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# ULJANICE IZ FLACIUSOVE ULICE U PULI

## OIL LAMPS FROM THE FLACIUSOVA ULICA SITE IN PULA

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*Na pulskoj rivi u Flaciusovoj ulici, tijekom 2012. i 2013. godine, provodilo se arheološko istraživanje u sklopu izgradnje kolektora oborinskih i fekalnih voda grada Pule. Tijekom istraživanja pronađeni su rimski šivani brodovi te brojni drugi arheološki nalazi, a među njima i 23 rimske uljanice. Ovaj će rad tipološki obraditi rimske uljanice pronađene u Flaciusovoj ulici u Puli.*

**KLJUČNE RIJEČI:** antika, Pula, rimske uljanice, tipologija, radionički pečat

*Archaeological excavation was undertaken at the Riva and Flaciusova ulica sites in 2012 and 2013 in the frame of the construction of a wastewater and storm water collector in Pula. Roman sewn boats and numerous other archaeological artefacts were found in the course of the excavation, including twenty-three Roman oil lamps. This paper presents a typological analysis of the Roman period oil lamps found at the Flaciusova ulica site in Pula.*

**KEY WORDS:** Antiquity period, Pula, Roman period oil lamps, typology, lampmakers' signature

## UVOD

Tijekom višegodišnjeg projekta izgradnje kolektora oborinskih i fekalnih voda grada Pule, koji je izvodila tvrtka Pula Herculanea d.o.o, obavljao se i arheološki nadzor. Prilikom izgradnje trase na pulskoj rivi i Flaciusovoj ulici u 2012. i 2013. godini, Arheološki muzej Istre provodi i arheološko istraživanje, zbog iznimno zanimljivih otkrića.

Za vrijeme arheološkog iskopavanja pronađeni su uobičajeni keramički, metalni i kameni artefakti, ali zbog izvrsnih, anaerobnih uvjeta uspjeli su se očuvati i kožni te drveni predmeti poput kožnog potplata cipele ili drvene alatke. No, svakako najznačajniji artefakti iz arheološkog iskopa u Flaciusovoj ulici u Puli jesu dva antička šivana broda koje su Latini nazivali *sutilis* (Moschela 2015, 48). Dobro očuvani, brodovi su izvrstan primjer tehnike šivanja brodova na istočnoj obali Jadrana, no tema ovoga rada su 23 uljanice, odnosno lucerne, koje su također iskopane tijekom arheoloških radova.

## OSVRT NA ARHEOLOŠKO ISTRAŽIVANJE FLACIUSOVE ULICE U PULI

U veljači 2013. godine pronađen je prvi od dva antička broda, nazvan Pula I. Od broda je ostala sačuvana brodska kobilica, 14 rebara te 11 vojeva brodske oplata, no zbog nedovoljno specifičnih elemenata nije bilo moguće odrediti krmu i pramac. Brod je izgrađen tako što su predmetne platice međusobno spajane tehnikom šivanja konopom kroz provrte na sljubnicama platica. Kao tip šivanja primijenjen je Z tip; ovakva je tehnika karakteristična za sjeverni i srednji Jadran te je pronađena i na lokalitetu Canale Anfora<sup>1</sup> (Boetto, Koncani Uhač, Uhač 2015, 7; Brusić 1968, 207–208; Radić Rossi, Boetto 2011, 510). Tehnika šivanja za izradu brodova najpopularnija je bila na području Grčke još u arhajsko doba, no s vremenom biva zamijenjena tehnikom jezičca i utora koja je, iako skuplja i sporija, bila čvršća i jednostavnija za održavanje. No sam nastanak šivanih brodova stariji je od arhajskog doba te se prvi primjerci mogu pronaći već u mezolitičko doba u fluvijalnim područjima. Unatoč prestanku korištenja ove tehnike nakon arhajskog razdoblja, ona se ponovno pojavljuje u 1. st. pr. Kr. na području sjevernog Jadrana, a velika je vjerojatnost da je na istočnoj obali Jadrana njezino korištenje bilo kontinuirano, prenošeno s generacije na generaciju (Beltrame 2012, 75–84, 126–129; Moschela 2015, 46).

<sup>1</sup> Zahvaljujem kolegici Idi Koncani Uhač na ustupljenim informacijama.

## INTRODUCTION

Archaeological supervision was conducted in the course of the multi-year construction of a storm water and wastewater collector in the city of Pula by the Pula Herculanea d.o.o. company. Following on high-interest finds the Archaeological Museum of Istria conducted archaeological excavations in 2012 and 2013 during the construction of the section at the Riva (waterfront street) and Flaciusova ulica (Flaciusova street) locations.

Common ceramic, metal and stone artefacts were found in the course of the archaeological dig, but the excellent anaerobic conditions also saw the preservation of leather and wooden artefacts such as leather shoe soles and wooden tools. Certainly the most significant artefacts from the archaeological dig at Pula's Flaciusova ulica are two Antiquity period sewn boats, referred to by the Latins as *sutilis* (Moschela 2015, 48). Well preserved, the boats are excellent specimens of the sewn boat technique on the eastern Adriatic coast – the topic of this paper, however, are the twenty-three oil lamps (*lucernae*) also excavated during the archaeological work.

## CONCERNING THE ARCHAEOLOGICAL EXCAVATIONS AT THE FLACIUSOVA ULICA SITE IN PULA

The first of the two Antiquity period boats (called Pula I) was found in February of 2013. Preserved parts of the boat include the keel, fourteen ribs and eleven strakes of the boat's plating. The lack of sufficient specific elements did not allow for the identification of the stern and prow. The boat was built such that the shell planks were sewn with rope through holes drilled at the plank joints. "Z" type sewing was used; this technique is characteristic of the northern and central Adriatic and has also been found at the Canale Anfora<sup>1</sup> site (Boetto, Koncani Uhač, Uhač 2015, 7; Brusić 1968, 207–208; Radić Rossi, Boetto 2011, 510). The sewn boat technique of boat building was most popular in Greece as far back as the Archaic period, but was over time supplanted by the tongue and groove method that, although more costly, was also more solid and simpler in maintenance. The emergence of sewn boats, however, predates the Archaic period – we see the first specimens in the Mesolithic period in fluvial areas. Although the technique is abandoned after the Archaic period, it re-emerges in the first century BCE in the northern Adriatic and there is a high probability that its

<sup>1</sup> I wish to thank my colleague Ida Koncani Uhač for the information provided.

Na pet metara udaljenosti od Pule I, u srpnju 2013. godine, pronađen je drugi antički brod, nazvan Pula II. Istražen je u dužini od 610 cm i širini od 210 cm, što ga čini nešto manjim od prvog broda, čije su dimenzije 810 x 410 cm. Pri njegovoj izradi također je korištena tehnika šivanja, no njen jednostavniji, takozvani paralelni (II) tip, koji je poznat s nekoliko lokaliteta na istočnom Jadranu, poput Caske na Pagu i Zatonu pokraj Nina. Osim iste tehnike gradnje i oblika, brod u Caskoj i Pula II imaju podudarnosti i u odabiru materijala za izradu – riječ je o hrastovini i bukovini. Kod broda Pula II ostala je također sačuvana kobilica, 14 rebara te 13 vojeva oplate. Oba broda najnižu točku mjere na 220 odnosno 230 cm ispod današnje razine mora (Beltrame 2012, 126–127; Boetto, Koncani Uhač, Uhač, 2015, 7, 9; Brusić 1968, 207–208; Radić Rossi, Boetto 2010, 300–304; Radić Rossi, Boetto 2011, 508–510). Kobilice obaju brodova bile su izgrađene od hrasta, a daske Pule I bile su napravljene od brijesta, dok su one od broda Pula II bile od bukvinog drveta (Boetto, Koncani Uhač, Uhač 2015, 7–8). Iako je prva datacija brodova Pula I i II bila podosta široka, između 1. i 3. st. pos. Kr. (Boetto, Koncani Uhač, Uhač 2015, 7), dodatnom AMS analizom datirani su na početak 2. st. pos. Kr.

Prilikom istraživanja pronađeni arheološki materijal datira se između 1. i 4. st. pos. Kr, a u amforama u iskupu otkriveni su i brojni ostaci organskog, preciznije biljnog materijala, koji je dan na obradu. Analizom je otkriveno da većina biljnih ostataka pripada voćkama i orašastim plodovima. Ipak, nadaleko prevladavaju smokvine sjemenke, koje su najbrojnije u svim stratigrafskim jedinicama, a prisutni su još i *P. pinea*, *O. europaea subsp. europaea*, *V. vinifera subsp. vinifera*, *R. fruticosus agg.* i *T. aestivum/durum*. Najveću raznolikost vrsta imale su trave i samoniklo, divlje bilje; tako je pronađeno čak 37 različitih vrsta, a čini se da jedino je *C. Myxa* import iz sjeverne Afrike (moguće Tunis i/ili Libija). Ostale su se biljke ili kultivirale ili sakupljale u neposrednoj okolici Pule, ali ne i na mjestu iskopa, nego su u luku dopremljene kao hrana za lokalno stanovništvo i za mornare, ali i kao moguća roba za izvoz (Essert, Koncani Uhač, Uhač, Šoštarić 2016, 9, 11, 14–15,17).

Arheobotanička, a potom i arheološka analiza ukazale su na povezanost antičke Pule s brojnim mediteranskim zemljama pa stoga i ne čudi da je brod Pula II interpretiran kao transportni brod koji je plovio uz obalu i čija je konačna dužina bila između 9 i 10 metara. Pula I je pak interpretirana kao mala jedrilica od 15–ak metara (Boetto, Koncani Uhač, Uhač 2015, 9; Essert, Koncani Uhač, Uhač, Šoštarić 2016, 17). Osim toga, zahvaljujući arheobotaničkim podacima datirani su i kulturni slojevi

use was continuous on the eastern shores of the Adriatic, passed down from generation to generation (Beltrame 2012, 75–84, 126–129; Moschela 2015, 46).

The second Antiquity period boat (Pula II) was found in July of 2013, five metres from the Pula I boat. It was investigated to a length of 610 cm and a width of 210 cm, making it somewhat smaller than the first boat, with dimensions of 810 by 410 cm. It was also built using the sewn boat technique, but applying a simpler method known as the parallel (II) type, known to us from several sites on the eastern Adriatic seaboard such as Caska on the Island of Pag and Zaton near Nin. Besides the same building technique and form, the boat from Caska and the Pula II boat are also consistent in the selection of manufacturing material – oak and beech. The keel, fourteen ribs and thirteen strakes of plating of the Pula II boat have been preserved. The lowest measured points of the two boats are 220 and 230 cm respectively below the current sea level (Beltrame 2012, 126–127; Boetto, Koncani Uhač, Uhač 2015, 7, 9; Brusić 1968, 207–208; Radić Rossi, Boetto 2010, 300–304; Radić Rossi, Boetto 2011, 508–510). The keels of both boats are made of oak, the planks of Pula I are made of elm, while those of Pula II are of beech (Boetto, Koncani Uhač, Uhač 2015, 7–8). While the initial dating of the Pula I and Pula II boats placed them into a wider time frame, between the first and third centuries CE (Boetto, Koncani Uhač, Uhač 2015, 7), additional AMS analysis has dated them to the early second century CE.

The archaeological material unearthed in the course of the excavations is dated between the first and fourth century CE. The amphorae discovered during the dig contained numerous remnants of organic, more precisely plant material, which was submitted for analysis. This revealed that most of the plant remains were of fruits and nuts. By far the dominant group are fig seeds, which are most numerous in all of the stratigraphic units. Also present are *P. pinea*, *O. europaea subsp. europaea*, *V. vinifera subsp. vinifera*, *R. fruticosus agg.* and *T. aestivum/durum*. The greatest diversity was seen among grasses and wild plants; thirty-seven species were identified, with only *C. Myxa* appearing to be an import from northern Africa (possibly Tunisia and/or Libya). The remaining plants were either cultivated or collected in the immediate vicinity of Pula, but not at the dig site – they were brought to the harbour as food for the local population and for sailors, and potentially as goods for export (Essert, Koncani Uhač, Uhač, Šoštarić 2016, 9, 11, 14–15,17).

Archaeobotanical and subsequent archaeological analysis points to the communication Antiquity period Pula had with many Mediterranean lands, and it comes as

antičke rimske luke u kojima su pronađeni brodovi te ostali arheološki materijal, među kojima i uljanice.

Ovim su istraživanjem prvi put sustavno i cjelovito skupljene informacije korisne za rekonstrukciju ovog dijela lučkog bazena antičke Pule, koja se danas, zbog podizanja razine mora, ali i djelovanja čovjeka, nalazi 160 metara od mora. Naime, zbog nedostatka informacija, smještaj antičke luke bio je do istraživanja Flaciusove ulice određivan isključivo usporedbom s poznatom rimskom urbanom infrastrukturom te po geografskoj konfiguraciji tla Pule i njezine okolice. Po dosadašnjim spoznajama, pulska riva je vjerojatno u antici bila zaljev, a sami slojevi koji su prekrili antičku luku većinom su aluvijalni, zbog još uvijek aktivnog potoka Pragrande (Boetto, Koncani Uhač, Uhač 2015, 5-6; Essert, Koncani Uhač, Uhač, Šoštarić, 2016, 3).

## TIPOVI ULJANICA PRONAĐENI U FLACIUSOVOJ ULICI U PULI

Osnovna funkcija uljanica ili lucerni, čije ime potječe od grčke riječi *luknos*, bila je osvjetljavanje prostora, kako privatnih, tako i javnih, a bile su korištene među svim slojevima stanovništva još od prapovijesti. Najčešći materijal koji se koristio za njihovu izradu je glina, no pronađene su i brončane, olovne, srebrne uljanice, pa čak i mramorne te jantarne. Postavši s vremenom elegantnija, uljanica više nema samo funkcionalnu već i dekorativnu ulogu, koja je bila podjednako važna (Bersa 1902, 170; De Carolis 1982, 3-5, 7; Mardešić 2002, 351; Starac 1993, 6; Vikić-Belančić 1971, 100-101; Zaninović 2004, 12-14).

U carsko doba proizvodnja rimskih uljanica doživljava pravi procvat te se širi diljem Carstva. Tehnika proizvodnje s dvodijelnim kalupima dodatno se usavršava i postaje brža, a centar proizvodnje se iz rimskih radionica seli u one cisalpinske. Krajem 2. st. gospodarska kriza zahvatila je područje Italije, a posebno se odrazila upravo na sjevernoitalske radionice, što utječe na razvoj velikih radionica u provincijama, dok italskim proizvodima opada kvaliteta pa se smanjuje i potražnja na drugim tržištima. U 4. stoljeću tržište preplavljaju sjevernoafričke uljanice (Mardešić 2002, 352; Starac 1993, 7; Vikić-Belančić 1971, 103; Zaninović 2004, 12-14).

No, tržištem ipak stoljećima prevladavaju rimske uljanice, karakteristične zbog raznovrsnih reljefnih prikaza na disku, ali i one jednostavnih formi s pečatima radionica, nastale kao rješenje za veliku potražnju tzv. Firmalampe (De Carolis 1982, 23; Mardešić 2002, 352; Vikić-Belančić, 1971, 103).

Tijekom arheološkog istraživanja Flaciusove ulice u Puli pronađene su ukupno 23 uljanice, od kojih su neke

no surprise then that the Pula II boat has been interpreted as a transport vessel that sailed along the coast and that had a full length of between nine and ten metres. The Pula I boat was, for its part, interpreted as a small sailboat of some fifteen metres (Boetto, Koncani Uhač, Uhač 2015, 9; Essert, Koncani Uhač, Uhač, Šoštarić 2016, 17). Dating was also achieved with the help of archaeobotanical data of the cultural layers of the Roman harbour in which the boats were found, and of the other archaeological material, including the oil lamps.

This excavation has provided the first systematic and comprehensive gathering of information useful in the reconstruction of this part of the harbour basin of Antiquity period Pula that today, due to a rise in the sea level and human activity, is situated 160 metres from the sea. Due, namely, to a lack of information, the location of the Antiquity period harbour was, up to the excavation at the Flaciusova ulica site, determined solely by comparison with known Roman urban infrastructure and by the geographic configuration of the terrain in Pula and its environs. Based on our insight up to now the Pula waterfront was likely a bay during the Antiquity period, while the layers that covered the Antiquity period harbour are for the most part alluvial, from the still active Pragrande stream (Boetto, Koncani Uhač, Uhač 2015, 5-6; Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3).

## THE TYPES OF OIL LAMPS FOUND AT THE FLACIUSOVA ULICA SITE IN PULA

The basic function of oil lamps or *lucernae*, a name originating from the Greek *luknos*, was to light rooms, both private and public, and they have been in use among all societal strata since prehistoric times. Clay is the material most often used in their manufacture, but we have also found those made of bronze, lead, silver and even marble and amber. Becoming more elegant over time, the oil lamp has satisfied not only a functional, but also a decorative role of equal importance (Bersa 1902, 170; De Carolis 1982, 3-5, 7; Mardešić 2002, 351; Starac 1993, 6; Vikić-Belančić 1971, 100-101; Zaninović 2004, 12-14).

The production of Roman oil lamps flourished during the imperial period and spread across the Empire. Production became more rapid and the technique using a two-part mould was further perfected, while the hub of manufacturing moved from workshops in Rome to those in the cisalpine area. By the late second century Italy was caught up in an economic crisis, which impacted northern Italian workshops in particular and led to the development of large workshops in the provinces, while Italic production saw a decline in quality and a drop in demand from other markets. In the fourth century the market is flooded with North African oil lamps (Mardešić 2002, 352; Starac 1993,

u cijelosti sačuvane, a druge samo fragmentarno. Neki od fragmenata tipološki nije moguće razvrstati, dok su uljanice koje su bile cjelovite razvrstane u pet tipova prema Loeschcke (I, III, VIII, IX i X). Ipak, pojedine se uljanice ne uklapaju u Loeschckeovu tipologiju već pripadaju kasnijim, kasnoantičkim lucernama, a zabilježeno je i nekoliko primjeraka tzv. korintskih uljanica (Broneer 1977, 64; Loeschcke 1919, 211-312).

Zbog fragmentarne sačuvanosti pojedine uljanice nije moguće svrstati u određenu grupu, moguće je samo odrediti pripadaju li svjetiljkama s dekorativnim prikazom na disku ili onima s radioničkim pečatom. Za takvu podjelu bilo je potrebno odrediti nekoliko ključnih elemenata, kao što su boja keramike odnosno premaz, prikazi na disku te karakteristični elementi poput gorila<sup>2</sup>, uške, obruba i sl.

Pronađeno je i nekoliko ulomaka diska s reljefnim ukrasom, koje je teško preciznije uklopiti u Loeschckeovu tipologiju, prije svega zbog njihove fragmentarnosti. Ulomci su premazani crvenom bojom, s prikazom sove (inv. br. PV-1225A), kojoj je sačuvan i mali dio ramena s profilom III A pa je moguće da pripada tipu Loeschcke I. Sličan prethodnome je i ulomak diska s biljnim motivom, odnosno listom (inv. br. PV-1234A), no nažalost sačuvani dio u potpunosti je amorfan pa mu je nemoguće odrediti tipologiju. Mali ulomak diska, bez glazure (inv. br. PV-1249A), ima teško raspoznatljiv reljefni prikaz te se čini da prikazuje krilatu ljudsku figuru, možda erota. Također zbog nedostatka elemenata, tipologija je ostala neodređena. Pronađeno je i dno uljanice (inv. br. PV-1230A, TAB VIII), a zbog njegovog crvenog premaza najvjerojatnije pripada nekom od Loeschckeovih tipova od I do VIII. Jedan fragmentarni ulomak moguće je interpretirati kao uljanicu s radioničkim pečatom, ali ne i koji je njezin tip. To je ulomak ramena i diska, gdje se vidi samo djelić obruba i jedna neperforirana uška (inv. br. PV-1232A), a bez gorila nemoguće je odrediti radi li se o tipu Loeschcke IX ili X.

### **Korintske uljanice (TAB I, II, III, IV, V)**

(Broneer XXVII, Ivanyi X)

Iako brojnošću prevladavaju rimske uljanice, pronađeno je nekoliko primjeraka čiji se sačuvani ulomci mogu interpretirati kao uljanice korintškoga porijekla. Riječ je o četiri ulomka, od kojih su dva izgledom međusobno veoma slična, odnosno riječ je o donjim dijelovima tijela i ručke. Treći ulomak je dio ramena i diska s ručkom, dok je onaj četvrti ulomak diska i gorila. Izrađeni su od gline blijede žućkaste boje,

7; Vikić-Belančić 1971, 103; Zaninović 2004, 12-14).

