

## COPPER ALLOY LAMPS FROM THE ARCHAEOLOGICAL MUSEUM OF ISTRIA

The subject of paper are fifteen copper alloy lamps of various types and sizes from the Roman Collection of the Archaeological Museum of Istria, mostly collected in the first half of the 20<sup>th</sup> century in Istria and on the island of Cres. The lamps were classified according to shape into six basic types and compared with other finds, in order to gain insight into the chronological framework, workshop centers, and distribution routes. Figural depictions on lamps have been interpreted with regard to mythological and cult significance. The available data on the circumstances of the findings were analyzed and compared with the other data, from which assumptions were made about the possible time and causes of the storage of copper alloy lamps in hoards. The possible value of the copper alloy lamps is estimated according to their weight.

Key words: copper alloy, *fiscus*, Istria, Luna, poppy, Osor, Pan, Pula, lamp / *Ključne riječi*: bakrena slitina, *fisk*, Istra, Luna, mak, Osor, Pan, Pula, uljanica

### Introduction

The Roman Collection of the Archaeological Museum of Istria preserves fifteen copper alloy lamps of various types and sizes, mostly collected in the first half of the 20<sup>th</sup> century in Istria and on the island of Cres. Archaeological data on the circumstances of the finds are very scarce, for some specimens they do not exist at all, but nevertheless this group of representative and very well preserved objects deserves special attention. Eleven copper alloy lamps were included in the permanent Museum Exhibition opened from 1973 to 2013 (cat. nos. 1–11). Open lamps (cat. nos. 13–15) entered the Roman Collection due to the fact that for a long time in archaeology there was, and still is, uncertainty about distinguishing Roman from medieval and modern open lamps. Copper alloy lamps were a luxurious and durable product that could be passed down from generation to generation and kept in use for centuries. They were expensive and valued for their quality and attractive material, longevity, and often artistic quality.

### Copper alloy lamps and their use in Roman society

Copper alloy lamps of the Roman period followed the shape of selected luxury Hellenistic volute nozzle models with a large filling hole on the disc, more than the shapes of contemporary ceramic lamps. In a smaller number, however, certain copper alloy lamps clearly imitate the shape of ceramic lamps used during the period of the Roman

Empire.<sup>1</sup> Copper alloy lamps were made in various models, from the simplest open type, through lamps that match the size and shape of common ceramic lamps with a hole on the disc, all the way to large lamps with multiple nozzles and complex figural motifs on the handle. They could be one-piece or two-piece, i.e. composed of a body with a handle and a movable lid. The lamps with a large filling hole on the disc had the lid closing the hole. The lid could be independent and completely detachable from the lamp as in the case of the cat. no. 4, or attached to the disc by a hinge mechanism that allowed it to open. Like a ceramic lamp, a copper alloy lamp was filled with oil through a hole on the disc. A wick of twisted plant fibers was placed in the opening at the top of the nozzle so that the lower end was immersed in oil. The upper end of the wick protruded outward in order to be lit. Oil could be added through the filling hole on the disc before the flame was extinguished. Large copper alloy lamps had the advantage that they contained more oil and allowed a longer duration of light given by the flame without adding oil. Specimens with more nozzles gave more light and were suitable for lighting large spaces. Copper alloy lamps, just like ceramic ones, could be firmly placed on copper alloy or stone candelabra or hung on candelabra by a chain. They could also be placed on any flat surface or hung on a hook fixed to the ceiling, wall or in a niche.

In addition to everyday lighting, lamps had a special religious significance in sacrifice rituals and rituals associated with the cult of the dead. Certain types of lamps were used to burn fragrant plants in the ritual purification of the space during the sacrifice. The lamp nozzle that was the immediate source of the light was shaped by volutes like a miniature symbolic sanctuary, symbolizing the sacrificial fire on the altar.<sup>2</sup> Finds in the Temple of Isis in Pompeii indicate that copper alloy lamps and candelabra, or portable altars for burnt offerings (*altaria*), were used in sacred rites in the sanctuary and in processions. They were found in a wooden chest stored under a bench with a statue of Isis inside the Temple of Isis.<sup>3</sup> In addition to temples and other public shrines, copper alloy lamps served in private *lararia* and other home shrines (*sacraria*).<sup>4</sup> In both cases, more expensive copper alloy lamps are present in much smaller numbers compared to ceramic ones. Except in public and private cult ambiances, copper alloy lamps were used in a variety of other contexts. Numerous copper alloy lamps were found in private houses in corridors and other living quarters in Pompeii and Herculaneum, usually only one in the house. A small number of houses were equipped with two copper alloy lamps, and only the richest houses had three copper alloy lamps each.<sup>5</sup> Some specimens were found in the *triclinium*,<sup>6</sup> some in *oecus*,<sup>7</sup> other in *atria*, *peristylia* and adjoining corridors.<sup>8</sup> They illuminated as well shops and *thermopolia*.<sup>9</sup> Copper alloy lamps with two or more nozzles,

1 Conticello De' Spagnolis, De Carolis 1997: 10; Xanthopoulou 2005: 303.

2 Stewart 2000: 10; Zografou 2010: 281.

3 Gasparini 2008: 40–41, figs. 2–3; 44, fig. 20; Beaurin 2013: 461, no. I.15, Pompeii VIII.7.28.

4 Boyce 1937: 77, cat. no. 371, Pompeii VIII.5/6.37, House of the Red Walls, Pl. 31, no. 1; 88, cat. no. 439, Pompeii IX.7.20, House of the Arches, Pl. 5, no. 1; 98, cat. no. 487, Boscoreale, contrada Giuliana; Beaurin 2013: 476, no. II.27, Boscoreale, Villa of Asellius. Websites Pompeiinpictures and Herculaneumpictures were used to identify the houses and other buildings.

5 Conticello De' Spagnolis, De Carolis 1988: 15–17.

6 Conticello De' Spagnolis, De Carolis 1988: 14, cat. no. 8, Pompeii III.4.2, House of Arrii.

7 Conticello De' Spagnolis, De Carolis 1988: 15, cat. no. 85, Pompeii I.7.1, House of Paquius Proculus.

8 Conticello De' Spagnolis, De Carolis 1988: 15, cat. no. 13, Pompeii VI.16.15, House of the Ara Maxima; cat. no. 16, Herculaneum, Decumanus Maximus; cat. no. 69, Pompeii I.10.7, House of the Smith.

9 Conticello De' Spagnolis, De Carolis 1988: 15, cat. no. 11, Pompeii II.1; cat. no. 60, Pompeii IX.11.2, Thermopolium of Asellina; 224, cat. no. 142, Pompeii I.8.15, Caupona and officina of Fufidius Successus, and many others.

being generally much rarer than specimens with one nozzle, deserve special consideration given the circumstances of the finding. A copper alloy lamp with two nozzles from the chest in the *naos* of the Temple of Isis in Pompeii obviously served for public cult purposes.<sup>10</sup> Some specimens with two or three nozzles were found in shops or *thermopolia*,<sup>11</sup> others in private houses.<sup>12</sup> Some were found in the street, but can be attributed to the lighting of porches, shops, loggias or other parts of houses facing the street.<sup>13</sup> The use of copper alloy multi-nozzle lamps was very diverse, mainly intended for lighting larger areas or rooms where a large number of people gathered or passed. The decorated bottom and figural representations on the lower part of the handle show that many lamps were intended for hanging and view from below.<sup>14</sup>

Due to durability and high cost, copper alloy lamps could be inherited. Despite the relatively high price compared to ceramic lamps, copper alloy lamps appear in some necropolises as grave goods in the graves of members of the highest and richest social classes. The lamp cat. no. 1 originates from the Early Imperial necropolis of Kavanela in the town of Osor (Apsorus) on the homonymous Kvarner island, without data on the grave. A large number of copper alloy lamps of smaller dimensions, possibly of local production, were found in the necropolises of the city of Nîmes (Nemausus) in Provence, where the custom of placing a copper alloy lamp in a grave was widespread. Sometimes a copper alloy candelabrum along with a lamp was placed in the grave. Copper alloy lamps from the graves in Nîmes are dated by money and other grave finds in the period from 75 to 125 AD, indicating the period of their production and distribution.<sup>15</sup>

The issue of locating workshops in which copper alloy lamps were cast has not been clearly resolved by archaeological findings, but it is assumed that they could be linked to established workshop centers where copper alloy utensils, figurines and other copper alloy objects were made. Capua and Aquileia are presumed workshop centers of the production of copper alloy lamps in Italy.<sup>16</sup> In the 1<sup>st</sup> century AD, copper alloy lamps were produced mainly in Italy, from where they were distributed on the market. During the last third of the 1<sup>st</sup> century, and especially in the 2<sup>nd</sup> century AD, the production was decentralized and relocated to local provincial workshop centers.<sup>17</sup> In the production of lamps, the technique of lost wax was used and the procedure of joining separately cast parts by welding or soldering was applied. Another way of making a copper alloy lamp included a ceramic two-part mold, as evidenced by the finding of a lamp mold in the shape of Bacchus' head with a leaf-shaped handle in Ptuj.<sup>18</sup>

10 Podvin 2014: 36.

11 Conticello De' Spagnolis, De Carolis 1988: 71, cat. no. 56, Pompeii II.6; 72, cat. no. 60, Pompeii IX.11.2, Thermopolium of Asellina; 73, cat. no. 61, Pompeii I.6.3, Workshop of Verus the Blacksmith; 146, cat. no. 120, Herculaneum, Decumanus Maximus, shop 4.

12 Conticello De' Spagnolis, De Carolis 1988: 26, cat. no. 12, Pompeii VI.16.32, House of L. Aurunculeiu Secundio; 56, cat. no. 21, Herculaneum IV.4, House of the Alcove; 71, cat. no. 55, Herculaneum, House 10; cat. no. 58, Herculaneum Insula Orientalis II, House 9; cat. no. 59, Herculaneum VI.17, House of the Tuscan Colonnade; 71, cat. no. 57 and 146, cat. no. 119, Pompeii I.14.11, workshop; 73, cat. no. 61, Pompeii I.6.3, Workshop of Verus the Blacksmith.

13 Conticello De' Spagnolis, De Carolis 1988: 26, cat. no. 7, Herculaneum, Decumanus Maximus; 49, cat. no. 16, Herculaneum, Decumanus Maximus; 56, cat. no. 22, Herculaneum, Decumanus Maximus.

14 Conticello De' Spagnolis, De Carolis 1997: 11.

15 Manniez 2008–2010: 74–76.

16 Willers 1907: 25, Capua; Abramić, Colnago 2009: 174, Aquileia; Di Filippo Balestrazzi 1990: 261, Aquileia; De Carolis 2004: 72, Capua; Bison 2013: 284.

17 Pozo 1997: 205; Manniez 2008–2010: 74–76.

18 Vomer Gojković 2012: 18, cat. no. 10, Ptuj, 2<sup>nd</sup> century AD.

## Types of copper alloy lamps from the Archaeological Museum of Istria

### *Loeschcke XIX*

Copper alloy lamps with a rounded volute nozzle of the Loeschcke XIX type are characterized by a round body with a large filling hole and a flat shoulder. The nozzle is rounded at the top. Pronounced round ends of volutes, also called semivolutes, are visible only on the shoulder and not on the nozzle, unlike the Loeschcke XVIII type equipped with double volutes. The nozzle length is approximately equal to the body diameter. Typical representatives of the type are lamps with one nozzle cat. nos. 1–3 (Figs. 1–3). A vertical handle is placed on the body opposite the nozzle. The large filling hole was closed with a lid, which is not preserved in the specimens cat. nos. 1–3 and 5. In all these four lamps, the base-ring is shaped according to the same multi-ring model. The shape of the body, disc and nozzle have analogies in numerous Roman copper alloy lamps of Italian origin whose basic form was developed from Hellenistic models.<sup>19</sup> Semivolutes with ends visible only on the shoulder appear in the third quarter of the 1<sup>st</sup> century AD, as shown by the predominant number of this type in Pompeii, and remain characteristic of the production of copper alloy lamps during the second half of the 1<sup>st</sup> and first half of the 2<sup>nd</sup> century AD.<sup>20</sup> All Loeschcke XIX lamps cat. nos. 1–5 belong to a somewhat later, fully developed subtype.<sup>21</sup> The ring handle covered with an obliquely placed ivy leaf of the lamp cat. no. 3 forms a full circle and the body is made in the shape of a torus. Lamps cat. no. 1<sup>22</sup> and cat. no. 2<sup>23</sup> have a more cylindrical body and are equipped with a suspension lug on the nozzle, while the lamp cat. no. 3 with a leaf on the handle has no suspension lugs.<sup>24</sup> Body shape and leaf on the handle of the lamp cat. no. 3 have numerous close analogies among Loeschcke XIX lamps.<sup>25</sup> A small num-

19 Loeschcke 1919: 133–135, T. II, type XIX; Menzel 1954: 107, cat. no. 689, fig. 89, no. 3; Boube-Piccot 1975: Pl. 80, *Volutabilis*; De' Spagnolis, De Carolis 1983: 30, type III, datation to the second half of the 1<sup>st</sup> century and beginning of the 2<sup>nd</sup> century AD; Bailey 1996: 25, cat. nos. Q 3616, Q 3617, Pl. 26; 25–26, Q 3618, Q 3620, Q 3621, Pl. 27; 29, Q 3630, Q 3631, Q 3632, Pl. 30; 29–30, Q 3633, Q 3634, Q 3636, Pl. 31; 30, Q 3637, Q 3638, Q 3639, Pl. 32; 31, Q 3640, Q 3641, Q 3642, Pl. 33; 31–32, Q 3643, Q 3644, Q 3645, Q 3646, Pl. 34, all lamps are dated to the 1<sup>st</sup> century AD; Goethert 1997: 184, cat. no. 139, figs. 121–122, Trier, find in the grave, the third quarter of the 1<sup>st</sup> century AD; Pozo 1997: 220, cat. no. 12, T. IV, no. 3; 221, cat. no. 13, T. IV, no. 4; Krunic 2011: 335, cat. no. 481, Belgrade, 1<sup>st</sup>–2<sup>nd</sup> century AD.

20 Conticello De' Spagnolis, De Carolis 1988: 64; 1997: 10, 31.

21 Conticello De' Spagnolis, De Carolis 1997: 31, cat. nos. 5–6, subtype a-beta.

22 The shape of the disc and nozzle of cat. no. 1 is especially similar to the lamps: Valenza Mele 1983: 76, cat. no. 189; Bailey 1996: 30, Q 3636, Pl. 31.

23 The lamp cat. no. 2 has close analogies in lamps with a suspension lug: Iványi 1935: 299, cat. no. 4285, T. LIX, no. 8, Sopron museum, type Iványi XXXI; Ilakovac 1973: 394–395, no. 6, figs. 11–12, 26, Zadar museum; 395–398, no. 7, figs. 13–14, 27, Čitluk (*Aequum*) = Vučić 2009: 46–47, cat. no. 121; Valenza Mele 1983: 67–68, cat. nos. 152–154; 76, cat. no. 190, Pompeii; De' Spagnolis, De Carolis 1983: 30, 36, type III, cat. no. 5; Conticello De' Spagnolis, De Carolis 1988: 69, 95–96, cat. no. 41, Pompeii I.9.1, House of the Beautiful Impluvium; 69, cat. no. 42, Pompeii VI.16.11, shop; 69–70, 101, cat. no. 47, Herculaneum I.1, House of the Gem; Bailey 1996: 25, Q 3616, Pl. 26; 29, Q 3633, Pl. 31; 30, Q 3636, Pl. 31; Busuladžić 2007: 182, cat. no. 307, Krehin Gradac near Čitluk.

24 The lamp cat. no. 3 has a body shape analogy in lamps without suspension lugs type Iványi XXXI: Iványi 1935: 298, cat. no. 4283, T. LIX, no. 6, Káloz; 299, cat. no. 4286, T. LX, no. 3, Sisak; 299, cat. no. 4287, T. LX, no. 1, Drnovo; 299, cat. no. 4288, T. LX, no. 4, Dunapentele; 299, cat. no. 4290, T. LX, no. 2, Pécs; Ilakovac 1973: 387–389, no. 2, figs. 3–4, Zadar museum; 404–406, no. 12, fig. 19, 32, Suhovare = Vučić 2009: 46–47, cat. no. 122; De' Spagnolis, De Carolis 1983: 36, type III, cat. no. 6; Conticello De' Spagnolis, De Carolis 1988: 75–76, 131, cat. no. 77, Pompeii I.6.2, House of Cryptoporticus; 76, 132, cat. no. 78, Pompeii I.13.9, Domus of Lesbianus and Numicia Primigenia; 1997: 32, cat. no. 5, Bologna; Bailey 1996: 30, Q 3636, Pl. 31; Vučić 2009: 46–47, cat. no. 123, Nin, heart-shaped leaf on the handle analogous to Helops' lamp cat. no. 4.

25 Iványi 1935: 299, cat. no. 4284, T. LIX, no. 7, Székesfehérvár, type Iványi XXXI; Bailey 1996: 26, Q 3620, Pl. 27, Pompeii; Busuladžić 2007: 183, cat. no. 308, unknown site.

ber of Loeschcke XIX lamps with ivy leaf in Pompeii may indicate that the variant has only just began to come into vogue at the end of the third quarter of the 1<sup>st</sup> century AD. Ivy leaf appear also on double volute Loeschcke XVIII type with three nozzles from the second quarter of the 1<sup>st</sup> century AD,<sup>26</sup> on transitional lamp form between Loeschcke XX and Loeschcke XXI types from the end of the third quarter of the 1<sup>st</sup> century AD<sup>27</sup> and on developed Loeschcke XXI type.<sup>28</sup> Local provincial copper alloy lamp variants with a large filling hole on the disc and a smooth leaf on the handle resembling a lamp cat. no. 3, but without the volutes on the shoulder characteristic of the Italian type Loeschcke XIX,<sup>29</sup> as well as variants of the Loeschcke XIX type with volutes on the shoulder and a crescent on the handle,<sup>30</sup> were made in the area of the city of Nîmes in the last third of the 1<sup>st</sup> century AD and in the first third of the 2<sup>nd</sup> century. The lamp cat. no. 2 comes from a closed whole of a hoard from Peruški dated by a collection of coins from Augustus to Antoninus Pius (138–161 AD) in the middle decades of the 2<sup>nd</sup> century AD, around 140 AD. It means that the lamp was made within the period of the 1<sup>st</sup> and the first half of the 2<sup>nd</sup> century AD. The hoard from Peruški contained 82 coins from Augustus to Antoninus Pius, two copper alloy lamps, a ceramic lamp, two fragments of copper alloy vases and a fragment of a copper alloy strigil.<sup>31</sup> As it contains less than 100 coins, the hoard of Peruški is considered a small hoard belonging to a private owner.<sup>32</sup> The presence of two copper alloy lamps in the hoard indicates that the owner was quite wealthy.<sup>33</sup> Private treasuries in the southeastern Alpine region were often stored and hidden underground in peacetime and not only in troubled times of war danger, as testified by numerous hoards of Early Imperial period dated after Augustus' conquests in Illyricum and prior to the Marcomannic wars 167–180 AD.<sup>34</sup> Valuables were regularly kept in the owner's house, in a wooden chest-safe in the *atrium*. The safe in the House of the Gemmarius in Pompeii contained, among other things, a copper alloy lamp stored as a treasure.<sup>35</sup> Therefore, it was not unusual to store copper alloy lamps as valuable movable property. The owner could bury his treasure on extraordinary occasions, such as going on a long, dangerous and uncertain journey.

