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LAMPS FROM CASCINA ISOLA FELICE, RIVANAZZANO TERME (PV)

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Introduction

Clay lamps are not only tools and sources of light used in antiquity but also important sources of information for researchers, capable of shedding light on various aspects of life in Roman times. For this reason, this volume is dedicated to the study of ancient clay lamps discovered in Cascina Isola Felice, Rivanazzano Terme (PV), in the amount of 16 fragments and fragmented lamps, a collection of previously unpublished material that offers new insights into the site. The analysis of discovered lamps is crucial not only for refining the dating of the monument but also for deepening our understanding of its nature. Moreover, as scholarship on ancient lamps continues to grow, so does the wealth of information a researcher can extract from these artifacts.

The site of Cascina Isola Felice is located in the western part of the Oltrepò Pavese and appears to be a settlement site with multiple periods of occupation.[1] The study of Cascina Isola Felice is of great importance, as it plays a vital role in comprehending the development of the Oltrepò Pavese and, on a broader scale, Cisalpine during the Roman period.

This research aims to develop a comprehensive representation of the lamps discovered in Cascina Isola Felice. To achieve this goal, several tasks must be undertaken. First, it is necessary to characterize the region and the site of Cascina Isola Felice during Romanization and the Roman period, providing a historical and archaeological context. Next, the study will focus on identifying the specific features of the manufacturing process and the functional use of lamps in Roman society. Additionally, establishing a typology and chronology of the discovered lamps is essential to place them accurately within the broader historical timeline. Finally, determining the context of their discovery will help to further illuminate their significance within the site and the broader cultural landscape.

One of the main methods used in this research is a typological analysis. This method is essential for organizing and understanding complex material by dividing it into distinct categories, groups, and types. Typological analysis involves the systematic classification of objects based on their similarities in function, material, and form. At the core of this method is the "type", which is defined as a collection of objects that share these common characteristics. Categorizing archaeological artifacts into types, groups, or categories, reveals connections between different elements, offering a deeper understanding of the functions and meanings of the material objects.[2] In addition, this work also employs the contextual method. This approach is centered on understanding the broader context in which human activities take place, rather than focusing

[1] BATTAGLIA, MAINO 2022.
[2] GORODZOV 1933.

solely on individual artifacts.[3] Lamps in this paper will be considered as components of a holistic cultural environment created by humans in antiquity on a range of scales from specifically Cascina Isola Felice to the Roman world as a whole.

Thus, this paper is divided into five chapters in order to achieve the abovementioned objectives of the research. The first chapter is devoted to a short overview of the geographical features of the Oltrepò Pavese and specifically the Staffora Valley, as well as the historical and archaeological evidence of the Romanization process and the presence of Roman culture in this region. It will examine references to the area under study in ancient literary sources, epigraphy, and cartographic materials, as well as characterize the archaeological sites discovered. The second chapter characterizes the archaeological site of Cascina Isola Felice, from which the studied objects occur. Chapter III is an examination of Roman terracotta lamps as a category of artifacts, which includes a glimpse into the history of their studies, some accounts of their production and evolution in antiquity, and a contemporary view on their functionality in Roman times. The fourth chapter is a catalog of the lamps discovered in Cascina Isola Felice, which provides a detailed description of the finds. Chapter V contains a more detailed disksion of the typology and chronology of the lamps from Cascina Isola Felice, as well as the surrounding context, in which they were located, giving some hypothesized interpretations of the studied materials.

[3] BUTZER 1980.

Chapter I. The Staffora Valley and the territory of the Oltrepò Pavese in Roman times

The Staffora Valley is located in the western part of the Oltrepò Pavese, in the province of Pavia, Italy. The Staffora River is a right-side tributary of the Po River, which rises in the Ligurian Apennines, near the Passo del Giovà (around 1400 m above sea level). It runs for about 65 km from southeast to northwest, entering the Po Plain in the area of Rivanazzano Terme and flowing into the Po River near Cervesina. Geomorphologically, the Staffora Valley is composed of hills and mountains, while plains occupy only about a third of the region.[4]

The Oltrepò Pavese area has heterogeneous geomorphology and can be divided into three different zones in terms of elevation and character. Between the Po River and ancient via Postumia is situated a lowland area that continues along the Staffora River and culminates in the hills at the Varzi area. Between Varzi and Zavattarello is a zone of medium elevation, with altitudes between 400 and 750 meters above sea level. The southern areas of Oltrepò Pavese are mountainous, between 750 and 1100 meters above sea level with a maximum altitude of 1600 meters.[5] The geomorphologic differences of this area have been reflected in the different dynamics of the development of the defined zones, which will be disksed further below.

