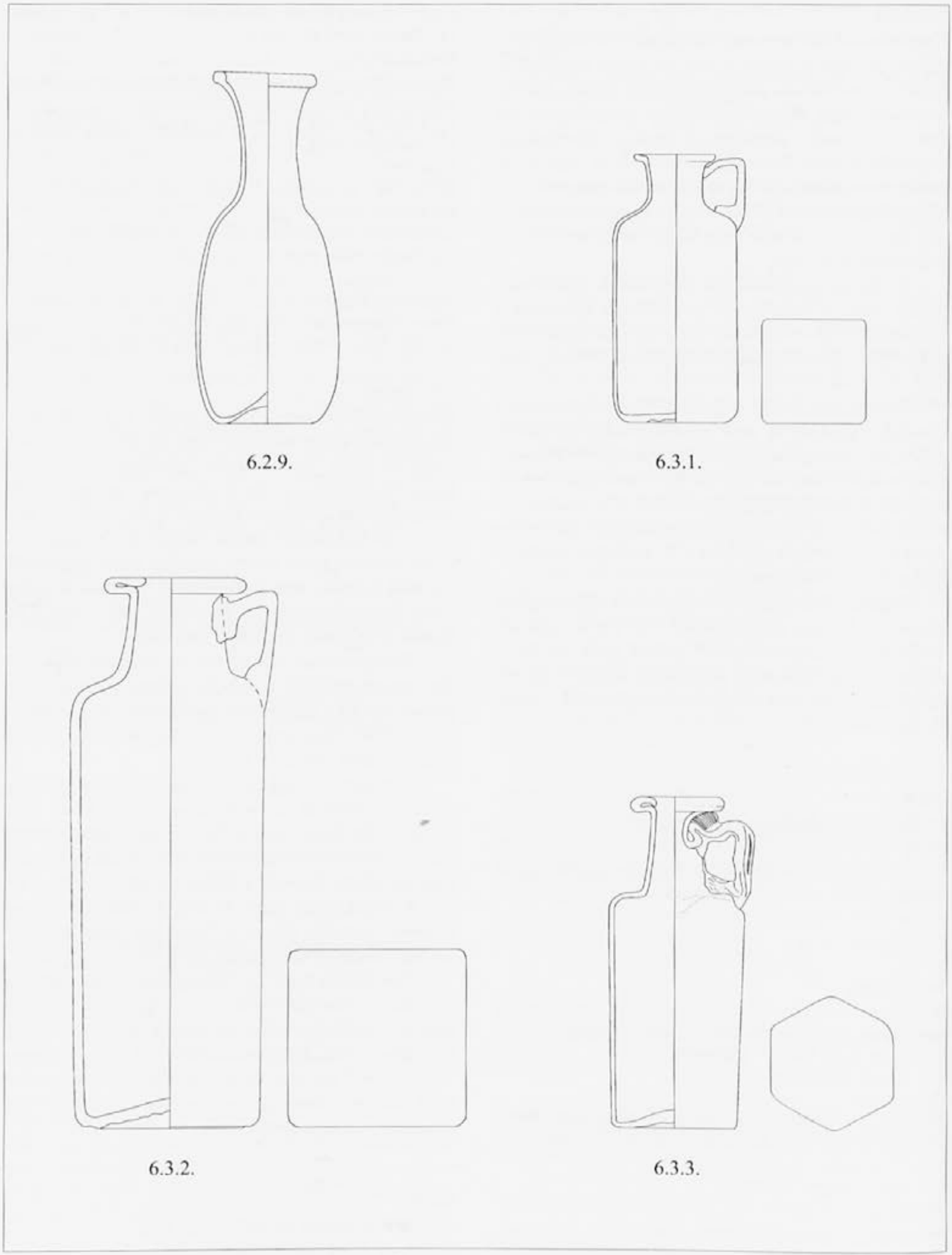
Comparative material can be found at many late Roman cemeteries and among settlement finds. This includes the finds from Köln (Fremersdorf, Polónyi-Fremersdorf 1984, 40, No. 101-103), dated to the second half of the 3rd century, Osijek (Bulat 1976, Pl. 1: 1), and Aquileia (Calvi 1969, Pl. 23). At Trier this type of bottle as form 101 (Form 101 a-c) was dated to the 4th century (Goethert-Polaschek 1977, 156, 351).

The bottles from the Poetovio graves are dated in reference to the composition of the grave goods to the end of the 3rd and the first half of the 4th centuries (Jevremov 1990, 395; Istenič 2000, 151, 163), while the bottle from Celje was an isolated find from a late Roman cemetery where graves from the 4th century were discovered (Lazar 1997a, 326).

6.2.9.
Cylindrical bottles (Is 102); (*Fig. 43*):

The rim everted and thickened or rounded, the base concave, the walls cylindrical.

Date: 2nd - 4th centuries



Sl. 43: Skupina 6 - steklenice (6.2.9.: Mikl Curk 1976, t. 2: 12; 6.3.1.: Petru, Valič 1959, t. 8: 3; 6.3.2.: Pahič 1969, t. 1: 5; 6.3.3.: Vomer Gojkovič 1996, t. 10: 7). M. = 1:3.

Fig. 43: Group 6 - bottles (6.2.9.: Mikl Curk 1976, Pl. 2: 12; 6.3.1.: Petru, Valič 1959, Pl. 8: 3; 6.3.2.: Pahič 1969, Pl. 1: 5; 6.3.3.: Vomer Gojkovič 1996, Pl. 10: 7). Scale = 1:3.

6.2.9. - viš. 12,8 cm; najv. obseg 5,6 cm; PMP R 3485.
Lit.: Mikl Curk 1976, t. 2: 13.
Ptuj (PN)
Steklenica s cilindričnim trupom, ustje izvihano in odebeljeno, dno vboklo.
6.2.9. - viš. 18, 3 cm; najv. obseg 5,6 cm - PMP R 11182.
Lit.: Mikl Curk 1976, t. 2: 12.

Primerjave: Goethert-Polaschek 1977, Taf. 64: 1147-50, 1158; Whitehouse 1997, No. 308, 309.

Komentar:
Cilindrične steklenice imajo ostenje oblikovano v enostavnem kalupu, dno je navadno nekoliko vboklo, izvihano ustje je zataljeno, odebeljeno in pri nekaterih zgodnejših izdelkih celo zapognjeno navznoter in sploščeno.

Primerjave tem steklenicam niso zelo številne, največ jih najdemo na najdiščih vzhodnega Sredozemlja (Stern 1977, 77-80). Najzgodnejši izdelki so datirani na konec 1. stoletja, srečamo pa jih tudi še v sredini 4. stoletja na najdiščih v Izraelu (Whitehouse 1997, 176).

Steklenici iz grobov zahodne petovionske nekropole pripadata grobovom iz 2. (gr. 598) in 3. stoletja (gr. 167; Istenič 2000, 194, 151). Ostale steklenice so posamične najdbe in jih lahko na osnovi oblike in izdelave ustij opredelimo od 2. do 4. stoletja.

6.3.
STEKLENICE Z ROČAJI

6.3.1.
Nizke kvadratne steklenice z ročajem (Is 50a); (*sl. 43*):

Steklenice s kvadratnim trupom, vrat kratek, ustje izvihano in sploščeno, ročaj gosto narebren, rebrast ali trakast, na dnu odtisi geometrijskih ali figuralnih motivov.

Datacija: druga polovica 1. - 2. st.

Bobovek (gr. 1)
Steklenica z ravnim ustjem, rahlo vboklim dnom in rebrastim ročajem.
6.3.1. - viš. 14,8 cm; pr. ustja 2,8 cm - GMK.
Lit.: Petru, Valič 1959, t. 1: 3.
Bobovek (gr. 4)
Steklenica s sploščenim ustjem, rahlo vboklim dnom in gosto narebrenim ročajem. Na dnu odtis rozete.
6.3.1. - viš. 13,9 cm; pr. ustja 3,2 cm - GMK.
Lit.: Petru, Valič 1959, t. 8: 3.
Cerknica (gr. 2)
Deli steklenice, dno vboklo, ročaj gosto narebren.
6.3.2. - najv. obseg 6,2 cm - NMP.
Lit.: Urleb 1984, t. 1: 18.
Cerknica (gr. 10)
Steklenica z rahlo izvihanim in sploščenim ustjem, dno vboklo, ročaj trakast.

Ptuj (gr. 167)
Bottle with cylindrical walls, rim everted and turned inside, base concave, handle profiled.
6.2.9. - dia. rim 3.6 cm - LMJ 2652.
Lit.: Istenič 2000, Pl. 36: 3.
Ptuj (gr. 499)
Bottle with cylindrical walls, rim everted and turned inside, base concave, handle densely ribbed.
6.2.9. - dia. rim 5.2 cm - LMJ 2355.
Lit.: Istenič 2000, Pl. 128: 8.
Ptuj (gr.)
Bottle with cylindrical walls, rim everted, base concave.
6.2.9. - ht. 16 cm; dia. base 7.2 cm - PMP R 3462.
Lit.: Šubic 1976, Pl. 2: 20.
Ptuj (IF)
Bottle with cylindrical walls, rim everted and thickened, base concave.
6.2.9. - ht. 12.8 cm; greatest circ. 5.6 cm; PMP R 3485.
Lit.: Mikl Curk 1976, Pl. 2: 13.
Ptuj (IF)
Bottle with a cylindrical body, rim everted and thickened, base concave.
6.2.9. - ht. 18.3 cm; greatest circ. 5.6 cm - PMP R 11182.
Lit.: Mikl Curk 1976, Pl. 2: 12.

Analogies: Goethert-Polaschek 1977, Pl. 64: 1147-50, 1158; Whitehouse 1997, No. 308, 309.

Comments:
Cylindrical bottles have walls formed in a simple mould, the base is usually somewhat concave, the everted rim is rounded, thickened, and in several earlier examples even turned inwards and flattened.

Comparisons for these bottles are not very numerous, and most can be found at eastern Mediterranean sites (Stern 1977, 77-80). The earliest examples are dated to the end of the 1st century, while they can also be found from the middle of the 4th century at sites in Israel (Whitehouse 1997, 176).

The bottles from the western necropolis of Poetovio came from graves of the 2nd (grave 598) and the 3rd centuries (gr. 167; Istenič 2000, 194, 151). The other bottles were isolated finds and on the basis of the form and manufacture of the rims they can be classified from the 2nd to the 4th centuries.

6.3.
BOTTLES WITH HANDLES

6.3.1.
Low square bottles with a handle (Is 50a); (*Fig. 43*):

Bottles with a square body, the neck short, the rim everted and flattened, the handle reeded, ribbed, or banded, on the base impressions of geometric or figural motifs.

Date: second half of the 1st - 2nd centuries

6.3.1. - viš. 13,4 cm; najv. obseg 4,6 cm - NMP.
Lit.: Urleb 1984, t. 7: 2.
Ptuj (gr. 463)
Steklenica s sploščenim ustjem, gosto narebrenim ročajem in odtisom koncentričnih krogov na dnu.
6.3.1. - pr. ustja 4,5 cm - LMJ 2569.
Lit.: Istenič 2000, t. 94: 3.
Trebnje (gr 111)
Spodnji del steklenice z rahlo vboklim dnom in trakastim ročajem.
6.3.1. - viš. 21,7 cm; pr. dna 10,8 cm - DM R 831.
Lit.: Slabe 1993, t. 17: 6.
Trebnje (gr. 111)
Steklenica s sploščenim ustjem, ravnim dnom in trakastim ročajem.
6.3.1. - viš. 15,3 cm; pr. dna 6,8 cm - DM R 827.
Lit.: Slabe 1993, t. 17: 9.
Drnovo (PN)
Steklenica s sploščenim ustjem, vboklim dnom in trakastim ročajem. Na dnu vtisnjeni koncentrični krogi.
6.3.1. - viš. 16,1 cm; najv. obseg 9,2 cm - NMS R 717.
Lit.: Petru, Petru 1978, t. 25: 14.
Trebnje (PN)
Steklenica s sploščenim ustjem, vboklim dnom in trakastim ročajem.
6.3.1. - viš. 14,2 cm; najv. obseg 6,8 cm - DM.
Lit.: Knez 1969, t. 7: 1.

Primerjave: Berger 1960, Taf. 21: 82, 83; Follmann-Schulz 1988, Taf. 10: 99; 11: 100-102; Biaggio Simona 1991, Tav. 35: 007, 047; 36: 065, 013.

6.3.2.
Visoke kvadratne steklenice z ročajem (Is 50b); (*sl. 43*):

Steklenice z visokim štirikotnim trupom, vrat zelo kratek, ustje izvihano, zavihano in sploščeno, ročaj gosto narebren, na dnu geometrijski vzorci.

Datacija: druga polovica 1. - 2. st.

Miklavž pri Mariboru (GN)
Visoka steklenica s kratkim vratom, sploščenim ustjem, vboklim dnom in gosto narebrenim ročajem. Na dnu odtis rozet in pelte v vogalih.
6.3.2. - viš. 28,7 cm; najv. obseg 9,5 cm - PMM A 2241.
Lit.: Pahič 1969, t. 1: 5.
Ptuj (gr. 463)
Visoka steklenica s sploščenim ustjem, gosto narebrenim ročajem in okrasom romba na dnu.
6.3.2. - pr. ustja 5 cm - LMJ 2568.
Lit.: Istenič 2000, t. 94: 2.
Drnovo (PN)
Visoka steklenica s kratkim vratom, ustje sploščeno, dno ravno, ročaj gosto narebren. Na dnu vtisnjeni koncentrični krogi.
6.3.2. - viš. 20,5 cm; najv. obseg 7,2 cm - NMS R 716.
Lit.: Petru, Petru 1978, t. 25: 13.

Bobovek (gr. 1)
Bottle with a straight rim, a slightly concave base, and a ribbed handle.
6.3.1. - ht. 14.8 cm; dia. rim 2.8 cm - GMK.
Lit.: Petru, Valič 1959, Pl. 1: 3.
Bobovek (gr. 4)
Bottle with a flattened rim, a slightly concave base, and a reeded handle. Impression of a rosette on the base.
6.3.1. - ht. 13.9 cm; dia. rim 3.2 cm - GMK.
Lit.: Petru, Valič 1959, Pl. 8: 3.
Cerknica (gr. 2)
Parts of a bottle, the base concave, the handle reeded.
6.3.2. - greatest circ. 6.2 cm - NMP.
Lit.: Urleb 1984, Pl. 1: 18.
Cerknica (gr. 10)
Bottle with a slightly everted and flattened rim, concave base, ribbon handle.
6.3.1. - ht. 13.4 cm; greatest circ. 4.6 cm - NMP.
Lit.: Urleb 1984, Pl. 7: 2.
Ptuj (gr. 463)
Bottle with a flattened rim, densely ribbed handle, and impressions of concentric circles on the base.
6.3.1. - dia. rim 4.5 cm - LMJ 2569.
Lit.: Istenič 2000, Pl. 94: 3.
Trebnje (gr 111)
Lower part of a bottle with a slightly concave base and ribbon handle.
6.3.1. - ht. 21.7 cm; dia. base 10.8 cm - DM R 831.
Lit.: Slabe 1993, Pl. 17: 6.
Trebnje (gr. 111)
Bottle with a flattened rim, flat base, and ribbon handle.
6.3.1. - ht. 15.3 cm; dia. base 6.8 cm - DM R 827.
Lit.: Slabe 1993, Pl. 17: 9.
Drnovo (IF)
Bottle with a flattened rim, concave base, and ribbon handle. Impressed concentric circles on the base.
6.3.1. - ht. 16.1 cm; greatest circ. 9.2 cm - NMS R 717.
Lit.: Petru, Petru 1978, Pl. 25: 14.
Trebnje (IF)
Bottle with a flattened rim, concave base, and ribbon handle.
6.3.1. - ht. 14.2 cm; greatest circ. 6.8 cm - DM.
Lit.: Knez 1969, Pl. 7: 1.

Analogies: Berger 1960, Pl. 21: 82,83; Follmann-Schulz 1988, Pl. 10: 99; 11: 100-102; Biaggio Simona 1991, Pl. 35: 007, 047; 36: 065, 013.

6.3.2.
Tall square bottles with a handle (Is 50b); (*Fig. 43*):

Bottles with a high square body, the neck very short, the rim everted, bent, and flattened, the handle reeded, geometric patterns on the base.

Date: second half of the 1st - 2nd centuries

Miklavž pri Mariboru (TF)
Tall bottle with a short neck, flattened rim, concave base, and reeded handle. On the base an impression of a rosette and peltae in the corners.

Primerjave: Berger 1960, Taf. 21: 84; Follmann-Schulz 1988, Taf. 13: 116; Biaggio Simona 1991, Tav. 35: 007, 047; 36: 065, 013.

6.3.3.
Mnogokotne steklenice z ročajem (*sl. 43*):

Steklenice z mnogokotnim ostenjem, ustje izvihano in sploščeno, ročaj gosto narebren, dno vboklo. Ponekod odtisi vzorcev na dnu.

Datacija: druga polovica 1. - 2. st.

Ptuj (gr. 26)
Šesterokotna steklenica s sploščenim ustjem, vboklim dnom in gosto narebrenim ročajem. Na dnu odtisnjena rozeta.
6.3.3. - viš. 17,2 cm; najv. obseg 6,4 cm - PMP.
Lit.: Vomer Gojkovič 1996, t. 10: 7.
Drnovo (PN)
Šesterokotna steklenica, ustje manjka, dno vboklo, ročaj narebren.
6.3.3. - viš. 16 cm; najv. obseg 8, 4 cm - NMS R 718.
Lit.: Petru, Petru 1978, t. 25: 14.

Primerjave: Biaggio Simona 1991, Tav. 37: 153, 154, 128, 042, 056; Cool, Price 1995, Fig. 11.8: 2124, 2143.

6.3.4.
Nizke cilindrične steklenice z ročajem (Is 51a); (*sl. 44*):

Cilindrična steklenica, ustje izvihano in sploščeno, dno vboklo, ročaj narebren.

Datacija: druga polovica 1. - prva polovica 2. st.

Unec (gr. 24)
Cilindrična enoročajna steklenica, dno vboklo, ročaj narebren.
6.3.4. - viš. 10,6 cm; najv. obseg 9 cm; pr. dna 8 cm - NMP.
Lit.: neobjavljeno.
Unec (gr. 57)
Cilindrična enoročajna steklenica, dno vboklo, ročaj narebren.
6.3.4. - viš. 14 cm; najv. obseg 10,5 cm - NMP.
Lit.: neobjavljeno.
Unec (gr. 57)
Cilindrična enoročajna steklenica, dno vboklo, ročaj narebren.
6.3.4. - viš. 14 cm; najv. obseg 10,5 cm - NMP.
Lit.: neobjavljeno.
Ptuj (PN)
Steklenica z izvihanim ustjem, ročaj trakast.
6.3.4. - viš. 21 cm; najv. obseg 8,9 cm - PMP 3493.
Lit.: Mikl Curk 1976, t. 2: 15.

Primerjave: Berger 1960, Taf. 21: 85; Fremersdorf, Polónyi-Fremersdorf 1984, Abb. 182, 183; Follmann-Schulz 1988, Taf. 17: 149; Biaggio Simona 1991, Tav. 30: 005.

6.3.2. - ht. 28.7 cm; greatest circ. 9.5 cm - PMM A 2241.
Lit.: Pahič 1969, Pl. 1: 5.
Ptuj (gr. 463)
Tall bottle with a flattened rim, reeded handle, and a decoration of rhombs on the base.
6.3.2. - dia. rim 5 cm - LMJ 2568.
Lit.: Istenič 2000, Pl. 94: 2.
Drnovo (IF)
Tall bottle with a short neck, flattened rim, flat base, and reeded handle. Concentric circles impressed on the base.
6.3.2. - ht. 20.5 cm; greatest circ. 7.2 cm - NMS R 716.
Lit.: Petru, Petru 1978, Pl. 25: 13.

Analogies: Berger 1960, Pl. 21: 84; Follmann-Schulz 1988, Pl. 13: 116; Biaggio Simona 1991, Pl. 35: 007, 047; 36: 065, 013.

6.3.3.
Polygonal bottles with a handle (*Fig. 43*):

Bottles with polygonal walls, rim everted and flattened, handle reeded, base concave. Pattern sometimes impressed on the base.

Date: second half of the 1st - 2nd centuries

Ptuj (gr. 26)
Hexagonal bottle with a flattened rim, concave base, and reeded handle. Rosette impressed on the base.
6.3.3. - ht. 17.2 cm; greatest circ. 6.4 cm - PMP.
Lit.: Vomer Gojkovič 1996, Pl. 10: 7.
Drnovo (IF)
Hexagonal bottle, rim missing, concave base, ribbed handle.
6.3.3. - ht. 16 cm; greatest circ. 8.4 cm - NMS R 718.
Lit.: Petru, Petru 1978, Pl. 25: 14.

Analogies: Biaggio Simona 1991, Pl. 37: 153, 154, 128, 042, 056; Cool, Price 1995, Fig. 11.8: 2124, 2143.

6.3.4.
Low cylindrical bottles with a handle (Is 51a); (*Fig. 44*):

Cylindrical bottles, the rim everted and flattened, the base concave, the handle ribbed.

Date: second half of the 1st - first half of the 2nd centuries

Unec (gr. 24)
Cylindrical single-handled bottle, concave base, ribbed handle.
6.3.4. - ht. 10.6 cm; greatest circ. 9 cm; dia. base 8 cm - NMP.
Lit.: unpublished.
Unec (gr. 57)
Cylindrical single-handled bottle, concave base, ribbed handle.
6.3.4. - ht. 14 cm; greatest circ. 10.5 cm - NMP.
Lit.: unpublished.
Unec (gr. 57)
Cylindrical single-handled bottle, concave base, ribbed handle.

6.3.5.
Visoke cilindrične steklenice z ročajem (Is 51b); (*sl. 44*):

Cilindrične steklenice, ustje izvihano, zavihano in sploščeno, dno vboklo, ročaj rebrast ali trakast.

Datacija: druga polovica 1. - prva polovica 2. st.

Miklavž pri Mariboru (GN)
Steklenica z izvihanim in sploščenim ustjem, dno vboklo, ročaj narebren.
6.3.5. - viš. 19,3 cm; najv. obseg 11,7 cm - PMM A 2242.
Lit.: Pahič 1969, t. 1: 4.
Milavž pri Mariboru (GN)
Steklenica iz izvihanim in sploščenim ustjem, dno vboklo, ročaj trakast.
6.3.5. - viš. 20,2 cm; najv. obseg 11,2 cm - PMM A 2243.
Lit.: Pahič 1969, t. 1: 3.

Primerjave: nepoznane.

Komentar za oblike 6.3.1. do. 6.3.5.:
Enoročajne in dvoročajne steklenice so služile različnim namenom. Bolj kot serviranju so bili ti izdelki namenjeni shranjevanju tekočin. V njih so lahko hranili vse vrste tekočih in poltekočih snovi, zelo primerne pa so bile tudi za transport. Posebej pripravne so bile kvadratne steklenice, saj so jih lahko zložili drugo poleg druge in izkoristili ves prostor v zabojih. Cilindrične so bile glede prostora bolj potratne.

Četverokotne steklenice so bile pihane v kalupe ali prosto pihane in dooblikovane. Po pihanju so jih še vroče sploščili na marmorni ali železni plošči pred pečjo (Seitter 1991, 527, Abb. 1, 2).

Ustja steklenic so obdelali na več načinov, navadno so izvihana, zapognjena nazaj in navznoter ter sploščena. Seveda pa se pojavljajo tudi druge različice, tako da poznamo še strehasta, gobasta, dvakrat zapognjena ustja (Charlesworth 1966, 27). Premer ustja navadno ni veliko večji od širine vratu.

Ročaji steklenic so pritrjeni tik pod ustjem in na prehodu vratu v telo steklenice oziroma na ramenu. Ročaj je navadno eden, pri nekaterih pravokotnih in poligonalnih steklenicah tudi dva. Največkrat so ročaji dokaj široki, gosto narebreni (s posebnim orodjem - glavnikom), nekateri pa so tudi gladki (trakasti), profilirani ter z dvema ali tremi rebri (Rottloff 1999, 41).

Posebna značilnost kvadratnih in pravokotnih steklenic je na dnu vtisnjen okras (*sl. 45*). Najpogosteje se pojavljajo različni geometrijski vzorci, kombinirani z rozetami, poznamo pa tudi odtise črk in imen, ki pa na gradivu iz Slovenije zaenkrat niso zelo pogoste. Te lahko razlagamo kot oznake delavnic ali proizvajalcev, poznamo jih tudi na kvadratnih loncih (Stern 1997, 130). Vsi ti odtisi so morda neke vrste zaščitni znak, njihovo proučevanje lahko odgovori na vprašanja o distribuciji in trgovskih poteh posameznih izdelkov.

6.3.4. - ht. 14 cm; greatest circ. 10.5 cm - NMP.
Lit.: unpublished.
Ptuj (IF)
Bottle with an everted rim and ribbon handle.
6.3.4. - ht. 21 cm; greatest circ. 8.9 cm - PMP 3493.
Lit.: Mikl Curk 1976, Pl. 2: 15.

Analogies: Berger 1960, Pl. 21: 85; Fremersdorf, Polónyi-Fremersdorf 1984, Fig. 182, 183; Follmann-Schulz 1988, Pl. 17: 149; Biaggio Simona 1991, Pl. 30: 005.

6.3.5.
Tall cylindrical bottles with a handle (Is 51b); (*Fig. 44*):

Cylindrical bottles, the rim everted, bent, and flattened, the base concave, the handle ribbed or banded.

Date: second half of the 1st - first half of the 2nd centuries

Miklavž pri Mariboru (TF)
Bottle with an everted and flattened rim, concave base, ribbed handle.
6.3.5. - ht. 19.3 cm; greatest circ. 11.7 cm - PMM A 2242.
Lit.: Pahič 1969, Pl. 1: 4.
Milavž pri Mariboru (TF)
Bottle with an everted and flattened rim, concave base, ribbon handle.
6.3.5. - ht. 20.2 cm; greatest circ. 11.2 cm - PMM A 2243.
Lit.: Pahič 1969, Pl. 1: 3.

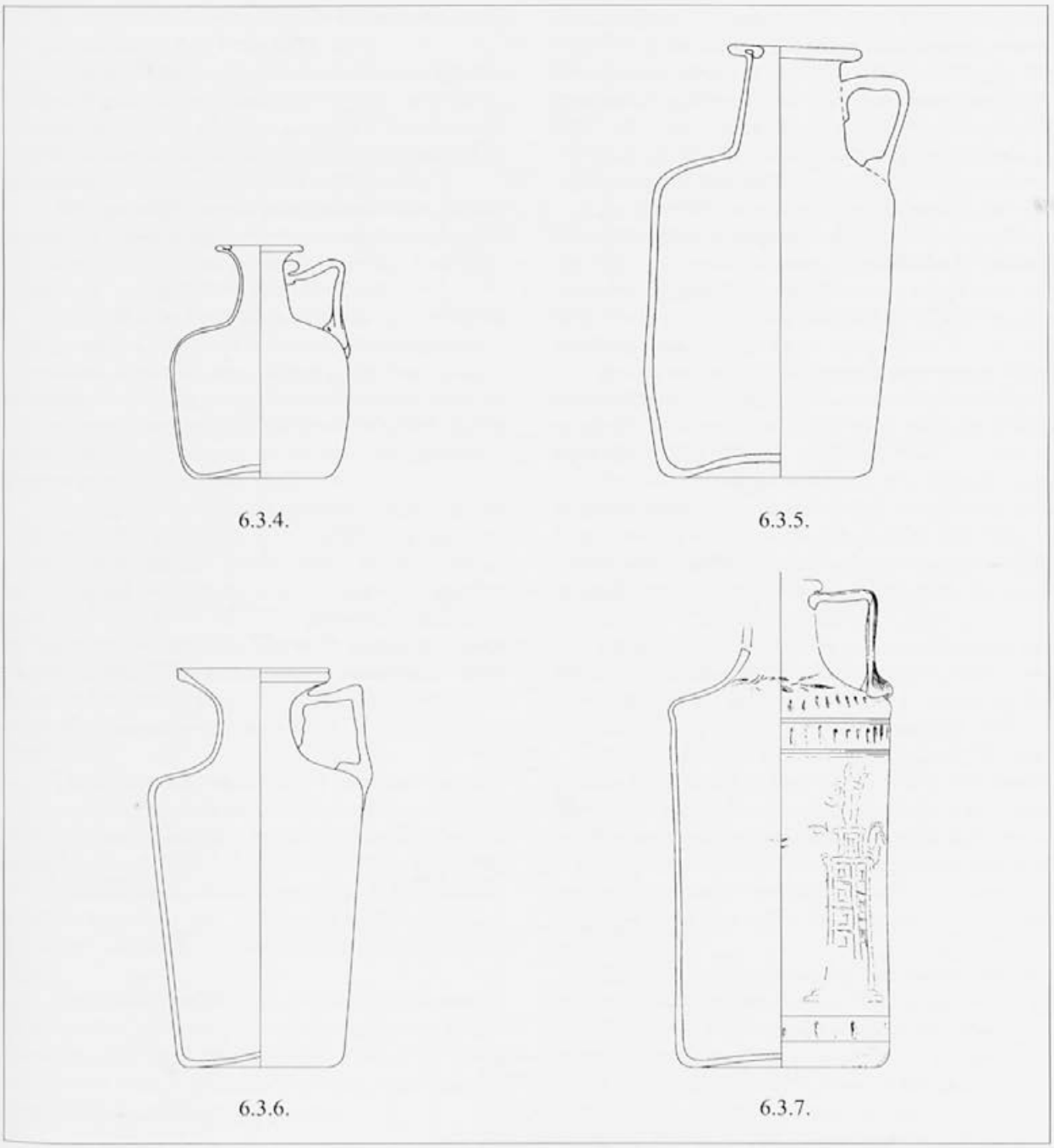
Analogies: none identified.

Comments - forms 6.3.1. to 6.3.5.:
Single and two handled bottles served various purposes. Such products in general were intended for storing liquids rather than serving them. They could be used to store all types of liquid and semi-liquid substances, and they were also quite suitable for transport. Square bottles were particularly convenient, as they could be placed immediately adjacent to one another, thus utilizing all the space available in crates. Cylindrical bottles were more wasteful of space.

Square bottles were mould-blown or free blown and reworked. After blowing, while still hot they were flattened on marble or iron plates (marvers) in front of the furnace (Seitter 1991, 527, Fig. 1, 2).

The rims of bottles were made in various ways. Usually they were everted, bent backwards, and flattened. Other variants also appear, so that roof-shaped, mushroom-shaped, and doubly bent rims are also known (Charlesworth 1966, 27). The diameter of the rim was usually not much larger than the width of the neck.

The handles of bottles were attached just under the rim and at the transition from the neck to the body, i.e. at the shoulder of the bottle. There was usually one handle, while some rectangular and polygonal bottles have two. Most often the handles were somewhat broad,



Sl. 44: Skupina 6 - steklenice (6.3.4.: Urleb 1984, t. 7: 2; 6.3.5.: Pahič 1969, t. 1: 3; 6.3.6.: Petru, Petru 1978, t. 25: 8; 6.3.7.: Knez 1969, t. 7: 2). M. = 1:3.

Fig. 44: Group 6 - bottles (6.3.4.: Urleb 1984, Pl. 7: 2; 6.3.5.: Pahič 1969, Pl. 1: 3; 6.3.6.: Petru, Petru 1978, Pl. 25: 8; 6.3.7.: Knez 1969, Pl. 7: 2). Scale = 1:3.

Med arheološkimi najdbami se je ohranilo nekaj kalupov, s pomočjo katerih so krasili dna steklenic. Izdelani so iz kamna, ki je bil očitno najbolj obstojen, med motivi pa so najpogosteje ohranjeni vzorci koncentričnih krogov (Rottloff 1999, 42, Abb. 2-5; Barkóczi 1988, 27, Abb. 2)

Najpogostejše so steklenice s kvadratnim ostenjem,

reeded (with a special tool comb tool), and some were also smooth (ribbon handles), profiled, or with two or three ribs (Rottloff 1999, 41).

A specific characteristic of square and rectangular bottles is the decoration impressed into the base (*Fig. 45*). This most often consists of various geometric patterns, combined with rosettes, and impressions of let-

Sl. 45: Skupina 6 - Vzorci odtisnjeni na dnu steklenic [1, 10 - Ptuj (Istenič 2000, t. 93: 6; 94: 2); 2, 3, 5, 7-9 - Ptuj (Mikl Curk 1976, t. 5: 2, 8, 10, 13, 16, 18); 12 - Ptuj (Vomer Gojkovič 1996, t. 10: 7); 4 - Bobovek (Petru, Valič 1959, t. 8: 3); 6, 11 - Celje (Lazar 1993, t. 2: 1, 2)].

Fig. 45: Group 6 - Base marks on the bottles [1, 10 - Ptuj (Istenič 2000, Pl. 93: 6; 94: 2); 2, 3, 5, 7-9 - Ptuj (Mikl Curk 1976, Pl. 5: 2, 8, 10, 13, 16, 18); 12 - Ptuj (Vomer Gojkovič 1996, Pl. 10: 7); 4 - Bobovek (Petru, Valič 1959, Pl. 8: 3); 6, 11 - Celje (Lazar 1993, Pl. 2: 1, 2)].

precej manj pogoste so pravokotne in mnogokotne, redke so tudi trikotne (Cool, Price 1995, 179).

Najzgodnejše kvadratne steklenice so znane s Štalenske gore (Czurda-Ruth 1979, 135), zares široko uporabo pa doživijo od druge polovice 1. stoletja dalje. V uporabi so skozi daljše časovno obdobje, ponekod jih zasledimo še v 4. stoletju (Isings 1957, 64-65).

Redkejše najdbe so mnogokotne steklenice. Njihova uporaba je podobna, tudi pri teh posodah je dno ponekod okrašeno. Pojavljajo se od druge polovice 1. do prve polovice 2. stoletja (Cool, Price 1995, 185).

Za razliko od kvadratnih steklenic so cilindrične precej redkejše. Običajno so telo steklenice napihnili v cilindričen, debelejši cevi podoben kalup. Dno navadno ni okrašeno, ustja pa so izdelana na podoben način kot pri kvadratnih steklenicah. Izdelovali so jih od sredine 1. stoletja dalje, v uporabo so bile še v prvi polovici 2. stoletja (Cool, Price 1995, 184).

Med zbranim gradivom v Sloveniji so najštevilnejše nizke kvadratne steklenice (6.3.1.), ki jih glede na grobne celote lahko umestimo v čas od konca 1. stoletja (Trebnje, gr. 111 - Slabe 1993, 25) do sredine 2. stoletja (Cerknica, gr. 2, 10 - Urleb 1984, 313-314), v grobu 463 iz Petovione sta steklenici del celote, ki sega še na začetek 3. stoletja (Istenič 2000, 150), ostale najdbe so posamične. Visoke kvadratne steklenice (6.3.2.) iz gomile v Miklavžu lahko datiramo glede na celoto na začetek 2. stoletja (Pahič 1969, 74).

Cilindrične steklenice (6.3.4.) poznamo iz grobov v Uncu. Grob 24 je z novcem datiran v sredino 2. stoletja (Vičič, Schein 1986, 100), kar je dokaj pozno, glede na najdbe z evropskih najdišč (Cool, Price 1995, 184). Grob 57 je iz začetka 2. stoletja (podatek T. Schein). Na začetek 2. stoletja sodi tudi visoka različica (6.3.5.), sodeč po najdbah iz gomile v Miklavžu (Pahič 1969, 74).

Mnogokotna steklenica iz ptujskega groba (6.3.3.) je bila edini pridatek v skeletnem grobu na pozno rimskem grobišču (Vomer Gojkovič 1996, 278). Glede na izdelavo ustja in ročaja lahko zaključimo, da gre za starejši izdelek, verjetno iz 2. stoletja.

6.3.6.

Cilindrične steklenice z ročajem in zoženim dnom (Is 126); (*sl. 44*):

Cilindrične steklenice z navzven izvihanim lijakastim ustjem, pod njim rebro, ostenje pri dnu zoženo, dno vboklo, ročaj gosto narebren.

Datacija: konec 2. - 4. st.

Ptuj (gr. 127)

Cilindrična steklenica z izvihanim ustjem, trakastim ročajem in zoženim dnom.

ters and names are also known, which are not very common among the material from Slovenia known at present. These can be explained as marks of the workshop or the glassworker, and they are also found on square jars (Stern 1997, 130). All of these stamps were perhaps some kind of trademark, and their study could offer answers about the distribution and trade routes of individual products.

Some moulds have been preserved among archaeological finds that were used to decorate the base of bottles. They were made of stone, which evidently endured best, and the most frequently preserved motifs were patterns of concentric circles (Rottloff 1999, 42, Fig. 2-5; Barkóczi 1988, 27, Fig. 2)

Bottles with square body were most frequent, while rectangular and prismatic bottles were considerably less common, and triangular forms were also rare (Cool, Price 1995, 179).

The earliest square bottles are known from Magdalensberg (Czurda-Ruth 1979, 135), while they enjoyed a truly broad use from the second half of the 1st century onwards. They continued in use throughout later chronological periods, and sometimes they can be traced even into the 4th century (Isings 1957, 64-65).

Finds of polygonal bottles are rarer. Their use was similar, and the base was also sometimes decorated. They appeared from the second half of the 1st century to the first half of the 2nd century (Cool, Price 1995, 185).

In contrast to the square bottles, cylindrical examples are fairly rare. The body of the bottles was usually blown into a cylindrical mould. The base was usually undecorated, and the rim was made in a manner similar to that for square bottles. They were manufactured from the middle of the 1st century onwards, and they were still in use in the first half of the 2nd century (Cool, Price 1995, 184).

The most numerous among the material gathered here were short square bottles (6.3.1.), which can be classified on the basis of grave finds to the period from the end of the 1st century (Trebnje, gr. 111 - Slabe 1993, 25) to the middle of the 2nd century (Cerknica, gr. 2, 10 - Urleb 1984, 313-314), while grave 463 from Poetovio contained bottles as part of grave goods extending in date to the beginning of the 3rd century (Istenič 2000, 150). The other finds represent isolated discoveries. The high square bottles (6.3.2.) from the tumulus at Miklavž can be dated in reference to the grave goods to the beginning of the 2nd century (Pahič 1969, 74).

Cylindrical bottles (6.3.4.) are known from the graves at Unec. Grave 24 was dated by a coin to the middle of the 2nd century, which is somewhat late when compared to the finds from other European sites (Vičič, Schein 1986, 100). Grave 57 was from the beginning of the 2nd century (information from T. Schein). The tall variant (6.3.5.) also belonged to the beginning of the 2nd century, judging by the finds from the tumulus at Miklavž (Pahič 1969, 74).

6.3.6. - pr. ustja 4, 5 cm - LMJ 2267.
Lit.: Istenič 2000, t. 26: 2.
Drnovo (PN)
Steklenica z izvihanim ustjem, dno rahlo vboklo, ročaj gosto narebren.
6.3.6. - viš. 18,6 cm - NMS R 719.
Lit.: Petru, Petru 1978, t. 25: 8.

Primerjave: Fremersdorf, Polónyi-Fremersdorf 1984, Abb. 171-174; Follmann-Schulz 1988, Taf. 15: 140; 16: 141, 147, 148.

6.3.7.
Cilindrične steklenice z ročajem in brušenim okrasom (*sl. 44*):

Cilindrične steklenice z izvihanim ustjem, vboklim dnom in enim ali dvema ročajema. Ostenje krasijo brušeni geometrijski ali figuralni okrasi.

Datacija: konec 2. - 4. st.

Ptuj (gr. 11)
Visoka cilindrična steklenica z brušenim okrasom s prizorom svetilnika in morja z ribami.
6.3.7. - viš. 22 cm; najv. obseg 10,1 cm - PMP AR 55387.
Lit.: Lazar, Tomanič Jevremov 2000, t. 1.
Trebnje (PN)
Spodnji del steklenice z okrasom mrežasto prepletenih linij, vmes rombi in krogi.
6.3.7. - viš. 16 cm; najv. obseg 13 cm - DM.
Lit.: Knez 1969, t. 7: 2.

Primerjave: Follmann-Schulz 1988, Taf. 17: 149; Klein 1996, fig. 3-9.

Komentar za obliki 6.3.6. in 6.3.7.:
V pozno rimski dobi so enoročajne steklenice manj pogoste. Njihova oblika in način izdelave pa kažejo nekatere posebnosti, po katerih se hitro ločijo od starejših izdelkov. Ustje je zataljeno in izvihano navzven, pod njim je pogosto nataljena steklena nit. Ostenje se proti dnu rahlo zoži, kvadratnih form ni več, izpodrinejo jih cilindrične steklenice. Ročaji so s pomočjo glavnika gosto narebreni. Na izdelkih poznega cesarstva opazimo še eno novost - tudi steklenice krasi brušen okras. Navadno gre za raznolike geometrijske motive, izjemoma pa naletimo tudi na figuralni okras (Klein 1996, 151).

Najzgodnejše steklenice z okrasom brušenih horizontalnih linij se pojavijo že v poznem 2. stoletju in so navadno izdelane iz kvalitetnega brezbarvnega stekla (Cool, Price 1995, 200), kasneje je razširjen razčlenjen geometrijski okras v več pasovih, pogosto tudi v obliki satovja (Follman-Schulz 1988, T. 17: 149; Barkóczi 1988, Taf. 32: 352; 57: 501, 503). Figuralni okras je redkejši, najdemo ga pogosteje na skodelah in čašah kot na steklenicah (Klein 1996, 152, Fig. 2).

A polygonal bottle (6.3.3.) was the only grave good in an inhumation grave from the late Roman cemetery at Ptuj (Vomer Gojkovič 1996, 278). It can be concluded on the basis of the working of the rim and the handle that this was an earlier product, probably from the 2nd century.

6.3.6.
Cylindrical bottles with a handle and a tapered base (Is 126); (*Fig. 44*):

Cylindrical bottles with an outward bent funnel-shaped rim, under it a rib, the walls taper toward the base, concave base, reeded handle.

Date: end of the 2nd - 4th centuries

Ptuj (gr. 127)
Cylindrical bottle with an everted rim, ribbon handle, and tapered base.
6.3.6. - dia. rim 4.5 cm - LMJ 2267.
Lit.: Istenič 2000, Pl. 26: 2.
Drnovo (IF)
Bottle with an everted rim, the base slightly concave, the handle densely ribbed.
6.3.6. - ht. 18.6 cm - NMS R 719.
Lit.: Petru, Petru 1978, Pl. 25: 8.

Analogies: Fremersdorf, Polónyi-Fremersdorf 1984, Fig. 171-174; Follmann-Schulz 1988, Pl. 15: 140; 16: 141, 147, 148.

6.3.7.
Cylindrical bottles with a handle and wheel-cut decoration (*Fig. 44*):

Cylindrical bottles with an everted rim, concave base, and one or two handles. The walls are decorated with wheel-cut geometric or figural motifs.

Date: end of the 2nd - 4th centuries

Ptuj (gr. 11)
Tall cylindrical bottle with wheel-cut decoration with an image of a lighthouse and the sea with fish.
6.3.7. - ht. 22 cm; greatest circ. 10.1 cm - PMP AR 55387.
Lit.: Lazar, Tomanič Jevremov 2000, Pl. 1.
Trebnje (IF)
Lower part of a bottle with a decoration of webbed interwoven lines, with rhombs and circles between.
6.3.7. - ht. 16 cm; greatest circ. 13 cm - DM.
Lit.: Knez 1969, Pl. 7: 2.

Analogies: Follmann-Schulz 1988, Pl. 17: 149; Klein 1996, Fig. 3-9.

Comments - forms 6.3.6. and 6.3.7.:
Single handled bottles were less frequent in the late Roman period. Their form and manner of manufacture

Lokalizacija delavnic teh izdelkov je še vedno nekoliko vprašljiva. Fremersdorf je na osnovi bogatih najdb zagovarjal mnenje o zahodnem, kölnskem izvoru teh izdelkov in obstoju tamkajšnjih delavnic (1951, 22), Harden pa se je nagibal k ideji o delavnicah v Aleksandriji (1988, 182). V zadnjem času prihaja do kompromisa in mnogi dopuščajo obstoj dveh proizvodnih centrov, vzhodnega in zahodnega (Rütti 1988, 129-133). Figuralno okrašene steklenice najdemo v Nemčiji (Fremersdorf 1951, 8, Taf. 6,7; Klein 1996, 152, fig. 2), na odlomku steklenice iz Rima pa prepoznamo biblijsko sceno (Harden *et al.* 1988, 182-186).

Tudi vprašanje časovne opredelitve teh izdelkov je včasih problematično, saj mnogi ne izvirajo iz datiranih celot. Nekatere postavljajo že na konec 2. stoletja (Harden *et al.* 1988, 197; Cool, Price 1995, 200), večina izdelkov z vrezanim figuralnim okrasom pa pripada 3. in 4. stoletju (Harden *et al.* 1988, 182-186). Kölnska delavnica mojstra Lynkeusa je po Fremersdorfu delovala v sredini in drugi polovici 3. stoletja, po mnenju B. Follmann-Schulz pa že v prvi polovici in sredini 3. stoletja (1951, 8-10; 1988, 7-8).

Steklenica iz groba 127 v Petovioni (6.3.6.) je s svojim izvihanim ustjem in zoženim dnom značilen mlajši izdelek, ki sodi morda na konec 2., verjetno pa v 3. stoletje in se ne sklada z nekoliko zgodnjo datacijo groba (Istenič 2000, 53).

Motiv svetilnika in obale z delfini, ki ga prepoznamo na drugi ptujski steklenici (6.3.7.), je vsekakor mediteranski, morda gre res za izdelek vzhodnih delavnic. Grob 11 iz Petovione sodi po sestavi grobne celote v prvo polovico 3. stoletja (Lazar, Tomanič Jevremov 2000, 200).

Steklenice z vrezanim okrasom med našim gradivom niso prav pogoste (6.3.7.). Steklenici iz Trebnjega najdemo primerjave med emonskim gradivom (Petru 1972, t. 119: 17), v evropskem prostoru so primerjave bolj številne in so datirane pretežno v 3. in 4. stoletje (Klein 1996, 150).

show certain special features that quickly distinguish them from earlier products. The rim is fire-rounded and bent outwards, frequently with a glass trail beneath. The walls taper slightly towards the base. The square forms had been supplanted by cylindrical bottles. The handles were densely ribbed - reeded with the aid of a comb tool. The products of the late Empire exhibit yet another new element - even bottles have wheel-cut decoration. This usually consisted of varied geometric motifs, and exceptionally also figural decoration (Klein 1996, 151).
The earliest bottles with a decoration of wheel-cut horizontal lines appeared as early as the late 2nd century, and they were usually made of high quality colourless glass (Cool, Price 1995, 200). Later a divided geometric decoration in several bands became widespread, also often in the form of honeycombs (Follman-Schulz 1988, Pl. 17: 149; Barkóczi 1988, Pl. 32: 352; 57: 501, 503). Figural decoration is rarer, and can be found frequently on bowls and beakers as on bottles (Klein 1996, 152, Fig. 2).

The location of the workshops that made such products is still somewhat in question. Fremersdorf supported a western source at Köln for these products, including the existence of workshops, on the basis of the rich finds (1951, 22). Harden was inclined to suggesting production centers in Alexandria (1988, 182). Lately a compromise has been reached, and many support the existence of two production centers, eastern and western (Rütti 1988, 129-133). Figural decoration on bottles can be found in Germany (Fremersdorf 1951, 8, Pl. 6,7; Klein 1996, 152, Fig. 2), and a biblical scene can be recognized on a fragment of a bottle from Rome (Harden *et al.* 1988, 182-186).

The question of the chronological classification of these products is also sometimes problematic, as many do not come from dated contexts. Some are assigned as early as the end of the 2nd century (Harden *et al.* 1988, 197; Cool, Price 1995, 200), while the majority of products with figural decoration belong to the 3rd and 4th centuries (Harden *et. al.* 1988, 182-186). The Köln production center of a glass-worker Lynkeus would have been active according to Fremersdorf in the middle and second half of the 3rd century, while B. Follmann-Schulz would date his work to the first half and middle of the 3rd century (1951, 8-10; 1988, 7-8).

The bottle from grave 127 at Poetovio (6.3.6.) with its everted rim and narrowed base is a characteristically later product from the late 2nd or the 3rd century, and does not agree with the somewhat earlier dating of the grave (Istenič 2000, 53).

The motif of the lighthouse and coast with dolphins found on the second bottle from Ptuj (6.3.7.) was certainly Mediterranean, and perhaps it truly was a product of the eastern workshops. Grave 11 from Poetovio would belong to the first half of the 3rd century on the basis of the composition of the grave goods (Lazar, Tomanič Jevremov 2000, 200).

SKUPINA 7 - LONCI
(*sl. 46-48; pril. 3*)

7.1.
ČETVEROKOTNI LONCI

7.1.1.
Četverokotni lonci z navzdol zapognjenim ustjem in vdolbinami na ostenju (Is 62); (*sl. 46*):

Četverokotne posode, katerih ostenje prehaja v ravno ustje, ki je zapognjeno navzdol, da tvori ovratnik. Nekatere posode imajo na ostenju vdolbine in žig na dnu.

Datacija: druga polovica 1. - 2. st.

Bobovek (gr.)
Lonec z zapognjenim ustjem, na ostenju vdolbine, dno ravno.
7.1.1. - viš. 11,2 cm - GMK.
Lit.: Petru, Valič 1959, t. 2: 3.
Ptuj (gr. 718)
Kvadraten lonec z navzdol zapognjenim ustjem, na dnu odtis kvadratov.
7.1.1. - pr. ustja 10 cm - LMJ 2482.
Lit.: Istenič 2000, t. 161: 8.
Ribnica (gr. 3)
Kvadraten lonec z nazaj zapognjenim ustjem, na ostenju vdolbine, na dnu okrog kroga odtisnjene črke T C T CQ.
7.1.1. - viš. 9,4 cm; pr. dna 3,6 cm - PMB.
Lit.: Petru P. 1969, t. 17: 1.

Primerjave: Cermanović-Kuzmanović 1976, t. 1: 16; Goethert-Polaschek 1977, Taf. 63: 1137; Barkóczi 1988, Taf. 32: 347, 348; Follmann-Schulz 1988, Taf. 10: 93, 94, 96.

7.1.2.
Četverokotni lonci z ravnim izvihanim ustjem (*sl. 46*):

Posode s četverokotnim ostenjem, ustje nagnjeno navzven in zataljeno, na dnu ponekod žig ali odtisnjen okras.

Datacija: 2. st.

Drnovo (PN)
Lonec iz zelenkastega stekla, ustje izvihano, dno rahlo vboklo. Na dnu odtis s črkami in rozeto v sredini (napis KAABAC ?).
7.1.2. - viš. 16,4 cm; pr. ustja 8,4 cm - NMS R 713.
Lit.: Petru, Petru 1978, t. 25: 10.

Primerjave: Goethert-Polaschek 1977, Taf. 63: 1139; Barkóczi 1988, Taf. 32: 350.

Bottles with wheel-cut decoration (6.3.7.) are not very common among the Slovenian material. A comparison to the bottle from Trebnje can be found among the material from Emona (Petru 1972, Pl. 119: 17). Comparisons are even more numerous among other European finds and are dated to the 3rd and 4th centuries (Klein 1996, 150).

GROUP 7 - STORAGE VESSELS AND URNS
(*Fig. 46-48; Appendix 3*)

7.1.
SQUARE JARS

7.1.1.
Square jars with the rims bent down and indents on the walls (Is 62); (*Fig. 46*):

Square vessels where the walls extend into a straight rim, which was bent downward to form a collar. Some vessels have indentations in the walls and a stamp on the base.

Date: second half of the 1st - 2nd centuries

Bobovek (gr.)
Jar with a bent rim, indents on the walls, flat base.
7.1.1. - ht. 11.2 cm - GMK.
Lit.: Petru, Valič 1959, Pl. 2: 3.
Ptuj (gr. 718)
Square jar with a downward bent rim, impression of a square on the base.
7.1.1. - dia. rim 10 cm - LMJ 2482.
Lit.: Istenič 2000, Pl. 161: 8.
Ribnica (gr. 3)
Square jar with a rim bent back, indents on the walls, on the base the letters T C T CQ stamped around a circle.
7.1.1. - ht. 9.4 cm; dia. base 3.6 cm - PMB.
Lit.: Petru P. 1969, Pl. 17: 1.

Analogies: Cermanović-Kuzmanović 1976, Pl. 1: 16; Goethert-Polaschek 1977, Pl. 63: 1137; Barkóczi 1988, Pl. 32: 347, 348; Follmann-Schulz 1988, Pl. 10: 93, 94, 96.

7.1.2.
Square jars with everted rim (*Fig. 46*):

Vessels with rectangular walls, the rim everted and fire-rounded, sometimes a stamp or an impressed decoration on the base.

Date: 2nd century

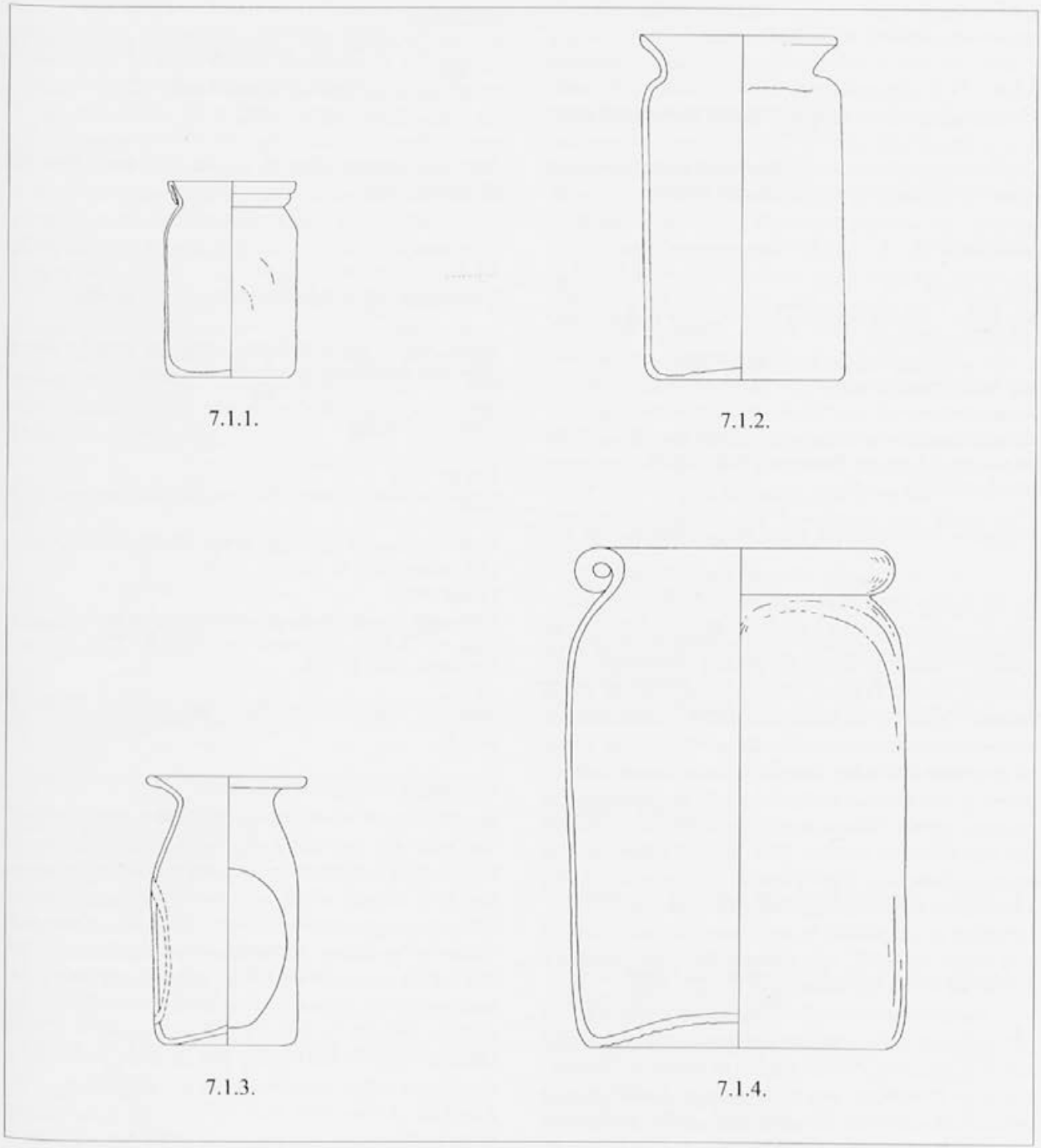
Drnovo (PN)
Jar of green glass, the rim everted, the base slightly concave.

7.1.3.
Četverokotni lonci z izvihanim ustjem in vdolbinami na ostenju (*sl. 46*):

Četverokotne posode z navzven nagnjenim ustjem, ki je zataljeno, na ostenju vdolbine na vseh štirih straneh, dno vboklo.

On the base an impression with letters and a rosette in the center (the legend KAABAC ?).
7.1.2. - ht. 16.4 cm; dia. rim 8.4 cm - NMS R 713.
Lit.: Petru, Petru 1978, Pl. 25: 10.

Analogies: Goethert-Polaschek 1977, Pl. 63: 1139; Barkóczi 1988, Pl. 32: 350.



Sl. 46: Skupina 7 - lonci (7.1.1.: Petru P. 1969, t. 17: 1; 7.1.2.: Petru, Petru 1978, t. 25: 10; 7.1.3.: Petru, Petru 1978, t. 25: 3; 7.1.4.: Istenič 2000, t. 26: 3). M. = 1:3.

Fig. 46: Group 7 - jars (7.1.1.: Petru P. 1969, Pl. 17: 1; 7.1.2.: Petru, Petru 1978, Pl. 25: 10; 7.1.3.: Petru, Petru 1978, Pl. 25: 3; 7.1.4.: Istenič 2000, Pl. 26: 3). Scale = 1:3.

Datacija: 2. st.

Drnovo (PN)
Lonec z izvihanim ustjem, vboklim dnom in vdolbinami na ostenju.
7.1.3. - viš. 13 cm, pr. ustja 7,4 cm - NMS.
Lit.: Petru, Petru 1978, t. 25: 3.

Primerjave: Barkóczi 1988, Taf. 32: 349, 350; Ružić 1994, t. 22: 5.

7.1.4.
Četverokotni lonci s cevastim ustjem (Is 62); (*sl. 46*):

Četverokotne posode, ostenje preko ramena prehaja v nekoliko izvihano in cevasto zavihano ustje, dno ravno.

Datacija: 2. st.

Ptuj (gr. 130)
Kvadraten lonec s cevastim ustjem, dno vboklo, odtis koncentričnih krogov.
7.1.4. - pr. ustja 15 cm - LMJ 2548.
Lit.: Istenič 2000, t. 26: 3.
Formin (PN)
Odlomki kvadratnega lonca, ustje cevasto, dno ravno.
7.1.4. - viš. 8,7 cm; pr. dna 6 cm - PMP R 7377.
Lit.: Šubic 1976, t. 1: 8.

Primerjave: Veličković 1976, Fig. 1; Biaggio Simona 1991, Tav. 27: 137.

Komentar za oblike 7.1.1. do 7.1.4.:
Kvadratni lonci so posode, katerih ostenje je bilo pihano v kalup. Ostenje je včasih okrašeno z vdolbinami, dno pogosto krasijo različni odtisi in tudi žigi, ki pa so redkejši. Odtisi črk na nekaterih izdelkih so lahko oznaka izdelovalca oziroma delavnice ali morda trgovca. Lonci so predvsem služili kot posode za shranjevanje, njihova oblika je bila posebej prilagojena tudi za transport. Od drugega stoletja dalje so pogosto uporabljeni v grobovih kot žare (Biaggio Simona 1991, 162). Zanimiv je tudi lonec iz Gleisdorfa, ki je bil uporabljen kot žara in pokrit s svinčenim pokrovom (Artner 1994, Taf. 12: 37).
Isingsova je vse posode te vrste uvrstila v eno skupino pod obliko 62 (1957, 81), medtem ko je npr. Goethert-Polaschek ločila več variant (1977, 123, 182).

Razprostranjenost teh izdelkov po imperiju je precej neenakomerna. Na vzhodnem področju teh loncev tako rekoč ne poznajo, številne najdbe so znane iz Panonije, nekaj iz Pompejev ter večje število z galskega in porenskega območja (Welker 1974, 108). V kölnskih delavnicah so nastale posode z žigom CC/PC, ki se pojavlja na posodah z ovratnikastim in izvihanim ustjem. Fremersdorf domneva, da je ta delavnica delovala že od konca 1. stoletja dalje (1958, 54).

Datirani konteksti kažejo, da se lonci s kvadratnim

7.1.3.
Square jars with an everted rim and indents on the walls (*Fig. 46*):

Square vessels with an everted and rounded rim, indents on all four sides of the walls, concave base.

Date: 2nd century

Drnovo (PN)
Jar with an everted rim, concave base, and indentations in the walls
7.1.3. - ht. 13 cm, dia. rim 7.4 cm - NMS.
Lit.: Petru, Petru 1978, Pl. 25: 3.

Analogies: Barkóczi 1988, Pl. 32: 349, 350; Ružić 1994, Pl. 22: 5.

7.1.4.
Square jars with a tubular rim (Is 62); (*Fig. 46*):

Square vessels, the walls extend across the shoulder into a somewhat everted and tubular rim, flat base.

Date: 2nd century

Ptuj (gr. 130)
Square jar with a tubular rim, concave base, impression of concentric circles.
7.1.4. - dia. rim 15 cm - LMJ 2548.
Lit.: Istenič 2000, Pl. 26: 3.
Formin (PN)
Fragments of a square jar, thickened rim, flat base.
7.1.4. - ht. 8.7 cm; dia. base 6 cm - PMP R 7377.
Lit.: Šubic 1976, Pl. 1: 8.

Analogies: Veličković 1976, Fig. 1; Biaggio Simona 1991, Pl. 27: 137.

Comments - forms 7.1.1. to 7.1.4.:
Square jars are vessels whose walls were mould-blown. The walls are sometimes decorated with indentations, and the base is often decorated with various impressions, and even stamps, which are rarer. The impressions of letters on several products could be the mark of the glass worker or workshop, or perhaps even a merchant. The jars served primarily as storage vessels, and their form was specially adapted for transport. From the second century onwards they were often used in graves as urns (Biaggio Simona 1991, 162). The jar from Gleisdorf is interesting, which was used as an urn and covered with a lead lid (Artner 1994, Pl. 12: 37). Isings placed all the vessels of this type into one group under form 62 (1957, 81), while others, such as Goethert-Polaschek, divided it into several variants (1977, 123, 182).

The distribution of such products throughout the Empire is fairly nonuniform. Such jars are almost un-

ostenjem pojavljajo od druge polovice 1. stoletja dalje in so najbolj razširjeni v 2. stoletju (Biaggio Simona 1991, 163). Grobovi 1. stoletja v Mainzu in Minusiu in grobovi iz sredine 2. stoletja (Welker 1974, 107) kažejo, da so izdelki s širokim, navzdol zavihanim ustjem najzgodnejši (7.1.1.). Ta oblika ustja je znana tudi na kroglastih loncih (Isings 67c), ki so v uporabi od flavijskega obdobja dalje. Posode z izvihanim ustjem (7.1.2.; 7.1.3.) se ne pojavljajo pred 2. stoletjem. Iz tega časa so najdbe iz Heddernheima (Welker 1974, 108) in Kölna (Fremersdorf 1958, 53-54), Barkóczi pa lonce iz Madžarske datira že v 3. stoletje (1988, 156). Uporaba kvadratnih loncev počasi zamre v 3. stoletju (Welker 1974, 108).

Primerjave poznamo tudi iz emonskih grobov. Grob 628 iz druge polovice 1. oz. 2. stoletja ima pridan lonec z navzdol zapognjenim ovratnikastim ustjem in okrašenim dnom (Plesničar Gec 1972, t. 144: 17), v grobu 903 iz 2. stoletja pa je lonec z izvihanim zataljenim ustjem (Petru 1972, t. 65: 17).

Petovionski grob 718 z loncem oblike 7.1.1. je datiran v flavijski čas in prvo polovico 2. stoletja, grob 130 z loncem oblike 7.1.4. pa je iz druge polovice 2. stoletja (Istenič 2000, 235, 54), obliki 7.1.2. in 7.1.3. smo datirali na osnovi primerjav (Welker 1974, 108; Fremersdorf 1958, 54).

7.2.
KROGLASTI LONCI

7.2.1.
Kroglasti lonci z izvihanim in odebeljenim ustjem (Is 94); (*sl. 47*):

Kroglasta posoda s kratkim vratom in močno izvihanim, odebeljenim ustjem. Dno vboklo.

Datacija: druga polovica 1. - prva polovica 2. st.

Stari trg pri Slovenj Gradcu (gr. W7)
Ustje žare, izvihano in odebeljeno.
7.2.1. - viš. 14,5 cm - KPM.
Lit.: Strmčnik Gulič 1981, t. 11: 18.
Šempeter (gr. 3)
Ustje žare, izvihano in odebeljeno.
7.2.1. - pr. ustja 16,2 cm - PMC R 1086.
Lit.: Kolšek 1977, t. 2: 49.
Drnovo (PN)
Kroglasta žara z izvihanim in odebeljenim ustjem, dno vboklo.
7.2.1. - viš. 19,2 cm - NMS R 734.
Lit.: Petru, Petru 1978, t. 26: 4.
Drnovo (PN)
Kroglasta žara z izvihanim in odebeljenim ustjem, dno vboklo.
7.2.1. - viš. 18,8 cm - NMS R 733.
Lit.: Petru, Petru 1978, t. 26: 3.
Ptuj (PN)
Kroglasta žara z izvihanim, ravnim ustjem, dno precej zoženo in vboklo.

known, so to speak, in the east, while numerous finds are known from Pannonia, a few from Pompeii, and large numbers from the regions of Gaul and along the Rhine (Welker 1974, 108). Vessels with the stamp mark CC/PC were made in the Köln workshops; this stamp appears on vessels with collar and everted rims. Fremersdorf considered this workshop to have been active from the end of the 1st century onwards (1958, 54).

The dated contexts indicate that square jars appeared from the second half of the 1st century onwards and were most widely distributed in the 2nd century (Biaggio Simona 1991, 163). Graves of the 1st century from Mainz and Minusio and graves from the mid 2nd century (Welker 1974, 107) indicate that products with broad downward bent rims were the earliest, (form 7.1.1.). This form of rim is also known on spherical urns (Isings 67c), which were in use from the Flavian period onwards. Vessels with everted rims (7.1.2; 7.1.3.) do not appear before the 2nd century. The finds from Heddernheim (Welker 1974, 108) and Köln (Fremersdorf 1958, 53-54) come from this period, while Barkóczi dated the vessels from Hungary to the 3rd century (1988, 156).

Comparative material is also known from the Emona cemeteries. Grave 628 from the second half of the 1st or 2nd centuries contained a jar with a downward bent collar rim and a decorated base (Plesničar Gec 1972, Pl. 144: 17), and grave 903 from the 2nd century had one with an everted fire-rounded rim (Petru 1972, Pl. 65: 17).

Grave 718 from Poetovio with a jar of form 7.1.1 is dated to the Flavian period and the first half of the 2nd century, while grave 130 with a vessel of form 7.1.4 was from the second half of the 2nd century (Istenič 2000, 235, 54). Forms 7.1.2. and 7.2.3. are dated according to comparisons (Welker 1974, 108; Fremersdorf 1985, 54).

7.2.
GLOBULAR JARS

7.2.1.
Globular jars with an everted and thickened rim (Is 94); (*Fig. 47*):

Globular vessels with a short neck and a highly out-turned, thickened rim. Concave base.