Variants of the Italian type Loeschcke XIX with two nozzles are represented by lamps cat. no. 4<sup>36</sup> and cat. no. 5<sup>37</sup> (**Figs. 4–5**). Nozzles could be placed on the same side or on two opposite sides of the body. A Loeschcke XIX lamp with three nozzles was found in Sisak.<sup>38</sup> The lamp cat. no. 5 was found along with the lamp cat. no. 2 in Peruški near Krnica, in

26 Conticello De' Spagnolis, De Carolis 1988: 40, 49, 53, cat. no. 16, Herculaneum, Decumanus Maximus.

27 Conticello De' Spagnolis, De Carolis 1988: 186–187, 194, cat. no. 126, Herculaneum I.1, House of the Gem.

28 Lachin 2000a: 190, cat. no. 366, Padova.

29 Manniez 2008–2010: 76–77, fig. 3, types 2b and 3b.

30 Manniez 2008–2010: 76–77, fig. 3, type 1a, 1b, 1c.

31 Schiavuzzi 1904: 362, fig. 101.

32 Miškec 2017: 454.

33 Conticello De' Spagnolis, De Carolis 1988: 17.

34 Callegher 2010: 282–284, 342; Miškec 2012: 380, 385.

35 Conticello De' Spagnolis, De Carolis 1988: 16, cat. no. 80, Pompeii II.9.2, House of the Gemmarius.

36 Heart-shaped handle and floral volutes analogous to lamps with one nozzle from the 1<sup>st</sup> century AD: Bailey 1996: 30, Q 3639, Pl. 32; 31, Q 3640, Pl. 33.

37 Analogous lamps with two opposite nozzles, a round body and a rounded nozzle top from the 1<sup>st</sup> century AD: De' Spagnolis, De Carolis 1983: 37, type III, cat. no. 10; Conticello De' Spagnolis, De Carolis 1988: 54, 56, 61, cat. no. 21, Herculaneum IV.4, House of the Alcove; 56, 62, cat. no. 22, Herculaneum, Decumanus Maximus, copper alloy lamps with reduced double volutes a small filling hole, produced in the middle decades of the 1<sup>st</sup> century AD; Bailey 1996: 34–35, Q 3653 – Q 3658, Pl. 39–41; especially 34–35, Q 3653 – Q 3654, Pl. 39–40.

38 Košćević 1995: 85, cat. no. 169, Pl. 20, no. 169.

the same hoard from the middle of the 2<sup>nd</sup> century AD. The lamp cat. no. 5 has oppositely placed nozzles and two suspension lugs on them, for chains which were sufficient to keep the hanging lamp in balance. Copper alloy lamps of the same shape with two opposite volute nozzles and two chains are found among the lamps from Pompeii and in other collections, and were characteristic of the period of the 1<sup>st</sup> and 2<sup>nd</sup> century AD, especially of the second half of the 1<sup>st</sup> century AD.<sup>39</sup> The Loeschcke XIX copper alloy lamp with two nozzles stored in the Museum of Croatian Archaeological Monuments in Split has completely preserved all the accompanying copper alloy elements: an independent plate lid, a triple chain connected at the top with a ring and a hanging hook.<sup>40</sup> The triple chain is attached to the two suspension lugs on the nozzles, and to the top of the lid handle. The handle is located in the middle of the lid and consists of several rings and a sphere on top. The sphere has a tubular cavity through which a chain with a ring is passed.

The lamp cat. no. 4 with two nozzles on the front stands out by the inscription of Helops, a slave accountant in the imperial service, engraved on a leaf covering the handle. The inscription reads: *Helops Aug(usti servus) disp(ensator)*. Compared to the other four copper alloy lamps of the Loeschcke XX type found in the same archaeological ensemble, the lamp cat. no. 4 differs in type and in the shape of the bottom with three wide rings in a tight sequence outside. Among the cast copper alloy objects from the Roman Collection of the Archaeological Museum of Istria, the most similar bottom could be found on a lamp cat. no. 10 and a copper alloy jug depicting Silenus offering a sacrifice in front of Bacchus' herm from the hoard in Šijana near Pula.<sup>41</sup> The bottom with a series of concentric rings outside is characteristic of various cast copper alloy vessels of Italian Campanian production of the 1<sup>st</sup> century AD as jugs,<sup>42</sup> casseroles,<sup>43</sup> *paterae*,<sup>44</sup> *amphorisci*,<sup>45</sup> *aryballoi* for cosmetic purposes,<sup>46</sup> basins with handles,<sup>47</sup> cups,<sup>48</sup> bowls,<sup>49</sup> basket-shaped bowls with handles,<sup>50</sup> *askoi*,<sup>51</sup> sauce beak bowls<sup>52</sup> and of course copper alloy lamps.<sup>53</sup> The Loeschcke XIX copper alloy lamp with two nozzles placed opposite the handle and a large filling hole on the disc is kept in Budapest, but its handle has not been preserved.<sup>54</sup> Two Loeschcke XIX lamps with two

39 Iványi 1935: 299, cat. no. 4291, T. LX, no. 5, Magyarórvár, type Iványi XXXI; Menzel 1954: 108, cat. no. 674, fig. 89, no. 8; Valenza Mele 1983: 63–64, cat. nos. 135–139, Pompeii; 68, cat. nos. 155–156; 72–73, cat. nos. 169–175; 77–78, cat. nos. 192–195; Conticello De' Spagnolis, De Carolis 1986: 22–24, cat. no. 4; 1988: 64, 70–71, 108, cat. no. 54, Pompeii, Insula Occidentalis; 71, 109, cat. no. 55, Herculaneum, House 10; 71, 110, cat. no. 56, Pompeii II.6; 71, 111, cat. no. 57, Pompeii I.14.11, workshop; 71, 112, cat. no. 58, Herculaneum, House 9; 71, 113, cat. no. 59, Herculaneum VI.17, House of the Tuscan Colonnade; 72, 114, cat. no. 60, Pompeii IX.11.2, Thermopolium of Asellina; 1997: 38, cat. no. 11, Bologna; Bison 2013: 286, fig. 3, no. 3.

40 Šeparović, Uroda 2010: 104, cat. no. 246, unknown site.

41 Inv. no. AMI-A-5090; Berlam 1905: 228, fig. 1; Džin 2006: 28–29, figs. 1–2.

42 Tassinari 1993, II: 21–47, type B 1111 – B 1262; 58–62, type C 2100 – C 2200; 63–69, type D 1110 – D 2400; 70, type E 1000 – E 2100.

43 Tassinari 1993, II: 93–128, type G 1110 – G 5300.

44 Tassinari 1993, II: 132–141, type H 3211 – H 2500; 142–146, type I 1110 – I 2400.

45 Tassinari 1993, II: 2–20, type A 2000 – A 3230.

46 Tassinari 1993, II: 90–92, type F 1100 – F 2340.

47 Tassinari 1993, II: 207–236, type S 2122 – S 4400; 240, type S 6100.

48 Tassinari 1993, II: 164–165, type L 2122 – L 4300.

49 Tassinari 1993, II: 166–168, type M 1112 – M 1210, M 1311 – M 1340, M 3100 – M 3220.

50 Tassinari 1993, II: 182–195, type P 2100 – P 2210.

51 Tassinari 1993, II: 181, type P 1200.

52 Tassinari 1993, II: 196, type Q 1000.

53 Valenza Mele 1983: 38, cat. no. 59, Pompeii; 59, cat. no. 119; 74, cat. no. 180; Conticello De' Spagnolis, De Carolis 1988: 185.

54 Iványi 1935: 299, cat. no. 4295, T. LXIV, no. 3, Budapest museum, type Iványi XXXI.

nozzles placed in the same way and with an elaborate palmette on the handle come from Pompeii.<sup>55</sup> The Loeschcke XIX copper alloy lamps with one nozzle from Nin<sup>56</sup> and from Campanian region<sup>57</sup> carry a heart-shaped leaf on the handle consisting of two rods, analogous to the Helops' lamp. Beside the handle, Campanian specimens from the surroundings of Vesuvius shows more similarities with the Helops' lamp in rosette-decorated volutes. The identical handle with a heart-shaped leaf appears on other types of lamps also, on a copper alloy lamp with short and raised nozzle from Pompeii belonging to the earlier production of the first half of the 1<sup>st</sup> century AD,<sup>58</sup> on Loeschcke XVIII,<sup>59</sup> on Loeschcke XX lamps dated to the third quarter of the 1<sup>st</sup> century AD,<sup>60</sup> and exceptionally on De Spagnolis – De Carolis IX lamp.<sup>61</sup> Volutes decorated by rosettes could be find on Loeschcke XVIII<sup>62</sup> and especially on Loeschcke XIX lamps<sup>63</sup> of Campanian production from Herculaneum and Pompeii. Given the characteristics of the pedestal base with concentric circles, volutes with rosettes and the shape of the handle, as well as the high quality of workmanship, Helops' lamp can be attributed to a Campanian workshop. The same goes for the lamp cat. no. 3 decorated by rosettes on volutes and circles at the bottom.

### *Loeschcke XX*

Lamps cat. nos. 6–9 with two radially placed nozzles and three small holes instead of one large filling hole in the middle of the disc, belong to the group of copper alloy pear-shaped lamps Loeschcke XX of Italian production, based on the Hellenistic model (Figs. 6–9).<sup>64</sup> Finds from Pompeii and Herculaneum show that the form was standardized around the middle of the 1<sup>st</sup> century AD and soon became very widespread.<sup>65</sup> The culmination of their production and distribution correspond to the second half of the 1<sup>st</sup> century and the first half of the 2<sup>nd</sup> century AD, when production ceased.<sup>66</sup> The classic

55 Conticello De' Spagnolis, De Carolis 1988: 73, 116–117, cat. nos. 62–63, Pompeii, Insula Occidentalis. Both lamps were found together under the loggia, eight meters from a *lararium*.

56 Ilakovac 1973: 392–394, no. 5, figs. 9–10, 25; Vučić 2009: 46–47, cat. no. 123, Nin.

57 Valenza Mele 1983: 50–53, cat. nos. 84–95; 66, cat. no. 147, Pompeii; 72, cat. no. 168, Pompeii; Conticello De' Spagnolis, De Carolis 1988: 64, 66–67, 82, cat. no. 28, Herculaneum II, Palaestra; 70, 105, cat. no. 51, Herculaneum V.15, House of the Bicentenary.

58 Valenza Mele 1983: 19, cat. no. 23, Pompeii; Conticello De' Spagnolis, De Carolis 1988: 23, 26, 34, cat. no. 8, Pompeii III.4.2, House of Arrii.

59 Valenza Mele 1983: 35–36, cat. nos. 51–52; 43, cat. no. 68; 44, cat. no. 73.

60 Valenza Mele 1983: 95, cat. no. 207, Pompeii; 96, cat. no. 209; 106–108, cat. nos. 248–256; Conticello De' Spagnolis, De Carolis 1988: 137, 144, 171, cat. no. 107, Herculaneum IV.2, House of Mosaic atrium; 144, 172, cat. no. 108, Pompeii I.10.4, House of Menander.

61 Valenza Mele 1983: 145, cat. no. 332, Pompeii.

62 Valenza Mele 1983: 35–38, cat. nos. 50, 53, 57–59; Conticello De' Spagnolis, De Carolis 1988: 56, 60, cat. no. 20, Herculaneum, near the House of the Gem.

63 Valenza Mele 1983: 50–80, cat. nos. 84–95, 97–107, 111–113, 116, 118–125, 129–140, 142–145, 147–148, 152, 154–155, 157, 191–193, 196–197, 200–201, 203–204; Conticello De' Spagnolis, De Carolis 1988: 66, 82, cat. no. 28, Herculaneum II, Palaestra; 67, 83, cat. no. 29, Pompeii VI.15.8, House of the Prince of Naples; 67–68, 88, cat. no. 34, Pompeii; 68, 89, cat. no. 35, Pompeii; 70, 103, cat. no. 49, Herculaneum VI.29, House of the two atriums; 70–71, 108, cat. no. 54, Pompeii I.11.17, Imperial house; 71, 112, cat. no. 58, Herculaneum, House 9; 74, 120, cat. no. 66, Herculaneum III.3, House of the Skeleton; 75, 125, cat. no. 71, Pompeii V.3; 75, 126, cat. no. 72, Herculaneum, Decumanus Maximus; 75, 127, cat. no. 73, Herculaneum V.7, House of Neptune and Amphitrite.

64 Loeschcke 1919: 135, T. II, type XX.

65 Conticello De' Spagnolis, De Carolis 1988: 137; 1997: 10, 41.

66 Dimitrijević 1979: 157, cat. no. 195, Utrine, Bratinci near Požarevac; 158, cat. no. 197, Dobrotin near Lipljani, 1<sup>st</sup>–2<sup>nd</sup> century AD; Sokolovska 1979: 157–158, cat. no. 196, Demir Kapija, grave find, 1<sup>st</sup> century AD; De' Spagnolis, De Carolis 1983: 45, type V, cat. nos. 1–5, Rome; Conticello De' Spagnolis, De Carolis 1988: 137; 1997: 41; Di Filippo Balestrazzi 1990:244; Bailey 1996: 39–44, Q 3669 – Q 3686, Pl. 47–54.

variant of Loeschcke XX lamps has only one rounded nozzle and the stem-shaped handle bent upwards. Copper alloy Loeschcke XX lamps with a rounded nozzle were spread all over the Empire. They are present in northeastern Italy, Dalmatia, southern Pannonia and Noricum, in areas that have achieved large trade in goods with neighboring Istria.<sup>67</sup> Sometimes only a small part of the lamp is preserved, the decorative end of the handle in the form of a theatrical mask, characteristic of the Loeschcke XX type. The lamps cat. nos. 6–8 from Pula are similar in the shape of a body and nozzle mostly to the lamps with one nozzle from Pompeii and Herculaneum, dated to the period 50–79 AD.<sup>68</sup> In addition to the standard single-nozzle Loeschcke XX lamp, there are variants with two opposite nozzles and with two nozzles opposite the handle. Two copper alloy lamps Loeschcke XX with two opposite nozzles were found in Pompeii and Herculaneum.<sup>69</sup> Copper alloy specimens Loeschcke XX of large dimensions equipped with two nozzles on the front, like the lamps from Pula, are kept in the National Archaeological Museum in Naples,<sup>70</sup> and in the Louvre.<sup>71</sup> The lamp cat. no. 9 is the only one in the group with polygonally shaped nozzles. Examples with polygonal nozzle are a rarely attested exception. Loeschcke XX specimens with only one polygonal nozzle are dated to the last decades of the 1<sup>st</sup> and to the 2<sup>nd</sup> century AD.<sup>72</sup> It seems that they appeared somewhat later than the standard type with rounded nozzle, since they were not recorded in contexts reliably dated before the eruption of Vesuvius in 79 AD. Two polygonal nozzles appear relatively rarely on copper alloy lamps. They are attested on three large Loeschcke XX specimens with two nozzles on the front kept in the Louvre, two decorated with Eros and one with centaur on the handle.<sup>73</sup> Two polygonal nozzles appear also on double volute lamps De Spagnolis – De Carolis type II without a handle, as early as the 1<sup>st</sup> century AD.<sup>74</sup> The production and distribution of De Spagnolis – De Carolis II with two polygonal nozzles increased in the period of the 3<sup>rd</sup> – 4<sup>th</sup> century AD.<sup>75</sup> Both Loeschcke XX with a polygonal nozzle and double volute type with two polygonal nozzles were produced in Italy.

67 Iványi 1935: type Iványi XXXIV, 301, cat. no. 4310, T. LXI, no. 2, Oszöny museum; 301, cat. no. 4312, T. LXI, no. 5, Budapest museum; 301, cat. no. 4313, T. LXI, no. 6, Budapest museum; Šmalcelj 1966: 40, 43, T. III–IV, Vinkovci; Ilakovac 1973: 398–399, no. 8, figs. 15, 28, Zadar museum; Vikić-Belančić 1979: 158, cat. no. 198, Donji Petrovci (Bassianae), 1<sup>st</sup> century AD; 159, cat. no. 199, Sisak, 1<sup>st</sup> century AD = Koščević 1995: 85, cat. no. 164, Pl. 20, no. 164; Di Filippo Balestrazzi 1990: 241–251, figs. 7–9, Aquileia; Sedlmayer 2001: 308, K. 1; Green 2012; Buora 2015: 717, fig. 2, representation map.

68 Conticello De' Spagnolis, De Carolis 1988: 141–144, 147–157, cat. nos. 83–93, Pompeii and Herculaneum; Bailey 1996: 41, Q 3674, Pl. 49, Pompeii; Pozo 1997: 217, cat. no. 6, T. II, Villanueva del Trabuco, Málaga.

69 Loeschcke XX with two opposite nozzles from Pompeii and Herculaneum: Conticello De' Spagnolis, De Carolis 1988: 146, 183, cat. no. 119, Pompeii I.14.1, Hotel?; 184, cat. no. 120, Herculaneum, Dexumanus Maximus, Shop 4.

70 D'Allemagne 1891: 20; Valenza Mele 1983: 114, cat. no. 278, Pompeii, 22 x 22 x 30 cm, decorated with a bat on the handle.

71 Ridder 1915: 149, cat. nos. 3135–3138, Paris, Louvre.

72 De' Spagnolis, De Carolis 1983: 47, cat. no. 4, without datation; Conticello De' Spagnolis, De Carolis 1997: 48, cat. no. 18, Bologna; Bailey 1996: 42, Q 3676, Pl. 50, the second half of the 1<sup>st</sup> century – the first half of the 2<sup>nd</sup> century AD; 44, Q 3686, Pl. 54, end of the 1<sup>st</sup> – 2<sup>nd</sup> century AD.

73 Ridder 1915: 149, cat. nos. 3135–3136, Paris, Louvre, lamps with Eros, 29 x 24 x 25 cm; 149, cat. no. 3137, lamp with Centaur, 39 x 36 x 37 cm.