Since early Neolithic times, the Staffora Valley has had an important position in the network of traffic routes in Northern Italy. This is due to its location between the Po River, the Apennines, and the Ligurian Alps.[6] Thus, it is worth assuming that the Staffora Valley has great historical and archaeological significance reflected in the relevant sources, which should be disksed in more detail.

I.1. Representation of the Oltrepò Pavese in ancient written sources

There is not much information in ancient sources on the Staffora Valley, however, there is some evidence of it and its main urban centers in ancient literary and epigraphic materials.

The earliest known description of the Staffora Valley was left by Polybius in his The Histories in the 2nd century BCE. The Staffora Valley was described as the territory of the so-called Gaul inhabited by the Anares (or the Anamari): “On the other bank of the Po, by the Apennines, the first settlers beginning from the west were the Anares”.[7] To be more precise, the Anares seem to have occupied the territory between the Po River and the river Trebbia. The urban center of the Anares was *Clastidium*, a modern Casteggio. It is known that the Anares were the allies of

[4] PELLEGRINI ET AL. 2022. P. 87; PELLEGRINI 2024 P. 19
[5] CORTI 2022 P. 105
[6] BATTAGLIA 2018 P. 77
[7] POL. II.17.7

Rome since 224 BCE and fought against other Ligurian and Gallic tribes, including the Insubres.[8] Moreover, Polybius roughly described the way of life of local tribes, including the Anares: "They lived in unwalled villages, without any superfluous furniture; for as they slept on beds of leaves and fed on meat and were exclusively occupied with war and agriculture, their lives were very simple, and they had no knowledge whatever of any art or science".[9] It occurs that in 220s BCE the Romans established their first base in the Oltrepo' Pavese inside the Anares' town of *Clastidium*. This information was left by Plutarch in the biography of Roman consul M. Claudius Marcellus: "the place called Clastidium, a Gallic village which not long before had become subject to the Romans".[10] Thus, in 222 BCE, *Clastidium* became a place of a famous battle between the Romans and the Gallic tribe of the Insubres. The battle of Clastidium, described by Polybius and Plutarch[11], was a great success for the Roman army and led to the conquest of the local tribes and the beginning of the Romanization of the area. The battle had great significance for Roman culture as it illustrates that the poet of the 3rd century BCE Gnaeus Naevius dedicated to it his praetexta called *Clastidium*. Unfortunately, only two fragments of this praetexta have remained, quoted by Varro in On the Latin Language (*De lingua Latina)* in the 1st century BCE. This quotation, however, proves that the historical memory of this battle was preserved for decades.[12]

Another significant piece of evidence on this region comes from the History of Rome by Livy. According to him, at the time of the Second Punic War, the Staffora Valley was under the control of Hannibal after the betrayal of Dasius, the Roman commandant of Clastidium[13]. Later on, in 197 BCE, this territory was re-conquered by the Romans, and Clastidium was burnt, together with another Ligurian city in the area Litubium (traditionally identified as modern Retorbido, PV) and "villages and farms" of the local population.[14] After that, the territory of the Anares was incorporated into the power of the colony of *Placentia* (modern Piacenza), founded in 218 BCE. After that, and especially after the construction of via Aemilia from Ariminum to *Placentia,* the process of Romanization became more intense.[15]

Regarding the urban centers of the Staffora Valley, few ancient sources mention the town of Iria, modern Voghera. Pliny the Elder in the 1st century CE mentions that after Augustus divided Italy into eleven regions, the Staffora Valley belonged to the ninth region, Liguria.[16] Notably, Pliny called Iria, together with Dertona, modern Tortona in Piemont, the "*nobilia oppida*" of

[8] GABBA 1984 P. 208; PEARCE 2003 P. 51
[9] POL. II,17.9–11
[10] PLUT. MARCELLUS. 6. 3.
[11] POL. II, 34; PLUT. MARCELLUS. 6.
[12] CORTI 2024 P. 31
[13] LIV. XXI, 48
[14] LIV. XXXII, 31
[15] GABBA 1984 P. 211–214; BATTAGLIA 2018 P. 80
[16] PLIN. NAT. III, 49.