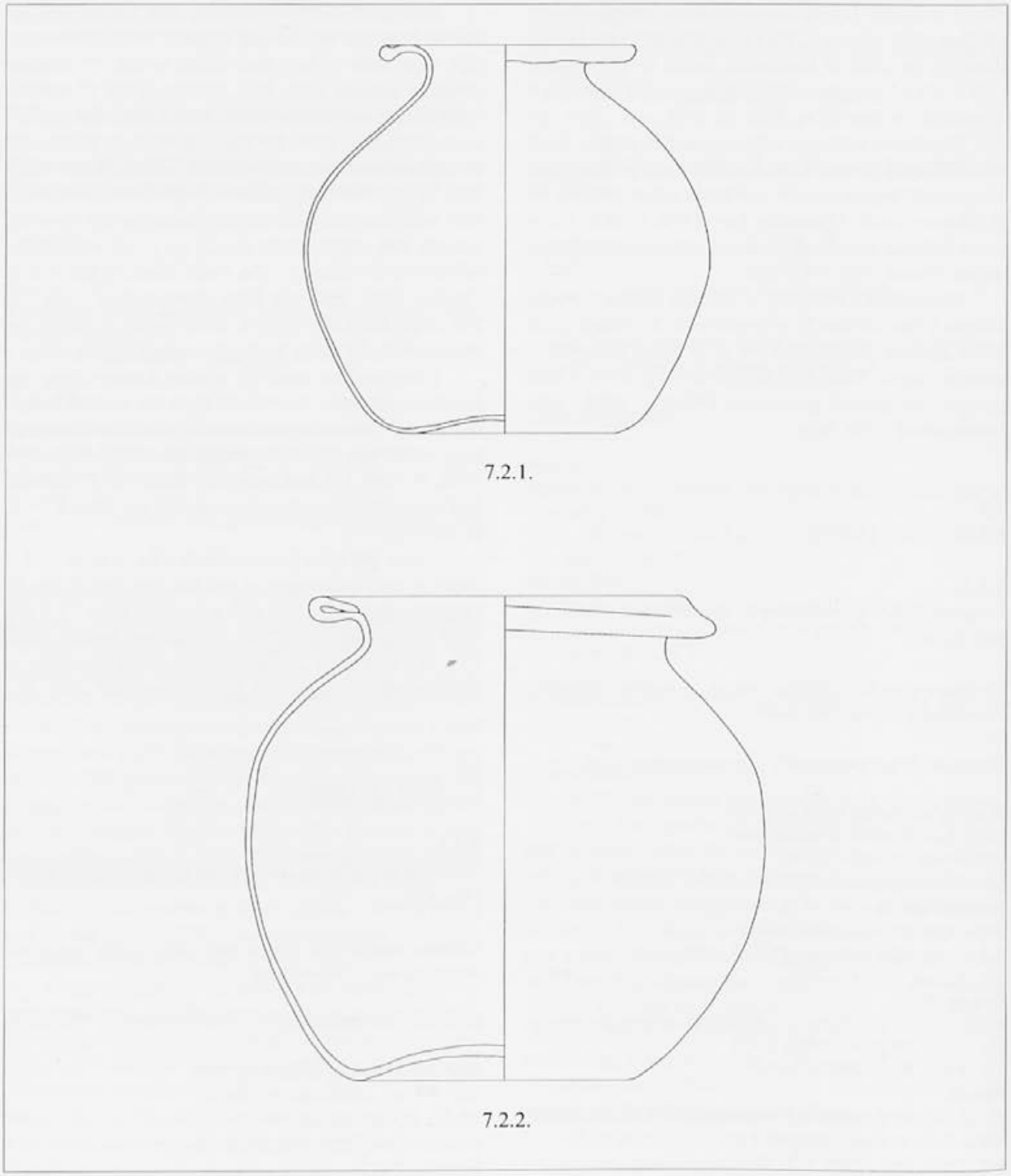
Date: second half of the 1st - first half of the 2nd centuries

Stari trg pri Slovenj Gradcu (gr. W7)
Rim of a jar, everted and thickened.
7.2.1. - ht. 14.5 cm - KPM.
Lit.: Strmčnik Gulič 1981, Pl. 11: 18.
Šempeter (gr. 3)
Rim of a jar, everted and thickened.
7.2.1. - dia. rim 16.2 cm - PMC R 1086.
Lit.: Kolšek 1977, Pl. 2: 49.

7.2.1. - viš. 18,5 cm - PMP.
Lit.: Šubic 1976, sl. 3.

Primerjave: Czurda-Ruth 1979, Taf. 9: 1163; Fremersdorf, Polónyi-Fremersdorf 1984, No. 79, 81; Barkóczi 1988, Taf. 40: 526; 41: 528; Follmann-Schulz 1988, Taf. 33: 255; Cool, Price 1995, Fig. 7.7: 828, 834-838.

Drnovo (PN)
Globular jar with an everted and thickened rim, concave base.
7.2.1. - ht. 19.2 cm - NMS R 734.
Lit.: Petru, Petru 1978, Pl. 26: 4.
Drnovo (PN)
Globular jar with an everted and thickened rim, concave base.
7.2.1. - ht. 18.8 cm - NMS R 733.
Lit.: Petru, Petru 1978, Pl. 26: 3.



Sl. 47: Skupina 7 - lonci (7.2.1.: Petru, Petru 1978, t. 26: 4; 7.2.2.: Pahič 1969, t. 1: 1). M. = 1:3.

Fig. 47: Group 7 - jars (7.2.1.: Petru, Petru 1978, Pl. 26: 4; 7.2.2.: Pahič 1969, Pl. 1: 1). Scale = 1:3.

7.2.2.

Kroglasti lonci z izvihanim in navzgor zapognjenim ustjem (*sl. 47*):

Kroglasta posoda s kratkim vratom in zataljenim ustjem, ki je izvihano navzven in nato zapognjeno navzgor, da tvori cevast rob. Dno vboklo.

Datacija: druga polovica 1. - začetek 3. st.

Miklavž pri Mariboru (GN)
Kroglasta žara z izvihanim in navzgor zapognjenim ustjem, dno vboklo.
7.2.2. - viš. 23,7 cm - PMM A 2239.
Lit.: Pahič 1969, t. 1: 1.
Ptuj (gr. 616)
Žara z izvihanim in navzgor cevasto zavihanim ustjem, dno vboklo.
7.2.2. - pr. ustja 12 cm - LMJ 2536.
Lit.: Istenič 2000, t. 133: 7.
Stari trg pri Slovenj Gradcu (gr. 1/1977)
Žara z navznoter zapognjenim ustjem, dno vboklo in odebeljeno v sredini.
7.2.2. - viš. 9,6 cm - KPM.
Lit.: Strmčnik Gulič 1981, t. 18: 1.
Ptuj (gr. 641)
Žara z izvihanim in navzgor cevasto zavihanim ustjem, dno vboklo.
7.2.2. - pr. ustja 15,2 cm - LMJ 2314.
Lit.: Istenič 2000, t. 142: 6.
Šempeter (gr. 7)
Ustje žare, izvihano in zapognjeno navzgor.
7.2.2. - pr. ustja 15 cm - PMC R 943.
Lit.: Kolšek 1977, t. 5: 1.

Primerjave: Welker 1974, Taf. 17: 280-282; Sternini 1990, Pl. 9: 18; 10: 19; Cool, Price 1995, Fig. 7. 4: 772, 784-787.

7.2.3.

Kroglasti lonci z izvihanim in navzdol zapognjenim ustjem (Is 67a); (*sl. 48*):

Kroglasta posoda s kratkim vratom, ustje zataljeno, izvihano navzven in zapognjeno navznoter. Dno vboklo.

Datacija: druga polovica 1. - 2. st.

Miklavž pri Mariboru (GN)
Kroglasta žara z izvihanim in navzdol zapognjenim ustjem, dno vboklo.
7.2.3. - viš. 21,2 cm - PMM A 2240.
Lit.: Pahič 1969, t. 1: 2.
Ptuj (gr. 139)
Žara z izvihanim in navzdol zapognjenim ustjem, dno vboklo.
7.2.3. - pr. ustja 10,5 cm - LMJ 2552.
Lit.: Istenič 2000, t. 30: 14
Šahovec pri Dobrniču (gr.1)
Kroglasta žara z izvihanim in navzdol zapognjenim ustjem, dno vboklo.

Ptuj (PN)
Globular jar with an everted flat rim, the base fairly narrowed and concave.
7.2.1. - ht. 18.5 cm - PMP.
Lit.: Šubic 1976, Fig. 3.

Analogies: Czurda-Ruth 1979, Pl. 9: 1163; Fremersdorf, Polónyi-Fremersdorf 1984, No. 79, 81; Barkóczi 1988, Pl. 40: 526; 41: 528; Follmann-Schulz 1988, Pl. 33: 255; Cool, Price 1995, Fig. 7.7: 828, 834-838.

7.2.2.

Globular jars with everted and rolled up rims (*Fig. 47*):

Globular vessels with a short neck and fire-rounded rim, which is turned out and then rolled up to create a tubular edge. Concave base.

Date: second half of the 1st - beginning of the 3rd centuries

Miklavž pri Mariboru (GN)
Globular jar with an everted and upwardly bent rim, concave base.
7.2.2. - ht. 23.7 cm - PMM A 2239.
Lit.: Pahič 1969, Pl. 1: 1.
Ptuj (gr. 616)
Jar with an everted and upward bent tubular rim, concave base.
7.2.2. - dia. rim 12 cm - LMJ 2536.
Lit.: Istenič 2000, Pl. 133: 7.
Stari trg pri Slovenj Gradcu (gr. 1/1977)
Jar with an inwardly bent rim, the base concave and thickened in the center.
7.2.2. - ht. 9.6 cm - KPM.
Lit.: Strmčnik Gulič 1981, Pl. 18: 1.
Ptuj (gr. 641)
Jar with an everted and upward bent tubular rim, concave base.
7.2.2. - dia. rim 15.2 cm - LMJ 2314.
Lit.: Istenič 2000, Pl. 142: 6.
Šempeter (gr. 7)
Rim of a jar, everted and bent upwards.
7.2.2. - dia. rim 15 cm - PMC R 943.
Lit.: Kolšek 1977, Pl. 5: 1.

Analogies: Welker 1974, Pl. 17: 280-282; Sternini 1990, Pl. 9: 18; 10: 19; Cool, Price 1995, Fig. 7. 4: 772, 784-787.

7.2.3.

Globular jars with everted and downward bent rims (Is 67a); (*Fig. 48*):

Globular vessels with a short neck, the rim fire-rounded, turned outward and bent downwards. Concave base.

Date: second half of the 1st - 2nd centuries

7.2.3. - viš. 23,7 cm; najv. obseg 30 cm - DM.
Lit.: Slabe 1976, t. 2: 4.
Šempeter (gr. 1)
Kroglasta žara z izvihanim, navzdol zapognjenim ustjem, dno zoženo in vboklo.
7.2.3. - viš. 15,9 cm; pr. ustja 11,2 cm - PMC R 951.
Lit.: Kolšek 1977, t. 1: 2.
Šempeter (PN)
Ustje žare, izvihano in zapognjeno navzdol.
7.2.3. - pr. ustja 11 cm - PMC R 1688.
Lit.: Kolšek 1977, t. 32: 18.

Primerjave: Barkóczi 1988, Taf. 41: 527; Sternini 1990, Pl. 10: 20.

7.2.4.
Kroglasti lonci z izvihanim in navzdol dvakrat zapognjenim ustjem (*sl. 48*):

Kroglaste posode s kratkim vratom, zataljeno ustje je izvihano, in navzdol dvakrat zapognjeno v obliki osmice. Dno vboklo.

Datacija: druga polovica 1. - 2. st.

Bobovek (gr. 1)
Kroglasta žara, ustje izvihano in dvakrat zapognjeno, dno vboklo.
7.2.4. - viš. 15 cm; pr. ustja 11 cm - GMK.
Lit.: Petru, Valič 1959, t. 1: 1.
Celje (gr. 4)
Ustje žare, izvihano in navzdol dvakrat zapognjeno.
7.2.4. - pr. ustja 14,1 cm - PMC R 4280.
Lit.: Kolšek 1972, Y 152-1: 6.
Celje (gr. 4)
Ustje žare, izvihano in navzdol dvakrat zapognjeno.
7.2.4. - pr. ustja 14 cm - PMC R 4282.
Lit.: Kolšek 1972, Y 152-1: 8.
Cerknica (gr. 2)
Deli žare, ustje dvakrat zapognjeno navzdol, dno vboklo.
7.2.4. - pr. ustja 19,2 cm - NMP.
Lit.: Urleb 1984, t. 1: 13.
Dobova (gr. A17)
Delno ohranjena žara, ustje izvihano in dvakrat zapognjeno, dno vboklo.
7.2.4. - viš. 24 cm; pr. ustja 17,6 cm - PMB.
Lit.: Petru P. 1969, t. 3: 1.
Novo mesto - Beletov vrt (gr. 69)
Deli žare z navzdol dvakrat zapognjenim ustjem, dno vboklo.
7.2.4. - pr. ustja 13,2 cm - DM 487.
Lit.: Knez 1981, Y 262: 11.
Ptuj (gr. 621)
Žara z navzdol dvakrat zapognjenim ustjem, dno vboklo.
7.2.4. - viš. 22 cm - LMJ 2463.
Lit.: Istenič 2000, t. 136: 4.
Ptuj (gr. 622)
Žara z navzdol dvakrat zapognjenim ustjem, dno vboklo.
7.2.4. - pr. ustja 13,8 cm - LMJ 2466.
Lit.: Istenič 2000, t. 137: 1.
Ptuj (gr. 646)
Žara z navzdol dvakrat zapognjenim ustjem, dno vboklo.

Miklavž pri Mariboru (GN)
Jar with an everted and downward bent rim, concave base.
7.2.3. - ht. 21.2 cm - PMM A 2240.
Lit.: Pahič 1969, Pl. 1: 2.
Ptuj (gr. 139)
Jar with an everted and downward bent rim, concave base.
7.2.3. - dia. rim 10.5 cm - LMJ 2552.
Lit.: Istenič 2000, Pl. 30: 14
Šahovec pri Dobrniču (gr.1)
Globular jar with an everted, downward bent rim, concave base.
7.2.3. - ht. 23.7 cm; greatest circ. 30 cm - DM.
Lit.: Slabe 1976, Pl. 2: 4.
Šempeter (gr. 1)
Globular jar with an everted, downward bent rim, base narrowed and concave.
7.2.3. - ht. 15.9 cm; dia. rim 11.2 cm - PMC R 951.
Lit.: Kolšek 1977, Pl. 1: 2.
Šempeter (PN)
Rim of a jar, everted and bent downwards.
7.2.3. - dia. rim 11 cm - PMC R 1688.
Lit.: Kolšek 1977, Pl. 32: 18.

Analogies: Barkóczi 1988, Pl. 41: 527; Sternini 1990, Pl. 10: 20.

7.2.4.
Globular jars with collar rim (*Fig. 48*):

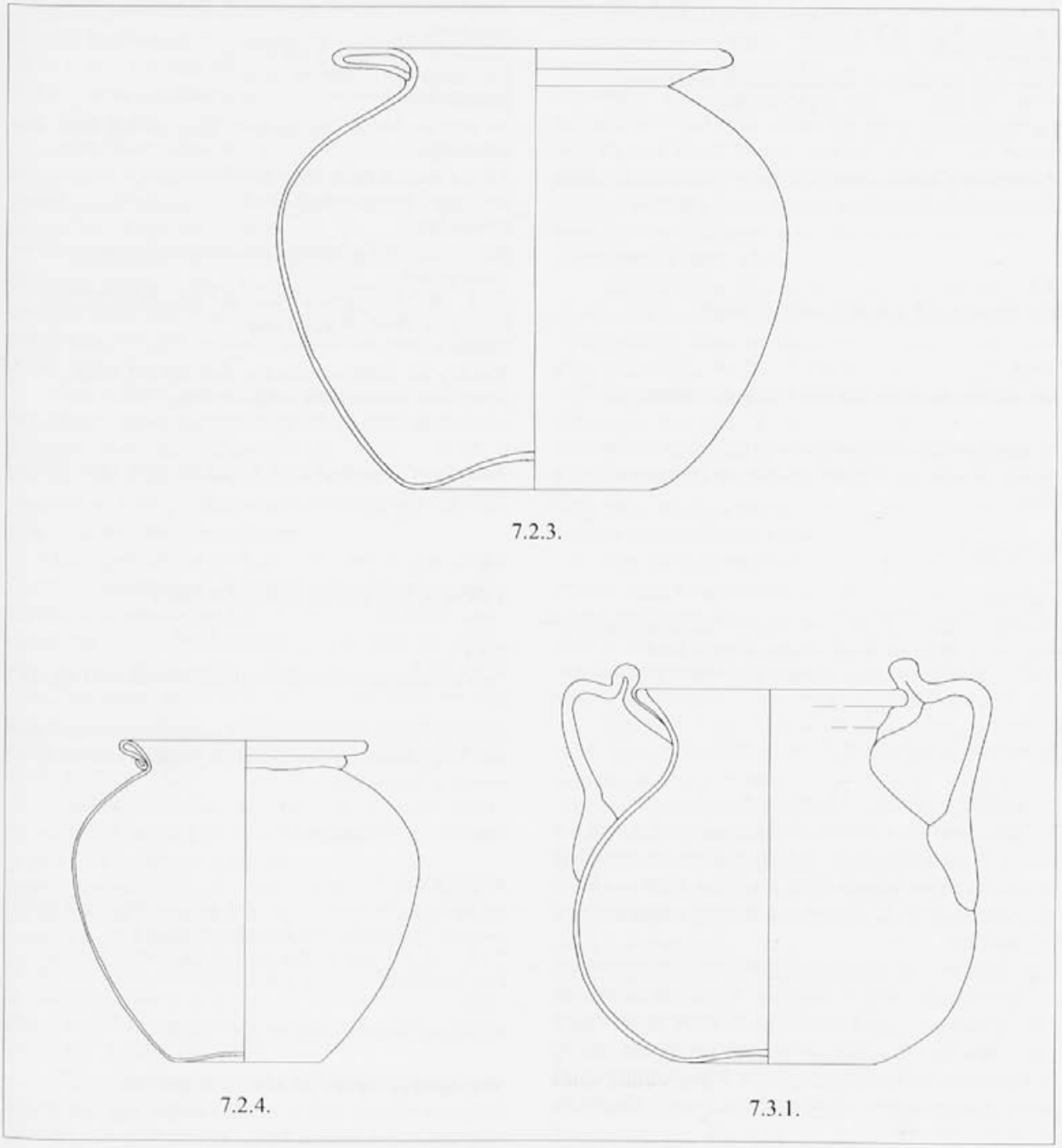
Globular vessels with a short neck, the rounded rim is everted, rolled in, bent out and down in the shape of a figure-eight. Concave base.

Date: second half of the 1st - 2nd centuries

Bobovek (gr. 1)
Spherical jar, rim everted, rolled in, then out and down, concave base.
7.2.4. - ht. 15 cm; dia. rim 11 cm - GMK.
Lit.: Petru, Valič 1959, Pl. 1: 1.
Celje (gr. 4)
Rim of a jar, everted, rolled in, then out and down.
7.2.4. - dia. rim 14.1 cm - PMC R 4280.
Lit.: Kolšek 1972, Y 152-1: 6.
Celje (gr. 4)
Rim of a jar, everted, rolled in, then out and down.
7.2.4. - dia. rim 14 cm - PMC R 4282.
Lit.: Kolšek 1972, Y 152-1: 8.
Cerknica (gr. 2)
Parts of a jar, rim rolled in, then out and down, concave base.
7.2.4. - dia. rim 19.2 cm - NMP.
Lit.: Urleb 1984, Pl. 1: 13.
Dobova (gr. A17)
Partly preserved jar, rim rolled in, then out and down, concave base.
7.2.4. - ht. 24 cm; dia. rim 17.6 cm - PMB.
Lit.: Petru 1969, Pl. 3: 1.
Novo mesto - Beletov vrt (gr. 69)
Parts of a jar with a rim rolled in, then out and down, concave base.
7.2.4. - dia. rim 13.2 cm - DM 487.

7.2.4. - pr. ustja 18,4 cm - LMJ 2321.
Lit.: Istenič 2000, t. 143: 8
Verdun (gr. 30)
Žara z izvihanim, navzdol dvakrat zapognjenim ustjem, dno vboklo.
S 2.7.4. - viš. 18,4 cm - DM 1696.
Lit.: Brešćak 2002, 138, kat. 74/5.
Drnovo (PN)
Kroglasta žara z izvihanim, navzdol dvakrat zapognjenim ustjem, dno vboklo.
7.2.4. - viš. 17 cm; najv. obseg 20 cm - NMS R 735.
Lit.: Petru, Petru 1978, t. 26: 5.

Lit.: Knez 1981, Y 262: 11.
Ptuj (gr. 621)
Jar with a rim rolled in, then out and down, concave base.
7.2.4. - ht. 22 cm - LMJ 2463.
Lit.: Istenič 2000, Pl. 136: 4.
Ptuj (gr. 622)
Jar with a rim rolled in, then out and down, concave base.
7.2.4. - dia. rim 13.8 cm - LMJ 2466.
Lit.: Istenič 2000, Pl. 137: 1.
Ptuj (gr. 646)
Jar with a rim rolled in, then out and down, concave base.
7.2.4. - dia. rim 18.4 cm - LMJ 2321.



Sl. 48: Skupina 7 - lonci (7.2.3.: Pahič 1969, t. 1: 2; 7.2.4.: Petru, Valič 1959, t. 1: 1; 7.3.1.: Mikl Curk 1976, t. 4: 9). M. = 1:3.

Fig. 48: Group 7 - jars (7.2.3.: Pahič 1969, Pl. 1: 2; 7.2.4.: Petru, Valič 1959, Pl. 1: 1; 7.3.1.: Mikl Curk 1976, Pl. 4: 9). Scale = 1:3.

Drnovo (PN)
Kroglasta žara, izvihano ustje dvakrat zapognjeno navzdol, dno vboklo.
7.2.4. - viš. 13,6 cm - NMS R 737.
Lit.: Petru, Petru 1978, t. 26: 6.
Drnovo (PN)
Žara z izvihanim, dvakrat zapognjenim ustjem, dno vboklo.
7.2.4. - viš. 15,9 cm - NMS R 1337d.
Lit.: Petru, Petru 1978, t. 26: 7.
Drnovo (PN)
Kroglasta žara s sploščenim, navzdol dvakrat zapognjenim ustjem, dno vboklo.
7.2.4. - viš. 19 cm; najv. obseg 21,2 cm - NMS R 732.
Lit.: Petru, Petru 1978, t. 26: 2.
Šempeter (PN)
Ustje žare, sploščeno in navzdol dvakrat zapognjeno.
7.2.4. - pr. ustja 17,2 cm - PMC R 1748.
Lit.: Kolšek 1977, t. 38: 29.

Primerjave: Czurda-Ruth 1979, Taf. 9: 1155, 1157, 1160; Sternini 1990, Pl. 11; 12.

7.3.
DVOROČAJNI KROGLASTI LONCI

7.3.1.
Dvoročajni kroglasti lonci z izvihanim ustjem (*sl. 48*):

Kroglaste posode s širokim vratom in izvihanim, odebeljenim ustjem. Ročaja sta pritrjena na rame in ustje posode, dno vboklo.

Datacija: 1. - 2. st.

Ptuj (PN)
Kroglasta žara z izvihanim ustjem, vboklim dnom in trakastima ročajema. Ročaja imata ob ustju gubo.
7.3.1. - viš. 17,8 cm; najv. obseg 17 cm - PMP R 1234.
Lit.: Mikl Curk 1976, t. 4: 9.

Primerjave: Sternini 1990, Pl. 8: 15, 16; 9: 17.

Komentar za oblike 7.2.1. do 7.2.4. in 7.3.1.:
Kroglaste posode s širokim izvihanim ustjem in vboklim dnom so med steklenimi izdelki pogoste in razširjene oblike. Različice lahko ločimo predvsem glede na obliko in izdelavo ustja, ki je izvihano in nato zapognjeno na več načinov.

Izdelovali so jih v mnogih velikostih in verjetno so jih uporabljali v različne namene. V manjših posodicah (oblike 8.2.1.-3.) so hranili mazila, večje pa so služile največkrat kot žare. Kot potrjujejo naselbinske najdbe iz Pompejev in Herkulanea so jih pogosto uporabljali tudi v gospodinjstvu kot shrambene posode (Scatozza Höricht 1986, 68-70).

Oblika je zelo razširjena predvsem v zahodnem delu imperija, medtem ko je na vzhodu zelo redka (Whitehouse 1997, 175).

Lit.: Istenič 2000, Pl. 143: 8
Verdun (gr. 30)
Jar with an everted rim rolled in then out and down, concave base.
7.2.4. - ht. 18.4 cm - DM 1696.
Lit.: Breščak 2002, 138, cat. 74/5.
Drnovo (PN)
Spherical jar with an everted rim rolled in, then out and down, concave base.
7.2.4. - ht. 17 cm; greatest circ. 20 cm - NMS R 735.
Lit.: Petru, Petru 1978, Pl. 26: 5.
Drnovo (PN)
Spherical jar, everted rim rolled in, then out and down, concave base.
7.2.4. - ht. 13.6 cm - NMS R 737.
Lit.: Petru, Petru 1978, Pl. 26: 6.
Drnovo (PN)
Jar with an everted rim, rolled in, then out and down, concave base.
7.2.4. - ht. 15.9 cm - NMS R 1337d.
Lit.: Petru, Petru 1978, Pl. 26: 7.
Drnovo (PN)
Spherical jar with a flattened rim, rolled in then out and down, concave base.
7.2.4. - ht. 19 cm; greatest circ. 21.2 cm - NMS R 732.
Lit.: Petru, Petru 1978, Pl. 26: 2.
Šempeter (PN)
Rim of a jar, flattened, rolled in, then out and down.
7.2.4. - dia. rim 17.2 cm - PMC R 1748.
Lit.: Kolšek 1977, Pl. 38: 29.

Analogies: Czurda-Ruth 1979, Pl. 9: 1155, 1157, 1160; Sternini 1990, Pl. 11; 12.

7.3.
TWO-HANDLED GLOBULAR JARS

7.3.1.
Two-handled globular jars with an everted rim (*Fig. 48*):

Globular vessels with a broad neck and a turned-out thickened rim. Two handles are attached to the shoulder and rim of the vessels. Concave base.

Date: 1st - 2nd centuries

Ptuj (PN)
Spherical jar with an everted rim, concave base, and ribbon handles. The handles are folded next to the rim.
7.3.1. - ht. 17.8 cm; greatest circ. 17 cm - PMP R 1234.
Lit.: Mikl Curk 1976, Pl. 4: 9.

Analogies: Sternini 1990, Pl. 8: 15, 16; 9: 17.

Comments - forms 7.2.1. to 7.2.4. and 7.3.1.:
Globular vessels with a broad everted rim and a concave base represent a frequent and widespread form among glass products. Variants can be distinguished primarily in terms of the form and working of the rim, which was everted and then bent in several ways.

Poleg enostavnih kroglastih posod brez ročajev, so razširjeni tudi izdelki z dvema ročajema različnih oblik (oblika Isings 63 in 65), ki sta vertikalno pritrjena na rame ali na rame in vrat posode. Predvsem izdelki 1. in 2. stoletja imajo ponekod dodan tudi pokrov. V redkih primerih je pokrov oblikovan kot lijak in je služil pri pogrebnih svečanostih (Whitehouse 1997, no. 302). Položili so ga na ustje žare z dulcem navzdol, da so lahko v posodo vlivali daritve, namenjene pokojniku (Whitehouse 1997, 172).

Več vrst žar z ročaji in s pokrovi poznamo iz emonskih grobov. V grobovih 109 in 746 (datiranima z novcem Nerona) sta bili najdeni žari z ročajema (Petru 1972, t. 15: 33; Plesničar Gec 1972, t. 208: 1), iz grobov 732 in 734 pa sta ohranjeni žari s pokrovoma (Plesničar Gec 1972, t. 169: 1; 170: 1).

Po razširitvi skeletnih pokopov od 3. stoletja dalje, je uporaba v pogrebnih običajih počasi zamrla, kot posode za shranjevanje pa so jih uporabljali še v mlajšem času (Cool, Price 1995, 110).

Najzgodnejši izdelki oblike Isings 67 so znani s Štalenske gore iz sredine 1. stoletja (Czurda-Ruth 1979, 156), od druge polovice 1. in do začetka 3. stoletja pa so pogosti na mnogih najdiščih zahodnega dela imperija (Cool, Price 1995, 109).

Tudi najdbe s slovenskega prostora so v glavnem del grobnih celot, medtem ko jih iz naselbinskih slojev poznamo zelo malo (Plesničar Gec 1983, t. 3: 18; 9: 2,3; 30: 16; Celje - neobjavljeno gradivo). Najdbe iz naselbin so zaradi fragmentarne ohranjenosti tudi teže prepoznavne oziroma določljive.

Kroglasti lonci z izvihanim in odebeljenim ustjem (7.2.1.) so najdbe brez datiranih celot. Po primerjavi z najdbami z ostalih najdišč je opaziti, da sodijo med zgodnejše oblike. Na Štalenski gori so tovrstni izdelki prisotni že v prvi polovici 1. stoletja (Czurda-Ruth 1979, 157), histogram najdb iz Colchestra pa kaže, da sodi največ najdb v drugo polovico 1. in prvo polovico 2. stoletja, nato pa jih zamenjajo druge oblike (Cool, Price 1995, 113, Fig. 7.6).

Obliki 7.2.2. in 7.2.3. se pojavljata v grobnih celotah od sredine 1. stoletja do začetka 3. stoletja. Najstarejši je grob 7 iz Šempetra, v katerem je bil najden Avgustov novec (Kolšek 1977, 15), žari iz gomile v Miklavžu pa sta del celote iz konca 1. in začetka 2. stoletja (Pahič 1969,74). Žare iz Petovione sodijo v grobne celote iz 2. stoletja (Istenič 2000, 204, 214, 57). Najmlajši sta žari iz groba v Šahovcu in groba 1 v Šempetru, ki sodita v drugo polovico 2. oziroma na začetek 3. stoletja (Slabe 1976, 245; Kolšek 1977, 13).

Najštevilneje so zastopane žare z dvojno zavihanim ustjem v obliki osmice (7.2.4.). Pojavljajo se v grobovih druge polovice 1. stoletja - Dobova, gr. A 17, Celeja, gr. 4 (Petru 1969, 35; Kolšek 1972, Y 152), Petoviona, gr. 622, 646 (Istenič 2000, 207, 216), grobovih iz začetka 2. stoletja - Novo mesto, gr. 69 (Knez 1992, 40),

They were manufactured in many sizes and they were probably used for varied purposes. The small vessels (forms 8.2.1.-3.) were used to store unguents, while the larger ones most often served as urns. As is confirmed by the settlement finds from Pompeii and Herculaneum, they were often also in everyday household use as storage vessels (Scatozza Höricht 1986, 68-70).

The form was highly widespread primarily in the western part of the Empire, and it was very rare in the east (Whitehouse 1997, 175).

In addition to single globular vessels without handles, products with two handles of various forms were also widespread (Isings 63 and 65), which were attached vertically to the shoulder or to the shoulder and neck of the vessel. Products of the 1st and 2nd centuries occasionally also had a lid added. On rare examples, the lid was formed like a funnel, and served in burial rituals (Whitehouse 1997, no. 302). It was placed on the lid of the urn with the spout facing downward, so that offerings for the deceased could be poured into the urn (Whitehouse 1997, 172).

Several types of urns with handles and with lids are known from the graves at Emona. Graves 109 and 746 (dated by coins of Nero) contained urns with handles (Petru 1972, Pl. 15: 33; Plesničar Gec 1972, Pl. 208: 1), and graves 732 and 734 contained urns with lids (Plesničar Gec 1972, Pl. 169: 1; 170: 1).

With the spread of inhumation burial from the 3rd century onwards, their use in burial ceremonies slowly died away, while as storage vessels they were used even in later periods (Cool, Price 1995, 110).

The earliest examples of the Isings 67 form are known from Magdalensberg from the middle of the 1st century (Czurda-Ruth 1979, 156), and from the second half of the 1st century up to the beginning of the 3rd centuries they were common at many sites in the western part of the Empire (Cool, Price 1995, 109).

The finds from Slovenia for the most part come from grave contexts, while very few are known from settlement strata (Plesničar Gec 1983, Pl. 3: 18; 9: 2,3; 30: 16; Celje - unpublished material). The fragmentary preservation of the finds from settlements also makes recognition and classification more difficult.

Jars with everted and thickened rims (7.2.1.) are finds without a dated context. Through comparisons with finds from other sites it can be noted that they are among the earliest forms. At Magdalensberg such products are present as early as the first half of the 1st century (Czurda-Ruth 1979, 157), while the histogram of finds from Colchester shows that the finds belong mostly to the second half of the 1st and the first half of the 2nd centuries, after which they were replaced by other forms (Cool, Price 1995, 113, Fig. 7.6).

Forms 7.2.2. and 7.2.3. appear in grave units from the middle of the 1st century to the beginning of the 3rd century. The earliest was grave 7 from Šempeter, which

Petoviona, gr. 621 (Istenič 2000, 206) in v grobovih 2. stoletja - Bobovek, Cerknica, Verdun (Petru, Valič 1959, 134; Urleb 1984, 315; Breščak 2002, 138). Številne najdbe iz Drnovega so iz neohranjenih grobnih celot.

Dvoročajna žara iz Petovione je posamična najdba (7.3.1.). Primerjava z najdbami z ostalih najdišč jo umešča v 1. in 2. stoletje (Sternini 1990, 18).

SKUPINA 8 - POSODICE ZA OLJA IN DIŠAVE
(sl. 49-51; pril. 3, 4)

8.2.
KROGLASTI LONČKI

8.2.1.
Kroglasti lončki z izvihanim ustjem (Is 68); (*sl. 49*):

Lončki imajo kroglasto ostenje, kratek vrat in močno izvihano ustje, ki je zataljeno. Dno je v sredini vboklo.

Datacija: druga polovica 1. - 3. st.

Ptuj (gr. 338)
Kroglast lonček s kratkim vratom, ustje izvihano, dno vboklo.
8.2.1. - viš. 4,5 cm; pr. dna 2,6 cm - PMP 16065.
Lit.: Kujundžić 1982, t. 26: 4.
Ptuj (PN)
Kroglast lonček s kratkim vratom, ustje izvihano, dno vboklo.
8.2.1. - viš. 3,9 cm - PMP 1259.
Lit.: Mikl Curk 1976, t. 4: 10.

Primerjave: Goethert-Polaschek 1977, Taf. 25: 285a; Barkóczi 1988, Taf. 60: 513.

8.2.2.
Kroglasti lončki z izvihanim in odebeljenim ustjem (*sl. 49*):

Posodice s kroglastim ostenjem imajo izvihano ustje, ki je zataljeno in odebeljeno, dno je zaokroženo in ravno.

Datacija: druga polovica 1. - 2. st.

Formin (gr. 14)
Kroglast lonček z izvihanim in odebeljenim ustjem, dno ravno.
8.2.2. - viš. 5 cm - PMP.
Lit.: Mikl Curk 1975, Y 182: 7.

Primerjave: Barkóczi 1988, Taf. 60: 519, 516, 520.

contained a coin of Augustus (Kolšek 1977, 15), while the urns from the tumulus at Miklavž belonged to a grave from the end of the 1st and the beginning of the 2nd centuries (Pahič 1969,74). The urns from Poetovio came from 2nd century grave contexts (Istenič 2000, 204, 214, 57). The latest were urns from grave 1 at Šahovec and grave 1 at Šempeter, dated to the second half of the 2nd and the beginning of the 3rd century (Slabe 1976, 245; Kolšek 1977, 13).

The most represented form was globular jar with collar rim (7.2.4.). They appear in graves from the second half of the 1st century - Dobova, gr. A 17, Celeia, gr. 4 (Petru P. 1969, 35; Kolšek 1972, Y 152), Poetovio, gr. 622, 646 (Istenič 2000, 207, 216), graves from the beginning of the 2nd century - Novo mesto, gr. 69 (Knez 1992, 40), Poetovio, gr. 621 (Istenič 2000, 206), and graves from the 2nd century - Bobovek, Cerknica, and Verdun (Petru, Valič 1959, 134; Urleb 1984, 315; Breščak 2002, 138). The numerous finds from Drnovo came from unpreser-ved grave units.

The two-handled jar from Poetovio is also an isolated find (7.3.1). Comparison with finds from other sites places it in the 1st and 2nd centuries (Sternini 1990, 18).

GROUP 8 - VESSELS FOR OIL AND PERFUME/ COSMETICS
(Fig. 49-51; Appendices 3, 4)

8.2.
SMALL SPHERICAL JARS

8.2.1.
Small globular jars with a turned out rim (Is 68); (*Fig. 49*):

The small jars have globular walls, a short neck and a fire-rounded highly everted rim. The base is concave in the center.

Date: second half of the 1st - 3rd centuries

Ptuj (gr. 338)
Small spherical jar with a short neck, everted rim, concave base.
8.2.1. - ht. 4.5 cm; dia. base 2.6 cm - PMP 16065.
Lit.: Kujundžić 1982, Pl. 26: 4.
Ptuj (IF)
Small spherical jar with a short neck, everted rim, concave base.
8.2.1. - ht. 3.9 cm - PMP 1259.
Lit.: Mikl Curk 1976, Pl. 4: 10.

Analogies: Goethert-Polaschek 1977, Pl. 25: 285a; Barkóczi 1988, Pl. 60: 513.

8.2.3.
Kroglasti lončki z izvihanim in nazaj zapognjenim ustjem (*sl. 49*):

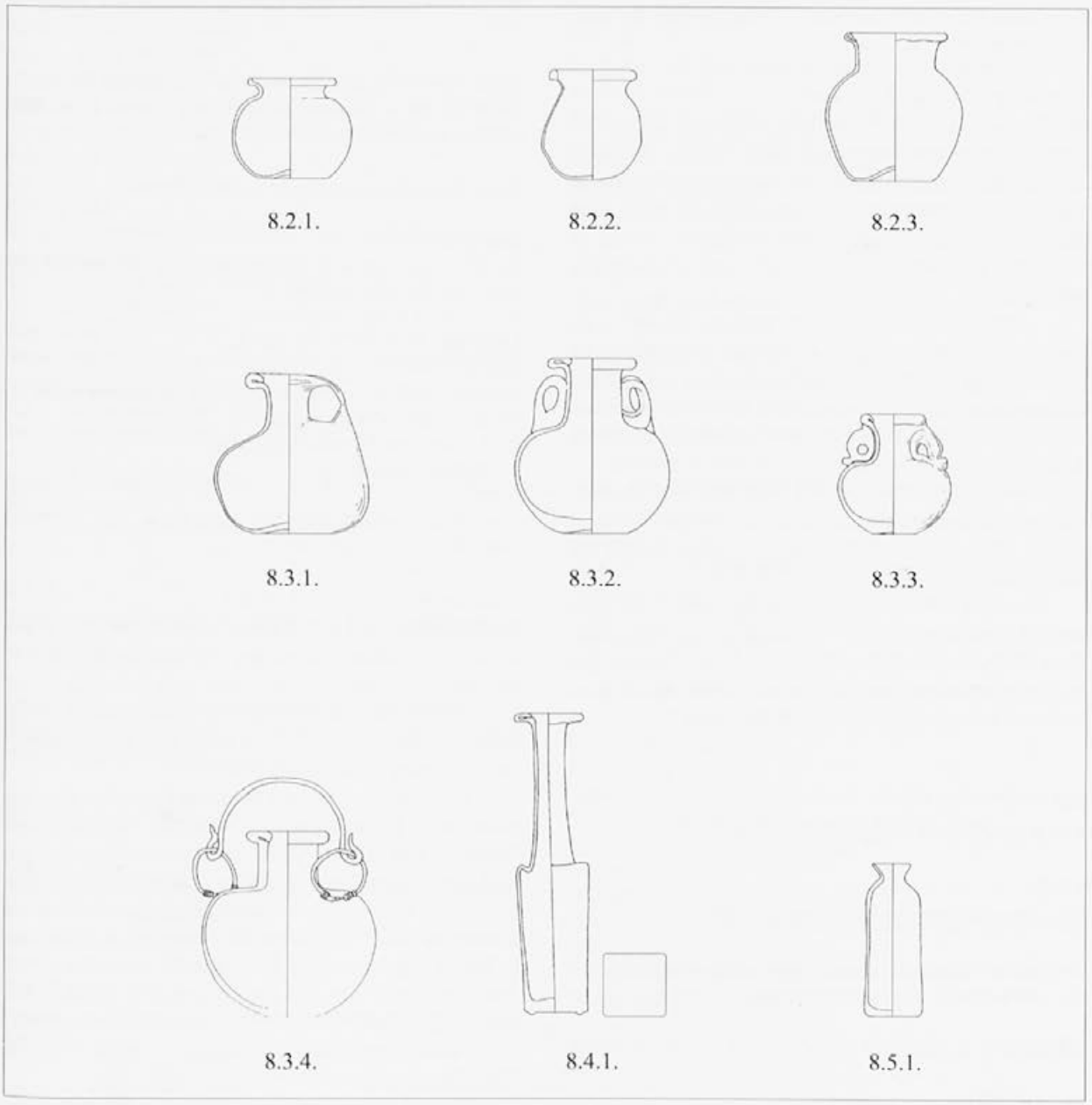
Posodice s kroglastim ostenjem imajo izvihano ustje, ki je nazaj cevasto zapognjeno in ponekod sploščeno, dno je v sredini vboklo.

Datacija: druga polovica 1. - 2. st.

8.2.2.
Small globular jars with a turned out and thickened rim (*Fig. 49*):

Small vessels with globular walls have an everted rim that is fire-rounded and thickened; the base is rounded and flat.

Date: second half of the 1st - 2nd centuries



Sl. 49: Skupina 8 - posodice za olja in dišave (8.2.1.: Kujundžić 1982, t. 26: 4; 8.2.2.: Mikl Curk 1975, 182: 7; 8.2.3.: Petru, Petru 1978, t. 25: 15; 8.3.1.: Istenič 2000, t. 170: 3; 8.3.2.: Urleb 1984, t. 14: 3; 8.3.3.: Istenič 2000, t. 62: 2; 8.3.4.: Slabe 1993, t. 2: 4; 8.4.1.: Petru, Petru 1978, t. 24: 37; 8.5.1.: Šubic 1976, t. 1: 3). M. = 1:3.

Fig. 49: Group 8 - cosmetic vessels (8.2.1.: Kujundžić 1982, Pl. 26: 4; 8.2.2.: Mikl Curk 1975, 182: 7; 8.2.3.: Petru, Petru 1978, Pl. 25: 15; 8.3.1.: Istenič 2000, Pl. 170: 3; 8.3.2.: Urleb 1984, Pl. 14: 3; 8.3.3.: Istenič 2000, Pl. 62: 2; 8.3.4.: Slabe 1993, Pl. 2: 4; 8.4.1.: Petru, Petru 1978, Pl. 24: 37; 8.5.1.: Šubic 1976, Pl. 1: 3). Scale = 1:3.

Drnovo (PN)
Kroglast lonček z nizkim vratom, ustje izvihano in zapognjeno, dno vboklo.
8.2.3. - viš. 6,8 cm - NMS R 711.
Lit.: Petru, Petru 1978, t. 25: 15.
Ptuj (gr. 237)
Kroglast lonček z izvihanim in navznoter cevasto zapognjenim ustjem, dno rahlo vboklo.
8.2.3. - pr. ustja 3,3 cm - LMJ 2416.
Lit.: Istenič 2000, t. 49: 6.

Primerjave: Goethert-Polaschek 1977, Taf. 6: 72b; 10: 118k; Cool, Price 1995, Fig. 7. 10.

Komentar za oblike 8.2.1. do 8.2.3.:
Mali kroglasti lončki s širokim izvihanim ustjem so izdelani iz naravno obarvanega stekla, verjetno so služili za hranjenje različnih mazil. Med seboj se razlikujejo le v detajlih. Večinoma imajo močno izvihano ustje, ki je zataljeno, odebeljeno ali cevasto zavihano. Ostenje je navadno kroglasto, ali nekoliko bolj cilindrično potegnjeno.

Lončki ne sodijo med zelo pogoste najdbe, a jih vseeno poznamo z najdišč v Britaniji, Nemčiji in na Madžarskem. Najstarejše najdbe, datirane v klavdijski čas, so znane iz Hofheima - oblika 19 (Ritterling 1913, 376). Najpogosteje se pojavljajo v kontekstih od konca 1. in v 2. stoletju, najdemo pa jih tudi v grobovih 3. stoletja (Cool, Price 1995, 116). Najdbe z Madžarske so datirane večinoma na konec 1. in v 2. stoletje (Barkóczi 1988, 205), Rütti pa najdbe iz Augsta datira od klavdijskega časa do 4. stoletja (1991, 51).

Grob 14 iz Formina je datiran na konec 1. oziroma začetek 2. stoletja, grob 338 s Ptuja pa v 2. stoletje (Mikl Curk 1975, Y 182; Kujundžić 1982, 50). Grobova 238 in 778 z zahodne petovionske nekropole sta iz prve polovice 2. stoletja (Istenič 2000, 87, 251).

8.3.
KROGLASTE STEKLENIČKE Z ROČAJI

8.3.1.
Kroglaste stekleničke z ročajem (*sl. 49*):

Stekleničke s kroglastim trupom, ustje zapognjeno navznoter, dno rahlo vboklo, ročaj pritrjen na ustje.

Datacija: 2. st.

Ptuj (gr. 759)
Kroglasta steklenička z ročajem, dno ravno, ročaj izvlečen iz ostenja.
8.3.1. - pr. ustja 3, 8 cm - LMJ 2400.
Lit.: Istenič 2000, t. 170: 3.

Primerjave: nepoznane.

Formin (gr. 14)
Globular small jar with an everted and thickened rim, flat base.
8.2.2. - ht. 5 cm - PMP.
Lit.: Mikl Curk 1975, Y 182: 7.

Analogies: Barkóczi 1988, Pl. 60: 519, 516, 520.

8.2.3.
Small globular jars with a turned out tubular rim (*Fig. 49*):

Small vessels with globular walls have an everted rim that is rolled up into a tube and is sometimes flattened; the base concave in the center.

Date: second half of the 1st - 2nd centuries

Drnovo (IF)
Globular small jar with a short neck, the rim everted and rolled up, the base concave.
8.2.3. - ht. 6.8 cm - NMS R 711.
Lit.: Petru, Petru 1978, Pl. 25: 15.
Ptuj (gr. 237)
Globular small jar with an everted and tubular rim rolled inwards, the base slightly concave.
8.2.3. - dia. rim 3.3 cm - LMJ 2416.
Lit.: Istenič 2000, Pl. 49: 6.

Analogies: Goethert-Polaschek 1977, Pl. 6: 72b; 10: 118k; Cool, Price 1995, Fig. 7. 10.

Comments - forms 8.2.1. to 8.2.3.:
Small globular jars with a broad everted rim were made of naturally coloured glass, and probably served for storing various ointments. They differ only in details. Most have a highly everted rim, which was fire-rounded, thickened or rolled into a tube. The walls were usually globular, somewhat cylindrically rolled.

Small jars are not very common finds, but they are nonetheless known from sites in Britain, Germany, and Hungary. The earliest finds, dated to the Claudian period, are known from Hofheim - form 19 (Ritterling 1913, 376). They appear most frequently in contexts from the end of the 1st and in the 2nd centuries, and can also be found in graves of the 3rd century (Cool, Price 1995, 116). The finds from Hungary are mostly dated to the end of the 1st and to the 2nd centuries (Barkóczi 1988, 205), while Rütti dated the finds from Augst from the Claudian period to the 4th century (1991, 51).

Grave 14 from Formin was dated to the end of the 1st or the beginning of the 2nd century, and grave 338 from Ptuj to the 2nd century (Mikl Curk 1975, Y 182; Kujundžić 1982, 50). Graves 238 and 778 from the western cemeteries of Poetovio were from the first half of the 2nd century (Istenič 2000, 87, 251).

8.3.2.
Kroglaste steklenička z ročajema (*sl. 49*):

Telo kroglasto, ustje zataljeno, izvihano navzven, nato cevasto zavihano nazaj in sploščeno, dno ravno, v sredi vboklo. Ročaj trakast, speljan tik ob vratu in zavihan nazaj.

Datacija: 1. - 3. st.

Cerknica (gr. 27)
Kroglasta steklenička z dvema ročajema, ustje izvihano in sploščeno, dno rahlo vboklo.
8.3.2. - viš. 8 cm - NMP.
Lit.: Urleb 1984, t. 14: 3.
Ptuj (gr. 4)
Kroglasta dvoročajna steklenička, ustje sploščeno, dno ravno.
8.3.2. - viš. 5,8 cm - PMP.
Lit.: Tušek 1993, t. 6: 6.
Ptuj (gr. 11)
Kroglasta dvoročajna steklenička, ustje zapognjeno nazaj in sploščeno, dno vboklo.
8.3.2. - pr. ustja 3,6 cm - LMJ 2253.
Lit.: Istenič 2000, t. 3: 9.
Ptuj (gr. 615)
Kroglasta dvoročajna steklenička, po ostenju nataljene steklene niti, ustje narezano.
8.3.2. - pr. ustja 3,6 cm - LMJ 2534.
Lit.: Istenič 2000, t. 134: 5.

Primerjave: Welker 1974, Taf. 3: 39, 42; Barkóczi 1988, Taf. 33: 354.

8.3.3.
Kroglaste stekleničke z ročajema v obliki delfinov (Is 61); (*sl. 49*):

Stekleničke z izvihanim zataljenim ali odebeljenim ustjem, ki je sploščeno. Dno ravno ali v sredi vboklo. Ročaj, ki se drži vratu, ima obliko delfinov.

Datacija: 1. - 3. st.

Ptuj (gr. 303)
Kroglasta steklenička zapognjenim in sploščenim ustjem, ročaja v obliki delfinov.
8.3.3. - pr. ustja 2,9 cm - LMJ 2441.
Lit.: Istenič 2000, t. 62: 2.
Ptuj (PN)
Kroglasta steklenička z izvihanim ustjem, ročaja v obliki delfinov.
8.3.3. - viš. 6,5 cm - PMP 1236.
Lit.: Mikl Curk 1976, t. 4: 6.

Primerjave: Fremersdorf 1958, Taf. 36, 37; Welker 1974, Taf. 3: 31-33, 36-38; Barkóczi 1988, Taf. 355-59.

8.3.
BATH FLASKS WITH HANDLES

8.3.1.
Bath flasks flasks with a handle (*Fig. 49*):

Small flasks with a globular body, the rim bent inwards, the base slightly concave, the handle attached to the rim.

Date: 2nd century

Ptuj (gr. 759)
Globular small flask with a handle, base flat, the handle drawn out from the walls.
8.3.1. - dia. rim 3.8 cm - LMJ 2400.
Lit.: Istenič 2000, Pl. 170: 3.

Analogies: none identified.

8.3.2.
Bath flasks with handles (*Fig. 49*):

Globular body, rim fire-rounded, turned outwards, then rolled inwards into a tube and flattened, the base flat, concave in the center. The ribbon handles were drawn out adjacent to the neck and bent inwards.

Date: 1st - 3rd centuries

Cerknica (gr. 27)
Globular small flask with two handles, the rim turned outward and flattened, base slightly concave.
8.3.2. - ht. 8 cm - NMP.
Lit.: Urleb 1984, Pl. 14: 3.
Ptuj (gr. 4)
Globular two-handled small flask, rim flattened, base flat.
8.3.2. - ht. 5.8 cm - PMP.
Lit.: Tušek 1993, Pl. 6: 6.
Ptuj (gr. 11)
Globular two-handled small flask, the rim bent inwards and flattened, concave base.
8.3.2. - dia. rim 3.6 cm - LMJ 2253.
Lit.: Istenič 2000, Pl. 3: 9.
Ptuj (gr. 615)
Globular two-handled small flask, applied glass trails on the walls, cut rim.
8.3.2. - dia. rim 3.6 cm - LMJ 2534.
Lit.: Istenič 2000, Pl. 134: 5.

Analogies: Welker 1974, Pl. 3: 39, 42; Barkóczi 1988, Pl. 33: 354.

8.3.3.
Bath flasks with handles in the shape of dolphins (Is 61); (*Fig. 49*):

Small flasks with an everted fire-rounded or thickened

8.3.4.
Kroglaste stekleničke z bronastima zankama namesto ročajev (*sl. 49*):

Kroglaste stekleničke s sploščenim ustjem, ki imajo bronast ročaj pritrjen neposredno na ostenje posodice.

Datacija: 2. st.

Trebnje (gr. 27)
Kroglasta steklenička s sploščenim ustjem, bronast ročaj pritrjen z dvema bronastima zankama na ostenje.
8.3.4. - viš. 8,3 cm - DM 680.
Lit.: Slabe 1993, t. 2: 4.

Primerjave: Whitehouse 1997, 201, no. 351.

Komentar za oblike 8.3.1. do 8.3.4.:
Kroglaste stekleničke s kratkim vratom in dvema ročajema so bile namenjene uporabi v kopališčih. V njih so obiskovalci nosili s seboj olja, navadno so bile pripete na bronastih verižicah ali ročajih. Osnovna izhaja iz kovinskih posod, poznani pa so tudi izdelki iz polihromnega stekla iz 6.-4. st. pr. n. š. (Harden 1981, 89). Posodice so pogosto poimenovane z grškim imenom *aryballos*, latinsko ime zanje pa je *ampulla* (Hilgers 1969, 37-38, 102-104).

Izdelki iz pihanega stekla se, kot kažejo najdbe, ne pojavljajo pred drugo polovico 1. stoletja, v uporabi pa ostanejo vse 2. in še v zgodnjem 3. stoletju (Cool, Price 1995, 156). Razširjene so po vsem rimskem imperiju, seznam datiranih najdb prinašajo Isingsova (1957, 78-81), Sorokina (1987, 40-46) in Cool, Price (1995, 156-159).

Grob 27 iz Cerknice (8.3.2.) sodi po pridatkih na prehod 1. v 2. stoletje (Urleb 1984, 312-313), delno uničen petovionski grob lahko umestimo v prvo polovico 2. stoletja (Tušek 1993, 391), grob 11 sodi v 2., grob 615 pa v 3. stoletje (Istenič 2000, 20, 203).

Steklenička iz groba 27 v Trebnjem (8.3.4.) nima povsem točnih primerjav. Najdba je bila slabo ohranjena in nato rekonstruirana. Na rekonstruirani posodici verjetno manjkata vsaj majhni stekleni zanki, skozi kateri so bili obešeni bronasti obročki. V nobenem ohranjenem primeru namreč niso bronaste zanke pritrjene neposredno na ostenje posode (Sorokina 1987, Fig. 1: 7; 2: 5). Možno je tudi, da je bila steklenička že poškodovana priložena v grob, ki je po pridatkih datiran v prvo polovico 2. stoletja (Slabe 1993, 13).

Med posebnosti sodi tudi steklenička iz Petovione iz groba 759 - oblika 8.3.1. Ročaj ni nataljen na ostenje ampak izvlečen iz napihanega trupa; oblika nima primerjav in je verjetno nastala v domačih delavnicah, grob je datiran na konec 1. oziroma v prvo polovico 2. stoletja (Istenič 2000, 244), glede na priloženi vrč pa bi ga lahko opredelili v 2. stoletje.

flattened rim. The base flat but concave in the center. The handles, which are close to the neck, are dolphin shaped.

Date: 1st - 3rd centuries

Ptuj (gr. 303)
Globular small flask with an outward, then inward turned and flattened rim, handles in the shape of dolphins.
8.3.3. - dia. rim 2.9 cm - LMJ 2441.
Lit.: Istenič 2000, Pl. 62: 2.
Ptuj (IF)
Globular small bottle with an everted rim, handles in the shape of dolphins.
8.3.3. - ht. 6.5 cm - PMP 1236.
Lit.: Mikl Curk 1976, Pl. 4: 6.

Analogies: Fremersdorf 1958, Pl. 36, 37; Welker 1974, Pl. 3: 31-33, 36-38; Barkóczi 1988, Pl. 355-59.

8.3.4.
Bath flasks with bronze loops in place of handles (*Fig. 49*):

Globular small flasks with flattened rims, which have bronze handles attached directly to the walls of the vessel.

Date: 2nd century

Trebnje (gr. 27)
Globular small flask with a flattened rim, a bronze handle attached with two bronze loops to the walls.
8.3.4. - ht. 8.3 cm - DM 680.
Lit.: Slabe 1993, Pl. 2: 4.

Analogies: Whitehouse 1997, 201, No. 351.

Comments - forms 8.3.1. to 8.3.4.:
Small globular flasks with a short neck and two handles were intended for use in baths. Visitors carried oils in them, and they were usually fastened onto bronze chains or handles. The original form was derived from metal vessels, and examples from polychrome glass from the 6th-4th centuries BC are also known (Harden 1981, 89). These small vessels are often called by the Greek name *aryballos*, while the Latin name for them is *ampulla* (Hilgers 1969, 37-38, 102-104).

As is shown by the finds, products made of blown glass did not appear prior to the second half of the 1st century, and they remained in use throughout the 2nd and in the early 3rd centuries (Cool, Price 1995, 156). They were spread throughout the entire Roman Empire. Lists of dated finds were composed by Isings (1957, 78-81), Sorokina (1987, 40-46), and Cool, Price (1995, 156-159).

Grave 27 from Cerknica (8.3.2.) belongs on the basis of the grave goods to the transition from the 1st to the 2nd century (Urleb 1984, 312-313), a partly destroyed

8.4.
MERKURJEVE STEKLENIČKE

8.4.1.
Četverokotne stekleničke z dolgim vratom in odtisom ali žigom na dnu (Is 84); (*sl. 49*):

Stekleničke imajo daljši štirikoten trup in dolg vrat s široko izvihanim in sploščenim ustjem. Dno je navadno okrašeno z napisom izdelovalca ali rastlinskim okrasom, ponekod tudi z likom Merkurja.

Datacija: 2. - 3. st.

Drnovo (PN)
Steklenička s kvadratnim trupom, vrat enako dolg, ustje izvihano in sploščeno, na dnu okras rastlinja in pik v vogalih.
8.4.1. - viš. 13,7 cm - NMS R 704.
Lit.: Petru, Petru 1978, t. 24: 37.
Logatec (NN)
Dno stekleničke z geometrijskim odtisom na dnu.
8.4.1. - pr. dna 4 cm - NMP.
Lit.: neobjavljeno.

Primerjave: Barkóczi 1988, Taf. 21: 266-70; Facchini *et al.* 1995, Tav. A, B.

Komentar:
Četverokotne stekleničke so znane pod imenom Merkurjeve stekleničke. Služile naj bi za hranjenje olj in dišav, dolg vrat naj bi preprečeval prehitro hlapenje vsebine. Ostenje je bilo pihano v kalup.

Glavna značilnost teh posodic so različni žigi in odtisi na dnu, redkeje tudi na ostenju. Najpogosteje je na dnu okras palmete, ki je kombiniran s štirimi pikami v vogalih ali s kraticami izdelovalca (Facchini *et al.* 1995, Tav. B, D). Bolj preprosti odtisi imajo le označeno kvadratno polje, kroge v vogalih ali posamezne črke (Facchini *et al.* 1995, Tav. A). Nekatere stekleničke pa imajo na dnu lik boga Merkurja in kratice izdelovalca (?) v vogalih in prav to je dalo stekleničkam ime (Facchini *et al.* 1995, Tav. C: 28; E: 1, 3). Izjemoma se pojavljajo tudi šesterokotne posode, ki so znane med drugim v Istri in Dalmaciji (Fadić 1987, 113; Kirigin 1980, 63).

Večina najdb je datiranih v 2. in 3. stoletje (Facchini *et al.* 1995, 171), čeprav Isingsova navaja tudi najdbo iz flavijskega obdobja (1957, 100). Različne variante teh posodic kažejo, da so nastajale v mnogih delavnicah.

Izredno število stekleničk na območju severne Italije, grupiranih predvsem vzdolž vodne poti ob Padu, kjer je potekala trgovina padanskega območja z ozemljem Vzhodnih Alp, pa navaja k sklepu, da je tudi nekje na tem območju obstajala delavnica tovrstnih izdelkov (Facchini *et al.* 1995, 170).

Obe najdbi iz Slovenije sta posamični, zato je njuna časovna opredelitev v 2. in 3. stoletje določena na osnovi primerjav z najdbami na ostalih evropskih najdiščih.

grave from Poetovio can be dated to the first half of the 2nd century (Tušek 1993, 391), grave 11 is dated to the 2nd century, and grave 615 to the 3rd century (Istenič 2000, 20, 203).

The small flask from grave 27 at Trebnje (8.3.4.) lacks any exact analogies. The find was poorly preserved and then reconstructed. The reconstructed vessel probably lacks at least the small glass loops through which the bronze circlets would have been hung. No preserved examples have bronze loops directly attached to the vessel (Sorokina 1987, Fig. 1: 7; 2: 5). It is also possible that the flask had been placed already damaged in the grave, which was dated on the basis of the grave goods to the first half of the 2nd century (Slabe 1993, 13).

The small flask from grave 759 at Poetovio is also unusual - form 8.3.1. The handle was not attached to the walls but was instead drawn out from the blown body. The form has no analogies and was probably created in a local workshop. The grave was dated to the end of the 1st or in the first half of the 2nd centuries (Istenič 2000, 244), but given the presence of the jug among the grave goods, it could be assigned to the 2nd century.

8.4.
MERCURY FLASKS

8.4.1.
Small square flasks with an elongated neck and an impression or stamp on the base (Is 84); (*Fig. 49*):

The small flasks have a four-sided body and a long neck, with horizontal and flattened rim. The base is usually decorated with the name or mark of the maker, or floral decoration, and sometimes also with the figure of Mercury.

Date: 2nd - 3rd centuries

Drnovo (IF)
Small flask with a square body, equally long neck, everted and flattened rim, on the base a floral decoration and dots in the corners.
8.4.1. - ht. 13.7 cm - NMS R 704.
Lit.: Petru, Petru 1978, Pl. 24: 37.
Logatec (SF)
Base of a small flask with a geometric impression on the base.
8.4.1. - dia. base 4 cm - NMP.
Lit.: unpublished.

Analogies: Barkóczi 1988, Pl. 21: 266-70; Facchini *et al.* 1995, Pl. A, B.

Comments:
Small four-sided flasks are also known as Mercury flasks. They probably served for storing oils and perfumes, the long neck preventing rapid evaporation of the contents. The walls were mould-blown.

8.5.
CILINDRIČNE STEKLENIČKE

8.5.1.
Cilindrične stekleničke s kratkim vratom (*sl. 49*):

Ostenje cilindrično, vrat kratek in nagnjen navzven, dno ravno ali v sredini vboklo.

Datacija: 1. - 2. st.

Ptuj (gr. 332)
Cilindrična posodica z izvihanim ustjem, dno vboklo.
8.5.1. - viš. 8,5 cm - PMP R 16025.
Lit.: Kujundžić 1982, t. 25: 8.
Ptuj (gr. 332)
Cilindrična posodica z izvihanim ustjem, dno vboklo.
8.5.1. - viš. 8 cm - PMP R 16026.
Lit.: Kujundžić 1982, t. 25: 9.
Ptuj (PN)
Miniaturna steklenička s cilindričnim ostenjem in kratkim vratom, dno ravno.
8.5.1. - viš. 7 cm - PMP R 765.
Lit.: Šubic 1976, t. 1: 3.
Ptuj (PN)
Miniaturna steklenička s cilindričnim ostenjem in kratkim vratom, dno ravno.
8.5.1. - viš. 4,6 cm - PMP R 10498.
Lit.: Šubic 1976, t. 5: 41.

Primerjave: Welker 1974, Taf. 8: 143-145; Barkóczi 1988, Taf. 16: 182, 184-186; Rütti 1991, ARR 116/1.

Komentar:
Male cilindrične stekleničke so prav tako služile za hranjenje kozmetičnih in morda tudi medicinskih oziroma farmacevtskih pripravkov. Njihova višina ne presega 10 cm, telo pa je ozko in dolgo.

Primerjav za to obliko ni prav veliko, povsem identične izdelke poznamo z madžarskega prostora (Barkóczi 1988, 110) in Heddernheima (Welker 1974, 55), podobne miniaturne stekleničke iz Kölna pa objavlja tudi Fremersdorf (1958, Taf. 95).

Najdb iz točno datiranih kontekstov je malo. Barkóczi predlaga na osnovi naselbinske najdbe iz Regölyja datacijo v 1. stoletje (1988, 110), za isti čas se opredeljuje tudi Fremersdorf (1958, 45). Posodice s široko izvihanim ustjem iz Heddernheima Welkerjeva umešča v 2. stoletje (1974, 55).

Posodici iz groba 332 sta del grobne celote iz prve polovice 2. stoletja (Kujundžić 1982, 12). Drugi dve miniaturni stekleničkis Ptuja pa sodita med posamične najdbe. Po obliki in izdelavi sta vsekakor najbolj sorodni madžarskim stekleničkam, ni pa izključeno, da je bila enostavna in uporabna oblika v rabi skozi daljše časovno obdobje.

The main characteristic of these small vessels is various stamps and impressions on the base, and rarely also on the walls. The most common is a decoration of a palmette on the base, which is combined with four dots in the corners or with the initials of the manufacturer (Facchini *et al.* 1995, Pl. B, D). Simpler impressions consist merely of square fields, circles in the corners, or individual letters (Facchini *et al.* 1995, Pl. A). Some flasks have an image of the god Mercury on the base and the initials of the manufacturer (?) in the corners, and this was what gave the flasks their name (Facchini *et al.* 1995, Pl. C: 28; E: 1, 3). Hexagonal vessels are also sometimes found, they are known from Istria and Dalmatia (Fadić 1987, 113; Kirigin 1980, 63).

The majority of finds are dated to the 2nd and 3rd centuries (Facchini *et al.* 1995, 171), although Isings also cited finds from the Flavian period (1957, 100). The different variants of these small vessels indicate that they were produced in many production centers.

The exceptional amount of flasks in the region of northern Italy, primarily grouped along the Po Valley water routes, where trade with the eastern Alpine region was very lively, lead to the conclusion that a workshop for such products existed in this region (Facchini *et al.* 1995, 170).

Both examples from Slovenia are individual finds, and thus the chronological classification to the 2nd and 3rd centuries was made on the basis of comparisons with finds from the other European sites.

8.5.
CYLINDRICAL FLASKS

8.5.1.
Small cylindrical flasks with a short neck (*Fig. 49*):

The body cylindrical, the neck short and turned out, the base flat or concave in the center.

Date: 1st - 2nd centuries

Ptuj (gr. 332)
Small cylindrical vessel with an everted rim, concave base.
8.5.1. - ht. 8.5 cm - PMP R 16025.
Lit.: Kujundžić 1982, Pl. 25: 8.
Ptuj (gr. 332)
Small cylindrical vessel with an everted rim, concave base.
8.5.1. - ht. 8 cm - PMP R 16026.
Lit.: Kujundžić 1982, Pl. 25: 9.
Ptuj (IF)
Miniature flask with cylindrical walls and a short neck, flat base.
8.5.1. - ht. 7 cm - PMP R 765.
Lit.: Šubic 1976, Pl. 1: 3.
Ptuj (IF)
Miniature flask with cylindrical walls and a short neck, flat base.

8.6.
BALZAMARIJI

8.6.1.
Cevasti balzamariji (*sl. 50*):

Balzamariji s cevasto oblikovanim trupom, ustje rahlo izvihano, zataljeno ali ravno odrezano, dno zaokroženo in oblikovano v majhno stojno ploskev.