74 De' Spagnolis, De Carolis 1983: 17–19, type II with double volutes, cat. nos. 1, 6–7. The dating to the 1<sup>st</sup> century AD is assumed for analogous specimens from the Madrid museum: Blázquez 1959: 168–170, cat. nos. 24, 29, Madrid.

75 Ridder 1915: 149, cat. no. 3131, Paris, Louvre; Blázquez 1959: 167, cat. no. 21, Madrid, 4<sup>th</sup> century AD; Bailey 1996: 63, Q 3778, Pl. 75, Rome, Baths of Diocletian; 64, Q 3780 – Q 3781, Pl. 76; Xanthopoulou 2010: 3, 88–89, cat. nos. LA 1.004–LA 1.007.



The other three Loeschcke XX lamps from Pula cat. nos. 6–8 have a semicircular nozzle and a handle covered with a four-leafed flower. In the middle of the four-leafed flower is placed a globular fruit that represents a poppy head. The poppy is a symbol of Hypnos, the god of sleep, also dedicated to the Greek goddesses Artemis, Aphrodite and Demeter.<sup>76</sup> Roman official state iconography adopted the poppy fruit as a cult symbol on public buildings. In the period of Augustus, the poppy was often depicted entangled in festoons, and along the wheat ears as an attribute of Ceres/Demeter it was associated with the imperial house in depictions of the emperor's wife Livia.<sup>77</sup> Like a grain of wheat and a pomegranate, a poppy head filled with a multitude of seeds symbolized fertility and prosperity (Ov. *Met.* XI, 605). The poppy head as a sign of abundance and fertility could be found in the festoon in Priapus' shoulder and in the horn of plenty (*cornucopia*), regardless of which deity wears it.<sup>78</sup> The cult relationship of the breadwinner Ceres with the Roman empress made the poppy a popular and relatively frequent visual representation from the Julian-Claudian period onwards. Poppy also played a role in the symbolism of Oriental deities widely accepted in the Roman world, Egyptian Isis, Cybele and Attis of Asia Minor, and Mithras.<sup>79</sup> As a source of sedative hypnotic substances, the opium poppy plant (*papaver somniferum*) is indirectly associated with sleep (*somnus*), night (*nox*), darkness when the light is on in the lamp and with eternal sleep or death (*mors*).<sup>80</sup> Symbolising the eternal sleep, death and eternal renewal of life, Erotes with poppies were depicted on the sides of the funerary altars in the period of the 1<sup>st</sup> – 3<sup>rd</sup> century AD,<sup>81</sup> on the lid of the *osthoteca* or of the sarcophagus,<sup>82</sup> on the decorated sides of the sarcophagus<sup>83</sup> and in the stucco in the masonry tombs.<sup>84</sup> The winged boy Eros or young man with wings on his head with an opium poppy in his hand represented a god of sleep called Hypnos or Somnus, to whom the poppy belonged as an attribute.<sup>85</sup> Opium poppy heads shaped in full volume are a relatively common decoration of Roman copper alloy candelabra on which lamps were hung.<sup>86</sup>

The details of the shaping of the body, pedestal base and plant motifs leave no room for doubt in the same workshop origin of all three Loeschcke XX lamps with two semicircular nozzles cat. nos. 6–8. The pedestal base shape with narrow concentric rings around the center and a wide smooth field on the bottom shows a considerable resemblance to the bottom of a Campanian jug with Silenus offering a sacrifice and a bust of a Satyr from the hoard in Šijana near Pula, dated to the 1<sup>st</sup> century AD.<sup>87</sup> Similar pedestal base shape occurs on a large Campanian Loeschcke XVIII lamp with two nozzles.<sup>88</sup> The bottom of

76 Guerrini 1961: 62–63; Galliazzo 1979: 145, cat. no. 54; Fabbri 2014–2015: 211–249, poppy dedicated to Venus and Ceres.

77 Guillaume-Coirier 2001: 1022, fig. 11, Ara Pacis, poppy in festoon; 1028–1029, fig. 14, Ara Pacis, poppy stalks next to the figure of Tellus/Pax; Fabbri 2009: 326–327; Fabbri 2014–2015: 446.

78 Guillaume-Coirier 2001: 1025, fig. 13, Rome, Villa of the Quintilii, Priapus; 1032, fig. 17, Tivoli, Villa Adriana, personification of the river Tevere (Tiberis).

79 Guillaume-Coirier 2001: 1035–1040.

80 Fabbri 2014–2015: 257–265, 412.

81 Marchini 1973: 366, 422–423, cat. no. 19, Verona; fig. 19, Aquileia; Poli 2015: 149, fig. 2, Aquileia, funerary altar of P. Postumius Hilarus, the second half of the 1<sup>st</sup> century AD.

82 Poli 2015: 149, fig. 4, Aquileia, lid of an *osthoteca* or small sarcophagus with a sleeping Eros or Hypnos holding a poppy, 3<sup>rd</sup> century AD.

83 Gaggadis-Robin 1994: 134.

84 Rizzotto 2014: 124, 127, T. 44, Vatican, necropolis below the Basilica of St. Peter, tomb of Valerius, about 160 AD.

85 Lochin 1990, V.1: 594–596, nos. 11–34; 603, no. 127; V.2: 404–407, nos. 15–32; 416, no. 127; 418, no. 153.

86 Galliazzo 1979: 145–147, cat. nos. 54–56; Krunic 2011: 348, cat. no. 488, Beograd, 2<sup>nd</sup> – 3<sup>rd</sup> century AD.

87 Inv. no. AMI-A-5880; Berlam 1905: 232, fig. 6; Džin 2006: 29, fig. 3.

88 Valenza Mele 1983: 37, cat. no. 58, Pompeii.

the Loeschcke XIX lamps cat. nos. 2–3 and cat. no. 5 show a similar composition of the rings, but less precisely shaped profiles. Lamp with polygonal nozzles cat. no. 9 shows a roughly worked bottom of the pedestal base of a much poorer quality of workmanship than the lamp itself, that cannot be attributed to the same master foundryman and to the same period as cat. nos. 6–8. A roughly executed joint of the pedestal base with the body occurred during the repair, in a workshop other than the one where the lamp was originally made. Lamps cat. nos. 6–9 all were probably made in workshops in Italy in the period from the middle of the 1<sup>st</sup> century to the end of the first quarter of the 2<sup>nd</sup> century AD, but without further analyses there is no possibility to determine its exact location.

### *Loeschcke XXI*

Copper alloy lamp cat. no. 10 (**Fig. 10**) represents the Loeschcke XXI type of pear-shaped body.<sup>89</sup> The production of the type, distributed throughout Italy and in the provinces, began primarily in Italy in the second half of the 1<sup>st</sup> century and continued in the 2<sup>nd</sup> century AD.<sup>90</sup> A small number of specimens from Pompeii and Herculaneum suggests the definitive formation of a type towards the end of the third quarter of the 1<sup>st</sup> century AD.<sup>91</sup> The bottom with wide and precisely shaped concentric rings of cat. no. 10 resembles the bottom of the lamp of the imperial slave Helops cat. no. 4. Three vertically placed suspension lugs, two on the shoulder on each side of the nozzle and one on the top of the handle, were used to hang the lamp using a chain. Three chains connected by a single ring at the top allowed for a horizontal position of the hanging lamp. The filling hole was closed with a lid usually hung on a chain, which is not preserved. The lamp has a crescent moon on the handle, a symbol of the night and a symbol of the moon goddesses Luna and Diana.<sup>92</sup> The crescent moon (*lunula*) was not limited to the cult and literary role of a divine attribute, but as a powerful protective symbol that protects against all evil (*amuletum*) appeared on various useful objects in everyday life, on jewelry, rings, as a necklace pendant for girls.<sup>93</sup> In this way, the crescent moon on the lamp symbolizes the night and also protects against disease, evil eyes and evil spirits that populated Roman beliefs. The crescent is a common decorative-symbolic motif on Loeschcke XXI copper alloy lamp type, especially widespread at the end of the 1<sup>st</sup> and the beginning of the 2<sup>nd</sup> century throughout the Empire.<sup>94</sup> The crescent on the handle is documented already on transitional lamp forms derived from Loeschcke XX that preceded Loeschcke XXI type<sup>95</sup> and fully developed Loeschcke

89 Loeschcke 1919: 135, T. II, type XXI; Iványi 1935: 300, cat. no. 4299, T. LXI, no. 1, Sisak, type Iványi XXXIII; Prodanović 1969: 152, cat. no. 321, Gradac na Lepeni; Szentléleky 1969: 141–142, no. 278; Ilakovac 1973: 389–390, no. 3, figs. 5–6, 23, Zadar museum.

90 Bailey 1996: 36–37, Q 3660 – Q 3662, Pl. 43–44.

91 Valenza Mele 1983: 124–125, cat. nos. 300–306, Pompeii; Conticello De' Spagnolis, De Carolis 1988: 195, 197, cat. no. 127, Herculaneum IV.21, House of the Stags; 195, cat. no. 128, Pompeii I.9.1, House of the Beautiful Impluvium; 195, 199, cat. no. 129, Herculaneum, House 8; 195, 200, cat. no. 130, Pompeii I.10.7, House of the Smith.

92 Kahil, Icard 1984, II.1: 689–690, nos. 900–909; II.2: 513–514, nos. 903–909; Gury 1994, VII.1: 706, 713–714.

93 Corti 2001: 71.

94 Menzel 1954: 108, cat. no. 673, fig. 89, no. 7; Boube-Piccot 1975: Pl. 85–86, Volubilis; Košćević 1995: 17, cat. no. 166, Pl. 20, no. 166; Conticello De' Spagnolis, De Carolis 1997: 53–56, cat. nos. 22–25, Bologna; Goethert 1997: 184–187, cat. no. 141, fig. 122–123, Trier, end of the 1<sup>st</sup> – beginning of the 2<sup>nd</sup> century AD; Pozo 1997: 227, cat. no. 22, T. VIII, no. 4, Bobadilla, end of the 1<sup>st</sup> century AD; 227, cat. no. 23, T. IX, no. 1, Granada; Simion 2003: 61, cat. no. 31, fig. 10, no. 31, Pl. XXVI, Cluj; Vomer Gojković, Žižek 2008: 124, cat. no. 130; Abramić, Colnago 2009: 174, no. 11, fig. 21, Starigrad; Humer, Kremer 2011: 411, cat. no. 912; Filipović, Crnković 2015: 14, cat. no. 12, Osijek.

95 Valenza Mele 1983: 127–128, cat. nos. 307–310, Pompeii; 146, cat. no. 336; Conticello De' Spagnolis, De Carolis 1988: 186–187, 193, cat. no. 125, Herculaneum III.14, House of the Wattle Work.

XXI type lamps found in Pompeii and Herculaneum,<sup>96</sup> both dating to the end of the third quarter of the 1<sup>st</sup> century AD. Nîmes was the center of local production of copper alloy lamps Loeschcke XXI in Provence at the turn of the 1<sup>st</sup> and 2<sup>nd</sup> centuries.<sup>97</sup> The crescent on the handle appear on other copper alloy lamp types as well, as on the lamps with a short and raised nozzle from Pompeii and Herculaneum produced mostly in the first half of the 1<sup>st</sup> century AD,<sup>98</sup> on Loeschcke XIX lamps widespread particularly in the second half of the 1<sup>st</sup> century AD,<sup>99</sup> on Loeschcke XVIII<sup>100</sup> and rarely on Loeschcke XX.<sup>101</sup>

### *De Spagnolis – De Carolis IX*

The lamp cat. no. 11 (**Fig. 11**) belongs to the rather heterogeneous group of copper alloy lamps with a small nozzle without volutes De Spagnolis – De Carolis IX.<sup>102</sup> The nozzle top is more or less rounded with side angles, similar to Loeschcke XX nozzle but short and completely reduced. The shape originates from Late Hellenistic round-shaped ceramic lamps with a large filling hole on the disc and a trapezoidal or triangular nozzle.<sup>103</sup> Similar copper alloy lamps, but with round nozzle, are classified as De Spagnolis – De Carolis VIII type.<sup>104</sup> The lamp cat. no. 11 in the shape of nozzle, body with a large central filling hole and ring handle resembles Early Imperial copper alloy lamp De Spagnolis – De Carolis IX from Pompeii<sup>105</sup> and lamps of the same type with a crescent on the handle kept in the British Museum<sup>106</sup> and in the Museum in Vienna.<sup>107</sup> To a lesser extent it resembles copper alloy lamps De Spagnolis – De Carolis IX with a small filling hole from Pompeii,<sup>108</sup> Herculaneum<sup>109</sup> and other sites,<sup>110</sup> or atypical specimens with a large

- 96 Valenza Mele 1983: 124–125, cat. nos. 300–302, 304–306; Conticello De' Spagnolis, De Carolis 1988: 195–200, cat. nos. 127–130 (see note 91).
- 97 Manniez 2008–2010: 76–77, fig. 3, type 1d.
- 98 Valenza Mele 1983: 17, cat. no. 15, Pompeii; 21, cat. no. 33, Pompeii; Conticello De' Spagnolis, De Carolis 1988: 17, 23, 25, 27, cat. no. 1, Herculaneum V.31, House of wooden shrine; 25, 31, cat. no. 5, Pompeii VII.16.22, House of M. Fabius Rufus.
- 99 Valenza Mele 1983: 56, cat. no. 109, Pompeii; 57–58, cat. nos. 111–115; 61, cat. no. 127; 65–66, cat. nos. 143–145; 69, cat. no. 158, Pompeii; 70, cat. no. 164, Pompeii; 74–76, cat. nos. 178–181, 185–186; 78, cat. no. 197, Pompeii; 79, cat. nos. 198–199, Pompeii; Conticello De' Spagnolis, De Carolis 1988: 64, 67, 87, cat. no. 33, Pompeii I.8, terrace near the Officina tinctoria of Terentius; 67, 88, cat. no. 34, Pompeii I.11.17, Imperial house; 69, 100, cat. no. 46, Herculaneum V.15, House of the Bicentenary; 74, 120, cat. no. 66, Herculaneum III.3, House of the Skeleton; 75, 125, cat. no. 71, Pompeii V.3; 75, 127, cat. no. 73, Herculaneum V.7, House of Neptune and Amphitrite; 75, 128, cat. no. 74, Pompeii I.18.3? shop?
- 100 Valenza Mele 1983: 35, cat. no. 50, Pompeii; 36, cat. no. 54, Pompeii; 43, cat. no. 69; 44, cat. no. 75; 45, cat. no. 79, Pompeii; 46, cat. no. 80, Pompeii; 46, cat. no. 82, Pompeii.
- 101 Valenza Mele 1983: 108, cat. no. 257, Pompeii; Lachin 2000b: 191, cat. no. 368, Padova.
- 102 De' Spagnolis, De Carolis 1983: 56–57, type IX, cat. nos. 1–2; Conticello De' Spagnolis, De Carolis 1988: 214.
- 103 Sapelli 1979: 32, cat. no. 69, T. VII, no. 69, Palestine, a round lamp without a handle, the last third of the 1<sup>st</sup> century BC – the first third of the 1<sup>st</sup> century AD; 49, cat. no. 86, T. VIII, no. 86, Codogno, the lamp with a handle, end of the 1<sup>st</sup> century BC.
- 104 Boube-Piccot 1975: Pl. 40, Fés; Pl. 285, Sala; Valenza Mele 1983: 24–25, cat. nos. 36–37, 40–42; De' Spagnolis, De Carolis 1983: 54–55, type VIII, cat. nos. 1–2, Rome, 1<sup>st</sup> – 3<sup>rd</sup> century AD; Conticello De' Spagnolis, De Carolis 1988: 219, 221, cat. no. 139, Herculaneum IV.21, House of the Stags; 222, cat. no. 140, Herculaneum; 224, cat. no. 142, Pompeii I.8.15, Caupona and officina of Fufidius Successus; 225, cat. no. 143, Herculaneum II, Palaestra; Simion 2003: 68, cat. no. 38, fig. 12, no. 38, Pl. XXXIII, Drobeta, 1<sup>st</sup>–2<sup>nd</sup> century AD; 69, cat. no. 39, fig. 12, no. 39, Pl. XXXIV, Telița, 1<sup>st</sup>–2<sup>nd</sup> century AD.
- 105 Valenza Mele 1983: 145, cat. no. 334, Pompeii.
- 106 Bailey 1996: 47, Q 3701, Pl. 58, 1<sup>st</sup> century AD, a lamp possibly found in the vicinity of Naples.
- 107 Iványi 1935: 301, cat. no. 4317, T. LXI, no. 10, type Iványi XXXV.
- 108 Valenza Mele 1983: 144, cat. no. 330, Pompeii.
- 109 Conticello De' Spagnolis, De Carolis 1988: 214–215, cat. no. 138, Herculaneum.
- 110 Bailey 1996: 48, Q 3709 EA, Pl. 59, Egypt, second half of the 1<sup>st</sup> or early 2<sup>nd</sup> century AD; 48, Q 3710, Pl. 59, 1<sup>st</sup> century AD or little later.

hole from Morocco,<sup>111</sup> Pompeii or surroundings,<sup>112</sup> from Rome<sup>113</sup> and other localities.<sup>114</sup> The oval-shaped ring handle inclined the upper part forward is not characteristic of the Early Imperial period. The ring handles of Early Imperial copper alloy lamps mostly are round in shape, and not oval. Oval-shaped handles are not at all present on the Pompeii and Herculaneum copper alloy lamps. An oval inclined handle with a leaf at the top appears on an Loeschcke XVIII lamp with double volutes on a nozzle from Rome, dated to the 1<sup>st</sup> century AD.<sup>115</sup> A similar handle appears on the copper alloy variant of the North African Atlante X clay lamps which can be dated to the late 4<sup>th</sup> or in the 5<sup>th</sup> century, perhaps even in the 6<sup>th</sup> century AD.<sup>116</sup>

### *Deneauve VII/Loeschcke VIII*

Copper alloy lamp cat. no. 12 (**Fig. 12**) imitates the ceramic form of the Deneauve VII or Loeschcke VIII lamp with a handle. The shape follows the very popular East Mediterranean and North African ceramic lamps from the 2<sup>nd</sup>–3<sup>rd</sup> century AD.<sup>117</sup> The Deneauve VII/Loeschcke VIII is one of the few forms of Roman lamps made predominantly of clay which, with changes in the shape of the handle, was made also of copper alloy but in a much smaller quantity.<sup>118</sup> In the Early Imperial period of the 1<sup>st</sup>–3<sup>rd</sup> century AD, round-body lamps with a small nozzle (variants of Deneauve VII/Loeschcke VIII) and “firma lamps” were made both from clay and copper alloy.<sup>119</sup> In the Late Antique period, four groups of lamps were made at the same time from clay and copper alloy, the so-called “African” lamps Atlante X, “Asia Minor” and “Samian-Asia Minor” lamps, and the production of round lamps with a more or less semicircular or round nozzle continued.<sup>120</sup> The lamp cat. no. 12 belongs to a group of round lamps with a round nozzle among above mentioned forms made of two kinds of material, of clay and of copper alloy. This type of copper alloy lamp appears as early as the 1<sup>st</sup> century AD in Italy, but always with

111 Boube-Piccot 1975: Pl. 89.

112 Valenza Mele 1983: 144, cat. no. 329, Pompeii; 144–145, cat. nos. 331–332.

113 De’ Spagnolis, De Carolis 1983: 56–57, type IX, cat. nos. 1–2, Rome; Bison 2013: 285, fig. 2, no. 2, Rome, Gorga collection.