Liguria, as if he classified them as indigenous cities but not Roman.[17] The city of Iria was also mentioned in Ptolemy's Geography in the mid-2nd century CE. The Alexandrian geographer called Iria and Dertona the towns of the Taurini, another local tribe that gave its name to modern Turin, and placed them on the route to the middle Po Plain.[18] Despite of this, Iria seems to be a Roman colony, founded *ex novo*, as it is attested from one epigraphic source dated to the 2nd century CE from Dertona, where Iria is mentioned like *Colonia Forum Iulii Iriensium*.[19] However, the city's name may derive from the Celtic name of the river Ira/Hyra, which can be identified as the Staffora or the Scrivia River.[20]

Another type of ancient sources on the Oltrepò Pavese is itineraries. The presence of the towns of the Oltrepò Pavese in ancient itineraries can be explained by the vicinity of the *via Postumia*, inaugurated in 148 BCE, which followed the ancient pre-Roman route in the Oltrepò Pavese.[21] Iria is presented on the *Tabula Peutingeriana* as a part of the prolongation of the *via Aemilia Scaurii,* but information on the distance between Iria and neighboring Dertona is not available on this Tabula.[22] Notably, the Staffora River, which flows to the east of the city of Iria, probably was indicated as *Odubria* on the *Tabula Peutingeriana.*[23] The *Itinerarium Antonini*, on the other hand, included this indication: it stated that Iria was located 10 miles away from Dertona.[24]

Thus, as this overview shows, the Oltrepò Pavese is evident in written sources, as it had a significant place in the ancient traffic routes. Its towns, Clastidium and Iria, were on the way to the Roman conquest of Cisalpina, as well as Hannibal's campaigns in Italy, and subsequently, roads connecting the most important Roman cities passed by the city of Iria in the Staffora Valley. That is why the Oltrepò Pavese is reflected in the historical studies of Polybius, Livy, and Plutarch, in the tragedy of Gnaeus Naevius, in the works of Pliny the Elder and Ptolemy, as well as in ancient itineraries such as Tabula Peutingeriana and Itinerarium Antonini.

I.2. Archaeological testimonies of the Roman presence in the Oltrepò Pavese

Archaeological sites of the Roman time in the Oltrepò Pavese, including the Staffora Valley, are abundant. They are centralized mostly along the Via Postumia, however, some known testimonies of Romanization in the area are prior to its construction in 148 BCE. Other than that,

[17] DOLCI 2001 P. 21
[18] PTOL. III, 1; DOLCI 2001 P. 21
[19] DOLCI 2001 P. 21; BATTAGLIA 2018 P. 80
[20] CORTI 2024 P. 32
[21] BATTAGLIA 2018 P. 78
[22] TAB. PEUT., SEGM. III
[23] TAB. PEUT., SEGM. III; DEBATTISTI 1996. P. 29
[24] ITIN. ANTON. 288, 5–6.

the concentration of finds is located on the fertile alluvial plain along the Po basin and in the western part of the Oltrepò Pavese.[25]

Not only the geographical spread of archaeological sites but also the chronology of the development of the region is aligned with the construction of the Via Postumia. In the 1st century BCE, the intense economic development of the Oltrepò Pavese began: together with the construction of additional to the Via Postumia roads of the Via Aemilia Scauri and the Via Julia Augusta, progressive populating of the lowland areas started.[26] A dense inhabitant network has been identified in the lowland areas of the Oltrepò Pavese. Even the Roman urban center of Clastidium was rather in the lowlands than on the hill and was surrounded by rural villas and farm buildings and centuriated agricultural land.[27] Another urban center could have been located in Broni, where the remains of an ancient settlement cannot be fully discovered due to the modern habitat, however, there were unearthed some structures including a *domus* dated to the 1st – 2nd centuries CE.[28]