Datacija: 1. - prva polovica 2. st.

Drnovo (PN)
Balzamarij z izvihanim in odrezanim ustjem, dno zaokroženo.
8.6.1. - viš. 4,9 cm - NMS 689.
Lit.: Petru, Petru 1978, t. 24: 27.
Drnovo (PN)
Balzamarij z izvihanim in odrezanim ustjem, dno zaokroženo.
8.6.1. - viš. 8,2 cm - NMS 687.
Lit.: Petru, Petru 1978, t. 24: 25.
Ptuj (gr. 293)
Balzamarij z izvihanim in odrezanim ustjem, dno zaokroženo.
8.6.1. - viš. 9 cm - PMP 15847.
Lit.: Kujundžić 1982, t. 23: 28.
Ptuj (gr. 510)
Balzamarij z izvihanim in odrezanim ustjem, dno ravno.
8.6.1. - pr. ustja 1,9 cm - LMJ 2485.
Lit.: Istenič 2000, t. 107: 3.
Ptuj (gr. 775)
Balzamarij z izvihanim in odrezanim ustjem, dno ravno.
8.6.1. - pr. ustja 2 cm - LMJ 2172.
Lit.: Istenič 2000, t. 175: 2.
Ptuj (PN)
Balzamarij z izvihanim in odrezanim ustjem, dno zaokroženo.
8.6.1. - viš. 9,5 cm - PMP 1291.
Lit.: Mikl Curk 1976, t. 3: 27.

Primerjave: Rütti 1991, AR 138.

8.6.2.
Cevasti balzamariji z zajedo na ostenju (*sl. 50*):

Balzamariji s cevasto oblikovanim trupom, prehod trupa v vrat poudarja zajeda, ustje izvihano iz odrezano.

Datacija: 2. - 3. st.

Drnovo (PN)
Balzamarij z zajedo na spodnjem delu trupa, ustje manjka.
8.6.2. - viš. 10 cm - NMS 679.
Lit.: Petru, Petru 1978, t. 24: 13.
Drnovo (PN)
Balzamarij z zajedo na sredini trupa, ustje izvihano in odrezano.
8.6.2. - viš. 10, 8 cm - NMS 677.
Lit.: Petru, Petru 1978, t. 24: 12.
Drnovo (PN)
Balzamarij z zajedo na gornjem delu trupa, ustje manjka.
8.6.2. - viš. 7,7 cm - NMS 684.

8.5.1. - ht. 4.6 cm - PMP R 10498.
Lit.: Šubic 1976, Pl. 5: 41.

Analogies: Welker 1974, Pl. 8: 143-145; Barkóczi 1988, Pl. 16: 182, 184-186; Rütti 1991, ARR 116/I.

Comments:
Small cylindrical flasks served for storing cosmetics, and perhaps also medicinal or pharmaceutical preparations. Their height does not exceed 10 cm, and the body is long and narrow.

There are not many analogies for this form, but identical products are known from Hungary (Barkóczi 1988, 110) and Heddernheim (Welker 1974, 55), while similar miniature flasks from Köln were also published by Fremersdorf (1958, Pl. 95).

There are few finds from exactly dated contexts. Barkóczi proposed a date in the first century on the basis of the settlement finds from Regöly (1988, 110), and the same date was suggested by Fremersdorf (1958, 45). The small vessel with a horizontal rim from Heddernheim was placed by Welker in the 2nd century (1974, 55).

The vessels from grave 332 were part of a grave unit from the first half of the 2nd century (Kujundžić 1982, 12). The other two miniature flasks from Ptuj were individual finds. In form they were certainly most similar to the Hungarian flasks, and it is not excluded that this simple and useful form had been in use throughout a lengthy chronological period.

8.6.
BALSAMARIA

8.6.1.
Tubular balsamaria (*Fig. 50*):

Balsamaria with a tubular body, the rim slightly everted, fire-rounded or cut, the base rounded and formed into a small standing platform.

Date: 1st - first half of the 2nd century

Drnovo (IF)
Balsamarium with an everted and cut rim, base rounded.
8.6.1. - ht. 4.9 cm - NMS 689.
Lit.: Petru, Petru 1978, Pl. 24: 27.
Drnovo (IF)
Balsamarium with an everted and cut rim, base rounded.
8.6.1. - ht. 8.2 cm - NMS 687.
Lit.: Petru, Petru 1978, Pl. 24: 25.
Ptuj (gr. 293)
Balsamarium with an everted and cut rim, base rounded.
8.6.1. - ht. 9 cm - PMP 15847.
Lit.: Kujundžić 1982, Pl. 23: 28.
Ptuj (gr. 510)
Balsamarium with an everted and cut rim, base flat.
8.6.1. - dia. rim 1.9 cm - LMJ 2485.

Lit.: Petru, Petru 1978, t. 24: 22.
Ptuj (gr. 10)
Balzamarij z zajedo na sredini trupa, ustje manjka.
8.6.2. - viš. 8,2 cm - PMP 1287.
Lit.: Mikl Curk 1976, t. 3: 14.
Ptuj (gr.)
Balzamarij z zajedo na sredini trupa, ustje izvihano in odrezano.
8.6.2. - viš. 10,5 cm - PMP 2283.
Lit.: Mikl Curk 1976, t. 3: 23.
Ptuj (gr. 51)
Balzamarij z zajedo na sredini trupa, ustje izvihano in odrezano.
8.6.2. - viš. 8,9 cm - PMP 1295.
Lit.: Mikl Curk 1976, t. 3: 7.
Ptuj (gr. 8)
Balzamarij z zajedo na sredini trupa, ustje izvihano.
8.6.2. - viš. 9,1 cm - PMP 1285.
Lit.: Mikl Curk 1976, t. 3: 4.
Ptuj (gr. 26)
Balzamarij z zajedo na sredini trupa, ustje izvihano in odrezano.
8.6.2. - viš. 7,4 cm - PMP 1290.
Lit.: Mikl Curk 1976, t. 3: 6.
Ptuj (gr. 1)
Balzamarij z zajedo na sredini trupa, ustje izvihano in odrezano.
8.6.2. - viš. 9 cm - PMP 1286.
Lit.: Mikl Curk 1976, t. 3: 5.
Ptuj (gr. 36)
Balzamarij z zajedo na spodnjem delu trupa, ustje izvihano.
8.6.2. - viš. 8,6 cm - LMJ 2590.
Lit.: Istenič 2000, t. 8: 7.
Ptuj (gr. 221)
Balzamarij z zajedo na trupu, ustje izvihano.
8.6.2. - pr. ustja 1,9 cm - LMJ 2562.
Lit.: Istenič 2000, t. 46: 3.
Ptuj (gr. 224)
Balzamarij z zajedo na trupu, ustje izvihano.
8.6.2. - pr. ustja 2,4 cm - LMJ 2509.
Lit.: Istenič 2000, t. 47: 1.
Ptuj (gr. 265)
Balzamarij z zajedo na trupu, ustje izvihano.
8.6.2. - pr. ustja 2,8 cm - LMJ 2519.
Lit.: Istenič 2000, t. 53: 5.
Ptuj (gr. 267)
Balzamarij z zajedo na trupu, ustje izvihano.
8.6.2. - pr. ustja 2 cm - LMJ 2520.
Lit.: Istenič 2000, t. 54: 2.
Ptuj (PN)
Balzamarij z zajedo na sredini trupa, ustje izvihano.
8.6.2. - viš. 8,5 cm - PMP 1296.
Lit.: Mikl Curk 1976, t. 3: 8.
Ptuj (PN)
Balzamarij z zajedo na sredini trupa, ustje izvihano in odrezano.
8.6.2. - viš. 5,5 cm - PMP 1282.
Lit.: Mikl Curk 1976, t. 3: 2.
Ptuj (PN)
Balzamarij z zajedo na sredini trupa, ustje izvihano in odrezano.
8.6.2. - viš. 11,3 cm - PMP 1239.

Lit.: Istenič 2000, Pl. 107: 3.
Ptuj (gr. 775)
Balsamarium with an everted and cut rim, base flat.
8.6.1. - dia. rim 2 cm - LMJ 2172.
Lit.: Istenič 2000, Pl. 175: 2.
Ptuj (IF)
Balsamarium with an everted and cut rim, base rounded.
8.6.1. - ht. 9.5 cm - PMP 1291.
Lit.: Mikl Curk 1976, Pl. 3: 27.

Analogies: Rütti 1991, AR 138.

8.6.2.

Tubular balsamaria with a constriction on the body (*Fig. 50*):

Balsamaria with a tubular body, the transition from the body to the neck is emphasized by a constriction, the rim is everted and cut.

Date: 2nd - 3rd centuries

Drnovo (IF)
Balsamarium with a constriction in the lower part of the body, rim missing.
8.6.2. - ht. 10 cm - NMS 679.
Lit.: Petru, Petru 1978, Pl. 24: 13.
Drnovo (IF)
Balsamarium with a constriction in the central part of the body, rim everted and cut.
8.6.2. - ht. 10.8 cm - NMS 677.
Lit.: Petru, Petru 1978, Pl. 24: 12.
Drnovo (IF)
Balsamarium with a constriction in the upper part of the body, rim missing.
8.6.2. - ht. 7.7 cm - NMS 684.
Lit.: Petru, Petru 1978, Pl. 24: 22.
Ptuj (gr. 10)
Balsamarium with a constriction in the center of the body, rim missing.
8.6.2. - ht. 8.2 cm - PMP 1287.
Lit.: Mikl Curk 1976, Pl. 3: 14.
Ptuj (gr.)
Balsamarium with a constriction in the center of the body, rim everted and cut.
8.6.2. - ht. 10.5 cm - PMP 2283.
Lit.: Mikl Curk 1976, Pl. 3: 23.
Ptuj (gr. 51)
Balsamarium with a constriction in the center of the body, rim everted and cut.
8.6.2. - ht. 8.9 cm - PMP 1295.
Lit.: Mikl Curk 1976, Pl. 3: 7.
Ptuj (gr. 8)
Balsamarium with a constriction in the center of the body, rim everted.
8.6.2. - ht. 9.1 cm - PMP 1285.
Lit.: Mikl Curk 1976, Pl. 3: 4.
Ptuj (gr. 26)
Balsamarium with a constriction in the center of the body, rim everted and cut.

Lit.: Mikl Curk 1976, t. 3: 1.
Ptuj (PN)
Balzamarij z zajedo na sredini trupa, ustje manjka.
8.6.2. - viš. 8,2 cm - PMP 1293.
Lit.: Mikl Curk 1976, t. 3: 22.
Ptuj (PN)
Balzamarij z zajedo na sredini trupa, ustje manjka.
8.6.2. - viš. 6,1 cm - PMP 1334.
Lit.: Mikl Curk 1976, t. 3: 13.
Ptuj (PN)
Balzamarij z zajedo na sredini trupa, ustje manjka.
8.6.2. - viš. 5 cm - PMP 1324.
Lit.: Mikl Curk 1976, t. 3: 11.
Šempeter (gr. 46)
Balzamarij z zajedo na sredini trupa, ustje manjka.
8.6.2. - viš. 7,5 cm - PMC 982.
Lit.: Kolšek 1977, t. 20: 11.
Trebnje (gr. 3)
Balzamarij z zajedo na trupu, ustje izvihano in odrezano.
8.6.2. - viš. 8 cm - DM.
Lit:: Knez 1969, t. 10: 2.

Primerjave: Barkóczi 1988, Taf. 17: 189, 190; Sternini 1990, Pl. 23: 123-126; Rütti 1991, AR 129, 130; Bonnet Borel 1997, Pl. 22: 118.

8.6.3.

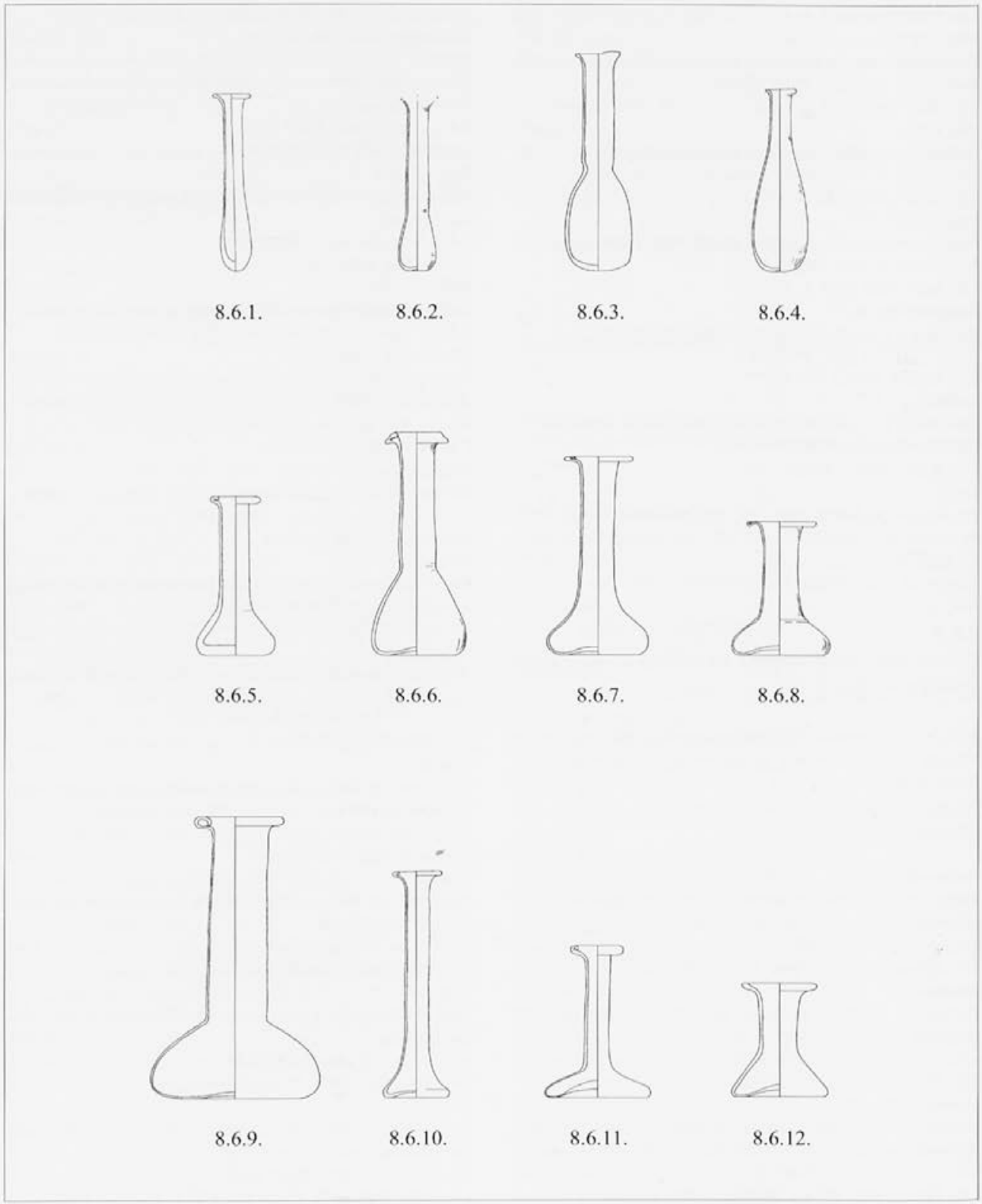
Cevasti balzamariji z zajedo na ostenju in razširjenim spodnjim delom (*sl. 50*):

Balzamariji s cevasto oblikovanim trupom, ustje izvihano in odrezano, prehod trupa v vrat poudarja zajeda, spodnji del trupa razširjen.

Datacija: 2. - 3. st.

Dobova (gr. A 40).
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 7 cm - PMB.
Lit.: Petru P. 1969, t. 10: 9.
Drnovo (PN).
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 5,5 cm - NMS R 685.
Lit.: Petru, Petru 1978, t. 24: 16.
Drnovo (PN).
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 8,1 cm - NMS R 688.
Lit.: Petru, Petru 1978, t. 24: 26.
Drnovo (PN).
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 5,2 cm - NMS R 678.
Lit.: Petru, Petru 1978, t. 24: 19.
Drnovo (PN).
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 7,2 cm - NMS R 681.

8.6.2. - ht. 7.4 cm - PMP 1290.
Lit.: Mikl Curk 1976, Pl. 3: 6.
Ptuj (gr. 1)
Balsamarium with a constriction in the center of the body, rim everted and cut.
8.6.2. - ht. 9 cm - PMP 1286.
Lit.: Mikl Curk 1976, Pl. 3: 5.
Ptuj (gr. 36)
Balsamarium with a constriction in the lower part of the body, rim everted.
8.6.2. - ht. 8.6 cm - LMJ 2590.
Lit.: Istenič 2000, Pl. 8: 7.
Ptuj (gr. 221)
Balsamarium with a constriction on the body, rim everted.
8.6.2. - dia. rim 1.9 cm - LMJ 2562.
Lit.: Istenič 2000, Pl. 46: 3.
Ptuj (gr. 224)
Balsamarium with a constriction on the body, rim everted.
8.6.2. - dia. rim 2.4 cm - LMJ 2509.
Lit.: Istenič 2000, Pl. 47: 1.
Ptuj (gr. 265)
Balsamarium with a constriction on the body, rim everted.
8.6.2. - dia. rim 2.8 cm - LMJ 2519.
Lit.: Istenič 2000, Pl. 53: 5.
Ptuj (gr. 267)
Balsamarium with a constriction on the body, rim everted.
8.6.2. - dia. rim 2 cm - LMJ 2520.
Lit.: Istenič 2000, Pl. 54: 2.
Ptuj (IF)
Balsamarium with a constriction in the center of the body, rim everted.
8.6.2. - ht. 8.5 cm - PMP 1296.
Lit.: Mikl Curk 1976, Pl. 3: 8.
Ptuj (IF)
Balsamarium with a constriction in the center of the body, rim everted and cut.
8.6.2. - ht. 5.5 cm - PMP 1282.
Lit.: Mikl Curk 1976, Pl. 3: 2.
Ptuj (IF)
Balsamarium with a constriction in the center of the body, rim everted and cut.
8.6.2. - ht. 11.3 cm - PMP 1239.
Lit.: Mikl Curk 1976, Pl. 3: 1.
Ptuj (IF)
Balsamarium with a constriction in the center of the body, rim missing.
8.6.2. - ht. 8.2 cm - PMP 1293.
Lit.: Mikl Curk 1976, Pl. 3: 22.
Ptuj (IF)
Balsamarium with a constriction in the center of the body, rim missing.
8.6.2. - ht. 6.1 cm - PMP 1334.
Lit.: Mikl Curk 1976, Pl. 3: 13.
Ptuj (IF)
Balsamarium with a constriction in the center of the body, rim missing.
8.6.2. - ht. 5 cm - PMP 1324.
Lit.: Mikl Curk 1976, Pl. 3: 11.
Šempeter (gr. 46)
Balsamarium with a constriction in the center of the body, rim missing.
8.6.2. - ht. 7.5 cm - PMC 982.



Sl. 50: Skupina 8 - posodice za olja in dišave (8.6.1.: Kujundžić 1982, t. 23: 28; 8.6.2.: Istenič 2000, t. 8: 7; 8.6.3.: Knez 1969, t. 6: 8; 8.6.4.: Istenič 2000, t. 70: 5; 8.6.5.: Kujundžić 1982, t. 12: 11; 8.6.6.: Istenič 2000, t. 27: 2; 8.6.7.: Kujundžić 1982, t. 23: 4; 8.6.8.: Istenič 2000, t. 32: 1; 8.6.9.: Pahič 1969, t. 3: 11; 8.6.10.: Kujundžić 1982, t. 16: 10; 8.6.11.: Kujundžić 1982, t. 6: 17; 8.6.12.: Kujundžić 1982, t. 23: 5). M. = 1:3.

Fig. 50: Group 8 - cosmetic vessels (8.6.1.: Kujundžić 1982, Pl. 23: 28; 8.6.2.: Istenič 2000, Pl. 8: 7; 8.6.3.: Knez 1969, Pl. 6: 8; 8.6.4.: Istenič 2000, Pl. 70: 5; 8.6.5.: Kujundžić 1982, Pl. 12: 11; 8.6.6.: Istenič 2000, Pl. 27: 2; 8.6.7.: Kujundžić 1982, Pl. 23: 4; 8.6.8.: Istenič 2000, Pl. 32: 1; 8.6.9.: Pahič 1969, Pl. 3: 11; 8.6.10.: Kujundžić 1982, Pl. 16: 10; 8.6.11.: Kujundžić 1982, Pl. 6: 17; 8.6.12.: Kujundžić 1982, Pl. 23: 5). Scale = 1:3.

Lit.: Petru, Petru 1978, t. 24: 14.
Drnovo (PN).
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 6,4 cm - NMS R 682.
Lit.: Petru, Petru 1978, t. 24: 21.
Kaštelir nad Kortami (NN)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 7,6 cm - PMPi 134.
Lit.: Boltin 1959, sl. 3
Ptuj (gr.)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje manjka.
8.6.3. - viš. 7,2 cm - PMP 2288.
Lit.: Mikl Curk 1976, t. 3: 24.
Ptuj (gr. 23)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 5 cm - PMP 1315.
Lit.: Mikl Curk 1976, t. 1: 22.
Ptuj (gr. 2)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 10,6 cm - PMP 1299.
Lit.: Mikl Curk 1976, t. 3: 29.
Ptuj (gr.)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 10,4 cm - PMP 2284.
Lit.: Mikl Curk 1976, t. 3: 31.
Ptuj (gr. 70)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje manjka.
8.6.3. - viš. 8,8 cm - PMP 1321.
Lit.: Mikl Curk 1976, t. 3: 10.
Ptuj (gr. 27)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 5,7 cm - PMP 1310.
Lit.: Mikl Curk 1976, t. 3: 18.
Ptuj (gr. 373)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje manjka.
8.6.3. - viš. 5 cm - PMP 16242.
Lit.: Kujundžić 1982, t. 29: 4.
Ptuj (PN)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 6,8 cm - PMP 2289.
Lit.: Mikl Curk 1976, t. 3: 15.
Ptuj (PN)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 5,6 cm - PMP 1335.
Lit.: Mikl Curk 1976, t. 3: 26.
Ptuj (PN)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje manjka.
8.6.3. - viš. 5,2 cm - PMP 1327.
Lit.: Mikl Curk 1976, t. 3: 12.

Lit.: Kolšek 1977, Pl. 20: 11.
Trebnje (gr. 3)
Balsamarium with a constriction on the body, rim everted and cut.
8.6.2. - ht. 8 cm - DM.
Lit:: Knez 1969, Pl. 10: 2.

Analogies: Barkóczi 1988, Pl. 17: 189, 190; Sternini 1990, Pl. 23: 123-126; Rütti 1991, AR 129, 130; Bonnet Borel 1997, Pl. 22: 118.

8.6.3.

Tubular balsamaria with a constriction on the walls and a broadened lower part (*Fig. 50*):

Balsamaria with a tubular body, the rim everted and cut, the transition from the body to the neck emphasized by a constriction, the lower part of the body broadened.

Date: 2nd - 3rd centuries

Dobova (gr. A 40).
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 7 cm - PMB.
Lit.: Petru P. 1969, Pl. 10: 9.
Drnovo (IF)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 5.5 cm - NMS R 685.
Lit.: Petru, Petru 1978, Pl. 24: 16.
Drnovo (IF)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 8.1 cm - NMS R 688.
Lit.: Petru, Petru 1978, Pl. 24: 26.
Drnovo (IF)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 5.2 cm - NMS R 678.
Lit.: Petru, Petru 1978, Pl. 24: 19.
Drnovo (IF)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 7.2 cm - NMS R 681.
Lit.: Petru, Petru 1978, Pl. 24: 14.
Drnovo (IF)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 6.4 cm - NMS R 682.
Lit.: Petru, Petru 1978, Pl. 24: 21.
Kaštelir nad Kortami (SF)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 7.6 cm - PMPi 134.
Lit.: Boltin 1959, Fig. 3.
Ptuj (gr.)
Balsamarium with a constriction on the body, the lower part broadened, rim missing.
8.6.3. - ht. 7.2 cm - PMP 2288.

Ptuj (PN)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje manjka.
8.6.3. - viš. 8 cm - PMP 1304.
Lit.: Mikl Curk 1976, t. 3: 30.
Ptuj (PN)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 9,6 cm - PMP 1303.
Lit.: Mikl Curk 1976, t. 3: 9.
Ptuj (PN)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje manjka.
8.6.3. - viš. 4,4 cm - PMP 16703.
Lit.: Kujundžić 1982, t. 31: 14.
Ribnica (gr. 6)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 5,7 cm - PMP 1310.
Lit.: Petru P. 1969, t. 12: 1.
Trebnje (PN)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 11 cm - DM.
Lit.: Knez 1969, t. 6: 8.
Trebnje (PN)
Balzamarij z zajedo na trupu, spodnji del razširjen, ustje izvihano.
8.6.3. - viš. 7,6 cm - DM.
Lit.: Knez 1969, t. 6: 7.

Primerjave: Sternini 1990, Pl. 21: 105; Rütti 1991, AR 128.1, 2.

8.6.4.
Balzamariji s podolgovatim ovalno oblikovanim trupom (*sl. 50*):

Balzamariji imajo podolgovat in ovalen trup, ki preide v kratek vrat in rahlo izvihano ustje, dno ravno in zaokroženo.

Datacija: druga polovica 1. - prva polovica 2. st.

Ptuj (gr. 340)
Balzamarij z ovalno oblikovanim trupom, ustje izvihano, dno ravno.
8.6.4. - pr. ustja 1,6 cm - LMJ 2558.
Lit.: Istenič 2000, t. 70: 5.

Primerjave: Sternini 1990, Pl. 21: 97, 104.

8.6.5.
Balzamariji s trikotno oblikovanim trupom (*sl. 50*):

Balzamariji z dolgim vratom in majhnim, trikotno oblikovanim trupom, v razmerju 1:3, ustje izvihano in zataljeno ali odrezano, ponekod zataljeno in zapognjeno navznoter.

Lit.: Mikl Curk 1976, Pl. 3: 24.
Ptuj (gr. 23)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 5 cm - PMP 1315.
Lit.: Mikl Curk 1976, Pl. 1: 22.
Ptuj (gr. 2)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 10.6 cm - PMP 1299.
Lit.: Mikl Curk 1976, Pl. 3: 29.
Ptuj (gr.)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 10.4 cm - PMP 2284.
Lit.: Mikl Curk 1976, Pl. 3: 31.
Ptuj (gr. 70)
Balsamarium with a constriction on the body, the lower part broadened, rim missing.
8.6.3. - ht. 8.8 cm - PMP 1321.
Lit.: Mikl Curk 1976, Pl. 3: 10.
Ptuj (gr. 27)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 5.7 cm - PMP 1310.
Lit.: Mikl Curk 1976, Pl. 3: 18.
Ptuj (gr. 373)
Balsamarium with a constriction on the body, the lower part broadened, rim missing.
8.6.3. - ht. 5 cm - PMP 16242.
Lit.: Kujundžić 1982, Pl. 29: 4.
Ptuj (IF)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 6.8 cm - PMP 2289.
Lit.: Mikl Curk 1976, Pl. 3: 15.
Ptuj (IF)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 5.6 cm - PMP 1335.
Lit.: Mikl Curk 1976, Pl. 3: 26.
Ptuj (IF)
Balsamarium with a constriction on the body, the lower part broadened, rim missing.
8.6.3. - ht. 5.2 cm - PMP 1327.
Lit.: Mikl Curk 1976, Pl. 3: 12.
Ptuj (IF)
Balsamarium with a constriction on the body, the lower part broadened, rim missing.
8.6.3. - ht. 8 cm - PMP 1304.
Lit.: Mikl Curk 1976, Pl. 3: 30.
Ptuj (IF)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 9.6 cm - PMP 1303.
Lit.: Mikl Curk 1976, Pl. 3: 9.
Ptuj (IF)
Balsamarium with a constriction on the body, the lower part broadened, rim missing.
8.6.3. - ht. 4.4 cm - PMP 16703.
Lit.: Kujundžić 1982, Pl. 31: 14.

Datacija: druga polovica 1. - 2. st.

Dokležovje (GN)
Spodnji del balzamarija s trikotno oblikovanim trupom.
8.6.5. - viš. 8 cm - PMMb A 1743.
Lit.: Pahič 1961, t. 6: 6.
Drnovo (PN)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano in odebeljeno.
8.6.5. - vš. 7,7 cm - NMS R 667.
Lit.: Petru, Petru 1978, t. 24: 3.
Drnovo (PN)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano in odebeljeno.
8.6.5. - viš. 7,6 cm - NMS R 671.
Lit.: Petru, Petru 1978, t. 24: 7.
Drnovo (PN)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano.
8.6.5. - viš. 6,9 cm - NMS R 673.
Lit.: Petru, Petru 1978, t. 24: 9.
Drnovo (PN)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano.
8.6.5. - viš. 8,7 cm - NMS R 672.
Lit.: Petru, Petru 1978, t. 24: 8.
Drnovo (PN)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano.
8.6.5. - viš. 7 cm - NMS R 683.
Lit.: Petru, Petru 1978, t. 24: 15.
Drnovo (PN)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano in odebeljeno.
8.6.5. - viš. 15 cm - NMS R 665.
Lit.: Petru, Petru 1978, t. 24: 1.
Drnovo (PN)
Balzamarij s trikotno oblikovanim trupom, ustje cevasto zavihano.
8.6.5. - viš. 10,3 cm - NMS R 675.
Lit.: Petru, Petru 1978, t. 24: 11.
Drnovo (PN)
Balzamarij s trikotno oblikovanim trupom, ustje manjka.
8.6.5. - viš. 5,6 cm - NMS R 668.
Lit.: Petru, Petru 1978, t. 24: 4.
Drnovo (PN)
Balzamarij s trikotno oblikovanim trupom, ustje manjka.
8.6.5. - viš. 9,1 cm - NMS R 697.
Lit.: Petru, Petru 1978, t. 24: 33.
Ptuj (gr. 30)
Balzamarij s trikotno oblikovanim trupom, ustje manjka.
8.6.5. - viš. 12,6 cm - PMP 1266.
Lit.: Mikl Curk 1976, t. 3: 17.
Ptuj (gr. 14)
Balzamarij s trikotno oblikovanim trupom, ustje manjka.
8.6.5. - viš. 8,4 cm - PMP 1307.
Lit.: Mikl Curk 1976, t. 3: 28.
Ptuj (gr. 14)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano.
8.6.5. - viš. 9,7 cm - PMP 1279.
Lit.: Mikl Curk 1976, t. 3: 33.
Ptuj (gr. 62)
Spodnji del balzamarija s trikotno oblikovanim trupom.
8.6.5. - viš. 9,5 cm - PMP 13887.
Lit.: Kujundžič 1982, t. 7: 12.

Ribnica (gr. 6)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 5.7 cm - PMP 1310.
Lit.: Petru P. 1969, Pl. 12: 1.
Trebnje (IF)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 11 cm - DM.
Lit.: Knez 1969, Pl. 6: 8.
Trebnje (IF)
Balsamarium with a constriction on the body, the lower part broadened, rim everted.
8.6.3. - ht. 7.6 cm - DM.
Lit.: Knez 1969, Pl. 6: 7.

Analogies: Sternini 1990, Pl. 21: 105; Rütti 1991, AR 128.1, 2.

8.6.4.
Balsamaria with an elongated oval body (*Fig. 50*):

The balsamaria have an elongated and oval body, leading to a short neck and a slightly everted rim, the base flat and rounded.

Date: second half of the 1st - first half of the 2nd centuries

Ptuj (gr. 340)
Balsamariun with an oval body, rim everted, base flat.
8.6.4. - dia. rim 1.6 cm - LMJ 2558.
Lit.: Istenič 2000, Pl. 70: 5.

Analogies: Sternini 1990, Pl. 21: 97, 104.

8.6.5.
Balsamaria with a triangular body (*Fig. 50*):

Balsamaria with a long neck and a small triangular body, with a ratio of 1:3, the rim everted and fire-rounded or cut, sometimes bent inwards.

Date: second half of the 1st - 2nd centuries

Dokležovje (TF)
Lower part of a balsamarium with a triangular body.
8.6.5. - ht. 8 cm - PMMb A 1743.
Lit.: Pahič 1961, Pl. 6: 6.
Drnovo (IF)
Balsamarium with a triangular body, rim everted and thickened.
8.6.5. - ht. 7.7 cm - NMS R 667.
Lit.: Petru, Petru 1978, Pl. 24: 3.
Drnovo (IF)
Balsamarium with a triangular body, rim everted and thickened.
8.6.5. - ht. 7.6 cm - NMS R 671.
Lit.: Petru, Petru 1978, Pl. 24: 7.

Ptuj (gr. 136)
Balzamarij s trikotno oblikovanim trupom.
8.6.5. - viš. 8 cm - PMP 14905.
Lit.: Kujundžić 1982, t. 12: 11.
Ptuj (gr. 338)
Spodnji del balzamarija s trikotno oblikovanim trupom.
8.6.5. - viš. 4 cm - PMP 16069.
Lit.: Kujundžić 1982, t. 26: 7.
Ptuj (gr. 338)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano.
8.6.5. - viš. 7,7 cm - PMP 16066.
Lit.: Kujundžić 1982, t. 26: 5.
Ptuj (gr. 1)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano.
8.6.5. - pr. ustja 2,3 cm - LMJ 2256.
Lit.: Istenič 2000, t. 1:4.
Ptuj (gr. 482)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano.
8.6.5. - najv. obseg 3,6 cm - LMJ 2577.
Lit.: Istenič 2000, t. 100: 5.
Ptuj (gr. 772)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano.
8.6.5. pr. ustja 3,5 cm - LMJ 2413.
Lit.: Istenič 2000, t. 174: 3.
Ptuj (PN)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano.
8.6.5. - viš. 7 cm - PMP 1332.
Lit.: Mikl Curk 1976, t. 2: 3.
Ptuj (PN)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano.
8.6.5. - viš. 11,1 cm - PMP 1275.
Lit.: Mikl Curk 1976, t. 3: 16.
Ribnica (gr. 8)
Balzamarij s trikotno oblikovanim trupom, ustje izvihano.
8.6.5. - pr. ustja 3,1 cm - PMB.
Lit.: Petru P. 1969, t. 18: 6.
Ribnica (gr. 9)
Spodnji del balzamarija s trikotno oblikovanim trupom.
8.6.5. - viš. 3,3 cm - PMB.
Lit.: Petru P. 1969, t. 18: 4.
Ribnica (gr. 9)
Spodnji del balzamarija s trikotno oblikovanim trupom.
8.6.5. - pr. dna 3,3 cm - PMB.
Lit.: Petru P. 1969, t. 18: 5.
Vir pri Stični (PN)
Balzamarij s trikotno oblikovanim trupom.
8.6.5. - viš. 10,7 cm - NMS.
Lit.: Petru, Šribar 1956, t. 4: 5.

Primerjave: Barkóczi 1988, Taf. 17: 201, 205; Sternini 1990, Pl. 25: 146, 154; Bonnet Borel 1997, Pl. 22: 120.

8.6.6.
Balzamariji s stožčasto oblikovanim trupom in zajedo na prehodu v vrat (*sl. 50*):

Balzamariji z dolgim vratom in stožčasto oblikovanim trupom, v razmerju 1:3, prehod trupa v vrat poudarja zajeda, ustje izvihano in zataljeno, redko cevasto zapognjeno.

Drnovo (IF)
Balsamarium with a triangular body, rim everted.
8.6.5. - ht. 6.9 cm - NMS R 673.
Lit.: Petru, Petru 1978, Pl. 24: 9.
Drnovo (IF)
Balsamarium with a triangular body, rim everted.
8.6.5. - ht. 8.7 cm - NMS R 672.
Lit.: Petru, Petru 1978, Pl. 24: 8.
Drnovo (IF)
Balsamarium with a triangular body, rim everted.
8.6.5. - ht. 7 cm - NMS R 683.
Lit.: Petru, Petru 1978, Pl. 24: 15.
Drnovo (IF)
Balsamarium with a triangular body, rim everted and thickened.
8.6.5. - ht. 15 cm - NMS R 665.
Lit.: Petru, Petru 1978, Pl. 24: 1.
Drnovo (IF)
Balsamarium with a triangular body, rim tubular.
8.6.5. - ht. 10.3 cm - NMS R 675.
Lit.: Petru, Petru 1978, Pl. 24: 11.
Drnovo (IF)
Balsamarium with a triangular body, rim missing.
8.6.5. - ht. 5.6 cm - NMS R 668.
Lit.: Petru, Petru 1978, Pl. 24: 4.
Drnovo (IF)
Balsamarium with a triangular body, rim missing.
8.6.5. - ht. 9.1 cm - NMS R 697.
Lit.: Petru, Petru 1978, Pl. 24: 33.
Ptuj (gr. 30)
Balsamarium with a triangular body, rim missing.
8.6.5. - ht. 12.6 cm - PMP 1266.
Lit.: Mikl Curk 1976, Pl. 3: 17.
Ptuj (gr. 14)
Balsamarium with a triangular body, rim missing.
8.6.5. - ht. 8.4 cm - PMP 1307.
Lit.: Mikl Curk 1976, Pl. 3: 28.
Ptuj (gr. 14)
Balsamarium with a triangular body, rim everted.
8.6.5. - ht. 9.7 cm - PMP 1279.
Lit.: Mikl Curk 1976, Pl. 3: 33.
Ptuj (gr. 62)
Lower part of a balsamarium with a triangular body.
8.6.5. - ht. 9.5 cm - PMP 13887.
Lit.: Kujundžić 1982, Pl. 7: 12.
Ptuj (gr. 136)
Balsamarium with a triangular body.
8.6.5. - ht. 8 cm - PMP 14905.
Lit.: Kujundžić 1982, Pl. 12: 11.
Ptuj (gr. 338)
Lower part of a balsamarium with a triangular body.
8.6.5. - ht. 4 cm - PMP 16069.
Lit.: Kujundžić 1982, Pl. 26: 7.
Ptuj (gr. 338)
Balsamarium with a triangular body, rim everted.
8.6.5. - ht. 7.7 cm - PMP 16066.
Lit.: Kujundžić 1982, Pl. 26: 5.
Ptuj (gr. 1)
Balsamarium with a triangular body, rim everted.
8.6.5. - dia. rim 2.3 cm - LMJ 2256.
Lit.: Istenič 2000, Pl. 1: 4.

Datacija: druga polovica 1. - prva polovica 3. st.

Cerknica (gr. 10)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje cevasto zavihano.
8.6.6. - viš. 12 cm - NMP.
Lit.: Urleb 1984, t. 6: 8.
Cerknica (gr. 30)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - viš. 10,2 cm - NMP.
Lit.: Urleb 1984, t. 18: 6.
Dobova (gr. A 17)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - viš. 11,6 cm - PMB.
Lit.: Petru P. 1969, t. 3: 8.
Drnovo (PN)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - viš. 11,6 cm - NMS R 666.
Lit.: Petru, Petru 1978, t. 24: 2.
Drnovo (PN)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - 10,6 cm - NMS R 670.
Lit.: Petru, Petru 1978, t. 24: 6.
Novo mesto - Beletov vrt (gr. 63)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje manjka.
8.6.6. - viš. 11,2 cm - DM.
Lit.: Knez 1981, Y 267: 8.
Ptuj (gr. 3)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - viš. 8,3 cm - PMP 1284.
Lit.: Mikl Curk 1976, t. 1: 17.
Ptuj (gr. 51)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - viš. 9,8 cm - PMP 1298.
Lit.: Mikl Curk 1976, t. 3: 19.
Ptuj (gr. 147)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - viš. 10 cm - PMP 1280.
Lit.: Mikl Curk 1976, t. 1: 6.
Ptuj (gr. 96)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - viš. 9,6 cm - PMP 1312.
Lit.: Mikl Curk 1976, t. 1: 20.
Ptuj (gr. 58)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje manjka.
8.6.6. - viš. 8,7 cm - PMP 1281.
Lit.: Mikl Curk 1976, t. 3: 18.
Ptuj (gr. 23)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje manjka.
8.6.6. - viš. 12 cm - PMP 1302.
Lit.: Mikl Curk 1976, t. 3: 20.

Ptuj (gr. 482)
Balsamarium with a triangular body, rim everted.
8.6.5. - greatest circ. 3.6 cm - LMJ 2577.
Lit.: Istenič 2000, Pl. 100: 5.
Ptuj (gr. 772)
Balsamarium with a triangular body, rim everted.
8.6.5. dia. rim 3.5 cm - LMJ 2413.
Lit.: Istenič 2000, Pl. 174: 3.
Ptuj (IF)
Balsamarium with a triangular body, rim everted.
8.6.5. - ht. 7 cm - PMP 1332.
Lit.: Mikl Curk 1976, Pl. 2: 3.
Ptuj (IF)
Balsamarium with a triangular body, rim everted.
8.6.5. - ht. 11.1 cm - PMP 1275.
Lit.: Mikl Curk 1976, Pl. 3: 16.
Ribnica (gr. 8)
Balsamarium with a triangular body, rim everted.
8.6.5. - dia. rim 3.1 cm - PMB.
Lit.: Petru P. 1969, Pl. 18: 6.
Ribnica (gr. 9)
Lower part of a balsamarium with a triangular body.
8.6.5. - ht. 3.3 cm - PMB.
Lit.: Petru P. 1969, Pl. 18: 4.
Ribnica (gr. 9)
Lower part of a balsamarium with a triangular body.
8.6.5. - dia. base 3.3 cm - PMB.
Lit.: Petru P. 1969, Pl. 18: 5.
Vir pri Stični (IF)
Balsamarium with a triangular body.
8.6.5. - ht. 10.7 cm - NMS.
Lit.: Petru, Šribar 1956, Pl. 4: 5.

Analogies: Barkóczi 1988, Pl. 17: 201, 205; Sternini 1990, Pl. 25: 146, 154; Bonnet Borel 1997, Pl. 22: 120.

8.6.6.

Balsamaria with a conical body and a constriction at the transition to the neck (*Fig. 50*):

Balsamaria with a long neck and a conical body, in a ratio of 1:3, the transition from the body to the neck emphasized by a constriction, the rim everted and fire-rounded, rarely tubular.

Date: second half of the 1st - first half of the 3rd centuries

Cerknica (gr. 10)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim tubular.
8.6.6. - ht. 12 cm - NMP.
Lit.: Urleb 1984, Pl. 6: 8.
Cerknica (gr. 30)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - ht. 10.2 cm - NMP.
Lit.: Urleb 1984, Pl. 18: 6.
Dobova (gr. A 17)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - ht. 11.6 cm - PMB.

Ptuj (gr. 129)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje zavihano in sploščeno, dno vboklo.
8.6.6. - pr. ustja 3,3 cm - LMJ 2546.
Lit.: Istenič 2000, t. 27: 2.
Ptuj (gr. 291)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - pr. ustja 3 cm - LMJ 2492.
Lit.: Istenič 2000, t. 59: 1.
Ptuj (gr. 347)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - pr. ustja 1,8 cm - LMJ 2559.
Lit.: Istenič 2000, t. 72: 2.
Ptuj (PN)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje manjka.
8.6.6. - viš. 7 cm - PMP 2285.
Lit.: Mikl Curk 1976, t. 3: 36.
Ptuj (PN)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje manjka.
8.6.6. - viš. 8,9 cm - PMP 2286.
Lit.: Mikl Curk 1976, t. 3: 37.
Ptuj (PN)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - viš. 8,3 cm - PMP.
Lit.: Mikl Curk 1976, t. 3: 35.
Ptuj (PN)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje manjka.
8.6.6. - viš. 7 cm - PMP 1309.
Lit.: Mikl Curk 1976, t. 3: 25.
Ptuj (PN)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje manjka.
8.6.6. - viš. 6,6 cm - PMP 1323.
Lit.: Mikl Curk 1976, t. 3: 21.
Ptuj (PN)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje manjka.
8.6.6. - viš. 4,8 cm - PMP 2287.
Lit.: Mikl Curk 1976, t. 3: 34.
Ptuj (PN)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje manjka.
8.6.6. - viš. 5,1 cm - PMP 1329.
Lit.: Mikl Curk 1976, t. 1: 7.
Ptuj (PN)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje manjka.
8.6.6. - viš. 4,4 cm - PMP 1326.
Lit.: Mikl Curk 1976, t. 1: 8.
Ptuj (PN)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje manjka.
8.6.6. - viš. 7 cm - PMP 1271.
Lit.: Mikl Curk 1976, t. 3: 32.

Lit.: Petru P. 1969, Pl. 3: 8.
Drnovo (IF)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - ht. 11.6 cm - NMS R 666.
Lit.: Petru, Petru 1978, Pl. 24: 2.
Drnovo (IF)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - ht. 10.6 cm - NMS R 670.
Lit.: Petru, Petru 1978, Pl. 24: 6.
Novo mesto - Beletov vrt (gr. 63)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim missing.
8.6.6. - ht. 11.2 cm - DM.
Lit.: Knez 1981, Y 267: 8.
Ptuj (gr. 3)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - ht. 8.3 cm - PMP 1284.
Lit.: Mikl Curk 1976, Pl. 1: 17.
Ptuj (gr. 51)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - ht. 9.8 cm - PMP 1298.
Lit.: Mikl Curk 1976, Pl. 3: 19.
Ptuj (gr. 147)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - ht. 10 cm - PMP 1280.
Lit.: Mikl Curk 1976, Pl. 1: 6.
Ptuj (gr. 96)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - ht. 9.6 cm - PMP 1312.
Lit.: Mikl Curk 1976, Pl. 1: 20.
Ptuj (gr. 58)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim missing.
8.6.6. - ht. 8.7 cm - PMP 1281.
Lit.: Mikl Curk 1976, Pl. 3: 18.
Ptuj (gr. 23)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim missing.
8.6.6. - ht. 12 cm - PMP 1302.
Lit.: Mikl Curk 1976, Pl. 3: 20.
Ptuj (gr. 129)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted and flattened, base concave.
8.6.6. - dia. rim 3.3 cm - LMJ 2546.
Lit.: Istenič 2000, Pl. 27: 2.
Ptuj (gr. 291)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - dia. rim 3 cm - LMJ 2492.
Lit.: Istenič 2000, Pl. 59: 1.
Ptuj (gr. 347)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - dia. rim 1.8 cm - LMJ 2559.
Lit.: Istenič 2000, Pl. 72: 2.

Ptuj (PN)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - viš. 8,5 cm - PMP 1283.
Lit.: Mikl Curk 1976, t. 3: 3.
Ribnica (gr. 4)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - viš. 9,2 cm - PMB.
Lit.: Petru P. 1969, t. 17: 5.
Šempeter (gr. 12, 12A)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje izvihano.
8.6.6. - viš. 9,5 cm - PMC 1679.
Lit.: Kolšek 1977, t. 7: 6.
Trebnje (PN)
Balzamarij s trikotnim trupom in zajedo na prehodu v vrat, ustje manjka.
8.6.6. - viš. 6 cm - DM.
Lit.: Knez 1969, t. 7: 6.

Primerjave: Barkóczi 1988, Taf. 17: 206; Sternini 1990, Pl. 25: 149-152; Bonnet Borel 1997, Pl. 22: 122.

8.6.7.
Balzamariji z bikoničnim trupom (*sl. 50*):

Trup balzamarija je bikoničen in bolj zaokroženo oblikovan, ustje zataljeno in zapognjeno navznoter, dno v sredini vboklo. Ponekod na dnu žig.

Datacija: 2. - prva polovica 3. st.

Cerknica (gr. 10)
Balzamarij z bikoničnim trupom, ustje cevasto zavihano.
8.6.7. - viš. 14,2 cm - NMP.
Lit.: Urleb 1984, t. 6: 7.
Drnovo (PN)
Balzamarij z bikoničnim trupom, ustje izvihano.
8.6.7. - viš. 12,3 cm - NMS R 707.
Lit.: Petru, Petru 1978, t. 24: 4.
Ptuj (gr. 73)
Spodnji del balzamarija z bikoničnim trupom.
8.6.7. - viš. 6,4 cm - PMP 1371.
Lit.: Mikl Curk 1976, t. 1: 5.
Ptuj (gr. 69)
Spodnji del balzamarija z bikoničnim trupom.
8.6.7. - viš. 7,3cm - PMP 1256.
Lit.: Mikl Curk 1976, t. 1: 16.
Ptuj (gr. 44)
Balzamarij z bikoničnim trupom, ustje cevasto zavihano.
8.6.7. - viš. 12,8 cm - PMP 13804.
Lit.: Kujundžić 1982, t. 5: 10.
Ptuj (gr. 293)
Balzamarij z bikoničnim trupom, ustje zavihano navznoter.
8.6.7. - viš. 10 cm - PMP 15845.
Lit.: Kujundžić 1982, t. 23: 4.
Ptuj (gr. 305)
Balzamarij z bikoničnim trupom, ustje zavihano navznoter.
8.6.7. - viš. 14 cm - PMP 15910.

Ptuj (IF)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim missing.
8.6.6. - ht. 7 cm - PMP 2285.
Lit.: Mikl Curk 1976, Pl. 3: 36.
Ptuj (IF)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim missing.
8.6.6. - ht. 8.9 cm - PMP 2286.
Lit.: Mikl Curk 1976, Pl. 3: 37.
Ptuj (IF)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - ht. 8.3 cm - PMP.
Lit.: Mikl Curk 1976, Pl. 3: 35.
Ptuj (IF)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim missing.
8.6.6. - ht. 7 cm - PMP 1309.
Lit.: Mikl Curk 1976, Pl. 3: 25.
Ptuj (IF)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim missing.
8.6.6. - ht. 6.6 cm - PMP 1323.
Lit.: Mikl Curk 1976, Pl. 3: 21.
Ptuj (IF)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim missing.
8.6.6. - ht. 4.8 cm - PMP 2287.
Lit.: Mikl Curk 1976, Pl. 3: 34.
Ptuj (IF)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim missing.
8.6.6. - ht. 5.1 cm - PMP 1329.
Lit.: Mikl Curk 1976, Pl. 1: 7.
Ptuj (IF)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim missing.
8.6.6. - ht. 4.4 cm - PMP 1326.
Lit.: Mikl Curk 1976, Pl. 1: 8.
Ptuj (IF)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim missing.
8.6.6. - ht. 7 cm - PMP 1271.
Lit.: Mikl Curk 1976, Pl. 3: 32.
Ptuj (IF)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - ht. 8.5 cm - PMP 1283.
Lit.: Mikl Curk 1976, Pl. 3: 3.
Ribnica (gr. 4)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - ht. 9.2 cm - PMB.
Lit.: Petru P. 1969, Pl. 17: 5.
Šempeter (gr. 12, 12A)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim everted.
8.6.6. - ht. 9.5 cm - PMC 1679.
Lit.: Kolšek 1977, Pl. 7: 6.

Lit.: Kujundžić 1982, t. 23: 19.
Ptuj (gr. 305)
Balzamarij z bikoničnim trupom, ustje izvihano.
8.6.7. - viš. 10,5 cm - PMP 15909.
Lit.: Kujundžić 1982, t. 23: 18.
Ptuj (PN)
Spodnji del balzamarija z bikoničnim trupom.
8.6.7. - viš. 11,8 cm - PMP 2277.
Lit.: Mikl Curk 1976, t. 1: 11.
Stari trg pri Slovenj Gradcu (gr. 1/1977)
Balzamarij z bikoničnim trupom, ustje cevasto zavihano, na dnu žig AT • F, nad njim OE.
8.6.7. - viš. 14,2 cm - KPM.
Lit.: Strmčnik Gulič 1981, t. 18: 8.

Primerjave: Barkóczi 1988, Taf. 17: 208, 211; 18: 213; Biaggio Simona 1991, Tav. 26: 1.010; Fadić 1997, 16.

8.6.8.
Balzamariji z bikoničnim trupom in nataljeno nitjo na trupu (*sl. 50*):

Balzamarij z bikoničnim trupom in nataljeno nitjo na prehodu trupa v vrat, ustje močno izvihano in cevasto zavihano, dno vboklo.

Datacija: konec 1. - prva polovica 2. st.

Ptuj (gr. 142)
Balzamarij z bikoničnimim trupom, izvihano cevasto ustje, dno vboklo, na trupu nataljena nit.
8.6.8. - LMJ 11003, pogrešan.
Lit.: Istenič 2000, t. 23: 1.

Primerjave: Goethert-Polaschek 1977, 121, obl. 74.

8.6.9.
Balzamariji z bikoničnim trupom in zajedo na prehodu v vrat (*sl. 50*):

Oblika enaka gornji, prehod trupa v vrat pa poudarja zajeda.

Datacija: druga polovica 1. - prva polovica 2. st.

Miklavž pri Mariboru (GN)
Balzamarij z bikoničnim trupom, cevastim ustjem in rahlo vboklim dnom, zajeda na prehodu trupa v vrat.
8.6.9. - viš. 14,3 cm - PMMb.
Lit.: Pahič 1969, t. 3: 11.
Ptuj (PN)
Spodnji del balzamarija z bikoničnim trupom in zajedo na prehodu v vrat.
8.6.9. - viš. 15 cm - PMP 1250.
Lit.: Mikl Curk 1976, t. 1: 10.
Ptuj (gr. 71)
Balzamarij z bikoničnim trupom in zajedo na prehodu v vrat.
8.6.9. - pr. ustja 4,2 cm - LMJ 2593.
Lit.: Istenič 2000, t. 14: 7.

Trebnje (IF)
Balsamarium with a triangular body and a constricton at the transition to the neck, rim missing.
8.6.6. - ht. 6 cm - DM.
Lit.: Knez 1969, Pl. 7: 6.

Analogies: Barkóczi 1988, Pl. 17: 206; Sternini 1990, Pl. 25: 149-152; Bonnet Borel 1997, Pl. 22: 122.

8.6.7.
Balsamaria with a biconical body (*Fig. 50*):

The body of the balsamaria is biconical and rounded, the rim fire-rounded and bent inwards, the base concave in the center. Sometimes a stamp on the base.

Date: 2nd - first half of the 3rd centuries

Cerknica (gr. 10)
Balsamarium with a biconical body, the rim tubular and everted.
8.6.7. - ht. 14.2 cm - NMP.
Lit.: Urleb 1984, Pl. 6: 7.
Drnovo (IF)
Balsamarium with a biconical body, the rim everted.
8.6.7. - ht. 12.3 cm - NMS R 707.
Lit.: Petru, Petru 1978, Pl. 24: 4.
Ptuj (gr. 73)
Lower part of a balsamarium with a biconical body.
8.6.7. - ht. 6.4 cm - PMP 1371.
Lit.: Mikl Curk 1976, Pl. 1: 5.
Ptuj (gr. 69)
Lower part of a balsamarium with a biconical body.
8.6.7. - ht. 7.3 cm - PMP 1256.
Lit.: Mikl Curk 1976, Pl. 1: 16.
Ptuj (gr. 44)
Balsamarium with a biconical body, the rim tubular.
8.6.7. - ht. 12.8 cm - PMP 13804.
Lit.: Kujundžić 1982, Pl. 5: 10.
Ptuj (gr. 293)
Balsamarium with a biconical body, the rim bent inwards.
8.6.7. - ht. 10 cm - PMP 15845.
Lit.: Kujundžić 1982, Pl. 23: 4.
Ptuj (gr. 305)
Balsamarium with a biconical body, the rim bent inwards.
8.6.7. - ht. 14 cm - PMP 15910.
Lit.: Kujundžić 1982, Pl. 23: 19.
Ptuj (gr. 305)
Balsamarium with a biconical body, the rim everted.
8.6.7. - ht. 10.5 cm - PMP 15909.
Lit.: Kujundžić 1982, Pl. 23: 18.
Ptuj (IF)
Lower part of a balsamarium with a biconical body.
8.6.7. - ht. 11.8 cm - PMP 2277.
Lit.: Mikl Curk 1976, Pl. 1: 11.
Stari trg pri Slovenj Gradcu (gr. 1/1977)
Balsamarium with a biconical body, the rim tubular, on the base the stamp AT • F and OE.
8.6.7. - ht. 14.2 cm - KPM.
Lit.: Strmčnik Gulič 1981, Pl. 18: 8.

Ptuj (gr. 621)
Balzamarij z bikoničnim trupom in zajedo na prehodu v vrat.
8.6.9. - pr. ustja 3,7 cm - LMJ 2465.
Lit.: Istenič 2000, t. 136: 2.
Ptuj (gr. 621)
Balzamarij z bikoničnim trupom in zajedo na prehodu v vrat.
8.6.9. - pr. ustja 4,3 cm - LMJ 2464.
Lit.: Istenič 2000, t. 136: 3.

Primerjave: Barkóczi 1988, Taf. 17: 207; 18: 214; Biaggio Simona 1991, Tav. 26: 1.075; Rütti 1991, AR 140; Bonnet Borel 1997, Pl. 22: 123.

8.6.10.
Balzamariji s sploščenim trupom (*sl. 50*):

Balzamariji z dolgim vratom, ki gladko prehaja v nizek, sploščen trup, ki enkrat presega širino ustja, dno vboklo, ustje zataljeno.

Datacija: druga polovica 1. - prva polovica 3. st.

Ptuj (gr. 38)
Spodnji del balzamarija z nizkim, sploščenim trupom, dno rahlo vboklo.
8.6.10. - viš. 8,2 cm - PMP 13774.
Lit.: Kujundžić 1982, t. 4: 21.
Ptuj (gr. 82)
Spodnji del balzamarija z nizkim, sploščenim trupom, dno rahlo vboklo.
8.6.10. - viš. 6,5 cm - PMP 1272.
Lit.: Mikl Curk 1976, t. 1: 3.
Ptuj (gr. 210)
Spodnji del balzamarija z nizkim, sploščenim trupom, dno rahlo vboklo.
8.6.10. - viš. 11,5 cm - PMP 15307.
Lit.: Kujundžić 1982, t. 16: 10.
Ptuj (gr. 387)
Balzamarij z nizkim, sploščenim trupom, dno rahlo vboklo.
8.6.10. - pr. ustja 2,5 cm - LMJ 2663.
Lit.: Istenič 2000, t. 79: 1.
Ptuj (PN)
Spodnji del balzamarija z nizkim, sploščenim trupom, dno rahlo vboklo.
8.6.10. - viš. 7,3 cm - PMP 1325.
Lit.: Mikl Curk 1976, t. 1: 4.

Primerjave: Barkóczi 1988, Taf. 17: 200; Rütti 1991, AR 136.

8.6.11.
Balzamariji s širokim sploščenim trupom (*sl. 50*):

Oblika je enaka gornji, le da je trup dvakrat širši od premera ustja, dno vboklo, ustje izvihano in zataljeno ali cevasto zapognjeno nazaj.

Datacija: druga polovica 1. - prva polovica 3. st.

Analogies: Barkóczi 1988, Pl. 17: 208, 211; 18: 213; Biaggio Simona 1991, Pl. 26: 1.010; Fadić 1997, 16.

8.6.8.
Balsamaria with a biconical body and an applied trail on the body (*Fig. 50*):

Balsamaria with a biconical body and an applied trail at the transition from the body to the neck, the rim highly everted and tubular, the base concave.

Date: end of the 1st - first half of the 2nd centuries

Ptuj (gr. 142)
Balsamarium with a biconical body, everted tubular rim, concave base, applied trail on the body.
8.6.8. - LMJ 11003, missing.
Lit.: Istenič 2000, Pl. 32: 1.

Analogies: Goethert-Polaschek 1977, 121, form 74.

8.6.9.
Balsamaria with a biconical body and a constriction at the transition to the neck (*Fig. 50*):

The form as above, the transition from the body to the neck emphasized by a constriction.

Date: second half of the 1st - first half of the 2nd centuries

Miklavž pri Mariboru (TF)
Balsamarium with a biconical body, tubular rim, and slightly concave base, constriction at the juncture of the body and neck.
8.6.9. - ht. 14.3 cm - PMMb.
Lit.: Pahič 1969, Pl. 3: 11.
Ptuj (IF)
Lower part of a balsamarium with a biconical body and a constriction at the neck juncture.
8.6.9. - ht. 15 cm - PMP 1250.
Lit.: Mikl Curk 1976, Pl. 1: 10.
Ptuj (gr. 71)
Balsamarium with a biconical body and a constriction at the neck juncture.
8.6.9. - dia. rim 4.2 cm - LMJ 2593.
Lit.: Istenič 2000, Pl. 14: 7.
Ptuj (gr. 621)
Balsamarium with a biconical body and a constriction at the neck juncture.
8.6.9. - dia. rim 3.7 cm - LMJ 2465.
Lit.: Istenič 2000, Pl. 136: 2.
Ptuj (gr. 621)
Balsamarium with a biconical body and a constriction at the neck juncture.
8.6.9. - dia. rim 4.3 cm - LMJ 2464.
Lit.: Istenič 2000, Pl. 136: 3.

Analogies: Barkóczi 1988, Pl. 17: 207; 18: 214; Biaggio Simona

Ptuj (gr. 1)
Spodnji del balzamarija z nizkim, sploščenim trupom, dno rahlo vboklo.
8.6.11. - viš. 12,4 cm - PMP 1267.
Lit.: Mikl Curk 1976, t. 1: 2.
Ptuj (gr. 49)
Spodnji del balzamarija z nizkim, sploščenim trupom, dno rahlo vboklo, ustje odebeljeno.
8.6.11. - viš. 7,7 cm - PMP 13848.
Lit.: Kujundžić 1982, t. 6: 17.
Ptuj (gr. 321)
Spodnji del balzamarija z nizkim, sploščenim trupom, dno rahlo vboklo, ustje odebeljeno.
8.6.11. - viš. 12 cm - PMP 15964.
Lit.: Kujundžić 1982, t. 24: 2.
Ptuj (gr. 350)
Spodnji del balzamarija z nizkim, sploščenim trupom, dno rahlo vboklo, ustje odebeljeno in izvihano.
8.6.11. - viš. 8 cm - PMP 16123.
Lit.: Kujundžić 1982, t. 26: 16.
Ptuj (gr. 136)
Balzamarij z nizkim, sploščenim trupom, dno rahlo vboklo.
8.6.11. - pr. ustja 4,8 cm - LMJ 2551.
Lit.: Istenič 2000, t. 29: 2.
Ptuj (gr. 396)
Balzamarij z nizkim, sploščenim trupom, ustje cevasto zavihano.
8.6.11. - pr. ustja 2,5 cm - LMJ 2664.
Lit.: Istenič 2000, t. 80: 4.
Ptuj (gr. 559)
Balzamarij z nizkim, sploščenim trupom, dno vboklo, ustje cevasto zavihano.
8.6.11. - pr. ustja 1,9 cm - LMJ 2585.
Lit.: Istenič 2000, t. 116: 5.

Primerjave: Barkóczi 1988, Taf. 17: 204; Sternini 1990, Pl. 30: 182, 184; Biaggio Simona 1991, Tav. 26: 2.024.

8.6.12.
Balzamariji s širokim vratom (*sl. 50*):

Nizki balzamariji s širokim vratom, trup bolj koničen, ustje močno izvihano navzven, dno vboklo.

Datacija: 2. st.

Drnovo (PN)
Nizek balzamarij s širokim vratom in koničnim trupom, ustje izvihano.
8.6.12. - viš. 6,1 cm - NMS R 676.
Lit.: Petru, Petru 1978, t. 24: 18.
Ptuj (gr. 211)
Nizek balzamarij s širokim vratom in koničnim trupom, ustje izvihano.
8.6.12. - viš. 7,2 cm - PMP 15314.
Lit.: Kujundžić 1982, t. 16: 13.
Ptuj (gr. 293)
Nizek balzamarij s širokim vratom in koničnim trupom, ustje izvihano, dno vboklo.

1991, Pl. 26: 1.075; Rütti 1991, AR 140; Bonnet Borel 1997, Pl. 22: 123.

8.6.10.
Balsamaria with a flattened body (*Fig. 50*):

Balsamaria with a long neck that continues smoothly into a low, flattened body, which extends beyond the width of the rim, base concave, rim fire-rounded.

Date: second half of the 1st - first half of the 3rd centuries

Ptuj (gr. 38)
Lower part of a balsamarium with a low, flattened body, the base slightly concave.
8.6.10. - ht. 8.2 cm - PMP 13774.
Lit.: Kujundžić 1982, Pl. 4: 21.
Ptuj (gr. 82)
Lower part of a balsamarium with a low, flattened body, the base slightly concave.
8.6.10. - ht. 6.5 cm - PMP 1272.
Lit.: Mikl Curk 1976, Pl. 1: 3.
Ptuj (gr. 210)
Lower part of a balsamarium with a low, flattened body, the base slightly concave.
8.6.10. - ht. 11.5 cm - PMP 15307.
Lit.: Kujundžić 1982, Pl. 16: 10.
Ptuj (gr. 387)
Balsamarium with a low, flattened body, the base slightly concave.
8.6.10. - dia. rim 2.5 cm - LMJ 2663.
Lit.: Istenič 2000, Pl. 79: 1.
Ptuj (IF)
Lower part of a balsamarium with a low, flattened body, the base slightly concave.
8.6.10. - ht. 7.3 cm - PMP 1325.
Lit.: Mikl Curk 1976, Pl. 1: 4.

Analogies: Barkóczi 1988, Pl. 17: 200; Rütti 1991, AR 136.

8.6.11.
Balsamaria with a wide flattened body (*Fig. 50*):

The form is identical to the above, only the body is twice as wide as the diameter of the rim, the base concave, the rim everted and fire-rounded or rolled back in a tube.

Date: second half of the 1st - first half of the 3rd centuries

Ptuj (gr. 1)
Lower part of a balsamarium with a short, flattened body, slightly concave base.
8.6.11. - ht. 12.4 cm - PMP 1267.
Lit.: Mikl Curk 1976, Pl. 1: 2.
Ptuj (gr. 49)
Lower part of a balsamarium with a short, flattened body, slightly concave base, thickened rim.
8.6.11. - ht. 7.7 cm - PMP 13848.

8.6.12. - viš. 5,8 cm - PMP 15846.
Lit.: Kujundžić 1982, t. 23: 5.
Ptuj (gr. 9)
Balzamarij z nizkim trupom in širokim vratom, dno ravno, ustje cevasto zavihano.
8.6.12. - pr. ustja 3,8 cm - LMJ 2254.
Lit.: Istenič 2000, t. 3: 4.
Ptuj (gr. 605)
Balzamarij z nizkim, sploščenim trupom, dno vboklo, ustje cevasto zavihano.
8.6.12. - pr. ustja 5,8 cm - LMJ 2328.
Lit.: Istenič 2000, t. 131: 2.
Ptuj (PN)
Nizek balzamarij s širokim vratom in koničnim trupom, ustje izvihano.
8.6.12. - viš. 5,8 cm - PMP 1267.
Lit.: Mikl Curk 1976, t. 2: 1.

Primerjave: Goethert-Polaschek 1977, 121, obl. 74; Barkóczi 1988, Taf. 17: 260-263; Sternini 1990, Pl. 26: 160-158; Rütti 1991, AR 137.

8.6.13.
Balzamariji s kroglastim trupom in ravnim dnom (*sl. 51*):

Balzamariji s kroglasto oblikovanim trupom, dno ravno, ustje izvihano in odrezano.