114 Bailey 1996: 48, Q 3711, Pl. 60.

115 De’ Spagnolis, De Carolis 1983: 16, 29, type II, cat. no. 13.

116 Anselmino 1981: 200, T. CL, no. 1, type X B2, from the end of the 4<sup>th</sup> to the 6<sup>th</sup> century AD; Bailey 1996: 65, Q 3784, Pl. 78, late 4<sup>th</sup> – 5<sup>th</sup> century AD.

117 Loeschcke 1919: 237; Broneer 1930: 90–102, type XXVII, Pl. XI, nos. 551, 556, 566, 570; Pl. XII, Corinth; Broneer 1977: 64–72, Corinth; Bailey 1988: 403–410, Q 3241 – Q 3276, Pl. 116–119, Attic lamps; Bussière, Lindros Wohl 2017: 194–195, production in the Greek area, in Asia Minor and North Africa.

118 Copper alloy specimens of Loeschcke VIII type: Szentlélek 1969: 143, no. 285; De’ Spagnolis, De Carolis 1983: 54–55, type VIII, 1<sup>st</sup>–3<sup>rd</sup> century AD; Bailey 1996: 46, Q 3700, Pl. 57; 66, Q 3786, Pl. 78, Stratia, Corfu, 5<sup>th</sup> century AD; 66–67, Q 3787, Pl. 78, Halicarnassus, 5<sup>th</sup>–6<sup>th</sup> century AD; Simion 2003: 68–69; Xanthopoulou 2005: 303.

119 Copper alloy specimens of firma lamps: Iványi 1935: type Iványi XXXII: 300, cat. no. 4298, T. LXIII, no. 11, Oszöny; type Iványi XXXVI: 301, cat. no. 4321, T. LXII, no. 7, Dunapentele; 301, cat. no. 4322, T. LXII, no. 4, Carnuntum; type Iványi XXXVII: 301, cat. no. 4323, T. LXII, no. 1, Sisak; 301, cat. no. 4324, T. LXII, no. 2, Račje selo; 302, cat. no. 4325, T. LXII, no. 3, Dunapentele; 302, cat. no. 4326, T. LXII, no. 6, Székesfehérvár museum; Gorenc 1969: 152, cat. no. 320, Vukovar; Szentlélek 1969: 143–144, nos. 286–287; Ilakovac 1973: 386–387, no. 1, figs. 1–2, 22, Zadar; Buchi 1975: 208–209, cat. nos. 1599–1602, T. LXXI, Aquileia; Valenza Mele 1983: 132–135, cat. nos. 312–323; De’ Spagnolis, De Carolis 1983: 58, type X; Conticello De’ Spagnolis, De Carolis 1986: 37–38, cat. no. 12; 1988: 201–211, cat. nos. 131–137, Pompeii and Herculaneum; 1997: 57–62, cat. nos. 26–30, Bologna; Košćević 1995: 85, cat. no. 165, Pl. 20, no. 165; Simion 2003: 71, cat. no. 41; 72, cat. no. 42; 73, cat. no. 43; 74, cat. no. 44; 75, cat. no. 45; 76, cat. no. 46, 1<sup>st</sup>–3<sup>rd</sup> century AD; Bison 2013: 286, fig. 3, no. 2; Bussière, Lindros Wohl 2017: 310.

120 De’ Spagnolis, De Carolis 1983: 59, type XI; Conticello De’ Spagnolis, De Carolis 1986: 39–42, cat. nos. 13–14, Atlante X; Xanthopoulou 2005: 303.

a ring handle.<sup>121</sup> Round lamps with a round nozzle and a handle made in one piece with the body became especially popular in the 2<sup>nd</sup> century AD in the East of the Roman Empire, which is consistent with the inscription in Greek letters on the disc indicating the Eastern Mediterranean production. The depiction of a naked woman sitting on a chair holding a jug in her hand represents a washing scene. The Herm of Pan represents a cult moment from the Dionysian cycle.<sup>122</sup>

### *Open copper alloy lamps*

Fully open shallow metal lamps were suitable for filling with animal tallow instead of oil. In the Early Imperial period, open metal lamps with a narrow elongated nozzle Loeschcke XXIII or lamps in the shape of the number eight Loeschcke XXIV–XXV were manufactured.<sup>123</sup> The decoration of the bottom with groups of shallow concentric grooves is characteristic of Early Imperial lamps Loeschcke XXV.<sup>124</sup> The production of open lamps continued for centuries only with minor changes. The most important change occurred in the appearance of the tabbed bed for the wick, absent on Roman open lamps.<sup>125</sup> All three open copper alloy lamps cat. nos. 13–15 from the Archaeological Museum of Istria come from an unknown archaeological context and all three differ from Roman open lamps by their bed for the wick. Among these three specimens, two types of open lamps are distinguished according to the shape of the nozzle, a lamp with trapezoidal nozzle and lamps with round nozzle.

The lamp cat. no. 13 (**Fig. 13**) with short trapezoidal nozzle and cast wick tab, decorated by concentric circles, shows many similarities with Adria type from which it differs only in the manner of fastening the handle or chain. Copper alloy open lamps of Adria type were particularly widespread in the northern Adriatic under the Venetian rule from the 13<sup>th</sup> century to the first half of the 15<sup>th</sup> century.<sup>126</sup> Most specimens have been documented in the northeastern Italy around Venice, and some come from northwestern Istria, from Sočerb and Kortina near Koper.<sup>127</sup> One specimen was found in the castle Gradec near Vrbnik on the island of Krk, which was abandoned in the second half of the 15<sup>th</sup> century.<sup>128</sup> The lamp cat. no. 13 has analogies also in two Adria type specimens from Nin, one decorated with concentric circles<sup>129</sup> and another undecorated with three nozzles.<sup>130</sup> A group of copper alloy open lamps with trapezoidal nozzle from the National Roman Museum in Rome is very similar to the Adria type, with the difference that their nozzle is proportionally larger.<sup>131</sup> All documented Adria type lamps have vertically placed and split double hinge lugs for the metal handle or chain, in contrast to the specimen from Pula equipped with a simple hole in the wall.

121 Valenza Mele 1983: 24, cat. nos. 34–35, 38; Conticello De' Spagnolis, De Carolis 1988: 219, 223, cat. no. 141, Pompeii, Villa of the Mysteries.

122 Boardman 1997, VIII. 1: 931, nos. 155–159, depiction of a herm of Pan; 933–935, nos. 199–228; VIII. 2: 626–630, nos. 199–228, Pan as a participant in Dionysian scenes.

123 Loeschcke 1919: 141–145, T. II, types XXIII–XXV; Deschler-Erb 1996: 36–37, fig. 32.

124 Bailey 1996: 56, Q 3751 PRB, Pl. 64, Boxmoor, grave of the second half of the 1<sup>st</sup> century AD.

125 Loeschcke 1919: 331; Preložnik 2019: 59.

126 Calaon 2014: 260, 265, fig. 6; Preložnik 2019: 62–64, figs. 5–6.

127 Preložnik 2019: 57–58, fig. 1, Kortina, lamp with three nozzles.

128 Starac 2019: 51, fig. 7, Gradec, 13<sup>th</sup>–15<sup>th</sup> century.

129 Ilakovac 1973: 407–411, no. 14, figs. 21, 34, Nin.

130 Ilakovac 1973: 405–408, no. 13, figs. 20, 33, Nin.

131 De' Spagnolis, De Carolis 1983: 72, Rome, Museo Nazionale Romano, type XXIII B, cat. nos. 7–12.

Two lamps cat. nos. 14–15 (**Figs. 14–15**) with rounded nozzle show a semi-cylindrical bed for the wick and a horizontally placed suspension lug for the metal handle. None are decorated with concentric circles. Open lamps with a small rounded nozzle appear mainly in the Late Roman and Late Antique periods and persist through the Middle Ages until the present, and it is almost impossible to date them outside the archaeological or ethnological context. The bed for the wick remains an indicator that the lamp does not belong to the Roman, but to the medieval or modern period.<sup>132</sup> Among the rare metal open lamps with a small semicircular nozzle reliably dated to the Early Roman Imperial period are an iron lamp from Pompeii<sup>133</sup> and a lead lamp from the grave of the 2<sup>nd</sup> century AD in Trier.<sup>134</sup> None of them has a wick holder. More modest forms of metal open lamps without a wick holder appear continuously throughout the late Middle Ages and the modern age, in parallel with more advanced models with a wick holder.<sup>135</sup> While the open lamp cat. no. 13 from the Archaeological Museum of Istria belongs to the late medieval period characterized by the rule of the Venetian Republic in western Istria, lamps cat. nos. 14–15 find analogies in modern specimens made up to the beginning of the 20<sup>th</sup> century, especially popular in Austro-Hungary in the 19<sup>th</sup> and at the turn of the 20<sup>th</sup> century.<sup>136</sup> There is a difference in crafting technique between them. The lamp cat. no. 14 was cast in one piece with semi-cylindrical wick holder in the nozzle, similar to cat. no. 13. The lamp cat. no. 15 is equipped with a separately made and soldered semi-cylindrical wick holder, characteristic of the more recent, modern open metal lamps.<sup>137</sup> A reliable typology of copper alloy open lamps based on stratigraphical or other scientific data is lacking, so more precise dating will be given only by future research.

## Copper alloy lamps and imperial offices in the colony of Pola

An extraordinary group of large copper alloy lamps from the Roman Collection of the Archaeological Museum of Istria consists of five lamps with two nozzles, cat. nos. 4, and 6–9 (**Figs. 4, 6–9**). Their weight ranges from two and a half kilograms to over four and a half kilograms per specimen, total weight exceeds 17 kilograms. A group of lamps was found in Pula in 1904 during the renovation of a pub (*birreria*) owned by Bernardis, in Via Sergia Street at the then house number 77.<sup>138</sup> The pub was located in a still existing building on the west corner of the Street of the Sergii and the Glavinić Gradient. In 1907, the Cinema Internacional, later Leopold, was opened in the same building, and in the period of Yugoslavia, “Narodna tehnika” was housed in it. In Roman times, there was a city district (*insula*) on the corner of the main city street (*decumanus*) and a gradient to the top of the city hill, not far from the main city gate with the Arch of the Sergii. After the finding lamps in the Street of the Sergii and their arrival in the museum collection, at some point between 1904 and 1973, a handle with a four-leafed flower and fruit which originally belonged to the lamp cat. no. 8 was mistakenly soldered to the lamp cat. no. 9.

132 Loeschcke 1919: 330–331, fig. 19, no. 4; Bailey 1996: 58, Q 3766, Pl. 69, no datation; 58–59, Q 3767 MLA, Pl. 69, late antique or medieval period; Lachin 2000c: 191, cat. no. 369, Padova, without datation; Preložnik 2019: 61.

133 De Carolis 2004: 71, cat. no. 16, Pompeii I 13, 6.

134 Goethert 1997: 189, cat. no. 144, fig. 124, Inv. no. 27.244, Trier, 2<sup>nd</sup> century AD.

135 D'Allemagne 1891: 191–192, 15<sup>th</sup> century; 237, 16<sup>th</sup> century; Chrzanovski, Kaiser 2007: 144–152.

136 Benesch 1905: 13–15, type XII, T. 31–34; Hempel 1991: 25–32, cat. nos. 32–54, 18<sup>th</sup>–19<sup>th</sup> century; Chrzanovski, Kaiser 2007: 158, 163, figs. 101–102, 16<sup>th</sup> century; Brenko, Randić, Živković 2011: 61, fig. 68, Žrnjelovača, end of the 19<sup>th</sup> century; Preložnik 2019: 60.

137 Preložnik 2019: 61.

138 Gnirs 1904: 143; Berlam 1905: 227–228; Starac 2014.

In this condition, both lamps were exhibited in the permanent museum exhibition from 1973 to 2013. The handle was returned to the right lamp during restoration in 2014.<sup>139</sup> Three lamps from the group, cat. nos. 6–8, are of the same type Loeschcke XX and are almost identical in design. Apparently they come from the same workshop and the same series created to order for the lighting of a representative building or semi-open area of large dimensions, possibly of public purpose, in the second half of the 1<sup>st</sup> or in the first decades of the 2<sup>nd</sup> century AD. The other two lamps cat. no. 4 and cat. no. 9 are of different shapes and originate from different production series, but regarding their size and equipment with two nozzles, they completely fit into the whole of the group of lamps. The lamp cat. no. 4 belongs to the fully developed type Loeschcke XIX whose production has begun in the third quarter of the 1<sup>st</sup> century AD, two or three decades later than the production of the standardized type Loeschcke XX to which lamps cat. nos. 6–9 belong. The lamp cat. no. 9 differs from the others by its roughly shaped pedestal base without concentric circles attached during repair, but the body with nozzles testify to the superior manufacturing that corresponds to the period of production of standard Loeschcke XX lamps. It could be assumed that all lamps were purchased for the needs of the same building of a representative character on several occasions through the period covering the second half of the 1<sup>st</sup> century and first decades of the 2<sup>nd</sup> century AD. They were kept, used and repaired if necessary over a longer period of time. The lamp cat. no. 4 carrying the inscription of the imperial slave, the accountant Helops, seems to hide the answer to the question to whose ownership the space in question belonged. Helops worked in the patrimonial fiscal office as an accountant in charge of distributing funds (*dispensator*). It follows the hypothesis that all five copper alloy lamps were commissioned to illuminate the imperial offices in which administrative officials, respectively imperial slaves and freedmen, supervised and distributed the revenues from the imperial estates in Istria. The imperial estates in southern Istria existed from the very beginning of Augustus' reign, and included fertile fields in the vicinity of Pula. During the late 1<sup>st</sup> and 2<sup>nd</sup> century AD, spacious estates in Poreč and northern Istria previously owned by members of senatorial dynasties became the imperial property. All public lands came into the imperial possession through the fiscal reform of Septimius Severus.<sup>140</sup> The regional imperial office for the administration of personal imperial estates (*patrimonium*) in Histria became independent in the fiscal administration in the period of Vespasian, who reformed the fiscal patrimonial administration based in Rome, decentralizing the administration and establishing separate regional fiscal offices, among others a department for Histria based in the colony of Pola.<sup>141</sup> Imperial administrators operated in the territory of Pola even before Vespasian's decentralization, from the very beginning of the Roman Empire in 27 BC. The number of imperial administrators and the scope of their work was constantly increasing by enriching imperial property in Histria with new acquisitions through inheritance, seizure or fiscal-administrative reorganization. It could be supposed, therefore, that five lamps made to order on several occasions have been preserved and left together in a hoard. They could illuminate the imperial offices or other representative spaces for centuries until the turbulent times of the Great Migration of Peoples in which the Western Roman Empire collapsed. At the end of the 5<sup>th</sup> century AD, in the short period after the collapse of the Western Roman Empire and the establishment of Odoacer's

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139 Starac 2014.

140 Starac 2016: 694.

141 Starac 1999: 73–87.

rule, the Ostrogothic migration across the northern Adriatic to Italy followed. The deposed Odoacer was succeeded by the Ostrogothic leader Theodoric.<sup>142</sup> The copper alloy lamps could have been stored in a hoard inside the city walls at a critical moment when the survival of the imperial administration itself was threatened, but there was never another opportunity to return to their original function. The hoard of the imperial insignia in the imperial palace on the Palatine in Rome buried at the beginning of the 4<sup>th</sup> century is an example of hiding the symbols of imperial power, probably at the time of a sudden outbreak of danger. It contained three scepters, four tops of ceremonial spears, and four spearheads bearing honorary *insignia* in the form of a flag or pennant, which were hidden in the palace most likely in the moment immediately before or immediately after Maxentius' defeat and death at Milvian Bridge.<sup>143</sup>

Lamps from the Pula hoard are among the largest Roman copper alloy lamps. The number of copper alloy lamps in the Museum of Naples reaching 20 cm in at least one dimension is 16% out of the total number.<sup>144</sup> Among lamps from Pompeii and Herculaneum studied by Conticello De' Spagnolis and De Carolis, that percentage is 10%.<sup>145</sup> These catalogues provide also valuable data on a similar percentage of copper alloy lamps with two or more nozzles of 16% in Naples<sup>146</sup> and 12% in the collection of Pompeii and Herculaneum.<sup>147</sup> While other here studied copper alloy lamps weigh 70 to 400 grams, an average 200 grams, the weight of five lamps from the Pula hoard ranges from 2.4 to 4.7 kilograms or 7.3–14.3 Roman pounds. Diocletian's Price Edict provides precious information on the value of various goods useful for estimating the value of copper alloy lamps: the price of one Roman pound of unworked copper alloy was 50 *denarii communes*, while ten clay lamps were worth 4 *denarii communes*.<sup>148</sup> Therefore each lamp from Pula hoard contained copper alloy in the value from 365 to 715 *denarii communes* in the time of Diocletian. Adding relative cost of workmanship which was about 58%–93% of the total value of the copper alloy handicraft,<sup>149</sup> the value of copper alloy lamps from Pula hoard would range from 869–5,214 *denarii communes* for the cheapest cat. no. 9 without handle, and 1,702–10,214 for the most expensive Helops' lamp cat. no. 4. Calculating inflation of 100% from Nero to Diocletian,<sup>150</sup> costs of Early Imperial lamps with handles cat. nos. 4, 6–8 in the period of Nero would range from 577 *sestertii* to maximally 5,107 *sestertii*, while the price of an average copper alloy lamp weighing 200 grams would be from 72 to 435 *sestertii*, most likely around 100 *sestertii*. The average annual inflation was 0.7% from Nero to the middle of the 3<sup>rd</sup> century AD,<sup>151</sup> raising the price about 35% to the time of Hadrian.

142 MacGeorge 2002: 176–177, 290; Halsall 2008: 280–282, 287; Bratož 2014: 217–240, 371–383.

143 Ferrandes 2011: 144–147; Panella 2011: 25–31, 72.

144 Valenza Mele 1983: cat. nos. 1, 3–4, 45, 53, 58–65, 68, 81, 98, 122, 128–130, 133, 137, 140, 165–170, 172, 174, 182, 191, 194, 209, 228–229, 236, 239, 242–244, 252, 254–255, 260–264, 266, 269, 278, 297–298, 320, 324, 333, 337, 372, 384–385, out of 385 catalogue numbers.