For centuries, however, the market was dominated by Roman oil lamps, characterised by the diverse relief imagery on the discus of the vessel and by lamps of simple forms bearing lampmakers' signatures – the *Firmalampen*, created to address the great demand for the product (De Carolis 1982, 23; Mardesić 2002, 352; Vikić-Belančić 1971, 103).

A total of twenty-three oil lamps were discovered in the course of the archaeological excavation of the Flaciusova ulica site in Pula, some preserved intact, others only as fragmentary finds. A typological classification is not possible for some of the fragments, while the oil lamps that were largely whole were categorised into five types following the Loeschcke classification (I, III, VIII, IX and X). Some of the lamps, however, are not covered by the Loeschcke typology, but are rather late Antiquity lamp types. Furthermore a number of specimens were identified as Corinthian oil lamps (Broneer 1977, 64; Loeschcke 1919, 211-312).

The fragmentary preservation of some of the lamps precludes their precise classification and they can only be categorised as lamps with decorative imagery on the discus or as those bearing a lampmakers' signature. For this division we had to identify a number of key elements, including the colour of the pottery and slip, the depiction on the discus and characteristic elements such as nozzles<sup>2</sup>, lugs, rims and the like.

Several discus sherds were found with decorations in relief that we could not fit precisely into the Loeschcke typology, above all due to their fragmented condition. The sherds bear a red slip and the image of an owl (Inv. No. PV-1225A) with a small part of the shoulder preserved with an III A profile, meaning that it may be of the Loeschcke I type. Similar to this is a discus sherd with a vegetal, i.e. leaf motif (Inv. No. PV-1234A), however the preserved section is entirely amorphous and its typology cannot be determined. A small discus sherd without glazing (Inv. No. PV-1249A) bears a hardly perceptible image in relief that may depict a winged human figure, perhaps an Erote. The typology is once again undetermined due to the lack of elements. Also found was the base of a lamp (Inv. No. PV-1230A, TAB VIII) the red slip of which likely makes it attributable to one of the Loeschcke I to VIII types. One fragmentary sherd can be interpreted as a lamp with a lampmakers' signature, but a determination of its type remains elusive. The sherd is from the shoulder and discus, where we see only a small part of the rim and one unperforated lug (Inv. No. PV-1232A) – without the nozzle we cannot determine if this is of the Loeschcke IX or X type.

<sup>2</sup> Neki autori umjesto "gorilo" koriste termin "nos".

<sup>2</sup> In place of "nozzle" some authors use the term "spout".

tipične za korintsku proizvodnju, bez premaza, što su sve karakteristike korintskih uljanica tipa XXVII po Broneeru, u koji spadaju čak tri pulska primjerka (Broneer 1977, 64).

Broneerov tip uljanica XXVII lokalne je korinthske proizvodnje, a pojavljuju se kao već potpuno razvijen proizvod na prijelazu iz 1. u 2. stoljeće naše ere. Takva situacija objašnjava se činjenicom da su korintski majstori imitirali rimske glazirane uljanice, stvarajući tako Broneer tip XXIII, koji je istovjetan s Loeschckeom IV, ali i tipove XXIV te XXV, koji su prijelazni tipovi između imitiranog rimskog tipa XXIII i korintskog tipa XXVII. Također, treba naglasiti da analogije postoje samo za prvi od pet podtipova, XXVII A, dok za ostale nije utvrđena sličnost. Tip XXVII C, koji je ujedno i najbrojniji, preuzima ušice od uljanica s radioničkim pečatom tzv. Firmalampe, koje i u ovom slučaju nemaju nikakvu funkciju osim dekorativne. Kod korintskih uljanica ušice nisu izbočene nego su plosnate, tvoreći na taj način dva mala nedekorirana panela na bogato ukrašenom ramenu (Broneer 1977, 64,68; Ivanyi 1935, 13-14; Protulipac 2016, 79). U 2. stoljeću, posebice za vrijeme Hadrijana, masovno se izvoze u Atenu, a potom ih proizvode lokalni atenski keramičari (Broneer 1977, 64-65).

Dakle, Broneer tip XXVII dijeli na pet podtipova, od A do E, koji se međusobno razlikuju prema načinu ukrašavanja diska, ramena i ručke. Podtip A, koji je jedini zabilježen u Puli, kronološki je najraniji, a tu činjenicu potvrđuje i sličnost s tipom XXV, tranzitnom formom između uvezenih rimskih uljanica i tipa XXVII. Ostali podtipovi pojavljuju nedugo potom te se proizvode istovremeno (Broneer 1977, 55-60, 66).

Kao i većina lucerni, i tip Broneer XXVII izrađivao se uz pomoć dvodijelnog kalupa, a rupa na dršci i ona na disku naknadno su urezivane. Mnoge su imale i radionički pečat na donjoj strani. Ovaj korintski proizvod od druge polovice 2. st. do početka 3. st. predstavlja vrhunac proizvodnje uljanica na tlu Grčke, a bio je toliko popularan da se izvezio diljem Grčke. Iako se tip XXVII proizvodi i kroz cijelo 3. st., njihova kvaliteta opada, a ubrzo nakon toga centar proizvodnje uljanica seli se iz Korinta u Atenu. Upravo za vrijeme njihovog vrhunca zabilježen je povećan izvoz iz Grčke diljem Mediterana, općenito keramičkih predmeta pa tako i uljanica. Stoga primjerke korintskih lucerni pronalazimo u Egiptu, Cipru, Maloj Aziji, Italiji, ali i na hrvatskoj obali Jadrana, u Splitu, Saloni, Makarskoj, Zatonu kraj Nina (Broneer 1977, 64-66; Mardešić 2002, 353; Protulipac 2016, 78-90; Vikić-Belančić 1971, 116) te dakako u Puli.

## Corinthian Lamps (TAB I, II, III, IV, V)

(Broneer XXVII, Ivanyi X)

Although Roman lamps dominate in terms of their number, the excavation also yielded finds of several specimens the preserved sherds of which can be interpreted as lamps of Corinthian provenance. These are four sherds of which two are of very similar appearance, sections from the lower part of the body and handle. The third sherd is a shoulder and discus section with the handle, while the fourth is a part of the discus and nozzle. They are made of pale yellow clay, typical of Corinthian production, without slip, all characteristics of Broneer's type XXVII to which three specimens from Pula are attributable (Broneer 1977, 64).

Broneer's type XXVII lamp is of local Corinthian make and appears as a fully developed product at the turning of the first and second century CE. This situation is explained by the fact that the Corinthian lampmakers imitated Roman glazed lamps, creating the Broneer type XXIII, which corresponds to the Loeschcke type IV, and the XXIV and XXV types, which are transitional forms between the imitation of the Roman type XXIII and the Corinthian type XXVII. It is also worth noting that there are only analogies for the first of the five sub-types, XXVII A, while similarities have not been determined for the others. Type XXVII C, which is also the most numerous, adopts the lugs from lamps with lampmakers' signatures (*Firmalampen*), but gives them no functional role, solely a decorative one. On Corinthian lamps the lugs are not projected from the body of the lamp, but are, rather, flat, thus creating two small undecorated panels on a richly decorated shoulder (Broneer 1977, 64, 68; Ivanyi 1935, 13-14; Protulipac 2016, 79). In the second century, in particular during the reign of Hadrian, they are massively exported to Athens and later manufactured by local Athenian potters (Broneer 1977, 64-65).

Broneer, then, divides type XXVII into five subtypes, from A to E, that are distinguished one from the other by the way in which the discus, shoulder and handle are decorated. Subtype A, the only one to be identified in Pula, is earliest in terms of chronology, a fact confirmed by its similarity with type XXV, a transitional form between the imported Roman lamps and type XXVII. The other subtypes appear not long afterwards and are produced concurrently (Broneer 1977, 55-60, 66).

As with most lamps, the Broneer type XXVII was also manufactured using a two-part mould, with the hole in the handle and the filling hole on the discus cut out at a later stage in production. Many also bore lampmakers' signatures on the bottom. From the second half of the second to the early third century this Corinthian product

Broneerovom podtipu XXVII A, koji ima rame ukrašeno ovulima, dok je disk zrakasto dekoriran, a ponekad i ostavljen prazan, pripada i ulomak iz Pule (inv. br. PV-1221A). U njegovom je slučaju sačuvan dio ramena, diska i ručke te ima utisnute ovule na ramenu, dok je disk bez dekoracije. Tipu XXVII pripada i ulomak uljanice (inv. br. PV-1226A) koji na dnu ručke ima urezan X, dok se na dijelu gdje se tijelo uljanice spaja s ručkom nalaze tri kružnice, a svaka od njih sastoji se od još po tri koncentrične kružnice. Budući da nije sačuvano ni rame ni disk lucerne, nemoguće je odrediti njezin podtip. Treća lucerna (inv. br. PV-1226A) osim žljebova na ručki nema dekoracija pa je i u ovom slučaju teško odrediti podtip.

Četvrta uljanica, ulomak diska s reljefnim prikazom i dijelom gorila s volutom (inv.br. PV-1223A), uklapa se u Loeschckeov tip I, onaj tip uljanica s uglatim volutnim gorilom, no određivanje podtipa je otežano zbog fragmentarno očuvanog gorila. Ipak, najvjerojatniji podtip je C. Loeschcke I istovjetan je tipu Broneer XXII, okruglog je tijela, najčešće bez ručke i s uglatim (trokutastim) volutnim gorilom. Uljanice su glazirane crveno-smeđom bojom, a disk je ukrašen reljefnim prikazom i odijeljen je od uskog ramena jednim ili dvama žljebovima. Ovakve su uljanice u Korint većinom uvezene iz Italije (Broneer 1977, 55-56; Loeschcke 1919, 212-220; Vikić-Belančić 1971, 104-105). Ulomak iz Flaciusove ulice uvršten je u korintske lucerne zbog njegove blijede žute boje, koja je specifična za korintsku glinu, kao i zbog nedostatka premaza. Čini se da je pulski primjerak uljanice lokalna korintska imitacija uljanica s uglatim volutnim gorilom importiranih iz Italije.

U ovu skupinu može se svrstati još jedan pulski ulomak diska (inv. br. PV-1249A), koji bojom i nedostatkom glazure podsjeća na korintske uljanice.

Tip XXVII datira se na kraj 1. st, a traje tijekom 3. i 4. stoljeća; kao što je već napomenuto podtip A je najraniji, dok se C i D smještaju od druge polovice 2. st. Zbog reljefnih dekoracija, kao što je stilizirano janje, ovaj se tip svjetiljki iz 3. i 4. st. može promatrati i u ranokršćanskom kontekstu. Korintske uljanice često imaju pečat majstora na dnu recipijenta, koji osim određivanja radionice pomaže i u dataciji, no kod pulskih ulomaka dno nije sačuvano. Još jedan čimbenik koji određuje dataciju jesu žljebovi na ručkama. Naime, žljebovi su na ranijim uljanicama bili prisutni samo na gornjem dijelu ručke, što znači da ih donji kalup nije imao. Tri pulska primjerka imaju sačuvane ručke, kod dva ulomka (Inv. br. PV-1226A i PV-1243A) je to donji dio na kojem se jasno vide žljebovi, dok je na trećem sačuvan samo gornji dio ručke pa nije relevantan (Broneer 1977, 66; Busuladžić 2007,

constitutes the pinnacle of oil lamp production in Greece and was so popular that it was exported across Greece. Although type XXVII is manufactured during the whole of the third century, its quality dropped, quickly followed by the transfer of the hub of oil lamp production from Corinth to Athens. There was increased exporting to across the Mediterranean from Greece coinciding with this peak of production of pottery in general, including oil lamps. We thus find specimens of Corinthian lamps in Egypt, Cyprus, Asia Minor, Italy and on the Croatian Adriatic coast, in Split, Salona, Makarska, Zaton near Nin (Broneer 1977, 64-66; Mardešić 2002, 353; Protulipac 2016, 78-90; Vikić-Belančić 1971, 116) and, of course, in Pula.

One of the sherds from the Pula site (Inv. No. PV-1221A) is of Broneer's subtype XXVII A, which has a shoulder decorated with ovules and either a blank discus or one decorated with a radial motif. In this case we have a preserved shoulder, discus and handle section with ovules impressed into the shoulder, with an undecorated discus. Also of the XXVII type is a lamp sherd (Inv. No. PV-1226A) with an incised "X" on the bottom of the handle, with three circles at the point where the body meets the handle, each of these consisting of a further three concentric circles. Given that neither the shoulder nor the discus of this lamp has been preserved, we cannot determine its subtype. A third lamp (Inv. No. PV-1226A) has no decoration outside of grooves on the handle, and here too a determination of its subtype is difficult.

A fourth lamp is represented by a discus sherd with an image in relief and a part of the nozzle with volutes (Inv. No. PV-1223A) and is consistent with the Loeschcke type I, an oil lamp with an angular volute-nozzle. A determination of the subtype, however, is hampered by the fragmentary preservation of the nozzle. The most likely subtype, however, is C. The Loeschcke type I corresponds with Broneer's type XXII, has a round body, most often without a handle and with an angular (triangular) volute-nozzle. The lamps have a red-brown glaze and the discus is decorated with an image in relief and separated from the narrow shoulder with one or two rills. Lamps of this type were for the most part imported into Corinth from Italy (Broneer 1977, 55-56; Loeschcke 1919, 212-220; Vikić-Belančić 1971, 104-105). The sherd from the Flaciusova ulica site has been classified among the Corinthian lamps on account of its pale yellow colour, specific of Corinthian clay, and the lack of slip. It appears that the Pula specimen is a local Corinthian imitation of oil lamps with angular volute-nozzles imported from Italy.

In this group we can also include another discus sherd from the site in Pula (Inv. No. PV-1249A) of a colour and lack of glaze reminiscent of Corinthian lamps.

49-51; Protulipac 2016, 79-80). Unatoč žljebovima na donjem dijelu ručki dvaju pronađenih pulskih ulomaka, koji upućuju na nešto kasniji datum, uljanice se datiraju u 1. st. budući da su pronađene u sloju (SJ010) datiranim arheobotaničkom analizom (Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9).

### Uljanice s uglatim volutnim gorilom (TAB IV, V)

(Loeschcke I, Broneer XXII, Ivanyi I)

Među svjetiljkama pronađenim u Flaciusovoj ulici u Puli samo je jedna tipa Loeschcke I (inv. br. PV-1244A), kao i najvjerojatnije ulomak s prikazom sove (inv. br. PV-1225A), koji je ranije spomenut. Njihov prototip možemo pronaći u metalnim uljanicama koje su također imale volute s rupama na krajevima, no za razliku od keramičkih, čija je svrha samo dekorativna, one su služile za provlačenje lanca za vješanje (De Carolis 1982, 23-24; Mardešić 2002, 352). Ovakav se tip uljanice dijeli na tri podtipa, nazvana A, B i C, a određeni su po izgledu njihovih gorila. Gorilo tipa I ima uglati odnosno trokutasti završetak i s volutama je povezan za tijelo i rame svjetiljke. Tri podtipa nisu kronološki simultana. A je najraniji tip i njegovo se gorilo prema završetku naglo sužava. Tip C ima najšire gorilo, koje je gotovo iste širine kao i sama uljanica te je ujedno i posljednja faza razvitka Loeschckeovog tipa I, što bi onda podtip B, s nešto širim gorilom od A, a ipak užim od C, učinilo razvojnom fazom prelaska iz prve u posljednju (Ivanyi, 1935, 10-11; Loeschcke 1919, 212-220; Mardešić 2002, 352; Menzel 1954, 30; Vikić-Belančić 1971, 104-107). Fragmentarno sačuvana uljanica iz Pule onemogućava točno određivanje podtipa, no s obzirom na proporcije gorila i ramena, moguće je da pripada tipu B ili tipu C. Preciznije određivanje otežaju i varijante B i C, koje je teško razlikovati, jer često imaju karakteristike i jednog i drugog tipa. Keramika kod ovih uljanica tanka je i dobre kvalitete, a finalni proizvod uvijek ima crveno-smeđi premaz, odnosno glazuru (Loeschcke 1919, 212-220; Vikić-Belančić 1971, 104-105), što je zajedno s tragovima gorenja vidljivo i na pulskom primjeru.

Uljanicama s uglatim volutnim gorilom ramena su raščlanjena prstenima i žljebovima, dok im je disk okrugao i ukrašen, ali u našem slučaju nažalost nije sačuvan pa ne znamo kojim je prikazom bio dekoriran. Diskovi uljanica tipa Loeschcke I dekorirani su raznim reljefnim prikazima, a teme su varirale te je o podtipu ovisio način ukrašavanja. Naime, na ranijim primjerima razrađeni su prikazi s mnoštvom detalja i više likova, dok se kod kasnijih situacija mijenja te ovakvi prizori ustupaju mjesto jednostavnijim prikazima, s manje likova i detalja. Stoga je moguće vidjeti likove životinja, biste

Type XXVII is dated to the late first century and remains in use through the third and fourth centuries. As has already been observed, subtype A is the earliest variant, while C and D are dated to the second half of the second century. In the third and fourth centuries we can also consider this type of lamp, with relief decorations such as a stylised image of a lamb, in an early Christian context. Corinthian oil lamps often bear a maker's mark on the base of the basin - besides determining the workshop this also assists in dating. The base has not, however, been preserved among the sherds from Pula. Another factor in establishing a date are the grooves on the handles. On earlier lamps, namely, the grooves were only present on the upper part of the handle, meaning that the lower half of the mould did not have them. The three specimens from Pula have preserved handles - on two sherds (Inv. Nos. PV-1226A and PV-1243A) these are lower sections on which we clearly see grooves, while the third has only the upper section preserved, making it irrelevant in this regard (Broneer 1977, 66; Busuladžić 2007, 49-51; Protulipac 2016, 79-80). In spite of the grooves on the lower part of the handle of the two recovered Pula sherds, indicative of a somewhat later date, the lamps are dated to the first century due to the fact that they were found in a layer (SU 010) dated by archaeobotanical analysis (Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9).

### Lamps with Angular Volute-Nozzles (TAB IV, V)

(Loeschcke I, Broneer XXII, Ivanyi I)

Among the oil lamps found at the Flaciusova ulica site in Pula only one is of the Loeschcke type I (Inv. No. PV-1244A), as is, most likely, the previously mentioned sherd with an image of an owl (Inv. No. PV-1225A). We can find their prototype in metal lamps that had volutes perforated at their ends - unlike the volutes on ceramic lamps where the role is purely decorative, these served for the attachment of chains with which the lamp was suspended (De Carolis 1982, 23-24; Mardešić 2002, 352). This type of lamp is divided into three subtypes - A, B and C - based on the appearance of their nozzles. Nozzle type I has an angular, i.e. triangular terminus, with the volutes forming the connection to the body and shoulder of the lamp. The three subtypes are not chronologically concurrent. A is the earliest type with a nozzle that abruptly narrows at the terminus. Type C has the broadest nozzle, almost as wide as the body of the lamp and is also the last phase of the development of Loeschcke's type I, which would make the B subtype, with a somewhat broader nozzle than A, but narrower than C, a transitional form from the first to last development phase (Ivanyi 1935, 10-11; Loeschcke 1919, 212-220;



i cjelovite ljudske figure, ali i maske koje su preuzete s tzv. Firmalampe, na kojima su bile čest ukras (Loeschcke 1919, 215; Vikić-Belančić 1971, 104-105).

Posebne podtipove moguće je odrediti i po raščlanjenosti i izgledu ramena; Loeschcke je razlučio njih čak osam koji su prisutni među svim tipovima uljanica. Ipak, za tip I karakteristična su prva četiri oblika ramena: prvi oblik ima tri žlijeba i horizontalno odnosno ravno rame, a razlika kod drugog oblika jest što je vanjski prsten ramena širi, a bočna stijenka tijela blago nagnuta prema sredini uljanice. Oblik ramena pod brojem tri karakterističan je zbog šireg prstena nagnutog prema disku uljanice, smještenog između vanjskog i srednjeg žlijeba. Bočna stijenka tijela uljanice ponovno je nagnuta prema njezinoj sredini. Četvrta forma ima jako izraženo rame, tako što je stijenka oštro nagnuta prema centru uljanice, a ima široki i horizontalno postavljen vanjski prsten (Loeschcke 1919, 213-214; Menzel 1954, 30; Vikić-Belančić 1971, 104-105). Pulsom primjerku uljanice, iako mu je sačuvan dio ramena, nije raspoznatljiv točan oblik. No, budući da je ranije iznesena pretpostavka da se radi o podtipu B ili C, ne treba uzeti u obzir oblik ramena I, jer je on korišten samo kod podtipa A. Svaki podtip imao je određeni oblik ramena pa se tako za B koristi oblik II ili III, a za C oblik III ili IV (Loeschcke 1919, 214; Menzel 1954, 30).