Datacija: 1. - prva polovica 2. stoletja

Drnovo (PN)
Balzamarij s kroglastim trupom, dno ravno, ustje izvihano.
8.6.13. - viš. 5 cm - NMS R 702.
Lit.: Petru, Petru 1978, t. 24: 31.
Drnovo (PN)
Balzamarij s kroglastim trupom, dno ravno, ustje izvihano.
8.6.13. - viš. 6,4 cm - NMS R 700.
Lit.: Petru, Petru 1978, t. 24: 30.
Drnovo (PN)
Balzamarij s kroglastim trupom, dno ravno, ustje izvihano.
8.6.13. - viš. 5,1 cm - NMS R 701.
Lit.: Petru, Petru 1978, t. 24: 35.
Drnovo (PN)
Balzamarij s kroglastim trupom, dno ravno, ustje izvihano.
8.6.13. - viš. 5,2 cm - NMS R 703.
Lit.: Petru, Petru 1978, t. 24: 36.
Kaštelir nad Kortami (NN)
Balzamarij s kroglastim trupom, dno ravno, ustje manjka.
8.6.13. - viš. 5 cm - PMPi 130.
Lit.: Boltin 1959, sl. 2.
Kaštelir nad Kortami (NN)
Balzamarij s kroglastim trupom, dno ravno, ustje manjka.
8.6.13. - viš. 6,7 cm - PMPi 129.
Lit.: Boltin 1959, sl. 1.
Miklavž pri Mariboru (GN)
Balzamarij s kroglastim trupom, dno ravno, ustje cevasto zavihano.
8.6.13. - viš. 11 cm - PMMB 2256.
Lit.: Pahič 1969, t. 3: 5.

Lit.: Kujundžić 1982, Pl. 6: 17.
Ptuj (gr. 321)
Lower part of a balsamarium with a short, flattened body, slightly concave base, thickened rim.
8.6.11. - ht. 12 cm - PMP 15964.
Lit.: Kujundžić 1982, Pl. 24: 2.
Ptuj (gr. 350)
Lower part of a balsamarium with a short, flattened body, slightly concave base, thickened and everted rim.
8.6.11. - ht. 8 cm - PMP 16123.
Lit.: Kujundžić 1982, Pl. 26: 16.
Ptuj (gr. 136)
Balsamarium with a short, flattened body, slightly concave base.
8.6.11. - dia. rim 4.8 cm - LMJ 2551.
Lit.: Istenič 2000, Pl. 29: 2.
Ptuj (gr. 396)
Balsamarium with a short, flattened body, tubular rim.
8.6.11. - dia. rim 2.5 cm - LMJ 2664.
Lit.: Istenič 2000, Pl. 80: 4.
Ptuj (gr. 559)
Balsamarium with a short, flattened body, concave base, tubular rim.
8.6.11. - dia. rim 1.9 cm - LMJ 2585.
Lit.: Istenič 2000, Pl. 116: 5.

Analogies: Barkóczi 1988, Pl. 17: 204; Sternini 1990, Pl. 30: 182, 184; Biaggio Simona 1991, Pl. 26: 2.024.

8.6.12.
Balsamaria with a wide neck (*Fig. 50*):

Short balsamaria with a wide neck, a fairly conical body, the rim highly turned out, the base concave.

Date: 2nd century

Drnovo (IF)
Short balsamarium with a wide neck and a conical body, everted rim.
8.6.12. - ht. 6.1 cm - NMS R 676.
Lit.: Petru, Petru 1978, Pl. 24: 18.
Ptuj (gr. 211)
Short balsamarium with a wide neck and a conical body, everted rim.
8.6.12. - ht. 7.2 cm - PMP 15314.
Lit.: Kujundžić 1982, Pl. 16: 13.
Ptuj (gr. 293)
Short balsamarium with a wide neck and a conical body, everted rim, concave base.
8.6.12. - ht. 5.8 cm - PMP 15846.
Lit.: Kujundžić 1982, Pl. 23: 5.
Ptuj (gr. 9)
Balsamarium with a short body and wide neck, flat base, tubular rim.
8.6.12. - dia. rim 3.8 cm - LMJ 2254.
Lit.: Istenič 2000, Pl. 3: 4.
Ptuj (gr. 605)
Balsamarium with a short, flattened body, concave base, tubular rim.

Novo mesto Beletov vrt (gr. 61)
Balzamarij s kroglastim trupom, dno ravno, ustje manjka.
8.6.13. - viš. 8 cm - DM.
Lit.: Knez 1981, Y 261-2: 7.
Polhov Gradec (gr.)
Balzamarij s kroglastim trupom, dno ravno, ustje izvihano.
8.6.13. - viš. 7,5 cm - NMS.
Lit.: Ložar 1938, sl. 20.
Polhov Gradec (gr.)
Balzamarij s kroglastim trupom, dno ravno, ustje izvihano.
8.6.13. - viš. 6 cm - NMS.
Lit.: Ložar 1938, sl. 20.
Ptuj (gr. 47)
Balzamarij s kroglastim trupom, dno zaokroženo, vrat nagnjen navzven, ustje izvihano.
8.6.13. - viš. 6 cm - PMP 13830.
Lit.: Kujundžić 1982, t. 6: 10.
Ptuj (gr. 321)
Balzamarij s kroglastim trupom in ravno odrezanim ustjem.
8.6.13. - pr. ustja 2,4 cm - LMJ 2453.
Lit.: Istenič 2000, t. 66: 2.

Primerjave: Barkóczi 1988, Taf. 17: 198; Sternini 1990, Pl. 18: 62-65; Rütti 1991, AR 125; Biaggio Simona 1991, Tav. 16; Bonnet Borel 1997, Pl. 22: 115.

8.6.14.
Balzamariji s kroglastim trupom in vboklim dnom (*sl. 51*):

Balzamariji s kroglasto oblikovanim trupom, vboklim dnom in izvihanim ustjem.

Datacija: 2. - 3. st.

Brezje nad Zrečami (gr. 5)
Balzamarij s kroglasto oblikovanim trupom, vboklim dnom in izvihanim ustjem.
8.6.14. - viš. 10,5 cm - PMMb.
Lit.: Pahič 1969, t. 7: 4.
Brezje nad Zrečami (gr. 31)
Balzamarij s kroglasto oblikovanim trupom, vboklim dnom in ravnim ustjem.
8.6.14. - viš. 7,4 cm - PMMb.
Lit.: Pahič 1969, t. 7: 3.
Ptuj (gr. 9)
Balzamarij s kroglasto oblikovanim trupom, vboklim dnom in cevasto zavihanim ustjem.
8.6.14. - viš. 13 cm - PMP 13641.
Lit.: Kujundžić 1982, t. 1: 7.
Ptuj (PN)
Balzamarij s kroglasto oblikovanim trupom, vboklim dnom in cevasto zavihanim ustjem.
8.6.14. - viš. 9,3 cm - PMP 1165.
Lit.: Mikl Curk 1976, t. 1: 1.
Ptuj (PN)
Balzamarij s kroglasto oblikovanim trupom, vboklim dnom in cevasto zavihanim ustjem.
8.6.14. - viš. 8 cm - PMP 16505.
Lit.: Kujundžić 1982, t. 31: 17.

8.6.12. - dia. rim 5.8 cm - LMJ 2328.
Lit.: Istenič 2000, Pl. 131: 2.
Ptuj (IF)
Short balsamarium with a wide neck and a conical body, everted rim.
8.6.12. - ht. 5.8 cm - PMP 1267.
Lit.: Mikl Curk 1976, Pl. 2: 1.

Analogies: Goethert-Polaschek 1977, 121, form 74; Barkóczi 1988, Pl. 17: 260-263; Sternini 1990, Pl. 26: 160-158; Rütti 1991, AR 137.

8.6.13.
Balsamaria with a globular body and flat base (*Fig. 51*):

Balsamaria with a globular body, flat base, everted and cut rim.

Date: 1st - first half of the 2nd century

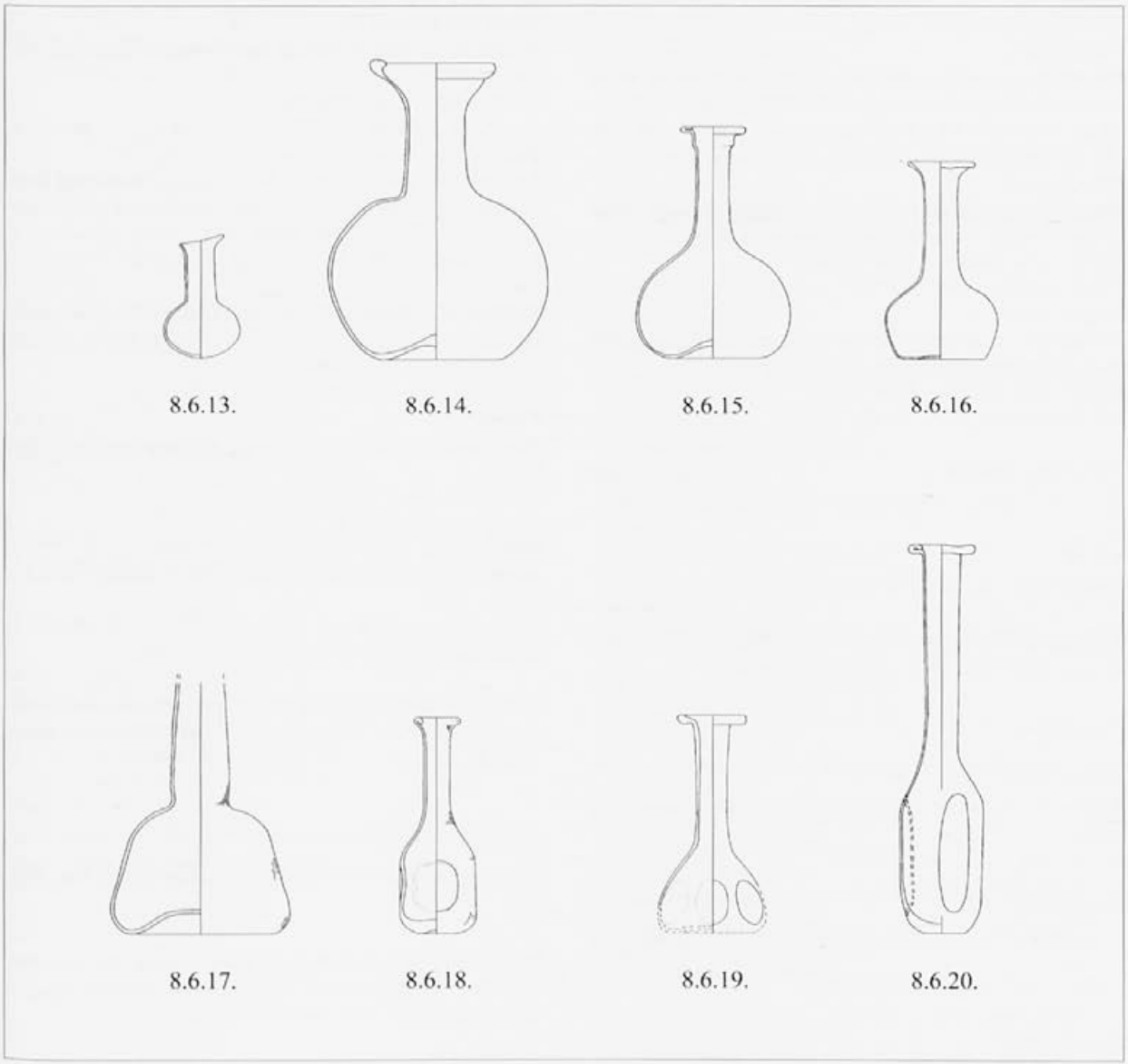
Drnovo (IF)
Balsamarium with a spherical body, flat base, everted rim.
8.6.13. - hat. 5 cm - NMS R 702.
Lit.: Petru, Petru 1978, Pl. 24: 31.
Drnovo (IF)
Balsamarium with a spherical body, flat base, everted rim.
8.6.13. - ht. 6.4 cm - NMS R 700.
Lit.: Petru, Petru 1978, Pl. 24: 30.
Drnovo (IF)
Balsamarium with a spherical body, flat base, everted rim.
8.6.13. - ht. 5.1 cm - NMS R 701.
Lit.: Petru, Petru 1978, Pl. 24: 35.
Drnovo (IF)
Balsamarium with a spherical body, flat base, everted rim.
8.6.13. - ht. 5.2 cm - NMS R 703.
Lit.: Petru, Petru 1978, Pl. 24: 36.
Kaštelir nad Kortami (SF)
Balsamarium with a spherical body, flat base, rim missing.
8.6.13. - ht. 5 cm - PMPi 130.
Lit.: Boltin 1959, Fig. 2.
Kaštelir nad Kortami (SF)
Balsamarium with a spherical body, flat base, rim missing.
8.6.13. - ht. 6.7 cm - PMPi 129.
Lit.: Boltin 1959, Fig. 1.
Miklavž pri Mariboru (TF)
Balsamarium with a spherical body, flat base, tubular rim.
8.6.13. - ht. 11 cm - PMMB 2256.
Lit.: Pahič 1969, Pl. 3: 5.
Novo mesto Beletov vrt (gr. 61)
Balsamarium with a spherical body, flat base, rim missing.
8.6.13. - ht. 8 cm - DM.
Lit.: Knez 1981, Y 261-2: 7.
Polhov Gradec (gr.)
Balsamarium with a spherical body, flat base, everted rim.
8.6.13. - ht. 7.5 cm - NMS.
Lit.: Ložar 1938, Fig. 20.
Polhov Gradec (gr.)
Balsamarium with a spherical body, flat base, everted rim.
8.6.13. - ht. 6 cm - NMS.
Lit.: Ložar 1938, Fig. 20.

Ptuj (gr. 499)
Balzamarij s kroglasto oblikovanim trupom, vboklim dnom in cevasto zavihanim ustjem.
8.6.14. - pr. ustja 1,8 cm - LMJ 3583.
Lit.: Istenič 2000, t. 105: 3.

Primerjave: Barkóczi 1988, Taf. 17: 199; 19: 245; Follmann-Schulz 1988, Taf. 5: 53-61; Rütti 1991, AR 148; Bonnet Borel 1997, Pl. 22: 116.

Ptuj (gr. 47)
Balsamarium with a spherical body, rounded base, neck turned outwards, everted rim.
8.6.13. - ht. 6 cm - PMP 13830.
Lit.: Kujundžić 1982, Pl. 6: 10.
Ptuj (gr. 321)
Balsamarium with a spherical body and cut rim.
8.6.13. - dia. rim 2.4 cm - LMJ 2453.
Lit.: Istenič 2000, Pl. 66: 2.

Analogies: Barkóczi 1988, Pl. 17: 198; Sternini 1990, Pl. 18: 62-65; Rütti 1991, AR 125; Biaggio Simona 1991, Pl. 16; Bonnet Borel 1997, Pl. 22: 115.



Sl. 51: Skupina 8 - posodice za olja in dišave (8.6.13.: Petru, Petru 1978, t. 24: 36; 8.6.14.: Kujundžić 1982, t. 1: 7; 8.6.15.: Kujundžić 1982, t. 1: 10; 8.6.16.: Petru, Petru 1978, t. 24: 29; 8.6.17.: Istenič 2000, t. 14: 5; 8.6.18.: Istenič 2000, t. 32: 7; 8.6.19.: Urleb 1984, t. 11: 7; 8.6.20.: Petru, Petru 1978, t. 25: 1). M. = 1:3.

Fig. 51: Group 8 - cosmetic vessels (8.6.13.: Petru, Petru 1978, Pl. 24: 36; 8.6.14.: Kujundžić 1982, Pl. 1: 7; 8.6.15.: Kujundžić 1982, Pl. 1: 10; 8.6.16.: Petru, Petru 1978, Pl. 24: 29; 8.6.17.: Istenič 2000, Pl. 14: 5; 8.6.18.: Istenič 2000, Pl. 32: 7; 8.6.19.: Urleb 1984, Pl. 11: 7; 8.6.20.: Petru, Petru 1978, Pl. 25: 1). Scale = 1:3.

8.6.15.
Balzamariji s kroglastim trupom in stopničastim ustjem (*sl. 51*):

Balzamariji s kroglasto oblikovanim trupom in vboklim dnom, na prehodu v ustje se vrat stopničasto razširi, ustje izvihano ali zapognjeno nazaj in sploščeno.

Datacija: 2. - 3. st.

Ptuj (gr. 15)
Balzamarij s kroglasto oblikovanim trupom, vboklim dnom in stopničastim prehodom v cevasto zavihano ustje.
8.6.15. - viš. 10 cm - PMP 13656.
Lit.: Kujundžić 1982, t. 1: 10.
Ptuj (gr. 90)
Balzamarij s kroglasto oblikovanim trupom, vboklim dnom in stopničastim prehodom v cevasto zavihano ustje.
8.6.15. - viš. 12,4 cm - PMP 14029.
Lit.: Kujundžić 1982, t. 9: 19.
Ptuj (gr. 153)
Balzamarij s kroglasto oblikovanim trupom, vboklim dnom in stopničastim prehodom v cevasto zavihano ustje.
8.6.15. - viš. 10,5 cm - PMP 14980.
Lit.: Kujundžić 1982, t. 13: 12.
Ptuj (gr. 221)
Balzamarij s kroglasto oblikovanim trupom, vboklim dnom in stopničastim prehodom v cevasto zavihano ustje.
8.6.15. - viš. 14,5 cm - PMP 15403.
Lit.: Kujundžić 1982, t. 18: 9.

Primerjave: nepoznane.

8.6.16.
Balzamariji s hruškastim trupom (*sl. 51*):

Balzamariji s hruškasto oblikovanim trupom, dno rahlo vboklo, ustje izvihano ali zapognjeno navznoter.

Datacija: 2. - 3. st.

Drnovo (PN)
Balzamarij s hruškasto oblikovanim trupom, dno vboklo, ustje izvihano.
8.6.16. - viš. 8 cm - NMS R 669.
Lit.: Petru, Petru 1978, t. 24: 5.
Drnovo (PN)
Balzamarij s hruškasto oblikovanim trupom, dno vboklo, ustje izvihano.
8.6.16. - viš. 8,7 cm - NMS R 692.
Lit.: Petru, Petru 1978, t. 24: 29.
Drnovo (PN)
Balzamarij s hruškasto oblikovanim trupom, dno vboklo, ustje cevasto zavihano.
8.6.16. - viš. 8,9 cm - NMS R 695.
Lit.: Petru, Petru 1978, t. 24: 32.
Drnovo (PN)
Balzamarij s hruškasto oblikovanim trupom, dno vboklo, ustje cevasto zavihano.

8.6.14.
Balsamaria with a globular body and concave base (*Fig. 51*):

Balsamaria with a globular body, concave base, and everted rim.

Date: 2nd - 3rd centuries

Brezje nad Zrečami (gr. 5)
Balsamarium with a globular body, concave base, and everted rim.
8.6.14. - ht. 10.5 cm - PMMb.
Lit.: Pahič 1969, Pl. 7: 4.
Brezje nad Zrečami (gr. 31)
Balsamarium with a globular body, concave base, and flat rim.
8.6.14. - ht. 7.4 cm - PMMb.
Lit.: Pahič 1969, Pl. 7: 3.
Ptuj (gr. 9)
Balsamarium with a globular body, concave base, and tubular rim.
8.6.14. - ht. 13 cm - PMP 13641.
Lit.: Kujundžić 1982, Pl. 1: 7.
Ptuj (IF)
Balsamarium with a globular body, concave base, and tubular rim.
8.6.14. - ht. 9.3 cm - PMP 1165.
Lit.: Mikl Curk 1976, Pl. 1: 1.
Ptuj (IF)
Balsamarium with a globular body, concave base, and tubular rim.
8.6.14. - ht. 8 cm - PMP 16505.
Lit.: Kujundžić 1982, Pl. 31: 17.
Ptuj (gr. 499)
Balsamarium with a globular body, concave base, and tubular rim.
8.6.14. - dia. rim 1.8 cm - LMJ 3583.
Lit.: Istenič 2000, Pl. 105: 3.

Analogies: Barkóczi 1988, Pl. 17: 199; 19: 245; Follmann-Schulz 1988, Pl. 5: 53-61; Rütti 1991, AR 148; Bonnet Borel 1997, Pl. 22: 116.

8.6.15.
Balsamaria with a globular body and stepped rim (*Fig. 51*):

Balsamaria with a globular body and a concave base, the neck spreads in stepped fashion at the juncture with the rim, the rim turned out or rolled back and flattened.

Date: 2nd - 3rd centuries

Ptuj (gr. 15)
Balsamarium with a globular body, concave base, and a stepped transition to the tubular rim.
8.6.15. - ht. 10 cm - PMP 13656.
Lit.: Kujundžić 1982, Pl. 1: 10.

8.6.16. - viš. 8,3 cm - NMS R 694.
Lit.: Petru, Petru 1978, t. 24: 24.
Drnovo (PN)
Balzamarij s hruškasto oblikovanim trupom, dno vboklo, ustje manjka.
8.6.16. - viš. 6,4 cm - NMS R 693.
Lit.: Petru, Petru 1978, t. 24: 23.

Primerjave: Barkóczi 1988, Taf. 18: 221, 220; Sternini 1990, Pl. 29: 180; Biaggio Simona 1991, Tav. 25: 1.173; 26: 1.002.

8.6.17.
Balzamariji z zvončastim trupom (*sl. 51*):

Bikonično oblikovan trup se na dnu zvončasto razširi, dno rahlo vboklo.

Datacija: 2. - 3. st.

Ptuj (gr. 67)
Balzamarij z zvončasto oblikovanim trupom, dno vboklo.
8.6.17. - viš. 11 cm - LMJ 2599.
Lit.: Istenič 2000, t. 14: 5.

Primerjave: Barkóczi 1988, Taf. 19: 241-243; De Tomasso 1990, f. 53; Gluščević 2000, 186, Fig. 2.

8.6.18.
Balzamariji z gubami na ostenju in kroglastim trupom (*sl. 51*):

Balzamariji s kroglasto oblikovanim trupom in štirimi gubami na ostenju, ustje cevasto zavihano, dno rahlo vboklo.

Datacija: 2. - 3. st.

Ptuj (gr. 147)
Balzamarij s kroglastim trupom in štirimi gubami na ostenju, ustje cevasto zavihano.
8.6.18. - pr. ustja 2,1 cm - LMJ 2596.
Lit.: Istenič 2000, t. 32: 7.
Ptuj (PN)
Balzamarij s kroglastim trupom in štirimi gubami na ostenju, ustje cevasto zavihano, dno vboklo.
8.6.18. - viš. 9 cm - PMP 3499.
Lit.: Mikl Curk 1976, t. 2: 16.

Primerjave: Barkóczi 1988, Taf. 18: 228, 231; 19: 238, 239; Sternini 1990, Pl. 30: 187; Rütti 1991, AR 147.1.

8.6.19.
Balzamariji z gubami na ostenju in trikotnim trupom (*sl. 51*):

Balzamariji s trikotno oblikovanim trupom in gubami po ostenju, ustje izvihano in odebeljeno, dno rahlo vboklo.

Ptuj (gr. 90)
Balsamarium with a globular body, concave base, and a stepped transition to the tubular rim.
8.6.15. - ht. 12.4 cm - PMP 14029.
Lit.: Kujundžić 1982, Pl. 9: 19.
Ptuj (gr. 153)
Balsamarium with a globular body, concave base, and a stepped transition to the tubular rim.
8.6.15. - ht. 10.5 cm - PMP 14980.
Lit.: Kujundžić 1982, Pl. 13: 12.
Ptuj (gr. 221)
Balsamarium with a globular body, concave base, and a stepped transition to the tubular rim.
8.6.15. - ht. 14.5 cm - PMP 15403.
Lit.: Kujundžić 1982, Pl. 18: 9.

Analogies: none identified.

8.6.16.
Balsamaria with a pear-shaped body (*Fig. 51*):

Balsamaria with a pear-shaped body, the base slightly concave, the rim turned out or folded inwards.

Date: 2nd - 3rd centuries

Drnovo (IF)
Balsamarium with a pear-shaped body, concave base, everted rim.
8.6.16. - ht. 8 cm - NMS R 669.
Lit.: Petru, Petru 1978, Pl. 24: 5.
Drnovo (IF)
Balsamarium with a pear-shaped body, concave base, everted rim.
8.6.16. - ht. 8.7 cm - NMS R 692.
Lit.: Petru, Petru 1978, Pl. 24: 29.
Drnovo (IF)
Balsamarium with a pear-shaped body, concave base, tubular rim.
8.6.16. - ht. 8.9 cm - NMS R 695.
Lit.: Petru, Petru 1978, Pl. 24: 32.
Drnovo (IF)
Balsamarium with a pear-shaped body, concave base, tubular rim.
8.6.16. - ht. 8.3 cm - NMS R 694.
Lit.: Petru, Petru 1978, Pl. 24: 24.
Drnovo (IF)
Balsamarium with a pear-shaped body, concave base, rim missing.
8.6.16. - ht. 6.4 cm - NMS R 693.
Lit.: Petru, Petru 1978, Pl. 24: 23.

Analogies: Barkóczi 1988, Pl. 18: 221, 220; Sternini 1990, Pl. 29: 180; Biaggio Simona 1991, Pl. 25: 1.173; 26: 1.002.

8.6.17.
Balsamaria with a bell-shaped body (*Fig. 51*):

The biconically formed body is broadened at the base into a the shape of a bell, the base slightly concave.

Datacija: 2. st.

Cerknica (gr. 23)
Gornji del balzamarija z gubami na ostenju, ustje odebeljeno.
8.6.19. - viš. 9,6 cm - NMP.
Lit.: Urleb 1984, t. 11: 7.

Primerjave: Rütti 1991, AR 147.2;

8.6.20.
Balzamariji z gubami na ostenju in cevastim trupom (*sl. 51*):

Balzamariji s cevasto oblikovanim podolgovatim trupom z gubami, ustje cevasto zavihano, dno ravno.

Datacija: 2. st.

Drnovo (PN)
Balzamarij s podolgovatim nagubanim trupom, ustje cevasto zavihano, dno ravno.
8.6.20. - viš. 17 cm - NMS R 705.
Lit.: Petru, Petru 1978, t. 25: 1.

Primerjave: Barkóczi 1988, Taf. 18: 229-233; Follmann-Schulz 1988, Taf. 1: 3-7; Rütti 1991, AR 139.

Komentar za oblike 8.6.1. do 8.6.20.:
Balzamariji sodijo med najstarejše oblike steklenih posod. Balzamariji v Egiptu in Mezopotamiji so bili delani še s tehniko nabiranja stekla okrog jedra. Velikost posodic priča o dragoceni vsebini, ki so jo v njih shranjevali (Grose 1989, 47).

Zaradi preproste oblike so bili to prvi izdelki, ki so nastali s pihanjem stekla. Datiramo jih lahko v zadnjo četrtino 1. st. pr. n. š. (De Tommaso 1990, 19). Že v Avgustovi dobi je proizvodnja balzamarijev v zahodnem in vzhodnem delu imperija dosegla vrh in kmalu zatem se razširijo tudi v kalup pihani balzamariji (De Tommaso 1990, 20).

Vsebina balzamarijev se je redko ohranila in glede na obliko ne moremo ugotavljati, če je bila vsebina vezana na en tip balzamarija. Na nekaterih stekleničkah na dnu prepoznamo odtise žigov oziroma različne napise, ki so morda povezani s proizvodnjo nekaterih dišečih snovi in mazil. Balzamariji so bili zaprti z zamaški iz organskih materialov.

Različne tipologije te oblike so pripeljale nekatere avtorje do številnih različic, vendar je treba pri tej enostavni obliki upoštevati način izdelave, kar pomeni, da vsaka najmanjša razlika in podrobnost še ni nova oblika. De Tommaso (1990) se je lotil tipologije italijanskih balzamarijev s pomočjo numeriranja. Merske razlike in detajli so ga privedli do izrednega števila oblik, ki skoraj nimajo več pravega pomena in sistema. Posebno tipologijo balzamarijev iz Salone je pripravila Buljevi-

Date: 2nd - 3rd centuries

Ptuj (gr. 67)
Balsamarium with a bell-shaped body, concave bas.
8.6.17. - ht. 11 cm - LMJ 2599.
Lit.: Istenič 2000, Pl. 14: 5.

Analogies: Barkóczi 1988, Pl. 19: 241-243; De Tomasso 1990, Fig. 53; Gluščević 2000, 186, Fig. 2.

8.6.18.
Balsamaria with indents on the walls and a globular body (*Fig. 51*):

Balsamaria with a globular body and four indents on the walls, the rim tubular, the base gently concave.

Date: 2nd - 3rd centuries

Ptuj (gr. 147)
Balsamarium with a spherical body and four indents on the walls, tubular rim.
8.6.18. - dia. rim 2.1 cm - LMJ 2596.
Lit.: Istenič 2000, Pl. 32: 7.
Ptuj (IF)
Balsamarium with a spherical body and four indentats on the walls, tubular rim, concave base.
8.6.18. - ht. 9 cm - PMP 3499.
Lit.: Mikl Curk 1976, Pl. 2: 16.

Analogies: Barkóczi 1988, Pl. 18: 228, 231; 19: 238, 239; Sternini 1990, Pl. 30: 187; Rütti 1991, AR 147.1.

8.6.19.
Balsamaria with indents on the walls and a triangular body (*Fig. 51*):

Balsamaria with a triangular body and indentations on the walls, the rim everted and thickened, the base gently concave.

Date: 2nd century

Cerknica (gr. 23)
Upper part of a balsamarium with indentations on the walls, thickened rim.
8.6.19. - ht. 9.6 cm - NMP.
Lit.: Urleb 1984, Pl. 11: 7.

Analogies: Rütti 1991, AR 147.2.

8.6.20.
Balsamaria with indents on the walls and a tubular body (*Fig. 51*):

Balsamaria with a tubular elongated body with indents, the rim tubular, the base flat.

ćeva, ki zelo podrobno deli ohranjene stekleničke v skupine in podskupine (Buljević 1999; 2000, 465). Med slovenskim gradivom je pri obravnavi grobov z zahodne petovionske nekropole balzamarije razdelila tudi Isteničeva (1999, 71-73). Pri delitvi je upoštevala tipologijo Isingsove, a je balzamarije poimenovala po značilnostih v oblikovanju, npr. svečasti balzamariji ipd. (Istenič 1999, 73). Oblik, ki jih ni mogla umestiti v tipologijo Isingsove, ni posebej obravnavala.

Pri naši delitvi obravnavanega gradiva na posamezne različice so upoštevani v celoti in delno ohranjeni balzmariji, ki kažejo dovolj izrazite značilnosti za razporeditev med določene različice.

Cevasti balzamariji imajo ozko telo, ki je ponekod v sredini poudarjeno z zajedo in celo nekoliko zaokroženim spodnjim delom trupa (8.6.1.-3.). Dno je navadno nekoliko zaokroženo ali ravno, ustje izvihano. Balzamariji z gladkim trupom (8.6.1.) sodijo med najzgodnejše in jih najdemo že od flavijskega do trajanskega obdobja ter v 2. stoletju (De Tommaso 1990, 85). Dlje so v uporabi balzamariji z zajedo na trupu (8.6.2. in 8.6.3.), saj jih najdemo še v 2. in 3. stoletju, kar kažejo tudi grobne celote iz Petovione (Istenič 2000, 82, 83, 85, 93).

Različica 8.6.4. je zastopana samo v grobu 340 iz Petovione iz druge polovice 1. oz. prve polovice 2. stoletja (Istenič 2000, 144).

Balzamariji s trikotno oblikovanim trupom so med najdbami s slovenskih najdišč najštevilneje zastopani (8.6.5.; 8.6.6.). Vrat in trup sta pogosto ločena z zajedo, ki poudarja prehod v vrat.

V Ticinu so te oblike balzamarijev datirane od druge polovice 1. do prve polovice 2. stoletja (Biaggio Simona 1991, 132-135). De Tommaso jih opredeljuje kot tip 43 in 46 ter umešča v čas od flavijcev do antoninov (1990, 66, 69). Najdbe iz Petovione potrjujejo uporabo te oblike v enakem časovnem obdobju in še v začetku 3. stoletja (Istenič 2000, 14, 54, 116, 157).

Različica 8.6.7. je zastopana v petovionskih grobovih, Cerknici in v grobu iz Starega trga pri Slovenj Gradcu. Prav slednji je do sedaj edini med slovenskim gradivom, ki ima na dnu napis AT • F OE, grobna celota je iz 2. stoletja (Strmčnik Gulič 1981, 368). To obliko balzamarijev z napisi umeščajo po ohranjenih grobnih celotah v 2. in 3. stoletje (Taborelli 1999, 267, 277). Na osnovi ptujskih grobnih celot lahko naše časovne okvire razširimo tudi v prvo polovico 3. stoletja (Kujundžič 1982, 12).

Kot posebno obliko velja omeniti balzamarij z nataljeno nitjo na trupu (8.6.8.) iz groba zahodne petovionske nekropole, ki sodi na konec 1. in v prvo polovico 2. stoletja (Istenič 2000, 58). Morda gre za lokalni izdelek, ker med objavljenim gradivom nima pravih primerjav.

Različica 8.6.9. je zastopana v dveh grobnih celotah zahodnega petovionskega grobišča (gr. 71 in 621), ki sta

Date: 2nd century

Drnovo (IF)
Balsamarium with an elongated indented body, tubular rim, flat base.
8.6.20. - ht. 17 cm - NMS R 705.
Lit.: Petru, Petru 1978, Pl. 25: 1.

Analogies: Barkóczi 1988, Pl. 18: 229-233; Follmann-Schulz 1988, Pl. 1: 3-7; Rütti 1991, AR 139.

Comments - forms 8.6.1. - 8.6.20.:
Balsamaria are among the oldest forms of glass vessels. Balsamaria were made even in Egypt and Mesopotamia with the technique of core-wrapping. The small size of the vessels indicates the value of the contents stored in them (Grose 1989, 47).

The simple form meant that they were the first products that were created by blowing glass. They can be dated to the last quarter of the 1st century BC (De Tommaso 1990, 19). As early as the Augustan period, the production of balsamaria reached its peak in the western and eastern parts of the Empire, and shortly afterwards also spread to mould-blown balsamaria (De Tommaso 1990, 20).

The contents of balsamaria are rarely preserved and it cannot be established on the basis of form if the contents were related to a given type of container. Several vessels have impressions, stamps, or various inscriptions on the base, which were perhaps connected to the production of some kind of perfume or ointment. Balsamaria were closed with stoppers of organic material.

The various typologies of the form have led some authors to numerous variants, although it is necessary to take into consideration the manner of production of this simple form, which means that each slightest difference and detail does not always represent a new form. De Tommaso (1990) undertook setting up the typology of Italian balsamaria with the help of numeration. Metrical differences and details led to an exceptional number of forms, which almost have no real meaning and system. A special typology of the balsamaria from Salona was made by Buljević, who in extreme detail divided the preserved flasks into groups and subgroups (Buljević 1999; 2000, 465). For the Slovenian material, while analyzing the graves from the western cemeteries of Poetovio, the balsamaria were classified by Istenič (1999, 71-73). The typology of Isings was used in the classification, and the balsamaria were termed according to characteristics of form, such as candle-shaped balsamaria, etc. (Istenič 1999, 73). Forms that could not be placed in the Isings typology were not discussed separately.

In our classification of the material under study into individual variants both entirely and partly preserved vessels were taken into consideration, if they exhibited sufficient characteristics for classification among the given forms.

datirani v drugo polovico 1. oz. na začetek 2. stoletja (Istenič 2000, 35, 206).

Oblike s sploščenim trupom (8.6.10.; 8.6.11.) niso zelo razširjene, a dovolj značilne. Poznane so v severni Italiji, Trierju in na vzhodu, De Tommaso jih opredeljuje kot tip 49 in umešča v drugo polovico 2. stoletja (1990, 71). V grobnih celotah v Petovioni so najbolj pogosti v 2. stoletju in v uporabi tudi še v 3. stoletju (Kujundžić 1982, 13; Istenič 2000, 128, 180). Pri teh izdelkih so na dnu prav tako pogosto odtisnjeni posebni žigi, ki so verjetno vezani na proizvajalce kozmetičnih snovi ali celo posameznih delavnic, ki so proizvajale izdelke za posebne naročnike (Frova 1971, 38; Pasqualucci 1998, 115).

Balzamariji s širokim vratom (8.6.12.) sodijo med redkejše oblike. Kot tip 29 in 50 jih opredeljuje De Tommaso in datira v 2. in 3. stoletje (1990, 56, 72). Najdemo jih na najdiščih severne Italije, pa tudi v Trierju, Kölnu in na Madžarskem (Goethert Polaschek 1977, no. 664-665; Barkóczi 1988, taf. 20: 260-63).

V grobovih Petovione so del grobnih celot iz 2. stoletja (Kujundžić 1982, 12; Istenič 2000, 199).

Kroglasti balzamariji (8.6.13.) so razširjeni po vsej Italiji, zelo številni so v Ticinu in zahodnih provincah. Proizvajajo se že od avgustejske dobe dalje. Zgodnji izdelki imajo kratek vrat in odrezano ustje, razširjeni so do prve polovice 2. stoletja. Najdemo jih v petovionskih grobovih od 1. do prve polovice 2. stoletja (Istenič 2000, 108).

Izdelki večjih dimenzij z dolgim vratom in vboklim dnom (8.6.14.) so mlajši in razširjeni v 2. in 3. stoletju, izjemoma tudi kasneje, npr. v grobu 499 iz Petovione (Istenič 2000, 163). Posebno obliko predstavljajo kroglasti balzamariji s stopničastim ustjem 8.6.15., ki jih najdemo samo v petovionskih grobovih in bi lahko bili lokalni izdelek. Pojavljajo se v petovionskih grobovih 2. in 3. stoletja (Kujundžić 1982, 13).

Oblika s hruškasto oblikovanim trupom (8.6.16.) je zastopana samo med drnovskim gradivom, ki je brez grobnih celot. Primerjave iz Italije in Francije so poznane v 2. in 3. stoletju, nekatere najdbe iz Madžarske pa izvirajo še iz grobov 4. stoletja (Barkóczi 1988, 119).

Samo z enim primerkom so zastopani balzamariji z zvončastim trupom (8.6.17.), ki jim najdemo največ primerjav na Hrvaškem. To obliko balzamarijev je natančno obdelal Gluščević, ki domneva, da gre za izdelek delavnic v Zadru, saj je izven Hrvaške poznanih le malo najdb teh balzamarijev (2000, 185). Glede na grobne najdbe iz Dalmacije jih lahko umestimo v 2. in 3. stoletje (Gluščević 2000, 188).

Tudi balzamariji z gubami na ostenju (8.6.18. do 8.6.20.) niso zelo pogoste oblike. Primerjave jim najdemo v Dalmaciji (Fadić 1997, 81, 85, 86), Augstu (Rütti 1991, 73) in na Madžarskem (Barkóczi 1988, Taf. 18: 227-236). Najdbe iz Dalmacije datira Fadić v 3. in celo 4. stoletje (1997, 33), madžarske stekleničke pa v glavnem izvirajo iz 2. stoletja (Barkóczi 1988, 122).

Tubular balsamaria have a narrow body, which is sometimes emphasized in the center with a constriction and even a somewhat rounded lower part of the body (8.6.1.-3.). The base is usually somewhat rounded or flat, and the rim everted. Balsamaria with a smooth body (8.6.1.) are among the earliest and they can be found from the Flavian to the Trajanic period, as well as in the 2nd century (de Tommaso 1990, 85), longer in use were balsamaria with a constriction on the body (8.6.2. and 8.6.3.), as they can be found in the 2nd and 3rd centuries, as is also indicated by the graves from Poetovio (Istenič 2000, 82, 83, 85, 93).

Variant 8.6.4. is represented only in grave 340 from Poetovio from the second half of the 1st or the first half of the 2nd centuries (Istenič 2000, 144).

Balsamaria with a triangular body are among the most numerously represented among finds from Slovenian sites (8.6.5.; 8.6.6.). The neck and body are often separated with a constriction that emphasizes the transition to the neck.

At Ticino these forms of balsamaria are dated from the second half of the 1st to the first half of the 2nd centuries (Biaggio Simona 1991, 132-135). De Tommaso classified them as types 43 and 46 and placed them in the period from the Flavians to the Antonines (1990, 66, 69). The finds from Poetovio confirm the use of these forms in the same chronological period, and further at the beginning of the 3rd century (Istenič 2000, 14, 54, 116, 157).

Variant 8.6.7. is represented in the graves from Poetovio, Cerknica, and Stari trg near Slovenj Gradec. In fact, the balsamarium from Stari trg is so far the only example among the Slovenian material that has the legend AT·F OE on the base; the grave is dated to the 2nd century (Strmčnik Gulič 1981, 368). This form of balsamaria with inscriptions is dated on the basis of preserved grave units to the 2nd and 3rd centuries (Taborelli 1999, 267, 277). On the basis of the grave units from Poetovio, the chronological framework can be extended to the first half of the 3rd century (Kujundžić 1982, 12).

A balsamarium with an applied glass trail on the body (8.6.8.), should be mentioned as a special group, which came from a grave of the western Poetovian cemetery dated to the end of the 1st and the first half of the 2nd century (Istenič 2000, 58). It could have been a local product, as there are no real analogies among the published material.

Variant 8.6.9. is represented in two grave units of the western necropolis of Poetovio (gr. 71 and 621), which are dated to the second half of the 1st and the beginning of the 2nd century, respectively (Istenič 2000, 35, 206).

Forms with a flattened body (8.6.10.; 8.6.11.) are not very widespread, but are sufficiently characteristic. They were distributed in northern Italy, at Trier, and in the east, De Tommaso classified them as type 49 and

Najdbe iz grobnih celot po Sloveniji sodijo v 2. stoletje (Istenič 2000, 61; Urleb 1984, 313).

SKUPINA 9 - SVETILKE
(sl. 52; pril. 4)

9.1.
KONIČNE SVETILKE

9.1.1.
Konične svetilke z zaobljenim dnom (*sl. 52*):

Imajo ravno ustje, ki je zataljeno ali odebeljeno, ostenje neokrašeno, dno zoženo in zaokroženo ali z majhno stojno površino.

Datacija: 4. - 6. stoletje

Ptuj (NN)
Visoka konična svetilka, ustje odebeljeno.
9.1.1. - viš. 12,6 cm; pr. ustja 8,2 cm - PMP 3486.
Lit.: Mikl Curk 1976, t. 5: 1.

Primerjave: Harden 1936, Pl. 16: 436, 449; Šaranović-Svetek 1986, t. 4: 4; Barkóczi 1988, Taf. 9: 100; Ružić 1994, t. 39: 2,3; 40: 1.

9.1.2.
Konične svetilke z zoženim dnom in horizontalnimi vrezi (Is 106d); (*sl. 52*):

Oblika je podobna gornji, ustje je ravno odrezano in obrušeno, ponekod tudi klekasto oblikovano, dno zaokroženo. Ostenje krasijo plitvi horizontalni vrezi. Nekatere krasijo tudi kaplje modrega stekla.

Datacija: konec 4. - začetek 5. st.

Ptuj (NN)
Visoka konična svetilka s tremi horizontalnimi vrezanimi linijami.
9.1.2. - viš. 17,5 cm; pr. ustja 12 cm - PMP 3475.
Lit.: Mikl Curk 1976, t. 4: 16.

Primerjave: Harden 1936, Pl. 16: 438, 455; Šaranović-Svetek 1986, t. 4: 2, 3; Barkóczi 1988, Taf. 10: 104-110; Ružić 1994, t. 38: 6; 39: 1; 40: 3.

9.1.3.
Svetilke z usločenim ostenjem in zoženim dnom (Is 106c); (*sl. 52*):

Imajo razširjeno klekasto ustje, ki je odrezano in obrušeno.

placed them in the second half of the 2nd century (1990, 71). In the graves at Poetovio they were most frequent in the 2nd century and were also in use in the 3rd century (Kujundžić 1982, 13; Istenič 2000, 128, 180). Special stamps were often impressed on the bases of these products, which were probably related to manufacturers of cosmetic goods or even individual workshops that produced items for special orders (Frova 1971, 38; Pasqualucci 1998, 115).

Balsamaria with a wide neck (8.6.12.) are among rarer forms. De Tommaso classified them as types 29 and 50 and dated them to the 2nd and 3rd centuries (1990, 56, 72). They can be found at sites in northern Italy, as well as at Trier and Köln, and in Hungary (Goethert Polaschek 1977, No. 664-665; Barkóczi 1988, Pl. 20: 260-63).

At Poetovio they came from graves dated to the 2nd century (Kujundžić 1982, 12; Istenič 2000, 199).

Globular balsamaria (8.6.13.) are spread throughout all of Italy, and they are very numerous in Ticino and the western provinces. They were produced from as early as the Augustan period onwards. Early examples have a short neck and cut rim, and they were widespread to the first half of the 2nd century. They are found in Poetovian graves from the 1st to the first half of the 2nd centuries (Istenič 2000, 108).

Examples of larger dimensions with a long neck and a concave base (8.6.14.) are later, and were widely spread in the 2nd and 3rd century, and exceptionally also later, such as in grave 499 from Poetovio (Istenič 2000, 163). A special form is represented by globular balsamaria with a stepped rim (8.6.15.), which can be found only in the Poetovian graves and could well be a local product. It appears in the graves of Poetovio in the 2nd and 3rd centuries (Kujundžić 1982, 13).

The form with a pear-shaped body (8.6.16.) is represented only among the material from Drnovo, which lacks grave units. Analogies from Italy and France are known from the 2nd and 3rd centuries, and some finds from Hungary even come from graves of the 4th century (Barkóczi 1988, 119).

Balsamaria with a bell-shaped body (8.6.17.) are represented with only one example. The greatest number of comparisons can be found in Croatia. This form of balsamaria was analyzed in detail by Gluščević, who considered that this type was manufactured in a workshop in *Iader* (Zadar), as only a few finds of these balsamaria are known from outside Croatia (2000, 185). On the basis of grave finds from Dalmatia they can be placed in the 2nd and 3rd centuries (Gluščević 2000, 188).

Balsamaria with indentations on the walls (8.6.18.-8.6.20.) are not very common forms. Analogies can be found in Dalmatia (Fadić 1997, 81, 85, 86), at Augst (Rütti 1991, 73), and in Hungary (Barkóczi 1988, Pl. 18: 227-236). The finds from Dalmatia were dated by Fadić to the 3rd and even the 4th centuries (1997, 33),

Ostenje je konkavno in prehaja v ravno dno, ki je lahko na sredini rahlo vboklo. Stojna površina je večja kot pri gornjih dveh vrstah svetil.

Datacija: druga polovica 4. - 5. st.

Ptuj (NN)
Svetilka z usločenim ostenjem, ravno odrezanim ustjem in ravnim dnom.
9.1.3. - viš. 8,8 cm; pr. ustja 8,5 cm - PMP 3465.
Lit.: Mikl Curk 1976, t. 4: 15.

Primerjave: Plesničar Gec 1983, t. 25: 13-25; 27: 19; Follmann-Schulz 1988, Taf. 37: 299,300; Ružić 1994, t. 38: 5; Termini Storti 1994, Fr. 2-4.

9.2.
SVETILKE Z ROČAJI

9.2.1.
Svetilke s pokončnimi ročaji (Is 134); (*sl. 52*):

Posoda je plitva, z navzven nagnjenim ostenjem. Ustje je zataljeno, dno vbočeno. Na ostenje so vertikalno pritrjeni navadno trije ušesasti ročaji, gornji del tik ob ustju. Ročaji so večkrat iz drugobarvnega, navadno modro obarvanega stekla.

Datacija: 4. - 7. st.

Koper (NN)
Del ustja, ostenja in ročaj svetilke.
9.2.1. - viš. 2,8 cm - PMK.
Lit.: Cunja 1996, t. 5: 75.
Koper (NN)
Fragmenti ustja, ostenja in ročaj svetilke.
9.2.1. - viš. 3,9 cm; pr. ustja 8,9 cm - PMK.
Lit.: Cunja 1996, t. 5: 76.
Kučar (NN)
Odlomek svetilke z ročajem.
9.2.1. - NMS.
Lit.: Petru, Ulbert 1975, sl. 27: 40.

Primerjave: Plesničar Gec 1983, t. 28: 2,3; Ružić 1994, t. 43: 3,4; Uboldi 1995, Fig.2: 1-5.

9.3.
SVETILKE S ČEPKI NA DNU

9.3.1.
Svetilke s cilindričnim ostenjem in čepkom na dnu (*sl. 52*):

Cilindrično ostenje prehaja v ravno odrezano ustje. Dno je zoženo in oblikovano kot pri amforah, v čepek. Ostenje nekaterih posod krasijo nataljene niti ali kapljičaste aplikacije.

Datacija: druga polovica 5. - 6. stoletje

while the Hungarian vessels mainly came from the 2nd century (Barkóczi 1988, 122).

The finds from graves in Slovenia are classified to the 2nd century (Istenič 2000, 61; Urleb 1984, 313).

GROUP 9 - LAMPS
(*Fig. 52; Appendix 4*)

9.1.
CONICAL LAMPS

9.1.1.
Conical lamps with a rounded base (*Fig. 52*):

The lamps have a straight rim, which was fire-rounded or thickened, the walls undecorated, the base narrowed and rounded or with a small standing surface.

Date: 4th - 6th centuries

Ptuj (SF)
A tall conical lamp, rim thickened.
9.1.1. - ht. 12.6 cm; dia. rim 8.2 cm - PMP 3486.
Lit.: Mikl Curk 1976, Pl. 5: 1.

Analogies: Harden 1936, Pl. 16: 436, 449; Šaranović-Svetek 1986, Pl. 4: 4; Barkóczi 1988, Pl. 9: 100; Ružić 1994, Pl. 39: 2, 3; 40: 1.

9.1.2.
Conical lamps with a rounded base and horizontal incisions (Is 106d); (*Fig. 52*):

The form is similar to the above, the rim is cut straight and ground, and sometimes also curved, the base rounded. The walls are decorated with shallow horizontal wheel-cut lines, or with drops of blue glass.

Date: end of the 4th - beginning of the 5th centuries

Ptuj (SF)
A tall conical lamp with three horizontal wheel-cut lines.
9.1.2. - ht. 17.5 cm; dia. rim 12 cm - PMP 3475.
Lit.: Mikl Curk 1976, Pl. 4: 16.

Analogies: Harden 1936, Pl. 16: 438, 455; Šaranović-Svetek 1986, Pl. 4: 2, 3; Barkóczi 1988, Pl. 10: 104-110; Ružić 1994, Pl. 38: 6; 39: 1; 40: 3.

9.1.3.
Lamps with concave walls and a narrow base (Is 106c); (*Fig. 52*):

The lamps have a broad curved rim, cut straight and ground. The walls are concave and extend to a flat base, which can be

Rodik (NN)
Spodnji del svetilke, zaključek v obliki čepka.
9.3.1. - viš. 3 cm - FF.
Lit.: neobjavljeno.

Primerjave: Harden 1936, Pl. 26: 466, 467; Foy, Bonifay 1989, Fig. 3: 73; 4: 112, 113; Plesničar Gec 1981, t. 5; Ružić 1994, t. 43: 5-11; Uboldi 1995, Fig.4: 22-27.

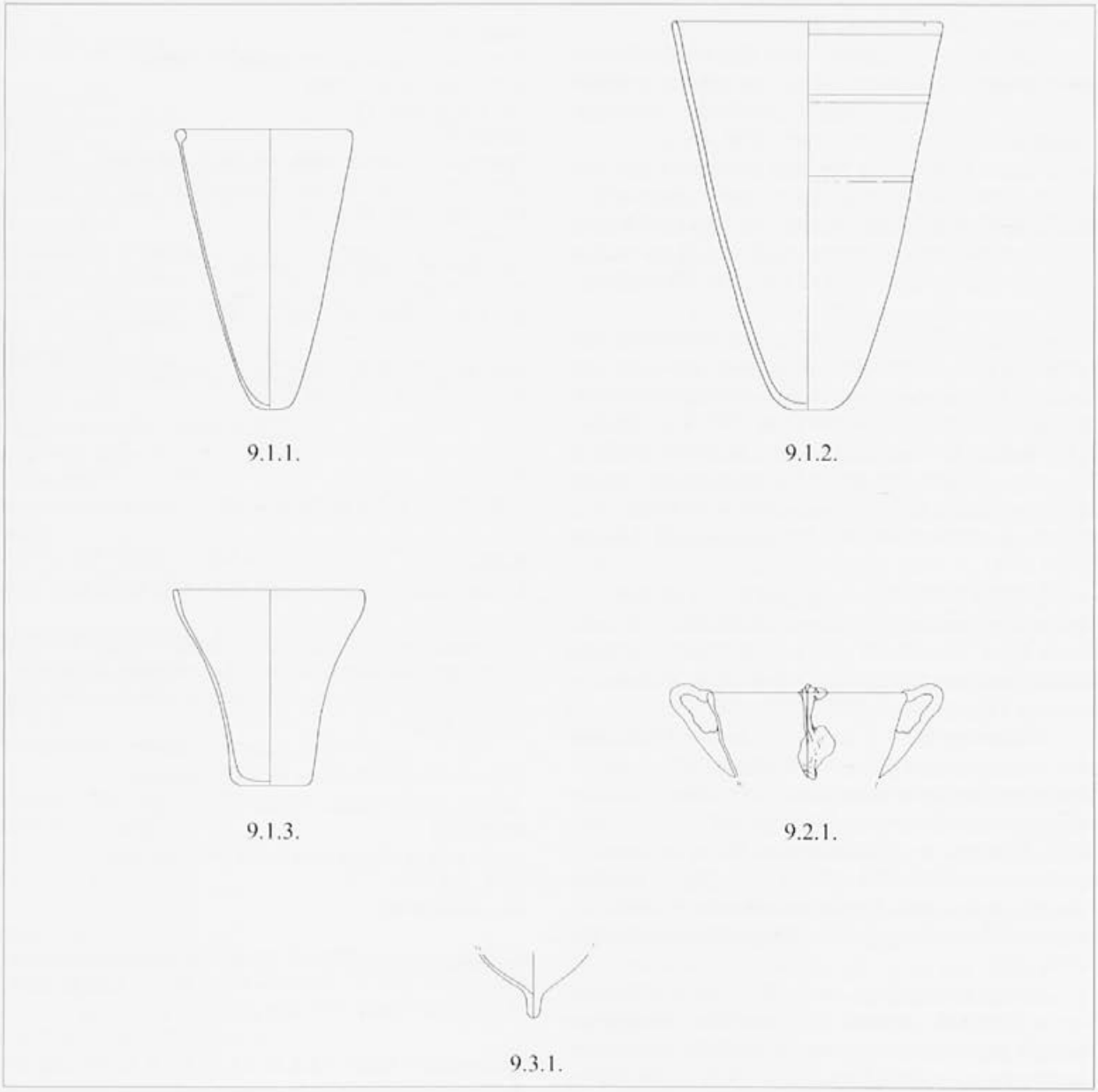
Komentar za oblike 9.1.1. do. 9.1.3., 9.2.1. in 9.3.1.:
Arheološke raziskave ter literarni in ikonografski viri izpričujejo splošno uporabo različnih steklenih posod

slightly concave on the center. The standing surface is larger than in the above two types of lamps.

Date: second half of the 4th - 5th centuries

Ptuj (SF)
Lamp with concave walls, straight cut rim, and flat base.
9.1.3. - ht. 8.8 cm; dia. rim 8.5 cm - PMP 3465.
Lit.: Mikl Curk 1976, Pl. 4: 15.

Analogies: Plesničar Gec 1983, Pl. 25: 13-25; 27: 19; Follmann-Schulz 1988, Pl. 37: 299, 300; Ružić 1994, Pl. 38: 5; Termini Storti 1994, Fr. 2-4.



Sl. 52: Skupina 9 - svetilke (9.1.1.: Mikl Curk 1976, t. 5: 1; 9.1.2.: Mikl Curk 1976, t. 4: 16; 9.1.3.: Mikl Curk 1976, t. 4: 15; 9.2.1.: Cunja 1996, t. 5: 76; 9.3.1.: Rodik, neobjavljeno). M. = 1:3.

Fig. 52: Group 9 - lamps (9.1.1.: Mikl Curk 1976, Pl. 5: 1; 9.1.2.: Mikl Curk 1976, Pl. 4: 16; 9.1.3.: Mikl Curk 1976, Pl. 4: 15; 9.2.1.: Cunja 1996, Pl. 5: 76; 9.3.1.: Rodik, unpublished). Scale = 1:3.

za svetilke od pozne rimske dobe dalje (Uboldi 1995, 93), vendar steklena oljenka iz groba 1081 iz Emone (Petru 1972, t. 88: 7) kaže, da so steklo za svetlobna telesa uporabljali že prej, po omenjeni grobni celoti sodeč od 2. stoletja dalje, in ne šele v pozni rimski dobi.

Steklene svetilke imajo večinoma obliko posod s širokim ustjem. Navadno so visele na kovinskih verižicah (svetilke z ročaji) ali pa so bile postavljene v kovinske svečnike (*polycandelon*), zato je bil njihov spodnji del zožen ali oblikovan v ozko nogo, ki se je natančno prilegala odprtini (Whitehouse 1997, 194, no. 340). Kot svečnika ali lestenca sta verjetno služila tudi kristograma iz druge polovice 4. stoletja, odkrita na Vipoti pri Celju (Ciglenečki 1993, 215, sl. 1, 3).

V posodah so uporabljali plast olja, ki je plavala na vodni podlagi. Ostanki maščob z dna nekaterih svetilk kažejo na uporabo loja (živalske maščobe), orehovega olja in celo sivkinega olja (Uboldi 1995, 94).

Stenj je bil pritrjen s pomočjo plutovine ali koščka kovine, včasih tudi privezan na dno svetilke na posebno zanko. Izdelan je bil verjetno iz lanu ali kakih drugih rastlinskih niti, analize srednjeveških stenjev iz Francije potrjujejo tudi uporabo volne ali konoplje (Uboldi 1995, 93).

Obliki 9.1.1. in 9.1.2. sta večkrat opredeljeni kot svetilki ali čaši, verjetno pa je, da je bila njihova uporaba dvojna. Vsaj običajne izdelke so po potrebi uporabili tako za čaše kot za svetilke (Whitehouse 1997, 192). Obliko je kot svetilke prvi opredelil Harden, na osnovi najdb iz Karanisa v Egiptu, ker so na dnu našli ostanke saj in maščob (Harden 1936, 155). Najdbe iz Slovenije smo datirali na osnovi primerjav z evropskih najdišč (Uboldi 1995, 115).

Svetilke z razširjenim ustjem (9.1.3.) so znane iz steklarske delavnice Sevegliano pri Akvileji (Termini Storti 1994, 210-213, Fr. 1-4) in s številnih evropskih najdišč (Invillino, Trier, Pécs) v drugi polovici 4. in v 5. stoletju (Termini Storti 1994, 211).

Svetila z ročaji (9.2.) se pojavijo že konec 4. stoletja in so v uporabi skozi daljši čas. Nekatere imajo na dnu v sredini pritrjen držaj za stenj v obliki steklene palčke z razširjenim gornjim delom (Whitehouse 1997, 193, no. 339). Poznane so iz katakomb v Rimu in mnogih zgodnjekrščanskih bazilik (Uboldi 1995, 105). V uporabi ostanejo vse do konca 7. oziroma 8. stoletja. V različicah se ta oblika ohrani v uporabi še skozi srednji vek (Uboldi 1995, 112).

Zadnja oblika (9.3.1.) se pojavlja v kontekstih od konca 5. in v 6. stoletju. To je svetilka razmeroma majhnih dimenzij, popolnoma ohranjen kos iz groba v Obrenovcu ni visok niti 8 cm (Ružić 1994, 56, št. 1189). Poznana je še z najdišč v Italiji, Franciji (Uboldi 1995, 120), iz Splita (DeMaine 1979, t. 11: R 57) in Egipta (Harden 1936, t. 16: 466-67) in tudi iz Emone (Plesničar Gec 1981, t. 5).

9.2.
LAMPS WITH HANDLES

9.2.1.
Lamps with vertical handles (Is 134); (*Fig. 52*):

The vessels are shallow with outward turned walls. The rim is fire-rounded, the base concave. The walls usually have three auricular handles attached vertically, the upper part directly adjacent to the rim. The handles were often of differently coloured, usually blue glass.

Date: 4th - 7th centuries

Koper (SF)
Part of the rim, walls, and handle of a lamp.
9.2.1. - ht. 2.8 cm - PMK.
Lit.: Cunja 1996, Pl. 5: 75.
Koper (SF)
Fragments of the rim, walls, and handle of a lamp.
9.2.1. - ht. 3.9 cm; pr. rim 8.9 cm - PMK.
Lit.: Cunja 1996, Pl. 5: 76.
Vranje (SF)
Fragment of a lamp with a handle.
9.2.1. - NMS.
Lit.: Petru, Ulbert 1975, Fig. 27: 40.

Analogies: Plesničar Gec 1983, Pl. 28: 2,3; Ružić 1994, Pl. 43: 3,4; Uboldi 1995, Fig. 2: 1-5.

9.3.
LAMPS WITH A BASE KNOB

9.3.1.
Lamps with cylindrical walls and a base knob (*Fig. 52*):

The cylindrical walls extend into a straight cut rim. The base is narrowed and shaped like that of an amphora, in a stopper. The walls of some vessels are decorated with glass threads or applied drops.

Date: second half of the 5th - 6th centuries

Rodik (SF)
Lower part of a lamp, base in the form of a knob.
9.3.1. - ht. 3 cm - FF.
Lit.: unpublished.

Analogies: Harden 1936, Pl. 26: 466, 467; Foy, Bonifay 1989, Fig. 3: 73; 4: 112, 113; Plesničar Gec 1981, Pl. 5; Ružić 1994, Pl. 43: 5-11; Uboldi 1995, Fig. 4: 22-27.

Comments - forms 9.1.1. to 9.1.3., 9.2.1. and 9.3.1.:
Archaeological research, as well as literary and iconographic sources, indicate the general use of various glass vessels as lamps from the late Roman period onwards (Uboldi 1995, 93). However, the glass lamp from grave 1081 at Emona (Petru 1972, Pl. 88: 7) indicates that

SKUPINA 10 - RAZNO
(*sl. 53; pril. 4*)

10.2.
KAPALKE

10.2.1.
Steklenička v obliki ptice s kapalko na ostenju (*sl. 53*):

Ostenje posode je oblikovano kot ptica, rep služi kot kapalka, gornji del posode postavljen poševno in se zaključi v zavihano ustje.

Datacija: konec 1. - 3. st.

Ptuj (gr. 610)
Steklenička s kapalko na ostenju in poševno postavljenim vratom.
10.2.1.- viš. 7 cm - LMJ.
Lit.: Istenič 2000, t. 132: 6.
Ptuj (gr. 191)
Steklenička s kapalko v sredini ostenja, ustje zavihano navznoter in sploščeno, dno v sredini vboklo.
10.2.1. - viš. 7 cm; pr. dna 3,5 cm - PMP 15201.
Lit.: Kujundžić 1982, t. 14: 26.
Drnovo (PN)
Steklenička s kapalko na ostenju in poševno postavljenim vratom.
10.2.1. - viš. 7 cm - NMS R 708.
Lit.: Petru, Petru 1978, t. 25: 6.
Drnovo (PN)
Steklenička s kapalko na ostenju in poševnim vratom, dno ravno.
10.2.1. - viš. 7,3 cm - NMS R 709.
Lit.: Petru, Petru 1978, t. 25: 7.

Primerjave: Whitehouse 1997, No. 188, 189.

10.2.2.
Steklenička s kapalko na ostenju (*sl. 53*):

Kroglasta steklenička z odebeljenim ustjem ima na ostenju odprtino s kapalko.

Datacija: 1. - 3. st.

Drnovo (PN)
Steklenička s kapalko na ostenju in poševnim vratom, dno v sredini vboklo.
10.2.2. - viš. 7,5 cm - NMS R 710.
Lit.: Petru, Petru 1978, t. 25: 5.
Ptuj (gr. 83)
Steklenička s kapalko na ostenju, ustje manjka.
10.2.2. - viš. 7,5 cm - LMJ.
Lit.: Istenič 2000, t. 18: 4.
Ptuj (gr. 693)
Steklenička s kapalko na ostenju, ustje manjka.
10.2.2. - viš. 7,5 cm - LMJ.

glass was used for lighting vessels even prior to this, from the 2nd century onwards, and not merely in the late Roman period.

Glass lamps mostly have the form of vessels with wide rims. They usually hung on metal chains (lamps with handles) or they were placed in metal candle holders (*polycandelon*), and hence their lower part was tapered or formed into a narrow foot that exactly fit into the opening (Whitehouse 1997, 194, no. 340). The Christograms from the second half of the 4th century discovered at Vipota near Celje (Ciglenečki 1993, 215, Fig. 1, 3), probably also served as candelabra or chandeliers.

A layer of oil floating above a layer of water was used in the vessels. The remains of grease from the bottoms of several lamps indicate the use of animal fat, walnut oil, and even lavender oil (Uboldi 1995, 94).

The wick was attached with cork or a piece of metal, and was sometimes also tied to the base of the lamp with a special loop. It was probably made of linen or some other vegetative thread, while analysis of medieval wicks from France also confirm the use of wool or hemp (Uboldi 1995, 93).

Forms 9.1.1. and 9.1.2. have several times been classified either as lamps or beakers, and it is probable that they were used for both purposes. At any rate, everyday products were used both as glasses and as lamps (Whitehouse 1997, 192). The forms of lamps were first classified by Harden, on the basis of the finds from Karanis in Egypt, where remains of soot and grease were found in the vessels (Harden 1936, 155). The finds from Slovenia have been dated on the basis of comparisons with other European sites (Uboldi 1995, 115).

Lamps with a broadened rim (9.1.3.) are known from the glass workshop at Sevegliano near Aquileia (Termini Storti 1994, 210-213, Fr. 1-4), and from numerous European sites (Invillino, Trier, Pécs) in the second half of the 4th and in the 5th century (Termini Storti 1994, 211).

Lamps with handles (9.2.) appear as early as the end of the 4th century, and were in use throughout a lengthy period. Some have a holder for the wick attached to the center of the base in the form of a glass "thumb" with a widened upper section (Whitehouse 1997, 193, no. 339). They are known from the catacombs of Rome and many early Christian churches (Uboldi 1995, 105). They remained in use all the way to the end of the 7th or in the 8th centuries. This form was preserved in variants throughout the Middle Ages (Uboldi 1995, 112).
The last form (9.3.1.) appeared in contexts from the end of the 5th and in the 6th centuries. These were lamps of relatively small dimensions; the completely preserved example from a grave at Obrenovac is not even 8 cm tall (Ružić 1994, 56, no. 1189). The form is also known from sites in Italy and France (Uboldi 1995, 120), from Split (DeMaine 1979, Pl. 11: R 57), and Egypt (Harden 1936,

Lit.: Istenič 2000, t. 158: 1.
Ptuj (PN)
Steklenička s kapalko v sredini ostenja, ustje odebeljeno, dno ravno.
10.2.2. - viš. 7,8 cm - PMP 2281.
Lit.: Mikl Curk 1976, T. 2: 14.

Primerjave: Barkóczi 1988, Taf. 20: 248-251; Rütti 1991, AR 149.

Komentar za obliki 10.2.1. in 10.2.2.:
Stekleničke v obliki ptice (10.2.1.) se pojavljajo med gradivom že od 1. stoletja dalje. Glede njihove uporabe so obstajale različne razlage, zadnje analize ostankov v teh posodicah pa so potrdile, da gre za ostanke kozmetičnih snovi (Whitehouse 1997, 121).

Številne najdbe teh steklenih ptic so znane iz švicarskega kantona Ticino, kjer so pretežno datirane v 1. stoletje, najmlajše najdbe pa so iz prve četrtine 2. stoletja (Biaggio Simona 1991, 125-129).

Stekleničke z ravnim vratom (oblika 10.2.2.) se od prejšnjih (Isings 11) razlikujejo po obliki in morda tudi namenu. Verjetno so jih uporabljali pri kopelih, za olja, ob žrtvovanjih, nekateri so celo menili, da so to stekleničke za dojenje, kar pa verjetno ne drži.