145 Conticello De' Spagnolis, De Carolis 1988: cat. nos. 13, 16, 35, 40, 43, 62–63, 68, 83, 85, 92–93, 99, 107–108, 120, out of 152 catalogue numbers.

146 Valenza Mele 1983: cat. nos. 3–4, 44–46, 58–65, 81, 128–140, 155–156, 166–175, 192–197, 202, 278, 296–299, 341–342, 344–345, 354–355, 382–383, 385.

147 Conticello De' Spagnolis, De Carolis 1988: cat. nos. 7, 12–13, 16, 21–22, 54–63, 119–120.

148 Kropff 2016: 31–32.

149 Duncan Jones 1982: 126.

150 Wassink 1991: 465.

151 Wassink 1991: 465.



## Conclusion

The collection of copper alloy lamps made from the 1<sup>st</sup> century AD to the modern period from the Archaeological Museum of Istria represent Roman types Loeschcke XIX (cat. nos. 1–5), Loeschcke XX (cat. nos. 6–9), Loeschcke XXI (cat. no. 10), De' Spagnolis – De Carolis IX (cat. no. 11) and Deneauve VII/Loeschcke VIII (cat. no. 12). Open copper alloy tallow lamps belong to the late medieval and modern period (cat. nos. 13–15). The most numerous are specimens from Italian workshops of the second half of the 1<sup>st</sup> century AD and the first half of the 2<sup>nd</sup> century (cat. nos. 1–10). The expansion of the copper alloy lamps began simultaneously with the beginning of the Roman Empire. The period of the most intensive production and distribution in Italy lasted until the middle of the 2<sup>nd</sup> century AD. Only one lamp (cat. no. 12) can be attributed to an Eastern Mediterranean workshop. Apart from the group of large copper alloy lamps from the hoard in the urban core of Pula (cat. nos. 4, 6–9), other copper alloy lamps of smaller dimensions originate from the hoard in Peruški on the eastern coast of Istria buried around 140 AD (cat. nos. 2, 5), from unknown sites in the territory of Poreč and other places in Istria, and one originates from the Early Imperial necropolis in Osor on the island of Cres (cat. no. 1). A solitary find from the Osor necropolis indicates that the placement of valuable copper alloy lamps in a grave in Istria and Kvarner was more the exception than the rule. Most of the copper alloy lamps were preserved in hoards, where they were hidden and stored for a future. Thanks to the hoards, the percentage of lamps with two nozzles of 40% is unusually high compared to the number of more modest lamps with one nozzle. Hoards from Pula and Peruški differ in character. Peruški hoard was a small private hoard containing primarily coins, and the hoard from Pula contained exclusively large copper alloy lamps with two nozzles suitable for large representative spaces, made over a period covering the second half of the 1<sup>st</sup> century and first decades of the 2<sup>nd</sup> century AD. The total weight of the five lamps exceeds 17 kilograms. They were kept and used for a long time, and repaired if necessary. The weight of each lamp from the Pula hoard ranges from two and a half kilograms to over four and a half kilograms, unlike other copper alloy lamps from the Collection whose weight varies from 70 to 400 grams, usually around 200 grams. The difference in the metal weight confirms the high value of lamps from the Pula hoard, that were worth at least five to ten times more than small copper alloy lamps. An inscription with the name of the imperial slave accountant on the lamp cat. no. 4 connects the entire hoard with the imperial fiscal offices in the colony of Pola. It can be assumed that the hoard dates to the last decades of the 5<sup>th</sup> century, when Odoacer's and Ostrogothic Theodoric's rule alternated in a short period of time after the collapse of the Western Roman Empire and when the imperial administration faced the uncertainty of survival.

Figural decoration is not a characteristic of most types of copper alloy lamps, and when it is present, it is usually found on the handle. The motifs of the Dionysian cult and the deities of the moon, night and sleep predominate. The figural decoration on copper alloy lamps from Italian workshops in the Collection mostly emphasizes the symbols of deities associated with sleep and night. There is a poppy, an attribute of the dream god Hypnos and also a symbol of prosperity (cat. nos. 6–8), and a crescent moon, a symbol of the night and an attribute of the moon goddesses Luna and Diana (cat. no. 10). The Dionysian cult associated with the belief in the eternal renewal of life is represented on the lamp made in the Eastern part of the Empire, which depicts a woman bathing in front of the herm of Pan (cat. no. 12).

## Catalogue

### *Loeschcke XIX*

1. Inv. no. AMI-A-3273 (**Fig. 1**)

Copper alloy lamp Loeschcke XIX. The round, almost cylindrical body with a large filling hole 2.4 cm in diameter is bordered by a smooth ring on the shoulder. The long nozzle with a rounded tip has volutes at the junction with the body. The suspension lug in the middle of the nozzle is broken off. The raised base-ring is profiled with three concentric rings and grooves of various width and depth. The handle at the rear part of the body is placed vertically, broken off. The body is perforated by corrosion in a couple of places and damaged on the disc.

Dimensions: height 2.8 cm (incomplete), volute width 4.1 cm, body diameter 4.2 cm, disc diameter 4.2 cm, base-ring diameter 3.2 cm, base-ring height 0.6 cm, length 8.2 cm (incomplete), weight 99.66 g (incomplete).

Site: Osor, Kavanela, necropolis excavated in the 1930s.

Bibliography: Matijašić 1984: 54, no. 31.

Datation: last third of the 1<sup>st</sup> and first half of the 2<sup>nd</sup> century AD.



Fig. 1. Lamp Loeschcke XIX cat. no. 1 (Archaeological Museum of Istria, inv. no. AMI-A-3273. Photo and processing A. Starac) / Sl. 1. Uljanica Loeschcke XIX, kat. br. 1 (Arheološki muzej Istre, inv. br. AMI-A-3273. Snimila i obradila A. Starac)

2. Inv. no. AMI-A-5306 (old inv. no. 146(2 or 3?)) (**Fig. 2**)

Copper alloy lamp Loeschcke XIX with two small suspension lugs with a round hole, one at the back and one on the nozzle. The round body of almost cylindrical shape with a large central filling hole 2.3 cm in diameter is bordered by a flat ring on the shoulder. The long nozzle with a rounded tip has volutes at the junction with the body. The raised base-ring is profiled with three concentric rings and grooves of various width and depth. The vertical suspension lug with a round hole is placed at the rear of the body.

Dimensions: height with suspension lugs 3.6 cm (complete), height without suspension lugs 3 cm, width 4.55 cm (complete), base-ring diameter 3.3 cm, base-ring height 0.5 cm, length with suspension lugs 9.8 cm (complete), length without suspension lugs 8.3 cm, weight 132.7 g (complete).

Site: Peruški near Krnica, Monte Cavallo, hoard, August 10, 1903.

Bibliography: Schiavuzzi 1904: 362, fig. 101.

Datation: last third of the 1<sup>st</sup> and first half of the 2<sup>nd</sup> century AD.



Fig. 2. Lamp Loeschcke XIX cat. no. 2 (Archaeological Museum of Istria, inv. no. AMI-A-5306. Photo and processing A. Starac) / Sl. 2. Uljanica Loeschcke XIX, kat. br. 2 (Arheološki muzej Istre, inv. br. AMI-A-5306. Snimila i obradila A. Starac)

### 3. Inv. no. AMI-A-5308 (old inv. no. 261) (Fig. 3)

Copper alloy lamp Loeschcke XIX with a plate in the shape of an ivy leaf on a vertically placed ring handle. The leaf is smooth, with shallow oblique incisions indicating veins and a round hole 0.4 cm in diameter on the left side. The torus-shaped body with a large central filling hole 2.7 cm in diameter is bordered by a flat ring on the shoulder. The long nozzle with a rounded tip has volutes with concave rosettes at the junction with the body. The raised base-ring is profiled with three concentric rings and grooves of various width and depth.

Dimensions: height with handle 4.9 cm (complete), height without handle 2.8 cm, body diameter 5.6 cm, disc diameter 5 cm, handle diameter 2.4 cm, leaf dimensions on the handle 4.6 x 4.3 cm, base-ring diameter 3.6 cm, base-ring height 0.4 cm, length 12.83 cm, weight 205.43 g (complete).

Site: unknown, before 1949, probably Poreč.

Bibliography: unpublished.

Datation: last third of the 1<sup>st</sup> and first half of the 2<sup>nd</sup> century AD.



Fig. 3. Lamp Loeschcke XIX cat. no. 3 (Archaeological Museum of Istria, inv. no. AMI-A-5308. Photo and processing A. Starac) / Sl. 3. Uljanica Loeschcke XIX, kat. br. 3 (Arheološki muzej Istre, inv. br. AMI-A-5308. Snimila i obradila A. Starac)

#### 4. Inv. no. AMI-A-5267 (old inv. no. 2947 civ.) (Fig. 4)

Copper alloy lamp Loeschcke XIX of the imperial slave accountant Helops, with two rounded nozzles. A torus-shaped lamp stands on a raised bell-shaped base-ring. A curved handle in the shape of a bundle of plant tendrils, 18.5 cm high, is attached at the rear of the body. The handle carries a smooth heart-shaped leaf measuring 14 x 13 cm with an engraved inscription: HELOPS / AVG / DISP. The lamp consists of two pieces, a body with a handle and a slightly concave round lid. The body has a rounded smooth shoulder and a large filling hole 11 cm in diameter covered with a lid. The nozzles are flat on the upper side. The handle is cast in one piece and then attached to the body in two grips. On the left side, the grip is reinforced by a secondary, coarser weld. Remains of the same type of weld are visible in two more places along the edge of the filling hole. The handle consists of three bent and downward-facing stems covered with smooth leaves of bent rounded tips. The central of the three stems bearing the leaf is covered in the middle of the inner side with a pointed flat leaf, in the lower part it is flat and curled in a leaf-shaped end, reaching the bottom of the base. The two outer stems are smooth, round in cross-section and covered with smooth leaves that have curled tips at the base. The three stems are joined in the middle by two rings above which rises an acanthus leaf with an upwardly curved tip. The acanthus leaf has a triangular shape without division into lobes, a pronounced central vein and wavy-shaped surfaces towards the sides ending in rounded tips. At the top of the handle, three stems protrude again below the acanthus leaf and together carry on top of the obliquely placed flat heart-shaped leaf with a sphere at the bottom 1.5 cm in diameter, and with an incised inscription. The letter P is very open, O is quite round, the curves of the letter S close exactly half of the circle, the central horizontal line of the letters

E and H is located just above half the height of the letter, as well as the end of the vertical line of the letter G. The height of the letters is in the 1<sup>st</sup> row 6 cm, 2<sup>nd</sup> row 1.3 cm, 3<sup>rd</sup> row 1.2 cm. The leaf with the inscription is 13 cm wide, 14 cm high, and has two symmetrical slits in the upper part that form volutes. The height of the handle is 18.5 cm, which is also the maximum height of the entire lamp. The nozzles have wick holes 3 cm in diameter and volutes decorated with rosettes at the junction with the body. Two rosettes with two rows of petals each are interconnected by a relief leafy stem that extends continuously on the underside of the body. The rosettes have a small, round, convex anther, the first row of petals in the left rosette has four petals and in the right five, while the outer rows of petals in both have seven petals. The rosettes rise from the stems framed by three slightly pointed leaves. The lid is concave, carries five shallow concentric rings, a 1.4 cm diameter hole in the middle and three smaller 0.5 cm diameter holes around it. In a few more places there are smaller cavities caused by corrosion. The bottom of the raised base-ring shows six rings of various width and depth and a small central concave semi-calotte 0.8 cm in diameter.

Dimensions: height with handle 18.5 cm (complete), width at the top of the nozzle 22.3 cm (complete), body diameter 15 cm, body width with rosettes 18 cm, lid diameter 12 cm, body height with the base-ring 6.3 cm, base-ring height 1.5 cm, base-ring diameter 9.1 cm, body length with nozzles 23 cm, length with handle 37 cm (complete), weight 4.685 kg.

Site: Pula, the Street of the Sergii, July 1904.

Bibliography: Gnirs 1904: 143, no. 4; Berlam 1905: 227, fig. 1, no. 1; fig. 2; *Inscr. It.* X/1 58; Mlakar 1969a: 134, cat. no. 261, cited under inv. no. A-4650, end of the 1<sup>st</sup> or beginning of the 2<sup>nd</sup> century AD; Valenza Mele 1983: 48; Starac 1999: 73, 82.

Datation: last third of the 1<sup>st</sup> and first half of the 2<sup>nd</sup> century AD.

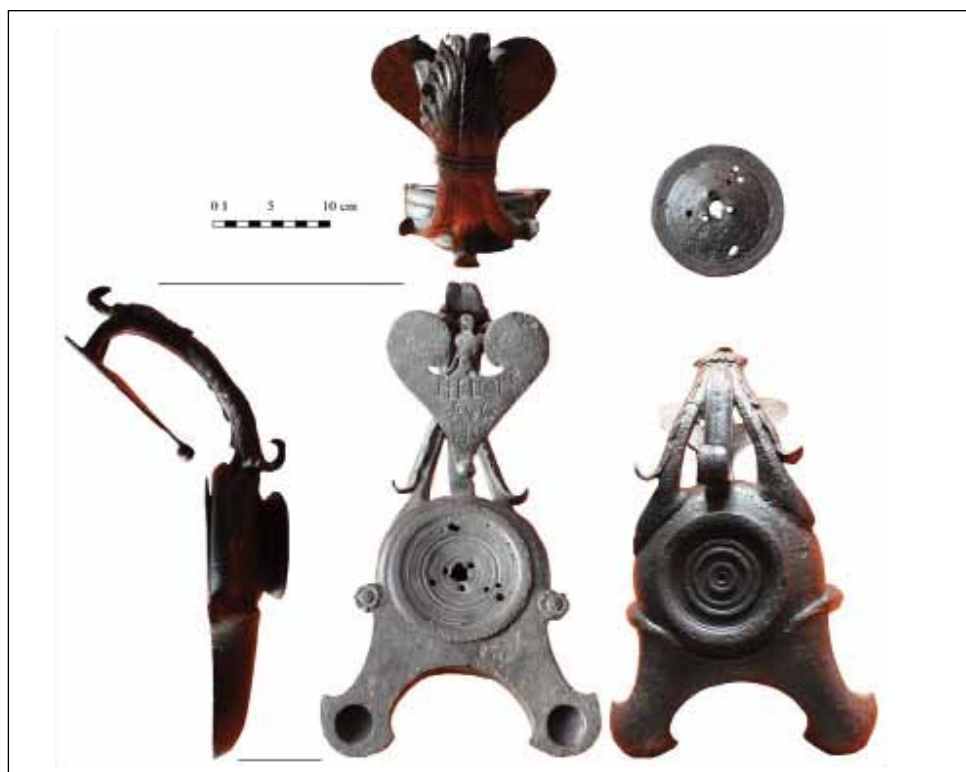


Fig. 4. Lamp Loeschcke XIX cat. no. 4 (Archaeological Museum of Istria, inv. no. AMI-A-5267. Photo and processing A. Starac) / Sl. 4. Uljanica Loeschcke XIX, kat. br. 4 (Arheološki muzej Istre, inv. br. AMI-A-5267. Snimila i obradila A. Starac)

5. Inv. no. AMI-A-5307 (Fig. 5)

Copper alloy lamp Loeschcke XIX with two opposite nozzles and a chain for hanging. The round, semi-dome-shaped body 5.6 cm in diameter is bordered by a narrow ring on the shoulder. An equally narrow ring borders the central filling hole 3.3 cm in diameter on a flat disc. Two opposite long nozzles with a rounded tip and a flat upper side have volutes at the junction with the body. The tiny round ends of the volutes are concave on the upper side. A raised base-ring 4.1 cm in diameter is 0.5 cm high and has three rings and grooves of various width and depth on the underside. Two flat, vertically oriented suspension lugs with a round hole are placed one in the middle of each nozzle. The 16 cm long chain, with one preserved hook for pulling through the suspension lug, consists of links knitted from double copper alloy wire. A pendant in the shape of a triangular plate with a hoop and three round holes is placed on the ring holding the hook. One nozzle is perforated by corrosion on the underside.

Dimensions: height with suspension lugs 4 cm (complete), body height with base-ring without suspension lugs 2.6 cm, width 5.6 cm (complete), length 13.4 cm (complete), weight 207.61 g (incomplete).

Site: Peruški near Krnica, Monte Cavallo, hoard, August 10, 1903.

Bibliography: Schiavuzzi 1904: 362, fig. 100; Gnirs 1915: 152, fig. 107.

Datation: last third of the 1<sup>st</sup> and first half of the 2<sup>nd</sup> century AD.



Fig. 5. Lamp Loeschcke XIX cat. no. 5 (Archaeological Museum of Istria, inv. no. AMI-A-5307. Photo and processing A. Starac) / Sl. 5. Uljanica Loeschcke XIX, kat. br. 5 (Arheološki muzej Istre, inv. br. AMI-A-5307. Snimila i obradila A. Starac)

## Loeschcke XX

### 6. Inv. no. AMI-A-5062 (Fig. 6)

Copper alloy lamp Loeschcke XX with two rounded nozzles, on a profiled round bell-shaped pedestal base hollow within, with a raised circularly bent handle in the shape of a plant tendril with an applied four-leaved flower with a round poppy head in the middle. Three small round holes, each 0.5 cm in diameter, are placed in the middle of the disc. The disc surface is recessed along the axes leading from the middle of the disc to the wick holes on the nozzles. The diameter of the nozzle holes is 3.2 cm. The disc and nozzles are bordered with a strip rectangular in profile. The pedestal base shows three rings of various width and depth on the underside.

Dimensions: height without handle 9 cm, height with handle 19.5 cm (complete), width of nozzles 21 cm (complete), body width 12.3 cm, length without handle 22 cm, length with handle 31 cm (complete), pedestal base diameter 8.3 cm, pedestal base height 2.6 cm, handle height with flower 16.5 cm, handle height without flower 9.5 cm, tendril diameter 1.7 cm, handle length 8 cm, weight 3.235 kg (complete).

Site: Pula, the Street of the Sergii, July 1904.

Bibliography: Berlam 1905: 228, fig. 1, no. 2a; Mlakar 1969c: 135, cat. no. 263, cited under inv. no. A-4652, end of the 1<sup>st</sup> or beginning of the 2<sup>nd</sup> century AD.

Datation: second half of the 1<sup>st</sup> century to the end of the first quarter of the 2<sup>nd</sup> century AD.