Uljanica pronađena u Flaciusovoj ulici u Puli datira se od Tiberija do 2. st, odnosno prvih desetljeća 3. stoljeća. Budući da je loše očuvana te nedostaju mnogi ključni elementi koji određuju dataciju, poput jezičca, kanalića, rupe i dr., to otežava datiranje. Tip Loeschcke IB počeo se proizvoditi za vrijeme Tiberija i u italjskim je radionicama aktualan do kraja 1. st., dok u Panoniji njegova proizvodnja seže do 2. st. Podtip C, s druge strane, proizvodi se još i duže – na italjskom tlu do treće četvrtine 2. st., a na panonskom području do polovice 3. st., na što ukazuje ranokršćanski motiv ribe. Na kasniju dataciju upućuje i plošno izrađena voluta s kružićem na kraju umjesto spirale, jer su oni raniji primjerci voluta, iz Augustova doba, detaljniji i spiralno zavnutih završetaka. Kasniji tipovi uljanica nazivaju se još i retijske lampe, iako ime ne dobivaju po mjestu proizvodnje, a reljef im na disku podsjeća na rezbarije u drvu. Loeschcke tip IA, dakle najranija varijanta, počinje s proizvodnjom u Rimu već za vrijeme Augusta i ranog Tiberijevog vremena, i to pod utjecajem helenizma. Ipak, pulske uljanice moguće je uže vremenski odrediti te ih se smješta u 1. st., budući da su slojevi u kojima su pronađene (SJ 010; SJ027) također datirani u 1. st. (Busuladžić 2007, 33-37; Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9; Ivanyi

Mardešić 2002, 352; Menzel 1954, 30; Vikić-Belančić 1971, 104-107). The fragmentary state of preservation of the oil lamp from Pula makes an exact determination of the subtype impossible, but given the proportions of the nozzle and the shoulder it may be of the B or C type. A more precise determination is also made difficult by the fact that variants B and C are hard to differentiate as they often have characteristics of both types. The pottery of these lamps is thin-walled and of good quality, with the final product always having a red-brown slip or glaze (Loeschcke 1919, 212-220; Vikić-Belančić 1971, 104-105), visible on the Pula specimen along with traces of burning.

Lamps with angular volute-nozzles have shoulders articulated with rings and rills, with round and decorated discuses, which in our case has not been preserved and there is no indication therefore of the image that was depicted on it. The discuses of lamps of the Loeschcke type I are decorated with various images in relief – the themes varied and the method of decoration depended on the subtype. Earlier examples, namely, bore elaborate images with numerous details and multiple figures, while on later examples they are supplanted by simple images, with fewer figures and details. Thus we see the images of animals, busts and complete human figures, but also masks, which were adopted on the *Firmalampen* on which they are a frequent decoration (Loeschcke 1919, 215; Vikić-Belančić 1971, 104-105).

Distinct subtypes can also be identified by the articulation and appearance of the shoulder; Loeschcke distinguished eight, present among all the lamp types. Characteristic, however, of type I are the first four shoulder forms: the first form has three rills and a horizontal, i.e. flat shoulder, and the difference in the second form is that the outer ring of the shoulder is broader and the side wall of the body leans slightly towards the centre of the lamp. The third shoulder form is characterised by a broader ring that slopes towards the discus of the lamp, situated between the outer and central rill. The side wall of the body of the lamp is again sloped towards its centre. The fourth form has a very prominent shoulder, such that the wall is sharply sloped towards the centre of the lamp, and has a broad horizontal outer ring (Loeschcke 1919, 213-214; Menzel 1954, 30; Vikić-Belančić 1971, 104-105). The exact form of the lamp specimen from Pula, although with a preserved section of the shoulder, is not distinguishable. But given our earlier stated hypothesis that it is of the B or C subtype, we need not take into consideration shoulder form I as it was in use only for subtype A. Each subtype had a given shoulder form – forms II or III were used for subtype B, and forms III or IV for subtype C (Loeschcke 1919, 214; Menzel 1954, 30).

1935, 10-11; Loeschcke 1919, 217-218; Mardešić 2002, 352; Menzel 1954, 30; Starac 1993, 11; Vikić-Belančić 1971, 106-107).

### **Uljanice izduženog volutnog gorila i ukrasnom drškom (TAB IV)**

(Loeschcke III, Ivanyi III)

No svakako estetski najzanimljivije su lucerne tipa Loeschcke III, koje uz okruglo gorilo s volutama imaju i trokutaste ručke, "a riflettore" ili u obliku polumjeseca. Ručke su gotovo uvijek ukrašene, a motivi su najčešće mitološke priče ili likovi božanstava. Osim dekorativne, ručka ima i funkcionalnu svrhu - održavanje ravnoteže da se uljanica ne bi prevrнула zbog izduženog i teškog gorila. Često su gorila, naime, bila dvostruka (De Carolis 1982, 24; Mardešić 2002, 352). Osim toga, ovakva drška proizlazi iz sličnih metalnih uljanica, koje su i poslužile kao predložak za one keramičke. Gorila su, za razliku od Loeschckeova tipa I, bila uska i duguljasta, ali također bočno flankirana volutama te s oblikom završetkom (Broneer 1977, 54-55; Loeschcke 1919, 222-223; Menzel 1954, 25-26; Vikić-Belančić 1971, 109-110). Jedini primjerak uljanice ovoga tipa iz Pule (inv. br. PV-271A), nažalost je očuvan samo u fragmentima, a među njima nema ostataka gorila.

Sačuvana su dva dijela ramena uljanice s vidljiva tri žlijeba i manji dijelovi diska uz rame te ručka s ukrasnim trokutastim dodatkom. Trokutasto polje je bilo ukrašavano raznim motivima, od floralnih do mitoloških scena, kao što je Odisej s drugovima koji vezuju jarbol ili prikaz Viktorije. Ovaj pulski ulomak ima lijepi prikaz palmete. Osim toga, i sam dodatak mogao je biti u oblikovan na nekoliko različitih načina pa su tako zabilježene ručke u obliku polumjeseca, ljudske biste, lista ili klasja (Ivanyi 1935, 11-12; Loeschcke 1919, 385-387; Menzel 1954, 26-28).

Ova je varijanta uljanica, po Broneeru tip XXI, podijeljena u dvije grupe. Prva grupa predstavlja prijelaz s helenističkih metalnih uljanica na one keramičke rimske, a datira se u drugu polovicu 1. st. pr. Kr. do 1. st. pos. Kr. Ono što ih najviše razlikuje od druge grupe su bočne ručke koje su izravno preuzete s brončanih svjetiljki; na taj način gube svoju funkciju i postaju dekoracija. Tamnim, metalnim premazom također pokušavaju imitirati metalne lucerne. Broneer ih naziva XXI A (Busuladžić 2007, 41-42; Menzel 1954, 25; Broneer 1977, 54). Druga grupa, po Broneeru XXI B, istovjetna je s Loeschcke tipom III. Uljanice su to velikih dimenzija, vrlo slične prethodnoj grupi, s iznimkom što nemaju bočne ručke. Njihova su gorila izdužena, s volutama i okruglim završetkom, koji ponekad može biti trokutasti,

One lamp found at the Flaciusova ulica site in Pula is dated from the reign of Tiberius to the second century or the first decades of the third. Given its poor state of preservation and the lack of many key elements that determine a date, such as the tongues, channels, holes and others, attributing a date is difficult. Production of the Loeschcke IB type began during the reign of Tiberius and was present in Italic workshops up to the end of the first century, while in Pannonia its production lasted into the second century. Production of subtype C, on the other hand, lasted longer - in Italy up to the third quarter of the second century and in Pannonia up to the mid third century, as indicated by the early Christian fish motif. Also indicative of a later date is the flat volute with a circle at its terminus in place of a spiral - the earlier examples of the volute, from the Augustan period, are more detailed and have spiral terminuses. Later lamp types are also referred to as Raetian lamps - their name is not derived from the place of production and the image in relief on the discus is reminiscent of a woodcut image. Production of Loeschcke's type IA, the earliest variant, began in Rome during the reign of Augustus and the early Tiberian period under Hellenic influence. The Pula lamps can, however, be dated with somewhat greater precision and are placed in the first century given that the layers in which they were found (SU 010; SU 027) are also dated to the first century (Busuladžić 2007, 33-37; Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9; Ivanyi 1935, 10-11; Loeschcke 1919, 217-218; Mardešić 2002, 352; Menzel 1954, 30; Starac 1993, 11; Vikić-Belančić 1971, 106-107).

### **Lamps with Elongated Volute-Nozzles and Ornamental Handles (TAB IV)**

(Loeschcke III, Ivanyi III)

Certainly aesthetically most interesting are lamps of Loeschcke's type III. They have round nozzles with volutes and handles of triangular, a riflettore (reflector) or crescent moon form. The handles are almost always decorated with motifs usually drawn from mythology or the Antiquity period pantheon. The handles have both a decorative and a functional role - to balance the lamp and prevent the elongated and heavy nozzle from tipping it over. These lamps, namely, often had two nozzles (De Carolis 1982, 24; Mardešić 2002, 352). This handle form is derived from the similar metal lamps that served as models for the clay versions. Unlike Loeschcke's type I the nozzles were narrow and elongated but also flanked by volutes and with a rounded terminus (Broneer 1977, 54-55; Loeschcke 1919, 222-223; Menzel 1954, 25-26; Vikić-Belančić 1971, 109-110). The sole example of this lamp type from Pula (Inv. No. PV-271A) is, unfortunately, preserved only in fragments among which we do not find remains of the nozzle.

odnosno uglati. Na spoju gorila s tijelom volute često imaju okrugli završetak, a on ponekad može biti u obliku konjske ili glave grifona (Broneer 1977, 54; Loeschcke 1919, 222-224; Menzel 1954, 25).

U drugu grupu Broneer XXI B odnosno Loeschcke III spada i primjerak uljanice iz Pule, na što ukazuje crvenkasto-smeđa boja premaza, karakteristična za ovaj tip. Loeschcke tip III bio je dugo u upotrebi; pojavljuje se u Augustovo doba, dok se preko Alpa širi za vrijeme Tiberija. Pulska uljanica datira se u 1. st., zahvaljujući analizi organskog materijala pronađenog u sloju iz kojeg je iskopana. Ove se uljanice proizvode paralelno s Loeschcke I tipom, odnosno sa svjetiljkama s volutnim uglatim gorilom. Naposljetku ih potiskuju i počinju prevladavati uljanice s malim i okruglim gorilom, iako se i u kasnijim stoljećima, 3. i 4., može pronaći ovakav tip uljanica (Broneer 1977, 54; Busuladžić 2007, 41-42; Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9; Loeschcke 1919, 222-224; Menzel 1954, 25; Vikić-Belančić 1971, 109-110).

#### **Uljanice s malim okruglim gorilom (TAB II, VIII)** (Loeschcke VIII, Ivanyi VII)

Ovaj tip uljanica daleko je najrasprostranjeniji u Rimskom Carstvu, a i vrlo dugovječan. Naime, počinje se proizvoditi u prvoj polovici 1. st., a nastavlja se sve do 3. ili čak 4. st. u sjevernoafričkim radionicama. Primjerci ovih uljanica bili su izvrsne kvalitete, barem oni raniji, pročišćene gline, tankih stijenki i fine završne obrade (De Carolis 1982, 24-25; Mardešić 2002, 353). Tijekom iskopa u Flaciusovoj ulici u Puli pronađena su dva cjelovita primjerka Loeschcke tipa VIII (inv. br. PV-247A; PV-1222A). Uljanice su to okruglog i malenog gorila, s diskom koji je nizom žljebova i prstenova odijeljen od uskog ramena. Premaz im je crvene boje, a ponekad i izostaje. Broneer ove uljanice svrstava pod tip XXV te navodi da je ovaj oblik prijelazni stupanj između uvezenih rimskih i proizvodnje korintskih uljanica tipa XXVII (Broneer 1977, 59-60; Loeschcke 1919, 237-238).

Loeschcke je odredio nekoliko podtipova, ovisno o načinu na koji je gorilo odvojeno od ramena uljanice. Najčešće se odvajalo ravnom crtom koja se protezala do žljebova koji su okruživali disk (tip gorila R). Gorilo je moglo završiti i zaobljenom linijom, tvoreći na taj način kružnicu oko otvora za fitilj (tip gorila K) ili pak s dvije zaobljene linije koje tvore srčoliki završetak (tip gorila H). Također, čest završetak je i onaj s ravnom linijom, kojemu je Loeschcke dao oznaku L te ga podijelio na još dva tipa. L1 varijanta zahvaća i ulazi do polovice širine ramena, dok L2 varijanta završava točno na liniji

Preserved are two parts of the lamp shoulder with three visible rills, small sections of the discus adjoining the shoulder and a handle with a decorative triangular extension. The triangular field was decorated with various motifs, from floral to mythological scenes, such as the companions of Odysseus tying him to the mast of his ship, or images of Victoria. The Pula specimen has a fine palmette image. The extension could also be shaped in a number of ways and there are examples of handles in the form of crescent moons, human busts, leaves and ears of grain (Ivanyi 1935, 11-12; Loeschcke 1919, 385-387; Menzel 1954, 26-28).

This oil lamp variant, Broneer's type XXI, is divided into two groups. The first group shows transition from Hellenic metal lamps to the Roman clay lamps and is dated to the period from the second half of the first century BCE to the first century CE. What sets them apart most from other groups are the side handles that have been directly adopted from bronze lamps, wherein their function is abandoned and they become decorative. A dark, metallic slip also attempts to imitate the metal lamps. Broneer names them type XXI A (Busuladžić 2007, 41-42; Menzel 1954, 25; Broneer 1977, 54). The second group, Broneer's type XXI B, corresponds to Loeschcke's type III. These are large oil lamps, very similar to the previous group but without the side handles. The nozzles are elongated, with volutes and a round termination that is at times triangular (angular). At the meeting of the nozzle and the body of the vessel the volutes often have a round termination, sometimes in the form of a horse or gryphon head (Broneer 1977, 54; Loeschcke 1919, 222-224; Menzel 1954, 25).

One of the Pula specimens falls under a second group, Broneer's type XXI B and Loeschcke's type III, as indicated by the reddish-brown slip characteristic of this type. Loeschcke's type III was in use for a long time - it emerged in the Augustan period and spread over the Alps during the reign of Tiberius. The Pula lamp is dated to the first century on the basis of the analysis of organic material found in the layer from which it was excavated. This lamp was produced parallel with Loeschcke's type I, i.e. with lamps of angular volute-nozzles. They are later abandoned in favour of lamps with small and round nozzles, although in later centuries, the third and fourth, we do see this type of lamp (Broneer 1977, 54; Busuladžić 2007, 41-42; Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9; Loeschcke 1919, 222-224; Menzel 1954, 25; Vikić-Belančić 1971, 109-110).

#### **Oil Lamps with Small Round Nozzles (TAB II, VIII)** (Loeschcke VIII, Ivanyi VII)

This lamp type is by far the most widely distributed in the Roman Empire and had a very long life span. Production began in the first half of the first century and continued through to the third and even the fourth

odnosno rubu ramena, tvoreći oštar spoj gorila i ramena (Ivanyi 1935, 12; Loeschcke 1919, 237-238; Menzel 1954, 49-50; Starac 1993, 13; Vikić-Belančić 1971, 113-114). Pulske uljanice imaju tip gorila K (inv. br. PV-1222A) i L1, u čijem je slučaju sa svake strane ravne crte po jedan kružić, a na crti je i rupa za zrak (inv. br. PV-247A).

Uljanice tipa Loeschcke VIII imaju i podtip VIII A koji nije toliko čest, a razlikuje se volutama s okruglim završecima koje flankiraju malo okruglo gorilo. Čini se da je ovaj tip uljanica spoj tipa Loeschcke VIII i IV (uljanice s okruglim volutnim gorilom) te je datiran u drugu trećinu 1. stoljeća (Loeschcke 1919, 241).

Suprotno nešto ranijim uljanicama, onim s volutnim gorilima iz Augustova i Tiberijeva doba, tip Loeschcke VIII teži jednostavnijem obliku. Na cijelom se području Mediterana u vrijeme Klaudija proizvode uljanice bez ukrasa, s malim i okruglim gorilom, a po Loeschckeu čini se da rimske uljanice tipa VIII vuku korijenje iz antičkih atenskih uljanica. Upravo u to vrijeme javlja se klasicistički ukus koji utječe na izgled tadašnjih uljanica pa se polovicom 1. stoljeća izbjegavaju nekadašnji raskošni prikazi na disku, a zamjenjuju ih oni znatno jednostavniji i jednofiguralni, kao što su prikazi životinja i alata. Ipak, iznimno popularan motiv tijekom cijelog 1. st. bio je prikaz Jupitera iza orla, pa ga stoga možemo pronaći i na lucernama tipa Loeschcke VIII. Uljanica iz Pule (inv. br. PV-247A) ima prikazanu rozetu s osam latica i rupom za ulijevanje ulja u centru diska, a uokvirena je s dva žlijeba. Pulski primjer govori u prilog činjenici da geometrijski ukrasi, poput rozete, postaju sve popularniji. No, sve češći su i slučajevi gdje je disk ostao prazan, bez ikakvih prikaza (Busuladžić 2007, 42-46; Ivanyi 1935, 12; Loeschcke 1919, 238-242; Menzel 1954, 49-50), što je slučaj s drugom uljanicom iz Pule (inv. br. PV-1222A).

Ramena su često ukrašavana, i to reljefnim točkicama, ovoidnim ili vegetabilnim ukrasima. Rameni profili kod tipa VIII varirali su od varijanti VI do VIII, one od II do IV bile su rijetke, dok rameni profil I nije zastupljen kod ovih uljanica (Loeschcke 1919, 238-242; Menzel 1954, 49-50; Starac 1993, 13). Lucerne pronađene u Puli imaju rame profila VII a (inv. br. PV-247A) i VIII b (inv. br. PV-1222A). Na ramenu je najčešće smještena i rupa za zrak, ako postoji, i to na njegovom unutarnjem dijelu, a pojavljuje se i na disku, što je u suprotnosti s uljanicama s volutnim gorilom koje rupu imaju na početku samog gorila (Loeschcke 1919, 238; Starac 1993, 13-14).

Iako je raniji tip ovih uljanica znao imati i stajaći prsten, pulski primjerci očito su kasnijeg tipa, jer imaju stajaću plohu. Na njoj se često mogu vidjeti pečati radionica, kao što je slučaj i s tipovima I i IV, bilo da je riječ o cijelom imenu majstora, njegovim inicijalima ili

century in North African workshops. Specimens of these lamps, at least those produced earlier, were of excellent quality, made of refined clay, with thin walls and excellent finish (De Carolis 1982, 24-25; Mardešić 2002, 353). Two complete specimens of Loeschcke's type VIII (Inv. Nos. PV-247A; PV-1222A) were found in the course of the dig at the Flaciusova ulica site in Pula. These are lamps with small round nozzles, with a discus separated from the narrow shoulder by a number of grooves and rings. They have a red slip or none at all. Broneer classified this form under his type XXV and noted that the form is a transitional stage between imported Roman lamps and the production of Corinthian lamps of the XXVII type (Broneer 1977, 59-60; Loeschcke 1919, 237-238).

Loeschcke identified a number of subtypes based on the way in which the nozzle is delineated from the shoulder of the lamp. The delineation was most often with a straight line running to the grooves encircling the discus (nozzle type R). The nozzle could also end with a rounded line, creating a circle around the wick hole (nozzle type K) or with two rounded lines creating a cordiform termination (nozzle type H). Another frequent termination had a straight line, designated by Loeschcke as L and subdivided into a further two variants. The L1 variant runs into half of the width of the shoulder, while the L2 variant ends exactly at the line/edge of the shoulder, creating a sharp connection between the nozzle and the shoulder (Ivanyi 1935, 12; Loeschcke 1919, 237-238; Menzel 1954, 49-50; Starac 1993, 13; Vikić-Belančić 1971, 113-114). The Pula lamps have the K type nozzle (Inv. No. PV-1222A) and the L1 variant, with a small circle to each side of the straight line and an air hole on the line (Inv. No. PV-247A).