Obe steklenički iz petovionskih grobov sta edini pridatek groba (Istenič 2000, 231), zato časovna opredelitev te različice sloni na primerjavah z evropskih najdišč (Barkóczi 1988, 126).

10.3.
AMPULE

10.3.1.
Miniaturna steklena ampula (*sl. 53*):

Steklenička s kroglasto razširjenim ostenjem, koničastim dnom in navznoter zavihanim ustjem nad kratkim vratom.

Datacija: 4. st.

Martinj Hrib (NN)
Steklenička s konično oblikovanim dnom, kratkim vratom in noter zavihanim ustjem.
10.3.1. - viš. 10, 2 cm - Izgubljena.
Lit.: Leben, Šubic 1990, t. 17: 292.

Primerjave: Giesler 1981, t. 49: 44.

Komentar:
Miniaturna ampula med objavljenim gradivom nima primerjav. Tudi med gradivom širšega evropskega prostora ne najdemo podobnih oblik. Njena časovna opredelitev zato sloni na opredelitvi najdb poznoantičnega kastela (Leben, Šubic 1990, 331).

Pl. 16: 466-67), as well as from Emona (Plesničar Gec 1981, Pl. 5).

GROUP 10 - MISCELLANEOUS
(*Fig. 53; Appendix 4*)

10.2.
FLASKS FOR POURING

10.2.1.
A bird shaped vessel with a nozzle protruding from the walls (*Fig. 53*):

The walls of the vessels are shaped like a bird, the tail serving as a nozzle, the upper part of the vessel placed at an angle and ending in a turned out rim.

Date: end of the 1st - 3rd centuries

Ptuj (gr. 610)
A small flask with a nozzle extending from the walls and an obliquely placed neck.
10.2.1. - ht. 7 cm - LMJ.
Lit.: Istenič 2000, Pl. 132: 6.
Ptuj (gr. 191)
A small flask with a nozzle in the middle of the walls, the rim bent inwards and flattened, the base concave in the center.
10.2.1. - ht. 7 cm; dia. base 3.5 cm - PMP 15201.
Lit.: Kujundžić 1982, Pl. 14: 26.
Drnovo (IF)
A small flask with a nozzle extending from the walls and a slanting neck.
10.2.1. - ht. 7 cm - NMS R 708.
Lit.: Petru, Petru 1978, Pl. 25: 6.
Drnovo (IF)
A small flask with a nozzle extending from the walls and a slanting neck, flat base.
10.2.1. - ht. 7.3 cm - NMS R 709.
Lit.: Petru, Petru 1978, Pl. 25: 7.

Analogies: Whitehouse 1997, No. 188, 189.

10.2.2.
Small flasks with a nozzle on the walls (*Fig. 53*):

A small globular flask with a thickened rim has a nozzle opening in the body.

Date: 1st - 3rd centuries

Drnovo (IF)
A small flask with a nozzle in the walls and a slanting neck, the base concave in the center.
10.2.2. - ht. 7.5 cm - NMS R 710.
Lit.: Petru, Petru 1978, Pl. 25: 5.

10.4.
ROGOVI

10.4.1.
Pivski rog (Is 73); (*sl. 53*):

Prosto pihana posoda v obliki roga, dno se konča z odebeljenim gumbom, nataljen okras niti.

Datacija: druga polovica 6. st.

Kranj (gr. 44)
Pivski rog iz modro-zelenkastega stekla z nataljenim okrasom modrih niti.
10.4.1. - viš. 14 cm - NHMW.
Lit.: Stare 1980, T. 131: 1.

Primerjave: Evison 1975, Fig. 14-15.

Komentar:
Vse vrste steklenih pivskih rogov je zbrala že v petdesetih letih Evisonova (1955, 159), ki je oblikovala štiri skupine teh posod, glede na obliko rogove konice in okrasov na samih posodah.

Modo uporabe pivskih rogov so verjetno razširili Langobardi, ki so jo prinesli tudi k nam. Čeprav je ohranjena najdba nekoliko mlajša, smo jo vseeno uvrstili med oblike rimskih posod, kajti posamezne različice se pojavljajo že od 4. stoletja dalje.

Rog iz Kranja sodi po deliti Evisonove v skupino III (1975, 79). Rogovi izdelani iz naravno obarvanega stekla, imajo nataljen okras v enaki barvi, konica roga je nekoliko odebeljena in sploščena. Ta oblika je značilna od sredine 6. do začetka 7. stoletja, verjetno gre za izdelke porenskega območja (Evison 1975, 80).

Primerjave tej različici roga najdemo v Belgiji, Angliji in Italiji, verjetno pa gre povsod za izdelke obrenskih delavnic. Karta razprostranjenosti posameznih variant kaže koncentracijo različice III predvsem v Porenju (Evison 1975, fig. 21).

10.5.1.
Mešalne palčke (Is 79); (*sl. 53*):

Steklena palčka, gladka ali profilirana, kot okras ponekod nataljena nit iz drugobarvnega stekla, konca palčke sta lahko odebeljena ali oblikovana v zanko.

Datacija: 1. - 2. stoletje

Celje (NN)
Del steklene palčke, tordiran, z nataljeno nitjo iz rumenega stekla.
10.5.1. - dl. 4 cm - PMC R 21637.
Lit.: Lazar 1993, t. 2: 6.

Ptuj (gr. 83)
A small flask with a nozzle in the walls, the rim missing.
10.2.2. - ht. 7.5 cm - LMJ.
Lit.: Istenič 2000, Pl. 18: 4.
Ptuj (gr. 693)
A small flask with a nozzle in the walls, the rim missing.
10.2.2. - ht. 7.5 cm - LMJ.
Lit.: Istenič 2000, Pl. 158: 1.
Ptuj (IF)
A small flask with a nozzle in the center of the walls, thickened rim, flat base.
10.2.2. - ht. 7.8 cm - PMP 2281.
Lit.: Mikl Curk 1976, Pl. 2: 14.

Analogies: Barkóczi 1988, Pl. 20: 248-251; Rütti 1991, AR 149.

Comments - forms 10.2.1. and 10.2.2.:
Bird-shaped flasks (10.2.1.) appear from as early as the 1st century onwards. Various explanations exist for their purpose, but the most recent analyses of remains found in such vessels have confirmed that these were the remains of cosmetics (Whitehouse 1997, 121).

Numerous finds of these glass birds are known from the Swiss canton of Ticino, where they were mostly dated to the 1st century, while the latest finds were from the first quarter of the 2nd century (Biaggio Simona 1991, 125-129).

The small flasks with a straight neck (form 10.2.2.) differ from the preceding (Isings 11) in form and perhaps also in purpose. They were probably used in bathing, for oil, during sacrifices; some scholars have even thought that these were small bottles for feeding infants, which is probably unlikely.

Both flasks from Poetovio were the only grave goods (Istenič 2000, 231), and thus the chronological classification of this variant is based on comparisons with finds from other European sites (Barkóczi 1988, 126).

10.3.
AMPULLAE

10.3.1.
Miniature glass ampulla (*Fig. 53*):

A small flask with spherically broadened walls, a conical base, and an inwardly turned rim above a short neck.

Date: 4th century

Martinj Hrib (SF)
Small flask with a conically shaped base, short neck and inturned rim.
10.3.1. - ht. 10.2 cm - Lost.
Lit.: Leben, Šubic 1990, Pl. 17: 292.

Analogies: Giesler 1981, Pl. 49: 44.

Ptuj (NN)
Del tordirane steklene palčke, en konec oblikovan v zanko.
10.5.1. - dl. 3,4 cm - PMP 5414/1.
Lit.: neobjavljeno.

Primerjave: Fremersdorf 1958, Taf. 124: a, b; Rütti 1988, Taf. 28: 2027, 2030-31; Biaggio Simona 1991, Tav. 47, 48.

Komentar:
Steklene palčke, imenovane tudi mešalne, so razširjene po vsem imperiju (Biaggio Simona 1991, 223). Izdelane so iz modro-zelenkastega ali obarvanega stekla, so gladke, tordirane in redko tudi kvadratnega preseka, pogosto okrašene z drugobarvnimi steklenimi nitmi. Konca sta razširjena in oblikovana v ploščico ali zanko.

Zakaj so palčke uporabljali, še vedno ni povsem pojasnjeno. Večkrat so bile odkrite skupaj z lončki in stekleničkami za dišave, zato domnevajo, da so jih rabili

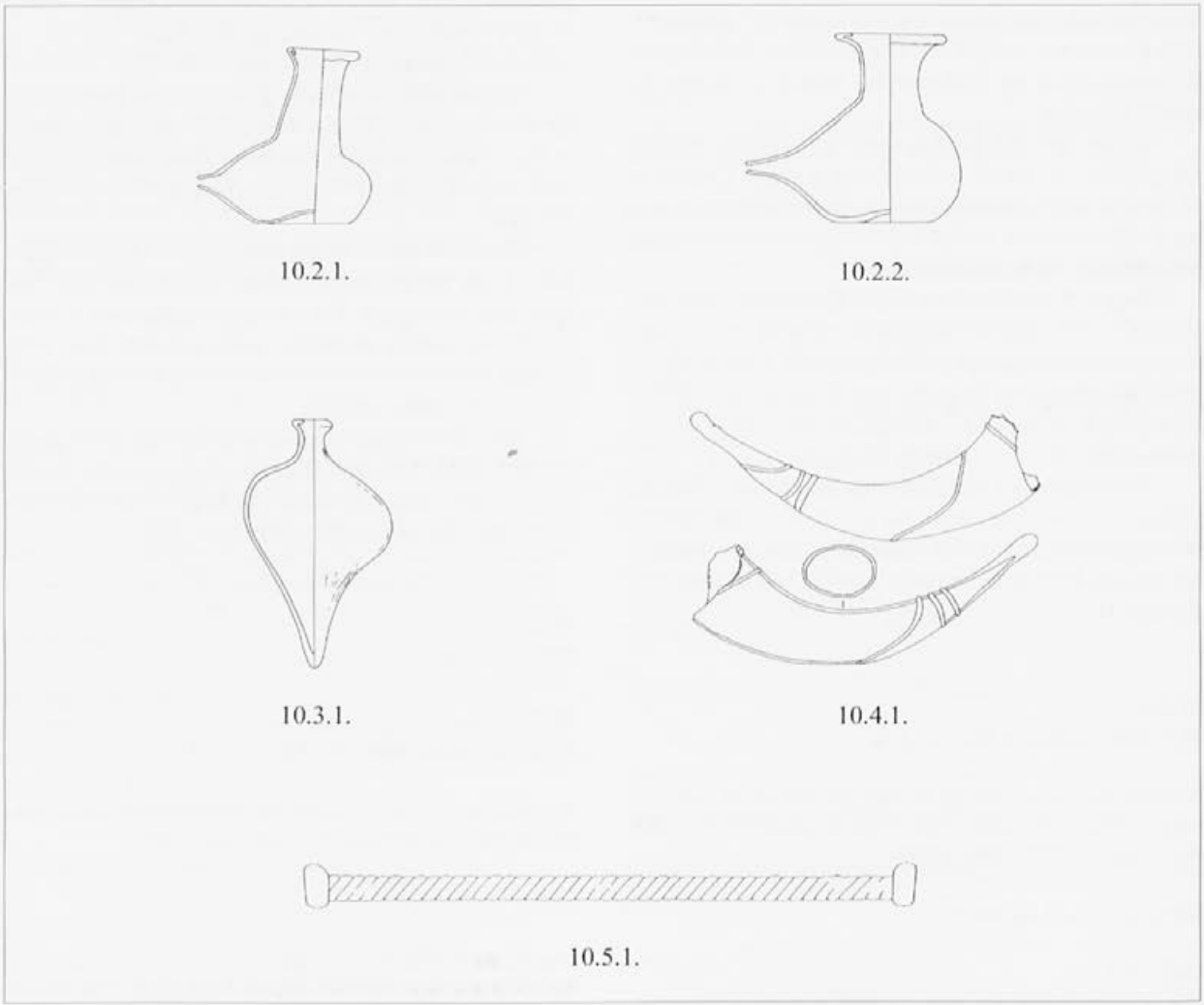
Comments:
The miniature ampulla has no analogies among the published material, nor can similar forms be found among the material from a broader European context. Its chronological classification thus depends on that of the finds from the late Roman castrum published by Leben and Šubic (1990, 331).

10.4.
HORNS

10.4.1.
Drinking horn (Is 73); (*Fig. 53*):

A free-blown vessel in the shape of a horn, the base terminates in a thickened button, applied glass trails.

Date: second half of the 6th century



Sl. 53: Skupina - razno (10.2.1.: Petru, Petru 1978, t. 25: 7; 10.2.2.: Mikl Curk 1976, t. 2: 14; 10.3.1.: Leben, Šubic 1990, t. 17: 292; 10.4.1.: Stare 1980, t. 131: 1; 10.5.1.: po: Biaggio Simona 1991). M. = 1:3.

Fig. 53: Group 10 - miscellaneous (10.2.1.: Petru, Petru 1978, Pl. 25: 7; 10.2.2.: Mikl Curk 1976, Pl. 2: 14; 10.3.1.: Leben, Šubic 1990, Pl. 17: 292; 10.4.1.: Stare 1980, Pl. 131: 1; 10.5.1.: after: Biaggio Simona 1991). Scale = 1:3.

za mešanje in nanašanje kozmetičnih proizvodov (Rütti 1988, 102).

Gladke, tanjše palčke z odebelitvijo samo na enem delu, so lahko služile tudi kot lasne igle (Fremersdorf 1958, 55, Taf. 124: c-g). Palčke iz obarvanega stekla, okrašene z drugobarvno nitjo, so služile tudi kot arhitekturni okras (Saguì 1998, 28, Fig. 31).

Njihova uporaba je poznana že od 1. stoletja dalje in traja še vse 2. stoletje (Rütti 1988, 103), nekateri izdelki, npr. lasne igle, pa se pojavljajo tudi še v 3. stoletju (Fremersdorf 1958, 55).

Odlomka palčk iz Celeje in Petovione sta bila najdena med gradivom steklarskih delavnic. Oba sta iz modro-zelenkastega stekla in verjetno sta bila namenjena vsakdanji uporabi skupaj s kozmetičnimi posodicami. Glede na spremljevalno gradivo sodita verjetno v 2. stoletje (Lazar 1993, 9; gl. str. 215, 230).

Kranj (gr. 44)
Drinking horn of blue-green glass with applied decoration of blue threads.
10.4.1. - ht. 14 cm - NHMW.
Lit.: Stare 1980, Pl. 131: 1.

Analogies: Evison 1975, Fig. 14-15.

Comments:
All types of glass drinking horns were collected in the fifties by Evison (1955, 159), who formed four groups of these vessels based on the shape of the horn points and the decoration on the vessels.

The fashion of using drinking horns was probably spread by the Lombards, who introduced it into the area of Slovenia as well. Although the preserved find is somewhat later, it has nonetheless been placed among the forms of Roman vessels, since individual variants appear from the 4th century onwards.

The horn from Kranj belongs to Evison's group III (1975, 79). Horns made of naturally coloured glass have applied decoration in the same colour, and the point of the horn is somewhat thickened and flattened. This form was characteristic from the mid 6th to the beginning of the 7th centuries, and was probably produced in the Rhine region (Evison 1975, 80).

Analogies to this variant of horn can be found in Belgium, England, and Italy, and everywhere they probably represent products of Rhine valley workshops. The distribution map for individual variants shows a concentration of variant III primarily along the Rhine (Evison 1975, fig. 21).

10.5.1.
Mixing rods (Is 79); (*Fig. 53*):

Glass rods, smooth or profiled, sometimes a decoration of applied threads of differently coloured glass, the end of the rod can be thickened or formed into a loop.

Date: 1st - 2nd centuries

Celje (SF)
Part of a glass rod, spirally twisted, with an applied thread of yellow glass.
10.5.1. - l. 4 cm - PMC R 21637.
Lit.: Lazar 1993, Pl. 2: 6.
Ptuj (SF)
Part of a spirally twisted glass rod, one end formed into a loop.
10.5.1. - l. 3.4 cm - PMP 5414/1.
Lit.: unpublished.

Analogies: Fremersdorf 1958, Pl. 124: a, b; Rütti 1988, Pl. 28: 2027, 2030-31; Biaggio Simona 1991, Pl. 47, 48.

Skupina / *Group 1* Krožniki / *Plates*	 1.1.1.	
Skupina / *Group* 2 Skodelice / *Bowls*	 2.1.1.	 2.1.2.
	 2.1.3.	 2.1.4.
	 2.1.5.	 2.1.6.
	 2.1.7.	 2.1.8.
Skupina / *Group* 8 Posodice za olja in dišave / *Cosmetic vessels*	 8.1.1.	

Sl. 54: V kalupu izdelane posode – preglednica oblik.

Fig. 54: Cast vessels – reference table.

Skupina / *Group 2* Skodelice / *Bowls*	 2.2.1.
Skupina / *Group 3* Čaše / *Beakers*	 3.1.1.
Skupina / *Group 6* Steklenice / *Bottles*	 6.1.1.
Skupina / *Group 10* Ostalo / *Miscellaneous*	 10.1.1.

Sl. 55: V kalup pihane posode - preglednica oblik.

Fig. 55: Mould-blown vessels - reference table.

Comments:
Glass rods, also referred to as mixing rods, were distributed throughout the entire Empire (Biaggio Simona 1991, 223). They were manufactured from blue-green or coloured glass, were smooth, spirally twisted, and also rarely with a square section, and were frequently decorated with glass threads of other colours. The ends were widened and formed into a flat surface or a loop.

What exactly the rods were used for is still not entirely clear. They have been discovered several times together with small jars and flasks for perfume, and thus it is thought that they were used for mixing and applying cosmetic products (Rütti 1988, 102).

Smooth, thinner rods with a thickening in only one section could also have served as hair pins (Fremersdorf 1958, 55, Pl. 124: c-g). Rods of coloured glass, decorated with threads in other colours, served as architectural decoration (Sagui 1998, 28, Fig. 31).

Their use is known from as early as the 1st century onwards and continued throughout the entire 2nd century (Rütti 1988, 103), while some products, such as hair pins, even were in use during the 3rd century (Fremersdorf 1958, 55).

The fragments of rods from Celeia and Poetovio were found among the material of the glass workshops. Both are made of blue-green glass and were probably intended for everyday use together with small cosmetic vessels. The accompanying material indicates a probable date in the 2nd century (Lazar 1993, 9; see p. 215, 230).

PROIZVODNJA RIMSKEGA STEKLA V SLOVENIJI

THE PRODUCTION OF ROMAN GLASS IN SLOVENIA

STEKLO IN NJEGOVE LASTNOSTI

Steklo je sestavljeno iz treh glavnih sestavin: kremenčevega peska, sode in apnenca. Osnovna sestavina rimskega stekla je bil kremen (v obliki kremenčevega peska), soda je služila kot topilo, da je znižala temperaturo, potrebno za taljenje osnovnih surovin (gl. npr. Stern, Schlick-Nolte 1994, 19; Henderson 2000, 25). Dobili so jo iz naravnih mineralov (*natron*) ali v obliki pepela morskih rastlin (*salicornia*). Kalcij (apnenec) je služil kot stabilizator, da je bilo steklo trše in bolj odporno na vodo.

Osnovne surovine so najprej segrevali pri 600° C. Postopek je bil dolgotrajen in pri tem so tudi odstranjevali primesi in nečistoče. Tako so dobili t. i. surovo steklo ali talino (angl. *frit*). Le-to so nato razlomili in segrevali v pečeh pri temperaturi okrog 1100° C, da so dobili steklo, ki je bilo primerno za pihanje ali ulivanje.

Bolj je steklo vroče, manjša je njegova prosojnost; čimbolj se steklo ohlaja, večja je njegova prosojnost. Seveda pa je odvisna tudi od sestavin.

Antično steklo je pri temperaturi okrog 700° C mehko kot sir, pri 1050° C pa teče kot med. Temperature, pri katerih je steklo mogoče obdelovati, se gibljejo približno med 700° C in 1100° C. Ta temperaturni razpon je bil pri zgodnejšem steklu, npr. egiptovskem, verjetno nižji kot pri steklu mlajših obdobij (Stern, Schlick-Nolte 1994, 21).

Steklarji so glede na barvo steklene taline ločili tri temperaturne stopnje. Od rdeče preko oranžno rumene do zlato rumene, ko je steklo doseglo najvišjo temperaturo.

Glede na različne temperature steklene taline lahko ločimo, na kakšen način oziroma do katere mere je steklo mogoče oblikovati (Stern, Schlick-Nolte 1994, 22, Fig. 1).

Pri 650° C se steklo začne **upogibati** pod lastno težo; če je tej temperaturi izpostavljen daljši čas, se bodo zmehčali in zaoblili tudi vsi ostri robovi. Pri temperaturi 735° C ali višji se dva kosa stekla **pritalita** oz. sprimeta. Pri temperaturah med 830° C in 875° C se steklo **splošči**, izgubi obliko in se razleze v ravno ploščo kroglaste ali

GLASS AND ITS QUALITIES

Glass is composed of three main ingredients: quartz sand, soda, and lime. The basic ingredient of Roman glass was quartz (in the form of sand or crushed flint). Soda served as a modifying agent to reduce the temperature necessary for the smelting of the basic ingredients (see, for example, Stern, Schlick-Nolte 1994, 19; Henderson 2000, 25). It was acquired in the form of naturally occurring minerals (*natron*) or in the form of ashes of the plants of the genus *Salicornia*. Calcium (lime) served as a stabilizing agent to make the glass harder and more water-resistant.

The basic ingredients were first heated to 600° C. During this lengthy procedure impurities and additives were removed and raw glass or frit was created. The frit was broken up and heated in a furnace at a temperature of around 1100° C to acquire glass that was suitable for blowing or casting. The hotter the glass, the less transparency; the cooler the glass, the greater transparency. This also can depend on the composition of the glass.

Ancient glass at a temperature of circa 700° C is as soft as cheese, and at 1050° C, it flows like honey. The temperature at which glass can be worked ranges approximately between 700° C and 1100° C. The temperature range was probably lower for earlier glass, Egyptian, for example, than for the glass of later periods (Stern, Schlick-Nolte 1994, 21).

Glass workers could distinguish three temperature phases on the basis of the colour of the molten glass. This ranged from red through orange yellow to golden yellow, when the glass reached the highest temperature. In terms of the various temperatures of molten glass can be defined, in what manner or to what extent glass could be worked. (Stern, Schlick-Nolte 1994, 22, Fig. 1).

At 650° C, glass beings to **bend** under its own weight; if it is exposed further to this temperature, all sharp edges will begin to soften and become rounded. At a temperature of 735° C and above, two pieces of glass will **fuse** or adhere to one another. At temperatures between 830° and 875° C, glass **flattens**, loses its shape,

elipsaste forme. Od temperature 930° C dalje je steklo tako mehko, da ga lahko **oblikujemo** s steklarskim ročnim orodjem, valjamo po trdi podlagi in raztegujemo v paličice.

Pihanje stekla je mogoče pri temperaturah od 970–1020° C. Pri nižji temperaturi je potrebna večja moč in mehurček oz. stekleno kroglico je teže nadzorovati.

Taljenje stekla poteka pri temperaturi med 1050° in 1150° C in na tej stopnji je premehko in preveč tekoče za delo, ker ga ni več mogoče nadzorovati. Do te temperature segreto steklo je primerno za zajemanje iz talilnikov, preden pa z njim lahko delajo, se mora zunanja površina ohladiti. Zato na pipo nabrano steklo pred pihanjem povaljajo po kamniti ali kovinski podlagi ob peči.

Steklo se med **ohlajanjem** krči. Da bi preprečili napetosti med površino in notranjostjo predmeta, ki se hladi počasneje, mora ohlajanje potekati zelo počasi. Čim debelejše so stene, dlje časa traja ohlajanje izdelka. Danes poteka ohlajanje v ločenih pečeh, rimski steklarji pa so posode odložili v poseben del peči in so se ohlajale skupaj s pečjo.

PEČI

Za izdelavo steklenih predmetov so verjetno že od vsega začetka uporabljali neke vrste peči (Price 1976, 114; Stern, Schlick-Nolte 1994, 19). Recepti za pripravo stekla iz Mezopotamije omenjajo tri vrste peči oziroma objektov za taljenje. Arheološko raziskanih peči iz časa prvih dveh tisočletij pr. n. š. ne poznamo, razen sledov peči iz 4. st. pr. n. š. iz Nimruda. Tudi iz Egipta ne poznamo peči iz predrimske dobe, vendar številni stekleni izdelki in kosi stekla potrjujejo obstoj razvite steklarske obrti (Nicholson, Jackson 2000, 11).

Čeprav peči ne poznamo, pa najdeni ingoti in njihova oblika kažejo, da so steklo pripravljali in talili v manjših posodah - talilnikih. Ingoti, najdeni na potopljeni ladji ob maloazijski obali, ki izvirajo iz bronaste dobe, dokazujejo, da so s surovim steklom trgovali že v prazgodovini (Bass 1986, 282).

RIMSKE STEKLARSKE PEČI

O izgledu rimskih steklarskih peči dolgo ni bilo pravih arheoloških dokazov in o njihovi obliki se je le ugibalo. Domnevali so, da se v svoji zgradbi in obliki niso prav veliko razlikovale od srednjeveških peči, ki so jih opisovali takratni rokopisi (Gaitzsch 1999, 132; Price 1976, 114; 1998, 335).

Razlago njihovih oblik so skušali najti tudi na osnovi upodobitev iz rimske dobe. Na glinenih oljenkah iz Benkovca (*Asseria*) na Hrvaškem in Ferrare v Italiji je ohranjen motiv steklopihača, ki sedi pred pečjo

and spreads into a flat surface of circular or ellipsoid form. At temperatures of 930° C and above, glass is sufficiently soft that it can be **formed** with hand tools, rolled on a hard surface, and stretched into rods.

It is possible to **blow** glass at a temperature between 970° and 1020° C. At a lower temperature greater force is required and the bubble is difficult to control.

Glass **melts** at temperatures between 1050° and 1150° C, and at that point it is too soft and too pliable for working, as it can no longer be controlled. Glass heated to this temperature is suitable for scooping from the crucible, but prior to working with it, the exterior surface must be cooled. Thus the glass gathered on the pipe is marvered on a stone or metal surface placed by the furnace before blowing.

Glass shrinks upon **cooling**. So as to hinder tension between the surface and the interior of the object, which cools more slowly, cooling must take place very slowly. The thicker the walls, the longer the period required for cooling the product. Today the cooling process takes place in separate furnaces, while the Roman glass workers placed the vessels in a separate part of the furnace and they cooled together with the furnace.

FURNACES

Furnaces were probably used to produce glass objects from the beginning (Price 1976, 114; Stern, Schlick-Nolte 1994, 19). Mesopotamian recipes for making glass mention three types of furnaces or structures for melting, but archaeologically excavated furnaces from the first two millennia BC are not known, except for traces of furnaces from the 4th century BC from Nimrud. Furnaces from the pre-Roman period are not known from Egypt; however numerous glass products and fragments of glass confirm the existence of glass production (Nicholson, Jackson 2000, 11).

Although furnaces are unknown, the shape of discovered ingots indicate that glass was prepared and melted in smaller containers – crucibles. Ingots found along the coast of Asia Minor in a shipwreck from the Bronze Age prove that trade in raw glass existed already in prehistory (Bass 1986, 282).

ROMAN GLASS FURNACES

There was no real archaeological proof of the existence of Roman glass working furnaces for a long time, and only guesses could be made about their form. Most scholars assumed that their structure and form did not differ greatly from the medieval furnaces that had been described in manuscripts (Gaitzsch 1999, 132; Price 1976, 114; 1998, 335).

Information about furnaces was based on depic-

(Abramić 1959, Taf. 27: 1; Baldoni 1987, 22, Fig. 1-3); (*sl. 56*). Pred steklarjem lahko prepoznamo majhno, enoprostorsko peč, spodaj je kurišče in nad njo prostor v katerem so stali talilniki iz katerih so steklarji zajemali staljeno steklo.

Sodobne arheološke raziskave v drugi polovici 20. stoletja pa so prinesle nova odkritja, med njimi tudi nekatere sodobno raziskane rimske steklarske obrate. S pomočjo le-teh sta predstava in vedenje o izgledu in delu v rimskih steklarskih delavnicah bolj prepoznavna. Izmed številnih odkritij naj omenimo le nekatere najdbe zadnjih let, ki so zbudile največ zanimanja in s pomočjo katerih so bila pojasnjena marsikatera vprašanja o rimski steklarski proizvodnji.

Leta 2000 so v Lyonu odkrili ostanke dveh steklarskih peči iz 1. stoletja (Becker, Monin 2000, 6). Ena od njiju je bila poškodovana, druga pa je bila odlično ohranjena, saj se ni ohranil samo tloris, ampak tudi nadgradnja peči. Deljena je bila v dva dela; nad okroglim kuriščnim delom je ležal iz opek zgrajen pravokoten prostor. V njem ni bilo ostankov žlindre ali steklenih odpadkov, zato raziskovalci menijo, da je bil namenjen ohlajanju izdelkov (Foy, Nenna 2001, 48). To odkritje potrjuje obliko steklarske peči iz 1. stoletja, ki smo jo do sedaj poznali samo po upodobitvi na oljenkah (Abramić 1956; Baldoni 1987).

V Švici so v prvi polovici devetdesetih let raziskali ostanke steklarske delavnice v Avenchu (*Aventicum*) in odkrili dele petih peči (Morel *et al.* 1992). Z ostanki talilnih loncev, odpadkov, odlomkov raznobarvnih steklenih posod in kosov amorfnega stekla so dokazali, da gre za delavnico, ki je delovala v prvi polovici 1. stoletja (Amrein *et al.* 1996, 189; Amrein 2001).

V Franciji pa so leta 1990 v Saintu (*Mediolanum*) odkrili delavnico iz druge polovice 1. in začetka 2. stoletja (Hochuli-Gysel 1991, 79). Peč je bila ohranjena le v tlorisu, več deset kilogramov odpadkov in marmorni kalupi za izdelavo kvadratnih steklenic pa so nudili obilo gradiva za študij.

Relativna bližina delavnic v Avenchu in Saintu, velika količina gradiva, odpadnega materiala in časovna zaporednost delovanja obeh obratov, so omogočili primerjavo najdb in raziskavo razvoja steklarske tehnologije v 1. stoletju (Amrein, Hochuli-Gysel 2000, 89). Rezultat teh primerjav je ponudil nekaj zanimivih ugotovitev oziroma hipotez, ki skušajo pojasniti razvoj steklarske obrti po izumu pihanja stekla v teku 1. stoletja.

V Avenchu so za pihanje uporabljali kovinsko pipo, na katero so nabirali koščke zdrobljenega stekla, ga segreli do primerne temperature in nato pihali. V Saintu so uporabljali pipe z večjim premerom, kar pomeni, da so izdelovali posode večjih dimenzij in steklo zajemali na pipo iz talilnih loncev, ki jih v Avenchu niso uporabljali. Pregled dnov posod je pokazal, da se je uporaba prijemalke, na katero so prenesli posodo pred končno obdelavo ustja, razširila verjetno šele v drugi

tions from the Roman period. Clay lamps from Benkovac (*Asseria*) in Croatia and Ferrara in Italy bear motifs of glass blower sitting in front of a furnace (Abramić 1959, Pl. 27: 1; Baldoni 1987, 22, Fig. 1-3), (*Fig. 56*). A small, single sectioned furnace can be recognized, with the fire chamber below, and above it the area where the crucibles stood from which the craftsmen took the molten glass.

Modern archaeological excavations in the second half of the 20th century have led to new discoveries, including several recently investigated Roman glass production centers. Excavated remains have aided considerably in the presentation and knowledge of the appearance of the Roman glass workshops and the work in them. Only a few finds from the last few years will be mentioned from the numerous discoveries, as they have attracted the greatest attention and have aided in the explication of many questions about Roman glass production.

The remains of two glass furnaces from the 1st century were discovered in Lyon in 2000 (Becker, Monin 2000, 6). One of them was damaged, while the other was preserved in excellent condition, with the upper section in addition to the lower part. The furnace was divided into two parts: circular chamber for firing with a square area of brick above it. The upper part contained no remains of slag or glass debris, and the researchers considered that it was intended for the cooling of products (Foy, Nenna 2001, 48). This discovery confirms the form of glass furnaces from the 1st century, which had been known to the present only from depictions on clay lamps (Abramić 1956; Baldoni 1987).

In Switzerland, the remains of a glass workshop at Avenches (*Aventicum*) were investigated in the first half of the nineties, and parts of five furnaces were discovered (Morel *et al.* 1992). The remains of crucibles, waste, fragments of variously coloured glass, and fragments of amorphous glass proved that this production center was active in the first half of the 1st century (Amrein *et al.* 1996, 189; Amrein 2001).

In France, a workshop from the second half of the 1st and the beginning of the second century was discovered at Saintes (*Mediolanum*) in 1990 (Hochuli-Gysel 1991, 79). The furnace was preserved only in its ground plan, but more than ten kilograms of waste and marble moulds for manufacturing square flasks offered abundant material for study.

The relative vicinity of workshops in Avenches and Saintes, the large quantity of material, the glass waste, and the chronological succession of activity at both production centers have enabled comparisons of finds and investigation into the development of glass technology in the 1st century (Amrein, Hochuli-Gysel 2000, 89). The results of these comparisons have led to several interesting conclusions or hypotheses that attempt to explain the development of the glass craft after the invention of glass blowing during the 1st century.

polovici 1. stoletja, saj so sledove prijemalke na posodah odkrili le med gradivom v Franciji (Amrein, Hochuli-Gysel 2000, 93).

Te ugotovitve kažejo, da se je v teku 1. stoletja steklopihaštvo še vedno razvijalo in da lahko primerjava različnih delavnic odgovori na mnoga vprašanja o lokalnih posebnostih in stopnjah razvoja obrti.

Veliko novosti o tehnologiji steklarskih peči so prinesla izkopavanja v Nemčiji. Zahodno od Kölna so v revirskih predelih Hambacher Forst odkrili pet steklarskih obratov (Gaitzsch 1991, 41; 1999, 125). Na izredno obsežnem območju so pri raziskovanju posameznih obratov odkrili štiri tipe steklarskih peči glede na njihovo obliko. Zaenkrat še ne morejo potrditi, da bi bile različne oblike peči vezane na različne procese dela, npr. taljenje surovin, pihanje in ohlajanje izdelkov. Odkrili so okrogle oz. ovalne peči (tip A), polkrožne peči (tip B), kvadratne do pravokotne peči (tip C) in pravokotne peči (tip D) (Gaitzsch 1999, 134). Pri vseh pečeh so našli tudi številne ostanke glinenih talilnikov.

Po ostankih pepela v manipulativnem prostoru ob pečeh so ugotovili, da so peči kurili le z lesom in ne s premogom, čeprav so delavnice ležale v območju velikih nahajališč rjavega premoga. Analizirali so ostanke lesa hrasta, breze, jelše, jesena in sadnega drevja (jablane, hruške) (Gaitzsch 1999, 135). Zanimivo je, da niso uporabljali bukovega lesa, ki je dolgo veljal za najbolj primernega pri ogrevanju steklarskih peči.

V bližini ene od peči so bili najdeni tudi ostanki apna. Zaradi tega je verjetno, da so v teh obratih izredno velikega obsega sami talili in pripravljali tudi surovo steklo. Delavnice so, sodeč po ostankih razbitih in slabo izdelanih posod, izdelovale različne polkroglaste čaše, plitve skodele ter več vrst steklenic (Follmann-Schulz 2003, 62). Večina peči je obratovala v drugi polovici 4. stoletja, nekatere morda še v začetku 5. stoletja. V celoti je na tem območju delovalo šest delavnic. V okviru posameznih delavnic je bilo odkritih od pet do trinajst steklarskih peči. V tem primeru lahko govorimo o skoraj industrijsko organiziranem poznorimskem obratu za pripravo in proizvodnjo in stekla. Kako so bile te delavnice povezane z bližnjim Kölnom, kjer zaenkrat ni dokazov o obstoju delavnic v 4. in 5. stoletju, bodo pokazale prihodnje analize (Gaitzsch 1999, 145).

Nazadnje naj omenimo še delavnico iz Izraela, kjer so v procesu izdelave in pihanja stekla uporabljali nekoliko drugačne postopke (Weinberg 1988). Izkopavanje steklarske delavnice Jalame v Palestini je bilo prvo sistematično in načrtno izkopavanje, ki so ga pričeli z namenom proučiti postopke in potek dela v poznorimski steklarski delavnici.

Na osnovi analiz stekla, ostankov peči in odpadkov je Sternova postavila nekaj zanimivih hipotez, povezanih s proizvodnjo v tej delavnici (Stern 1992, 490). Po njenem mnenju je pri pihanju stekla mogoče nabirati steklo na pipo na dva načina. S klasičnim zajemanjem

At Avenches they used a metal pipe for blowing, onto which glass-workers gathered pieces of broken glass, heated them to the required temperature, and then blew the vessel. At Saintes they used a pipe with a greater diameter, meaning that they were producing vessels of larger dimensions, and gathered the glass onto the pipe from a crucible. A review of the vessel bases showed that the use of a pontil, onto which the vessel was attached for the final shaping of the rim etc., probably spread only in the second half of the 1st century, as pontil marks on vessels have been found only on the French material (Amrein, Hochuli-Gysel 2000, 93).

This indicates that glass blowing was still developing during the 1st century and that comparisons of various workshops can offer answers to many questions about local features and stages in the development of the craft.

Excavations in Germany have offered major new knowledge about the technology of glass furnaces. To the west of Köln in the Hambacher Forst district, five glass production centers were discovered (Gaitzsch 1991, 41; 1999, 125). In an exceptionally extensive area they uncovered four types or forms of glass furnaces during the investigation of individual production centers. At present it still cannot be confirmed whether the different forms of furnaces were tied to different working processes, e.g. melting raw material, blowing, and cooling products. They revealed circular or oval furnaces (type A), hemispherical furnaces (type B), square to rectangular furnaces (type C), and rectangular furnaces (type D) (Gaitzsch 1999, 134). Numerous remains of clay crucibles were also found near the furnaces.

The remains of ash in the stoke-hole by the furnaces established that the furnaces were fueled by wood and not by coal, although the workshops were located in a region with major deposits of brown coal. Analysis showed the remains of oak, birch, alder, ash, and fruit trees (apple tree, pear) (Gaitzsch 1999, 135). It is interesting that they did not use beech wood, which was long considered to be most suitable for heating a glass furnace.

The remains of lime were also found near one of the furnaces. It is likely that in this glasshouses of exceptional size they melted and prepared also raw glass. Judging from the remains of broken and distorted vessels, the glass workers manufactured various hemispherical cups, shallow bowls, and several types of flasks (Follmann-Schulz 2003, 62). Most of the furnaces were used for manufacturing in the second half of the 4th century, and some perhaps even at the beginning of the 5th century. Altogether six production centers were active in this region. Individual workshops contained from five to thirteen furnaces. In this case, one can speak of an almost industrial organization of the late Roman production centers for the preparation and manufacture of glass. The connection of these workshops with nearby

Sl. 56: Upodobitev steklarske peči in steklarjev ob njej na oljenki iz Benkovca, risba po fotografiji (po: Abramić 1959).

Fig. 56: Depiction of a glass furnace and glass blowers next to it on a clay lamp from Benkovac, drawing from a photograph (after: Abramić 1959).

staljenega stekla iz topilnikov ali z nabiranjem segretih koščkov stekla na pipo (t. i. *chunk-gathering*). Pri tem postopku so koščke surovega stekla v posodah le ogreli do določene temperature (med 500-600° C), da so jih lahko nabrali na pipo in nato segrevali dalje.

Drugi postopek ima v primerjavi s prvim vsaj dve prednosti. Peči ni potrebno segreti do tako visoke temperature in najvišje temperature tudi ni potrebno vzdrževati ves čas med pihanjem. Pihanje posod pri tem postopku lahko poteka pri temperaturi med 970 in 990° C (Stern 1992, 492). Zaradi tega so bile peči pri drugem načinu izdelave bolj ekonomične, zahtevale so manjšo količino kuriva in manj pomoči ob peči. Za običajno pihanje staljenega stekla je bilo potrebno segreti peč do temperature med 1000 in 1100° C in to temperaturo ves čas vzdrževati, da je ostalo steklo v talilnikih enakomerno staljeno.

Verjetno so enak postopek pri pihanju uporabljali tudi v začetku 1. stoletja (Avenches - Amrein, Hochuli-Gysel 2000, 90). Razlike v postopku dela kažejo, da je bilo pihanje stekla proces, ki se je razvijal in prilagajal skozi vso rimsko dobo.

Köln, where at present no proof exists of the existence of workshops in the 4th and 5th centuries, will be investigated in the course of future research (Gaitzsch 1999, 145).

Finally, the production center in Israel should be mentioned, which used a somewhat different procedure in the process of blowing glass (Weinberg 1988). The excavation of the glass workshop of Jalame in Palestine was the first systematic and planned investigation that was undertaken with the intention of studying the processes and procedures of production in a late Roman glass workshop.

Stern suggested some interesting hypotheses related to production in this workshop on the basis of analyses of glass, furnace remains, and glass waste (Stern 1992, 490). She considered that it was possible to gather the glass on the pipe in two manners: the classical gathering of the molten glass from a crucible or the attaching of heated chips of glass on the tip of a pipe (so-called chunk-gathering). In this procedure the chips of raw glass in a crucible were heated only to a certain temperature (500-600° C) so that they could be gathered on the pipe and then heated further.

The second procedure had at least two advantages over the first. It was not necessary to heat the furnace to so high a temperature, and it was also not necessary to retain the highest temperature during the entire blowing process. The blowing of a vessel using this procedure could take place at a temperature between 970° and 990° C (Stern 1992, 492). Thus furnaces were more economical in the second manner of production, as they required less fuel and less assistance near the furnace. In the usual method of blowing glass, it was necessary to heat the furnace to a temperature between 1000° and 1100° C, and to maintain this temperature throughout the entire process so that the glass in the crucible would be equally molten.

A similar procedure was probably also used in blowing at the beginning of the 1st century (Avenches - Amrein, Hochuli-Gysel 2000, 90). Differences in the work procedure indicate that blowing glass was a process that developed and adapted itself throughout the entire Roman period.

SLEDOVI RIMSKIH STEKLARSKIH OBRATOV V CELJU, LJUBLJANI IN KRANJU

Celje (*Celeia*)

V Celeji so bili dokazi o proizvodnji stekla odkriti med izkopavanji v Levstikovi ulici leta 1991-92 (Lazar 1993, 7). Tik ob severnem robu pozno rimskega obzidja je bilo na površini okrog 30 m^2 zabeležena močna koncentracija kosov surovega amorfnega stekla in velika količina steklarskih odpadkov ter razbitih posod.

Kljub počasnemu in natančnemu delu na raziskanem terenu ni bilo odkritih nobenih elementov, ki bi jih lahko pripisali ostankom steklarskih peči. Ker je šlo za zaščitna izkopavanja, pri katerih smo bili z izkopnim poljem omejeni na velikost gradbene jame, domnevamo, da je delavnica ležala izven našega terena in jo bo mogoče raziskati v prihodnosti.

Analiza ostalega izkopanega gradiva pa je potrdila, da so v tem delu mesta delovali steklarji. Količina izkopanega steklenega materiala je precejšnja in teža odpadkov in surovega stekla znaša več kilogramov. Zanimivi so kosi surovega stekla. Vsi so zelenkaste barve in nekateri debeli od 2 do 3 cm, kar potrjuje, da gre za ostanke steklenih ingotov oziroma pripravljenega surovega stekla, ki so ga uporabljali za taljenje in pihanje (*sl. 57*).

Različni odpadki v obliki kapelj (*sl. 57: 3*), nitk (*sl. 57: 6*) in koščki staljenega stekla kažejo, da so tu steklo talili, preverjali njegovo viskoznost in ga obdelovali. Neposreden dokaz pihanja in izdelovanja steklenih posod pa so ostanki slabo izdelanih in zavrženih posod, ročajev in palčke zvitega stekla (*sl. 57: 4, 5, 7*), iz katerih so oblikovali ročaje posod. Sledovi prijemalke na dnu balzamarija in nekaterih čaš potrjujejo poleg steklarske pipe tudi uporabo kovinske palice - prijemalke.

Zelo zanimivi so tudi odlomki posod vijoličastega odtenka (PMC, inv. št. R 21562-65). Ta barva nastane z dodajanjem manganovih oksidov stekleni masi. Rimski steklarji so mangan uporabljali tudi za razbarvanje stekla, da so nevtralizirali železove okside in dobili povsem brezbarvno steklo (Velde, Hochuli-Gysel 1996, 185). Prevelika količina mangana je povzročila namesto razbarvanja nastanek vijolične barve stekla. Verjetno lahko odlomke iz Celja povežemo prav s temi postopki. Med odpadki steklenih izdelkov je veliko odlomkov cilindričnih čaš iz brezbarvnega stekla (3.6.1.; 3.6.2.), ki so skoraj gotovo nastale v tej delavnici. Mogoče je, da je ob postopku razbarvanja stekla prišlo tudi do napak in so morali, da ne bi zavrgli staljenega in pripravljenega stekla, napihati nekaj izdelkov vijolične barve.

Odlomki steklenih posod, ki so bili odkriti v Levstikovi ulici, pripadajo številnim oblikam, med njimi najdemo koščke mozaičnega stekla, rebraste skodelice

REMAINS OF ROMAN GLASS PRODUCTION CENTERS IN CELJE, LJUBLJANA, AND KRANJ

Celje (*Celeia*)

Proof of the glass production in Celeia was discovered during excavations in Levstikova Street in 1991-92 (Lazar 1993, 7). 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.

Despite careful work, no evidence was discovered in the excavated area that could be identified as the remains of glass furnaces. As these were rescue excavations, where the size of the excavated area was limited to the dimensions of the construction pit, it is assumed that the workshop lay beyond its borders and that it will be possible to excavate the site in the future.

The analysis 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 pieces of raw glass were interesting. They were all greenish in colour and some were from 2 to 3 cm thick, which confirms that they represent remnants of glass ingots, i.e. prepared raw glass used for melting and blowing (*Fig. 57*).

Various waste in the form of drops (*Fig. 57: 3*), threads (*Fig. 57: 6*), and chips of melted glass provide evidence 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 consists of the remains of poorly worked and rejected vessels, handles, and rods of bent glass (Fig. 57: 4, 5, 7), from which handles of vessels were formed. Pontil marks on the bases of balsamaria and several beakers confirm the use of metal rods - pontils - in addition to the blowing pipe.

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, Hochuli-Gysel 1996, 185). Too large a quantity of manganese caused the creation of violet glass instead of decoloured. The fragments from Celje can probably be connected with just such a process. The rejected glass products included many fragments of cylindrical beakers of uncoloured glass (3.6.1.; 3.6.2.), which were almost certainly created in this workshop. It is possible that a mistake was made in the process of decolouring, and that they had to manufacture a few products in a violet colour so as not to discard the already melted and prepared glass.

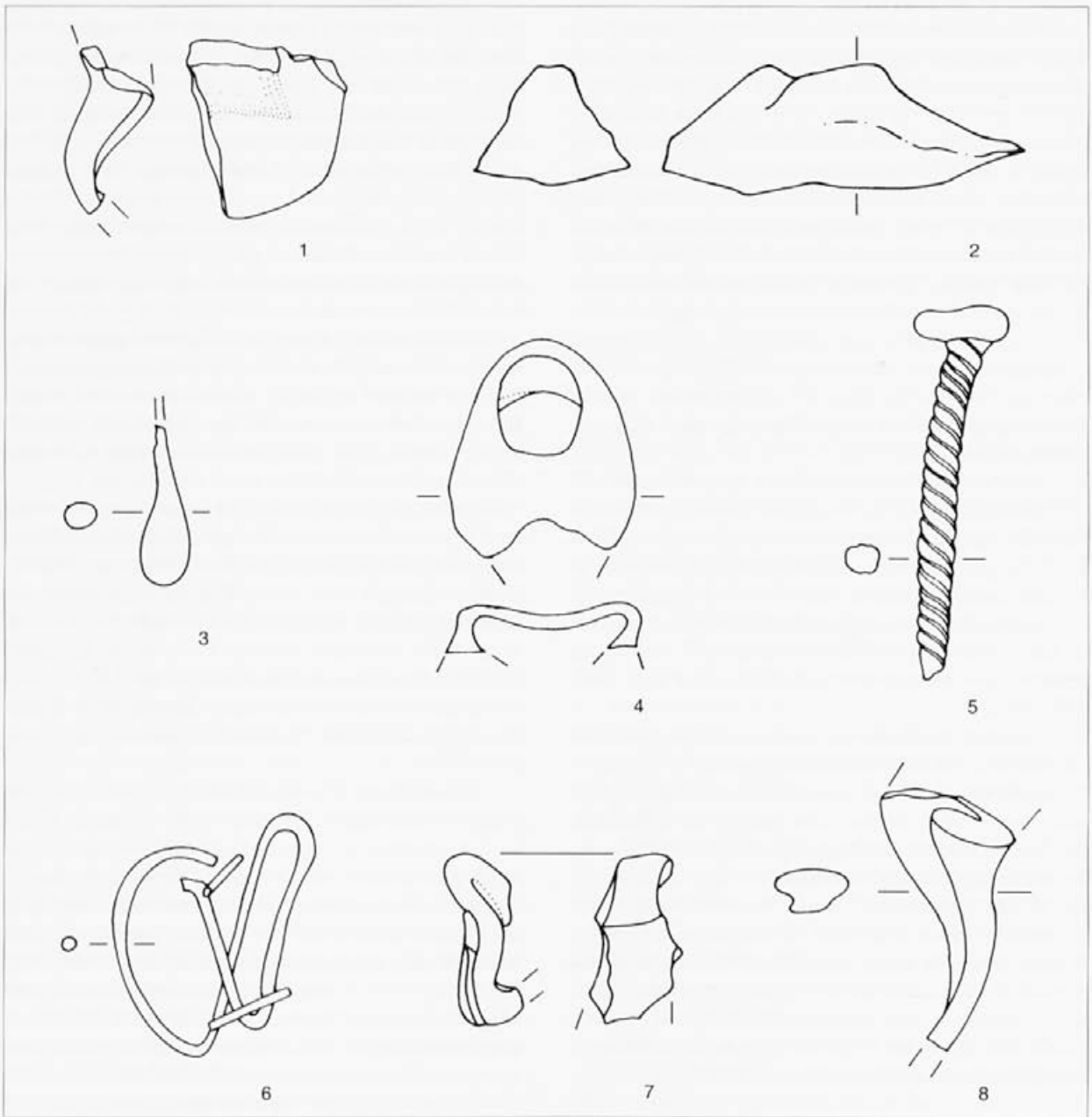
(2.1.4.), kvadratne steklenice (6.3.1.-6.3.3.), cilindrične čaše (3.6.1.; 3.6.2.) in steklo z nataljenim okrasom iz obarvanega stekla (Lazar 1993, t. 1-3). Če zanemarimo najstarejše oblike kot steklo za reciklažo, lahko postavimo delovanje te delavnice v 2. in morda še na začetek 3. stoletje (oblike 3.6.1.; 3.6.2; 6.3.1.-3.). Tako datacijo utemeljuje tudi globina plasti, v katerih so bili odkriti njeni ostanki, saj so ležale pod nivojem pozno rimskega obzidja, datiranega na konec 3. stoletja.

Sl. 57: Steklarski odpadki in deformirani deli posod. Celje, Levstikova ulica. M. = 1:1.

Fig. 57: Glass working waste and distorted vessels. Celje, Levstik Street. Scale = 1:1.

The fragments of glass vessels that were discovered in Levstikova Street belonged to numerous forms, including pieces of mosaic glass, ribbed bowls (2.1.4.), square bottles (6.3.1.-6.3.3.), cylindrical beakers (3.6.1.; 3.6.2.), and glass with applied snake-thread decoration (Lazar 1993, Pl. 1-3). If the earliest forms are considered to represent glass for recycling, production at this workshop can be assigned to the 2nd century and perhaps the beginning of the 3rd (forms 3.6.1.; 3.6.2.; 6.3.1.-3.). This date is also based on the depth of the stratum in which the remains were discovered. It lay beneath the level of the late Roman walls, dated to the end of the 3rd century.

The position of the Celje glass workshop should be mentioned in conclusion. In Roman towns, all crafts that involved the use of fires and kilns or furnaces were



Na koncu naj omenimo še lego celjske delavnice. Vse obrti, ki so bile povezane z uporabo ognja in peči, so v rimskih mestih navadno ležale na obrobju mesta, čim dlje od stanovanjskih zgradb. S tem je bila zmanjšana nevarnost požara. Tudi celjski steklarji so svoj prostor poiskali na severnem robu mesta, nekoliko stran od gosto poseljenega centra, a blizu ceste in v bližini reke, ki je bila takrat prav tako pomembna transportna pot.

Ljubljana (*Emona*)

Že pred odkritjem ostankov steklarskih peči v eni od emonskih insul so bile izražene domneve o lokalni steklarski proizvodnji v Emoni (Plesničar Gec 1976, 35). Vendar, razen velike količine steklenih predmetov v grobovih in značilnih oblik (npr. zajemalke), dokaza o proizvodnji stekla ni bilo.

Izkopavanja leta 1977 v insuli XXXI, na skrajnem severozahodnem delu mesta, pa so omogočila razmišljanja o proizvodnji stekla v Emoni (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 dele opek, ki naj bi pripadali steklarski peči. V sloju nad tlakom iz svetlo rdečega estriha in slabo ohranjenim mozaikom iz opek, so na površini dveh kvadratnih metrov naleteli na večjo količino zdrobljenega stekla. Odlomki posod, okenskega stekla ter staljenega stekla so bili deloma pritaljeni na ostanke kvadratnih opek.

Žal je bila prav ta najmlajša faza tega arhitekturnega kompleksa najslabše ohranjena in pokrita samo z ostanki ruševine. Verjetno je bil ta del stavbe uničen in nato zravnan, zato so ohranjeni ostanki tako skromni (Plesničar Gec 1981, 139).

Med odlomki steklenih posod, ki so bili najdeni v teh plasteh, lahko prepoznamo polkroglaste čaše (3.10.1.), gladke in okrašene z nataljenimi kapljami (3.10.2.), plitve polkroglaste skodele (2.6.4.; 2.6.5.) in ostanke svetilk (Plesničar Gec 1981, t. 2-5). Na osnovi novčnih najdb in oblik steklenih posod je sloj, v katerem so ležali ostanki domnevne steklarske peči, datiran na konec 4. in v začetek 5. stoletja (Plesničar Gec 1981, 142).

Vendar moramo, ob natančnejšem pregledu objavljenega gradiva z izkopavanj v insuli XXXI, vseeno izraziti nekaj dvomov in razmišljanj glede tega, ali je na odkritem mestu res delovala steklarska delavnica. Skromnost ostankov arhitekture peči ni presenetljiva, saj so steklarske peči pogosto najdene le še v temeljih. Če naj bi bila peč uničena, kot je interpretirano v tem primeru, je toliko bolj jasno, da več kot nekaj opek z ostanki stekla ne more ostati. Zanimivo pa je, da na opekah ni ostankov steklene žlindre oziroma staljenega stekla ampak se opek držijo koščki stekla in odlomki posod. Do tega lahko pride tudi pri požaru in zatorej ti ostanki niso nujno del uničene steklarske peči.

Presenetljivo je tudi, da so bili med izkopavanji

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 center, and near both the roads and the river, which then represented an important transportation route.

Ljubljana (*Emona*)

Even before the discovery of the remains of glass furnace in one of the *insulae* of Emona, local glass production had been hypothesized (Plesničar Gec 1976, 35). Despite the large quantity of glass objects found in graves at Emona and characteristic forms such as ladles, there was no evidence for glass production.

The excavations in 1977 in *insula* XXXI, located in the far northwestern section of the town, enabled the manufacture of glass at Emona to be considered seriously (Plesničar Gec 1981, 136). In a room measuring 4.1 x 4.7 m, divided with poorly preserved walls into three parts, archaeologists revealed parts of bricks that could have belonged to a glass furnace. In a stratum above a paving of pale red mortar and a poorly preserved mosaic of tile, in an area of two square meters was found a large quantity of crushed glass. Fragments of vessels, window glass, and melted glass were partly fused to the remains of square bricks.

Unfortunately, it was just this latest phase of this architectural complex that was the most poorly preserved and was covered only with ruinous remains. Probably this part of the structure had been destroyed and then levelled, because the preserved remains were so modest (Plesničar Gec 1981, 139).

Among the fragments of glass vessels found in these layers, we can recognize hemispherical cups (3.10.1.), both smooth and decorated with applied drops (3.10.2.), shallow hemispherical bowls (2.6.4.; 2.6.5.), and the remains of lamps (Plesničar Gec 1981, Pl. 2-5). On the basis of the coin finds and the forms of the glass vessels, the layer that contained the remains of the hypothesized glass furnace was dated to the end of the 4th and the beginning of the 5th century (Plesničar Gec 1981, 142).

On the basis of a more precise review of the published material from the excavations in *insula* XXXI, certain doubts and considerations must be expressed as to whether a glass workshop had truly been located at this site. The modesty of the architectural remains of the furnace is not surprising, as glass furnaces are often found merely at the foundation level. If a furnace had been destroyed, as was interpreted in this case, it was clear that no more than a few bricks with remains of glass could exist. It is interesting that on the bricks there were no remains of glass slag or melted glass but nonetheless chunks of glass and fragments of vessels adhered

odkriti predvsem ostanki steklenih posod in okenskega stekla, ni pa značilnih steklarskih odpadkov. S tem mislimo npr. ostanke surovega stekla, odpadke, ki nastanejo ob pihanju stekla, slabo izdelane posode ipd. Prav ti odpadki so najbolj zanesljiv dokaz o predelavi in proizvodnji stekla.

Razbite posode in okensko steklo lahko interpretiramo na več načinov. Morda so na tem mestu zbirali odpadno steklo in ga nato transportirali do porabnikov. Znano je, da so rimski steklarji skrbeli za organizirano zbiranje starega stekla, ki so ga recikliranega ponovno uporabili (Price 1991a, 24).

Pri objavljenem gradivu iz insule XXXI je opaziti majhno raznolikost in veliko časovno enotnost, zato lahko pomislimo še na drugo možnost. Večja količina enakih posod in okenskega stekla nas navaja k razmišljanju o trgovini s steklenimi izdelki. Glede na to, da so v neposredni bližini delovale terme (insula XXXII), ne bi bilo presenetljivo, če bi bližnja trgovina zalagala tako velikega odjemalca.

S temi razmišljanji smo želeli opozoriti na možnost različnih interpretacij najdbe iz insule XXXI, kar pa ne pomeni, da izključujemo obstoj steklarske obrti v mestu.

Kranj (*Carnium*)

Zadnje odkritje, povezano s steklarsko dejavnostjo, je prav tako vezano s pozno rimsko dobo oziroma že z obdobjem preseljevanja. Med zaščitnimi arheološkimi izkopavanji ob gradu Kieselstein so leta 1998 naleteli na zanimive konstrukcije, ki so jih interpretirali kot ostanke dveh peči oziroma poznorimske steklarske delavnice (Sagadin 1999; 2000).

Na površini 7 x 13 m so odkrili dve okrogli jami. Premer prve je znašal 1, 9–2,1 m in globina 1m, premer druge je bil 2–2,2 m in globina 0,6 m. Vkopani sta bili v glino in na notranji strani ometani. Večja jama je imela na zahodni strani polkrožno razširitev (prostor za kurišče), zapolnjeno z 0,40 m debelo plastjo žganine na dnu.

Večja jama je bila zapolnjena s kamni, na nekaterih so bili vidni ostanki steklaste mase na površini. Med obema jamama je ležala okrogla ploščad premera 1 m, zamejena s kamenjem in utrjena z malto. Približno en meter od prve jame je ležal plitev bazen velikosti 2,1 x 1,2 m, ki je bil delno zapolnjen z apnencem, vmes so bili tudi ostanki školjk.

Med drobnimi najdbami prevladujejo stekleni predmeti, večinoma gre za ustja in dna čaš na nogi, mnoge so poškodovane od ognja in močno deformirane. Na osnovi keramičnega gradiva in steklenih čaš so delavnico datirali na začetek 6. stoletja (Sagadin 1999, 31).

Kompleks peči iz Kranja še ni v celoti objavljen, zato je prezgodaj za dokončno interpretacijo najdišča. Na osnovi kratkih poročil in ogleda najdb pa želimo izraziti določene pomisleke glede delovanja tega obrata.

to them. This could have resulted from a fire, and thus the remains would not necessarily be part of a destroyed glass furnace.

It is also surprising that the excavated material mostly consisted of the remains of glass vessels and window glass, and not the characteristic glass working waste. This refers, for example, to remains of raw glass, the waste that remains from blowing glass, distorted vessels, and so forth. Such debris is the most reliable proof of the working and production of glass.

Broken vessels and window glass can be interpreted in several ways. Perhaps they had gathered broken glass in this place to transport it to a further user. It is known that the Roman glass workers organized the collection of discarded glass, which they recycled for further use (Price 1991a, 24).

The published material from *insula* XXXI exhibits little variety and a great chronological uniformity, so another possibility comes to mind. A large quantity of identical vessels and window glass lead to thoughts of a shop with glass products. Given that *thermae* were in the immediate vicinity (*insula* XXXII), it would not be surprising if a nearby store supplied such a big customer.

These thoughts are meant to draw attention to the possibility of varying interpretations of the finds from *insula* XXXI, which nonetheless does not mean that the existence of glass production centers in the city is excluded.

Kranj (*Carnium*)

The latest discoveries related to glass production are tied to the late Roman period, or in fact even the Migration period. During rescue excavations next to Kieselstein Castle in 1998, the researchers revealed an interesting structure that was interpreted as the remains of two furnaces representing a late Roman glass workshop (Sagadin 1999; 2000).

Two circular pits were discovered in an area of 7 x 13 m. The diameter of the first measured 1.9 - 2.1 m, with a depth of 1m, while diameter of the second was 2-2.2 m, with a depth of 0.6 m. They were dug into clay, and were plastered on the inside. The larger pit had a semicircular extension on the western side (area for the fire), filled with a 0.40 m thick layer of burnt remains at the bottom.

The larger pit was filled with stones, some of which had visible remains of a glassy mass on their surfaces. A circular platform 1 m in diameter lay between the two pits, bordered with stone and strengthened with mortar. Approximately one meter from the first pit was a shallow pool measuring 2.1 x 1.2 m, which was partly filled with lime and remains of shells.

Glass objects predominated among the small finds, most being rims and bases of footed goblets, many extensively damaged by fire. On the basis of the pottery

Zanimivo je, da tudi pri teh izkopavanjih niso našli steklarskih odpadkov in surovega stekla. Deformirane steklene posode bolj kažejo sekundarno deformacijo in poškodbe zaradi izpostavljenosti ognju kot pa deformacijo med potekom proizvodnje. Pri opisu peči preseneča dejstvo, da naj bi bile v notranjosti ometane, prav tako t. i. manipulativni del pred pečjo. Zaenkrat med znanimi pečmi iz rimske dobe te podrobnosti ni zaslediti nikjer.

Nivo manipulativnega dela pred pečjo in osrednjega dela peči je, sodeč po opisu, različen. Tako pri steklarskih kot drugih pečeh je dno navadno v istem nivoju, saj le tako lahko teče nemoteno upravljanje s pečjo.

Razlaga, da je ena peč služila za proizvodnjo, druga pa za ohlajanje, je vprašljiva. Rimske peči so imele prostor za ohlajanje v sami peči, oziroma v posebnem delu peči, kjer so se izdelki ohlajali počasi, skupaj s pečjo (Foy, Nenna 2001, 48-55). Prenos pravkar pihane posode v nekaj metrov oddaljeno peč za hlajenje bi povzročil prehitro ohlajanje posode na površini in steklo bi zaradi prevelike napetosti, ki jo povzroči temperaturna razlika, postalo lomljivo, če že ne bi razpokalo (Price 1976, 115). Ločevanje peči za pihanje in ohlajanje je značilno šele za polindustrijsko proizvodnjo, kjer lahko nadzorujejo temperaturo.

Med gradivom se pojavljajo tudi srednjeveški izdelki (npr. čaše ježevke - Sagadin 2000, 20), kar ponuja dodatna vprašanja tudi o časovni opredelitvi. Dokončno interpretiranje in datiranje izkopanega kompleksa bo zato mogoče šele po popolni objavi gradiva.

material and the glass goblets, the workshop was dated to the beginning of the 6th century (Sagadin 1999, 31).

The furnace complex at Kranj has not been published in entirety, and hence it is too early for a final interpretation of the site. On the basis of the brief report and the appearance of the finds, certain doubts must be expressed in terms of the activities of this production center.

It is interesting that no glass working waste and raw glass were found in these excavations. Deformed glass vessels would rather indicate a secondary deformation and damage due to exposure to fire than a deformation occurring during production. It is surprising that the furnaces were plastered with mortar on the inside, which also goes for the so-called handling area in front of the furnaces. Such features cannot at present be found anywhere among the known furnaces from the Roman period.

The levels of the handling area in front of the furnaces and the central part of the furnaces were different, judging from the description. In glass and pottery furnaces, the base is usually at the same level, as only in this manner the furnace can be managed without difficulty.

The explanation that one furnace served for production and the other for cooling is questionable. Roman furnaces had an area for cooling in the furnace itself, i.e. in a special part of the furnace, where the products cooled slowly, together with the furnace itself (Foy, Nenna 2001, 48-55). The transport of just blown vessels to a several meters distant furnace for cooling would cause too rapid cooling of the vessels on the surface, and the extreme tension caused by the temperature difference would make the glass become fragile, and perhaps even crack (Price 1976, 115). The separation of furnaces for blowing and cooling is characteristic only for semi-industrial production, where the temperature can be controlled.

The material also included medieval products (such as prunted beakers - Sagadin 2000, 20), which suggests additional questions related to the chronological determination. The final interpretation and dating of the excavated complex will thus be possible only after the complete publication of the material.

STEKLARSKE PEČI NA PTUJU

Med številnimi obrtnimi dejavnostmi, ki so delovale na območju rimske Petovione, so bili že v sedemdesetih letih na Spodnji Hajdini odkriti tudi ostanki steklarskih peči (Jevremov 1981, 258-259, sl. 79, 80). Pokrajinski muzej Ptuj je pod vodstvom Blagoja Jevremova izvedel zaščitne arheološke raziskave ob dveh izkopih za privatno gradnjo (*sl. 58*). Obdelava in interpretacija terenske dokumentacije in ostalih najdb z obeh izkopavanj bo objavljena v *Arheološkem vestniku* 55 (Lazar, Jevremov, Tomanič Jevremov 2004).

Parcela Hameršek

Od 28. 6. do 14. 7. 1978 je PM Ptuj izvedel zaščitne arheološke raziskave ob izkopu za privatno gradnjo Hameršek. Delo je potekalo na delu parcel 1117/16, 1117/10, 1108/1 in 1109/1 k. o. Hajdina. Odkriti sta bili dve steklarski peči in ruševine tretje.