The area of the Staffora Valley is also characterized by leading agricultural activity with abundant rural villas and farms and no major agglomerations besides Iria.[29] The territory pertaining Iria was divided into *ager dertonensis* to the west and *ager placentinus* to the east and centuriated, and ancient centuriation can still be traced in the landscape of the Staffora Valley.[30] In the territories between modern Voghera and Rivanazzano Terme, the rural settlements were placed at a distance of circa 650-700 m with surrounding agricultural land and aligned to the axes of centuriation in this region in the NNE-SSW direction (see Fig. 1).

Sites of Le Germane and Barborina have not been fully investigated yet. Le Germane is located 900 m to the southeast of the modern town and represents, perhaps, a rustic villa. The studies of satellite pictures resulted in identifying a building of several rooms, oriented NNE-SSW, while the materials collected on site show the presence of floor and wall architectural elements, painted plaster, tubes, as well as pottery sherds dated to the Imperial and Late Antique periods. The site of Barborina has been reported to be around 1 km away to the southeast of Le Germane. Based on the collected materials, it might have been occupied between the Imperial and post-medieval periods and had no architectural structures. Perhaps, it was a rural site of lesser extent than Le Germane.[31]

[25] GRASSI 2022 P. 104–105
[26] BATTAGLIA 2018. P. 81
[27] INVERNIZZI 2011. P. 17–18
[28] INVERNIZZI 2019. P. 16
[29] ZAMBONI 2022. P. 114–115
[30] DOLCI 2001. P. 25–26
[31] ZAMBONI 2022. P. 114–115