Lamps of Loeschcke's type VIII also have the infrequent subtype VIII A, differentiated by the volutes with round terminations flanking a small round nozzle. This lamp type appears to be a combination of the Loeschcke types VIII and IV (lamps with round volute-nozzles), dated to the second third of the first century (Loeschcke 1919, 241).

Unlike the somewhat earlier oil lamps, those with volute-nozzles from the Augustan and Tiberian periods, the Loeschcke type VIII tends to have a simpler form. Undecorated lamps are produced throughout the Mediterranean during the reign of Claudius, with small round nozzles, and according to Loeschcke the Roman lamps of the VIII type draw their roots from the Attic lamps of Athens. This was the period that saw the emergence of a Classical fashion that influenced the appearance of the lamps of the time. At the mid-first century the once lavish images on the discus are supplanted by much simpler single figure imagery, depicting animals and tools. An exceptionally popular motif throughout the first century was that of the image of Jupiter behind an eagle, and we also see it on lamps of Loeschcke's type VIII. The lamp

jednostavnim kružnicama. Kružnice u svrzi radioničkog pečata ima i jedna uljanica iz Flaciusove ulice (inv. br. PV-247A). Sredinom 1. stoljeća učestalost ovakvih pečata počinje opadati. Ponekad se javljaju i primjerci s ručkom, no oni su češći na grčkom tlu, gdje se ovakav tip uljanice proizvodi i u 2. i 3. stoljeću, a ručke su odlivene u kalupu (Starac 1993, 13-14; Vikić-Belančić 1971, 113). Posebna varijanta Loeschckeovog tipa VIII je ona s bočnim, ukrasnim drškama (Menzel 1954, 50; Loeschcke, 1919, 241-243; Starac 1993, 13).

Razvitak ovog tipa lucerni započinje u Klaudijevo doba, u drugoj trećini 1. st., kada svjetiljke s volutnim gorilom bivaju potisnute onima malim i okruglim. Loeschcke tip VIII proizvodi se usporedno s tipovima IV i V, vrhunac doživljava sredinom istog stoljeća, kada se i počinje širiti sjeverno od Alpa, a već u zadnjoj trećini 1. stoljeća upotreba počinje opadati. No, duže se zadržava na obalnom dijelu, pogotovo na egejskom području te na grčkom tlu, kao što je ranije spomenuto, gdje su u upotrebi još u 2. i 3. st. Takva dugovječnost za sobom donosi i neke promjene u samom izgledu pa njihovo tijelo iz okruglog postaje okruglo-ovalno, a dekoracija postaje sve bogatija. U tom je razdoblju posebno popularno gorilo srcolikog oblika (Loeschcke tip gorila H), a osim toga uljanice dobivaju i ušice na ramenima, koje su preuzete s tzv. Firmalampe (Busuladžić 2007, 42-46; Ivanyi 1935, 13; Loeschcke 1919, 239; Menzel 1954, 49-50; Starac 1993, 13; Vikić-Belančić 1971, 113-114). Tipološka datacija koja uljanice tipa Loeschcke VIII smješta u 1. st. poklapa se i s datacijom slojeva (SJ 010; SJ 008) u kojima su pronađena dva pulska primjerka (Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9).

### **Firmalampe (uljanice s radioničkim pečatom) (TAB I, II, III, VI, VII, VIII)**

(Loeschcke IX i X)

Njihov izgled bio je revolucionaran, fokusiran isključivo na funkcionalnost uljanice kao utilitarnog predmeta. Lišene su dekoracije, tek ponekad imaju prikaz kazališne maske ili glavu erota; tijelo im je u obliku krnjeg stošca, sa širokim ramenom na kojem mogu biti aplicirane dvije ili tri ušice, odnosno krnji dršci, ponekad ima ručku, a rame je od diska odvojeno obrubom. S obzirom na obrub dijelimo ih na dva tipa (i još nekoliko podtipova): Loeschcke IX i X, odnosno sa zatvorenim i otvorenim kanalom. Na uljanicama s radioničkim pečatom nedostaje čak i premaz, no unatoč tome odišu elegancijom, jednostavnih su i jasnih linija (Buchi 1975, XXI-XXVIII; De Carolis 1982, 25-26; Loeschcke 1919, 255-259; Mardešić 2002, 353; Menzel 1954, 60-61).

from Pula (Inv. No. PV-247A) bears an eight-petal rosette framed with two grooves with a filling hole at the centre of the discus. The Pula specimen corroborates the growing popularity of geometric decorations such as the rosette. There is also an ever-greater frequency of blank discuses without any imagery (Busuladžić 2007, 42-46; Ivanyi 1935, 12; Loeschcke 1919, 238-242; Menzel 1954, 49-50), which is the case with the other oil lamps from Pula (Inv. No. PV-1222A).

The shoulders are often decorated with dots in relief and ovoid or vegetal decorations. The shoulder profile in type VIII varies from variant VI to VIII, those from II to IV were rare, while shoulder profile I is not represented among these lamps (Loeschcke 1919, 238-242; Menzel 1954, 49-50; Starac 1993, 13). The lamps found in Pula have shoulder profiles VIIa (Inv. No. PV-247A) and VIIIb (Inv. No. PV-1222A). An air hole, if there is one, is usually placed on the shoulder, on its inner section, and also appears on the discus, unlike volute-nozzle lamps, which have this hole at the start of the nozzle (Loeschcke 1919, 238; Starac 1993, 13-14).

Although earlier types of this lamp form had standing-rings, the Pula specimens are clearly later types, having a standing-plate. It often bears a lampmakers' signature, as is the case with types I and IV, whether it comprises the full name of the master craftsman, his initials or simple circles. Circles used as lampmakers' signatures are found on one of the lamps from the Flaciusova ulica site (Inv. No. PV-247A). The frequency of these kinds of lampmakers' marks drops off in the mid first century. Forms with handles do appear, but they are more frequent in Greek territories, where this lamp type is made in the second and third centuries with handles that are created in the mould (Starac 1993, 13-14; Vikić-Belančić 1971, 113). A special variant of Loeschcke's type VIII has decorative side handles (Menzel 1954, 50; Loeschcke, 1919, 241-243; Starac 1993, 13).

The development of this lamp type begins during the reign of Claudius, in the second third of the first century, when volute-nozzle lamps are supplanted by those with small round nozzles. Loeschcke's type VIII is manufactured alongside types IV and V, and sees its zenith in the middle of that century when it spreads north of the Alps, with its use dropping off by the last third of the first century. It remained in use longer on the coastal areas, in particular in the Aegean area and in the Greek lands, as has already been noted, where it remained in use into the second and third centuries. This longevity saw some changes in appearance - the body transitions from round to oval-round and the decoration becomes increasingly lavish. The cordiform nozzle (Loeschcke nozzle type H) was especially popular in this period and the lamps gained lugs on the shoulders, adopted from the *Firmalampe* (Busuladžić 2007, 42-46; Ivanyi 1935, 13;

Najveći broj uljanica pronađenih pri iskopavanju u Flaciusovoj ulici u Puli pripada upravo ovoj grupi, njih čak devet, od kojih je sedam tipa X, a dvije su tipa Loeschcke IX. Tri su lucerne u potpunosti očuvane (inv. br. PV-245A; PV-267A; PV-268A), dvjema su sačuvani samo gornji dijelovi, disk, rame i dio gorila (PV-1224A; PV-1229A), jednoj je očuvan desni dio ramena i gorila (inv. br. PV-1227A), također jednoj (inv. br. PV-1231A) sačuvana je gotovo polovica diska i ramena, tijela te dno. Od osme svjetiljke nije uništen dio diska s ramenom, nešto veći dio recipijenta i dno (inv. br. PV-1235A), dok je od posljednje uljanice sačuvano samo gorilo (inv. br. PV-1233A). Od pet uljanica gdje je cjelovito ili parcijalno sačuvano dno, na četiri su prisutni radionički pečati, a jedna ima prazno dno. Dakako, najznačajniji je pečat, kao što i sam naziv uljanica kaže, a koji označava radionicu u kojoj su proizvedene.

Firmalampe su specifičan tip uljanica koji se pojavljuje uslijed velike potražnje za ovim proizvodom, a o samom nastanku i širenju bit će riječi nešto kasnije. Glavna im je karakteristika radionički pečat koji se nalazi na dnu recipijenta. Pečat se sastoji od kognomena (*cognomen*), nomena (*nomen*) ili prenomena (*praenomen*), a ponekad i samo od početnih slova imena, tzv. *tria nomina*, što je slučaj i s uljanicom iz Pule, koja ima pečat QGC (inv. br. PV-267A). Uljanice s radioničkim pečatom specifičnog su izgleda pa ih se vrlo lako raspoznaje čak i u slučajevima kada nema pečata. Forma im je naglašeno funkcionalna, recipijent je krnjeg stožastog oblika, rame je široko, gorilo izduženo s rupama za zrak i zaobljenog vrha, a disk je ravan te ponekad ukrašen kazališnom maskom ili glavom erota. Otvor za ulje uvijek je okruglog oblika i u sredini diska, a ako je disk ukrašen onda se nalazi po jedan otvor sa svake strane reljefa (Buchi 1975, XXIII-XLI; Loeschcke 1919, 260-261; Mardešić 2002, 353-354; Menzel 1954, 60; Starac 1993, 13-14; Vikić-Belančić 1975, 49). Oko diska pruža se izbočeno rebro koje određuje o kojem se tipu radi: tip Loeschcke IX ima zatvoreni kanal oko diska, dok tip X ima otvoreni kanal i izbočeno rebro koje ide uzduž gorila, tvoreći na vrhu koljenasti oblik (Loeschcke 1919, 255-312). Na ramenu su ušice, kojih je na ranijim primjerima bilo tri i služile su za vješanje uljanica, no zbog krhkosti gube svoju funkciju te postaju dekorativni element. Javlja se nekoliko oblika ušica koje sad više nemaju rupe za vješanje i mogu biti polukružne, duguljaste, prizmatične, kvrgaste ili potpuno krnjaste. U slučajevima gdje uljanica ima ručku, samo su dvije ušice (Buchi 1975, XXIII-XLI; Ivanyi 1935, 15; Loeschcke 1919, 257-258; Mardešić 2002, 353-354; Menzel 1954, 60; Ravagnan 1983, 72; Starac 1993, 13-14; Vikić-Belančić 1975, 49), iako to nije

Loeschcke 1919, 239; Menzel 1954, 49-50; Starac 1993, 13; Vikić-Belančić 1971, 113-114). The typological date that places Loeschcke type VIII lamps in the first century is consistent with the dating of the layers (SU 010; SU 008) in which the two Pula specimens were found (Essert, Koncani Uhač, Uhač, Šošćarić 2016, 3-9).

### **Firmalampen (Oil Lamps with Lampmakers' Signatures) (TAB I, II, III, VI, VII, VIII)**

(Loeschcke IX and X)

Their appearance was revolutionary, focused entirely on the functionality of the lamp as a utilitarian object. They lack decoration and only rarely bear the image of a theatrical mask or the head of an Erote. The body of the lamp is in the form of a truncated cone, with a broader shoulder on which two or three lugs, i.e. rump handles may be applied, sometimes with a handle and a raised rim separating the shoulder from the discus. They are classed into two types (and a number of subtypes) based on the rim form: Loeschcke IX and X, i.e. with a closed or open channel. The oil lamps with a lampmakers' signature lack a slip, but nevertheless have an air of elegance to them, with simple and clear lines (Buchi 1975, XXI-XXVIII; De Carolis 1982, 25-26; Loeschcke 1919, 255-259; Mardešić 2002, 353; Menzel 1954, 60-61).

The majority of oil lamps, nine, found in the course of the excavations at the Flaciusova ulica site in Pula are from this class, seven of which are of type X and two of Loeschcke's type IX. Three of the lamps are fully preserved (Inv. Nos. PV-245A; PV-267A; PV-268A), from two we have only the upper parts, the discus, shoulder and part of the nozzle (PV-1224A; PV-1229A), from one the preserved right part of the shoulder and nozzle (Inv. No. PV-1227A), from another (Inv. No. PV-1231A) we have almost half the discus and shoulder, body and base. Of the eighth lamp the intact parts include part of the discus with shoulder, most of the basin and base (Inv. No. PV-1235A), while only the nozzle is preserved from the last lamp (Inv. No. PV-1233A). Lampmakers' signatures are found on four of the intact or partially preserved bases of the lamps, while one has a blank base. The maker's mark is, of course, the critical element, designating the manufacturing workshop.

*Firmalampen* are a specific type of lamp, emerging as the result of large demand for the product - the emergence of the type and its spread will be discussed further in the paper. Their chief characteristic is the lampmakers' signature on the base of the basin. The mark consists of the "nickname" (*cognomen*), hereditary surname (*nomen*) or first name (*praenomen*), and at times only of the initials, the *tria nomina*, which is the case with a lamp from Pula bearing the mark QGC (Inv. No. PV-267A). Lamps with

pravilo, budući da na primjercima iz Pule prevladavaju dvije ušice (od sedam kod kojih je to moguće odrediti samo ih jedna ima tri – inv. br. PV-268A), a uljanice nemaju ručku. Dno je ravno i na njemu su utisnute dvije kružnice unutar kojih se nalazi pečat, a uz pečat mogu biti prisutne i druge oznake, o čijem značenju će biti riječi nešto kasnije (Vikić-Belančić 1975, 49).

Opće prihvaćena je Loeschckeova podjela na tip IX odnosno lucerne sa zatvorenim i tip X s otvorenim kanalom. Loeschcke nadalje dijeli tip IX na još tri podtipa, a njegovu sistematizaciju za tip X nadopunjuje E. Buchi. Tip IX-a ima izbočeno rebro koje zatvara krug oko diska, a žlijeb koji vodi od diska do gorila i otvora za fitilj ima oblik I, plitak je i nema rupicu za zrak koja se u njegovom slučaju nalazi na disku uz sam rub s izbočenim rebrom. Tip IX-b također je zatvorenog kanala, ali žlijeb postaje dublji i dobiva otvor za zrak. Samo jedna od pulskih uljanica (inv. br. PV-1231A) posjeduje ove karakteristike te je svrstana u tip IX-b. Posljednji podtip je IX-c, kojem pripada i jedna uljanica iz Pule (inv. br. PV-1227A), a razlikuje se po tome što se njegovo izbočeno rebro razdvaja tvoreći trokutasti jezičac prema gorilu, na kojem se nalazi otvor za zrak (Buchi 1975, XXIII-XXVI; Loeschcke 1919, 255-312; Starac 1993, 13-14).

Uljanice s otvorenim kanalom, ili tip X po Loeschckeovoj tipologiji, također su podijeljene na tri podtipa. Prvi, X-a, ima izbočeno rebro koje ide oko diska i gorila, tvoreći na taj način prostrani kanal u kojem se nalaze jedan, dva ili ponekad i tri otvora za zrak. Rame je podjednake širine na svim dijelovima, često ukrašeno trima ušicama, a otvor za ulje pravilnog je, okruglog oblika. Četiri uljanice pronađene u Flaciusovoj ulici uklapaju se u tip X-a (inv. br. PV-245A; PV-1224A; PV-1229A; PV-1235A) i sve imaju prazan, neukrašen disk te dvije ušice na ramenu (Buchi 1975, XXIV-XXVIII; Vikić-Belančić 1975, 49-50). Podtip X-b zadržava sve karakteristike ranijeg oblika, samo što je grublje izrade; lošija je i kvaliteta gline te ponekad ima engobu. Gorilo im postaje zdepasto i prošireno, ušice stilizirane, rame šire i plosnato, a konture i rubovi više nisu oštri već tupi i zaobljeni. Jedan primjer tipa X-b zabilježen je i među pulskim svjetiljkama (inv. br. PV-267A). Kod trećeg podtipa, X-c, i dalje se nastavlja opadanje kvalitete te dolazi do grube deformacije prethodnog oblika. Loša je kvaliteta gline, a engoba je veoma česta. Rame uljanice je nepravilnog oblika, neoštarih rubova, a ušice su loše oblikovane i teško raspoznatljive. Disk je uvijek prazan, bez reljefa, ali s velikim otvorom za ulje, dok je kanal koji vodi do gorila kratak i uzak. Također, nestaje glavna karakteristika uljanica s radioničkim pečatom:

lampmakers' signatures are specific in their appearance and easily identified even when there is no mark. Their form is pronouncedly functional, the basin has the form of a truncated cone, the shoulder is broad, the nozzle elongated with air holes and a rounded tip, and the discus is flat and at times decorated with a theatrical mask or the head of an Erote. The filling hole is always round and at the centre of the discus – if the discus is decorated then there is an opening to each side of the relief (Buchi 1975, XXIII-XLI; Loeschcke 1919, 260-261; Mardešić 2002, 353-354; Menzel 1954, 60; Starac 1993, 13-14; Vikić-Belančić 1975, 49). There is a raised ridge around the discus that defines its type: Loeschcke's type IX has a closed ridge around the discus, while type X has an open channel, with the raised ridge running along the edge of the nozzle, creating a knee-shaped angle at the tip (Loeschcke 1919, 255-312). There are lugs on the shoulder – earlier types had three upon which to suspend the lamp – but their fragility precludes this function and they became purely decorative. There are several lug shapes, now without the perforations necessary for hanging. They can be semi-circular, elongated, prismatic, nubby or entirely reduced to a rump form. When these lamps have handles there are only two lugs (Buchi 1975, XXIII-XLI; Ivanyi 1935, 15; Loeschcke 1919, 257-258; Mardešić 2002, 353-354; Menzel 1954, 60; Ravagnan 1983, 72; Starac 1993, 13-14; Vikić-Belančić 1975, 49), although this is not the rule, given that most of the specimens from Pula have two lugs but no handles (of the seven on which this can be ascertained only one has three lugs: Inv. No. PV-268A). The base is flat and has two rings within which we see the lampmakers' signature and possibly other markings the meaning of which will be discussed further in the paper (Vikić-Belančić 1975, 49).

Loeschcke's typological classification of an IX type with a closed and an X type with an open channel has been widely accepted. Loeschcke further divided type IX into three subtypes, while his systematisation of the X type is elaborated by E. Buchi. Type X-a has a prominent ridge closing off a ring around the discus, while the groove running from the discus to the nozzle has the form of the capital letter I, is shallow and has no air hole, which in its case is located on the discus near the raised ridge. Type IX-b also has a closed channel, but the groove is deeper and gains an air hole. Only one of the Pula lamps (Inv. No. PV-1231A) has these characteristics and has been classed as an IX-b type. The last subtype is the IX-c, to which one of the lamps from Pula belongs (Inv. No. PV-1227A), differentiated by the fact that its raised discus ridge splits to form a triangular tongue towards the nozzle, where we see the air hole (Buchi 1975, XXIII-XXVI; Loeschcke 1919, 255-312; Starac 1993, 13-14).

na ovoidalnom dnu, koje je rijetko razgraničeno kanalom, više nema pečata (Buchi 1975, XXIV-XXVIII; Busuladžić 2007, 60-61). Jedan takav primjer je i lucerna iz Pule (inv. br. PV-268A), koja jedina među pulskim uljanicama ima tri ušice, ali su one loše izrade, kao i ostatak svjetiljke, te dakako nema pečata.

Poseban oblik tipa X-a je onaj kod kojeg su recipijent uljanice i gorilo neposredno vezani, bez vrata. Buchi ga naziva i tip *X-a forma corta*, a Loeschcke *Kurzform* te je najvjerojatnije nastao pod utjecajem velike popularnosti lucerni s malim i okruglim gorilom (Loeschcke tip VIII) (Buchi 1975, XXIV-XXVIII; Loeschcke 1919, 256-257; Menzel 1954, 60; Vikić-Belančić 1975, 49-50). Ovaj kratki oblik tipa X nije zabilježen među pulskim svjetiljkama iz Flaciusove ulice.