Parcela Preložnik

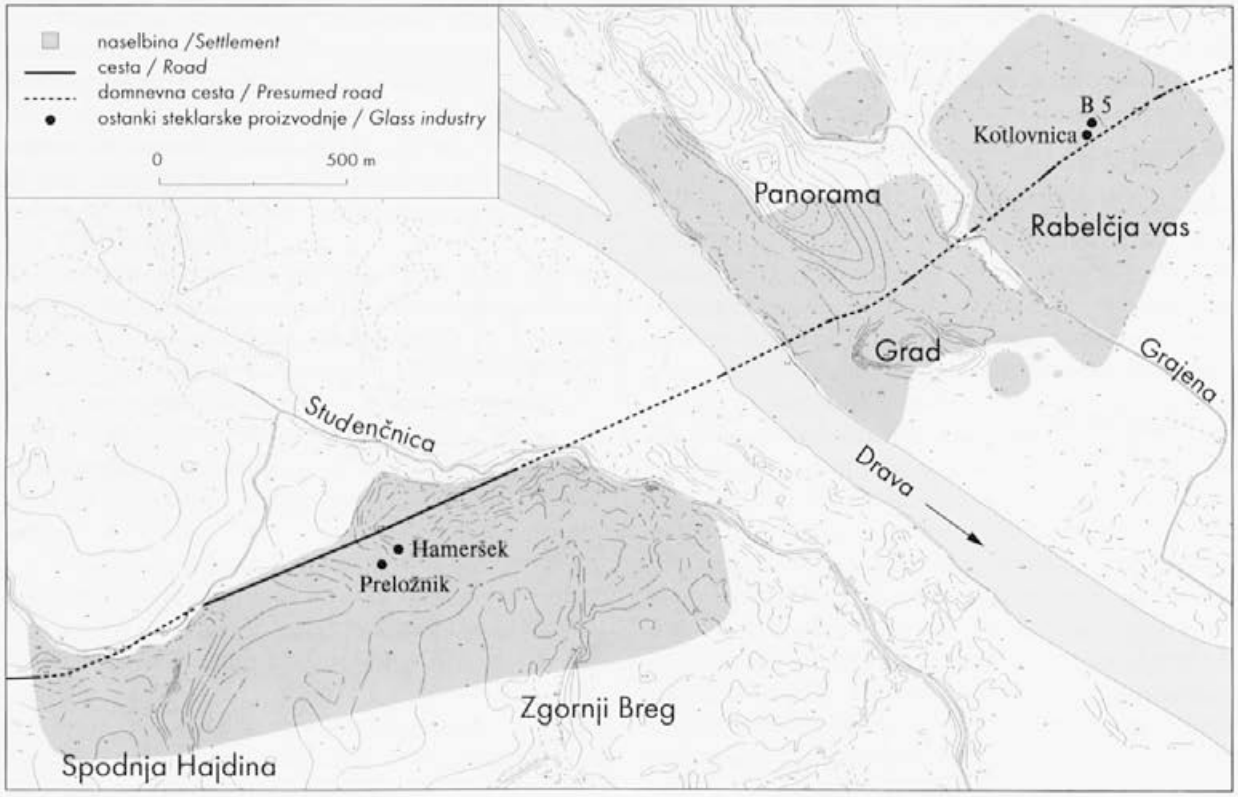
Od 17. 5. do 25. 5. 1978 so arheologi PM Ptuj nadzorovali gradbeni izkop hiše Preložnik na parc. 1102/

GLASS FURNACES AT PTUJ

Among the numerous craft activities that took place in the area of Roman Poetovio, the remains of glass furnaces were discovered at Spodnja Hajdina as early as the seventies (Jevremov 1981, 258-259, Fig. 79, 80). The Regional Museum in Ptuj, under the direction of Blagoj Jevremov, undertook rescue excavations at two sites dug up for private construction (*Fig. 58*). The analysis and interpretation of the field documentation and the other finds from both excavations will be published in the journal *Arheološki vestnik* 55 (Lazar, Jevremov, Tomanič Jevremov 2004).

The Hameršek plot

From 28 June to 14 July 1978, the museum staff in Ptuj took over rescue excavations at a site dug up for private construction by the Hameršek family. Excavations took place on part of plots 1117/16, 1117/10, 1108/1, and 1109/1 of the Hajdina land registry. Two glass working furnaces and the ruins of a third were discovered.



Sl. 58: Karta Ptuja z ostanki steklarske dejavnosti (obseg mesta po: J. Horvat *et al.* 2003. Vir: temeljni topografski načrt merila 1:5000; © Geodetska uprava Republike Slovenije; Ptuj 9, 10, 19, 20, Ormož 1, 11 - 1999).

Fig. 58: Map of Ptuj with the remains of glass working (town extent after: J. Horvat *et al.* 2003. Source: topographic plans at 1:5000 scale; © Surveying and Mapping Authority of the Republic of Slovenia (SMA); Ptuj 9, 10, 19, 20, Ormož 1, 11 - 1999).

2 k. o. Hajdina. Odkopani so bili ostanki treh steklarskih peči.

REKONSTRUKCIJA STEKLARSKIH PEČI

Tlorisi peči in deli konstrukcije so se bolje ohranili na parceli Hameršek in na osnovi tega lahko poizkusimo obnoviti izgled ptujskih steklarskih peči. Po obliki je šlo za podolgovate, ovalno oblikovane objekte, velikosti približno 2,05 x 1,00 m, če vzamemo zunanje mere, notranje mere pa so znašale 0,70 x 1,30 m. Zidani so bili iz opek različnih vrst in zamazani z glino. Posebej na notranji strani so bili sloji glinenih premazov precej debeli.

Notranjost peči je bila deljena v dva dela, v enem je bilo kurišče, drugi je služil kot delovni prostor (Lazar 2003, 78, Fig. 1). Ob kurišču, na stranskem delu, je ležal

Sl. 59: Ptuj - poskus rekonstrukcije peči, tloris in prerez.

Fig. 59: Ptuj - possible reconstruction of a furnace, ground plan and cross-section.

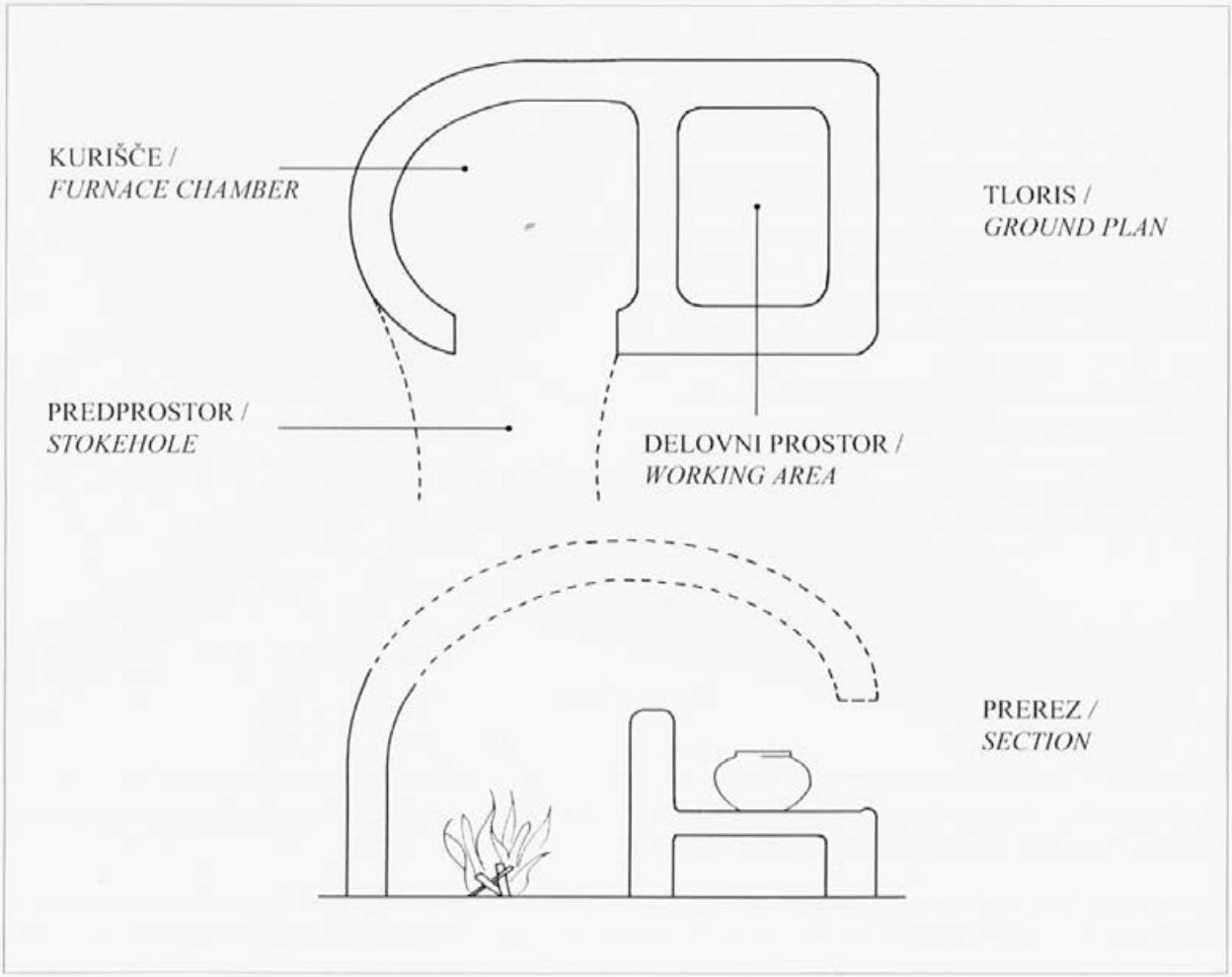
The Preložnik plot

From 17 May to 25 May 1978, archaeologists from the museum in Ptuj oversaw the digging of the foundations for the Preložnik house on plot 1102/2 of the Hajdina land registry. The remains of three glass furnaces were excavated.

RECONSTRUCTION OF THE GLASS FURNACES

The ground plans of the furnaces and construction remains were better preserved on the Hameršek plots, and on the basis of their preservation an attempt can be made to reconstruct the appearance of the glass furnaces of Ptuj. In form, these furnaces were elongated oval structures, with dimensions of approximately 2.05 x 1.00 m for the outer measurements, and the interior measurements of 0.70 x 1.30 m. The walls were made of brick of various types, plastered with clay (Lazar 2003, 78, Fig. 1). Particularly on the interior, the layers of clay coating were fairly thick.

The interiors of the furnaces were divided into two



kanal, ki je služil kot manipulativni prostor pred pečjo, iz katerega so oskrbovali kurišče z gorivom (*sl. 59*).

Glede na tloris je bil kurišči del nekoliko večji od delovnega prostora in na eni strani polkrožno zaključen, velik je bil približno 0,60 x 0,40 m. Vmesni zid je ločil oba dela peči. Delovni prostor je bil pravokotno kvadratne oblike. Po ostankih v peči 1 je verjetno, da je bila v tem delu neke vrste polica ali rešeto, na kateri so stale posode s steklom. Ta del peči je imel delovno odprtino, ob kateri je delal steklar (*sl. 59*).

Kako je izgledal gornji del peči, lahko le ugibamo. Morda je bil nad delovnim prostorom še eden manjši del, v katerem so odlagali izdelane posode. Iz ohranjenega tlorisa ni vidno, da bi bil sam delovni prostor deljen na dvoje, en del za pihanje, drugi del za ohlajanje posod.

Kakšna sta bila tloris in izgled peči na parceli Preložnik, ne moremo sklepati, ker so bili odkriti samo ostanki. Deli opek in ostanki konstrukcij kažejo, da je bil način gradnje podoben ali enak, to pomeni, da so bile zgrajene iz različnih vrst opek in zamazane z več plastmi gline. Kakršnikoli zaključki o njihovem zunanjem izgledu bi bili v tem primeru preveč spekulativni. Morda lahko samo ugibamo, da je sta bila konstrukcija in izgled podobna kot pri pečeh na parceli Hameršek, nedaleč stran.

Raziskana površina ob steklarskih pečeh je bila majhna, saj je šlo za posege pri zasebnih gradnjah. Zaradi tega ne moremo sklepati, ali je bil ob tem raziskan celoten obrat ali pa samo del večje steklarske delavnice. Tudi arhitekturni ostanki v bližini peči so pri obeh kompleksih skromni, tako da ne moremo potrditi, ali so peči ležale znotraj objektov ali so bile zamejene z zidovi, kako je bilo s streho in podobno.

Lega delavnic je bila usklajena s položajem ostalih mestnih obrti. Lokacija steklarskih obratov je umeščena v mestno četrt, kjer so poleg stanovanjskih hiš delovale delavnice različnih obrti. Na Spodnji Hajdini so delovale lončarske, opekarske in druge delavnice (Jevremov 1981a; 1985, 419). Njihov položaj ni bil ločen od stanovanjskega predela kot posebna obrtna četrt, hkrati pa je bil postavljen v bližino osrednje mestne komunikacije.

Vendar lahko po nekaterih manjših najdbah potrdimo, da steklarji niso delovali samo na območju Hajdine. Pri izkopavanjih leta 1976 so na današnji Rimski ploščadi pred gradnjo stanovanjskih blokov (*sl. 58*; najdišče Kotlovnica - Rabelčja vas, osrednji del; Jevremov 1985, 419), na območju nekdanje petovionske obrtniške četrti, med številnim keramičnim gradivom našli odlomke dnov in ustij keramičnih posod z ostanki staljenega stekla (*sl. 60, 61*). Gradivo hrani Arheološki oddelek Pokrajinskega muzeja Ptuj (inv. št. R 64755, 65366, 56367 (3 odlomki), 65390, 65391).

Notranjost posod je prekrita s tankim, milimeter debelim slojem stekla, ki je ponekod zbrano v manjše

parts, one was for the fire, and the other served as working area. Next to the exterior part of the heating section lay a channel that served as the handling area in front of the furnace, from which they supplied the fuel for the fire (*Fig. 59*).

In terms of the plan, the furnace area was somewhat larger than the working space, and on one side it ended in a semicircular, approximately 0.60 x 0.40 m in size. A wall divided both parts of the furnace. The work area had a square shape. According to the remains in furnace 1, it is likely that there was some kind of shelving or grating on which the vessels with glass stood. This part of the furnace had an opening for work, next to which the glass worker stood (*Fig. 59*).

The appearance of the upper part of the furnace can only be conjectured. Perhaps another smaller section was located above the work area where the glassworkers placed finished vessels. It cannot be seen from the preserved plan if the working area was divided into two sections, one for blowing, and the other for cooling vessels.

The plan and appearance of the furnaces on the Preložnik plot cannot be determined because only remains were discovered. Parts of bricks and other construction remains indicate that the manner of construction was similar or identical, meaning that they were built of various types of brick and plastered with several layers of clay. Any conclusion about their external appearance would be too speculative in this case. Perhaps it can be conjectured that the structure and appearance were similar to those at the Hameršek plot, located not far away.

Only a small area around the glass furnaces was investigated because these were interventions on private property. Thus it cannot be concluded whether the entire workshop was excavated or just part of a larger glass production center. The architectural remains in the vicinity of the furnaces were modest at both complexes, so that it cannot be established whether the furnaces lay within a structure or if they were bounded by walls, what form the roof took, and so forth.

The position of the workshops was similar to that of the other crafts in the town. The location of the glass production centers was placed in a city quarter where there were workshops of various crafts in addition to dwelling structures. Spodnja Hajdina had pottery, tile and brick, and other production centers (Jevremov 1981a; 1985, 419). Their position was not separated from the residential section into a special craft quarter, while at the same time they were located in the vicinity of the central communication route of the town.

It can also be confirmed from several smaller finds that glass-workers were active beyond the Hajdina area. Excavations in 1976 at Rimska ploščad (the site of Kotlovnica - Rabelčja vas, central section; Jevremov 1985, 419 - *Fig. 58*), in the area of the former craft quar-

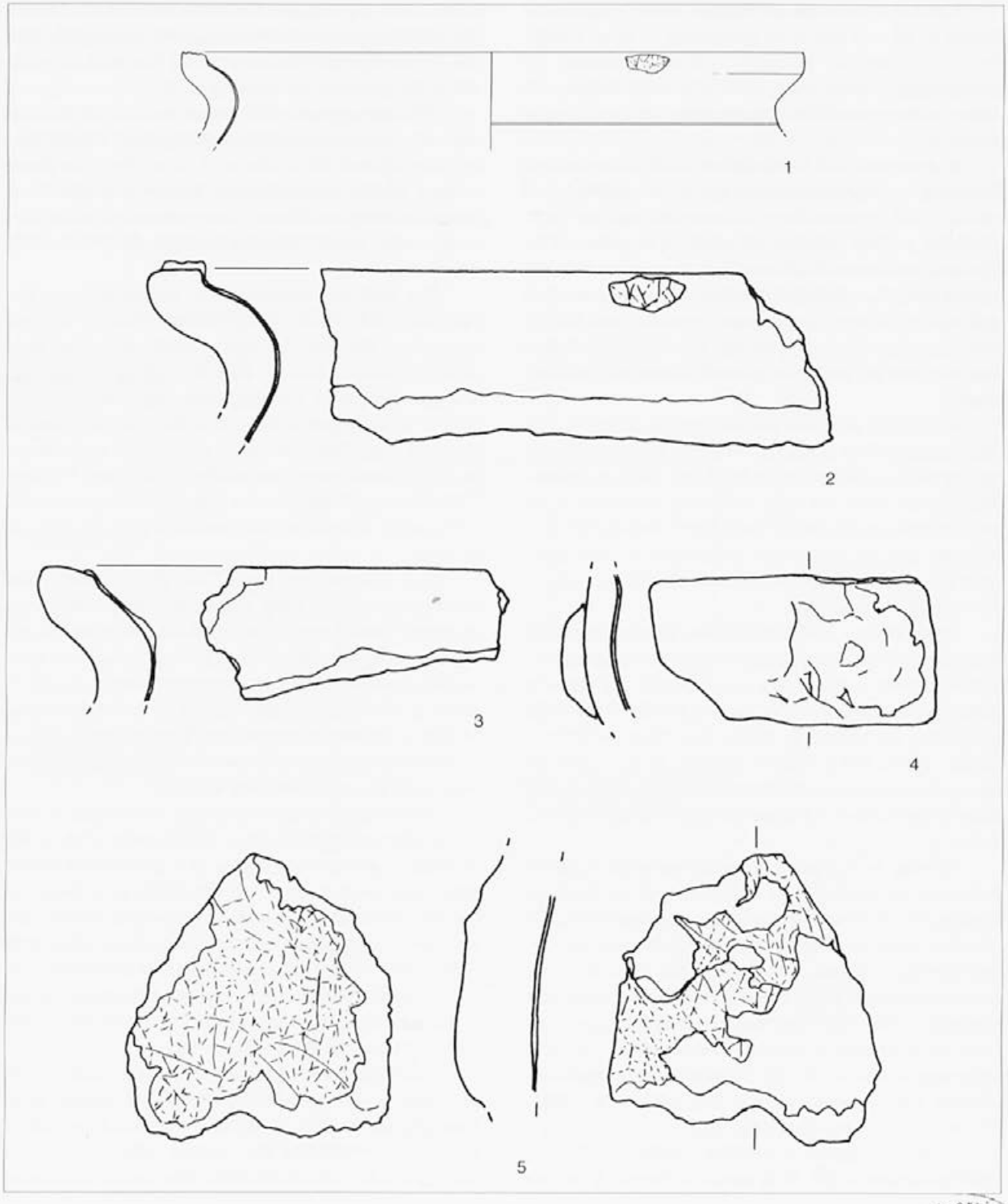
kepice. Na nekaterih ustjih je lepo vidno, kako je steklena masa spolzela po ostenju. Pri odlomku dna posode je ohranjen najdebelejši sloj stekla, ki znaša 2–3 milimetre

Sl. 60: Ostanki talilnikov za steklo. Ptuj - Kotlovnica, 1976 (kv. 19, 20). M. = 1:2; 2–5 = 1:1.

Fig. 60: Fragments of crucibles. Ptuj - Kotlovnica, 1976 (quad. 19, 20). *Scale* = 1:2; 2–5 = 1:1.

ter of Poetovio, among abundant ceramic material, fragments of pottery vessels with remains of melted glass were found (*Fig. 60, 61*). The material is kept in the Archaeological Department of the Regional Museum in Ptuj (inv. no. R 64755, 65366, 56367 (3 fragments), 65390, 65391).

The interior of the vessels is covered with a thin, millimeter thick layer of glass, sometimes collected into small lumps. It is quite apparent on some rims that the



(*sl. 61: 2*). Brez dvoma gre za ostanke talilnikov oz. talilnih loncev - posod v katerih so talili steklo.

Oblike ohranjenih odlomkov keramike kažejo, da so za talilnike uporabljali na vretenu izdelane posode, njihova oblika v tem primeru ni bila posebej prilagojena. Glede na ustje lahko rečemo, da so za taljenje uporabili nizke lonce enakih oblik, kot jih srečamo med ptujsko kuhinjsko keramiko (Istenič 1999, 137, sl. 130).

Najdbe talilnikov pa niso edine, ki govore o delovanju steklarjev v tem delu mesta. Pri zaščitnih izkopavanjih pred gradnjo stanovanjskih blokov so odkrili kose amorfnega stekla, na osnovi katerih je Paola

molten glass crept down the walls. One fragment of a vessel base has the thickest preserved layer of glass, measuring 2-3 millimeters (*Fig. 61: 2*). These were undoubtedly the remains of crucibles or melting pots - vessels in which glass was melted.

The forms of the preserved shards of pottery show that wheel-made vessels were used as crucibles, and their shape was not specially adapted in this case. In terms of the rims, it can be stated that for melting they used short pots of the same form as those found among the cooking ware of Ptuj (Istenič 1999, 137, sl. 130).

The finds of crucibles are not the only things to

Sl. 61: Ostanki talilnikov za steklo. Ptuj - Kotlovnica, 1976 (kv. 13, 20). M. = 1:1.

Fig. 61: Fragments of crucibles. Ptuj - Kotlovnica, 1976 (quad. 13, 20). *Scale* = 1:1.

Korošec sklepala, da so v bližini obratovale steklarske peči (1982, 23). Zaradi velike količine odlomkov okenskega stekla je tudi domnevala, da so ga morda izdelovali prav v Rabelčji vasi (1982, 22, t. 5).

Večji kos amorfnega stekla (vel. 8,5 x 5 cm, pr. 3–4 cm) je bil najden tudi na Panorami. Pobran je bil na površini povsem slučajno leta 1983 in najditelj Viktor Knez ga je podaril Pokrajinskemu muzeju Ptuj. Na osnovi posamične najdbe je sicer težko sklepati, vendar je mogoče, da so poleg drugih delavnic na Panorami delovali tudi steklarji. Vse te najdbe dokazujejo, da steklarska dejavnost v Petovioni ni bila omejena samo na en del mesta.

STEKLARSKI ODPADKI OB PEČEH

V neposredni bližini peči in v pečeh samih so bili na obeh najdiščih izkopani raznoliki stekleni odpadki, s pomočjo katerih lahko neposredno dokažemo obstoj steklarske delavnice in izdelovanje steklenih predmetov oziroma tako imenovano sekundarno proizvodnjo. Arheološke ostanke, ki nedvomno dokazujejo proizvodnjo steklenih izdelkov, lahko umestimo v pet kategorij (Price 1991a, 23).

Prve so prav gotovo peči. Pri opredelitvi nam zato pomagajo predvsem določene značilnosti, po katerih jih lahko jasno opredelimo kot peči za proizvodnjo stekla, npr. plast staljenega stekla na opeki, stekleni odpadki v peči in ob njej ipd. (*sl. 62, 63*). Različne steklaste glazure, ki nastanejo na kamenju ali glini zaradi visokih temperatur, še niso zadosten dokaz, da je peč služila za taljenje in pihanje stekla. Podobne steklaste prevleke velikokrat opazimo tudi na topilnikih za kovino, le-te nastanejo zaradi topljenja določenih primesi v glini, kadar je ta večkrat in dalj časa izpostavljena izjemno visokim temperaturam.

Drugo skupino predstavljajo ostanki surovin za proizvodnjo surovega stekla oziroma stekleno talino, to je steklena zmes, pripravljena do prve stopnje. Sledijo talilniki oziroma posode za taljenje in ostanki stekla v njih, nato orodje in pripomočki za proizvodnjo stekla ter na koncu raznoliki odpadki, nastali ob taljenju in pihanju stekla.

Surovine

Osnovne surovine za proizvodnjo stekla so bile kremenčev pesek, soda in apnenec. Ostanki teh surovin v večji količini v neposredni bližini peči bi dokazovali, da so v obratu najprej pripravljali surovo steklo in ga nato talili za proizvodnjo.

Priprava steklene taline je potekala v dvostopenjskem procesu. O tem postopku obstajajo zapisi že na

indicate the presence of a glass workers in this part of the town. During rescue excavations prior to construction of an apartment block, fragments of amorphous glass were discovered, on the basis of which Paola Korošec concluded that a glass furnaces had been located in the vicinity (1982, 23). The large quantities of window glass fragments also caused her to consider that they had perhaps been made at the site of Rabelčja vas itself (1982, 22, Pl. 5).

A large piece of amorphous glass (dim. 8.5 x 5 cm, dia. 3-4 cm) was also found at Panorama. It was gathered as a surface find quite by chance in 1983, and given by the discoverer, Viktor Knez, to the Regional Museum in Ptuj. On the basis of an isolated find it is difficult to conclude, although it is possible, that in addition to the other workshops at Panorama, glass was also produced. All of these finds prove that the glass working activities at Poetovio were not limited to a single part of the town.

GLASS WASTE BY THE FURNACES

Varied glass working waste was excavated at both sites in the immediate vicinity of the furnaces and also inside them. This material can be used as direct proof of the existence of a glass workshop and the manufacture of glass objects in what is known as secondary production. Archaeological remains that prove without any doubt the manufacture of glass products can be classified into five categories (Price 1991a, 23).

The first category consist of furnaces. Certain characteristics are essential for the classification of structures as glass furnaces, e.g. a layer of melted glass on the bricks, glass waste in the furnace and around it, etc. (*Fig. 62, 63*). Various glassy mass created on stone or pottery as a result of high temperatures are insufficient proof that the furnace served for melting and blowing glass. Similar glassy coatings can often be noted in crucibles for metal, created due to the fusing of certain fluxes in the clay when it was exposed consecutively and for long periods to exceptionally high temperatures.

The second group is represented by the remains of raw materials for the production of raw glass, meaning the molten glass mixture prepared for the first stage - frit. The other categories consist of crucibles or pots for melting and the remains of glass in them, tools and equipment for the production of glass, and finally the various forms of glass waste created through the melting and blowing of glass.

Raw materials

The basic igredients for manufacturing glass were quartz sand, soda, and lime. Remains of these raw mate-

Sl. 62: Ostanki peči s kosi stekla. Ptuj, parcela Preložnik (foto: M. Guštin).

Fig. 62: Remains of a furnace with fragments of glass. Ptuj, Preložnik plot (photo: M. Guštin).

glinenih ploščicah iz Mezopotamije, opisuje pa ga tudi rimski pisec Plinij Starejši (Stern, Schlick-Nolte 1994, 20). Najprej so dalj časa segrevali osnovne surovine pri nižji temperaturi, okrog 850°C. Tako dobljeno surovino so nato ohladili in jo nato ponovno segrevali pri temperaturi med 1000 in 1100°C. Šele po tem postopku je nastalo pravo steklo, ki je bilo pripravljeno za nadaljnje postopke. V obliki večjih kosov ali ingotov so ga dobavljali steklarskim delavnicam za izdelavo steklenih posod. Tu je nato potekal še postopek obarvanja, razbarvanja, dodajanje antimona za motno, nesvetlečo površino (mlečno belo steklo) in nato izdelava steklenih posod.

Dolgo je veljalo mnenje, da so tudi lokalne delavnice vse postopke v proizvodnji stekla, od priprave osnovnih surovin do taljenja in pihanja, opravljale same. Nove raziskave in analize surovin in izdelkov so dokazale, da sta bila postopka ločena. Šele od šestdesetih let

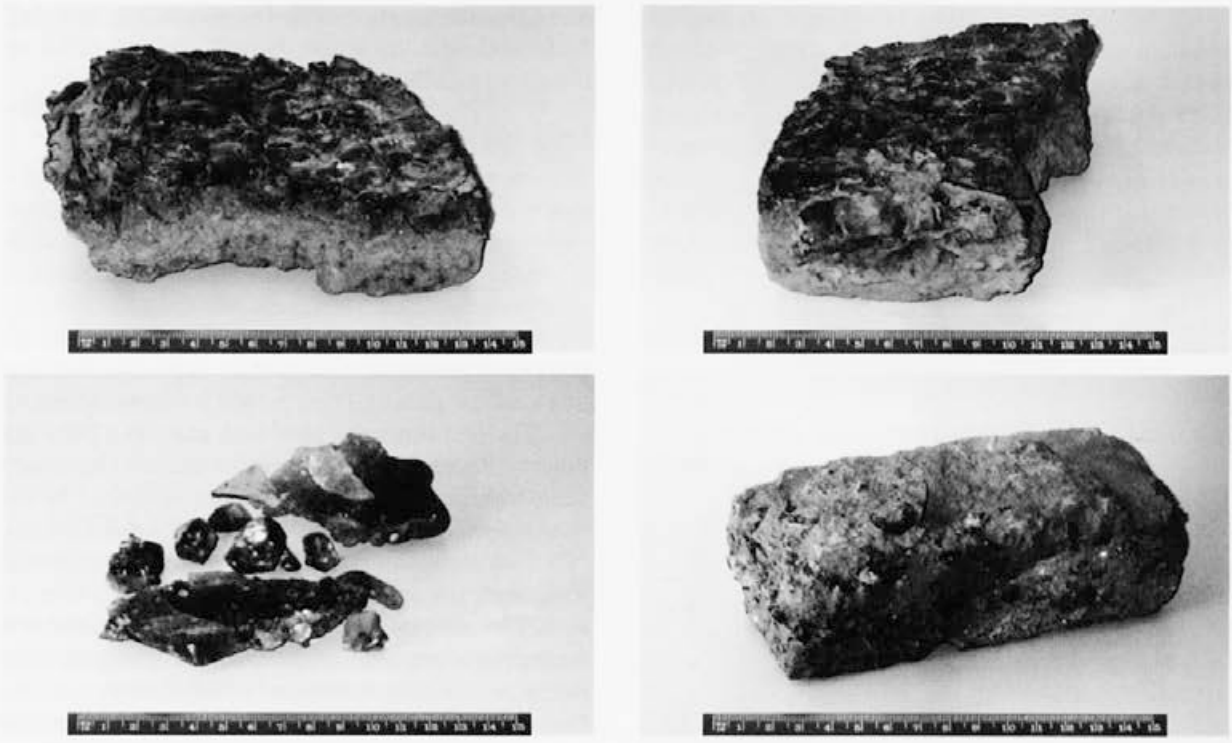
rials in large quantities in the immediate vicinity of a furnace would demonstrate that at the workshop they first prepared raw glass and then melted it for production.

The preparation of glass took place in a two-stage process. Records about this process exist on clay tablets from Mesopotamia, and it was also described by the Roman writer Pliny the Elder (Stern, Schlick-Nolte 1994, 20). First glass workers heated the basic ingredients at a relatively low temperature (ca. 850° C) for a long period. This mixture was then cooled and reheated to a temperature between 1000 and 1100° C. This procedure prepared glass, which was ready for further processing. It was supplied in the form of large chunks or ingots to glass production centers for the manufacture of glass vessels. Further processes then took place, including colouring, decolouring, adding antimony for an opaque, matte surface (milky white glass), leading finally to the blowing of glass vessels.

It was long thought that even local workshops performed all the stages in the production of glass, from preparation of the basic ingredients through melting to blowing, by themselves. New research and analysis of raw materials and products has shown that these processes were separate. It wasn't until the 1960' that the distinction between primary and secondary production was recognised (Price 1998, 331). Primary production refers to the preparation and making the glass from the basic ingredients (fritting and melting), while secondary production was the manufacture of glass vessels from previously prepared raw glass (Gorin-Rosen 2000, 52). Chemical analysis of the composition of glass from various regions has shown a surprising uniformity in the proportions and quantities of given elements. It can be concluded from this that the same sources were always used for individual raw ingredients (Aerts, Jansens, Velde, Adams & Wouters 2000, 119).

Analysis of the glass and products from a glass workshop in Lyons in France has shown that as a modifying agent glass-workers regularly added only natron, in the form of plant ash imported from the Mediterranean, while the quartz sand came from the Belus River region in Israel (Nenna, Vichy, Picon 1997, 81).

Further comparations of glass from Mediterranean workshops have confirmed that raw glass was produced by several production centers in the Mediterranean, for example in the vicinity of Alexandria and in Israel, and



Sl. 63: Ostanki peči s staljenim steklom in kosi surovega stekla. Ptuj, parcela Hameršek (foto: M. Guštin).

Fig. 63: Remains of a furnace with melted glass and pieces of raw glass. Ptuj, Hameršek plot (photo: M. Guštin).

prejšnjega stoletja dalje ločijo v rimskem steklarstvu primarno in sekundarno proizvodnjo (Price 1998, 331). Primarna proizvodnja pomeni pripravo in taljenje stekla iz osnovnih surovin, sekundarna pa izdelavo steklenih posod iz že pripravljenega surovega stekla (Gorin-Rosen 2000, 52). Kemijske analize sestavin stekla z različnih področij kažejo presenetljivo enotnost v razmerjih in količini določenih elementov. Iz tega lahko sklepamo, da so za posamezne surovine uporabljali vedno enake vire (Aerts, Jansens, Velde, Adams & Wouters 2000, 119).

Analize stekla in izdelkov steklarske delavnice v Lyonu v Franciji so pokazale, da so npr. kot topilo redno dodajali samo natron, pepel morskih rastlin, uvožen iz sredozemskega področja, kremenčev pesek pa iz območja reke Belus v Izraelu (Nenna, Vichy, Picon 1997, 81).

Nadaljnje primerjave stekla iz sredozemskih delavnic so potrdile, da so surovo steklo izdelovale nekatere delavnice v Sredozemlju, npr. okolica Aleksandrije, Izrael, in ga nato dobavljale izdelovalcem stekla oziroma steklarskim delavnicam v Evropi (Nenna, Vichy, Picon 1997, 85; Stern, Schlick-Nolte1994).

Do enakih rezultatov so prišli tudi ob primerjavi surovega stekla z vseh znanih zahodno evropskih steklarskih delavnic. Ugotovili so, da je potrebno analizirati sestavo peska v surovem steklu in ti rezultati potrdijo, od kod so izvirale surovine (Foy, Vichy, Picon 2000, 51).

Peči oziroma delavnice za pripravo steklene taline so bile sodeč po najnovejših raziskavah povsod ločene od delavnic za proizvodnjo steklenih izdelkov. Analize

that these workshops subsequently supplied raw glass to manufacturers in Europe (Nenna, Vichy, Picon 1997, 85; Stern, Schlick-Nolte 1994).

Identical results were achieved through the comparison of raw glass from all known western European glass working centers. These analyses established that it is necessary to analyze the composition of the sand in the raw glass, and the results confirm the source of the raw material (Foy, Vichy, Picon 2000, 51).

Furnaces or workshops for the preparation of raw glass, judging by the most recent research, were separated everywhere from workshops for the manufacture of glass products. Analyses in France have shown that no workshops involved in the primary production of glass were located in this region (Foy, Vichy, Picon 2000, 52). The majority of European production centers purchased already prepared glass as a raw material. Glass ingots were broken up and were melted together with pieces of recycled glass in furnaces, and were then used for manufacture. In addition to the trade in raw glass, trade was also organized in recycled glass, i.e. broken vessels, which was added to the raw glass.

Sl. 64: Stekleni odpadki ter kosi surovega stekla. Ptuj, parcela Preložnik (foto: M. Guštin).

Fig. 64: Glass waste and pieces of raw glass. Ptuj, Preložnik plot (photo: M. Guštin).

v Franciji so pokazale, da na tem območju ni bilo delavnice, ki bi se ukvarjala s primarno proizvodnjo stekla (Foy, Vichy, Picon 2000, 52). Večina evropskih delavnic je kupovala že pripravljeno steklo kot surovino. Steklene ingote so razbili in jih skupaj s kosi odpadnega stekla talili v pečeh ter nato uporabili za proizvodnjo. Poleg trgovine s surovim steklom je bila organizirana tudi trgovina s steklenimi odpadki oziroma razbitimi posodami, ki so jih dodajali surovemu steklu.

Na Ptuju ni bilo ob delavnicah odkritih nobenih ostankov ali depozitov surovin, iz katerih bi lahko sklepali, da so tam pripravljali tudi talino. Proizvodnja steklenih izdelkov je tudi tukaj najverjetneje slonela na uporabi uvoženega surovega stekla in dodajanju recikliranih steklenih odpadkov.

Dokaz za trgovanje s surovim steklom in uporabo že pripravljenih steklenih ingotov, so večji kosi surovega stekla, ki so včasih debeli tudi več kot 2 cm (*sl. 63, 64*). Razen na Ptuju, so bili podobni kosi odkriti tudi v Celju v Levstikovi ulici (*sl. 57: 2*), medtem ko jih z drugih najdišč v Sloveniji ne poznamo.

Talilniki

Med keramičnimi najdbami z lokacij Hameršek in Preložnik na Ptuju ni nobenega odlomka, ki bi ga lahko opredelili kot talilnik za steklo. Glede na velikost peči smemo domnevati, da je v njej stala le ena talilna posoda.

Po ostankih posod s staljenim steklom na dnu in ostenju, ki so bili najdeni v Rabelčji vasi - Kotlovnica, lahko sklepamo, kako so ti talilniki izgledali (*sl. 60, 61*). Oblika ustja in dna kaže, da jih lahko po obliki primerjamo z nizkimi lonci z izvihanim in odebeljenim ustjem, značilnimi oblikami domače kuhinjske keramike. Kvaliteta gline, iz katere so bili izdelani je bila seveda boljša, uporabili so prečiščeno glino brez primesi, ki je lahko zdržala visoke temperature v steklarskih pečeh ter večkratno segrevanje in ohlajanje.

At Ptuj, no remains or deposits of raw materials were found by workshops that would indicate that raw glass had been prepared there. The manufacture of glass products here also was most probably dependent on the use of imported raw glass and the addition of recycled broken glass.

Proof of the trade in raw glass and the use of already prepared glass ingots is offered by large pieces of raw glass, sometimes as thick as 2 cm (*Fig. 63, 64*). Other than at Ptuj, similar fragments were also found in Celje at the Levstikova Street site (*Fig. 57: 2*); however, they are unknown from other sites in Slovenia.

Crucibles

The pottery finds from the Hameršek and Preložnik sites in Ptuj contained no fragments that could be defined as crucibles for glass. Given the size of the furnaces, it can be suggested that only one crucible would have stood in them.

The appearance of these crucibles can be inferred from the remains of vessels with melted glass on the bottom and on the walls that were found at Rabelčja vas - Kotlovnica (*Fig. 60, 61*). The form of the rim and base indicate that they can be compared to low pots with everted and thickened rims, characteristic of local cooking ware. The quality of the clay from which they were made was certainly better because they used fine-grained clay without admixtures, which could endure high temperatures in glass furnaces and multiple heating and cooling.

Some fragments of amorphous glass bear remains of clay on one side. The clay could have come from the walls of the clay crucibles in which the glass was melted. The presence of the clay at the same time show that in these workshops, the glass blowers gathered the glass for blowing from a crucible and did not gather chips of glass on the pipe (so-called chunk-gathering).

Nekateri kosi amorfnega stekla imajo na eni strani ostanke gline. To je lahko ostalo od ostenja glinenih topilnikov v katerih se je talilo steklo. Ti ostanki hkrati dokazujejo, da so v tej delavnici steklarji zajemali steklo za pihanje iz talilnih posod in niso nabirali koščkov stekla na pipo (t. i. *chunk-gathering*).

Orodje

Najdbe steklarskih orodij iz rimske dobe so zelo redke. Nekateri pripomočki so bili verjetno izdelani iz lesa, ki se le redko ohrani. Drugo orodje, npr. škarje, pa je bilo uporabno za različne namene in če ga niso odkrili neposredno ob pečeh, ne moremo dokazati njegove uporabe pri izdelavi stekla. Zaenkrat so najdbe steklarskih pip in drugega orodja znane le iz Meride v Španiji (Price 1973, 82) in iz Salone v sosednji Hrvaški (Auth 1975, 167).

Na Ptuju je bilo ob delavnicah Hameršek in Preložnik najdenega le malo drobnega gradiva in žal nobene od teh najdb ne moremo povezati s steklarsko obrtjo. Na odlomkih dnov nekaterih steklenih posod pa se je ohranila sled prijemalke, kar posredno dokazuje uporabo kovinske palice v procesu izdelave posod. Ko je steklar napihal osnovno obliko posode, jo je ob ustju pipe odrezal in prenesel na kovinski drog - prijemalko, da je dokončno oblikoval ustje posode in npr. dodal ročaje ali izdelal okras (Schuler 1959, 119). Na prijemalko je zajel majhno kapljo stekla, na katero je pritalil posodo, ki jo je obdeloval. Ta steklena kaplja se ohrani na dnu posode v obliki okrogle, nekoliko grobe in tanke plasti stekla. Rimski steklarji navadno niso odbrusili sledov prijemalke s posode, kot je to običaj pri kasnejših izdelkih.

Steklarski odpadki

Najbolj neposreden dokaz obdelave in izdelave steklenih izdelkov so stekleni odpadki. Večinoma so le-te seveda pobrali in ponovno stalili, tako da količina teh odpadkov ni merilo za obseg proizvodnje ob posameznih pečeh. Steklenih odpadkov je več vrst, zato so opredeljeni v štiri skupine (Price 1991a, 25).

V prvo so uvrščeni koščki stekla, ki so na prvi pogled

Tools

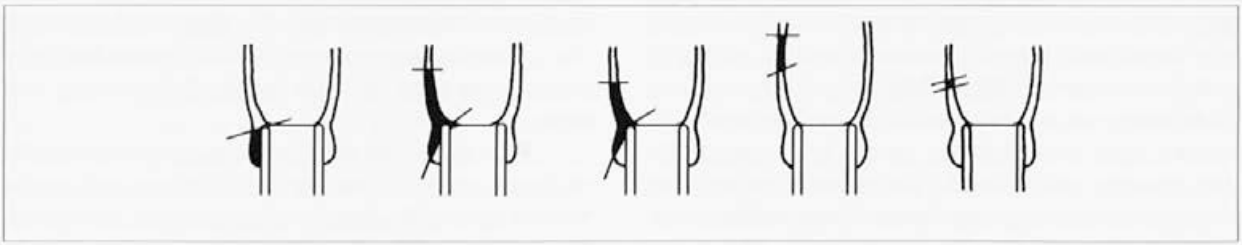
Finds of glass working tools from the Roman period are extremely rare. Some implements were probably made from wood, which is rarely preserved. Other tools, such as scissors, could be used for various purposes, and if they were not discovered immediately next to the furnace, their discovery does not present proof of their having been used in the manufacturing of glass vessels. At present finds of glass blowing pipes and other tools are known only from Merida in Spain (Price 1973, 82), and from Salona in neighboring Croatia (Auth 1975, 167).

Only a small amount of material was found at Ptuj by the Hameršek and Preložnik furnaces, and unfortunately none of these finds can be directly connected with glass manufacturing. On the base fragments of several glass vessels pontil marks were preserved, indirectly proving the use of metal rods in the process of manufacturing vessels. When the glass worker had blown the basic shape of the vessel, he would cut it off on the tip of the pipe and transfer it to a metal rod - the pontil, then finish forming the rim of the vessel, and add, for instance, a handle or decoration (Schuler 1959, 119). A small gob of glass was put on the pontil to which the vessel to be worked was attached. This glass drop was preserved on the base of the vessel in the form of circular, somewhat coarse and thin layers of glass. Roman glass workers usually did not grind off the pontil marks on a vessel, as was the case with later products.

Glass working waste

The best direct proof of the working and manufacture of glass products is glass waste and wasters. Most of them were collected and remelted, so that the quantity of such debris is not a measure of the extent of production at individual furnaces. There are several types of glass waste and they have been divided into four groups (Price 1991a, 25).

The first group consists of pieces of glass that at first glance resemble somewhat deformed rims of small flasks (*Pl. 3: 1-7; 8: 8, 9*). These are moiles - fragments of glass from the end of a glass blowing pipe, which remain on the pipe after the vessel is blown and trans-



Sl. 6.5: Različne vrste steklarskih odpadkov, ki nastanejo na koncu steklarske pipe (po: Amrein, Hochuli-Gysel 2000).

Fig. 6.5: The various types of glass moiles from the end of the blowing iron (after: Amrein, Hochuli-Gysel 2000).

podobni nekoliko deformiranemu ustju manjših stekleničk (*t. 3: 1-7; 8: 8,9*). To so odlomki stekla s konca steklarske pipe, ki ostanejo na pipi potem, ko je posoda napihana in prenesena na prijemalko (*sl. 65*). Najbolj pogosta oblika je polkroglasta, z zaobljenim vrhom, ki jo prepoznamo tudi med ptujskim gradivom. Steklo je polno zračnih mehurčkov, tudi smeti, ponekod so celo vidne kot las tanke praske oziroma razpoke v steklu. Na osnovi premera teh odpadkov lahko ugotovimo, kakšen je bil premer konca steklarskih pip, ki so jih uporabljali v delavnici. Vsi odlomki imajo premer med 2 in 2,5 cm. S pipo takega premera so lahko izdelovali tudi večje posode, npr. steklenice.

Drugo obliko teh odpadkov predstavljajo ostanki, podobni pokrovu, njihov gornji del je cilindričen, spodaj pa se močno razširi in ima ravno odrezan rob (Price 1991a, 25). Taki ostanki so nastali pri izdelavi posod s širšim ustjem, npr. večjih čaš ali plitvih skodel, vendar jih med obravnavanim ptujskim gradivom ne najdemo.

Drugo skupino predstavljajo odpadki, nastali ob posameznih stopnjah dela ob peči. Kako in pri katerem postopku so nastali majhni kroglasti koščki, ki imajo gladko in sijočo površino ter premer okrog 1 cm, ni jasno (*t. 3: 11, 12*). Laže razložimo ostanke potegnjenega in nekoliko zasukanega kosa stekla z razširjenim spodnjim delom (*t. 4: 15*). Verjetno gre za dele, ki so ostali od oblikovanja ročajev ali tordiranih steklenih paličk.

Kot slučajne odpadke pri pihanju lahko opredelimo staljene koščke steklene mase nepravilne oblike (*t. 3: 10, 13-15; 4: 13, 14*) in kot las tanke steklene nitke (*t. 2: 4; 4: 1-10*). To so ostanki stekla, ki odpadejo s steklarske pipe po nabiranju steklene taline na pipo; nekateri pa menijo, da so nitke nastale zaradi preverjanja viskoznosti stekla in ugotavljanja, če je že primerno za pihanje (Whitehouse 1991, 386). Staljeni amorfni kosi nastanejo ob potopitvi steklarske pipe v vodo.

Zadnjo skupino odpadkov predstavljajo uničene in slabo izdelane steklene posode ali njihovi odlomki. Pri tem je potrebno opozoriti, da velja ločiti ostanke steklenih posod, ki so bile naknadno poškodovane v ognju in so zato staljene in nepravilne oblike, ter odlomke slabo izdelanih in med pihanjem deformiranih posod. Od ognja deformirane in poškodovane posode imajo ostenje motno in skoraj hrapavo površino, pogosto polno smeti, ki so se pritalile na ostenje. Posode, deformirane med pihanjem, pa so gladke, steklo je prosojno, njegova površina nepoškodovana in le slabo izdelano in nepravilno oblikovano ustje, ostenje ali dno posode kažejo, da gre za odpadli izdelek steklarske delavnice.

Pri pečeh na Ptuju teh ostankov ni bilo prav veliko, saj so jih v delavnicah vedno sproti zbirali in ponovno stalili. Kot deformirane izdelke lahko opredelimo nekaj ostankov ustij (*t. 5: 5, 7, 8; 7: 1, 7*), ostanke ostenja (*t. 8: 6*) in dele slabo izdelanih ročajev različnih posod (*t. 5: 13; 7: 4, 9; 8: 11*).

Večina ostalih odlomkov pripada razbitim steklenicam.

ferred to the pontil (*Fig. 65*). The most common form is semicircular with a rounded edge, which can also be found among the Ptuj material. The glass is full of air bubbles, and also impurities, and sometimes even hair-thin scratches or cracks in the glass are visible. On the basis of the diameters of these moiles, it is possible to establish the diameter of the end of the glass blowing pipe that was used in the workshop. All fragments have a diameter between 2 and 2.5 cm. A pipe with this diameter could be used to manufacture large vessels, such as bottles.

Another form of this waste is represented by remains with a lid shape. The upper section is cylindrical, while below it strongly flares outwards and has an edge cut straight. Such remains were created in the manufacture of vessels with broad rims, such as large cups or shallow bowls (Price 1991a, 25). Such moiles were not found among the analyzed material from Ptuj.

The second group consists of waste created from individual phases of work at the furnace. It is not clear how and in what process small circular pieces with a smooth and shiny surface and a diameter of ca. 1 cm were created (*Pl. 3: 11, 12*). It is easier to explain the remains of stretched and somewhat rolled pieces of glass with a broad lower section (*Pl. 4: 15*). These were probably parts that remained from the formation of handles or spirally twisted glass rods.

Accidental waste created during blowing would be represented by melted irregularly shaped pieces of glass (*Pl. 3: 10, 13-15; 4: 13, 14*), and hair-thin glass threads (*Pl. 2: 4; 4: 1-10*). These are remains of glass that fall from the gather after gathering the molten glass onto the pipe. Some think that the threads were formed in testing the viscosity of the glass and establishing if it was ready for blowing (Whitehouse 1991, 386). The melted amorphous pieces were made when the glass blowing pipe was plunged in water.

The last group of debris consists of poorly made or distorted vessels or fragments of them - wasters. It should be noted that it is necessary to distinguish between the remains of glass vessels that were subsequently damaged in fire and are thus melted and of irregular form, and fragments of poorly made vessels and those deformed in blowing. Vessels deformed and damaged in fire have walls with an opaque and almost rough surface, often full of impurities adhering to the walls. Vessels deformed during blowing are smooth, the glass is transparent, and the surface is undamaged, while the poorly worked and irregularly formed rims, walls, or bases of the vessels show that these were discarded products of a glass house.

The furnaces at Ptuj did not contain a great number of such remains, as at workshops they were always collected and remelted. Wasters consisted of some rim remains (*Pl. 5: 5, 7, 8; 7: 1, 7*), remains of walls (*Pl. 8: 6*), and parts of poorly made handles for various vessels (*Pl. 5: 13; 7: 4, 9; 8: 11*).

nim posodam, ki so jih zbirali v vsaki steklarski delavnici in dodajali stekleni talini, da je bila čistejša. Med temi odpadki moramo iskati tudi morebitne ostanke proizvodov ptujskih delavnic.

Precej odlomkov je pripadalo kvadratnim steklenicam. Trije odlomki dnov (*t. 1: 6-8*) so bili okrašeni z rozeto, ohranilo se je nekaj odlomkov ostenij (*t. 2: 1; 6: 11, 12*) in več kosov gosto narebrenih ročajev, značilnih za te steklenice (*t. 8: 2, 3, 12*). Odlomki posod s prstanasto nogo (*t. 5: 14*) in dnom z izvlečeno prstanasto nogo (*t. 1: 5; 5: 16, 17*) so verjetno pripadali enostavnim cilindričnim čašam (obliki 3.6.1. in 3.6.2.), ki so bile zelo priljubljene v 2. stoletju.

Med celotnim gradivom obeh delavnic ni zaslediti odlomkov posod, ki bi sodile v pozno rimsko dobo. Steklo je kvalitetno, zelenkasto-modre ali modro-zelenkaste barve, ostanki posod so dokaj tanko pihani, zračnih mehurčkov skoraj ni.

Pregled odpadnega gradiva delavnic, ne glede na to, ali gre za odpadne izdelke ali steklo pripravljeno za reciklažo, kaže, da imamo pred seboj ostanke izdelkov, ki so bili v uporabi od konca 1. do vključno 3. stoletja.

Med odlomki, ki jih po njihovih značilnostih lahko datiramo v drugo polovico 1. stoletja, sodijo ostanki ustij balzamarijev in steklenic z navznoter zavihanim in sploščenim ustjem (*t. 7: 7; 8: 4*), del ročaja vrča, ki se na spodnji strani šapasto razširi (*t. 8: 10*), dvojna guba na ostenju, ki jo najdemo na kantarosih in nekaterih čašah (*t. 5: 11*) ter tudi odlomki dnov in ostenij kvadratnih steklenic (*t. 1: 6-8; 2: 1*).

Za 2. stoletje so še vedno značilni odlomki kvadratnih steklenic, odlomki cilindričnih čaš z ravnim in odebeljenim ali izvihanim in zataljenim ustjem (*t. 1: 3, 4; 5: 3, 7*), cevasto navzdol zavihano ustje (*t. 5: 1, 9*), ostanki balzamarijev s trebušastim in cevastim ostenjem (*t. 5: 12; 1: 10*).

V naslednje, 3. stoletje, trajajo še prej omenjene cilindrične čaše, okrasi z nataljeno nitjo po ostenju v isti ali kontrastni barvi (*t. 2: 6; 6: 5*), kvadratni lonci (*t. 6: 12*), v manjši meri pa tudi kvadratne steklenice. Glede na ostanke steklenih izdelkov predvidevamo čas obratovanja peči na Spodnji Hajdini v 2. in morda še na začetku 3. stoletja.

Most of the other fragments belonged to broken glass vessels, which were collected in every glass workshop and were added to the crucible of molten glass so as to be cleaner. The possible remains of the products of the Ptuj workshops should be sought among this fragments.

A fair number of fragments were from square bottles. Three base fragments (*Pl. 1: 6-8*) were decorated with a rosette, and a few fragments of walls were preserved (*Pl. 2: 1; 6: 11, 12*), as well as several pieces of reeded handles, characteristic for these bottles (*Pl. 8: 2, 3, 12*). Fragments of vessels with a ring base (*Pl. 5: 14*) and a base with a drawn out ringed foot (*Pl. 1: 5; 5: 16, 17*) probably belonged to simple cylindrical beakers (forms 3.6.1. and 3.6.2.), which were very popular in the 2nd century.

No traces of vessel fragments from the late Roman period could be found among the material from both workshops. The glass was of high quality, green-blue or blue-green, and the remains of the vessels were fairly thinly blown, with almost no air bubbles.

A review of the discarded material of the workshops, without consideration of whether this was discarded products or glass prepared for recycling, indicates that this represents the remains of products that were in use from the end of the 1st up to and including the 3rd centuries.

Fragments that can be dated on the basis of their characteristics to the second half of the 1st century include remains of the rims of balsamaria and small flasks with an inwardly bent and flattened rim (*Pl. 7: 7; 8: 4*), part of a jug handle with a clawed broadening at the bottom (*Pl. 8: 10*), double fold on the walls, which can be found on kantharoi and some beakers (*Pl. 5: 11*), as well as fragments of the bases and walls of square bottles (*Pl. 1: 6-8; 2: 1*).

Still characteristic for the 2nd century are fragments of square bottles, fragments of cylindrical beakers with straight and thickened or everted and fire-rounded rims (*Pl. 1: 3, 4; 5: 3, 7*), tubular rims rolled downwards (*Pl. 5: 1,.9*), and the remains of balsamaria with globular ands tubular walls (*Pl. 5: 12; 1: 10*).

In the following 3rd century, the previously mentioned cylindrical beakers still continued, as well as decorations with applied trails on the walls in the same or contrasting colours (*Pl. 2: 6; 6: 5*), square jars (*Pl. 6: 12*), and to a lesser extent square bottles. The remains of glass products indicate that the furnaces at Spodnja Hajdina were in function in the 2nd century and perhaps also at the beginning of the 3rd century.

KATALOG

TABLA 1
Hameršek, ob peči 1 (1-10).

1. Del ustja posode, steklo, pr. 12 cm, PMP 4780/1.
2. Del ustja posode, steklo, pr. 9 cm, PMP 4780/2.
3. Del odebeljenega ustja in ostenja čaše, steklo, pr. 5,2 cm, PMP 4780/3.
4. Del odebeljenega ustja, steklo, vel. 3,8 x 0,8 cm, PMP 2271/4.
5. Dno posode, oblikovano v prstanasto nogo, steklo, pr. 5 cm, PMP 4780/4.
6. Del dna steklenice z odtisom rozete, steklo, vel. 3,9 x 2,8 cm, PMP 2271/2.
7. Del dna steklenice z ostankom odtisa kroga, steklo, vel. 3,5 x 1 cm, PMP 2271/3.
8. Del dna steklenice z odtisom rozete, steklo, vel. 5,8 x 3,6 cm, PMP 2271/1.
9. Del vratu stekleničke, steklo, pr. 2, 6 cm, PMP 4780/5.
10. Spodnji del balzamarija, steklo, ohr. v. 4 cm, pr. 1,9 cm, PMP 5093/1.

TABLA 2
Hameršek, ob peči 2 (1-3), peč 3 (4-6).

1. Del ostenja steklenice (?), steklo, vel. 2,9 x 9,5 cm, PMP 5100/2.
2. Noga čaše, steklo, pr. 4 cm, PMP 5100/1.
3. Noga posode, steklo, pr. 3,8 cm, PMP 5094/1.
4. Kapljica stekla, steklo, dl.2,2 cm, PMP 5561/3.
5. Del noge, steklo, pr. 5,3 cm, PMP 5561/1.
6. Del ostenja z nataljenim okrasom, steklo, vel. 2,5 x 3,4 cm, PMP 5561/2.

TABLA 3
Preložnik, peč 2.

1. Del stekla, odlomljenega ob pipi, vel. 2,4 x 1 cm, PMP 5576/17a.
2. Deformirano ustje ali odlomek s pipe, steklo, vel. 2,5 x 1,3 cm, PMP 5577/2.
3. Del stekla, odlomljenega ob pipi, vel. 2,2 x 1,3 cm, PMP 5576/17d.
4. Del stekla, odlomljenega ob pipi, vel. 1,8 x 1,2 cm, PMP 5576/17c.
5. Del stekla, odlomljenega ob pipi, vel. 1,9 x 1 cm, PMP 5576/17e.
6. Del stekla, odlomljenega ob pipi, vel. 1,7 x 1,2 cm, PMP 5576/17b.
7. Del stekla, odlomljenega ob pipi, vel. 2,2 x 1 cm, PMP 5576/17a.
8. Del stekla, odlomljenega ob pipi, vel. 2,4 x 1,6 cm, 5576/17f.
9. Del stekla s steklarske pipe, vel. 2 x 1, 8 cm, PMP 5575/4.
10. Staljena kaplja stekla, vel. 1,3 x 1,9 cm, PMP 5576/18c.
11. Staljena kaplja stekla, vel. 1 x 0,8 cm, PMP 5576/18a.
12. Staljena kaplja stekla, vel. 1,4 x 1,2 cm, PMP 5576/18b.
13. Staljena kaplja stekla, vel. 1,2 x 2,2 cm, PMP 5576/18e.
14. Staljena kaplja stekla, vel.1,2 x 1,9 cm, PMP 5576/18g.
15. Staljena kaplja stekla, vel. 2,7 x 2,8 cm, PMP 5576/18f.

TABLA 4
Preložnik, peč 2.

1. Raztegnjena kaplja stekla, dl. 3,6 cm, PMP 5576/16a.
2. Raztegnjena kaplja stekla, dl. 3,4 cm, PMP 5576/16f.
3. Raztegnjena kaplja stekla, dl. 4,3 cm, PMP 5576/16b.
4. Raztegnjena kaplja stekla, dl. 3,5 cm, PMP 5576/16g.
5. Raztegnjena kaplja stekla, dl. 4,2 cm, PMP 5576/16c.
6. Raztegnjena kaplja stekla, dl. 2,6 cm, PMP 5576/16h.
7. Raztegnjena kaplja stekla, dl. 1,7 cm, PMP 5576/16i.
8. Raztegnjena kaplja stekla, dl. 3,1 cm, PMP 5576/16d.
9. Raztegnjena kaplja stekla, dl. 1,9 cm, PMP 5576/16j.
10. Raztegnjena kaplja stekla, dl. 2 cm, PMP 5576/16e.
11. Raztegnjena kaplja stekla, dl. 2,2 cm, PMP 5576/16k.
12. Raztegnjena steklena kaplja, dl. 2,1 cm, PMP 5577/5.
13. Staljena kaplja stekla, vel. 1,4 x 4,5 cm, PMP 5576/18h.
14. Stopljeno steklo, vel. 2 x 2,5 cm, PMP 5575/12.
15. V kapljo oz. nitko potegnjeno steklo, vel. 4,4 x 1,7 cm, PMP 5575/5.
16. Staljena kaplja stekla, vel. 3 x 1,9 cm, PMP 5576/18d.

TABLA 5
Preložnik, peč 2.

1. Del cevasto zavihanega ustja, steklo, pr. 10 cm, PMP 5577/4.
2. Del izvihanega in zataljenega ustja, steklo, vel. 1,9 x 0,9 cm, PMP 5575/3.
3. Izvihano ustje čaše, steklo, pr. 7 cm, PMP 5576/5.
4. Del izvihanega in zataljenega ustja posode, steklo, vel. 1,9 x 0,8 cm, PMP 5576/6.
5. Del cevasto zavihanega ustja posode, steklo, vel. 4,2 x 0,5 cm, PMP 5575/2.
6. Del cevasto zapognjenega ustja, steklo, vel. 2,8 x 0,4 cm, PMP 5576/12.
7. Del nazaj zavihanega in sploščenega ustja, steklo, vel. 2,2 x 1 cm, PMP 5577/3.
8. Del cevasto zapognjenega in sploščenega ustja, steklo, vel. 3,2 x 0,5 cm, PMP 5576/13.
9. Del izvihanega in zataljenega ustja, steklo, vel. 2,7 x 0,8 cm, PMP 5577/1.
10. Del cevasto zapognjenega ustja, steklo, vel. 3,4 x 0,4 cm, PMP 5576/14.
11. Del ostenja posode s cevasto zavitim robom, steklo, vel. 3,3 x 0,9 cm, PMP 5576/15.
12. Del dna in ostenja stekleničke, steklo, pr. 5,4 cm, ohr. v. 3,5 cm, PMP 5576/2.
13. Del trakastega ročaja, steklo, vel. 2,4 x 2,7 cm, PMP 5576/10.
14. Dno čaše s prstanasto nogo, steklo, pr. 3,9 cm, PMP 5576/8.
15. Del vratu posode, steklo, vel. 2,2 x 1,2 cm, PMP 5576/19.
16. Del dna čaše s prstanasto nogo, steklo, pr. 3,3 cm, PMP 5576/7.
17. Del dna čaše s prstanasto nogo, steklo, pr. 5,4 cm, PMP 5575/1.

TABLA 6
Preložnik, peč 2.

1. Del vratu in ramena posode, steklo, vel. 3, x 1,7 cm, PMP 5576/4.
2. Del ostenja posode, steklo, vel. 5 x 3,5 cm, PMP 5576/3.
3. Odlomek posode, steklo, vel. 3,2 x 4 cm, PMP 5575/11.
4. Del temno modrega stekla, vel. 3,1 x 2,6 cm, PMP 5575/7.
5. Del ostenja posode z nataljeno nitko, steklo, vel.1,9 x 2 cm, PMP 5576/9.
6. Odlomek posode, steklo, vel. 1,9 x 2,8 cm, PMP 5575/9.
7. Del ostenja posode, steklo, vel. 3,8 x 2,1 cm, PMP 5575/6.
8. Del vratu posode, steklo, vel. 1,7 x 1,4 cm, 5576/20.
9. Odlomek posode, steklo, vel. 2,8 x 2 cm, 5575/8.
10. Odlomek posode, steklo, vel. 4,6 x 4,7 cm, PMP 5575/10.
11. Del dna kvadratne steklenice z odtisom koncentričnih krogov, steklo, vel. 6,1 x 3,9 cm, PMP 5576/1.

TABLA 7
Preložnik, ob peči 2 (1-3), površinsko (4-9), peč 1 (10).

1. Del navzven cevasto dvakrat zavihanega ustja posode, steklo, vel. 3,2 x 1,9 cm, PMP 5453/11.
2. Del prstanastega dna čaše, steklo, pr. 5,1 cm, PMP 5453/10.
3. Steklena nitka, dl. 4,1 cm, PMP 5453/9.
4. Del ostenja in ročaja posode, steklo, vel. 2,9 x 1,3 cm, PMP 5409/1.
5. Deformiran del profiliranega ročaja, steklo, vel. 1,5 x 2,7 cm, PMP 5409/2.
6. Del narebrenega kosa stekla, vel. 1,8 x 1,5 cm, PMP 5410/2.
7. Del navznoter zapognjenega in sploščenega ustja in vratu stekleničke, steklo, pr. ustja 2,4 cm, ohr. v. 1,8 cm, PMP 5410/1.
8. Del odebeljenega ustja ali noge, steklo, vel. 2,3 x 1 cm, PMP 5410/3.
9. Odlomek zvitega kosa stekla, kot ročaj, vel. 2,5 x 2,2 cm, PMP 5455/1.
10. Ročaj mešalne palčke, steklo, pr. 3 cm, db. 0,4-0,9 cm, PMP 5414/1.

TABLA 8
Preložnik, peč 3 (1-9), SV del ob peči 3 (10-12).

1. Del ostenja in ročaja, steklo, vel. 2,7 x 3 cm, PMP 5460/3.
2. Del narebrenega ročaja, steklo, vel. 2,6 x 2,9 cm, PMP 5571/8.
3. Del narebrenega ročaja, steklo, vel.2,8 x 3,3 cm, PMP 5460/2.
4. Del navznoter zapognjenega in sploščenega ustja stekleničke, steklo, pr. 4 cm, PMP 5415/4.
5. Del ostenja in ročaja posode, steklo, vel. 2,2 x 2,4 cm, PMP 5460/1.
6. Del ramena steklenice (?), steklo, vel. 4,2 x 1 cm, PMP 5415/5.
7. Del dna posode iz temno zelenega stekla, pr. 6 cm, ohr. v. 0,8 cm, PMP 5572/3.
8. Odlomek stekla s konca steklarske pipe, vel. 2,5 x 0,8 cm, PMP 5571/7.
9. Odpadek stekla s steklarske pipe, vel. 2,3 x 1,7 cm, PMP 5572/2.
10. Del ostenja in spodnji del ročaja posode, steklo, vel. 2,5 x 2,8 cm, PMP 5404/2.
11. Del ostenja in trakast ročaj posode, steklo, vel. 2,2 x 1,4 cm, š. ročaja 0,9 cm, PMP 5404/3.
12. Del gosto narebrenega ročaja, steklo, vel. 2 x 2,6 cm, PMP 5404/1.

ZAKLJUČEK

Rimskodobno stekleno gradivo, ki se pojavlja na ozemlju današnje Slovenije, je bilo razvrščeno v deset skupin posodja, v okviru katerega smo lahko določili 154 različic posameznih oblik. Za razvrstitev po različicah smo upoštevali samo tiste odlomke, ki so bili ohranjeni toliko, da smo iz njih lahko razbrali dovolj izrazite značilnosti. Zbrano gradivo nam je po razvrstitvi v skupine in določitvi posameznih različic znotraj teh skupin ponudilo dovolj značilnosti, na osnovi katerih lahko strnemo nekaj poudarkov in ugotovitev.

Razmerje med posameznimi steklarskimi tehnikami, ki je prikazano na grafu, kaže popolno prevlado pihanih izdelkov (*sl. 66*). To je razumljivo, saj gre za novo tehniko, ki je izpodrinila bolj zamudne in drage procese izdelave (izdelovanje s pomočjo kalupov), hkrati pa njen razvoj sovpada s širitvijo rimske države tudi na naše področje in popolno romanizacijo tega prostora. Pihanje v kalup je proces, ki se razvije kasneje in zaradi svoje zahtevnosti ne doživi zelo velikega razmaha, bolj je vezan na trenutne želje in okus posameznih skupin odjemalcev, le-ta pa je vedno podvržen hitrim spremembam.