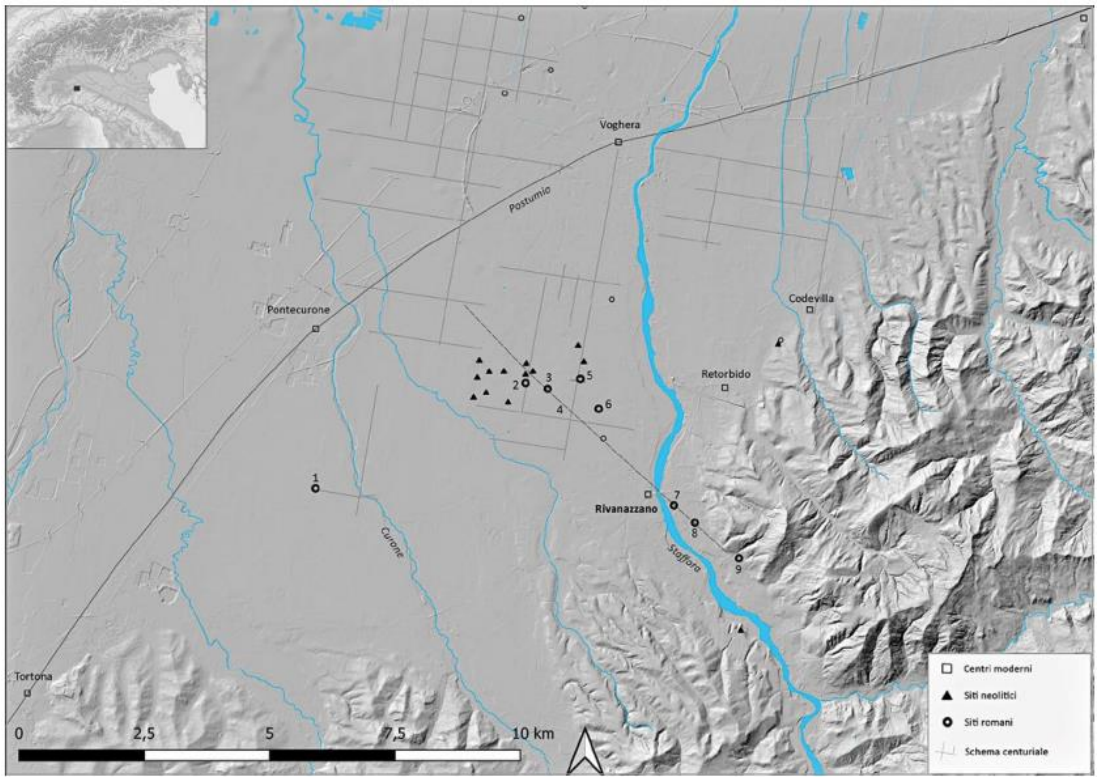

Figure 1. Map of the territory between Voghera and Rivanazzano Terme and its main sites: 1 – Cascina Torre (Pontecurone); 2 – Cascina Boarezza, trench *Theta*; 3 – Cascina Boarezza; 4 – hypothetical route of *via glarea*; 5 – Cascina Isola Felice: 6 – Cascina Pizzone; 7 – Cascina Campanile; 8 – Le Germane; 9 – Barborina (by ZAMBONI 2022. Fig. 1).

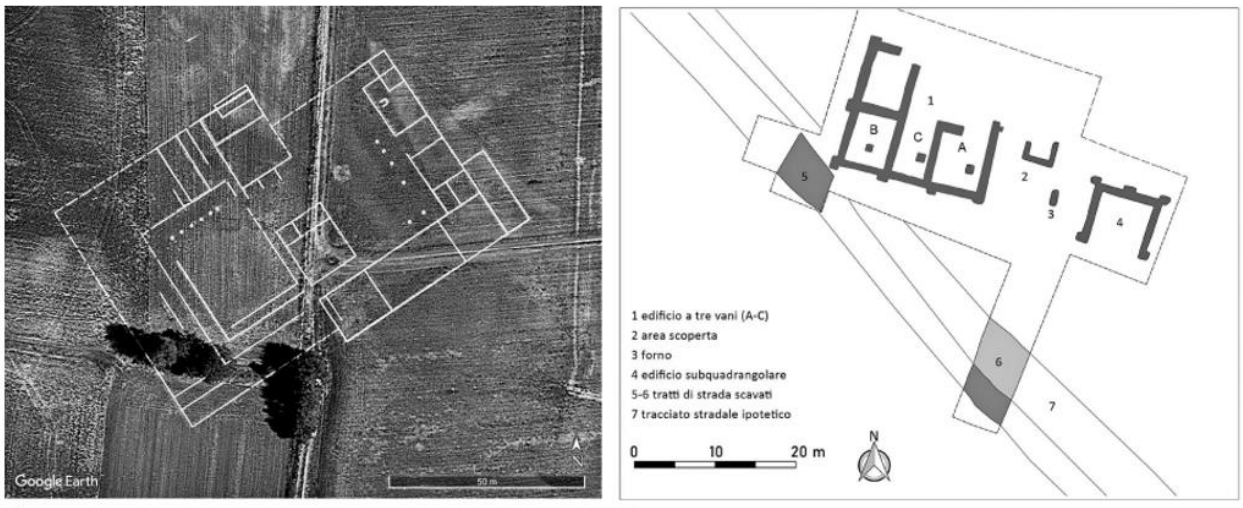

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Figure 2. Settlements of the Staffora Valley: 1 – Cascina Pizzone. Photointerpretation of cropmarks with planimetrical reconstruction; 2 – Cascina Boarezza. Layout of findings (by ZAMBONI 2022. Fig. 2.2, Fig 3.2)

One of the dominant settlements of the studied area is Cascina Pizzone, located around 2 km to the northwest of the center of Rivanazzano Terme. The research, initiated in 2015, was spurred by satellite images revealing distinct rectilinear and orthogonal cropmarks (Fig.2.1). Their layout testifies to the presence of 6800 square meters building of many rooms, organized around two porticoed courtyards, which is typical for Roman rural villas. Surface surveys allowed to collect numerous building materials, mosaics, tiles, and pottery, dating the villa's occupation to the periods between the late 1st century BCE to the 6th century CE.[32]