Svakako najvažniji element je pečat na dnu tijela, koji odaje mnoge informacije o svjetiljki, kao što je datacija, porijeklo ili radionica. Pečat označava majstora odnosno radionicu koja je izradila uljanicu, no za razliku od proizvodnje amfora ili tegula, u ovom slučaju vlasnici radionice žele ostati anonimni te se njihova imena ne nalaze uz imena radionica. Loeschcke smatra da pečat predstavlja proizvođača kalupa, no pečati se kroz vrijeme ne mijenjaju te ostaju isti, iako se mijenja i oblik svjetiljke i vlasnik i majstor radionice. Razlog tome je brendiranje imena: novi vlasnik koristi već poznato ime kao garanciju za svoje proizvode. Pečati su često i jedini način međusobnog raspoznavanja uljanica budući da su oblici iznimno ujednačeni (Buchi 1975, XXVIII-XLI; Loeschcke 1919, 261; Di Fillippo Balestrazzi 1987, 453).

Centar proizvodnje se iz Rima seli na sjever, u Padsku nizinu, gdje su istisnuti ostali tipovi. Takva promjena ne ukazuje na dekadenciju ukusa nego govori o političko-ekonomskoj promjeni na italskome tlu. Ipak, u središnjem i južnom dijelu Italije uljanice s pečatom nisu nikad zaživjele, prvenstveno zbog helenističkog utjecaja na tom području te su se i dalje proizvodile lucerne s uglatim volutnim i malim okruglim gorilom. Po dosad prikupljenim podacima jedan od većih proizvodnih centara bila je Modena, ali radionice su se nalazile i u okolici Padove i Akvileje. U Modeni su locirane radionice *Cerinthus*, *Menander*, *Priscus*, *C. Fadius*, *Strobilus* te *Fortis* (Buchi 1975, XXIV-XXVIII; Loeschcke 1919, 262; Vikić-Belančić 1975, 49-50). Upravo ovaj zadnji pečat se možda vidi na jednoj od uljanica iz Pule (inv. br. PV-1231A), koja ima sačuvana samo slova I i S te je radionički pečat *Fortis* logična mogućnost budući da se pretpostavlja da je u Fažani postojala keramičarska radionica koja je proizvodila i lucerne. Tome svjedoči i pronađeni kalup s pečatom *Fortis*. Riječ je o radionici konzula Lekanija Basa, čija je ipak glavna djelatnost bila

Lamps with open channels, the X type under Loeschcke's typology, are also further subdivided into three subtypes. The first, X-a, has a ridge running around the discus and the nozzle, creating a broad channel with one, two or even three air holes. The shoulder has an equal breadth at all parts and is often decorated with three lugs. The filling hole is of regular, round shape. Four of the lamps found at the Flaciusova ulica site are consistent with the X-a type (Inv. Nos. PV-245A; PV-1224A; PV-1229A; PV-1235A) and all have a blank, undecorated discus and two lugs on the shoulder (Buchi 1975, XXIV-XXVIII; Vikić-Belančić 1975, 49-50). Subtype X-b retains all of the characteristics of the earlier form but is of coarser fabrication - the clay is of poorer quality and sometimes has an engobe. The nozzle becomes stubby and broad, the lugs are stylised, the shoulder broad and flat and the contours and edges are no longer sharp but rather blunt and rounded. One specimen of the X-b type was found among the Pula lamps (Inv. No. PV-267A). The third subtype, X-c, saw a further deterioration of quality and there is a coarse deformation of the previous form. The clay is of poor quality and an engobe is very frequent. The shoulder of the lamp is irregular in form, with blunt edges, and the lugs are poorly shaped and almost indistinct. The discus is always blank, without relief decoration, but with a large pouring hole, while the channel running to the nozzle is short and narrow. Also absent is the chief characteristic of the lamps with lampmakers' signatures - the ovoid base, rarely delineated by a groove, no longer bears the maker's mark (Buchi 1975, XXIV-XXVIII; Busuladžić 2007, 60-61). One of the lamps from Pula falls into this class (Inv. No. PV-268A), the only lamp from the Pula group with three lugs, but of very poor make, as is the rest of the lamp that, of course, has no lampmakers' signature.

A separate form of the X-a type is one on which there is no neck between the lamp basin and nozzle. Buchi also refers to it as the *X-a forma corta* type, and Loeschcke as the *Kurzform*. It likely emerged under the influence of the great popularity of lamps with small and round nozzles (Loeschcke's type VIII) (Buchi 1975, XXIV-XXVIII; Loeschcke 1919, 256-257; Menzel 1954, 60; Vikić-Belančić 1975, 49-50). This short form of the X type was not found among the lamps from the Flaciusova ulica site in Pula.

The lampmakers' signature at the base of the body of the vessel is certainly the most important element, revealing much about the lamp, including its date, provenance and who made it. The mark designates the maker or workshop that made the lamp but, unlike the manufacture of amphorae or tegulae, in this case the owners of the workshop wish to remain anonymous



proizvodnja amfora Dressel 6B. Ovakva situacija, kada se u provincijskim radionicama proizvode Firmalampe, nije neobična nego dapače uobičajena. Od 1. stoljeća proizvodnja se širi u rimske provincije, a izvodila se s uvezenim kalupima, da bi se u kasnijim stoljećima u potpunosti osamostalila (Bulić, Koncani Uhač 2009, 288; Gnirs 1910, 79, 83; Starac 1993, 8; Vikić-Belančić 1975, 49-50).

Velike keramičke radionice na italskome tlu često su svoju proizvodnju prepuštale manjim radionicama koje su koristile iste pečate pa su tako one često ostajale anonimne. Ne bi li se međusobno ipak razlikovale nadodavali su se uz pečat, iznad ili ispod, mali znakovi poput kružnica ili palmeta. Takve male radionice prihvaćale su poslove od više proizvođača, jer su isti znakovi pronađeni na uljanicama s različitim pečatima. Primjerice, radionica Fortis koristila se s čak 13 manjih, samostalnih keramičkih radionica (Buchi 1975, XXIX-XLI; Loeschcke 1919, 280-282). Pulske svjetiljke takvih znakova nemaju.

Onomastičkom analizom pečata utvrdilo se da najviše radionica koristi za pečat *cognomen* majstora. Mnoga imena bila su grčkog porijekla te su zabilježena među robovima, stoga je velika vjerojatnost da su to bili *liberti*, oslobođeni robovi, koji su proizvodili svjetiljke s radioničkim pečatom, ili čak robovi koji su imali dopuštenje vlasnika za proizvodnju uljanica kao svojeg vlastitog dobra (*peculium*). Pojavljuju se i pečati s preimenom (*praenomen*) i kognomenom (*cognomen*), koji ukazuju na slobodne ljude, odnosno građane, a pronalaze se i pečati samo s inicijalima trojnog rimskog imena, *tria nomina*, kao u slučaju već ranije spomenutog primjera iz Pule, QGC. Gotovo svi primjerci s ovim pečatom pronađeni su u Akvileji, stoga se i sama radionica smješta u sjevernu Italiju, odnosno u Veneto. Najveći broj pronađenih uljanica s pečatom QGC pripada tipu X-b, što je slučaj i s pulskim primjerkom. Radionica s radom započinje u 2. stoljeću, vrhunac dostiže u njegovoj drugoj polovici, a proizvodnja traje sve do kraja 3. stoljeća. Buchi za interpretaciju pečata QGC navodi dvije mogućnosti: po epigrafskim svjedočanstvima iz Cisalpine postojali su *Q. Gavius Cerialis* i *Q. Gavius Communis*, čiji inicijali odgovaraju inicijalima s pečata, a čija su cjelovita imena pronađena na amforama i tegulama (Buchi 1975, XXIX-XLI, 96-97; Menzel 1954, 64; Ravagnan 1983, 72).

Među pulskim primjerima zabilježen je i pečat CRESC/S, i to na dvije uljanice (inv. br. PV-245A i PV-1235A). U Akvileji su pronađena tri donja dijela kalupa s pečatom CRESC/S, koji jasno ukazuje da se ondje nalazila radionica lucerni s ovim pečatom, a dijelovi gornjeg kalupa ukazuju na proizvodnju sva tri

and their name is not found alongside the name of the workshop. Loeschcke contends that the mark indicates the manufacturer of the mould, but the marks do not change over time in spite of changes to the forms of the lamps, the ownership of the workshop and the identity of the maker. The reason for this lies in the name branding: for new owners an already established name is a sort of guarantee for their products. The marks are also often the only way to tell lamps apart as the forms are highly uniform (Buchi 1975, XXVIII-XLI; Loeschcke 1919, 261; Di Fillippo Balestrazzi 1987, 453).

The hub of production moved north from Rome, to the Po Valley, where other types were supplanted. This change does not point to a decadence of taste, but speaks rather to the political and economic changes on Italian soil. In the central and southern parts of Italy, however, the lampmakers' signature lamps never gained a foothold, primarily on account of the Hellenistic influence in the area, with continued production of lamps with angular volute-nozzles and small round nozzles. Based on the data gathered so far, one of the leading production centres was in Modena, but there were also workshops in the area around Padua and Aquileia. Modena was home to the Cerinthus, Menander, Priscus, C. Fadius, Strobilus and Fortis workshops (Buchi 1975, XXIV-XXVIII; Loeschcke 1919, 262; Vikić-Belančić 1975, 49-50). This last maker's mark is found on one of the lamps from Pula (Inv. No. PV-1231A), on which only the letters I and S are preserved. The Fortis signature is a logical possibility given that there is a hypothesised pottery workshop in Fažana that produced lamps. This is borne out by a mould found with the Fortis signature. This was the workshop of the consul Caius Laecanius Bassus, whose chief business was the production of Dressel 6B amphorae. This situation, with provincial workshops manufacturing *Firmalampen*, is not unusual; it was in fact the norm. From the first century manufacturing spread to the Roman provinces and used imported moulds before becoming fully independent in later centuries (Bulić, Koncani Uhač 2009, 288; Gnirs 1910, 79, 83; Starac 1993, 8; Vikić-Belančić 1975, 49-50).

Major pottery workshops in Italy often farmed their manufacturing out to smaller workshops that used the same lampmakers' signature, keeping them anonymous. To differentiate them, small symbols like circles or palmettes were added above or below the lampmakers' mark. These small workshops subcontracted for multiple manufacturers - the same symbols have been found on lamps with different signatures. The Fortis workshop, for example, contracted work out to as many as thirteen smaller, independent pottery workshops (Buchi 1975, XXIX-XLI; Loeschcke 1919, 280-282). The Pula lamps do not bear any of these additional markings.

tipa X, kao i na onaj kratki, iako prevladava tip X-a kojem pripadaju i obje uljanice iz Pule. Smatra se da je radionica proizvodila isključivo uljanice tipa X, makar je u Akvileji pronađena i svjetiljka tipa Loeschcke VIII sa skraćenim imenom nekog Krescensa (*Crescens*), koji je poznat i po proizvodnji korintskih lucerni u 2. i 3. stoljeću. Ime je bilo često među robovima i kao *cognomen*, pogotovo u Africi, a spominje ga se i među Neronovim oslobođenimcima. Iako se tvrdi da je proizvodnja uljanica s pečatom CRESC/S započela već za vrijeme Augusta, vjerojatnija je datacija kraj 1. i početak 2. stoljeća, a proteže se do prve polovice 4. stoljeća. Ipak, radionica u Akvileji datira se u 2. i 3. stoljeće, a čini se da je osim uljanica s pečatom CRESC/S proizvodila i one s pečatom QGC (Buchi 1975, XXIX-XLI, 33-44; Di Fillippo Balestrazzi 1987, 450-451; Ravagnan 1983, 60-61).

Djelomično očuvan pečat -IS na ranije spomenutoj uljanici (inv. br. PV-1231A) interpretiran je kao FORTIS, a jedan od razloga je i kalup s istim pečatom pronađenim u Fažani, koji ukazuje na tamošnju proizvodnju. Ipak, matična radionica nalazi se u blizini Modene (Savignano sul Panaro), gdje su otkrivene brojne lucerne i nekoliko kalupa čiji je vlasnik bio *L. Aemilius Fortis*, a u novije vrijeme ona se smješta u okolicu Padove pa čak i Akvileje. Njihova proizvodnja počela je za vrijeme Nerona ili malo prije propasti Pompeja, budući da su upravo u tom gradu pronađene uljanice s pečatom FORTIS, iako u malim količinama, što ukazuje da je njihova proizvodnja tek započinjala. Vrhunac proizvodnje dostiže krajem 1. st., a nastavlja se do 3. stoljeća, a u nekim sporadičnim slučajevima u provincijama i do kraja 4. stoljeća (Buchi 1975, XXIX-XLI, 65-93; Bradara 1998, 106; Bulić, Koncani Uhač 2009, 288; Gnirs 1910, 79, 83; Loeschcke 1919, 280-282; Menzel 1954, 60-61; Ravagnan 1983, 65-71; Starac 1993, 8; Vikić-Belančić 1975, 49-50).

Iako je Loeschcke početak proizvodnje tipa IX smjestio u 70-e godine 1. st., a tipa X oko 100. godine, čini se da je datacija nešto ranija i Buchi pomiče granicu na početak 1. stoljeća, neovisno o njihovoj tipologiji (Buchi 1975, XXIX-XLI; Loeschcke 1919, 268-269; Menzel 1954, 60). Loeschcke tip IX svoj vrhunac dostiže za vrijeme Flavijevaca i Antonina, a prisutan je i kroz cijelo 2. stoljeće. Uljanice s otvorenim kanalom (tip X) najbrojnije su u 2. i 3. st., no proizvode se i u 4., iako je vidljivo opadanje u kvaliteti, što se očituje u tipovima X-b i X-c. Takve su datacije moguće zbog pronalaska novca uz svjetiljke, u zatvorenim grobnim cjelinama (Buchi 1975, XXIX-XLI; Menzel 1954, 60-61). Firmalampe iz Flaciusove ulice u Puli datirane su od 2. do 3. st., što je u skladu i s arheobotaničkim rezlutatima dobivenim iz

An onomastic analysis of lampmakers' marks has established that most workshops used the maker's cognomen for their signature. Many of the names were of Greek origin and have been found among the slave population - it is very likely that these were among the *liberti*, freed slaves, who made the lamps with signatures, or slaves that had the permission of owners to manufacture lamps as their own goods (*peculium*). We also see signatures with the *praenomen* and the *cognomen*, indicating free persons, i.e. citizens, and signatures composed only of the initials of the Roman trinomial names, the *tria nomina*, as is the case with the already cited example from Pula, QGC. Almost all specimens with this signature were found in Aquileia, placing the workshop in the north of Italy, i.e. in Veneto. Most of the lamps found with the QGC signature are of the X-b type, as is the case with the lamp from Pula. The workshop began its operations in the second century, saw its zenith in the second half of the century and continued production up to the end of the third century. In his interpretation of the QGC signature Buchi offers two possibilities: cisalpine epigraphic evidence tells of Q. Gavius Cerialis and Q. Gavius Communis, whose initials correspond to the signature, and whose full names have been found on amphorae and tegulae (Buchi 1975, XXIX-XLI, 96-97; Menzel 1954, 64; Ravagnan 1983, 72).

Also found among the Pula lamps is the signature CRESC/S, on two lamps (Inv. Nos. PV-245A and PV-1235A). Three bottom sections of moulds have been found in Aquileia with the CRESC/S signature, clearly indicating the presence of a lamp workshop there using this signature, while the upper mould sections point to the production of all three of the X types, including the short form, although we do see a predominance of the X-a type like the two specimens found in Pula. It is postulated that this workshop produced exclusively X type lamps, in spite of the find in Aquileia of a Loeschcke type VIII lamp with the abbreviated name of a Crescens, also known from the production of Corinthian lamps in the second and third century. The name was also frequent among slaves as a cognomen, especially in Africa, and is mentioned among Nero's freedmen. Although it has been asserted that the production of lamps with the CRESC/S signature began during the reign of Augustus, a more probable date is the end of the first or beginning of the second century, running through to the first half of the fourth. The workshop at Aquileia is dated to the second and third centuries and it appears that, along with lamps bearing the CRESC/S signature, it also made those with the QGC signature (Buchi 1975, XXIX-XLI, 33-44; Di Fillippo Balestrazzi 1987, 450-451; Ravagnan 1983, 60-61).

The partially preserved -IS signature on the previously cited lamp (Inv. No. PV-1231A) has been interpreted as

slojeva (SJ007; SJ 011) u kojima su pronađene uljanice (Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9).

### Kasnoantičke uljanice (TAB III)

Jedan ulomak ramena i gorila uljanice koji je pronađen tijekom arheoloških iskopavanja u Flaciusovoj ulici u Puli pripada kasnoantičkim lucernama. Za kasnoantičke uljanice postavljeno je nekoliko tipologija, a jedna je i ona J. W. Hayes, koji ih dijeli na dva osnovna tipa I i II, da bi potom svakom od njih dodao dva podtipa. Tip I A ima veliki, ovalni disk, usko prema van nakošeno rame te kratko gorilo s kanalom. Disk je najčešće ukrašen reljefnim prikazima, a ukrašeno je i rame, i to jednostavnim reljefnim ili pečatnim uzorcima. Dno uljanice je ravno ili blago konkavno. Glavna razlika između tipova I A i I B je ručka: naime, ručka tipa I B pločasta je s dubokim žlijebom po sredini, što nije slučaj s prvim tipom, koji ima ručku s rupom u sredini. Afrička terra sigilata koristila je Hayesu kao analogija za određivanje datacije pa tip I A smješta na početak 4. st., a tip I B na kraj 4. i početak 5. st (Hayes 1972, 310-311; Bubić 2011, 229-230).

Hayesov tip II, koji se podudara s Broneer tipom XXXI, također se dijeli na podtipove A i B, a osnovna im je razlika u kvaliteti izrade. Dok je kod tipa II A glina dobre kvalitete, kao i izrada, to nije slučaj s tipom II B. Glina je u tom tipu loše kvalitete, stijenke deblje, kao i premaz, a ukrasi su neoštiri linija i izlizani. Uljanice ovoga tipa imaju okrugli disk i široko rame koje je od diska odvojeno reljefnom vrpcom. Gorilo je dugačko i ima široki kanal koji ga spaja s tijelom, ručka je klinastog oblika, izvučena iz tijela, a na dnu recipijenta se nalazi prstenasta noga spojena s ručkom. Tip II A datira se u početak 4. st., a na kraj istog stoljeća te do polovice 6. st. smješta se tip II B (Broneer 1977, 81-83; Bubić 2011, 229-230; Hayes 1972, 310-311).

L. Anselmino i C. Pavolini također su odredili tipologiju za afričke, kasnoantičke uljanice, koju su iznijeli u radu "Atlante delle Forme ceramiche" (Pavolini 1981, 192-193; Starac 2005, 287-288). U svojoj tipologiji razlikuju dva glavna oblika, s gorilom i bez njega. U potonju skupinu spada samo jedan tip, tip XVI, koji je ujedno i posljednji. Od preostalih tipova koji su se proizvodili u sjevernoj Africi jedino se tip VIII, točnije podtip VIII A1a, izvezio diljem Mediterana u većim količinama. Tip VIII ima daleko najbrojnije podtipove, a glavna karakteristika mu je izduženo tijelo, zbog čega gorilo nije jasno razdvojeno od tijela uljanice. Recipijent nema prstenastu nogu, nego je blago konkavno, odvojen kružnim utorom koji vodi prema ručki, koja također ima utore. Ručka je vertikalno postavljena na gornji dio

FORTIS; one of the reasons motivating this interpretation is the find of a mould with the same signature at Fažana and pointing to local production. The parent workshop, however, was located near Modena (Savignano sul Panaro), where many lamps and several moulds have been found that were owned by L. Aemilius Fortis. It has lately been placed in the area around Padua and even Aquileia. Production began during the reign of Nero or a little ahead of the destruction of Pompeii – lamps with the FORTIS signature have been found in this city, albeit in small numbers, indicating that production has just begun. The peak of production was in the late first century and continued into the third and, in sporadic cases, in the provinces up to the end of the fourth (Buchi 1975, XXIX-XLI, 65-93; Bradara 1998, 106; Bulić, Koncani Uhač 2009, 288; Gnirs 1910, 79, 83; Loeschcke 1919, 280-282; Menzel 1954, 60-61; Ravagnan 1983, 65-71; Starac 1993, 8; Vikić-Belančić 1975, 49-50).