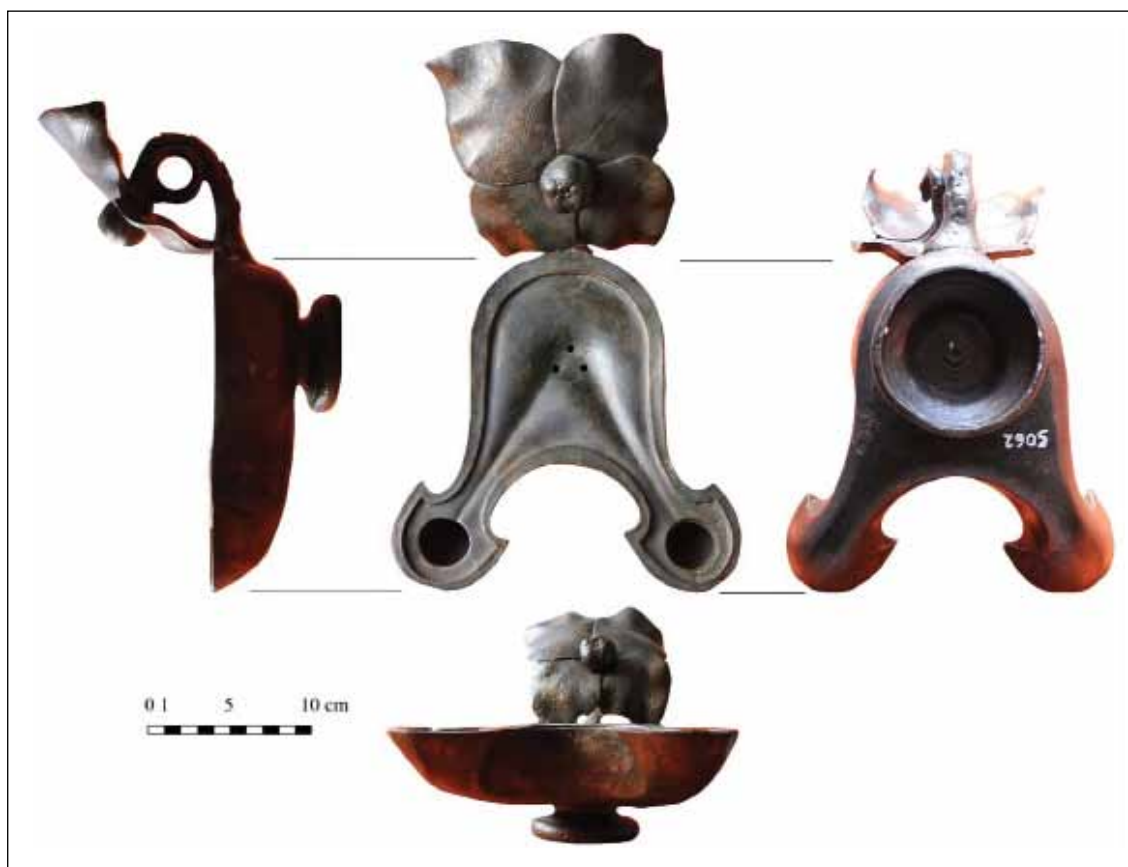


Fig. 6. Lamp Loeschcke XX cat. no. 6 (Archaeological Museum of Istria, inv. no. AMI-A-5062. Photo and processing A. Starac) / Sl. 6. Ulljanica Loeschcke XX, kat. br. 6 (Arheološki muzej Istre, inv. br. AMI-A-5062. Snimila i obradila A. Starac)

7. Inv. no. AMI-A-5265 (Fig. 7)

Copper alloy lamp Loeschcke XX with two rounded nozzles, on a bell-shaped pedestal base hollow within, with a raised circularly bent handle in the shape of a plant tendril with an applied four-leafed flower with a round poppy head in the middle. Three small round holes are in the middle of the disc, each 0.6 cm in diameter. The disc surface is recessed along the axes leading from the middle of the disc to the wick holes on the nozzles. The diameter of the nozzle holes is 3.1 cm. The disc and nozzles are bordered with a strip rectangular in profile. The pedestal base shows three rings of various width and depth on the underside.

Dimensions: height without handle 8.7 cm, height with handle 21.6 cm (complete), width of nozzles 21 cm (complete), body width 12.5 cm, length without handle 22.5 cm, length with handle 29.5 cm (complete), pedestal base diameter 8.5 cm, pedestal base height 2.6 cm, handle height with flower 15.5 cm, handle height without flower 9 cm, handle-tendril diameter 1.65 cm, weight 3.179 kg (complete).

Site: Pula, the Street of the Sergii, July 1904.

Bibliography: Berlam 1905: 228, fig. 1, no. 2c; Mlakar 1969b: 134–135, cat. no. 262, cited under inv. no. A-4651, end of the 1<sup>st</sup> or beginning of the 2<sup>nd</sup> century AD.

Datation: second half of the 1<sup>st</sup> century to the end of the first quarter of the 2<sup>nd</sup> century AD.



Fig. 7. Lamp Loeschcke XX cat. no. 7 (Archaeological Museum of Istria, inv. no. AMI-A-5265. Photo and processing A. Starac) / Sl. 7. Uljanica Loeschcke XX, kat. br. 7 (Arheološki muzej Istre, inv. br. AMI-A-5265. Snimila i obradila A. Starac)



8. Inv. no. AMI-A-6560 (Fig. 8)

Copper alloy lamp Loeschcke XX with two rounded nozzles, on a bell-shaped pedestal base hollow within, with a raised circularly bent handle in the shape of a plant tendril with an applied four-leafed flower with a round poppy head in the middle. Three small round holes are on the disc, each 0.7 cm in diameter. The disc surface is recessed along the axes leading from the middle of the disc to the nozzle wick holes. The diameter of the nozzle holes is 1.6 cm. The disc and nozzles are bordered with a strip rectangular in profile. The pedestal base shows three rings and grooves of various width and depth on the underside. At the moment of the finding, the lamp had a handle, which was mistakenly soldered to the lamp cat. no. 9 during restoration in the 20<sup>th</sup> century (before 1973). The handle was returned to the lamp cat. no. 8 in December 2013 – January 2014.

Dimensions: height without handle 10.3 cm, height with handle 18 cm (complete), width with nozzle 21.4 cm (complete), body width 13 cm, length without handle 22.5 cm, length with handle 29.5 cm (complete), pedestal base diameter 9.1 cm, pedestal base height 3.4 cm, handle height with flower 12 cm, handle height without flower 7 cm, handle-tendril diameter 1.7 cm, handle length 5 cm. Weight 3,685 kg (complete).

Site: Pula, the Street of the Sergii, July 1904.

Bibliography: Berlam 1905: 228, fig. 1, no. 2b; fig. 3; Starac 2014.

Datation: second half of the 1<sup>st</sup> century to the end of the first quarter of the 2<sup>nd</sup> century AD.



Fig. 8. Lamp Loeschcke XX cat. no. 8 (Archaeological Museum of Istria, inv. no. AMI-A-6560. Photo and processing A. Starac) / Sl. 8. Ulljanica Loeschcke XX, kat. br. 8 (Arheološki muzej Istre, inv. br. AMI-A-6560. Snimila i obradila A. Starac)

9. Inv. no. AMI-A-5264 (Fig. 9)

Copper alloy lamp Loeschcke XX with two trapezoidal square nozzles, without handle, on a profiled bell-shaped pedestal base hollow within. There are three small round holes in the middle of the disc, each 0.9 cm in diameter. The disc surface is recessed along the axes leading from the middle of the disc to the wick holes on the nozzles. The diameter of the nozzle holes is 2.5 cm. The disc and nozzles are bordered with a strip of concave profile. The pedestal base is roughly attached to the body, in the course of repair. The bottom outside of the pedestal base is flat, roughly worked, without concentric rings and grooves. During the restoration in the 20<sup>th</sup> century (before 1973), a handle which originally belonged to the lamp cat. no. 8 was mistakenly soldered to the lamp cat. no. 9. The handle was taken off in December 2013 – January 2014.

Dimensions: height 7.6 cm (complete), nozzle width 19 cm (complete), length 20 cm (complete), body width 10.8 cm, pedestal base diameter 8.5 cm, pedestal base height 2 cm. Weight 2,388 kg (complete).

Site: Pula, the Street of the Sergii, July 1904.

Bibliography: Berlam 1905: 228, fig. 1, no. 3; fig. 4; Starac 2014.

Datation: last quarter of the 1<sup>st</sup> and first half of the 2<sup>nd</sup> century AD.



Fig. 9. Lamp Loeschcke XX cat. no. 9 (Archaeological Museum of Istria, inv. no. AMI-A-5264. Photo and processing A. Starac) / Sl. 9. Ulanica Loeschcke XX, kat. br. 9 (Arheološki muzej Istre, inv. br. AMI-A-5264. Snimila i obradila A. Starac)

## Loeschcke XXI

### 10. Inv. no. AMI-A-4637 (Fig. 10)

Copper alloy lamp Loeschcke XXI with a crescent-shaped plate on the handle. The round nozzle is smoothly connected to a round body with a large central filling hole on the disc. The disc and the nozzle channel have a smooth and flat surface. The disc with the nozzle and the filling hole are bordered with a narrow strip. Two broken, vertically placed small suspension lugs with round holes are on the shoulder, one on each side of the nozzle. The raised, bell-shaped base-ring is concave in profile, with four rings and grooves of different width and depth. The vertically placed ring handle closes an irregular oval. It has a small loop at the top with a round hanging hole. The front of the handle is covered with a smooth, slanted crescent with the tops facing up. One crescent tip is broken off, the body is perforated by corrosion in several places.

Dimensions: height with handle 4 cm (complete), height without handle 2.3 cm (complete), width 4.3 cm (complete), disc hole diameter 2 cm, handle diameter 2.1 cm, handle width 0.5 cm, crescent size 3.7 x 2.56 cm, base-ring diameter 2.9 cm, base-ring height 0.5 cm, length with handle 8.3 cm, length without handle 6.8 cm, weight 68.87 g (incomplete).

Site: Poreč, before 1970.

Bibliography: unpublished.

Datation: last third of the 1<sup>st</sup> and 2<sup>nd</sup> century AD.



Fig. 10. Lamp Loeschcke XXI cat. no. 10 (Archaeological Museum of Istria, inv. no. AMI-A-4637. Photo and processing A. Starac) / Sl. 10. Uljarnica Loeschcke XXI, kat. br. 10 (Arheološki muzej Istre, inv. br. AMI-A-4637. Snimila i obradila A. Starac)

### *De Spagnolis – De Carolis IX*

#### 11. Inv. no. AMI-A-4978 (Fig. 11)

Copper alloy lamp with ring handle. The torus-shaped body has a large central filling hole on a smooth concave disc. The nozzle is small, with a rounded top and asymmetrically pointed sides. Three shallowly incised grooves are located on the disc, one around the filling hole and two along the smooth and rounded shoulder. The low base-ring shows a cone in the middle. The transition of the body to the base-ring is unevenly shaped. The vertically placed ring handle of flat D cross-section closes an irregular oblique oval whose longer axis is inclined the upper part towards the center of the body. The handle has a raised smooth leaf at the top, supported by a leaf that forms a small oval ring at the bottom of the handle. The nozzle has corrosion holes at the bottom and sides.

Dimensions: height with handle 5.6 cm (complete), height without handle 2.66 cm (complete), width 7.1 cm (complete), length 11.1 cm (complete), length without handle 9.3 cm. Handle height 4.2 cm, handle width 0.9 cm, handle length 2.9 cm, disc hole diameter 2.3 cm, base-ring diameter 3.8 cm, base-ring height 0.16 cm, weight 152.05 g (incomplete).

Site: Pula, surroundings, before 1949.

Bibliography: unpublished.

Datation: end of the 1<sup>st</sup> century to the 6<sup>th</sup> century AD.



Fig. 11. Lamp De Spagnolis – De Carolis IX cat. no. 11 (Archaeological Museum of Istria, inv. no. AMI-A-4978. Photo and processing A. Starac) / *Sl.11. Uljanica De Spagnolis – De Carolis IX, kat. br. 11 (Arheološki muzej Istre, inv. br. AMI-A-4978. Snimila i obradila A. Starac)*

*Deneauve VII/Loeschcke VIII*

12. Inv. no. AMI-A-3092 (Fig. 12)

Copper alloy lamp depicting a naked woman bathing and the herm of Pan. The body is round, with a small round nozzle, a handle and a relief display on the disc. Semicircular prints on the shoulder imitate an ovoid motif. The disc depicts a naked woman sitting on a four-legged chair without a backrest turned to the left, her head turned to the right towards the herm of Pan, holding a tilted jug with a wide opening in her right hand. The woman has short curly hair. She touches with her left hand the chin of the herm with the bust of the bearded and horned Pan located on the right side of the disc. The chair and base of the herm are shown in perspective shortening, and below them is a straight soil line. The disc hole is located to the right of the herm. An inscription in Greek is engraved on the upper left side of the disc along the edge:  $\text{PAOIN}\text{OAY}$ . The height of the letters is 0.7 cm. An upright handle without opening is placed on the opposite side of the nozzle. The base-ring is flat and smooth.

Dimensions: body height 2.2 cm (complete), height with handle 4.6 cm (complete), body width 8 cm (complete), length 11.3 cm (complete), base-ring diameter 3.7 cm, base-ring height 0.35 cm, nozzle length 2.6 cm, handle height 3.8 cm, handle cross section 2.2 x 0.8 cm, weight 407.6 g (complete).

Site: Poreč, before 1949.

Bibliography: unpublished.

Datation: 2<sup>nd</sup>-3<sup>rd</sup> century AD.



Fig. 12. Lamp Deneauve VII/Loeschcke VIII cat. no. 12 (Archaeological Museum of Istria, inv. no. AMI-A-3092. Photo and processing A. Starac) / Sl. 12. Uljanica Deneauve VII/Loeschcke VIII, kat. br. 12 (Arheološki muzej Istre, inv. br. AMI-A-3092. Snimila i obradila A. Starac)

### *Open copper alloy lamps*

13. Inv. no. AMI-A-2792 (old inv. no. 365 (143?)) (Fig. 13)

Open copper alloy lamp with a trapezoidal nozzle with a cast tabbed bed for the wick. A round hole 0.3 cm in diameter is placed opposite the nozzle. The bottom is flat, inside decorated with three groups of shallow concentric incisions. Each group consists of three concentric incisions.

Dimensions: height 1.4 cm (complete), body diameter 7.5 cm, bottom diameter 6.4 cm, body length with nozzle 9.5 cm (complete), nozzle length 1.2 cm, weight 138 g.

Site: unknown, before 1949.

Bibliography: unpublished.

Datation: 13<sup>th</sup> century to the first half of the 15<sup>th</sup> century AD.



Fig. 13. Open lamp cat. no. 13 (Archaeological Museum of Istria, inv. no. AMI-A-2792. Photo and processing A. Starac) / Sl. 13. Otvorena uljanica, kat. br. 13 (Arheološki muzej Istre, inv. br. AMI-A-2792. Snimila i obradila A. Starac)

14. Inv. no. AMI-A-4638 (P 23) (Fig. 14)

Open copper alloy lamp with an oval nozzle and a cast copper alloy semi-cylinder for fixing the wick. The bottom is flat, with a ring 0.6 cm in diameter in the middle inside. A semicircular horizontally placed suspension lug 1.3 cm wide and 1.2 cm long with a hole 0.6 cm in diameter is placed opposite the nozzle. Part of the body wall is broken off.

Dimensions: height 1.44 cm (complete), width 5 cm, length 8.7 cm (complete), bottom diameter 4.5 cm, nozzle length 2 cm, weight 58.46 g (incomplete).

Site: unknown.

Bibliography: unpublished.

Datation: modern period.



Fig. 14. Open lamp cat. no. 14 (Archaeological Museum of Istria, inv. no. AMI-A-4638. Photo and processing A. Starac) / Sl. 14. Otvorena uljanica, kat. br. 14 (Arheološki muzej Istre, inv. br. AMI-A-4638. Snimila i obradila A. Starac)

15. Inv. no. AMI-A-2794 (old inv. no. 3586) (Fig. 15)

Open copper alloy lamp with a trapezoidal nozzle and a separately made copper alloy semi-cylinder for the wick. The bottom is flat, with a central ring 0.4 cm in diameter inside and outside. A rectangular suspension lug 1.2 cm wide and 0.7 cm long with a circular hole is placed opposite the nozzle, in which a strip holder of rectangular cross-section, 10 cm long and 0.5–0.7 cm wide, is inserted by a shaft. The support ends with a round plate 1 cm in diameter with a hole 0.3 cm in diameter. It is decorated in the middle with a round plate 2.4 cm in diameter with an hole in the shape of an ivy leaf.

Dimensions: height with holder 8 cm (complete), body height 1.4 cm, body diameter 5.4 cm, bottom diameter 4.5 cm, nozzle length 2 cm, weight 69 g.

Site: unknown, before 1949.

Bibliography: unpublished.

Datation: modern period.