The site of Cascina Boarezza, 1 km northwest of Cascina Pizzone, consists of several living and productive complexes and remains of *via glarea,* oriented SE-NW (Fig.2.2). The main building, 15 × 10 m in measure, likely used as a habitation, consisted of four rooms, where the remains of fire, as well as numerous pottery sherds, were found. The angles were reinforced by the buttresses, indicating the probable presence of the second floor of the building. The walls were probably made of perishable materials as no traces of them were found, however, the roof of the building was covered with tiles in a double-slope manner, which were recovered *in situ* in the layer of collapse. To the east of the first building, a smaller one was identified. A rectangular single-room building of 5.6 × 6.6 m in measure was open to the south, which may indicate its function as a tool barn or a stable for animals. Founded around the 1st – early 2nd centuries CE, the settlement was abandoned in the 2nd century CE. It was reoccupied in Late Antiquity, between the 3rd and the 4th centuries CE, when the new structures were slightly re-oriented, indicating a clear gap between two occupational phases.[33]

Evidence of settlements fades at the boundary of the mid-hill range, near the site known as Fortunago-Molino della Signora. However, a Roman-era well has been found in Nivione, a med-hill site near Varzi, indicating the presence of a stable and organized settlement in that area, too. In the high hill zones, in contrast to the lowlands, the attestations of settlements are rare, while funerary sites are well-attested, for instance, small clusters of burials have been discovered at Varzi-Nivione and Romagnese-Bregni regions.[34]

In general, funerary finds in the Oltrepò Pavese predominate in numbers over settlements. The necropolis of the 1st – beginning of the 5th centuries CE was discovered in the northwest zone of Casteggio, giving abundant archaeological materials.[35] Speaking of the Staffora Valley, numerous burials have been discovered within the modern limits of Voghera such as those on the squares of Castello, S. Bovo, Battiste, etc. To the north of Voghera, the extramural necropolis

[32] ZAMBONI 2022. P. 116
[33] ZAMBONI 2022. P. 116–124; BATTAGLIA 2024. P. 56–59.
[34] GRASSI 2022 P. 106–107
[35] INVERNIZZI 2011. P.19

has been found, defining the limits of the ancient city of Iria.[36] The ritual architecture is not known yet in the Oltrepò Pavese, however, the altar of Diana found in Valverde may hint at the presence of some cult activities and structures in the region.[37]

Another aspect worth noticing is the presence of craft and manufacturing facilities in the Oltrepò Pavese, although they are rarely documented in the studied area. There were identified intentionally broken fragments of bronze artifacts ready to be remelted together with charcoal and burnt clay on the street of Anselmi in Casteggio, indicating the presence of a bronze workshop.[38] This facility, as well as a ceramic kiln found in Broni, was located inside the limits of ancient urban centers, while some other facilities seem to be in rather inaccessible locations, such as a kiln for brick production in Santa Margherita Staffora and a lime industry structure in Varzi.[39] Another pottery workshop was identified in Castelliere di Guardamonte, in Ponte Nizza, however, it was dated to pre-Roman time, the 4th century BCE even though it was probably in use for a long period of Romanization of this area.[40]

Speaking of the Staffora Valley, starting in 2015, extensive research on the ancient anthropogenic landscape in the area of Rivanazzano Terme is being conducted by the University of Pavia under the control of *Soprintendenza Archeologia Belle Arti e Paesaggio per le province di Como, Lecco, Monza e Brianza, Pavia, Sondrio e Varese*. After the report of one of the residents of Cascina Pizzone, studies of satellite pictures of the area were done, resulting in an attestation of the Roman villa's remains. Following this, another farming building dated to the 1st century CE and frequented until the 4th century CE was identified by the project in the area of Cascina Boarezza, just 1 km away from Cascina Pizzone. These two archaeological finds – a grand villa rustica with elaborate living quarters and extensive agricultural facilities in Cascina Pizzone, and a modest single-family farm in Cascina Boarezza – exemplify the most typical forms of land occupation and exploitation in Roman times.[41] Starting in 2017, the project of the University of Pavia has been continuing the studies of the Staffora Valley landscape working on the site of Cascina Isola Felice,[42] which will be further disksed in detail.