Razmerje posameznih skupin izdelkov, glede na njihovo uporabo, je pokazalo, da močno prevladuje namizno posodje (70 %), saj je bilo steklo zaradi svoje krhkosti za tako uporabo tudi najbolj primerno. Za shranjevanje in transport je bilo namenjenih 21% posodja, ki ga predvsem zastopajo različne steklenice in lonci, ki so služili za shranjevanje živil. Preostali procenti izdelkov pripadajo različnim posodam za kozmetične in medicinske pripomočke in manjši skupini ostalih oblik, ki se pojavljajo le kot posamični primeri (*sl. 67*).

Pregled števila različic po posameznih skupinah (*sl. 68*) prav tako pokaže, da so najbolje zastopani izdelki, ki so služili kot del namiznega servisa. Skodelice in čaše (skupini 2 in 3) po svoji količini in številu različic povsem odstopajo in izstopajo izmed preostalih steklenih izdelkov. Njihovo zastopanost skozi stoletja in medsebojni odnos je bilo mogoče primerjati skozi več stoletij. Čeprav čaše po številu različic presegajo skodelice, je pri obeh oblikah opazen enakomeren porast od konca 1. in v 2. stoletju ter nato izreden upad v kasnejših stoletjih.

S tema skupinama smo po količini lahko vzporejali samo še skupini 5 in 6 (vrče in steklenice), ki sta glede na število različic in količino izdelkov dokaj dobro zastopani, število ostalih izdelkov je bilo za ustrezno primerjavo preskromno.

Vrči (skupina 5) so dokaj razširjeni v prvih dveh stoletjih, njihova uporaba traja še do prve polovice

CONCLUSION

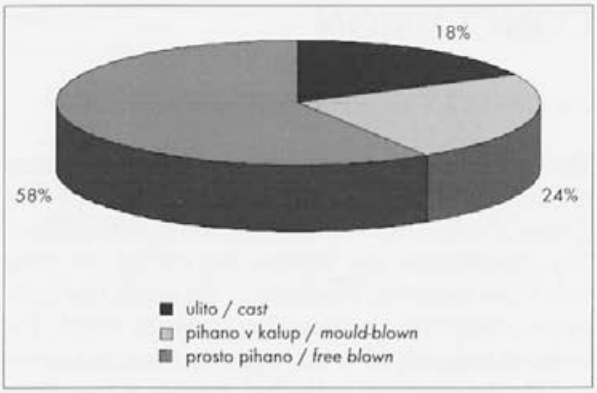
The Roman period glass material found on the territory of present-day Slovenia has been classified into ten groups of vessels, with 154 different forms distinguished. The classification into variants was carried out using only those fragments preserved to the extent that sufficiently distinctive characteristics could be noted. The collected material, following its classification into groups and the definition of individual variants within those groups, offered sufficient characteristics on the basis of which some points for emphasis and findings could be summarized.

The proportions among individual glass working techniques, as shown on the graph, indicate a total predominance of blown products (*Fig. 66*). This is understandable since it was a new technique that supplanted more complicated and expensive manufacturing processes (production using moulds), and at the same time its development coincided with the extension of the Roman state into the territory of Slovenia and the complete Romanization of this area. Blowing into a mould was a process that developed later and because of its demanding requirements, it did not experience any great popularity. Rather it was tied to the momentary desires and tastes of individual groups of customers, which were always subject to sudden changes.

The proportions of individual groups of products in reference to their use showed that tableware predominated greatly (70%), as glass was best suited for such a purpose because of its fragility. Storage and transport was the purpose of 21% of the vessels, primarily represented by various bottles and jars that served for the storage of provisions. The remaining products were various small vessels for cosmetics and medical preparations, and smaller group of other forms that appear only as individual examples (*Fig. 67*).

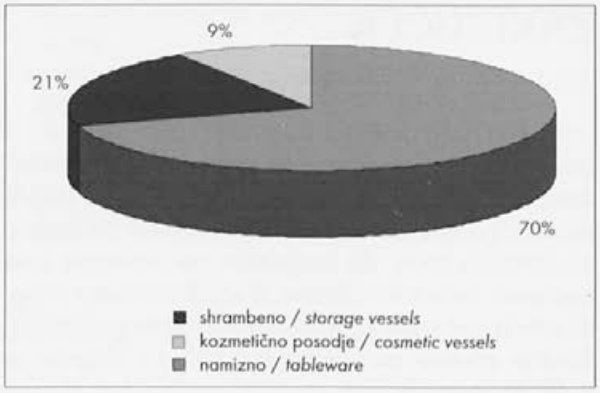
A review of the number of variants per individual form (*Fig. 68*) also shows that products that served as part of a table service were best represented. Bowls and beakers (groups 2 and 3) diverge and stand out from the remaining glass products in terms of quantity and the number of variants. Their representation and mutual relations could be compared through several centuries. Although beakers exceed bowls in terms of quantity, an equal growth was noted for both forms from the end of the 1st century and in the 2nd century, with a subsequent exceptional decline in later centuries.

With these groups could be compared in terms of quantity only groups 5 and 6 (jugs and bottles), which in terms of the number of variants and quantity of products were fairly well represented, while the number of the other products was too modest for suitable comparison.



Sl. 66: Grafikon s prikazom števila oblik po posameznih tehnikah.

Fig. 66: Graph showing the number of forms for individual techniques.



Sl. 67: Grafikon s prikazom razmerij med namiznim, shrambenim in kozmetičnim posodjem.

Fig. 67: Graph showing the proportions between groups of products.

tretjega, nato pa njihova količina močno upade. Primerjava s steklenicami lepo pokaže, da je razmerje med številom različic obeh oblik nekje do sredine 3. stoletja še dokaj uravnoteženo, nato pa steklenice povsem prevladajo.

Steklenice se pojavljajo vse do konca 4. stoletja in kažejo dokaj enakomerno zastopanost od druge polovice 1. stoletja dalje. Primerjava dveh podskupin je pokazala prevlado steklenic z ročajem v prvih dveh stoletjih in njihov močan upad v 3. in 4. stoletju. V mlajših stoletjih se pojavljajo redko in v uporabi prevladajo navadne steklenice brez ročajev.

Na posebnem grafu smo primerjali število oblik in njihovih različic skozi stoletja (*sl. 69*). Rast števila različic v 1. stoletju na eni strani in na drugi upad števila oblik in različic v 4. in 5. stoletju odražata tako razvoj in zastopanost uporabe steklenih izdelkov v materialni kulturi rimske dobe na našem ozemlju, kot tudi gospodarske razmere v državi.

Že v 1. stoletju je očiten premik med prvo in drugo polovico. Samo v prvi polovici 1. stoletja so vse tri tehnike izdelave dokaj enakomerno zastopane in količina izdelkov kaže na določeno sorazmerje. V drugi polovici 1. stoletja število oblik naraste za več kot 100 % in dokazuje razširitev uporabe stekla med vsemi sloji prebivalstva in ne nazadnje tudi popolno romanizacijo prostora današnje Slovenije. Do konca tega stoletja so bile na novo ustanovljene in dobile mestne pravice vse večje naselbine, z vzpostavitvijo cestne mreže in provincialne uprave je rimska civilizacija zajela celotno slovensko ozemlje.

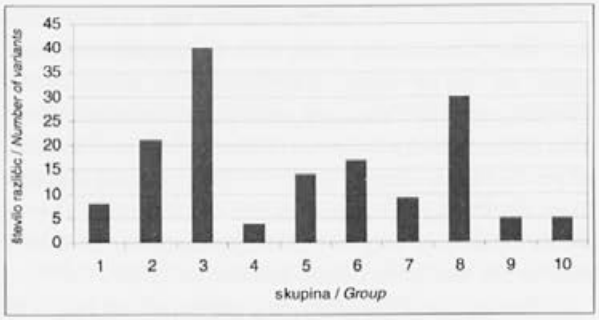
Med ulitimi izdelki v prvi polovici 1. stoletja prevladuje rebrasta skodelica (oblike 2.1.4.-2.1.6.) v različnih izvedbah, ki jo najdemo med grobnimi in naselbinskimi najdbami. V tej skupini izdelkov najdemo tudi kar nekaj luksuznih kosov mozaičnega stekla

Jugs (group 5) were somewhat widespread in the first two centuries, and their use extended up to the first half of the third, after which their quantity declined drastically. Comparisons with bottles show quite well that the proportions between these forms were fairly balanced to sometime in the mid 3rd century, after which bottles were entirely predominant.

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

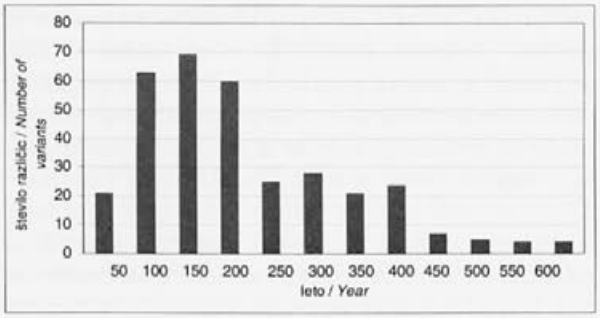
One graph was used to compare the number of forms and their variants through the centuries (*Fig. 69*). The increase in the number of variants in the 1st century on the one hand, and on the other the decline in the number of forms and variants in the 4th and 5th centuries reflect the development and representation of glass products in the material culture of the Roman period in Slovenia, as well as the economic conditions prevailing in the state.

Even in the 1st century, a changing point between the first and second halves is evident. Only in the first half of the 1st century were all three manufacturing techniques more or less equally represented, and the quantity of products indicates a relative proportion between them. In the second half of the 1st century, the number of forms increased by more than 100%, showing that the use of glass had spread among all strata of the population, and further indicating the total Romanization of the region of present-day Slovenia. To the end of that century, all larger settlements were awarded municipium status, receiving rights of citizenship, and with the es-



Sl. 68: Grafikon s prikazom števila različic po skupinah.

Fig. 68: Graph showing the number of variants per group.



Sl. 69: Grafikon s prikazom števila različic skozi stoletja.

Fig. 69: Graph showing the number of variants through the centuries.

(najdbe iz Polhovega Gradca), ki so bili uvoženi iz severno italskih delavnic. Posebno vrednost ima steklenička z zlato folijo s Hasberga (oblika 8.1.1.), ki je predstavnik najkvalitetnejših izdelkov rimskega steklarstva (sl. 70). Luksuzni import je tudi v kalup pihana piksida iz belega neprosojnega stekla iz Petovione, ki je nastala verjetno v Sidonu v Libanonu (oblika 10.1.1.).

V drugi polovici 1. stoletja prevladajo izdelki iz pihanega, modro-zelenkastega stekla. Pri njihovi izdelavi so značilna nazaj zapognjena in sploščena ustja, trikotno

Sl. 70: Steklenička iz obarvanega stekla z dodano zlato folijo. Hasberg, Narodni muzej Slovenije, Ljubljana (foto: T. Lauko).

Fig. 70: Flask made of polychrome gold-band glass. Hasberg, Narodni muzej Slovenije, Ljubljana (photo: T. Lauko).

tablishment of the road network and provincial administration, Roman civilization took over the entire territory of Slovenia.

In the group of cast products in the first half of the 1st century ribbed bowls predominate (forms 2.1.4.-2.1.6.), found in various versions among grave and settlement finds. This group of products also includes several luxurious pieces of mosaic glass (the finds from Polhov Gradec), which were imported from northern Italian production centers. Of particular value is the small flask with gold foil from Hasberg (form 8.1.1.), which represents the highest quality products of Roman glass industry (Fig. 70). Another luxurious import was the pyxis of white opaque glass from Poetovio, which was probably made at Sidon in Lebanon (form 10.1.1.).

Products of blown blue-green glass predominated in the second half of the 1st century. Characteristic forms had bent back and flattened rims, triangularly shaped rims, tubular rolled rims, while the base was often simply formed and concave in the center, sometimes the standing surface was drawn out on the edge, and formed or pressed into a low ring base. Many forms imitate products made from precious materials, such as two-handled beakers (skyphoi - 3.7.5.) and footed goblets (chalices - 3.8.1.) with a characteristic stepped rim. Such forms are no longer found in the following centuries, except as individual pieces. A special feature of this period was also small ladle with a vertical handle (forms 4.2.1.; 4.2.2.), and shallow dishes and jugs of coloured glass also appear.

Also very popular and well represented in the second half of the 1st century were small globular bowls with ribs and an impressed decoration of horizontal trails (so-called *zarte Rippenschale* - 2.3.1.). The bowl from Logatec (2.1.8.) stands out, as it shows that wealthy individuals followed changes in fashion and demand. The popularity of deliberately decoloured glass, imitating products made from rock crystal, was characteristic for the Flavian period, and the bowl with facet-cut decoration made of decoloured glass is the most attractive example from that period in Slovenia (form 2.1.8.).

oblikovana, cevasto navzven zavihana ustja, dno je pogosto enostavno oblikovano in na sredini vboklo, ponekod je stojna ploskev na robu izvlečena in oblikovana ali stisnjena v nizko prstanasto nogo. Mnoge oblike še posnemajo izdelke iz plemenitih materialov, tako najdemo med njimi dvoročajne čaše (skifose - 3.7.5.) in čaše na nogi (kelihe - 3.8.1.) z značilnim stopničastim ustjem. Teh oblik v naslednjih stoletjih ne najdemo več ali pa samo kot posamične kose. Posebnost tega časa so tudi male zajemalke s pokončnim ročajem (obliki 4.2.1.; 4.2.2.), pojavljajo se nizki krožniki in vrči iz obarvanega stekla.

V drugi polovici 1. stoletja je zelo priljubljena in tudi številno zastopana mala kroglasta skodelica z rebri in vtisnjenim okrasom vodoravnih črt (t. i. *zarte Rippenschale* - 2.3.1.). Posebnost predstavlja skodelica iz Logatca (2.1.8.), ki dokazuje, da so premožni posamezniki povsod sledili spremembam v okusu in povpraševanju. Priljubljenost namerno razbarvanega stekla, ki posnema izdelke iz kamene strele, je značilna za flavijsko dobo in skodelica z vrezanim okrasom iz razbarvanega stekla je pri nas najlepši primer iz tega obdobja (oblika 2.1.8.).

Mnogi izdelki druge polovice 1. stoletja so pihani iz stekla z izrazito modrikastim nadihom, to je opazno pri predmetih iz grobov flavijskega časa v Celeji in nekaterih steklenih servisih v Emoni. Ta posebnost govori o sorodnem ali enakem izvoru izdelkov, ki so v teku 1. stoletja prihajali k nam predvsem s posredništvom Akvileje kot osrednjega trgovskega centra za naš prostor. Izvor večine izdelkov smemo pripisati severno italskim delavnicam (sl. 71).

V teku 2. stoletja je rimski imperij v obdobju vlade sposobnih in močnih adoptivnih cesarjev doživljal ekonomsko in politično moč. Dosegel je največji teritorialni obseg in materialno blaginjo. Stabilnost države je omogočala bogato civilno življenje tako v sami Italiji kot v provincah, zagotovljena je bila nepretrgana trgovina in razcvet obrti, kar se je seveda odrazilo tudi v steklarstvu.

Drugo stoletje kaže nadaljevanje izrednega razmaha v uporabi steklenih izdelkov. Mnoge oblike, ki so se pojavile že v 1. stoletju, so še vedno v uporabi. To so predvsem steklenice z ročaji (6.3.1. do 6.3.5.), skodelice z ovratnikom (2.4.5.), nekatere oblike gubank (3.5.1. in 3.5.2.), ki se jim pridružijo nove različice (3.5.4. do 3.5.7.). Zelo razširjene so enostavne cilindrične čaše (obliki 3.6.1. in 3.6.2.), ki se pojavljajo v mnogih

Sl. 71: Enoročajni vrček z vtisnjenimi lisami obarvanega stekla. Dobova, gr. A 36, Posavski muzej Brežice (foto: T. Lauko).

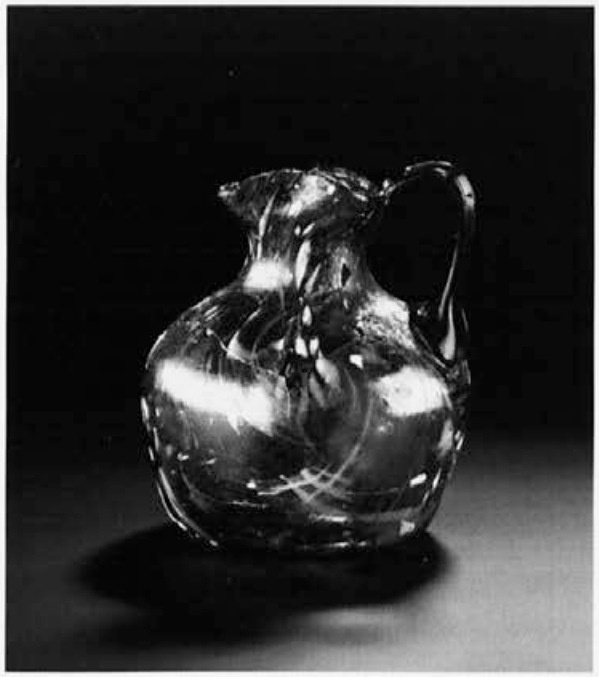
Fig. 71: Jug with marvered decoration of coloured glass blobs. Dobova, grave A 36, Posavski muzej Brežice (photo: T. Lauko).

Many products from the second half of the 1st century were blown from glass with an emphasized blue shade, as can be noted on artifacts from graves of the Flavian period in Celeia and several glass sets in Emona. This special feature indicates related or identical sources of products that during the 1st century primarily reached Slovenia through Aquileia as the central trade center for this area. The majority of the products can be attributed to the northern Italian workshops (Fig. 71).

During the 2nd century, in a period of the reigns of competent and powerful adoptive rulers, the Roman Empire experienced great economic and political power. It achieved its greatest territorial extent and material prosperity. The stability of the state enabled a rich civilian life in the provinces as well as in Italy, and uninterrupted trade flourished, leading to the further development of crafts and industry, which was certainly reflected also in the production of glass.

The second century showed a continuation of the exceptional growth in the use of glass products. Many forms that appeared as early as the 1st century were still in use. These were primarily bottles with a handle (6.3.1. to 6.3.5.), collared bowls (2.4.5.), and some forms of indented beakers (3.5.1. and 3.5.2.), which were joined by new variants (3.5.4. to 3.5.7.). Simple cylindrical beakers (forms 3.6.1. and 3.6.2.) were very widespread, which appeared in many sizes and variants. They were often made of decoloured glass. High quality thinly blown beakers and indented beakers from milk white glass were also popular. Cast products disappeared from use, particularly ribbed bowls, and small globular ribbed bowls with trailed decoration were also no longer widespread.

Certain special features and changes in production can be noted, characteristic for this and the following



velikostih in različicah. Velikokrat so izdelane iz dekoloriranega stekla, priljubljene pa so tudi kvalitetne, tanko pihane čaše in gubanke iz mlečno belega stekla. Iz uporabe izginejo uliti izdelki, predvsem rebraste skodelice, tudi kroglaste skodelice z rebri niso več razširjene.

Pri izdelavi je opaziti nekaj posebnosti in sprememb, značilnih za to in naslednje stoletje. Izdelava ustja je bolj preprosta, rob je zataljen ali odebeljen, ustja steklenic so enostavno izvihana, nekoliko lijakasta, dno ima najpogosteje nataljeno prstanasto nogo, ki je enojna ali dvojna. Poudarjena je enostavna forma, okrasa je manj, prevladujejo gube. Dve okrasni tehniki se na novo pojavita v tem stoletju in sicer nataljene niti stekla po ostenju, vratu, tudi po vsej posodi ter vrezan geometrijski okras, ki se kasneje razvije tudi v figuralne motive, vezane na religiozno in vsakdanje življenje.

Del povpraševanja po steklenem posodju za vsakodnevno rabo so v tem času prav gotovo že zadovoljile domače delavnice. Najdbe iz Ptuja in Celja dokazujejo obstoj steklarske proizvodnje vsaj od 2. stoletja dalje.

Večina izdelkov, predvsem boljše kvalitete, še vedno prihaja iz severno italskih delavnic (npr. 2.4.1.; 2.4.4.; 3.5.6.), konec 2. stoletja pa se jim že pridružijo izdelki centrov iz Porenja (npr. 2.6.2.).

Med dragocenimi izdelki moramo omeniti nekaj najdb s Ptuja. Nataljen okras je na kvalitetnejših posodah posnemal vegetabilne in figuralne motive. Ti izdelki so bili uvoženi iz vzhodnih delavnic, zanje je značilno brezbarvno, namerno razbarvano steklo in okras v enaki barvi. Dve čaši na nogi iz Petovione sta lep primer teh posod (oblika 3.8.4.). Proizvodi zahodnih, predvsem kölnskih delavnic, ki so krasile posode z raznobarvnimi steklenimi nitmi, zaenkrat pri nas niso zastopani v večji meri, ohranjenih je le nekaj manjših odlomkov (Lazar 1993, 9, t. 2: 4).

Razgibani politični dogodki v 3. stoletju, stalna nasprotja in spopadi za oblast so se kmalu odrazili tudi v ekonomiji države, negotove razmere so vplivale na celotno gospodarstvo. V 3. stoletju je tudi na vzhodnoalpskem prostoru že opaziti precejšen upad količine steklenih izdelkov, posamezne oblike izginejo iz uporabe in se ne pojavljajo več. Tako kot količina samih steklenih posod se zmanjša tudi raznolikost oblik.

Različni enostavni vrezani okrasi, ki so se pojavljali že na izdelkih v 2. stoletju (npr. pri obliki 2.6.2.), zdaj prerastejo v zahtevnejše geometrijske in figuralne motive (6.3.7.). Vse bolj razširjene postanejo enostavne polkroglaste oblike skodelic (2.6.1.) in čaš (3.10.1.), spremenijo se tudi detajli v izdelavi, predvsem način obdelovanja ustja posod. Vse več je izdelkov z ravno odrezanim ustjem, ki je ponekod obrušeno, pri bolj preprostih izdelkih pa še to ne.

Značilen izdelek 3. stoletja so polkroglaste skodelice dokaj debelega ostenja iz brezbarvnega ali tudi

century. The formation of the rim was more simple, the edge was fire-rounded or thickened, rims of bottles were simply turned out, somewhat funnel-like, the base most often had an applied single or double ring foot. The emphasis was on simple forms; the decoration was reduced, indentations predominating. Two decorative techniques newly appeared in this century: the application of glass threads or trails on the walls, neck, and even all over the vessels, and wheel-cut geometric decoration that later developed into figural motifs related to religion and everyday life.

Part of the demand for glass vessels for everyday use in that period was certainly satisfied by products from local workshops. The finds from Ptuj and Celje prove the existence of glass production from at least the 2nd century onwards.

Most of the products, and particularly those of better quality, still came from the northern Italic workshops (e.g. 2.4.1.; 2.4.4.; 3.5.6.), and at the end of the 2nd century they were joined by production centers from the Rhine valley (e.g. 2.6.2.).

Some finds from Ptuj must be mentioned among the valuable products. The applied decoration on higher quality vessels copied floral and figural motifs. These products were imported from eastern workshops, and they were characterized by deliberately decoloured glass and decoration in the same colour. Two footed goblets from Poetovio are a good example of such vessels (form 3.8.4.). Products of the western, mostly Köln workshops, where the vessels were decorated with multicoloured glass threads, at present are not represented to any great extent in Slovenia, as only a few small fragments have been preserved (Lazar 1993, 9, Pl. 2: 4).

The tumultuous political events in the 3rd century, the constant contentions and conflicts to gain power soon began to be reflected in the economic situation in the state, the uncertain conditions affected the entire economy. A considerable decline in the quantity of glass products can also be perceived in the 3rd century in the eastern Alpine region. Some individual forms pass out of use. The variety of individual forms was also reduced in addition to the quantity of vessels.

The various simple wheel-cut decorations that appeared on products in the 2nd century (such as on form 2.6.2.), at this point evolved into demanding geometric and figural motifs (6.3.7.). Simple hemispherical forms of bowls (2.6.1.) and beakers (3.10.1.) became ever more widespread, and details of the manufacture also changed, primarily referring to the manner of forming the rims of the vessels. 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 opaque white glass, decorated

motno belega stekla, ki jih krasijo geometrijski okrasi krogov, mandljastih vdolbin in rombov (oblika 2.6.2.). Najdragocenejši izdelki tega obdobja so posode z vrezanim figuralnim okrasom in z okrasom visokega reliefa. Med redkimi ohranjenimi kosi najdemo v Petovioni ponovno dva izdelka, ki sodita med vrhunske izdelke rimske steklarske obrti in sta bila najdena v istem grobu. Steklenico iz brezbarvnega stekla krasi vrezan motiv s prizorom svetilnika in morja (oblika 6.3.7.), dvoročajni kantaros pa reliefno izdelan rastlinski vzorec (oblika 3.7.4.).

Poleg že omenjenih velja nameniti pozornost tudi skodelici z napisom iz zlate folije na dnu. Črke in napis so že skoraj neprepoznavni, pripadali pa so plitvi polkroglasti skodelici (?), luksuznemu izdelku iz 3. stoletja (Mikl Curk 1963, 493; Filippini 1996, 124).

V 4. stoletju se število oblik izredno zmanjša, prav tako število posameznih različic. Prevladujejo konične čaše (3.9.1., 3.9.2., 3.10.2.) in polkroglaste skodele z ravno odrezanim, klekasto oblikovanim ustjem (2.6.4. in 2.6.5.), dno je ravno ali rahlo vboklo, ponekod se pojavlja tudi prstanasta noga. Redek okras predstavljajo le horizontalne brušene linije, ki se jim kasneje pridružijo še nataljene kaplje stekla v kontrastni barvi. Nova oblika pozno rimske dobe so konične svetilke in svetilke z ročaji (9.1.-9.2.), pri katerih je včasih težko opredeliti, ali gre za čaše ali svetilke.

Shrambenega posodja je malo (6.2.6., 6.2.8.). Steklenice imajo pogosto ravno odrezano, navzven nagnjeno ustje, pojavlja pa se še ena značilnost - pod ustjem je nataljena nit (6.3.6.). Ostenje steklenic z ročaji je proti dnu rahlo zoženo (6.3.6.). Njihova količina je majhna in zaprte oblike počasi izginejo iz uporabe. Prevladuje namizno posodje, predvsem posode za pitje, npr. že omenjene enostavne čaše in skodele ter konec stoletja še plitve polkroglaste skodele (obliki 2.6.4.; 2.6.5.). Okras na teh izdelkih je redek, pojavljajo se le gube.

Najbolj značilne oblike stekla iz 4. stoletja so najbolje zastopane na poznorimskem grobišču v Rabelčji vasi na Ptuju. Stekleni izdelki se pojavljajo v moških, ženskih in otroških grobovih in so pogosto edini pridatek.

Dragocenega posodja poznorimske dobe, predvsem skodel z brušenim figuralnim okrasom, diatretnih izdelkov in izdelkov z zlatimi medaljoni, skoraj ne poznamo, ohranjeni so samo skromni odlomki. Mednje sodi odlomek medaljona s figuro jagnjeta na zlati foliji iz Petovione, slučajne najdbe, ki je zaenkrat edini primer tovrstnih izdelkov (Mikl Curk 1963, 492).

Trgovske poti steklenih izdelkov so do našega ozemlja v prvih stoletjih vodile v glavnem preko severne Italije in prvi stekleni predmeti so bili dragoceni mozaični izdelki.

Z raznolikim spektrom izdelkov (2.1.1., 2.1.4.) iz 1. stoletja pr. n. š. in začetka 1. stoletja n. š. izstopa najdišče Razdrto (Mandrga in Preval), ki je s svojim položajem

with wheel-cut geometric decorations of circles, almond-shaped hollows, and rhombs (form 2.6.2.). The most valuable products of this period are vessels with cut figural decoration and decoration in high relief. Among the rare preserved pieces, two vessels representing top quality products of the Roman glass working craft were found at Ptuj, both in the same grave. The bottle of uncoloured glass was decorated with a motif showing a scene of a lighthouse and the sea (form 6.3.7.), and the double-handled kantharos had a floral decoration cut in high relief (form 3.7.4.).

In addition to those already mentioned, part of a bowl should be noted with an inscription made of gold leaf on the base. The letters and the inscription are almost unrecognizable. This was a shallow hemispherical bowl (?), a luxurious product from the 3rd century (Mikl Curk 1963, 493; Filippini 1996, 124).

In the 4th century, the number of forms was drastically reduced, as was the number of individual variants. Conical glasses predominate (3.9.1., 3.9.2., 3.10.2.) and hemispherical bowls with cut, curved rims (2.6.4. and 2.6.5.), while the bases were flat or slightly concave, and ring bases sometimes also appear The rare decoration consisted only of horizontal wheel-cut lines, later joined by applied drops of glass in contrasting colours. New forms of the late Roman period were conical lamps and lamps with a handle (9.1.-9.2.), although it is sometimes difficult to determine between beakers and lamps.

There are few storage vessels (6.2.6., 6.2.8.). Bottles frequently have a cut, outwards turned rim, and one more characteristic also appears - a thread applied under the rim (6.3.6.). The walls of bottles with a handle gently taper towards the base (6.3.6.). Their quantity was minimal and closed forms slowly disappear from use. Tableware predominated, particularly drinking vessels, such as the previously mentioned simple beakers and cups, and at the end of the century also shallow hemispherical bowls (forms 2.6.4.; 2.6.5.). Decoration on these products is rare, usually consisting only of indentations.

The most characteristic forms of glass from the 4th century are best represented at the late Roman cemetery of Rabelčja vas in Ptuj. Glass products appear in male, female, and child graves, and were often the only grave offering.

Valuable vessels of the late Roman period, such as bowls with wheel-cut figural decoration, diatreta products, and those with gold medallions, are almost unknown in Slovenia. They are preserved only as modest fragments. A fragment of a medallion with the figure of a lamb in gold leaf was a chance find in Poetovio, and at the moment is the only example of this type of product from Slovenia (Mikl Curk 1963, 492).

The trade routes for glass products to Slovenia in the first centuries led mostly through northern Italy and the

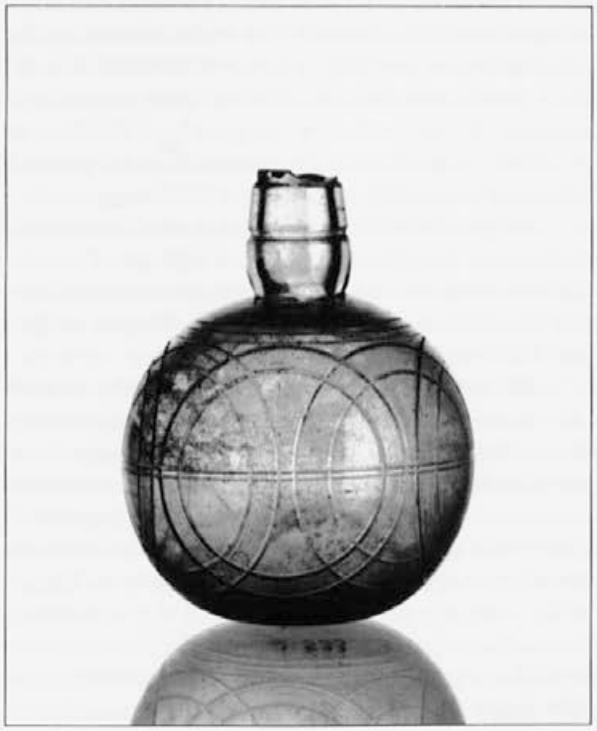
vezano na prazgodovinske trgovske poti in s tem tudi na prve poti rimskega vpliva na naše ozemlje.

Glavni trgovski center za trgovino v Vzhodnih Alpah, Panoniji in na Balkanu je predstavljala Akvileja, kjer so se zbirali izdelki severno italskih delavnic in delno delavnic srednje Italije. Redki dragoceni izdelki so prihajali tudi iz vzhodnega Sredozemlja in Egipta. Akvilejski vpliv na območju jugovzhodnih Alp se nadaljuje še v prvo polovico 2. stoletja, saj večina izdelkov še vedno prihaja iz italskih delavnic, to še posebej velja za kvalitetno posodje iz dekoloriranega stekla (2.1.8., 3.5.6.). V sredini 2. stoletja se razvijejo in razširijo vpliv steklarski centri v Porenju, posebej kölnske delavnice (sl. 72). Njihova proizvodnja začne počasi izpodrivati vpliv italskih delavnic in zadovoljevati potrebe tudi na tem delu imperija (3.7.4., 3.8.4., 3.8.5.).

V tem času začno povpraševanje po steklenih izdelkih za vsakdanjo rabo do neke mere zadovoljevati tudi lokalne steklarske delavnice, npr. v Celeji in Petovioni. Povpraševanje po vsakdanjih izdelkih je na trgu dovolj veliko, da ga zapolnjujejo tuje in domače delavnice.

Politična trenja poslabšajo ekonomske razmere v 3. stoletju in povzročijo precej sprememb, ki se kmalu odrazijo tudi v steklarski industriji. Od druge polovice stoletja povpraševanje močno upade, večji del trga so lahko zalagale domače in sosednje panonske delavnice, uvoz iz Porenja postaja predrag in upada. Dragoceni predmeti se pojavljajo le izjemoma, vendar so ti še vezani na kölnske delavnice.

V 4. in 5. stoletju se nazadovanje še nadaljuje. Za ta čas je težko trditi, v kakšni meri je bila še prisotna trgovina in do katere mere je lokalna obrt še delovala in



Sl. 72: Steklenica z brušenim geometrijskim okrasom na ostenju. Ptuj, gr. 615, Landesmuseum Joanneum Graz (Istenič 1999, 77, sl. 64); (foto: T. Lauko).

first glass products were valuable mosaic glass items. The sites at Razdrto (Mandrga and Preval) stand out with a varied spectrum of products (2.1.1., 2.1.4.) from the 1st century BC and beginning of the 1st century. The position was tied to the prehistoric trade routes, and thus also with the first routes of Roman influence on what is now Slovenian territory.

The main merchant center 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 were gathered. Rare valuable products also arrived from the eastern Mediterranean and Egypt. 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, which particularly applies to high quality vessels of decoloured glass (2.1.8., 3.5.6.). The influence of the glass production centers in the Rhine valley, particularly the Köln workshops, developed and spread in the middle of the 2nd century (Fig. 72). Their production began to displace the influence of the Italic workshops and satisfy demands even in that part of the Empire (3.7.4., 3.8.4., 3.8.5.).

In this period, the demand for glass products for everyday use to some extent began to be satisfied by local glass production centers, for example at Celeia and Poetovio. The demand for everyday products was sufficient that it could be filled both by foreign and local workshops.

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 century demand declined greatly, and most of the trade could be supplied by local and nearby Pannonian production centers, while imports from the Rhine valley declined. Expensive objects appeared only exceptionally, and they were still tied to the Köln workshops.

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, meaning that they were adding increasing amounts of

Fig. 72: Bottle with wheel-cut geometric decoration on the body. Ptuj, grave 615, Landesmuseum Joanneum Graz (Istenič 1999, 77, Fig. 64); (photo T. Lauko).

oskrbovala vsaj neposredno okolico. Kvaliteta steklenih izdelkov je slabša, ostenje je polno zračnih mehurčkov, prevladuje olivno zelenkasta barva stekla, ki kaže, da so talini dodajali vse več recikliranega stekla. Oskrba s surovinami, ki so večinoma prihajale iz Sredozemlja, in surovim steklom je bila slaba in neredna, proizvodnja je upadla. Vsekakor so v tem času razmere v večjih mestih še omogočale nadaljevanje tradicije in uporabe steklenih posod, ki pa je v manjših naseljih zaradi slabih ekonomskih razmer že skoraj zamrla.

Steklarska proizvodnja je na ozemlju današnje Slovenije delovala od 2. stoletja dalje. Njen obseg verjetno ni nikoli presegel lokalnih okvirov in z izdelki so predvsem zapolnili povpraševanje po vsakdanjih uporabnih predmetih, kot so bili balzamariji, steklenice in tudi okensko steklo. Najdbe peči, surovega stekla in steklarskih odpadkov iz Celeje in Petovione dokazujejo, da se je tu steklarska obrt razvila že na začetku 2. stoletja, podobno kot v večini lokalnih centrov v ostalih provincah. Ostanki iz Emone izvirajo iz poznorimske dobe, vendar odkrite najdbe dokazujejo le zbiranje odpadnega stekla ali trgovino, ostanki, ki bi lahko pripadali pečem, pa so preskromni. Nedavno raziskani obrat v Kranju je poleg odkopanih objektov odkril veliko količino steklenih odlomkov. Opredelitev, da gre za pozno rimsko steklarsko delavnico, pa moramo pred celovito objavo jemati s pridržkom. Med gradivom namreč pogrešamo značilne elemente, npr. surovo steklo, steklarske odpadke, ki so običajni za steklarske obrate rimske dobe; ne nazadnje pa tudi konstrukcija objekta ne ustreza steklarskim pečem.

Ostanki surovega stekla, odpadki pihanja in uničeni izdelki v Celeji in Petovioni dokazujejo obstoj sekundarne proizvodnje stekla oziroma izdelavo steklenih posod. Obrt je slonela na uporabi uvoženega surovega stekla, ki so ga pripravljali v večjih steklarskih centrih. Primarna steklarska proizvodnja, to je priprava surovega stekla iz osnovnih surovin, glede na trenutno stanje raziskav, pri nas ni obstajala.

Steklarska obrt je bila, sodeč po danes znanih najdbah, najbolj razvita in razvejana v Petovioni. Odkrite steklarske peči, ostanki talilnikov in drugih odpadkov neposredno dokazujejo proizvodnjo stekla in razvito steklarsko obrt.

Tlorisi ohranjenih peči nam omogočajo verjetno rekonstrukcijo njihovega izgleda. Ovalne konstrukcije so bile deljene v dva glavna dela, kurišče in delovni prostor. Na raziskanem predelu so bili odkriti ostanki najmanj šestih peči, kar kaže, da je tu deloval večji steklarski obrat, v katerem je lahko naenkrat delalo več steklarjev. Da je delavnica obratovala skozi daljše časovno obdobje, dokazujejo sledovi obnove peči in gradnja novih objektov preko starejših in dotrajanih peči.

Pregled različnih vrst odpadkov, nastalih med proizvodnim procesom, osvetljuje nekaj dejstev o sami

recycled glass. The trade in raw material, as well as raw glass, which mostly came from the Mediterranean, was feeble and irregular, and production declined. Conditions in larger towns at that time certainly enabled the continuation of tradition and the use of glass vessels, which in smaller settlement had almost died out because of poor economic conditions.

Glass manufacture took place 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 filled demand for objects of everyday use, such as balsamaria, bottles, and window glass. Finds of furnaces, raw glass, and glass working waste from Celje and Poetovio prove that a glass industry developed here as early as the beginning of the 2nd century, similarly as in the majority of local centers in the other provinces. The remains from Emona come from the late Roman period, although the discovered finds show only the collection of broken glass or trade in glass products, as remains that could be attributed to a furnace are too meager. The recently investigated workshop at Kranj contained a large quantity of glass fragments in addition to the excavated structures. The claim that this was a late Roman glass production center must be considered with reserve prior to publication in detail. Characteristic elements that are usual for the glass workshops of the Roman period are missing, such as raw glass, glass waste and wasters, and not least, the construction of the structures does not correspond to that of glass working furnaces.

Remains of raw glass, waste from blowing, and destroyed products at Celeia and Poetovio prove the existence of the secondary production of glass, meaning the manufacture of glass vessels. The craft depended on the use of imported raw glass, which was prepared in larger glass production centers. Primary glass production, meaning the preparation of raw glass from the basic ingredients, according to the present state of research would not have existed in the region of Slovenia.

Judging from the finds known to date, glass manufacture was best developed and ramified 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.

The plan of the preserved furnaces enables a probable reconstruction of the appearance of these furnaces. The oval structures were divided into two main sections, the area for fire and the working area. At least six furnaces were discovered in the excavated area, which indicates that a large workshop was located here, where several glass workers could work at the same time. The use of the workshop through a long period of time is proven by traces of renovation to the furnaces and the construction of new structures above old and worn out furnaces.

Analysis of the various types of waste created in the

proizvodnji v Petovioni. Odpadki s steklarske pipe potrjujejo pihanje stekla s pipami premera med 2 in 2,5 cm. Uporaba steklarskih pip različnega premera dokazuje izdelavo manjših in večjih izdelkov, npr. steklenic. Ostanki prijemalke na dnu posod kažejo na uporabo kovinskega droga - prijemalke med procesom izdelave in dodelave posod.

V bližini delavnic niso odkrili ostankov surovin za pripravo stekla, zato ne moremo govoriti o obstoju primarne proizvodnje oziroma taljenju stekla iz osnovnih surovin in pripravi surovega stekla. Različni steklarski odpadki, nastali med proizvodnjo, govore o obstoju sekundarne proizvodnje, to je pihanju izdelkov iz že pripravljenega stekla.

Ostanki izdelkov, ki so nastali v teh delavnicah, med izkopanim gradivom niso zelo številni, a po nekaterih odlomkih lahko vsaj domnevamo, da so ptujski steklarji izdelovali kvadratne steklenice z okrasom rozet na dnu (6.3.1., 6.3.2.), cilindrične čaše (3.6.1., 3.6.2.) in balzamarije (8.6.15.). Kemijske analize surovega stekla in odlomkov steklenic so pokazale, da gre za steklo enake sestave, kar potrjuje našo domnevo.

Tipološki pregled stekla s ptujskih najdišč je pokazal še na nekaj izdelkov, ki po obliki izstopajo in bi lahko nastali v domačih delavnicah. Največja skupina so balzamariji s stopničasto razširjenim vratom ob prehodu v ustje (8.6.15.). Oblika se ne pojavlja na drugih najdiščih, ampak je značilen pridatek petovionskih grobov. Druga zanimiva oblika je čaša kroglaste oblike na visoki prstanasti nogi (3.6.5.), ki nima primerjav (sl. 73). Najdena je bila v grobu iz 2. stoletja in zaradi njene unikatnosti domnevamo, da gre za domač izdelek. Zadnjo skupino domnevno domačih izdelkov tvorijo stekleničke in vrčki s kroglastim trupom in nataljenim okrasom niti, ki so med ptujskim gradivom prav tako številni (5.1.8., 5.1.9., 5.2.3.). Njihova skupna značilnost je na skoraj enak način izdelan nataljen okras.

Kemijske analize surovega stekla iz ptujskih peči (Schwinger 1998) in njihova primerjava z najdbami surovega stekla iz delavnic v Gleisdorfu in Flavii Solvi je pokazala, da so imele delavnice tega območja iste vire pri dobavi surovega stekla in so med seboj trgovale s končnimi izdelki (okensko steklo iz Flavie Solve je verjetno nastalo v Petovioni - Schwinger 1998, 138). Kaže, da so bile delavnice specializirane in so izdelovale le posamezne vrste posodja.

Ostanki steklarskih peči na Hajdini, talilnikov za steklo v Rabelčji vasi in posamične najdbe amorfnega stekla s Panorame potrjujejo, da je bila steklarska obrt zastopana v različnih mestnih predelih. Delavnice so delovale v obrtnih četrtih, skupaj z ostalimi mestnimi obrtmi.

Na osnovi steklenih in keramičnih najdb, odkritih poleg steklarskih peči, lahko za delavnice na Spodnji Hajdini ugotovimo, da so delovale v 2. in 3. stoletju,

production process illuminates certain facts about manufacture at Poetovio. Moiles from glass blowing pipes confirm the blowing of glass with pipes of a diameter between 2 and 2.5 cm. The use of glass blowing pipes of varied diameters indicates the production of small and large products, such as bottles. Pontil marks on bases of vessels show the use of a metal rod - the pontil - in the process of the production and finishing of a vessel.

No remains of the raw materials for the preparation of glass were found in the vicinity of the workshop, and thus we cannot speak of the existence of primary production here, meaning the melting of glass from basic ingredients and the preparation of raw glass. Various glass waste created during the manufacturing process shows the existence of secondary production, i.e. the blowing of products from previously prepared glass.

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 (6.3.1., 6.3.2.), cylindrical beakers (3.6.1., 3.6.2.), and balsamaria (8.6.15.). Chemical analysis of the raw glass and fragments of bottles has shown that the glass had the same composition, which confirms the hypothesis.

The typological analysis of the glass from the Ptuj sites 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 (8.6.15.). 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 (3.6.5.), which has no analogies (Fig. 73). It was found in a grave from the 2nd century, and its unique nature leads to the assumption that this had been 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 (5.1.8., 5.1.9., 5.2.3.). Their common characteristic is the almost uniform manner of forming the applied decoration.

Chemical analyses of raw glass from the Ptuj furnaces (Schwinger 1998) and their comparison to finds of raw glass from workshops at Gleisdorf and Flavia Solva have shown that the workshops of this region had the same source in acquiring raw glass, and that there was trade in the final products (the window glass from Flavia Solva was probably made at Poetovio - Schwinger 1998, 138). This indicates that the workshops were specialized and manufactured only specific types of vessels.

The remains of the glass furnaces at Hajdina, the crucibles for glass at Rabelčja vas, and isolated finds of

natančneje vsaj v njegovi prvi polovici. Najdbe iz konca 1. stoletja so preskromne, da bi začetek steklarske obrti v Petovioni postavili v zgodnejše obdobje.

Številne naselbinske in grobne najdbe iz Petovione omogočajo tudi vzporejanje in primerjanje razvoja mesta ter odraz le-tega v materialni kulturi oziroma v našem primeru steklenih izdelkih. Petoviona je za vlade cesarja Trajana dobila status kolonije in v naslednjih dveh stoletjih doživljala obdobje največjega razvoja v ekonomskem in političnem smislu, v mestu je bil sedež ilirske carinske službe.

Izdelki prve polovice 1. stoletja so med petovionskim gradivom skromno zastopani. Od druge polovice 1. stoletja dalje pa število steklenih posod poraste za skoraj 300 %. To so preprosti in v glavnem neokrašeni izdelki za vsakdanjo rabo. Večina oblik ostane v uporabi še v naslednjem stoletju, ko se spekter oblik dopolni in se pojavijo novi okrasi. V 3. stoletju se razpon oblik krči, dokler se v 4. stoletju ne omeji pretežno na oblike, namenjene pitju. Zanimivo je, da kljub omejenemu spektru steklenih posod, ki so v rabi v 4. stoletju, petovionska grobišča kažejo še vedno redno uporabo steklenih predmetov in njihovo prilaganje v grobove. To odraža še živahen utrip mesta, morda lahko značilne konične čaše (3.8.6., 3.9.1.,.3.9.2.) in svetilke (9.1.1., 9.1.2.) povežemo z močno krščansko skupnostjo in religioznim življenjem mesta.

Med arheološko dediščino steklenega gradiva v Sloveniji Petoviona izstopa z nekaj dragocenimi in izjemnimi izdelki, ki so bili zaradi redkosti in visoke cene dostopni oziroma dosegljivi samo premožnim slojem. Med steklenimi izdelki se od 2. stoletja dalje redno

Sl. 73: Kroglasta čaša na visoki nogi. Ptuj, gr. 32, Pokrajinski muzej Ptuj (foto: T. Lauko).

amorphous glass from Panorama confirm that glass making was present in various parts of the town. The workshops were located in artisan quarters along with the other crafts of the town.

On the basis of the glass and pottery finds discovered next to the glass furnaces, it can be established that the workshops at Spodnja Hajdina 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 also enable analysis and comparison of the development of the town and the reflection of this in the material culture, and in this case in the glass products. Poetovio received the status of a colonia during the reign of the emperor Trajan, and in the following two centuries it experienced the period of the greatest development in the economic and political sense, as the town was the seat of the Illyrian customs service.

Products from the first half of the 1st century were scarce among the material from Poetovio. From the second half of the 1st century onward, the number of glass vessels increased by almost 300%. 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 (3.8.6., 3.9.1., 3.9.2.) and lamps (9.1.1., 9.1.2.) can be connected to a powerful Christian community and the religious life of the city.

Poetovio stands out among the archaeological heritage of glass material in Slovenia with certain precious and exceptional objects, which were available only to the wealthiest stratum because of their rarity and high price. Individual pieces regularly appear among the glass products from the 2nd century onward that rank among peerless finds from the Roman period. These include the bowl with a gold inscription on the base (Mikl Curk 1963, 493), beakers with snake-thread decoration

Fig. 73: Globular cup on a high foot. Ptuj, gr. 32, Pokrajinski muzej Ptuj (photo: T. Lauko).

pojavljajo posamezni kosi, ki sodijo med unikatne najdbe rimske dobe: skodelica z zlatim napisom na dnu (Mikl Curk 1963, 493), čaši s kačastim okrasom (3.8.4.), kantaros z okrasom v visokem reliefu (3.7.4.), steklenica z vrezanim figuralnim okrasom (6.3.7.), odlomek medaljona z zlato folijo (Mikl Curk 1963, 492).

Vsi ti predmeti izvirajo iz oddaljenih sredozemskih ali porenskih delavnic, ki so bile specializirane za posamezne vrste izdelkov in so jih pogosto delale po naročilu odjemalcev. Prisotnost teh najdb, ki so vezane predvsem na višji sloj in pomembne politične osebnosti, je odraz visoke ekonomske moči mesta.

Tudi zapuščina steklenih posod v drugih centrih, npr. Emoni, Celeji in mnogih ostalih najdiščih, je obsežna in z novimi izkopavanji vsak dan bogatejša. Ta obseg seveda omogoča številne primerjave, analize in interdisciplinarne raziskave, ki jih v tem delu nismo mogli zajeti. Raziskati bo mogoče, kako se razlikujejo stekleni izdelki kot naselbinske ali grobne najdbe na enem najdišču, kaj lahko povemo o uporabi stekla na podeželskih najdiščih in vilah rustikah, kakšna sta razpon oblik in uporaba stekla na poznorimskih naselbinah. Z večjim obsegom kemijskih analiz lahko poglobimo poznavanje izvora surovin, tehnologije, posameznih skupin izdelkov, trgovine in ekonomije.

(3.8.4.), a kantharos with a decoration cut in high relief (3.7.4.), a bottle with cut figural decoration (6.3.7.), and a fragment of a medallion with gold leaf (Mikl Curk 1963, 492).

All these objects came from distant Mediterranean or Rhine valley production centers that specialized in particular types of products and often made them to order. The presence of such finds, which were related primarily to the upper class and important political dignitaries, was a reflection of the great economic power of the town.

The legacy of glass vessels at other centers, such as Emona, Celeia, and many other sites, is extensive, and is richer every day through new excavations. This wealth will certainly enable numerous comparisons, analyses, and interdisciplinary research, which could not be encompassed in this work. It will be possible to investigate the distinctions between glass products from settlement and grave finds at a single site, the use of glass at rural sites and at villae rusticae, the range of forms and uses of glass at late Roman settlements, and many other subjects. A greater extent of chemical analyses will lead to deeper knowledge about the sources of raw material, the technology, individual groups of products, trade, and the economy.

LITERATURA / BIBLIOGRAPHY

Poleg citirane literature so v seznam vključene tudi vse objave rimskega stekla v Sloveniji, ki so označene z zvezdico *.
In addition to the cited texts, the list also includes all other publications of Roman glass in Slovenia, which were marked with an asterisk *.

ABRAMIĆ, M. 1959, Eine römische Lampe mit Darstellung des Glasblasens. - *Bonner Jahrbücher* 159, 149-151.

AERTS, A. *et al.* 2000, Analysis of the Composition of Glass Objects from Qumrân, Israel, and Comparison with other Roman Glass from Western Europe. - V / *in*: (ed. M.-D. Nenna) *La Route du verre,* Travaux de la Maison de l'Orient Méditeranéen 32, Lyon, 113-121.

ALARCÃO, J. de 1968, Une coupe à fond d'or découverte à Farrobo, Portugal. - *Journal of Glass Studies* 10, 71-79.

AMREIN, H. *et al.* 1996, Analysen von Gläsern aus der frühkaiserzeitlichen Glaswerkstatt von Aventicum (Schweiz). - *Bulletin de l'Association Pro Aventico* 37, 189-201.

AMREIN, H., A. HOCHULI-GYSEL 2000, Le soufflage du vere: Attestations de la technique à Avenches (Suisse) et à Saintes (France) au 1er s. ap. J.-C. - V / *in*: *Annales du 14e Congrès de l'AIHV,* Lochem, 89-94.

AMREIN, H. 2001, *L'atelier de verriers d'Avenches.* - Cahiers d'archéologie Romande 87, Aventicum 11, Lausanne.

ARTNER, W. 1994, *Die provinzialrömischen Gräber von Gleisdorf in der Oststeiermark.* - Mitteilungen der Österreichischen Gesellscaft für Ur- und Frühgeschichte 38/39, 1988/89.

AUTH, S. H. 1975, Roman Glas. - V / *in*: Clairmont C. W., *Excavations at Salona, Yougoslavia* (1969-1972), Park Ridge, New Yersey, 145-175.

AUTH, S. H. 1976, *Ancient Glass in the Newark Museum.* - Newark.

BALDONI, D. 1987, Una lucerna romana con raffigurazione di officina vetraria: alcune considerazioni sulla lavorazione del vetro soffiato nell'antichita. - *Journal of Glass Studies* 29, 22-29.

BARAG, D. 1967, »Flower and bird« and snake-thread Glass Vessels. - V / *in*: *Annales du 4e Congrès de l'AIHV,* Liège, 55-66.

BARKÓCZI, L. 1981, Kelche aus Pannonien mit Fadenauflage und Gravierung. - *Acta Archaeologica Academiae Scientiarum Hungaricae* 33, 35-70.

BARKÓCZI, L. 1986, Geschliffene Gläser aus der ersten Hälfte des 3. Jhs. in Pannonien. - *Archeologiai Értesítő* 111, 186-189.

BARKÓCZI, L. 1988, *Pannonische Glasfunde in Ungarn.* - Studia Archaeologica 9, Budapest.

BASS, G. F. 1986, A Bronze Age Shipwreck at Ulu Burun (Kaş): 1984 Campaign. - *American Journal of Archaeology* 90, 269-296.

*BAVDEK, A. 1996, Fundorte aus spätrepublikanischer und frührömischer Zeit in Razdrto am Fuße des Nanos. - *Arheološki vestnik* 47, 297-306.

BECKER, C., M. MONIN 2000, Les fours de verriers des Subsistance, bis quai Saint-Vincent, Lyon. - *Bulletin de l'AFAV,* Rouen, 6-7.

BERGER, L. 1960, *Römische Gläser aus Vindonissa.* - Veröffentlichungen der Gesellschaft pro Vindonissa 4.

BERTONCELJ KUČAR, V. 1979, Nakit iz stekla in jantarja. - *Arheološki vestnik* 30, 254-277.

BIAGGIO SIMONA, S. 1991, *I vetri romani I, II.* - Locarno.

*BOLTA, A. 1957, Rimsko grobišče na Bregu v Celju. - *Arheološki vestnik* 8, 317-327.

*BOLTIN, E. 1959, Arheološke najdbe na Kaštelirju nad Kortami. - *Arheološki vestnik* 9-10, 237-250.

BONNET BOREL, F. 1997, *Le verre d'époque romaine à Avenches - AVENTICUM. Typologie générale.* - Documents du Musée romain d'Avenches 3.

*BOŽIČ, D. 1990, Mihovo - Novo mesto. - V / *in*: *Arheološka najdišča Dolenjske,* Novo mesto, 79-82.

*BOŽIČ, D. 2003, Die spätrömischen Hortfunde von der Gora oberhalb von Polhov Gradec. - *Arheološki vestnik* 54 (v tisku / *in print*).

*BREŠČAK, D. 1990, Antično grobišče na Verdunu pri Stopičah. - *Dolenjski zbornik* 1990, 23-30.

*BREŠČAK, D. 2002, Antika. - V / *in*: *Oživljene kulture.* Katalog razstave, Ljubljana, 74-100.

BULAT, M. 1976, Antičko staklo u muzeju Slavonije. - *Arheološki vestnik* 25, 88-101.

BULJEVIĆ, Z. 1999, *Stakleni balzamariji iz Salone.* - Zadar (neobjavljeno magistrsko delo / *unpublished MA dissertation*).

BULJEVIĆ, Z. 2000, Sferični i pticoliki balzamariji iz Arheološkog muzeja Split. - *Opuscula Archaeologica* 23-24, 465-472.

CABART, H., J.-I. FEYEUX 1995, *Verres de Champagne.* - Bulletin de la Société Archéologique Champenoise 4, Reims.

CALVI, C. 1969, *Römische Gläser aus Aquileia.* - Aquileia.

CALVI DI COENZO, L. 1996, Da Venezia all' Africa ... e ritorno. - *Alte Vitrie* 3, 8-11.

CERMANOVIĆ-KUZMANOVIĆ, A. 1976, Pregled i razvitak stakla u Crnoj Gori. - *Arheološki vestnik* 25, 175-190.

CHARLESWORTH, D. 1966, Roman Square Bottles. - *Journal of Glass Studies* 8, 26-40.

CHARLESWORTH, D. 1971, A group of Vessels from the Commandant's House, Housesteads. - *Journal of Glass Studies* 13, 34-37.

*CIGLENEČKI, S. 1985, Potek alternativne ceste Siscija - Akvileja na prostoru zahodne Dolenjske in Notranjske v času od 4. do 6. stoletja. - *Arheološki vestnik* 36, 255-284.

*CIGLENEČKI, S. 1991, Poznorimski depo z Rudne pri Rudnici. - *Arheološki vestnik* 42, 225-232.

*CIGLENEČKI, S. 1993, Zgodnjekrščanske najdbe z Vipote nad Pečovnikom. - *Arheološki vestnik* 44, 213-222.

CONSPECTUS 1990, *Conspectus formarum terrae sigillatae Italico modo confectae*, Materialien zur römisch-germanischen Keramik 10, Bonn.

COOL, H. E. M., J. PRICE 1995, *Roman Vessel Glass from the excavations in Colchester,* 1971-85. - Colchester Archaeological Report 8, Colchester.

CUMINGS, K. 1980, *The Technique of Glass Forming.* - London.

*CUNJA, R. 1996, *Poznorimski in zgodnjesrednjeveški Koper.* - Knjižnica Annales majora, Koper.

CZURDA-RUTH, B. 1979, *Die römischen Gläser vom Magdalensberg.* - Kärntner Museumsschriften 65.

DAMEVSKI, V. 1976, Pregled tipova staklenog posuđa iz italskih, galskih, mediteranskih i porajnskih radionica na području Hrvatske u doba rimskog carstva. - *Arheološki vestnik* 25, 62-87.

DE FRANCISCIS, A. 1963, Vetri antichi scoperti ad Ercolano. - *Journal of Glass Studies* 5, 137-139.

DE TOMMASO, G. 1990, *Ampulae vitreae. Contenitorni in vetro du unguenti e sostanze aromatiche dell' Italia romana (I sec. a. C. - III sec. d. C.).* - Archaeologica 94, Roma.

DEMAINE, M. R. 1979, Roman Glass from Diokletian's Palace at Split, Yugoslavia. - V / *in*: *Diocletian's Palace* 4, Split, 7-82.

*DEMAINE, M. R. 1983, Ancient Glass Distribution in Illyricum. - *Journal of Glass Studies* 25, 79-86.

*DEMAINE, M. R. 1990, The Northern necropolis at Emona: banquet burials with laddles. - V / *in*: *Annales du IIe Congrès de l'AIHV*, Amsterdam, 129-144.

*DULAR, A. 1977, Rimski grobovi iz Rosalnic, Štrekljevca in Otoka pri Podzemlju. - *Arheološki vestnik* 27, 191-223.

*DULAR, A. 1991, *Prazgodovinska grobišča v okolici Vinjega vrha nad Belo Cerkvijo.* - Katalogi in monografije 26.

EGGER, R. 1914, Ausgrabungen in Noricum. - *Jahreshefte des Österreichischen Archäologischen Institutes* 17, Beiblatt, 61-86.

EVISON, V. 1955, Anglo-Saxon Finds near Rainham, Essex, with a Study of Glass Drinking Horns. - *Archaeologia* 96, 159-195.

EVISON, V. 1975, Germanic Glass Drinking Horns. - *Journal of Glass Studies* 17, 74-87.

FACCHINI, G. M. *et al.* 1995, Studio di una forma vitrea di età romana: la Merkurflasche (forma Isings 84). - *Postumia* 6, 150-173.

FADIĆ, I. 1987, Kvadratični i stakleni poligonalni recipijenti u Arheološkom muzeju Istre. - *Izdanje HAD* 11/2, Pula, 99-118.

FADIĆ, I. 1997, *Antičko staklo Argyruntuma.* - Katalozi 1, Zadar.

FASSOLD, P. 1985, Die früh- und mittelrömischen Gläser von Kempten-Cambodunum. - *Schwabische Geschichtsquellen und Forschungen* 14, 197-230.

FILIPPINI, P. 1996, Blown gold-sandwich glasses with gilt glass-trail inscriptions. - V / *in*: *Annales du 13e Congrès de l'AIHV*, Lochem, 113-128.

FOLLMANN-SCHULZ, A.-B. 1988, *Die römischen Gläser aus Bonn.* - Beihefte der Bonner Jahrbücher 46.

FOLLMANN-SCHULZ, A.-B. 2003, Die Produkte der Glashütten im Hambacher Forst. - V / *in*: *Annales du 15e Congrès de l'AIHV,* Nottingham, 62-67.

FORBES, R. J. 1967, Glass. - V / *in*: *Studies in Ancient Technology* 5, Leiden, 110-210.

FOSSING, P. 1940, *Glass Vessels before Glass-blowing.* - Copenhagen.

FOY, D., M. BONIFAY 1989, Eléments d'évolution des verreries de l'antiquité tardive à Marseille d'après les fouilles de la Bourse. - *Revue archéologique de Narbonnaise* 22, 289-308.

FOY, D., M.-D. NENNA 2001, *Tout feu, tout sable. Mille ans de verre antique dans le Midi de la France.* - Katalog razstave, Marseille.

FOY, D., M. VICHY, M. PICON 2000, Lingots de verre en Méditerranée occidentale (IIIe s. av. J.-C. - VIIe s. ap. J.-C.): Approvisionnement et mise en oeuvre: Données archéologiques et données de laboratoire. - V / *in*: *Annales du 14e Congrès de l'AIHV*, Lochem, 51-57.

FRELIH, M. 1991, Odkritje rimske cestne postaje »mansio Longatico« v Dolenjem Logatcu. - V / *in*: *Zbornik poročil raziskovalnih skupin. Mladinski raziskovalni tabor Logatec 1989.* Logatec, 13-32.

FREMERSDORF, F. 1951, *Figurlich geschliffene Gläser.* - Römisch-Germanische Forschungen 19.

FREMERSDORF, F. 1958, *Das Naturfarbene sogennante*

blaugrüne Glass in Köln. - Die Denkmäler des römischen Köln 4, Köln.

FREMERSDORF, F. 1959, *Römische Gläser mit Fadenauflage in Köln.* - Die Denkmäler des römischen Köln 5, Köln.

FREMERSDORF, F. 1961, *Römisches geformtes Glas in Köln.* - Die Denkmäler des römischen Köln 6, Köln.

FREMERSDORF, F. 1967, *Die römischen Gläser mit Schliff, Bemalung und Goldauflagen aus Köln.* - Die Denkmäler des römischen Köln 8, Köln.

FREMERSDORF, F. 1970, Seltene Varianten steilwandiger römischer Glasbecher des 3. Jh. aus Köln. - *Kölner Jahrbuch für Vor- und Frühgeschichte* 11, 59-72.

FREMERSDORF, F., E. POLÓNYI-FREMERSDORF 1984, *Die Farblosen Gläser der Frühzeit in Köln.* - Die Denkmäler des römischen Köln 9, Köln.

FRIEDHOFF, U. 1991, *Der römische Friedhof an der Jakobstraße zu Köln.* - Kölner Forschungen 3, Mainz.

FROVA, A. 1971, Vetri romani con marchi. - *Journal of Glass Studies* 13, 38-44.

FUCHS, G. 1980, *Die römerzeitlicher Gräberfelder von Flavia Solva.* - Graz (neobjavljena doktorska disertacija / *unpublished doctoral dissertation*).

FÜNFSCHILLING, S. 1999, Die geschlossene Form - Flaschen, Kannen, Krüge in spätrömischer Zeit. - V / *in*: (Hrsg. M. J. Klein) *Römische Glaskunst und Wandmalerei,* Mainz, 78-90.

*GABROVEC, S. 1954, Poročilo o slučajnih najdbah v Sloveniji. - *Arheološki vestnik* 5, 132-140.

GABROVEC, 1987, Jugoistočnoalpska regija sa zapadnom Panonijom - Dolenjska grupa. - V / *in*: *Praistorija jugoslovenskih zemalja* V, *Željezno doba*, Sarajevo, 29-119.

GAITZSCH, W. 1991, Fours de verriers romains en foret de Hambach. - V / *in*: *Ateliers de verriers de l'antiquité à la période pré-industrielle*, Rouen, 41-46.

GAITZSCH, W. 1999, Spätrömischen Glashütten im Hambacher Forst. Die Werkstatt des ECVA-Produzenten. - V / *in*: (ed. M. Polfer) *Artisanat et productions artisanales en milieu rural dans les provinces du nord-ouest de l'Empire romain*, Monographies Instrumentum 9, 125-147.

GEBHARD, R. 1989, Pour une nouvelle typologie des bracelets celtique en verre. - V / *in*: (ed. M. Feugère) *Le verre préromain en Europe occidentale,* Montagnac, 73-84.

*GIESLER, U. 1981, Gläser. - V / *in*: (Hrsg. T. Ulbert) *Ad Pirum - Spätrömische Passbefestigung in den Julischen Alpen.* Münchner Beiträge zur Vor- und Frühgeschichte 31, 101-102.

GLUŠČEVIĆ, S. 1995, Staklene čaše s udubljenjima iz rimske luke u Zatonu. - *Diadora* 16-17, 221-242.

GLUŠČEVIĆ, S. 2000, Roman glass in Zadar: Certain characteristic forms. - V / *in*: *Annales du 14 Congrès de l'AIHV*, Lochem, 182-189.

GOETHERT-POLASCHEK, K. 1977, *Katalog der römischen Gläser des Rheinischen Landesmuseum Trier.* - Trierer Grabungen und Forschungen 9.

GORIN-ROSEN, Y. 2000, The Ancient Glass Industry in Israel: Summary of the Finds and New Discoveries. - V / *in*: (ed. M.-D. Nenna) *La Route du verre.* Travaux de la Maison de l'Orient Méditeranéen 32, Lyon, 49-64.

*GRAFENAUER, F. 1953, Rimski grob najden pri Skaručni. - *Arheološki vestnik* 4, 144-147.

GROSE, D. F. 1975, Roman Glass of the First Century A. D.: A Dated Deposit of Glassware from Cosa, Italy. - V / *in*: *Annales du 6e Congrès de l'AIHV*, Liège, 31-52.

GROSE, D. F. 1977, Early Blown Glass: The Western Evidence. - *Journal of Glass Studies* 19, 9-29.

GROSE, D. F. 1979, The Syro-Palestinian Glass Industry in the Later Hellenistic Period. - *Muse* 13, 54-67.

GROSE, D. F. 1982, The Hellenistic and Early Roman Glass from Morgantina (Serra Orlando) Sicily. - *Journal of Glass Studies* 24, 20-29.

GROSE, D. F. 1984, Glass Forming Methods in Classical Antiquity: Some Considerations. - *Journal of Glass Studies* 26, 25-34.

GROSE, D. F. 1989, *Early Ancient Glass. Core-formed, Rod-formed, and Cast Vessels and Objects from the Late Bronze Age to the Early Roman Empire, 1600 B.C. to A.D. 50.* - New York, Toledo.