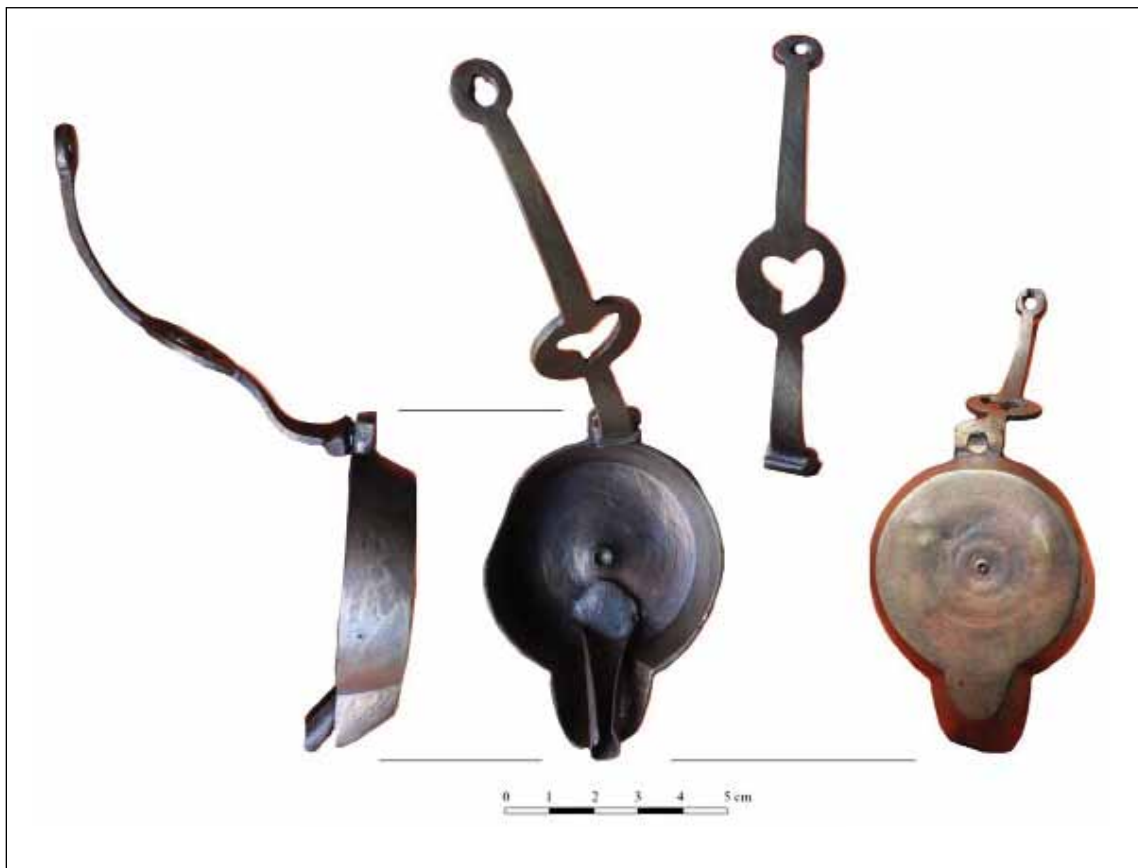


Fig. 15. Open lamp cat. no. 15 (Archaeological Museum of Istria, inv. no. AMI-A-2794. Photo and processing A. Starac) / Sl. 15. Otvorena uljanica, kat. br. 15 (Arheološki muzej Istre, inv. br. AMI-A-2794. Snimila i obradila A. Starac)



## LITERATURE / LITERATURA

- Abramić, Colnago 2009 Mihael Abramić, Anton Colnago, Istraživanja u sjevernoj Dalmaciji, *Asseria* 7, 2009., 161–205 = Michael Abramić, Anton Colnago, Untersuchungen in Norddalmatien – III, Grabungen in Starigrad – Argyruntum, *JÖAI* 12, 1909., Bb. 13–112.
- Anselmino 1981 Lucilla Anselmino, Decorazioni di tipo C2–C4 e D1–D2. Forme X, XI, XII, in: *Atlante delle forme ceramiche I. Ceramica fine romana nel bacino Mediterraneo (medio e tardo impero)*, *Terra sigillata: lucerne*, Enciclopedia dell'arte antica classica ed orientale, Roma, 1981., 198–204.
- Bailey 1988 Donald M. Bailey, *A Catalogue of the Lamps in the British Museum III, Roman Provincial Lamps*, British Museum Publications, London, 1988.
- Bailey 1996 Donald M. Bailey, *A Catalogue of the Lamps in the British Museum IV, Lamps of Metal and Stone, and Lampstands*, British Museum Press, London, 1996.
- Beaurin 2013 Ludivine Beaurin, *Honorer Isis: Les Cérémonies Isiaques dans les Cités de l'Empire Romain Occidental*, Doctorat, Université Lille III – Charles De Gaulle, 2013.
- Benesch 1905 Ladislaus Edler von Benesch, *Das Beleuchtungswesen vom Mittelalter bis zur Mitte des XIX. Jahrhunderts, aus Österreich, Ungarn, insbesondere aus den Alpenländern und den angrenzenden Gebieten der Nachbarstaaten*, Verlag von Anton Schroll Co., Wien, 1905., [https://www.volkskundemuseum.at/publikationen/publikation?publikation\\_id=1538569791912&](https://www.volkskundemuseum.at/publikationen/publikation?publikation_id=1538569791912&) (14.02.2022.).
- Berlam 1905 Arduino Berlam, Di alcuni bronzi scoperti recentemente a Pola, Nesazio – Pola, *Atti e Memorie della Società Istriana di Archeologia e Storia Patria* volume unico, 1905., 225–233.
- Bison 2013 Giulia Bison, Lucerne in bronzo, in: Alessandra Capodiferro (a cura di), *Museo Nazionale Romano, Evan Gorga, La collezione di archeologia*, Mondadori Electa, Milano, 2013., 283–288.
- Blázquez 1959 José Maria Blázquez, Ventinueve lámparas de bronce del Museo Arqueológico Nacional de Madrid, *Zephyrus* 10, 1959., 159–170.
- Boardman 1997 John Boardman, Pan, in: *Lexicon Iconographicum Mythologiae Classicae VIII,1, VIII,2, Artemis*, Zürich–Düsseldorf, 1997., 923–941, 612–635.
- Boube-Piccot 1975 Christiane Boube-Piccot, *Les bronzes antiques du Maroc II. Le mobilier. Planches*, Études et travaux d'archéologie Marocaine V, Rabat, 1975.
- Boyce 1937 George K. Boyce, *Corpus of the Lararia of Pompeii*, *Memoirs of the American Academy in Rome* 14, The University of Michigan Press for the American Academy in Rome, 1937.
- Bratož 2014 Rajko Bratož, *Med Italijo in Ilirikom. Slovenski prostor in njegovo sosjedstvo v pozni antiki*, Zbirka Zgodovinskega časopisa 46, Ljubljana, 2014.
- Brenko, Randić, Živković 2011 Aida Brenko, Mirjana Randić, Marija Živković (ur.), *Vatra / Fire, Katalog izložbe, lipanj – prosinac 2011.*, Etnografski muzej Zagreb, Školska knjiga, Zagreb, 2011.

- Broneer 1930 Oscar Broneer, *Corinth IV,2: Terracotta Lamps*, The American School of Classical Studies at Athens, Cambridge, Massachusetts, 1930.
- Broneer 1977 Oscar Broneer, *Isthmia, Terracotta Lamps, Excavations by the University of Chicago Under the Auspices of the American School of Classical Studies at Athens III*, Princeton–New Jersey, 1977.
- Buchi 1975 Ezio Buchi, *Lucerne del Museo di Aquileia I. Lucerne romane con marchio di fabbrica*, Associazione Nazionale per Aquileia, 1975.
- Buora 2015 Maurizio Buora, Sacro e profano nelle lucerne bronzee della Romania, in: Livio Zerbini (a cura di), *Culti e religiosità nelle province Danubiane, Atti del II Convegno Internazionalne, Ferrara 20–22 Novembre 2013*, Pubblicazione del Laboratorio di studi e ricerche sulle Antiche province Danubiane II, Bologna, 2015., 717–737.
- Bussière, Lindros Wohl 2017 Jean Bussière, Birgitta Lindros Wohl, *Ancient Lamps in the J. Paul Getty Museum*, J. Paul Getty Trust, Los Angeles, 2017.
- Busuladžić 2007 Adnan Busuladžić, *Antičke svjetiljke u Bosni i Hercegovini / Antique Lamps in the Collections in Bosnia-Herzegovina*, Zemaljski muzej Bosne i Hercegovine, Sarajevo, 2007.
- Calaon 2014 Diego Calaon, Torre delle Bebbe, presso Chioggia. Un sito di “confine” riletto attraverso un eccezionale rinvenimento di reperti metallici, litici e i vetri, in: *Dalla catalogazione alla promozione dei beni archeologici / Od katalogiziranja do promocije arheoloških dobrin*, Regione del Veneto, Mestrino-Pd, 2014., 251–266.
- Callegher 2010 Bruno Callegher, *Ritrovamenti monetali di età romana nel Friuli Venezia Giulia. Province di Gorizia e Trieste*, Edizioni Università di Trieste, Trieste, 2010.
- Chrzanovski, Kaiser 2007 Laurent Chrzanovski, Peter Kaiser (eds), *Dark ages? / Licht im Mittelalter / L'éclairage au moyen âge*, Edizioni Et, Milano, 2007.
- Conticello De' Spagnolis, De Carolis 1986 Marisa Conticello De' Spagnolis, Ernesto De Carolis, *Le lucerne di bronzo, Musei della Biblioteca Apostolica Vaticana, Inventari e studi 1*, Città del Vaticano, Roma, 1986.
- Conticello De' Spagnolis, De Carolis 1988 Marisa Conticello De' Spagnolis, Ernesto De Carolis, *Le lucerne di bronzo di Ercolano e Pompei, “L'Erma” di Bretschneider*, Roma, 1988.
- Conticello De' Spagnolis, De Carolis 1997 Marisa Conticello De' Spagnolis, Ernesto De Carolis, *Le lucerne di bronzo del Museo Civico Archeologico di Bologna*, Comune di Bologna, Bologna, 1997.
- Corti 2001 Carla Corti, Il fascinum e l'amuletum. Tracce di pratiche magico-religiose in alcuni insediamenti rurali del Modenese e del Reggiano, in: Carla Corti, Diana Neri, Pierangelo Pancaldi (a cura di), *Pagani e cristiani. Forme ed attestazioni di religiosità del mondo antico nell'Emilia centrale*, Edizioni Aspasia, Bologna, 2001., 69–85.
- D'Allemagne 1891 Henry René D'Allemagne, *Histoire du luminaire depuis l'époque romaine jusqu'au XIXe siècle*, Alphonse Picard, Paris, 1891., <https://doi.org/10.3931/e-rara-139356> (16.02.2022.).
- De Carolis 2004 Ernesto De Carolis, A proposito di alcune lucerne in ferro di Pompei, *Rivista di Studi Pompeiani* 15, Roma, 2004., 63–75.

- Deschler-Erb 1996 Eckhard Deschler-Erb, Die Kleinfunde aus Edelmetall, Bronze und Blei, in: Eckhard Deschler-Erb (Hrsg.), *Die Funde aus Metall. Ein Schrank mit Lararium des 3. Jahrhunderts, Ausgrabungen im Unteren Bühl. Beiträge zum römischen Oberwinterthur - Vitudurum 7*, Monographien der Kantonsarchäologie Zürich 27, Zürich-Egg, 1996., 13-139.
- De' Spagnolis,  
De Carolis 1983 Marisa De' Spagnolis, Ernesto De Carolis, *Museo Nazionale Romano. I bronzi, IV,1, Le lucerne*, De Luca Editore, Roma, 1983.
- Di Filippo Balestrazzi 1990 Elena Di Filippo Balestrazzi, Lucerne bronzee da Aquileia, *Aquileia Nostra LXI*, 1990., 233-272.
- Dimitrijević 1979 Danica Dimitrijević, Tragična maska na rimskoj svetiljci, kat. br. 195, 197, in: Dušan Rnjak (ur.), *Antički teatar na tlu Jugoslavije / Antique Theater in the Territory of Yugoslavia (Catalog)*, Novi Sad, 1979., 157-158.
- Duncan Jones 1982 Richard Duncan Jones, *The Economy of the Roman Empire*, Cambridge University Press, Cambridge-London-New York, New Rochelle, Melbourne, Sydney, 1982.<sup>2</sup>
- Džin 2006 Kristina Džin, Antičko brončano posuđe iz Pule, *Hant* 14, 2006., 27-30.
- Fabbri 2009 Lorenzo Fabbri, Livia e il simbolismo del papavero da oppio e delle spighe nella glittica romana, *ACME - Annali della Facoltà di Lettere e Filosofia dell'Università degli Studi di Milano LXII*, 3, 2009., 325-341, <http://www.ledonline.it/acme> (04.03.2019.).
- Fabbri 2014-2015 Lorenzo Fabbri, *Il papavero da oppio nella cultura e nella religione romana: aspetti simbolici e artistici*, Tesi di dottorato di Ricerca in Antichistica, Università degli Studi di Milano, 2014-2015.
- Ferrandes 2011 Antonio F. Ferrandes, Il contesto topografico e la stratigrafia, in: Clementina Panella (a cura di), *I segni del potere. Realtà e immaginario della sovranità nella Roma imperiale*, Edipuglia, Bari, 2011., 125-159.
- Filipović, Crnković 2015 Slavica Filipović, Mirna Crnković, Antičke svjetiljke od bakrene slitine iz Muzeja Slavonije, *OZ XXXI-XXXII*, 2015., 9-16.
- Gaggadis-Robin 1994 Vassiliki Gaggadis-Robin, *Jason et Médée sur les sarcophages d'époque impériale*, Collection de l'École française de Rome 191, Rome, 1994.
- Galliazzo 1979 Vittorio Galliazzo, *Bronzi Romani del Museo Civico di Treviso*, Giorgio Bretschneider Editore, Roma, 1979.
- Gasparini 2008 Valentino Gasparini, *Altaria o candelabra? Aspetti materiali del culto di Iside illuminati dalla testimonianza di Apuleio*, *Bibliotheca Isiaca* 1, 2008., 39-47.
- Gnirs 1904 Anton Gnirs, Antike Funde aus Pola und Umgebung, *JÖAI* 7, 1904., Bb. 131-146.
- Gnirs 1915 Anton Gnirs, *Pola. Führer durch die antiken Baudenkmäler und Sammlungen*, Alfred Hödler, Wien, 1915.
- Goethert 1997 Karin Goethert, *Römische Lampen und Leuchter. Auswahlkatalog des Rheinischen Landesmuseums Trier*, Trier, 1997.
- Gorenc 1969 Marcel Gorenc, Svetiljka (lucerna), kat. br. 320., in: Ljubiša B. Popović, Đorđe Mano-Zisi, Milivoje Veličković, Branka Jeličić (ur.), *Antička bronza u Jugoslaviji. 1844-1969 (Katalog)*, Narodni muzej Beograd, Beograd, 1969., 152.

- Green 2012 John Richard Green, Roman bronze lamps with masks: Dionysos, pantomime and Mediterranean popular culture, *Herom* 1, 2012., 23–66.
- Guerrini 1961 Lucia Guerrini, Hypnos, in: *Enciclopedia dell'Arte Antica, Classica e Orientale IV*, Roma, 1961., 62–63.
- Guillaume-Coirier 2001 Germaine Guillaume-Coirier, Le pavot fertile dans les mondes mycénien, grec et romain: réalité et symbolique, *MEFRA* 113, 2, 2001., 999–1044.
- Gury 1994 Françoise Gury, Selene, Luna, in: *Lexicon Iconographicum Mythologiae Classicae VII,1, VII,2*, Artemis, Zürich–München, 1994., 706–715, 524–529.
- Halsall 2008 Guy Halsall, *Barbarian Migrations and the Roman West*, 376–568, Cambridge University Press, 2008.
- Hempel 1991 Gudrun Hempel, *Lampen / Leuchter / Licht II, Sonderausstellung im Gartenpalais Schönborn*, Österreichisches Museum für Volkskunde, Wien, 1991.
- Herculaneuminpictures <https://www.herculaneum.uk/> (17.02.2022.).
- Humer, Kremer 2011 Franz Humer, Gabrielle Kremer (Hrsg.), *Götterbilder – Menschenbilder. Religion und Kulte in Carnuntum*, Katalog, Amt der Niederösterreichischen Landesmuseums, Wien, 2011.
- Ilakovac 1973 Boris Ilakovac, Brončane svjetiljke iz Arheološkog muzeja u Zadru, *Radovi Instituta Jugoslavenske akademije znanosti i umjetnosti u Zadru XX*, 1973., 385–412.
- Iványi 1935 Dóra Iványi, *Die pannonischen Lampen. Eine typologisch-chronologische Übersicht*, Dissertationes Pannonicae ser. 2, 2, Budapest, 1935.
- Kahil, Icard 1984 Lilly Kahil, Noëlle Icard, Artemis, in: *Lexicon Iconographicum Mythologiae Classicae II,1, II.2*, Artemis, Zürich–München, 1984., 618–753, 442–563.
- Koščević 1995 Remza Koščević, Finds and Metalwork Production, in: Remza Koščević, Rajka Makjanić (eds), *Siscia. Pannonia Superior*, BAR 621, 1995., 16–38.
- Kropff 2016 Antony Kropff, *An English Translation of the Edict on Maximum Prices, also known as the Price Edict of Diocletian (Edictum de pretiis rerum venalium) 2.1*, 2016., <https://kark.uib.no/antikk/dias/priceedict.pdf> (29.10.2021.).
- Krunić 2011 Slavica Krunić, *Antičke svjetiljke iz Muzeja Grada Beograda*, Muzej Grada Beograda, Beograd, 2011.
- Lachin 2000a Maria Teresa Lachin, Lucerna, cat. n. 366, in: Girolamo Zampieri, Beniamino Lavarone, (a cura di), *Bronzi antichi del Museo Archeologico di Padova. Bronzi antichi. Statuette figurate egizie etrusche venetiche e italiche, armi preromane, romane e medioevali, gioielli e oggetti di ornamento, instrumentum domesticum dal deposito del Museo (Catalogo della Mostra)*, "L'Erma" di Bretschneider, Roma, 2000., 190.
- Lachin 2000b Maria Teresa Lachin, Lucerna, cat. n. 368, in: Girolamo Zampieri, Beniamino Lavarone, (a cura di), *Bronzi antichi del Museo Archeologico di Padova. Bronzi antichi. Statuette figurate egizie etrusche venetiche e italiche, armi preromane, romane e medioevali*,

- gioielli e oggetti di ornamento, instrumentum domesticum dal deposito del Museo (Catalogo della Mostra), "L'Erma" di Bretschneider, Roma, 2000., 191.*
- Lachin 2000c Maria Teresa Lachin, Lucerna, cat. n. 369, in: Girolamo Zampieri, Beniamino Lavarone, (a cura di), *Bronzi antichi del Museo Archeologico di Padova. Bronzi antichi. Statuette figurate egizie etrusche venetiche e italiche, armi preromane, romane e medioevali, gioielli e oggetti di ornamento, instrumentum domesticum dal deposito del Museo (Catalogo della Mostra), "L'Erma" di Bretschneider, Roma, 2000., 191.*
- Lochin 1990 Catherine Lochin, Somnus, in: *Lexicon Iconographicum Mythologiae Classicae V,1, V,2, Artemis, Zürich-München, 1990., 591-609, 403-418.*
- Loeschcke 1919 Siegfried Loeschcke, *Lampen aus Vindonissa. Ein Beitrag zur Geschichte von Vindonissa und des antiken Beleuchtungswesens, In Kommission bei Beer & Cie. et al., Zürich, 1919.*
- MacGeorge 2002 Penny MacGeorge, *Late Roman Warlords*, Oxford University Press, 2002.
- Manniez 2008-2010 Yves Manniez, Les lampes et lampadaires miniatures en bronze de Nîmes, *École antique de Nîmes* 28, 2008-2010., 73-92.
- Marchini 1973 Giampaolo L. Marchini, Rilievi con geni funebri di età romana nel territorio veronese, in: *Il territorio veronese in età romana, Convegno 22-24. ottobre 1971, Atti, Accademia di Agricoltura Scienze e Lettere di Verona, Verona, 1973., 357-439.*
- Matijašić 1984 Robert Matijašić, Neobjavljeni antički materijal s otoka Cresa i Lošinja u Arheološkom muzeju Istre u Puli, in: *Izvori za povijest otoka Cresa i Lošinja, Otočki ljetopis Cres Lošinj* 5, Mali Lošinj, 1984., 51-64.
- Menzel 1954 Heinz Menzel, *Antike Lampen im römisch-germanischen Zentralmuseum zu Mainz, Römisch-germanischen Zentralmuseum zu Mainz, Katalog* 15, Mainz, 1954.
- Miškec 2012 Alenka Miškec, Hoards of the Roman period in Slovenia from the 2<sup>nd</sup> century BC to the 2<sup>nd</sup> century AD, *VAMZ*, 3. ser. XLV, 2012., 379-390.
- Miškec 2017 Alenka Miškec, Monetary circulation in Istria in antiquity: the first and second centuries AD, in: *Illyrica Antiqua, In honorem Duje Rendić-Miočević, Proceedings of the International Conference Šibenik 12<sup>th</sup>-15<sup>th</sup> September 2013, Department of Archaeology, Faculty of Humanities and Social Sciences, University of Zagreb, Zagreb, 2017., 449-456.*
- Mlakar 1969a Štefan Mlakar, Svetiljka (lucerna), kat. br. 261, in: Ljubiša B. Popović, Đorđe Mano-Zisi, Milivoje Veličković, Branka Jeličić (ur.), *Antička bronza u Jugoslaviji. 1844-1969 (Katalog)*, Narodni muzej Beograd, Beograd, 1969., 134.
- Mlakar 1969b Štefan Mlakar, Svetiljka (lucerna), kat. br. 262, in: Ljubiša B. Popović, Đorđe Mano-Zisi, Milivoje Veličković, Branka Jeličić (ur.), *Antička bronza u Jugoslaviji. 1844-1969 (Katalog)*, Narodni muzej Beograd, Beograd, 1969., 134-135.
- Mlakar 1969c Štefan Mlakar, Svetiljka (lucerna), kat. br. 263, in: Ljubiša B. Popović, Đorđe Mano-Zisi, Milivoje Veličković, Branka Jeličić