Although Loeschcke puts the beginning of the production of the IX type in the 70s of the first century, and of the X type around the year 100, it appears that the date is somewhat earlier, and Buchi moves the date to the early first century, irrespective of their typology (Buchi 1975, XXIX-XLI; Loeschcke 1919, 268-269; Menzel 1954, 60). Loeschcke's type IX saw its zenith during the Flavian and Antonine periods and was present throughout the second century. Lamps with open channels (type X) are most numerous in the second and third centuries, but are also made in the fourth, although there is an evident drop in quality, seen in the X-b and X-c types. These dates are possible due to the finds of coins alongside lamps in closed grave contexts (Buchi 1975, XXIX-XLI; Menzel 1954, 60-61). The *Firmalampen* from the Flaciusova ulica site in Pula are dated to the second and third centuries, which is consistent with the archaeobotanical results acquired from layers SU 007 and SU 011, where the lamps were found (Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9).

### Late Antiquity Oil Lamps (TAB III)

One shoulder and nozzle sherd found in the course of the archaeological excavations at the Flaciusova ulica site in Pula is from a late Antiquity lamp. Several typologies have been presented for late Antiquity lamps, one being that of J. W. Hayes, who classes them into two basic types, I and II, and attributing two subtypes to each. Type IA has a large, oval discus, a narrow outwardly bevelled shoulder and a short nozzle with a channel. The discus is usually decorated with imagery in relief, as is the shoulder, which bears simple relief imagery or stamped patterns. The base of the lamp is flat or slightly concave. The chief difference between types IA and IB is in the handle: the IB handle

recipijenta, a ne – kao što je uobičajeno – na stražnjem dijelu tijela uljanice. Dekoracija ovog tipa uljanica dosta je ograničena pa je disk često bez ukrasa, a ako on i postoji radi se o kristogramu, rozeti, školjci ili geometrijskome motivu. Iako je dekorirano i rame, i ovdje su motivi dosta jednostavni i ponavljajući, a najčešće su vegetabilni i geometrijski. Tip VIII dijeli se na četiri glavna podtipa A, B, C i D, a svaki ima dodatne podjele (Pavolini 1981, 192-193).

Pulski primjerak uljanice (inv. br. PV-1228A) jasno ukazuje da je riječ o kasnoantičkoj lucerni, tzv. afričkoj lucerni. Mada se ne uklapa striktno ni u jedan od ranije navedenih tipova, ovaj primjerak pripada duguljasto-ovalnim svjetiljkama. Sačuvana je samo fragmentarno, dio ramena i gorila, što otežava njezino preciznije određivanje. Rame je konveksno i ukrašeno geometrijskim motivom spirale, a gorilo je malo i okruglo, jedva primjetno izdvojeno od recipijenta. Najbliža analogija bila bi s Atlante tipovima VIII A i B, budući da oba imaju konveksno rame, no pulskoj uljanici nedostaje kanal koji spaja gorilo s diskom, a koji je prisutan na spomenutim afričkim lucernama. Daljnje razlike u A podtipovima i tipu B nemoguće je definirati, jer se razlikuju po ručki i ukrasu na disku, koji u našem slučaju nisu sačuvani, a očuvani mali dio diska naizgled ne posjeduje nikakav ukras. No, može se isključiti tip B budući da je on rasprostranjen samo na istočnom Mediteranu i Egiptu. Još je jedna nepodudarnost i korištenje ukrasa na ramenu: kod afričkih svjetiljki to su najčešće stilizirane palmine grančice ili otisci, dok pulska ima spiralu (Pavolini 1981, 193-194; Zaninović 2004, 12-14).

Sjevernoafričke uljanice tipa VIII imaju širok vremenski raspon, od 4. pa sve do 6. stoljeća, ovisno o njihovom podtipu, dok se podtip A smješta od polovice 4. do polovice 5. stoljeća. Izvan matičnog područja počinju se širiti u 5. stoljeću, najprije na istočni Mediteran, a potom i u druge zemlje (Pavolini 1981, 195; Ujčić 1993.-1994, 89-90). Pulski je primjerak, zbog tipološke neodredivosti, teže uže datirati, no zahvaljujući analizi organskog materijala iz sloja 003 (u kojem je pronađena uljanica) moguće ju je datirati od 4. do 5. st. (Essert, Koncani Uhač, Uhač, Šošćarić 2016, 3-9).

## ZAKLJUČAK

Tijekom arheološkog istraživanja u Flaciusovoj ulici u Puli pronađene su ukupno 23 uljanice, od kojih je 14 razvrstano u pet tipova prema Loeschckeu I, III, VIII, IX i X, jedna pripada kasnoantičkim lucernama, a četiri primjerka su korintske uljanice. Uljanice nisu pronađene unutar brodova pa su najvjerojatnije otpad iz

is tab-like with a deep groove along the centre, which is not the case with the first type, which has a pierced handle. Hays used Terra Sigillata Africana as an analogy in determining a date and he thus puts type IA at the beginning of the fourth century and type IB at the end of the fourth and in the early fifth century (Hayes 1972, 310-311; Bubić 2011, 229-230).

The Hayes type II, which corresponds to the Broneer type XXXI, is also further divided into subtypes A and B, the basic difference being in the quality of manufacture. While with type IIA the clay and manufacture is of good quality, this is not the case with type IIB. The clay of this type is of poor quality, the walls are thicker, as is the slip, and the decoration has blurred lines, lacking in sharpness of detail. Lamps of this type have a round discus and a broad shoulder separated from the discus by a band in relief. The nozzle is long and has a broad channel communicating with the body. The handle is spikelike, extending from the body with the base ring at the bottom of the basin communicating with the handle. Type IIA is dated to the early fourth century, while type IIB is placed at the end of that century and into the mid-sixth century (Broneer 1977, 81-83; Bubić 2011, 229-230; Hayes 1972, 310-311).

L. Anselmino and C. Pavolini also established a typology for African late Antiquity lamps in their *Atlante delle Forme ceramiche* (Pavolini 1981, 192-193; Starac 2005, 287-288). In their typology they differentiate between two main forms, with and without nozzles. The latter type has only a single type, XVI, also the last. Among the other types made in North Africa only VIII, more precisely subtype VIII A1a, was exported around the Mediterranean in large quantities. Type VIII has by far the most subtypes and its chief characteristic is an elongated body resulting in a nozzle that is not clearly delineated from the body of the lamp. The basin lacks a base ring and is slightly concave, separated by a circular groove running to the handle, which also has grooves. The handle rises vertically from the upper part of the basin and not, as was customary, on the rear of the lamp. The decoration of this lamp type is quite limited and the discus is often not decorated – if there is decoration it is limited to Christograms, rosettes, shells or geometric motifs. The shoulder too is decorated and here too the motifs are quite simple and repetitive, usually vegetal and geometric. Type VIII is divided into four main subtypes, A, B, C and D, and each is further subdivided (Pavolini 1981, 192-193).

One of the Pula lamps (Inv. No. PV-1228A) is clearly a late Antiquity period African lamp. Although it does not correspond neatly to any of the previously cited types, this specimen is of the elongated oval form. It is preserved only fragmentarily – part of the shoulder and nozzle – which makes a more precise determination difficult. The

luke. Zahvaljujući ranije spomenutim arheobotaničkim analizama koje su omogućile užu dataciju iskopanih kulturnih slojeva, moguće je i preciznije datirati svjetiljke koje su u tim slojevima pronađene. Ako nam brodovi posluže kao orijentir, može se konstatirati da su u slojevima koji se nalaze ispod broda Pula I (SJ 008) pronađene tri lucerne, a ispod broda Pula II (SJ 010; SJ027) njih čak osam. Spomenuti slojevi datirani su u 1. st., što odgovara i dataciji uljanica, koje sve pripadaju ranijim tipovima (Loeschcke I, III, VIII, Broneer XXVII), osim jedne iz SJ 008, koja pripada Loeschcke tipu X b i nešto je kasnijeg datuma (Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9).

Slojevi 007 i 011 (SJ 015 i SJ 020 izjednačeni su sa SJ 011) koji se nalaze iznad broda Pula II datirani su u 2. - 3. st., na što ukazuju i uljanice tipa Loeschcke X koje se isto smještaju u 2. - 3. st. Sloj 003 također je pokrivač broda Pula II, a njegova datacija je znatno šira od prethodnih slojeva, rastežući se od 2. do čak 5. stoljeća. Uljanice iz ovog sloja ponovno potkrepljuju te podatke pa tako nalazimo tip Broneer XXVII koji se pojavljuje već od 1. stoljeća, Loeschcke IX i X koji nastaju tijekom 2. i 3. stoljeća, a potom i kasnoantičku uljanicu koja se može datirati od 4. do 5. stoljeća. U slojevima iznad broda Pula I pronađena je samo jedna uljanica, i to u sloju 024 koji se nalazi neposredno uz brod (Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9). Nažalost ovaj sloj nije datiran arheobotaničkom analizom, no zbog pronađene uljanice tipa Loeschcke IX ili X moguće ga je smjestiti između 1. i 3. stoljeća.

Među pronađenim uljanicama četiri ulomka nemoguće je tipološki odrediti. Tri ulomka uljanica premazana su crvenom glazurom: to je ulomak diska s prikazom lista, dno uljanice te lucerna s prikazom sove. Tri ulomka zbog svoje prepoznatljive crvene glazure pripadaju uljanicama s reljefnim prikazima na disku, tzv. Bildlampen, a posljednji ima sačuvan i dio ramena pa je moguće da pripada tipu Loeschcke I. Četvrti ulomak je bez glazure i ima teško raspoznatljiv reljefni prikaz, no moguće je da prikazuje krilatu ljudsku figuru, možda erota. Zbog nedostatka elemenata tipologija je ostala neodređena, no slijedom izostanka glazure i blijede boje gline moguće je da pripada korintskim uljanicama.

Pod korintske svjetiljke uvrštena su četiri primjerka iz Pule, dva primjerka imaju sačuvan donji dio recipijenta i ručku, jedan dio ramena i diska te ručku, dok četvrti ulomak čini disk s reljefnim prikazom i dijelom gorila. Pulske uljanice korinskoga tipa svrstane su u tip Broneer XXVII (inv. br. PV-1226A; PV-1226A) i podtip XXVII A (inv. br. PV-1221A). Četvrtu uljanicu nešto je teže tipološki odrediti. Reljefni prikaz i dio gorila s volutom

shoulder is convex and decorated with the geometric motif of spirals and the nozzle is small and round, barely delineated from the basin. The closest analogy is with the Atlante types VIII A and B, given that both have a convex shoulder. The Pula lamp, however, lacks a channel communicating between the nozzle and discus, which is found on the cited African lamps. Further difference in the A subtypes and type B cannot be identified as they are differentiated by the handle and the decoration of the discus, which are not preserved in our case, and the preserved small section of the discus does not appear to have any decoration. Type B, however, can be ruled out as it is found only in the eastern Mediterranean and in Egypt. There is another inconsistency in the use of decoration on the shoulder: among the African lamps this is usually a stylised palm branch or impressions, while the Pula lamp has a spiral (Pavolini 1981, 193-194; Zaninović 2004, 12-14).

Type VIII North African lamps were made over a long time range, from the fourth to the sixth century, depending on the subtype, while subtype A is dated from the mid-fourth to mid-fifth century. It began to spread outside its area of origin in the fifth century, first to the eastern Mediterranean and then to other lands (Pavolini 1981, 195; Ujčić 1993-1994, 89-90). For the Pula lamps, because of the difficulty in attributing a precise typology, precise dating is also difficult. The analysis of organic material from layer 003, however, in which the lamp was found, allows us to date it to the period of the fourth to fifth centuries (Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9).

## CONCLUSION

A total of twenty-three lamps were found in the course of the excavation at the Flaciusova ulica site in Pula, of which fourteen have been classified among five types based on the Loeschcke typology, I, III, VIII, IX and X, one which is a late Antiquity lamp, and four are Corinthian lamps. The lamps were not found within the boats and are likely refuse from the harbour. Thanks to the already cited archaeobotanical analyses that provided for a narrow dating range of the excavated cultural layers, we can offer a more precise dating of the lamps found in these layers. If the boats serve as our point of orientation, we can say that three lamps were found in the layers beneath the Pula I boat (SU 008), and eight beneath the Pula II boat (SU 010; SU 027). These layers are dated to the first century, which is consistent with the dating of the lamps, all of which are of the earlier types (Loeschcke I, III, VIII, Broneer XXVII), with the exception of one from SU 008 of Loeschcke's type Xb of a somewhat later date (Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9).

(inv.br. PV1223A) uklapa se u Loeschckeov tip I, koji je istovjetan s tipom Broneer XXII, no zbog nedostatka glazure i blijede boje gline čini se da je uljanica njihova lokalna korinthska imitacija.

Među svjetiljkama pronađenim u Flaciusovoj ulici u Puli samo je jedna (inv. br. PV-1244A) tipa Loeschcke I. Loša očuvanost sprječava točno određivanje podtipa, no s obzirom na proporcije gorila i ramena, najvjerojatnije pripada tipu B ili C. Datira se u 1. stoljeće; uža datacija je nemoguća zbog nedostatka jezičca, kanalića i drugih elemenata koji određuju vrijeme njezina nastanka. Ipak, na nešto kasniju dataciju upućuje i plošno izrađena voluta s kružićem na kraju umjesto spirale.

U Loeschcke tip III pripada jedna uljanica iz Flaciusove ulice u Puli (inv. br. PV-271A) od koje su sačuvani ulomak ramena, diska i trokutaste ukrasne ručke, ukrašene palmetom. Iako taj tip nastaje već u Augustovo doba, širiti se počinje za vrijeme Tiberija, a primjerci takvih uljanica pronalaze se i tijekom 3. i 4. stoljeća, dok se pulski primjerak datira u 1. stoljeće.

U Puli su pronađena i dva cjelovita primjerka lucerni tipa Loeschcke VIII (inv. br. PV-247A; PV-1222A). Budući da su gotovo u potpunosti očuvana, moguće im je odrediti tipove gorila, a to su L1 i K, kao i profil ramena, VII a i VIII b. Disk jedne uljanice je dekoriran rozetom s osam latica, dok je drugi prazan, bez ukrasa, što ukazuje na sve češću tendenciju nedekoriranja diska. Loeschcke tip VIII počinje se proizvoditi u drugoj trećini 1. st., vrhunac proizvodnje doživljava već polovicom stoljeća, kada započinje i njegovo širenje, a u posljednjoj trećini istog stoljeća proizvodnja opada. Pulski su primjerci smješteni u 1. st., jer imaju stajaću plohu, dok su raniji tipovi imali stajaći prsten.

Devet je primjera uljanica s radioničkim pečatom, od kojih su sedam Loeschcke tipa X i dva tipa IX (inv. br. PV-245A; PV-267A; PV-268A; PV-1224A; PV-1227A; PV-1229A; PV-1231A; PV-1233A; PV-1235A). Četiri svjetiljke pripadaju podtipu X-a, po jedna podtipu IX-b, IX-c, X-b, X-c, dok je jedna uljanica nedovoljno očuvana za određivanje podtipa. Od pet uljanica kojima je cjelovito ili parcijalno sačuvano dno, na četiri su prisutni radionički pečati, a jedna ima prazno dno. Dvije imaju pečat CRESCE/S, jedna pečat QGC, a zadnja ima sačuvana samo dva, najvjerojatnije posljednja slova -IS, koja su interpretirana kao FORTIS. Akvilejska radionica koja je proizvodila uljanice s pečatima CRESCE/S proizvodila je i one s QGC pečatom, i datira se u 2. i 3. stoljeće. Lucerne s pečatom FORTIS vrhunac dostižu krajem 1. stoljeća, a proizvodnja im se nastavlja sve do 3. st.

Layers 007 and 011 (SU 015 and SU 020 correspond with SU 011), which are above the Pula II boat, are dated to the second to third century, as is also indicated by the Loeschcke X type lamp, also dated to the second to third century range. Layer 003 also covered the Pula II boat and its dating is significantly broader than the previous layers, ranging from the second to the fifth century. The lamps from this layer again corroborate these data, and we see Broneer's type XXVII, which appears in the first century, Loeschcke's types IX and X, which emerge in the second and third, and the late Antiquity lamp dated from the fourth to fifth century. One lamp was found in the layers above the Pula I boat, in layer 024 immediately adjacent to the boat (Essert, Koncani Uhač, Uhač, Šoštarić 2016, 3-9). This layer was not, unfortunately dated by archaeobotanical analysis, although the find of the Loeschcke IX or X type lamp allows us to place it between the first and third century.

Among the lamps found four sherds cannot be typologically determined. Three sherds are red glazed: a discus sherd with a depiction of a leaf, the base of a lamp and a lamp with a depiction of an owl. Three sherds, on account of their characteristic red glaze, are from the *Bildlampen* (Roman picture lamp) type, i.e. with relief-decorated discuses, and the fourth has a preserved section of the shoulder and may be of the Loeschcke type I. The fourth sherd has no glaze and bears a relief depiction that is difficult to make out, but may be that of a winged human figure, perhaps of an Erote. The lack of elements precludes a definitive typological determination, but the lack of glaze and the pale colour of the clay may indicate a Corinthian lamp.

Four specimens from Pula have been classed as Corinthian; two have preserved basin bases and handle; one a part of the shoulder, discus and handle; and the fourth the discus with a relief decoration and a part of the nozzle. The Corinthian type Pula lamps have been classed as Broneer's type XXVII (Inv. Nos. PV-1226A; PV-1226A) and subtype XXVII A (Inv. No. PV-1221A). A typological determination of the fourth lamp is more elusive. The relief imagery and section of volute-nozzle (Inv. No. PV1223A) are consistent with Loeschcke's type I, which corresponds to Broneer's type XXII, but the lack of glaze and the pale colour of the clay may mean that this is a local Corinthian imitation.

Among the lamps found at the Flaciusova ulica site in Pula only one (Inv. No. PV-1244A) is of Loeschcke's type I. The poor state of preservation precludes a precise determination of the subtype, but given the proportions of the nozzle and shoulder it is likely of the B or C type. It has been dated to the first century; a narrower date is not possible due to the lack of tongues, channels and other elements that would indicate the time of its

Kasnoantičke uljanice također su zastupljene jednim primjerkom (inv. br. PV-1228A), ali nažalost, s obzirom na njezinu spiralnu dekoraciju na konveksnom ramenu i nenaglašenom gorilu bez kanala, nemoguće ju je pobliže tipološki odrediti. Njezina fragmentarna očuvanost dodatno otežava razvrstavanje. Najbliža analogija je s Atlante tipom VIII A i B, čiji je raspon proizvodnje od 4. pa do 6. stoljeća, a izvoz tog tipa započinje u 5. stoljeću.

creation. A somewhat later date is, however, indicated by the flat execution of the volutes with a circle at the end in place of a spiral.

One lamp from the Flaciusova ulica site in Pula (Inv. No. PV-271A) is of Loeschcke's type III, from which we have the preserved shoulder, discus and the triangular decorative handle with palmette ornament. Although this type emerged during the reign of Augustus, it only spread during the time of Tiberius, and specimens of these lamps are also found from the third and fourth centuries, while the Pula lamp is dated to the first.

Two complete Loeschcke type VIII lamps (Inv. Nos. PV-247A; PV-1222A) were found in Pula. Given their almost entirely intact state we can determine the nozzle type, L1 and K, and the shoulder profile, VIIa and VIIIb. The discus of one of the lamps is decorated with an eight-petal rosette, while the other is blank, with no decoration, pointing to the growing trend in undecorated discuses. Production of Loeschcke's type VIII began in the second third of the first century and saw its zenith by the middle of that century when it became widespread, with production falling in the final third of the century. The Pula specimens are from the first century, with a standing-plate, while earlier versions had a standing-ring.

There are nine lamps with lampmakers' signature, seven of which are of Loeschcke's type X and two of type IX (Inv. Nos. PV-245A; PV-267A; PV-268A; PV-1224A; PV-1227A; PV-1229A; PV-1231A; PV-1233A; PV-1235A). Four lamps are of the X-a subtype, one each of the subtypes IX-b, IX-c, X-b and X-c, while one lamp is not sufficiently preserved for the determination of the subtype. Of the five lamps with a fully or partially preserved base we see the lampmakers' signature on four while one is blank. Two bear the CRESCERE/S signature, one the QGC signature and the last has only two letters preserved, IS, likely the end of the signature and interpreted as FORTIS. The Aquileian workshop that manufactured the lamps with the CRESCERE/S signature also made those with the QGC mark and is dated to the second and third centuries. Lamps with the FORTIS signature saw their zenith in the late first century, with production continuing into the third century.