GROSE, D. F. 1991, Early Imperial Roman Cast Glass: The Translucent Coloured and Colourless Fine Wares. - V / *in*: *Roman Glass. Two Centuries of Art and Invention*, London, 1-18.

HABEREY, W. 1942, Spätantike Gläser aus Gräbern von Mayen. - *Bonner Jahrbücher* 147, 249-284.

HAEVERNICK, T. E. 1958, Zarte Rippenschalen. - *Saalburg Jahrbuch* 17, 76-91.

HAEVERNICK, T. E. 1958a, Hallstatt-Tassen. - *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz* 5, 8-17.

HAEVERNICK, T. E. 1959, Beiträge zur Geschichte des antiken Glases I. Zu den Glasbügelfibeln. - *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz* 6, 57-63.

HAEVERNICK, T. E. 1960, Latenèzeitliche Glasfibelbügel. - *Situla* 1, 19-126.

HAEVERNICK, T. E. 1967, Die Verbreitung der "Zarten Rippenschalen". - *Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz* 14, 153-166.

HAEVERNICK, T. E. 1974, Zu den Glasperlen in Slowenien. - *Situla* 14/15, 61-65.

HAEVERNICK, T. E. 1981, *Beiträge zur Glasforschung.* - Mainz.

HARDEN, D. B. 1936, *Roman Glass from Karanis.* - University of Michigan Studies, Humanistic Series 41.

HARDEN, D. B. 1968, The Canosa group of Hellenis-

tic Glasses in the British Museum. - *Journal of Glass Studies* 10, 21-47.

HARDEN, D. B. 1968a, Ancient Glass I. Pre-Roman. - *The Archaeological Journal* 125, 46-72.

HARDEN, D. B. 1969, Ancient Glass II. Roman. - *The Archaeological Journal* 126, 44-77.

HARDEN, D. B. 1979, Glas and Glazes. - V / *in*: *History of Technology* II, Oxford, 311-450.

HARDEN, D. B. 1981, *Catalogue of Greek and Roman Glass in the British Museum. Volume* I. - London.

HARDEN, D. B. 1984, Study and Research on Ancient Glass: Past and Future. - *Journal of Glass Studies* 26, 9-24.

HARDEN, D. B. *et al.* 1988, *Glass der Caesaren*. Ausstellungskatalog. - Milano.

HAYES, J. W. 1975, *Roman and Pre-Roman Glass in the Royal Ontario Museum*. - Toronto.

HENDERSON, J. 2000, *The Science and Archaeology of Materials*. - London, New York.

HILGERS, W. 1969, *Lateinische Gefässnamen, Bezeichnungen, Funktion und Form römischer Gefässe nach den antiken Schriftquellen*. - Beihefte der Bonner Jahrbücher 31.

HOCHULI-GYSEL, A. 1991, Römisches Glas aus dem Südwesten von Frankreich. - V / *in*: *Annales du 12 Congrès de l'AIHV*, Amsterdam, 79-88.

*HORVAT, J. 1990, *Nauportus (Vrhnika)*. - Dela 1. razreda SAZU 33.

*HORVAT, J. 1995, Notranjska na začetku rimske dobe: Parti pri Stari sušici, Ambroževo gradišče in Baba pri Slavini. - *Arheološki vestnik* 46, 177-216.

HORVAT, J. *et al.* 2003, Poetovio. Development and Topography. - V / *in*: (ed. M. Šašel Kos) The autonomous towns of Noricum and Pannonia. Pannonia, *Situla 41*, Ljubljana (v tisku / *in print*).

*HORVAT ŠAVEL, I. 1978, Antično naselje v Ivancih. - *Arheološki vestnik* 29, 290-317.

ISINGS, C. 1957, *Roman Glass from Dated Finds*. - Archaeologica Traiectina 2.

ISINGS, C. 1964, A Fourth Century Glass Jar with Applied Masks. - *Journal of Glass Studies* 6, 59-63.

ISINGS, C. 1971, *Roman Glass in Limburg*. - Archaeologica Traiectina 9.

ISRAELI, Y. 1991, The Invention of blowing. - V / *in*: *Roman Glass. Two Centuries of Art and Invention*, London, 46-55.

*ISTENIČ, J. 1987, Rodik - grobišče Pod Jezerom. - *Arheološki vestnik* 38, 69-136.

*ISTENIČ, J. 1992, *Zahodno grobišče Poetovione: keramični pridatki kot vir proučevanja ekonomije antičnega mesta*. - Ljubljana (neobjavljena doktorska disertacija / *unpublished doctoral dissertaion*).

*ISTENIČ, J. 1994, The »Emona« Glass Beakers. - *Arheološki vestnik* 45, 95-98.

*ISTENIČ, J. 1999, *Poetovio, zahodna grobišča I (Poetovio, the Western Cemeteries I)*. - Katalogi in monografije 32.

*ISTENIČ, J. 2000, *Poetovio, zahodna grobišča II (Poetovio, the Western Cemeteries II)*. - Katalogi in monografije 33.

*ISTENIČ, J. 2001, An early mould-blown pyxis from Poetovio. - *Instrumentum 13*, 23-24.

*JEVREMOV, B. 1981, Spodnja Hajdina. - *Varstvo spomenikov* 23, 258-259.

JEVREMOV, B. 1981a, *Obrtniška dejavnost na območju rimskega Poetovia*. - Katalog razstave, Ptuj.

*JEVREMOV, B. 1985, Novosti o obrtniških dejavnostih in nekaj drobcev iz arheoloških izkopavanj v letih 1970-1980. - *Ptujski zbornik* 5, 419-430.

*JEVREMOV, B. 1990, Pozlačeni čebulasti fibuli iz Petovione. - *Arheološki vestnik* 41, 389-402.

KASTELIC, J. 1960, Nov tip halštatskega diadema v Sloveniji. - *Situla* 1, 3-26.

*KASTELIC, J. 1988, Dolenjska v rimski dobi. - V / *in*: *Enciklopedija Slovenije* 2, 289.

KIRIGIN, B. 1980, Merkur bočice iz Arheološkog muzeja u Splitu. - *Vjesnik za arheologiju i historiju dalmatinsku* 72, 61-65.

KIRIGIN, B. 1984, Roman Glass Bowls from the Archaeological Museum at Split. - *Vjesnik za arheologiju i historiju dalmatinsku* 77, 121-131.

KLEIN, M. J. 1996, Römische Luxusgläser aus Hohen-Sülzen (Rheinland-Pfalz, Deutschland). - V / *in*: *Annales du 13e Congrès de l'AIHV*, Lochem, 151-162.

*KNEZ, T. 1969, Novi rimski grobovi na Dolenjskem. - *Razprave I. razreda SAZU* 6, 107-160.

*KNEZ, T. 1981, La nécropole de Beletov vrt à Novo mesto. - *Inventaria Archaeologica Jugoslavija* 27, Beograd.

*KNEZ, T. 1992, *Novo mesto II. Keltsko-rimsko grobišče Beletov vrt*. - Carniola Archaeologica 2, Novo mesto.

*KOLŠEK, V. 1972, *Les nécropoles de Celeia et de Šempeter*. - Inventaria Archaeologica Jugoslavija 16, Beograd.

*KOLŠEK, V. 1977, *Vzhodni del antične nekropole v Šempetru*. - Katalogi in monografije 14.

*KOLŠEK, V. 1978, *Arheološke najdbe iz Gubčeve ulice v Celju*. Katalog razstave. - Celje.

KORFMANN, M. 1966, Zur Herstellung nahtloser Glasringe. - *Bonner Jahrbücher* 166, 48-61.

*KOROŠEC, P. 1982, Nekaj zanimivih kosov steklenih posod iz Rabelčje vasi v Ptuju. - *Arheološki vestnik* 33, 13-32.

*KOROŠEC, P. 1982a, Egipčanske najdbe iz Rabelčje vasi v Ptuju. - *Arheološki vestnik* 33, 33-43.

*KOROŠEC, P. 1982b, Odlomek guturnija iz Poetovione. - *Arheološki vestnik* 33, 44-46.

KOSTER, A., D. WHITEHOUSE 1989, Early Roman Cage Cups. - *Journal of Glass Studies* 31, 25-33.

KRIŽ, B. 1995, *Novo mesto pred Iliri*. - Katalog razstave, Novo mesto.

KRIŽ, B. 1997, *Kapiteljska njiva*. - Katalog razstave, Novo mesto.

KRIŽ, B. 2001, *Kelti v Novem mestu*. - Katalog razstave, Novo mesto.

*KUJUNDŽIĆ, Z. 1982, *Poetovijske nekropole*. - Katalogi in monografije 20.

*LAZAR, I. 1989, *Prispevek k proučevanju antičnega stekla v Sloveniji*. - Ljubljana (neobjavljeno diplomsko delo / *unpublished BA dissertation*).

*LAZAR, I. 1993, Sledovi rimske steklarske proizvodnje v Celeji. - *Celjski zbornik* 1993, 7-16.

*LAZAR, I. 1994, Steklene rebraste skodelice v Sloveniji. - *Celjski zbornik* 1994, 7-22.

*LAZAR, I. 1997, Obrti rimske Celeje. - *Kronika* 45/1-2, 1-7.

*LAZAR, I. 1997a, Poznorimske najdbe iz Celja. - *Arheološki vestnik* 48, 325-331.

*LAZAR, I. 1999, The Roman Tile Factory at Vransko near Celeia (Noricum). - V / *in*: (eds. M. R. De Maine, R. M. Taylor) *Life of the Average Roman - A Symposium*, White Bear Lake, 23-34.

*LAZAR, I. 2000, Ribbed Glass Bowls from the Territory of Modern Slovenia. - V / *in*: *Annales du 14e Congrès de l'AIHV*, Lochem, 63-68.

*LAZAR, I. 2001, Roman Glass from Poetovio - new informations about forms and local production. - *Archaeologia Poetovionensis* 2, Ptuj, 33-40.

*LAZAR, I. 2003, State of Research into Roman Glass production in Slovenia. - V / *in*: *Annales du 15e Congrès de l'AIHV*, Nottingham, 78-81.

* LAZAR, I., B. JEVREMOV, M. TOMANIČ JEVREMOV 2004, Rimske steklarske peči s Spodnje Hajdine na Ptuju. - *Arheološki vestnik* 55, (v pripravi / *forthcoming*).

*LAZAR, I., M. TOMANIČ JEVREMOV 2000, Dragoceni stekleni predmeti iz ptujskega groba 11/1978. - *Arheološki vestnik* 51, 195-204.

*LEBEN, F., Z. ŠUBIC 1990, Poznoantični kastel Vrh Brsta pri Martinj Hribu na Logaški planoti. - *Arheološki vestnik* 41, 313-354.

LECLANT, J. 1973, Glass from the Meroitic necropolis of Sedeinga (Sudanese-Nubia). - *Journal of Glass Studies* 15, 52-68.

LEYGE, F. 1990, Les verres à décors multicolores complexes du Musée Rolin. - V / *in*: *Vitrum. Le verre en Bourgogne*. Katalog razstave, Autun, 84-92.

LIERKE, R. 1993, »aliud torno teritur«. - *Antike Welt* 3, 218-234.

LIERKE, R. 1996, Glass vessels made on a turning wheel in Roman times (survey). - V / *in*: *Annales du 13e Congrès de l'AIHV*, Lochem, 55-62.

*LOŽAR, R. 1935, Steklena čaša iz Črnelega. - *Glasnik Muzejskega društva za Slovenijo* 16, 97-105.

*LOŽAR, R. 1938, Rimska najdba iz Polhovega Gradca. - *Glasnik Muzejskega društva za Slovenijo* 19, 87-108.

MATHESON, S. B. 1980, *Ancient Glass in the Yale University Art Galery*. - New Haven.

MECONCELLI NOTARIANNI, G. 1979, *Vetri antichi nelle collezioni del Museo civico archeologico di Bologna*. - Cataloghi, nuova serie 1, Bologna.

*MIKL CURK, I. 1959, Poročilo o sondiranju v Dolgi vasi pri Lendavi. - *Arheološki vestnik* 9-10, 1958-59, 173-184.

*MIKL CURK, I. 1961, Rimske najdbe iz Ptuja po letu 1954. - *Arheološki vestnik* 11-12, 1960-61, 153-186.

*MIKL CURK, I. 1963, Dva drobca steklenih posod z zlatom iz Poetovia. - *Arheološki vestnik* 13-14, 1962-63, 491-495.

*MIKL CURK, I. 1965, K topografiji rimske mestne četrti na današnjem Zgornjem Bregu v Ptuju. - *Arheološki vestnik* 15-16, 1964-65, 259-282.

*MIKL CURK, I. 1975, *La nécropole de Formin*. - Inventaria Archaeologica Jugoslavija 19, Beograd.

*MIKL CURK, I. 1976, *Poetovio* I. - Katalogi in monografije 13.

*MIKL CURK, I. 1976a, Novo iz Formina. - *Arheološki vestnik* 27, 135-183.

*MIKL CURK, I. 1986, Rimski kastel v Zalogu pri Ljubljani. - *Arheološki vestnik* 37, 227-231.

*MIKL CURK, I. 1996, Arheološki viri k vlogi žene v rimskem Ptuju. - *Ptujski zbornik* 6/1, 157-188.

MOREL, J. *et al.* 1992, Un atelier de verrier du milieu du 1er siècle apr. J.-C. à Avenches. - *Archéologie Suisse* 15/1, 2-17.

MORETTI, C. 1985, Vetro Mosaico, Millefiori, Murrine. - *Bollettino Civici musei veneziani d'arte e di storia* 29, 5-21.

MORIN-JEAN, 1913, *La verrerie en Gaule sous l'empire romain*. - Paris.

MÜLLNER, A. 1900, *Typische Formen aus den archaeologischen Sammlungen des krainischen Landesmuseum Rudolfinum in Laibach in photographischen Reproductionen*. - Ljubljana.

MUNSELL 1992, *Munsell Soil Color Charts*. - New York.

NAUMANN-STECKNER, F. 1991, Depictions of Glass in Roman Wall Paintings. - V / *in*: *Roman Glass. Two Centuries of Art and Invention*, London, 86-98.

NENNA, M.-D., M. VICHY, M. PICON 1997, L'atelier de verrier de Lyon, du Ier siècle après J.-C., et l'origine des verres »romains«. - *Revue d'Archeometrie* 21, 81-87.

NICHOLSON, P. T., C. M. JACKSON 2000, Tell el-Amarna and the Glassmakers' Workshop of the Second Millenium BC. - V / *in*: (ed. M.-D. Nenna) *La Route du verre*, Travaux de la Maison de l'Orient Méditeranéen 32, Lyon, 11-22.

OLIVER, A. 1967, Late Hellenistic Glass in the Metropolitan Museum. - *Journal of Glass Studies* 9, 13-33.

OLIVER, A. 1968, Millefiori Glass in Classical Antiquity. - *Journal of Glass Studies* 10, 48-70.

OLIVER, A. 1984, Early Roman faceted glass. - *Journal of Glass Studies* 26, 35-58.

*PAHIČ, S. 1961, Antične gomile v Prekmurju. - *Arheološki vestnik* 11-12, 88-146.

PAHIČ, S. 1966, Keltske najdbe v Podravju. - *Arheološki vestnik* 17, 271-336.

*PAHIČ S. 1969, Antična gomila z grobnico v Miklavžu pri Mariboru. - *Arheološki vestnik* 20, 35-114.

*PAHIČ, S. 1969a, Antični in staroslovanski grobovi v Brezju nad Zrečami. - *Razprave I. razreda SAZU* 6, 215-308.

*PAHIČ, S. 1978, Najdbe z rimske ceste Slovenska Bistrica - Pragersko. - *Arheološki vestnik* 29, 129-189.

PASQUALUCCI, R. 1998, Contributi sulla colezzione Gorga. Gli unguentari bollati. - *Atti 2e giornate nazionali di studio AIHV - Comitato nazionale italiano (Milano 1996)*, Milano, 115-120.

*PERKO, V., A. BAVDEK, I. LAZAR 1998, Poznoantično najdišče Šmarata. - *Arheološki vestnik* 49, 271-306.

*PETRU, P. 1956, Nove najdbe. - *Arheološki vestnik* 7, 297-304.

*PETRU, P. 1969, Rimski grobovi iz Dobove, Ribnice in Petrušnje vasi. - *Razprave I. razreda SAZU* 6, 5-82.

*PETRU, P., S. PETRU 1978, *Neviodunum, Drnovo pri Krškem*. - Katalogi in monografije 15.

*PETRU, P., V. ŠRIBAR 1956, Nove najdbe. - *Arheološki vestnik* 7, 297-306.

*PETRU, P., T. ULBERT 1975, *Vranje pri Sevnici, Starokrščanske cerkve na Ajdovskem gradcu*. - Katalogi in monografije 12.

*PETRU, P., A. VALIČ 1959, Drugo začasno poročilo o izkopavanjih v Bobovku pri Kranju. - *Arheološki vestnik* 9-10, 133-172.

*PETRU, S. 1969, Antično steklo iz dolenjskih grobov. - *Razprave I. razreda SAZU* 6, 163-179.

*PETRU, S. 1972, *Emonske nekropole*. - Katalogi in monografije 7.

*PETRU, S. 1974, Rimska steklena situla. - *Situla* 14-15, 191-197.

*PETRU, S. 1976, Rimsko steklo Slovenije. - *Arheološki vestnik* 25, 13-34.

*PETRU, S. 1980, Rimska steklena kupa s prizorom cirkuške dirke. - *Situla* 20-21, 445-448.

PIRKMAJER, D. 1994, *Rifnik - Arheološko najdišče, vodnik*. - Celje.

*PLESNIČAR GEC, L. 1967, *La necropole romaine à Emona*. - Inventaria Archaeologica Jugoslavija 10, Beograd.

*PLESNIČAR GEC, L. 1972, *Severno emonsko grobišče*. - Katalogi in monografije 8.

*PLESNIČAR GEC, L. 1976, Steklene zajemalke iz severnega emonskega grobišča. - *Arheološki vestnik* 25, 35-37.

*PLESNIČAR GEC, L. 1981, The production of glass at Emona. - *Archaeologia Iugoslavica* 21-22, 136-142.

*PLESNIČAR GEC, L. 1983, *Starokrščanski center v Emoni*. - Katalogi in monografije 21.

PRICE, J. 1973, Some Roman glass from Spain. - V / *in*: *Annales du 6e Congrès de l'AIHV*, Liège, 65-84.

PRICE, J. 1976, *Glass*. - V / *in*: (eds. Strong, D., D. Brown) *Roman Crafts*, London, 110-125.

PRICE, J. 1977, Roman Unguent Bottles from Rio Tinto (Huelva) in Spain. - *Journal of Glass Studies* 19, 30-39.

PRICE, J. 1985, Early Roman vessel Glass from burials in Tripolitania. - V / *in*: *Town and country in Roman Tripolitania*, British Archaeological Reports. International Series 274, 67-106.

PRICE, J. 1987, Glass Vessel Production in Southern Iberia in the First and Second Centuries A.D.: Archaeological Evidence. - *Journal of Glass Studies* 29, 30-39.

PRICE, J. 1991, Decorated Mould-Blown Glass Tablewares in the First Century AD. - V / *in*: *Roman Glass. Two Centuries of Art and Invention*, London, 56-75.

PRICE, J. 1991a, The evidence for the production of glass in Roman Britain. - V / *in*: *Ateliers de verriers de l'Antiquité à la période Pré-industrielle*, 4e Rencontres de l'AFAV (Rouen 1989), Rouen, 23-27.

PRICE, J. 1998, The social context of glass production in Roman Britain. - V / *in*: (eds. P. McCray, W. D. Kingery) *Prehistory and History of Glassmaking Technology*, Ceramics and Civilisation 8, Westerville, 331-348.

RADEMACHER, F. 1942, Fränkische Gläser aus dem Rheinland. - *Bonner Jahrbücher* 147, 285-344.

RITTERLING, E. 1913, *Das frührömische Lager bei Hofheim im Taunus*. - Annalen des Vereins für Nassauer Altertumskunde und Geschichtsforschung 40.

ROFFIA, E. 1993, *I vetri antichi delle civiche raccolte archeologiche di Milano*. - Milano.

ROTTLOFF, A. 1996, Zwei bedeutende Fundkomplexe römischer Gläser aus Augusta Vindelicum - Augsburg. - V / *in*: *Annales du 13e Congrès de l'AIHV*, Lochem, 163-174.

ROTTLOFF, A. 1999, Römische Vierkantkrüge. - V / *in*: (Hrsg. M. J. Klein) *Römische Glaskunst und Wandmalerei*, Mainz, 41-49.

RUTAR, S. 1894, Die Grabungen in Krain wahrend des Jahres 1893. - *Mitteilungen der K. K. Zentralkomission* 20, Wien, 183-184.

RÜTTI, B. 1988, *Die Gläser*. - Beiträge zum römischen Oberwinterthur - Vitudurum 4. Berichte der Zürcher Denkmalpflege, Monographien 5.

RÜTTI, B. 1991, *Die römischen Gläser aus Augst und Kaiseraugst*. - Forschungen in Augst 13/1, 2.

*RÜTTI, B. 1991a, Early Enameled Glass. - V / *in*: *Roman Glass. Two Centuries of Art and Invention*, London, 122-136.

RUŽIĆ, M. 1994, *Rimsko staklo u Srbiji*. - Centar za arheološka istraživanja 13, Beograd.

*SAGADIN, M. 1999, Late antique glass workshop in Kranj (Slovenia). - *Instrumentum* 9, 31.

*SAGADIN, M. 2000, Poznoantična steklarska delavnica v Kranju. - *Kranjski zbornik* 2000, 13-22.

SAGUÌ, L. 1998, *Storie al caleidoscopio - I vetri della collezione Gorga: un patrimonio ritrovato.* - Roma.

SALDERN VON, A. 1991, Roman Glass with Decoration Cut in High-Relief. - V / *in*: *Roman Glass. Two Centuries of Art and Invention*, London, 111-121.

SCATTOZZA HÖRICHT, L. A. 1986, *I vetri romani di Ercolano.* - Ministero per i beni culturali ed ambientali, Soprintendenza Archeologica di Pompei, Cataloghi 1, Roma.

SCHULER, F. 1959, Ancient Glassmaking Techniques - The Blowing Process. - *Archaeology* 12/2, 116-122.

SCHWINGER, O. 1998, *Multi-Element-Determinations in Roman Glasses.* - Graz (neobjavljeno magistrsko delo / *unpublished MA dissertation*).

SEIBEL, F. 2000, Technologie römischer Glashütten am Beispiel der Ausgrabungen im Hambacher Forst. - V / *in*: *Annales du 14e Congrès de l'AIHV*, Lochem, 156-159.

SEITTER, V. 1991, Bemerkungen zur Herstellung von formgeblasenen römischen Gläsern mit Bodenmarken. - *Archäologisches Korrespondenzblatt* 21, 527-533.

*SLABE, M. 1968, Antični grobovi v Komenskega ulici. - *Arheološki vestnik* 19, 419-426.

*SLABE, M. 1976, Antični grob iz Šahovca pri Dobrniču. - *Arheološki vestnik* 26, 242-249.

*SLABE, M. 1977, Velika Stara vas, Črnomelj, Ig: novi rimski napisi. - *Arheološki vestnik* 28, 110-113.

*SLABE, M. 1993, *Antična nekropola na Pristavi pri Trebnjem.* - Vestnik 12, Ljubljana.

SLAPŠAK, S. 1989, *Apicije, o kuvanju.* - Zagreb.

SMITH, R. 1949, The significance of Roman glass. - *Metropolitan Museum Bulletin* 8/2, 45-60.

SOROKINA, N. P. 1978, Facettenschliffgläser des 2^en^ - 3^en^ Jhd. u. Z. aus dem Schwarzmeesgebiet. - V / *in*: *Annales du 7e Congrès de l'AIHV*, Liège, 111-122.

SOROKINA, N. P. 1979, Ein Glass Pokal mit Iphigeniens Namen aus Pantikapeion. - V / *in*: *Festschrift für Waldemar Haberey*, Mainz, 145-152.

SOROKINA, N. P. 1987, Glass Aryballoi (1^st^ - 3^rd^ Centuries A.D.) from the Northern Black Sea Region. - *Journal of Glass Studies* 29, 40-46.

STARE, F. 1975, *Dobova.* - Posavski muzej Brežice 2, Brežice.

*STARE, V. 1952, Pozno antično grobišče na Ravnem Brdu. - *Arheološki vestnik* 3, 137-141.

*STARE, V. 1980, *Kranj - nekropola iz časa preseljevanja ljudstev.* - Katalogi in monografije 18.

STERN, E. M. 1977, *Ancient Glass at the Fondation Custodia.* - Archaeologica Traiectina 12.

STERN, E. M. 1992, A fourth-century factory for gathering and blowing chunks of glass? - *Journal of Roman Archaeology* 5, 490-494.

STERN, E. M. 1995, *Roman Mold-blown Glass.* - Toledo.

STERN, E. M. 1997, Neikais - A Woman Glassblower of the First Century A. D.? - V / *in*: *Komos - Festschrift für Thuri Lorenz*, Wien, 129-132.

STERN, E. M. in B. SCHLICK-NOLTE 1994, *Early Glass of the Ancient World.* - Stuttgart.

STERNINI, M. 1989, A Glass workshop in Rome (4^th^-5^th^ century A.D.). - *Kölner Jahrbuch für Vor- und Frühgeschichte* 22, 105-114.

STERNINI, M. 1990, *La verrerie romaine du Musée archéologique de Nimes I.* - Cahiers des Musées et Monuments de Nîmes 8.

STERNINI, M. 1991, *La verrerie romaine du Musée archéologique de Nîmes II.* - Cahiers des Musées et Monuments de Nîmes 8.

*STRMČNIK GULIČ, M. 1981, Antično grobišče v Starem trgu pri Slovenj Gradcu. - *Arheološki vestnik* 32, 348-389.

*STRMČNIK GULIČ, M. 1993, Skrb za izročilo preteklosti. - V / *in*: *Ptujski arheološki zbornik*, Ptuj, 481-504.

*SUNKOVSKY, R. 1956, *Antike Gläser in Carnuntum und Wien.* - Wien.

*SVOLJŠAK, D. 1985, Sv. Pavel nad Vrtovinom. Rezultati sondiranj leta 1966. - *Arheološki vestnik* 36, 195-236.

SZÖNYI, E. T. 1973, A győri Kálvária utcai római temető hamvasztásos sirjai. - *Arrabona* 15, 5-67.

ŠARANOVIĆ-SVETEK, V. 1986, *Antičko staklo u jugoslovenskom delu provincije Panonije.* - Monografije 7, Novi Sad.

*ŠAVEL, I. 1990, Antična gomilna grobišča v okolici Strehovec. - *Zbornik soboškega muzeja* 1, 7-17.

*ŠRIBAR, V. 1959, Rimski žgani grob iz Velike Loke pri Žalni. - *Arheološki vestnik* 9-10, 234-107.

*ŠUBIC, Z. 1972, *La nécropole romaine à Poetovio.* - Inventaria Archaeologica Jugoslavija 14, Beograd.

*ŠUBIC, Z. 1976, Tipološki in kronološki pregled rimskega stekla v Poetovioni. - *Arheološki vestnik* 25, 39-61.

TABORELLI, L. 1982, Vasi di vetro con bollo monetale. - *Opus* 1, 315-340.

TABORELLI, L. 1992, Vasi di vetro con bollo monetale (appendice I). - *Opus* 9, 95-97.

TABORELLI; L. 1999, Unguentari di vetro delle necropoli marchigiane: tipi di medie e grandi dimensioni, tra II e III secolo D.C. - *Picus* 19, 267-298.

TARPINI, R. 2000, La forma Isings 42a var. Limburg 1971: Aspetti morfologici-technologici e sua diffusione nell' Italia settentrionale. - V / *in*: *Annales du 13e Congrès de l'AIHV*, Lochem, 95-98.

TERMINI STORTI, A. R. 1994, Una produzione vetraria tardoantica a Sevegliano (agro di Aquileia). - *Aquileia Nostra* 65, 209-224.

TIRELLI, M. 1995, *L'archeologia invita: il museo nazi-*

onale e gli scavi di Altino. - Catalogue of the exhibition, Padova.

*TOMANIČ JEVREMOV, M. 1998, *Ohranimo lepoto preteklosti.* - Zloženka ob razstavi, Ptuj.

TROWBRIDGE, M. L. 1930, *Philological Studies in Ancient Glass.* - Urbana.

*TUŠEK, I. 1985, Ptuj - Novogradnje. - *Varstvo spomenikov* 27, 239-246.

*TUŠEK, I. 1985a, Zlati nakitni predmeti v rimskih grobovih na Ptuju. - *Ptujski zbornik* 5, 405-417.

*TUŠEK, I. 1993, Rimsko grobišče ob novi obvoznici ob Potrčevi cesti v Ptuju. - V / *in*: *Ptujski arheološki zbornik*, Ptuj, 385-448.

*TUŠEK, I. 1997, Skupina poznorimskih grobov iz območja izkopa za stanovanjski blok B-2 v Rabelčji vasi na Ptuju. - *Arheološki vestnik* 48, 289-300.

UBOLDI, M. 1995, Diffusione delle lampade vitree in età tardoantica e altomedievale e spunti per una tipologia. - *Archeologia Medievale* 22, 93-145.

URBAN, O. H. 1984, *Das Gräberfeld von Kapfenstein (Steiermark) und die römische Hügelgräber in Österreich.* - Münchner Beiträge zur Vor- und Frühgeschichte 35.

*URLEB, M. 1974, *Križna gora pri Ložu.* - Katalogi in monografije 11.

*URLEB, M. 1984, Antično grobišče v Cerknici. - *Arheološki vestnik* 34, 298-346.

VAN LITH, S. M. E. 1977, Römisches Glas aus Velsen. - *Oudheidkundige Mededelingen uit het Rijksmuseum van Oudheden te Leiden* 58 (1979), 1-62.

VAN LITH, S. M. E. 1991, First-Century Cantharoi with a Stemmed Foot: Their Distribution and Social Context. - V / *in*: *Roman Glass. Two Centuries of Art and Invention*, London, 99-110.

VAN LITH, S. M. E., K. RANDSBORG 1985, Roman Glass in the West: A Social Study. - *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek* 35, 413-532.

VELDE, B., A. HOCHULI-GYSEL 1996, Correlations between Antimony, Manganese and Iron content in Gallo-roman glass. - V / *in*: *Annales du 13e Congrès de l'AIHV*, Lochem, 185-192.

VELIČKOVIĆ, M. 1976, Tipologija i hronologija rimskog stakla iz Budve u zbirci Narodnog muzeja u Beogradu. - *Arheološki vestnik* 25, 165-174.

VESSBERG, O. 1952, *Roman Glass in Cyprus.* - Opuscula Archaeologica 7.

VESSBERG, O. 1956, Glass: Typology - Chronology. - V / *in*: O. Vessberg, A. Westholm, *The Swedish Cyprus Expedition*. Vol. IV, Part 3: *The Hellenistic and Roman Periods in Cyprus*. - 128-175, 193-219.

*VIČIČ, B. 1993, Zgodnjerimsko naselje pod Grajskim gričem v Ljubljani. Gornji trg 15. - *Arheološki vestnik* 44, 153-201.

*VIČIČ, B. 1994, Zgodnjerimsko naselje pod Grajskim gričem v Ljubljani. Gornji trg 30, Stari trg 17 in 32. - *Arheološki vestnik* 45, 25-80.

*VIČIČ, B., T. SCHEIN 1987, Unec - antično grobišče. - *Arheološki pregled* 1986, 164-165.

VITRUM, 1990, *Vitrum, le verre en Bourgogne.* - Katalog razstave, Autun.

*VODNIK, 1931, *Vodnik po zbirkah Narodnega muzeja v Ljubljani - Kulturnozgodovinski del.* - Ljubljana.

*VOMER GOJKOVIČ, M. 1993, Lončarska opekarska delavnica v rimski obrtniški četrti na Ptuju. - V / *in*: *Ptujski arheološki zbornik*, Ptuj, 449-479.

*VOMER GOJKOVIČ, M. 1996, Grobišče pri Dijaškem domu v Rabelčji vasi na Ptuju. - *Ptujski zbornik* 6/1, 229-312.

*VOMER GOJKOVIČ, M. in N. KOLAR 1993, *Archaeologia Poetoviensis.* - Katalog razstave, Ptuj.

WEINBERG, G. D. 1961, Hellenistic Glass Vessels from the Athenian Agora. - *Hesperia* 30-4, 380-392.

WEINBERG, G. D. 1965, The Antikythera shipwreck reconsidered. - *Transactions of the American Philosophical Society* 55, 30-39.

WEINBERG, G. D. 1970, Hellenistic Glass from Tel Anafa in Upper Galilee. - *Journal of Glass Studies* 12, 17-27.

WEINBERG, G. D. 1972, Mold-blown Beakers with Mythological Scenes. - *Journal of Glass Studies* 14, 26-47.

WEINBERG, G. D. 1988, *Excavations at Jalame. Site of a glass factory.* - Columbia.

WELKER, E. 1974, *Die römischen Gläser von Nidda-Heddernheim.* - Schriften des Frankfurter Museums für Vor- und Frühgeschichte 3.

WELKER, E. 1985, *Die römischen Gläser von Nidda-Heddernheim.* - Schriften des Frankfurter Museums für Vor- und Frühgeschichte 8.

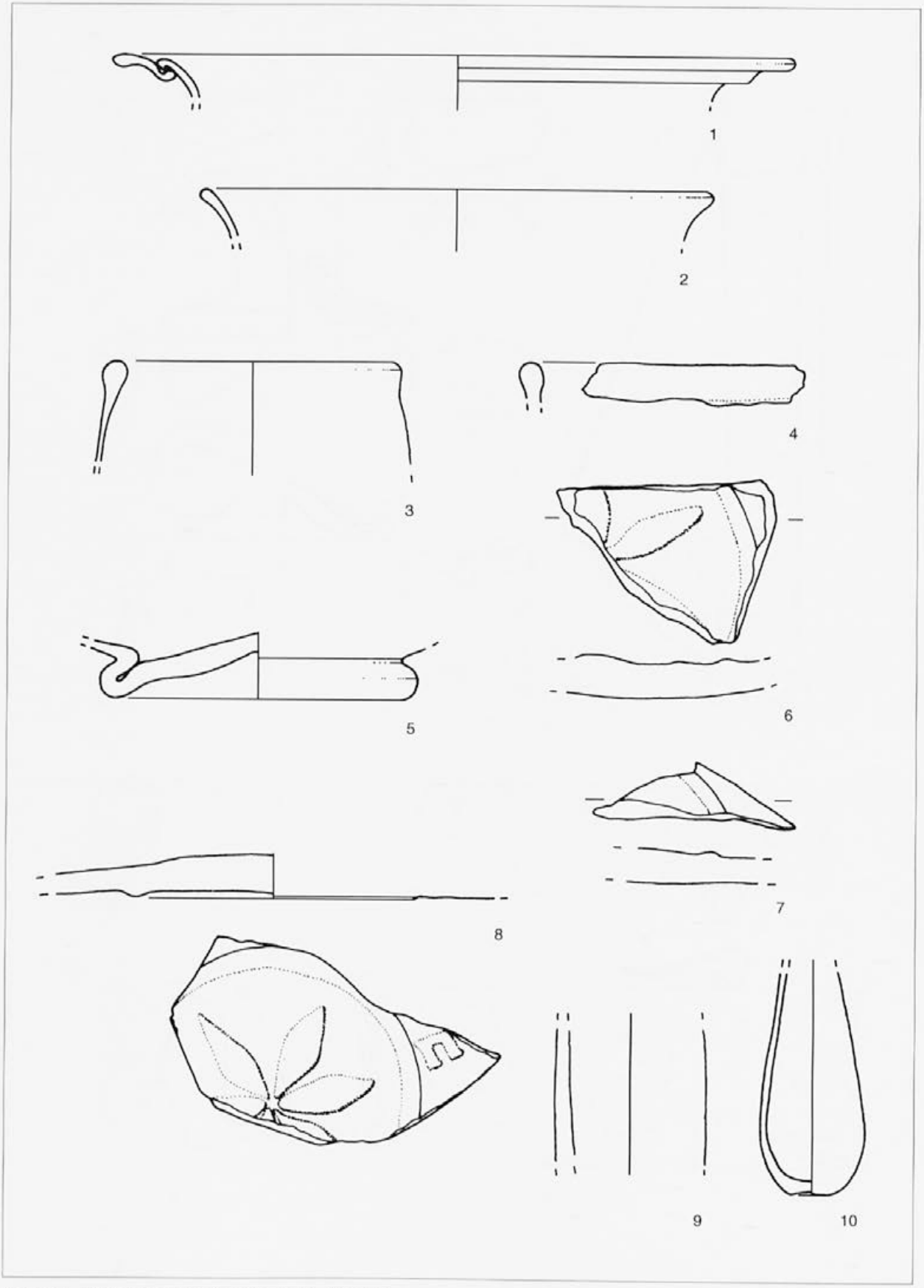
WHITEHOUSE, D. 1991, A glassmaker's workshop at Rome? - *Journal of Roman Archaeology* 4, 385-386.

WHITEHOUSE, D. 1997, *Roman Glass in The Corning Museum of Glass. Volume One.* - Corning, New York.

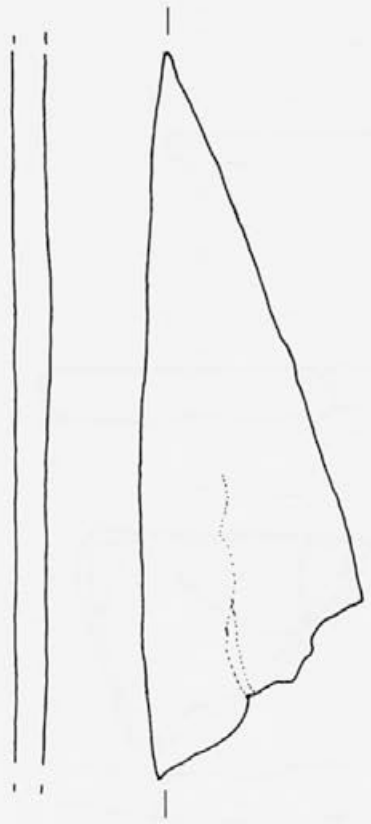
WIGHT, K. B. 1994, Mythological Beakers: A Re-examination. - *Journal of Glass Studies* 36, 24-55.

*ŽIŽEK, I. 1996, Rimsko grobišče na Zgornji Hajdini - Veronekova njiva. - *Ptujski zbornik* 6/1, 313-348.

TABLE /PLATES
1 - 8



T. 1: Ptuj - Hameršek, ob peči 1. Vse steklo. M. = 1:1.
Pl. 1: Ptuj - Hameršek, by furnace 1. All glass. Scale = 1:1.



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3

4

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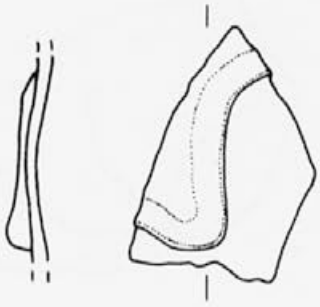
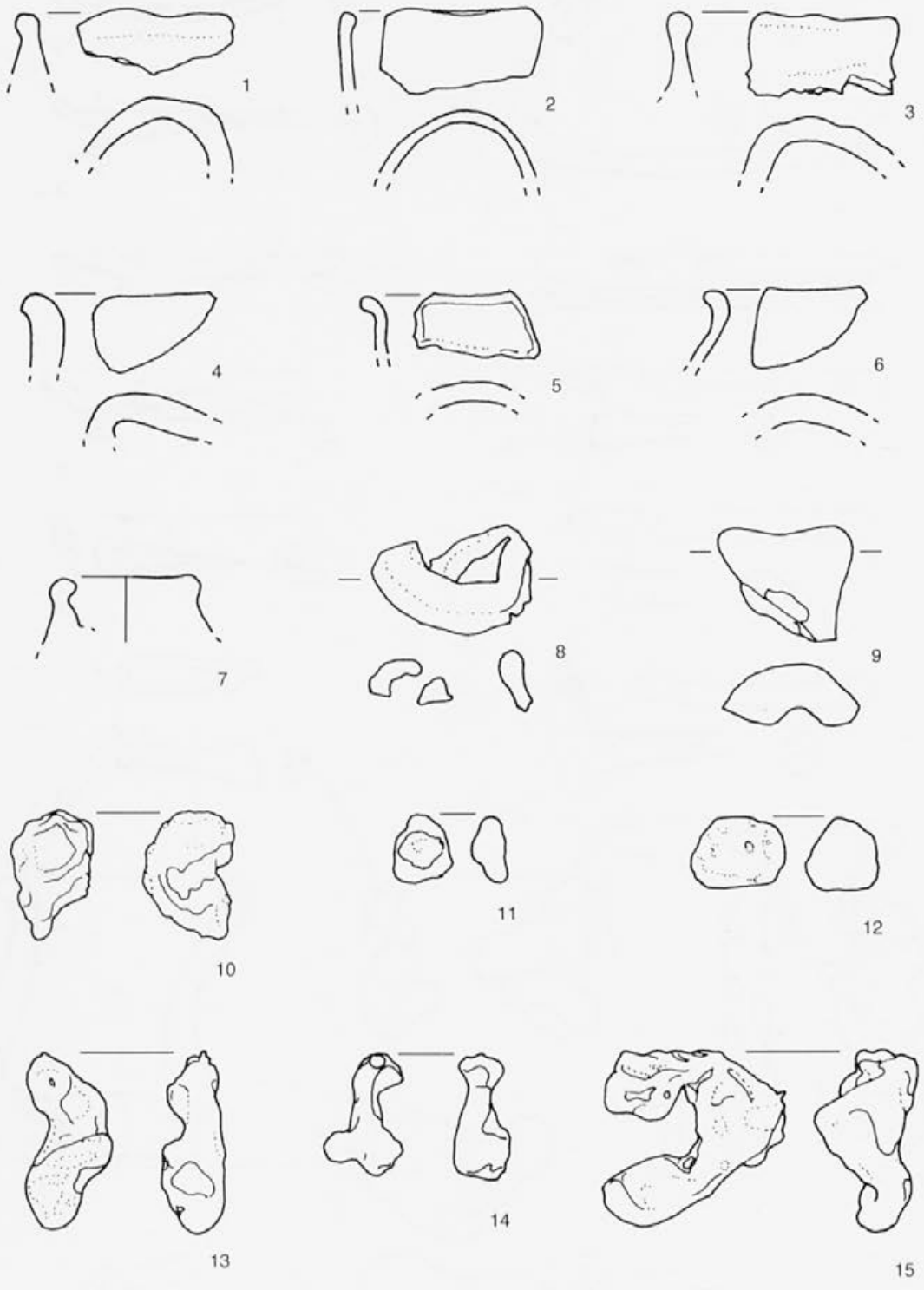
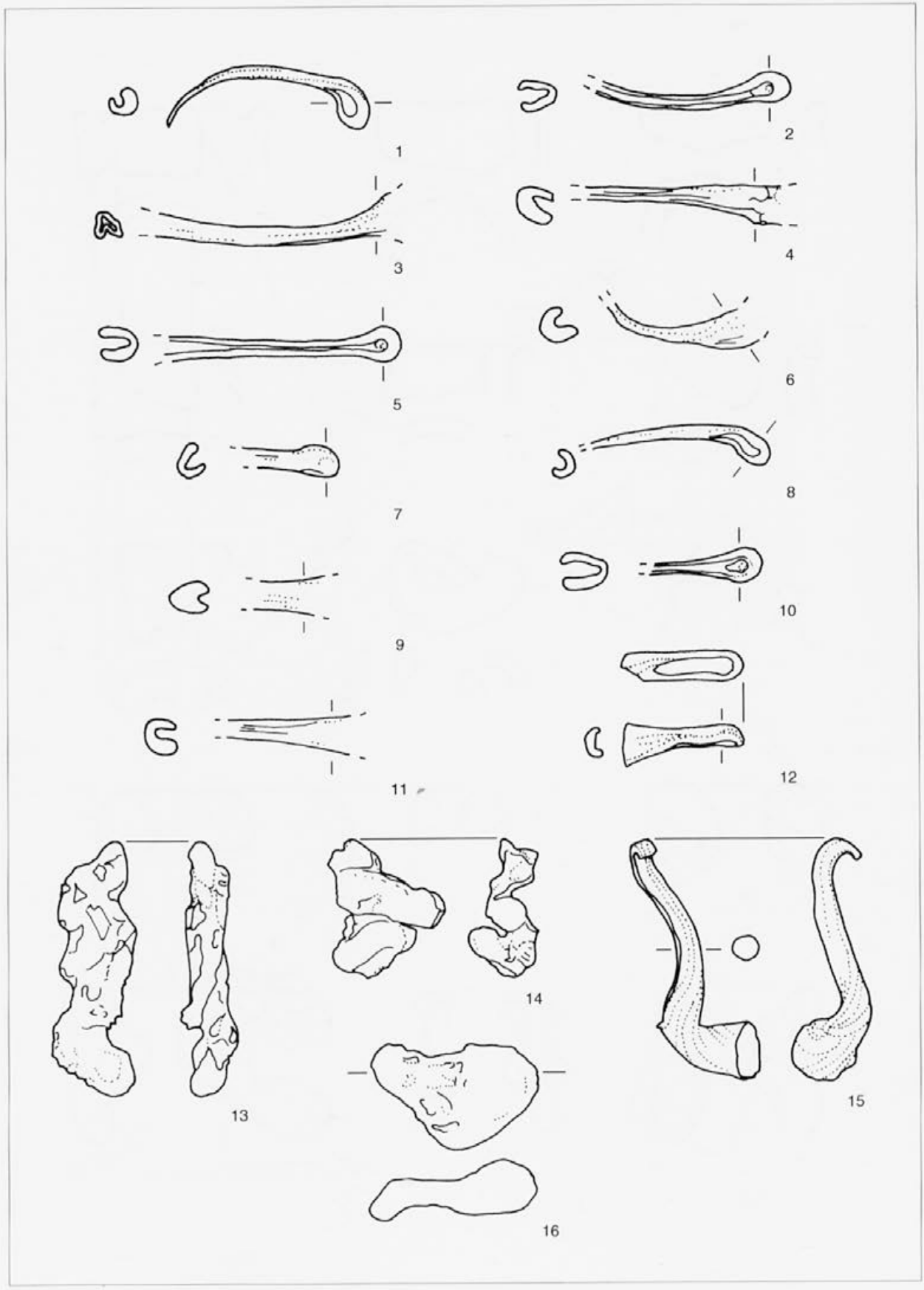


6

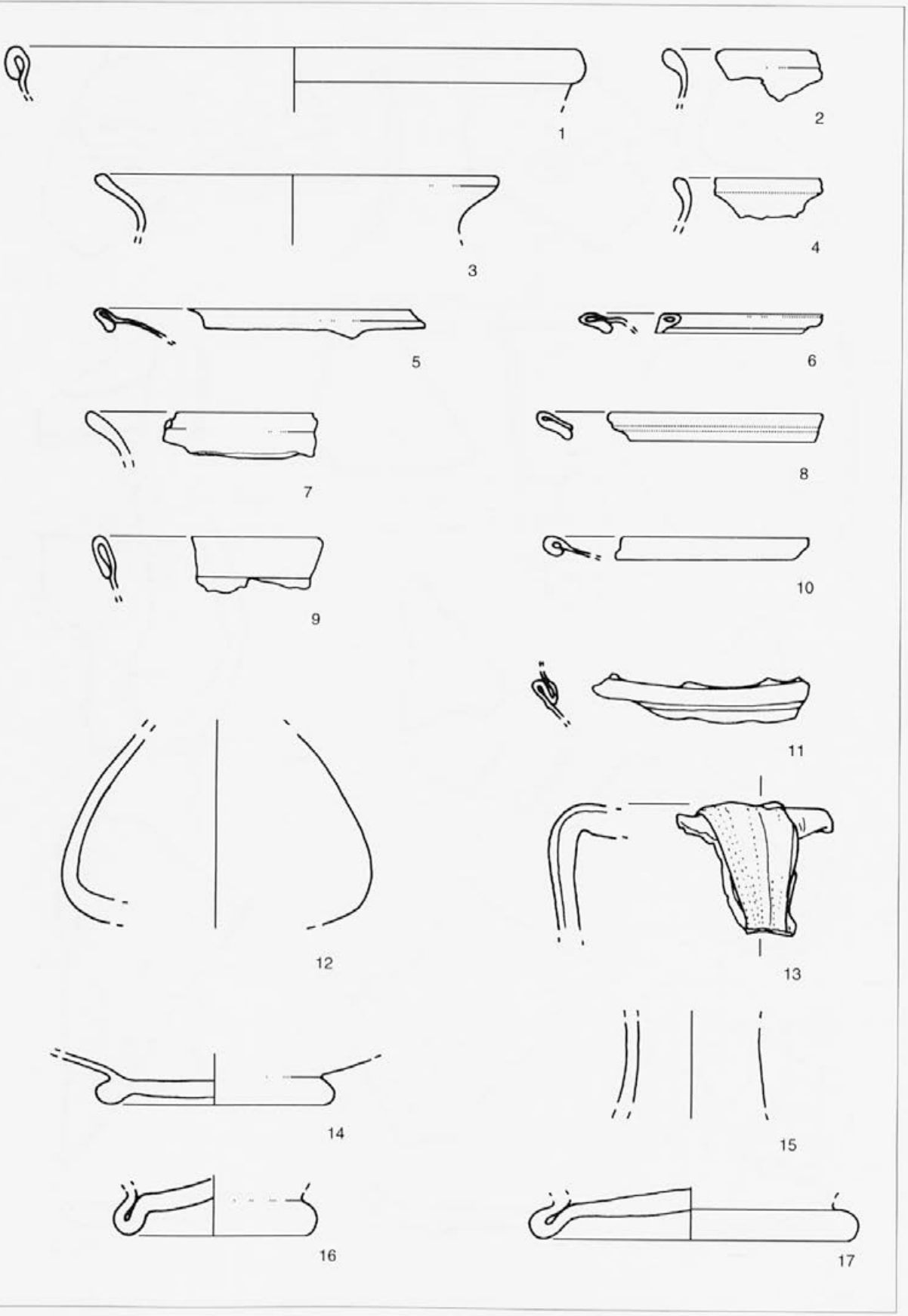
T. 2: Ptuj - Hameršek, ob peči 2 (1-3), peč 3 (4-6). Vse steklo. M. = 1:1.
Pl. 2: Ptuj - Hameršek, by furnace 2 (1-3), furnace 3 (4-6). All glass. Scale = 1:1.



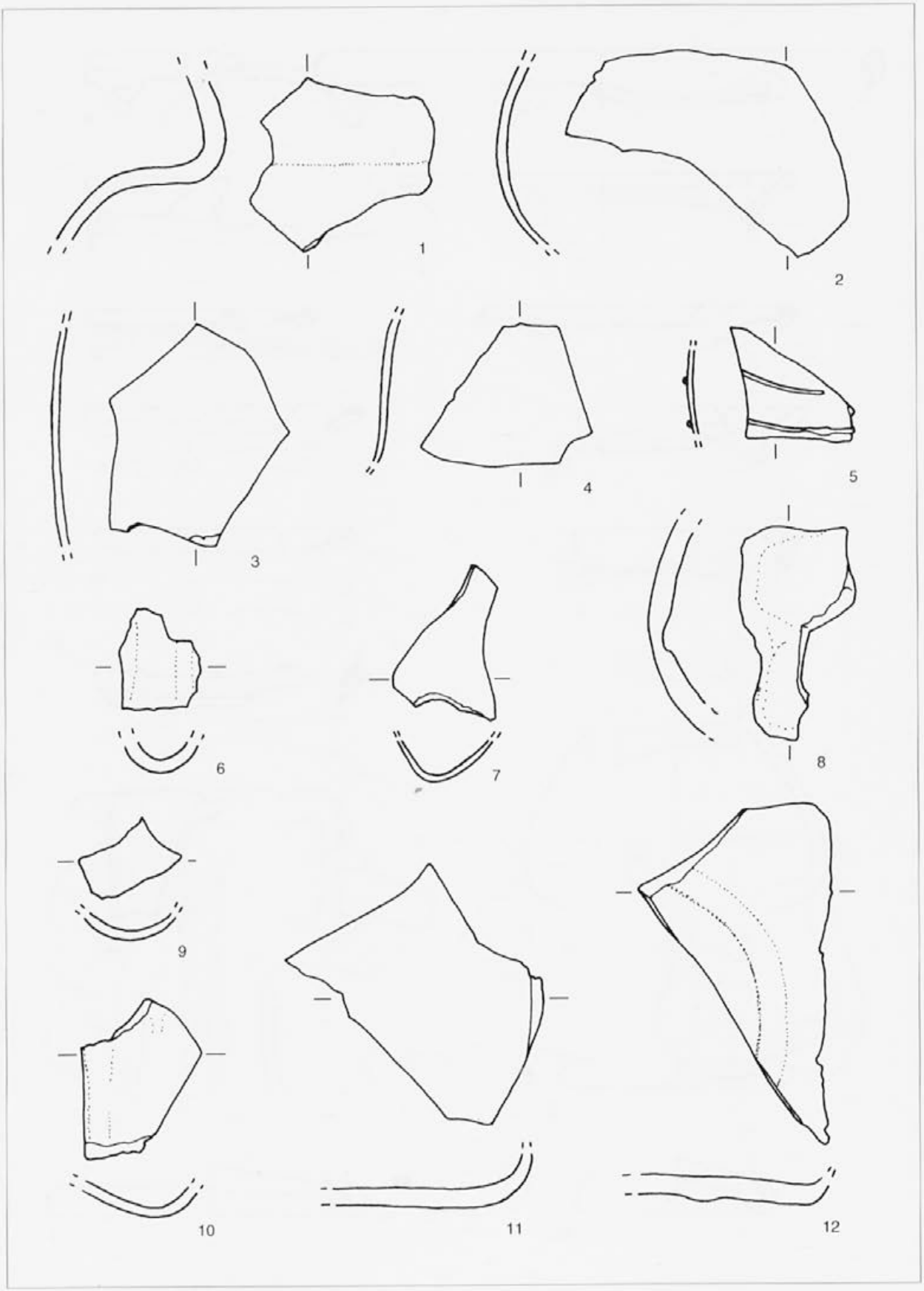
T. 3: Ptuj - Preložnik, peč 2. Vse steklo. M. = 1:1.
Pl. 3: Ptuj - Preložnik, furnace 2. All glass. Scale = 1:1.



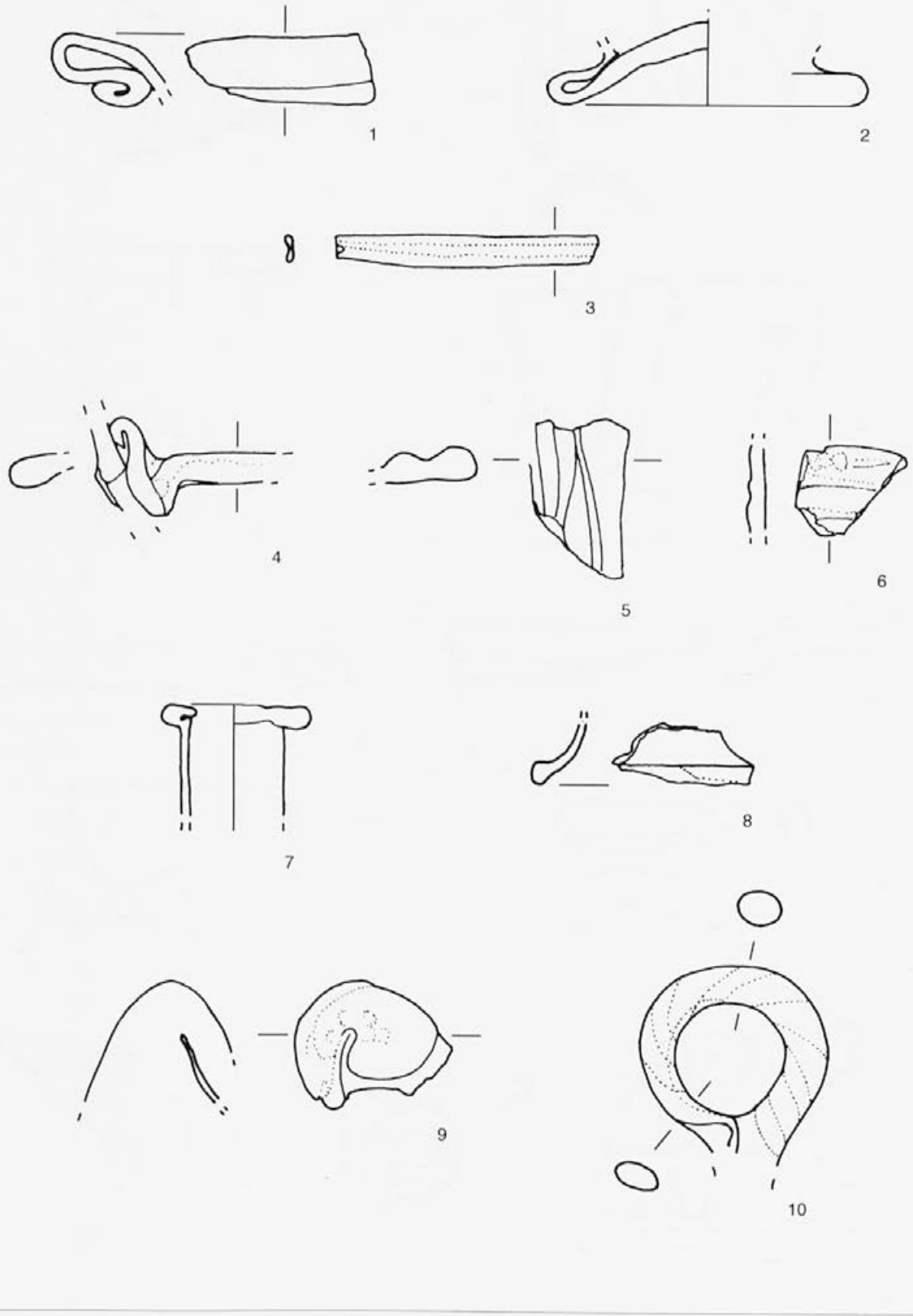
T. 4: Ptuj - Preložnik, peč 2. Vse steklo. M. = 1:1.
Pl. 4: Ptuj - Preložnik, furnace 2. All glass. Scale = 1:1.



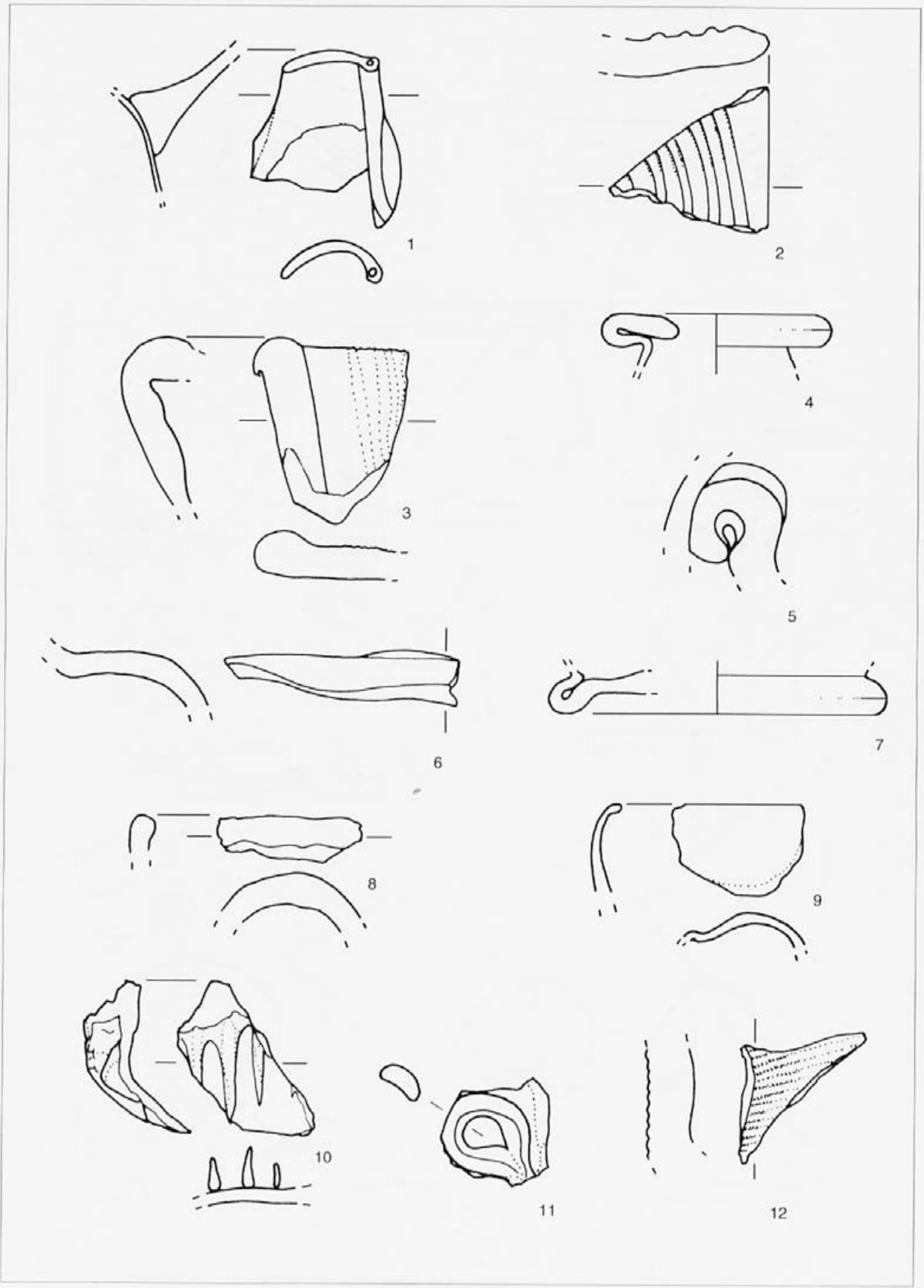
T. 5: Ptuj - Preložnik, peč 2. Vse steklo. M. = 1:1.
Pl. 5: Ptuj - Preložnik, furnace 2. All glass. Scale = 1:1.



T. 6: Ptuj – Preložnik, peč 2. Vse steklo. M. = 1:1.
Pl. 6: Ptuj – Preložnik, furnace 2. All glass. Scale = 1:1.



T. 7: Ptuj - Preložnik, ob peči 2 (1-3), površinske najdbe (4-9), peč 1 (10). Vse steklo. M. = 1:1.
Pl. 7: Ptuj - Preložnik, by furnace 2 (1-3), surface finds (4-9), furnace 1 (10). All glass. Scale = 1:1.



T. 8: Ptuj - Preložnik, peč 3 (1-9), SV del ob peči 3 (10-12). Vse steklo. M. = 1:1.
Pl. 8: Ptuj - Preložnik, furnace 3 (1-9), SE part by furnace 3 (10-12). All glass. Scale = 1:1.

ZRC SAZU, **Založba ZRC**, Novi trg 2, 1001 Ljubljana, p. p. 306;
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www. zrc-sazu.si/zalozba

Skupina / *Group* 1
Krožniki / *Plates*

1.2.1.

1.2.2.

1.2.3.

1.2.4.

1.3.1.

1.3.2.

Skupina / *Group* 2
Skodelice / *Bowls*

2.3.1.

2.3.2.

2.4.1.

2.4.2.

2.4.3.

2.4.4.

2.4.5.

2.4.6.

2.4.7.

2.5.1.

2.5.2.

2.6.1.

2.6.2.

2.6.3.

2.6.4.

2.6.5.

Skupina / *Group* 3
Čaše / *Cups*

3.2.1.

3.2.2.

3.2.3.

3.2.4.

3.2.5.

3.3.1.

3.3.2.

3.3.3.

3.3.4.

3.4.1.

3.4.2.

3.5.1.

3.5.2.

3.5.3.

3.5.4.

3.5.5.

3.5.6.

3.5.7.

3.6.1.

3.6.2.

3.6.3.

3.6.4.

3.6.5.

3.7.1.

3.7.2.

3.7.3.

3.7.4.

3.7.5.

3.8.1.

3.8.2.

3.8.3.

3.8.4.

3.8.5.

3.8.6.

3.9.1.

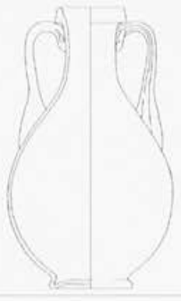
3.9.2.

3.10.1.

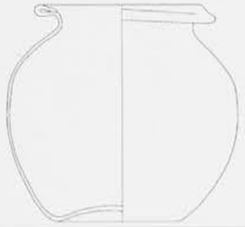
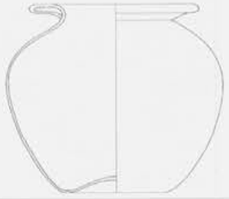
3.10.2.

3.10.3.

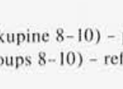
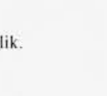
Priloga 1: Prosto pihane posode (skupine 1–3) – preglednica oblik.
Appendix 1: Free-blown vessels (groups 1–3) – reference table.

Skupina / *Group* 4 Zajemalke / *Ladles*									
	4.1.1.	4.1.2.	4.2.1.	4.2.2.					
Skupina / *Group* 5 Vrči / *Jugs*									
	5.1.1.	5.1.2.	5.1.3.	5.1.4.	5.1.5.	5.1.6.	5.1.7.	5.1.8.	5.1.9.
									
	5.2.1.	5.2.2.	5.2.3.	5.2.4.	5.3.1.				
Skupina / *Group* 6 Steklenice / *Bottles*									
	6.2.1.	6.2.2.	6.2.3.	6.2.4.	6.2.5.	6.2.6.	6.2.7.	6.2.8.	6.2.9.

Priloga 2: Prosto pihane posode (skupine 4–6) – preglednica oblik.
Appendix 2: Free-blown vessels (groups 4–6) – reference table.

Skupina / *Group* 6 Steklenice / *Bottles*										
	6.3.1.	6.3.2.	6.3.3.	6.3.4.	6.3.5.	6.3.6.	6.3.7.			
Skupina / *Group* 7 Lonci / *Jars*										
	7.1.1.	7.1.2.	7.1.3.	7.1.4.	7.2.1.	7.2.2.	7.2.3.	7.2.4.	7.3.1.	
Skupina / Group 8 Posodice za olja in dišave / *Cosmetic vessels*										
	8.2.1.	8.2.2.	8.2.3.	8.3.1.	8.3.2.	8.3.3.	8.3.4.	8.4.1.	8.5.1.	
										
	8.6.1.	8.6.2.	8.6.3.	8.6.4.	8.6.5.	8.6.6.	8.6.7.	8.6.8.	8.6.9.	8.6.10.

Priloga 3: Prosto pihane posode (skupine 6–8) – preglednica oblik.
Appendix 3: Free-blown vessels (groups 6–8) – reference table.

Skupina / *Group* 8 Posodice za olja in dišave / *Cosmetic vessels*										
	8.6.11.	8.6.12.	8.6.13.	8.6.14.	8.6.15.	8.6.16.	8.6.17.	8.6.18.	8.6.19.	8.6.20.
Skupina / *Group* 9 Svetilke / *Lamps*										
	9.1.1.	9.1.2.	9.1.3.	9.2.1.	9.3.1.					
Skupina / *Group* 10 Ostalo / *Miscellaneous*										
	10.2.1.	10.2.2.	10.3.1.	10.4.1.	10.5.1.					

Priloga 4: Prosto pihane posode (skupine 8–10) – preglednica oblik.
Appendix 4: Free-blown vessels (groups 8–10) – reference table.

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