- (ur.), *Antička bronza u Jugoslaviji. 1844–1969 (Katalog)*, Narodni muzej Beograd, Beograd, 1969., 135.
- Panella 2011  
Clementina Panella, I Segni del Potere, in: Clementina Panella (a cura di), *I segni del potere. Realtà e immaginario della sovranità nella Roma imperiale*, Edipuglia, Bari, 2011., 25–76.
- Podvin 2014  
Jean-Louis Podvin, Illuminer le temple: La lumière dans les sanctuaires isiaques à l'époque gréco-romaine, *Revue des Études Anciennes* 116, 1, 2014., 23–41.
- Poli 2015  
Nicoletta Poli, A proposito del papaver somniferum raffigurato su due monumenti funerari da Aquileia, in: Bruno Callegher (a cura di), *Studia Archaeologica Monika Verzár Bass dicata*, West & East Monografie 1, Trieste, 2015., 147–153, <http://hdl.handle.net/10077/12109> (18.03.2019.).
- Pompeiiinpictures  
<https://www.pompeiiinpictures.com/> (17.02.2022.)
- Pozo 1997  
Salvador Pozo, Lucernas antiguas en bronce de la Baetica: ensayo de clasificación. Tipología y cronología, *Boletín del Seminario de Estudios de Arte y Arqueología* 63, 1997., 203–251.
- Preložnik 2019  
Andrej Preložnik, The lamp from Kortina near Koper and other bronze lamps of the Adria type, *Polish Archaeology in the Mediterranean* 28, 1, 2019., 55–72, <https://doi.org/10.5604/01.3001.0013.6974> (10.02.2022.).
- Prodanović 1969  
Ljubica Prodanović, Svetiljka (lucerna), kat. br. 321, in: Ljubiša B. Popović, Đorđe Mano-Zisi, Milivoje Veličković, Branka Jeličić (ur.), *Antička bronza u Jugoslaviji. 1844–1969 (Katalog)*, Narodni muzej Beograd, Beograd, 1969., 152.
- Ridder 1915  
André de Ridder, *Les bronzes antiques du Louvre II. Les instruments*, Ernest Leroux, Paris, 1915.
- Rizzotto 2014  
Francesca Rizzotto, *La necropoli sotto s. Pietro in Vaticano. Storia degli studi, stato della questione e prospettive di ricerca*, Edizioni Accademiche Italiane, Roma, 2014.
- Sapelli 1979  
Marina Sapelli, *Lucerne fittili delle Civiche Raccolte Archeologiche*, Rassegna di Studi del Civico Museo Archeologico e del Civico Gabinetto Numismatico di Milano, Supplemento II, S. Donato Milanese, 1979.
- Schiavuzzi 1904  
Bernardo Schiavuzzi, Bericht über die im J. 1903. durch die Direktion des Museo Civico in Pola verfolgten Grabungen, *Mitteilungen der k.k. Zentral Kommission für Erforschung und Erhaltung der Kunst- und Historischen Denkmale* III, ser. 3, 1904., 356–363.
- Sedlmayer 2001  
Helga Sedlmayer, Bronzelampen mit Pferdekopf- und Maskengriff aus dem Virunenser Stadtgebiet, in: Friedrich Wilhelm Leitner (Hrsg.), *Carinthia romana und die römische welt, Festschrift für Gernot Piccottini zum 60. Geburtstag*, Aus Forschung und Kunst herausgegeben vom Geschichtsverein für Kärnten 34, Verlag des Geschichtsvereines für Kärnten, Klagenfurt, 2001., 301–314.
- Simion 2003  
Gavrilă Simion, *Opaițe Greco-romane de bronz din România*, Biblioteca Istro-Pontica. Seria Arheologie 6, Editura Nereamia Napocae, Cluj–Napoca, 2003.

- Sokolovska 1979 Viktorija Sokolovska, Tragična maska na rimskoj svjetiljci, kat. br. 196, in: Dušan Rnjak (ur.), *Antički teatar na tlu Jugoslavije / Antique Theater in the Territory of Yugoslavia (Catalog)*, Novi Sad, 1979., 157–158.
- Starac 1999 Alka Starac, *Rimsko vladanje u Istriji i Liburniji, Društveno i pravno uređenje prema literarnoj, natpisnoj i arheološkoj građi I, Istrija*, Arheološki muzej Istre, Monografije i katalozi 10/I, Pula, 1999.
- Starac 2014 Alka Starac, *Stvari nisu uvijek onakve kakvima se čine / Non sempre le cose sono come sembrano*, Arheološki muzej Istre, Pula, 2014.
- Starac 2016 Alka Starac, Sull' origine delle proprietà imperiali in Istria, in: Fulvia Mainardis (a cura di), *“Voce concordi”. Scritti per Claudio Zaccaria, AAAd LXXXV*, Editreg, Trieste, 2016., 687–697.
- Starac 2019 Ranko Starac, Utvrde Fortičina kod Omišlja i Gradec kod Vrbnika na otoku Krku, in: Goran Višnjić (ur.), *Notabile castrum / Castello ben munito e ornato. Kašteli Petrapilosa i San Vincenti u povijesnom i građevinskom kontekstu*, Općina Svetvinčenat, Grafika Režanci, 2019., 42–53.
- Stewart 2000 Peter Stewart, Cult images on Roman lamps, *Hephaistos* 18, 2000., 7–28.
- Szentléleky 1969 Tihamér Szentléleky, *Ancient Lamps*, Akadémiai Kiadó, Budapest, 1969.
- Šeparović, Uroda 2010 Tomislav Šeparović, Nikolina Uroda, *Antička zbirka Muzeja hrvatskih arheoloških spomenika (izbor) / Ancient Roman Collection of the Museum of Croatian Archaeological Monuments (A Selection)*, Muzej hrvatskih arheoloških spomenika, Katalozi i monografije 17, Split, 2010.
- Šmalcelj 1966 Marija Šmalcelj, Antičke metalne svjetiljke iz Vinkovaca, *OA* 6, 1966., 39–48.
- Tassinari 1993 Suzanne Tassinari, *Il vasellame bronzeo di Pompei I–II*, Soprintendenza Archeologica di Pompei, Cataloghi 5, “L’Erma” di Bretschneider, Roma, 1993.
- Valenza Mele 1983 Nazarena Valenza Mele, *Catalogo delle lucerne in bronzo. Museo Archeologico Nazionale di Napoli*, Istituto Poligrafo e Zecca dello Stato, Libreria dello Stato, Roma, 1983.
- Vikić-Belančić 1979 Branka Vikić-Belančić, Tragična maska – deo rimske svjetiljke, kat. br. 198–199, in: Dušan Rnjak (ur.), *Antički teatar na tlu Jugoslavije / Antique Theater in the Territory of Yugoslavia (Catalog)*, Novi Sad, 1979., 158–159.
- Vomer Gojković 2012 Mojca Vomer Gojković, Katalog / Catalogue, in: Mojca Vomer Gojković, Ivan Žižek, *Stopimo iz tame! / Let's step out of the darkness! Exhibition catalogue*, Pokrajinski muzej Ptuj–Ormož, Ptuj, 2012., 17–26.
- Vomer Gojković, Žižek 2008 Mojca Vomer Gojković, Ivan Žižek, *Rimski vsaki dan v Petovionu / Roman Everyday Life in Poetovio*, Pokrajinski muzej Ptuj, Ptuj, 2008.
- Vučić 2009 Jakov Vučić, Katalog, in: Jakov Vučić, Kornelija A. Giunio (ur.), *Lux in tenebris / Svjetlo u tmini. Antičke svjetiljke u Arheološkom muzeju Zadar / Ancient Lamps in the Archaeological Muse-*

- um in Zadar*, Arheološki muzej Zadar, Katalozi i monografije 7, Zadar, 2009., 20–47.
- Wassink 1991 Alfred Wassink, Inflation and Financial Policy under the Roman Empire to the Price Edict of 301 A.D., *Historia* 40, 4, 1991., 465–493.
- Willers 1907 Heinrich Willers, *Neue Untersuchungen über die römische Bronzeindustrie von Capua un von Niedergermanien*, Hahnsche Buchhandlung, Hannover–Leipzig, 1907.
- Xanthopoulou 2005 Maria Xanthopoulou, Lampes en métal, lampes en terre cuite: vies parallèles, in: Laurent Chrzanowski (ed.), *Lychnological Acts 1. Actes di 1er Congrès international d'études sur le luminaire antique (Nyon–Genève, 29.IX–4.X.2003)*, Monographies Instrumentum 31, Éditions Mergoil, Montagnac, 2005., 303–307, Pl. 136–139.
- Xanthopoulou 2010 Maria Xanthopoulou, *Les lampes en bronze à l'époque paléochrétienne*, Bibliothèque de l' Antiquité tardive 16, Brepols, 2010.
- Zografou 2010 Athanassia Zografou, Magic lamps, luminous dreams. Lamps in PGM recipes, in: Menelaos Christopoulos, Efimia D. Karakantza, Olga Levaniouk (eds), *Light and Darkness in ancient Greek Myth and religion*, Lexington Books, Lanham, 2010., 276–294.

#### LITERARY SOURCE / LITERARNI IZVOR

- Ov. *Met.* Ovid, *Metamorphoses, Books IX–XV*, with an English translation by Frank Justus Miller, The Loeb Classical Library, William Heinemann Ltd – Harvard University Press, London–Cambridge, Massachusetts, 1958.



## SAŽETAK

### Uljanice od bakrene slitine iz Arheološkog muzeja Istre

Antička zbirka Arheološkog muzeja Istre čuva petnaest uljanica od bakrene slitine pronađenih uglavnom u prvoj polovici XX. st. S obzirom na tip, zastupljene su rimske uljanice od bakrene slitine Loeschcke XIX (kat. br. 1–5), Loeschcke XX (kat. br. 6–9), Loeschcke XXI (kat. br. 10), De Spagnolis – De Carolis IX (kat. br. 11), Deneauve VII/Loeschcke VIII (kat. br. 12) te otvorene uljanice od bakrene slitine iz kasnosrednjovjekovnog i modernog razdoblja (kat. br. 13–15). Najbrojniji su primjerci iz italskih radionica druge polovice I. st. i prve polovice II. st. (kat. br. 1–10).

Ekspanzija izrade uljanica od bakrene slitine započinje usporedo s početkom Rimskog Carstva. Razdoblje najintenzivnije proizvodnje i distribucije italskih uljanica potrajalo je do sredine II. st. Jedna uljanica (kat. br. 12) može se pripisati radionici na području istočnog Mediterana. Svojim se značajem izdvaja ostava koja se sastoji od pet uljanica od bakrene slitine velikih dimenzija s dva gorila (kat. br. 4, 6–9). Ostava je pronađena u Puli, nedaleko glavnih gradskih vrata sa slavolukom Sergijevaca. Tri uljanice tipa Loeschcke XX iz ostave (kat. br. 6–8) predstavljaju rad iste radionice, nastale prema jedinstvenoj narudžbi za potrebe osvjetljenja reprezentativnog zdanja velikih dimenzija, možda javne namjene, u drugoj polovici I. st. ili prvim desetljećima II. st. Druge dvije uljanice (kat. br. 4 i 9) različitih su oblika i pripadaju različitim proizvodnim serijama, ali se uklapaju u grupu uljanica iz ostave veličinom i opremljenošću s dva gorila. Uljanica kat. br. 4 pripada tipu Loeschcke XIX, a uljanica tipa Loeschcke XX kat. br. 9 odudara svojom grubo izrađenom nogom, naknadno učvršćenom pri popravku.

Sve su uljanice mogle biti nabavljene u više navrata za potrebe jedne iste građevine reprezentativnog karaktera, u razdoblju koje obuhvaća drugu polovicu I. st. i prva desetljeća II. st. Uljanica kat. br. 4 s natpisom iz carskog roba računovođe Helopsa mogla bi biti kritičan odgovor na pitanje u čijem se vlasništvu dotični prostor nalazio. Helops je radio u patrimonijalnom fiskalnom uredu kao računovođa zadužen za raspodjelu sredstava (*dispensator*). Svih pet uljanica od bakrene slitine moglo je biti naručeno za osvjetljenje carskih ureda u kojima su administrativni službenici, redom carski robovi i oslobođenici, nadzirali i raspoređivali prihode iz carskih posjeda u Istri čiji se središnji ured nalazio u koloniji Poli. Carski administratori djelovali su na području Pole od samog početka Carstva. Broj carskih administratora i opseg njihovog posla konstantno se uvećavao. Može se stoga pretpostaviti da je pet uljanica, izrađenih po narudžbama u više navrata, sačuvano kroz dulje vremensko razdoblje i spremljeno zajedno u ostavi.

Težina svake uljanice iz pulske ostave kreće se od dva i pol do preko četiri i pol kilograma, za razliku od ostalih uljanica od bakrene slitine iz zbirke čija težina varira od 70 do 400 grama, najčešće oko 200 grama. Prema Dioklecijanovom *Ediktu o cijenama*, jedna libra sirove bronce vrijedila je 50 *denarii communes*. Dodavši cijenu izrade koja je za brončane izrađevine iznosila 58% – 93% ukupne cijene, vrijednost brončanih uljanica iz pulske ostave u Dioklecijanovo bi doba iznosila od 869–5.214 *denarii communes* za najjeftiniju kat. br. 9 do 170–10.214 *denarii communes* za naskuplju Helopsovu uljanicu kat. br. 4. Ranocarske uljanice kat. br. 4, 6–8 u Neronovo bi doba vrijedile od 577 do najviše 5.107 sestercija, s obzirom na inflaciju od 100% od Nerona do Dioklecijana. Razlika u težini metala potvrđuje njihovu izuzetno visoku vrijednost u odnosu na barem pet do deset puta jeftinije standardne uljanice od bakrene slitine teške oko 200 grama, koje su u Neronovo doba mogle vrijediti između 72 i 435 sestercija. Prosječna godišnja inflacija od 0,7% dovela je do porasta cijena za približno 35% od Nerona do Hadrijana.

Uljanice iz pulske ostave mogle su stoljećima osvjetljivati carske urede ili druge reprezentativne prostore sve do nemirnih vremena velike seobe naroda u kojima je potkraj V. st. propalo Zapadno Rimsko Carstvo. Uljanice od bakrene slitine mogle su biti spremljene u ostavu unutar grada u kritičnom trenutku kada je bio ugrožen opstanak same carske administracije, no više se nikada nije ukazala prilika da se vrate svojoj izvornoj namjeni.

Osim grupe velikih uljanica od bakrene slitine iz ostave u središtu Pule, druge uljanice od bakrene slitine manjih dimenzija potječu iz ostave u Peruškima na istočnoj obali Istre (kat. br. 2 i 5), iz nepoznatih nalazišta u Poreštini i s drugim mjesta u Istri, a jedna potječe iz ranocarske nekropole u Osoru na otoku Cresu (kat. br. 1). Usamljen nalaz iz osorske nekropole upućuje na to da je prilaganje vrijednih uljanica od bakrene slitine u grob u Istri i na Kvarneru bilo više izuzetak nego li pravilo. Najveći broj uljanica od bakrene slitine sačuvao se u ostavama, gdje su bile sakrivene i spremjene za mirniju budućnost. Zahvaljujući ostavama, postotak uljanica s dva gorila od 40% neobično je visok u odnosu na broj skromnijih uljanica s jednim gorilom.

Figuralna dekoracija na uljanicama od bakrene slitine iz italskih radionica u zbirci pretežno ističe simbole božanstava povezanih sa snom i noći. Zastupljeni su mak, atribut boga sna Hipnosa i ujedno simbol blagostanja (kat. br. 6–8) te polumjesec, simbol noći i atribut boginja mjeseca Lune i Dijane (kat. br. 10). Dionizijski kult povezan s vjerom u vječnu obnovu života predstavljen je na uljanici izrađenoj u istočnom dijelu Carstva, koja prikazuje ženu pri kupanju pred Panovom hermom (kat. br. 12).

Tri uljanice otvorenog tipa (kat. br. 13–15) namijenjene su za korištenje životinjskog loja umjesto ulja pa se ponekad nazivaju lojanicama. Osnovni oblik otvorene uljanice vrlo se malo mijenjao od rimskog razdoblja do danas. Polegnuti držač stijenja znak je da su sve tri uljanice nastale u postantičkom razdoblju. Uljanica kat. br. 13 kratkog trapezoidnog gorila, ukrašena urezanim koncentričnim krugovima, ima lijevanu pravokutnu pločicu za pridržavanje stijenja. Pripada grupi uljanica raširenih na sjevernom Jadranu pod utjecajem vlasti Venecije u XIV.–XV. st. Uljanice kat. br. 14 i 15 novijeg su postanka, a odlikuju se okruglim gorilom i polucilindričnim držačem stijenja. Kod uljanice kat. br. 14 držač stijenja izliven je zajedno s tijelom, dok je kod uljanice kat. br. 15 zasebno izrađen i naknadno zalemljen, što je karakteristika primjeraka iz modernog razdoblja XIX. i ranog XX. st. U nedostatku pouzdane tipologije utemeljene na stratigrafskim pokazateljima, preciznije datiranje brončanih otvorenih uljanica ostaje predmetom budućih istraživanja.