Late Antiquity lamps are also represented with one lamp (Inv. No. PV-1228A) but, unfortunately, given the spiral decoration on its convex shoulder and the unemphasised nozzle lacking a channel, we cannot offer a precise typological determination. Its fragmentary state of preservation further hampers classification. The closest analogy is with the Atlante types VIII A and B, which had a production range covering the period from the fourth to sixth century, and were exported from the fifth century on.

## KATALOG

Svjetiljke su popisane po redoslijedu inventarnih brojeva pod kojim su pohranjene u Arheološkom muzeju Istre, a citiran je kraticom inv. br. Kratice za mjere su: D = dužina, Š = širina, V = visina, DS = debljina stijenke, STAC. = stacionaža, SJ = stratigrafska jedinica.

**1. Inv. br. PV-1244A**

Flaciusova ulica, Pula, 2013; STAC. 0+092-0+093; SJ 010

Ulomak tijela i gorila uljanice s volutom. Svijetle narančaste boje s crvenim premazom i tragovima gorenja.

Mjere: V=2,4 cm; D=8,6 cm; DS=0,4 cm; Š=3,1 cm

Loeschcke I

Datacija: 1. st.

**2. Inv. br. PV-1225A**

Flaciusova ulica, Pula, 2013; STAC. 0+089-0+090; SJ 027

Ulomak ramena i diska uljanice s reljefnim prikazom sove. Otvor za ulje u sredini diska. Crveni premaz.

Mjere: Š=5 cm; D=3,9 cm; DS=0,3 cm

Loeschcke I (?), tip gorila III a

Datacija: kraj 1. st.

**3. Inv. br. PV-1223A**

Flaciusova ulica, Pula, 2013; STAC. 0+085-0+086; SJ 8; SJ 10; SJ 027

Ulomak dijela diska i gorila uljanice s volutama. Na disku je prikaz arhitekture i/ili drveća. Glina je blijede žućkaste boje, bez premaza.

Mjere: V=2,3 cm; Š=3,9 cm; DS=0,3 cm; D=7,1 cm

Loeschcke I, Broneer XXVII

Datacija: kraj 1. st.

## CATALOGUE

The lamps are listed in the order of the inventory numbers under which they are stored at the Archaeological Museum of Istria, given under the abbreviation Inv. No. The abbreviations for dimensions are: L = length, W = width, H = height, WT = wall thickness, STA = station, SU = stratigraphic unit.

**1. Inv. No. PV-1244A**

Flaciusova ulica, Pula, 2013; STA 0+092-0+093; SU 010

Oil lamp body and volute-nozzle. Light orange with red slip and traces of burning. Dimensions: H=2.4 cm; L=8.6 cm; WT=0.4 cm; W=3.1 cm

Loeschcke I

Date: 1<sup>st</sup> century

**2. Inv. No. PV-1225A**

Flaciusova ulica, Pula, 2013; STA 0+089-0+090; SU 027

Oil lamp shoulder and discus with owl relief-decoration. Filling hole at the centre of the discus. Red slip.

Dimensions: W=5 cm; L=3.9 cm; WT=0.3 cm

Loeschcke I (?), nozzle type III a

Date: late 1<sup>st</sup> century

**3. Inv. No. PV-1223A**

Flaciusova ulica, Pula, 2013; STA 0+085-0+086; SU 8; SU 10; SU 027

Volute-nozzle oil lamp discus section and nozzle. Architecture and/or trees depicted on discus. Light yellow clay, no slip.

Dimensions: H=2.3 cm; W=3.9 cm; WT=0.3 cm; L=7.1 cm

Loeschcke I, Broneer XXVII

Date: late 1<sup>st</sup> century



**4. Inv. br. PV-1243A**

Flaciusova ulica, Pula, 2013; STAC. 0+092-0+093; SJ 010

Ulomak uljanice s drškom ukrašenom urezima. Svijetle žućkaste boje, bez premaza.

Mjere: V=3 cm (s drškom V=4,8 cm); Š=5,4 cm; DS=0,3 cm

Broneer XXVII

Datacija: kraj 1. st.

**5. Inv. br. PV-1226A**

Flaciusova ulica, Pula, 2013; STAC. 0+092; SJ 010

Ulomak tijela uljanice s ručkom i nizom od tri kružnice sačinjene od koncentričnih kružnice na dijelu recipijenta ispod ručke. Ručka ima dva utora, a pri njenom dnu urezan je X. Blijedo žućkaste boje, bez premaza.

Mjere: V=2,6 cm; PR=7,5 cm; DS=0,3 cm

Broneer XXVII

Datacija: kraj 1. st.

**6. Inv. br. PV-1221A**

Flaciusova ulica, Pula, 2013; STAC. 0+093-0+095; SJ 003

Ulomak uljanice od koje je sačuvan dio ručke ukrašene utorima, ramena ukrašenog ovulima te diska bez prikaza. Otvor za ulje je u sredini. Blijedo žuta/oker glina.

Mjere: V=2,2 cm; Š=3,1 cm; DS=0,4 cm

Broneer XXVII A

Datacija: 2. - 4. st.

**7. Inv. br. PV-271A**

Flaciusova ulica, Pula, 2013; STAC. 0+092-0+093; SJ 010

Sačuvana su dva ulomka ramena i diska uljanice te ukrasna trokutasta drška s prikazom palmete. Crveni premaz.

Mjere: D=11 cm; Š=7,5 cm; DS=0,4 cm

Loeschcke III

Datacija: 1. st.

**4. Inv. No. PV-1243A**

Flaciusova ulica, Pula, 2013; STA 0+092-0+093; SU 010

Oil lamp with handle decorated with incisions. Light yellow, no slip.

Dimensions: H=3 cm (with handle H=4.8 cm); W=5.4 cm; WT=0.3 cm

Broneer XXVII

Date: late 1<sup>st</sup> century

**5. Inv. No. PV-1226A**

Flaciusova ulica, Pula, 2013; STA 0+092; SU 010

Oil lamp body with handle and series of three circles consisting of concentric circles on basin section below handle. Two grooves on handle, with X incised near its bottom. Light yellow, no slip.

Dimensions: H=2.6 cm; Diameter=7.5 cm; WT=0.3 cm

Broneer XXVII

Date: late 1<sup>st</sup> century

**6. Inv. No. PV-1221A**

Flaciusova ulica, Pula, 2013; STA 0+093-0+095; SU 003

Oil lamp with preserved handle section decorated with grooves, shoulder decorated with ovules and disk without imagery. Filling hole at centre. Light yellow/ochre clay.

Dimensions: H=2.2 cm; W=3.1 cm; WT=0.4 cm

Broneer XXVII A

Date: 2<sup>nd</sup> to 4<sup>th</sup> century

**7. Inv. No. PV-271A**

Flaciusova ulica, Pula, 2013; STA 0+092-0+093; SU 010

Two sherds preserved of shoulder and discus and decorative triangular handle with palmette decoration. Red slip.

Dimensions: L=11 cm; W=7.5 cm; WT=0.4 cm

Loeschcke III

Date: 1<sup>st</sup> century



**8. Inv. br. PV-1222A**

Flaciusova ulica, Pula, 2013; STAC. 0+086-0+088; SJ 008/010

Ulomak uljanice većim dijelom očuvan, nedostaje dio ramena i diska. Disk nema dekoracije. Svijetla oker glina s crvenim premazom.

Mjere: V=3,1 cm; PR=7,4 cm; DS=0,5 cm; D=10,3 cm

Loeschcke VIII A, tip gorila K, profil ramena VIII b

Datacija: 1. st.

**8. Inv. No. PV-1222A**

Flaciusova ulica, Pula, 2013; STA 0+086-0+088; SU 008/010

Oil lamp, mostly preserved. Part of shoulder and discus lost. Discus undecorated. Light ochre clay with red slip.

Dimensions: H=3.1 cm; Diameter=7.4 cm; WT=0.5 cm; L=10.3 cm

Loeschcke VIII A, nozzle type K, shoulder profile VIII b

Date: 1<sup>st</sup> century

**9. Inv. br. PV-247A**

Flaciusova ulica, Pula, 2013; STAC. 0+091; SJ 010

Uljanica s prikazom rozete s osam latica i otvorom za ulje u središtu diska. Disk je omeđen dvama utorima. Mali otvor za zrak na spoju gorila i recipijenta omeđen s dvije kružnice. Na dnu pet malih kružnica. Oker glina s crvenim premazom, vidljivi tragovi gorenja.

Mjere: V=2.9cm; Pr=8,8 cm; D=10,2 cm; DS=0,3 cm

Loeschcke VIII, tip gorila L1, rame profila VII a

Datacija: druga polovica 1. st.

**9. Inv. No. PV-247A**

Flaciusova ulica, Pula, 2013; STA 0+091; SU 010

Oil lamp with eight-petal rosette and filling hole at centre of discus. Discus bordered with two grooves. Small air hole at meeting of nozzle and basin bordered by two circles. Five small circles on base. Ochre clay with red slip, visible traces of burning.

Dimensions: H=2.9cm; Diameter=8.8 cm; L=10.2 cm; WT=0.3 cm

Loeschcke VIII, nozzle type L1, shoulder profile VII a

Date: second half of 1<sup>st</sup> century

**10. Inv. br. PV-1231A**

Flaciusova ulica, Pula, 2013; STAC. 0+085-0+087; SJ 003

Uljanica koja je gotovo u potpunosti sačuvana, osim dijela dna, recipijenta i završetka gorila. Na dnu su vidljiva dva slova pečata: -IS, najvjerojatnije FORTIS. Zatvorenog je kanala, s otvorom za ulje u sredini te dvjema ušicama bliže gorilu. Glina je narančaste boje.

Mjere: V=3,1 cm; PR=6,1 cm; DS=0,3 cm; D=6,8 cm

Loeschcke IX b

Datacija: 2. st.

**10. Inv. No. PV-1231A**

Flaciusova ulica, Pula, 2013; STA 0+085-0+087; SU 003

Almost entirely intact oil lamp. Lost sections of base, basin and nozzle tip. Two letters of the lampmakers' signature visible on base: -IS, most likely FORTIS. Closed channel, with filling hole at centre and two lugs toward the nozzle. Orange clay.

Dimensions: H=3.1 cm; Diameter=6.1 cm; WT=0.3 cm; L=6.8 cm

Loeschcke IX b

Date: 2<sup>nd</sup> century

**11. Inv. br. PV-1227A**

Flaciusova ulica, Pula, 2013; STAC. 0+087; SJ 008/010

Ulomak uljanice od koje je sačuvan dio gorila i ramena s ušicom, izvorno su najvjerojatnije bile dvije. Glina je svijetle narančaste boje, s tragovima gorenja.

Mjere: V=2,8 cm; D=10,3 cm; DS=0,3 cm

Loeschcke IX c

Datacija: 1. st.

**11. Inv. No. PV-1227A**

Flaciusova ulica, Pula, 2013; STA 0+087; SU 008/010

Oil lamp with preserved section of nozzle and shoulder with lug, originally likely two lugs. Light orange clay, with traces of burning.

Dimensions: H=2.8 cm; L=10.3 cm; WT=0.3 cm

Loeschcke IX c

Date: 1<sup>st</sup> century

**12. Inv. br. PV-1232A**

Flaciusova ulica, Pula, 2013; STAC. 0+086-0+087; SJ 024

Ulomak diska i ramena uljanice s očuvanom jednom ušicom. Svjetlije narančaste boje.

Mjere: D=4; Š=2,2; DS=0,3

Loeschcke IX ili X

Datacija: 2. - 4. st.

**12. Inv. No. PV-1232A**

Flaciusova ulica, Pula, 2013; STA 0+086-0+087; SU 024

Oil lamp discus and shoulder with one preserved lug. Light orange.

Dimensions: L=4; W=2.2; WT=0.3

Loeschcke IX or X

Date: 2<sup>nd</sup> to 4<sup>th</sup> century

**13. Inv. br. PV-1233A**

Flaciusova ulica, Pula, 2013; STAC. 0+093; SJ 007

Ulomak gorila uljanice, s tragovima gorenja i otvorenim kanalom. Svijetla oker glina.

Mjere: V=3,2; Š=2,7; DS=0,5; D=3,9

Loeschcke X

Datacija: 2. - 3. st.

**13. Inv. No. PV-1233A**

Flaciusova ulica, Pula, 2013; STA 0+093; SU 007

Oil lamp nozzle, with traces of burning and open channel. Light ochre clay.

Dimensions: H=3.2; W=2.7; WT=0.5; L=3.9

Loeschcke X

Date: 2<sup>nd</sup> to 3<sup>rd</sup> century

**14. Inv. br. PV-245A**

Flaciusova ulica, Pula, 2013; STAC. 0+093-0+095; SJ 003

Ulomak uljanice od koje je većim dijelom sačuvan disk, rame i gorilo (djelomično odlomljeno) te dio dna s pečatom CRESC(E)S. Dvije ušice na ramenu malo su bliže nosu, otvoreni kanal. Smeđe-crvena glina, s vidljivim tragovima gorenja na gorilu.

Mjere: V=3,2 cm; D=10,2 cm; DS=0,4 cm, PR=6,9 cm

Loeschcke X a

Datacija: 2. - 3. st.

**14. Inv. No. PV-245A**

Flaciusova ulica, Pula, 2013; STA 0+093-0+095; SU 003

Oil lamp with mostly preserved discus, shoulder and nozzle (partially lost) and a section of the base with the lampmakers' signature CRESC(E)S. Two lugs on the shoulder towards the nozzle, open channel. Brown-red clay, with visible traces of burning on the nozzle.

Dimensions: H=3.2 cm; L=10.2 cm; WT=0.4 cm, Diameter=6.9 cm

Loeschcke X a

Date: 2<sup>nd</sup> to 3<sup>rd</sup> century



**15. Inv. br. PV-1229A**

Flaciusova ulica, Pula, 2013; STAC. 0+085; SJ 015

Ulomak diska, ramena i gorila uljanice s otvorenim kanalom. Dvije ušice na ramenu primaknute su bliže gorilu, otvor za ulje je u sredini diska. Vidljiv je i otvor za zrak u kanalu. Svijetle je narančaste boje, s vidljivim tragovima gorenja.

Mjere: V=2,3 cm; PR=6,8 cm; DS=0,2 cm; D=7 cm

Loeschcke X a

Datacija: 2. - 3. st.

**15. Inv. No. PV-1229A**

Flaciusova ulica, Pula, 2013; STA 0+085; SU 015

Oil lamp discus, shoulder and nozzle sections with open channel. Two lugs on the shoulder towards the nozzle, filling hole at centre of discus. Visible air hole in channel. Light orange, with visible traces of burning.

Dimensions: H=2.3 cm; Diameter=6.8 cm; WT=0.2 cm; L=7 cm

Loeschcke X a

Date: 2<sup>nd</sup> to 3<sup>rd</sup> century

**16. Inv. br. PV-1235A**

Flaciusova ulica, Pula, 2013; STAC. 0+088-0+090; SJ 015

Ulomci uljanice, tijela i gorila. Na dnu pečat CRESCE/S. Dvije ušice odmaknute su od gorila. Glina je svijetle narančaste boje, s tragovima gorenja. Otvor za ulje je u sredini diska.

Mjere: recipijent V=3,4 cm; Š=6,9 cm; DS=0,4 cm

Gorilo: V=2,8 cm; Š=1,7 cm; D=4,5 cm

Loeschcke X a

Datacija: 2. - 3. st.

**16. Inv. No. PV-1235A**

Flaciusova ulica, Pula, 2013; STA 0+088-0+090; SU 015

Oil lamp body and nozzle sherds. Lampmakers' signature CRESCE/S on base. Two lugs away from nozzle. Light orange clay, with traces of burning. Filling hole at centre of discus.

Dimensions: Basin H=3.4 cm; W=6.9 cm; WT=0.4 cm

Nozzle: H=2.8 cm; W=1.7 cm; L=4.5 cm

Loeschcke X a

Date: 2<sup>nd</sup> to 3<sup>rd</sup> century

**17. Inv. br. PV-1224A**

Flaciusova ulica, Pula, 2013; STAC. 0+093-0+094; SJ 007

Ulomak uljanice od koje je sačuvan disk, rame i djelomično gorilo. Ima otvoreni kanal, dvije ušice malo primaknute gorilu, otvor za ulje blago decentriran. Glina je svijetle oker boje.

Mjere: D=8,2 cm; PR=7,1 cm; DS=0,5 cm

Loeschcke X a

Datacija: 2. - 3. st.

**17. Inv. No. PV-1224A**

Flaciusova ulica, Pula, 2013; STA 0+093-0+094; SU 007

Oil lamp with preserved discus, shoulder and part of the nozzle. Open channel, two lugs slightly towards the nozzle, filling hole slightly off-centre. Light ochre clay.

Dimensions: L=8.2 cm; Diameter =7.1 cm; WT=0.5 cm

Loeschcke X a

Date: 2<sup>nd</sup> to 3<sup>rd</sup> century

**18. Inv. br. PV-267A**

Flaciusova ulica, Pula, 2013; STAC. 0+086; SJ 008

Uljanica s radioničkim pečatom QGC na dnu, s otvorenim kanalom na kojem se nalazi otvor za zrak, dvije ušice primaknute gorilu. Otvor za ulje nije u središtu. Svijetle narančaste boje, s tragovima gorenja.

Mjere: V=2,7cm; D=8,6 cm; Pr=5,9 cm

Loeschcke X b

Datacija: 2. st.

**18. Inv. No. PV-267A**

Flaciusova ulica, Pula, 2013; STA 0+086; SU 008

Oil lamp with lampmakers' signature QGC on base, open channel with air hole, two lugs towards the nozzle. Filling hole not centred. Light orange, with traces of burning.

Dimensions: H=2.7cm; L=8.6 cm; Diameter=5.9 cm

Loeschcke X b

Date: 2<sup>nd</sup> century

**19. Inv. br. PV-268A**

Flaciusova ulica, Pula, 2013; STAC. 0+092; SJ 007

Uljanica s otvorenim kanalom i trima ušicama. Lošija kvaliteta izrade. Glina je svijetle oker boje, s tragovima gorenja. Otvor za ulje u sredini diska. Nema pečata. Mjere: V=2,8cm; D=8,6cm; Pr=5,9cm  
Loeschcke X c  
Datacija: 2. - 3. st.

**19. Inv. No. PV-268A**

Flaciusova ulica, Pula, 2013; STA 0+092; SU 007

Oil lamp with open channel and three lugs. Poor workmanship. Light ochre clay, with traces of burning. Filling hole at centre of discus. No lampmakers' signature. Dimensions: H=2.8cm; L=8.6cm; Diameter=5.9cm  
Loeschcke X c  
Date: 2<sup>nd</sup> to 3<sup>rd</sup> century

**20. Inv. br. PV-1234A**

Flaciusova ulica, Pula, 2013; STAC. 0+092-0+093; SJ 010

Ulomak diska uljanice s reljefnim prikazom lista i crvenim premazom. Mjere: D=3,7 cm; Š=2,2 cm; DS=0,4 cm  
Datacija: 1. st.

**20. Inv. No. PV-1234A**

Flaciusova ulica, Pula, 2013; STA 0+092-0+093; SU 010

Oil lamp discus with leaf relief-decoration and red slip. Dimensions: L=3.7 cm; W=2.2 cm; WT=0.4 cm  
Date: 1<sup>st</sup> century

**21. Inv. br. PV-1230A**

Flaciusova ulica, Pula, 2013; STAC. 0+085-0+087; SJ 003

Ulomak dna uljanice. Mjere: V=2,2 cm; D=5,4 cm; DS=0,4 cm; Š=3,3 cm  
Datacija: 2. - 4. st.

**21. Inv. No. PV-1230A**

Flaciusova ulica, Pula, 2013; STA 0+085-0+087; SU 003

Oil lamp base. Dimensions: H=2.2 cm; L=5.4 cm; WT=0.4 cm; W=3.3 cm  
Date: 2<sup>nd</sup> to 4<sup>th</sup> century

**22. Inv. br. PV-1228A**

Flaciusova ulica, Pula, 2013; STAC. 0+0890+091; SJ 003

Ulomak gorila i ramena uljanice. Široko rame dekorirano spiralom. Svijetla narančasta glina, bez vidljiva premaza, s tragovima gorenja. Mjere: V=2,8 cm; Š=4,2 cm; DS=0,5 cm; D=5,2 cm  
Datacija: 4. - 5. st.

**22. Inv. No. PV-1228A**

Flaciusova ulica, Pula, 2013; STA 0+0890+091; SU 003

Oil lamp nozzle and shoulder. Broad shoulder with spiral decoration. Light orange clay, no visible slip, with traces of burning. Dimensions: H=2.8 cm; W=4.2 cm; WT=0.5 cm; L=5.2 cm  
Date: 4<sup>th</sup> to 5<sup>th</sup> century

**23. PV-1249A**

Flaciusova ulica, Pula, 2013; STAC. 0+089-0+091; SJ 020

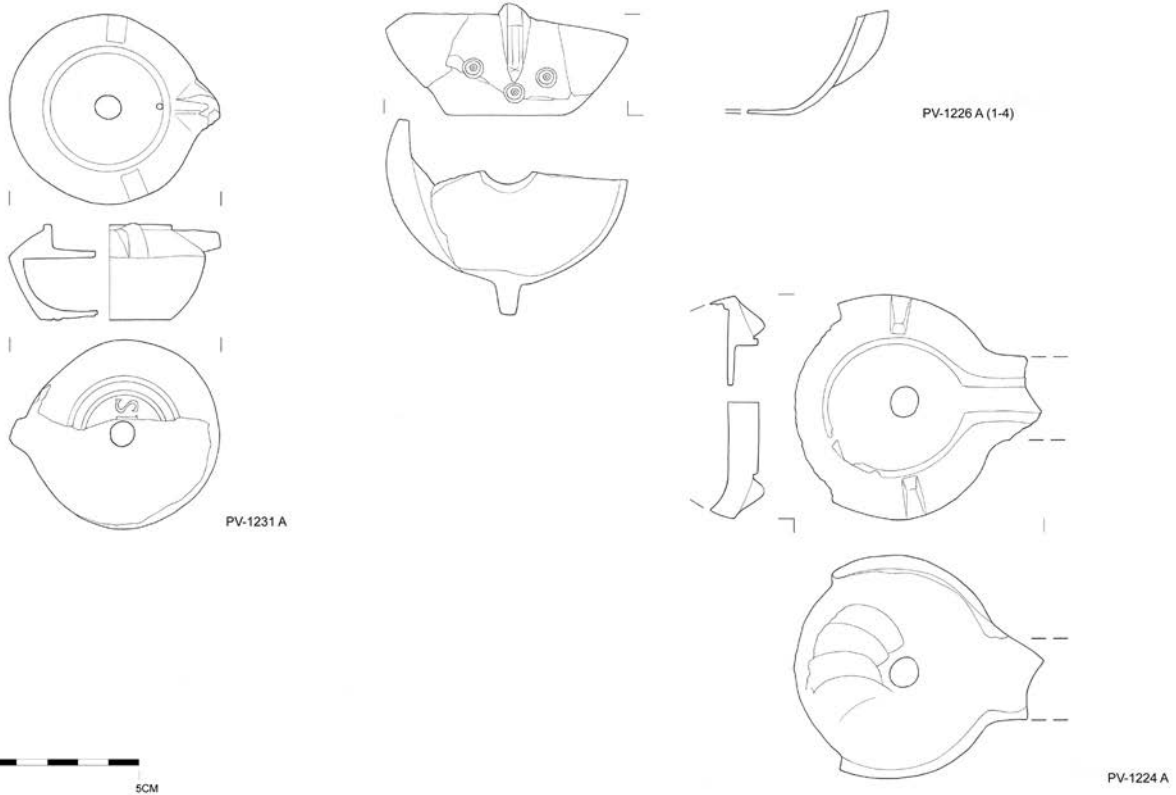
Ulomak diska uljanice, reljefno ukrašen ljudskom figurom. Svijetle žućkaste boje, bez premaza. Mjere: D=3,3 cm; Š=2,3 cm; DS=0,5 cm  
Datacija: 2. - 3. st.

**23. PV-1249A**

Flaciusova ulica, Pula, 2013; STA 0+089-0+091; SU 020

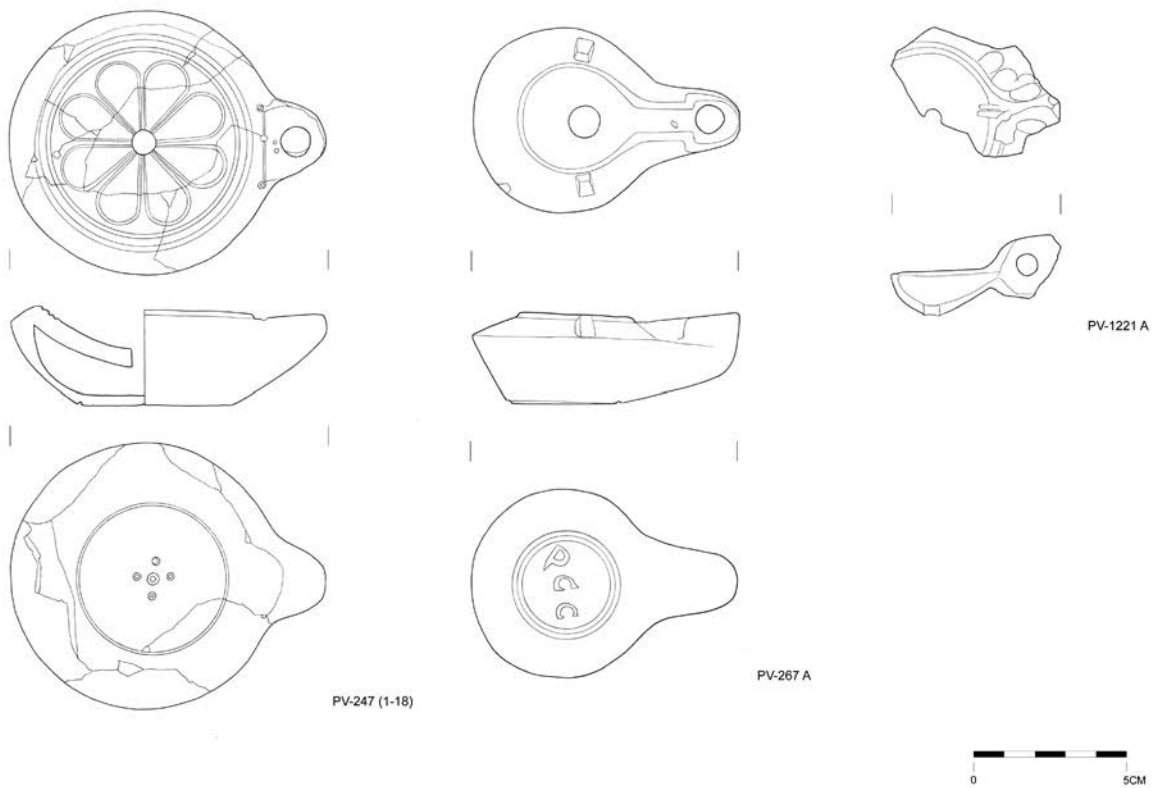
Oil lamp discus sherd, human figure relief-decoration. Light yellow, no slip. Dimensions: L=3.3 cm; W=2.3 cm; WT=0.5 cm  
Date: 2<sup>nd</sup> to 3<sup>rd</sup> century





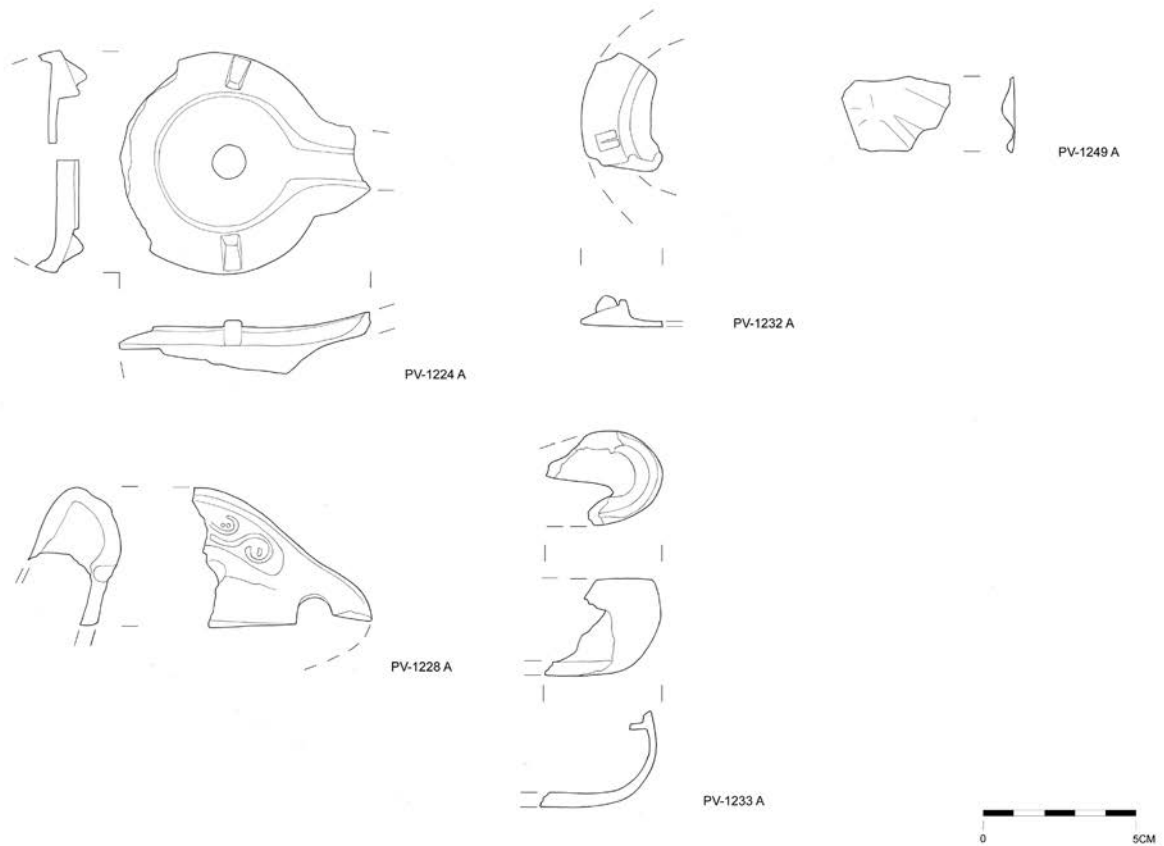
T. 1 Uljanice tipa Loeschcke IX i X, Broneer XXVII (crtež: I. Juričić).

T. 1 Loeschcke type IX and X, Broneer type XXVII oil lamps (drawing by: I. Juričić).



T. 2 Uljanice tipa Loeschcke VIII i X, Broneer XXVII (crtež: I. Juričić).

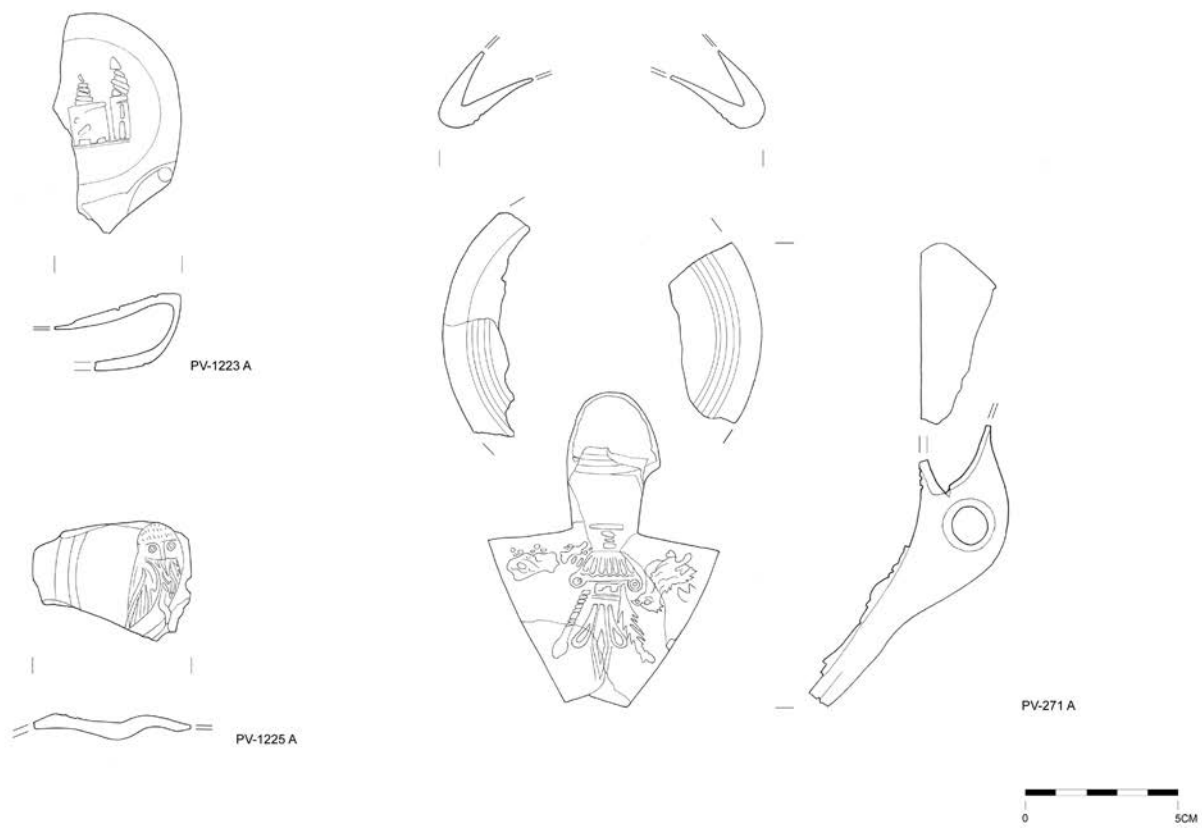
T. 2 Loeschcke types VIII and X, Broneer type XXVII oil lamps (drawing by: I. Juričić).



T. 3 Uljanice tipa Loeschcke IX i/ili X, kasnoantička uljanica (crteži I. Juričić).

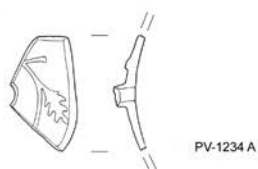
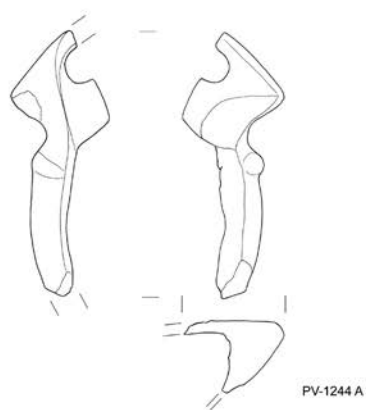
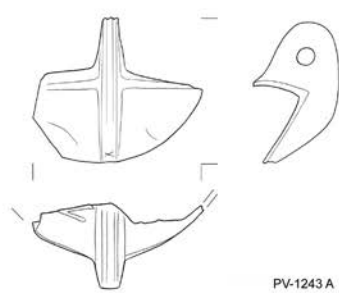
T. 3 Loeschcke type IX and/or X oil lamps, late Antiquity oil lamps (drawing by: I. Juričić).



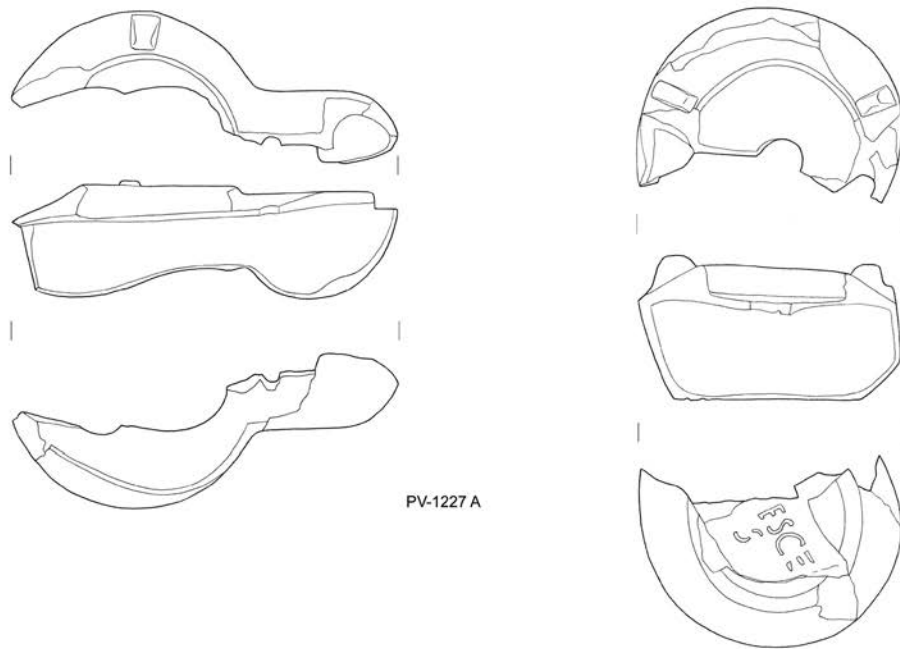


T. 4 Uljanice tipa Loeschcke III i VIII, Broneer XXVII (crtež: I. Juričić).

T. 4 Loeschcke type III and VIII, Broneer type XXVII oil lamps (drawing by: I. Juričić).



T. 5 Uljanice tipa Loeschcke I, Broneer XXVII (crtež: I. Juričić).  
T. 5 Loeschcke type I, Broneer type XXVII oil lamps (drawing by: I. Juričić).

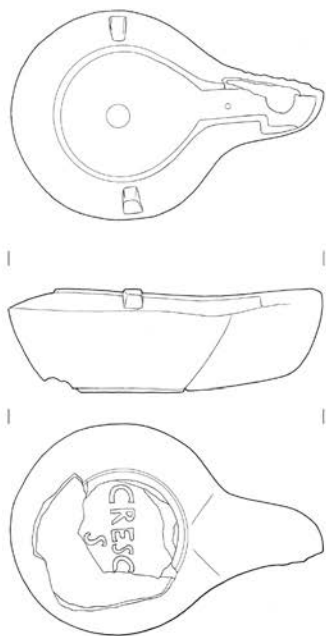


PV-1227 A

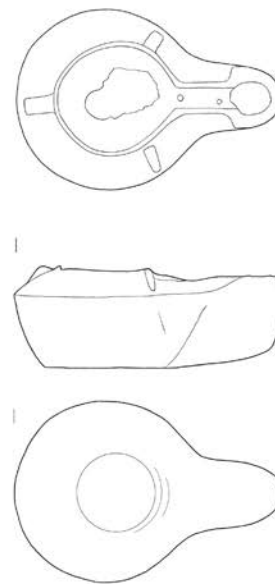
PV-1235 A



T. 6 Uljanice tipa Loeschcke X (crtež: I. Juričić).  
T. 6 Loeschcke type X oil lamps (drawing by: I. Juričić).



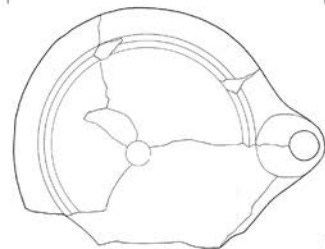
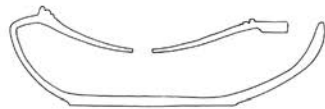
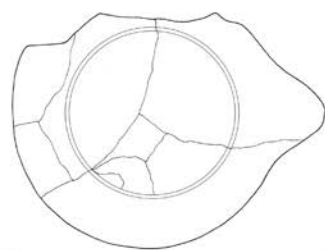
PV-245 A



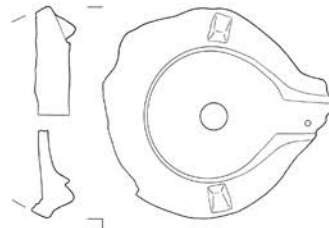
PV-268 A



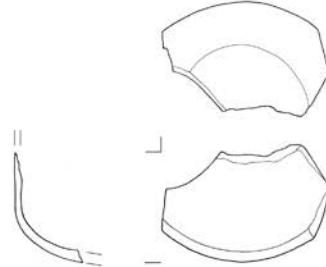
T. 7 Uljanice tipa Loeschcke X (crtež: I. Juričić).  
T. 7 Loeschcke type X oil lamps (drawing by: I. Juričić).



PV-1222 A



PV-1229 A



PV-1230 A



T. 8 Uljanice tipa Loeschcke VIII i X (crtež: I. Juričić).

T. 8 Loeschcke type VIII and X oil lamps (drawing by: I. Juričić).

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