In conclusion, the Oltrepò Pavese and particularly the Staffora Valley exhibit a rich Roman heritage primarily concentrated along the Via Postumia, however, not exclusively there. Significant economic and population growth occurred in the 1st century BCE after the construction of Via Aemilia Scauri and Via Julia Augusta. It reflected on the development of the area,

[36] DOLCI 2001. P. 21
[37] GRASSI 2022. P. 111
[38] INVERNIZZI 2012. P. 11
[39] GRASSI 2022 P. 107
[40] GRASSI 2022 P. 107; GAMBARO ET EL. 2016. P. 114
[41] MAGGI ET AL. 2017. P. 109–111; BATTAGLIA 2018. P. 77
[42] BATTAGLIA, MAINO 2022. P. 128

constructing clear hierarchical relations between the urban centers of Clastidium, Iria, or others such as one of Broni and rustic villas and farms. In this relation, rustic villas played the role of headquarters of local *dominus* among the numerous farms, occupying and exploiting the lowlands. The character of the archaeological evidence in this region is defined by its geomorphology: most of the settlements were located in the lowlands, while hills, especially of high altitude, were used for funerary purposes. Additionally, craft and manufacturing sites, though rare, provide insights into the region's economic activities during the Roman period and indicate the presence of local ceramic production, bronze, and lime industry.

Chapter II. Cascina Isola Felice: The University of Pavia's research

Since 2017, the University of Pavia has been working on a site of Cascina Isola Felice, located approximately 800 m to the NE of Cascina Boarezza and 800 m to the NNW of Cascina Pizzone sites. Initially, studies of satellite images and aerial photography done using a drone resulted in the identification of evidence of ancient anthropogenic activities. In the autumn of 2017, a survey was held to ascertain the extent and consistency of the archaeological site that confirmed the high density of archaeological materials and stratigraphic potential.[43]

In 2018, the first excavation campaign was done because of the emergency need to preserve the superficial layers, which revealed the three areas of concentration of bricks and pebbles, mortar and plaster, and coals and ash, as well as the artifacts in bronze, ceramics, and marble. In 2019, this excavation area was extended, receiving the name of the trench *Omega*.[44] The stratigraphy of this trench, numbered from US 5100 and so on, indicates the presence of Late Antique pits constructed for the disposal of domestic and construction waste.[45] In 2020, trench Omega was extended, giving the stratigraphy numbered from US 5200, and another trench *Psi* about 30 m southwest of trench *Omega* was opened to investigate some anomalies detected through satellite imagery. The stratigraphical units of trench *Psi* were numbered starting from US 5300[46], revealing the remains of pebble wall, the concentration of gravel to the south from the wall, and pottery of different types including black-glazed fragments, ceramics typical for La Tene culture, and a fragment of *Warzenlampen* disksed further in this research.

The next year, trench *Psi* was reopened and renamed trench *Tau*, where a wall foundation and remains of the wall collapse were unearthed, giving the number to the stratigraphical units from US 5500. During the same campaign, the trench *Omega* was enlarged to the east with the stratigraphic units starting from US 5400, shedding the late to other Late Antique pits.[47]

In 2022 the trench *Pi* was opened, overlapping in the west with the trench *Tau* and giving the stratigraphic units numbered from US 5700. There was unearthed a better-preserved portion of the wall previously discovered in 2020 in the trench *Psi* and in 2021 in the trench *Tau*. To the east of the wall, the evidence of the collapse of the buildings was attested, consisting of medium-large pebbles and fragments of bricks and tiles. The trench *Tau* was enlarged also to the east, where the trench *Rho* was opened. The stratigraphic units were numbered from US 5800 and

[43] BATTAGLIA, MAINO 2022. P. 127
[44] MILAN, RIVANAZZANO TERME 2019. P. 16–22
[45] BATTAGLIA, MAINO 2022. P. 133–135
[46] MILAN, RIVANAZZANO TERME 2020. P. 17–22
[47] MILAN, RIVANAZZANO TERME 2021.

showed the presence of pits dated to the period of the Late Roman Empire that seem to be contemporary to the time of abandonment of the building.[48]

During the campaign of 2023 in Cascina Isola Felice, three trenches A, B, and C to the south of the *Pi* and *Rho* trenches were opened giving the stratigraphic units numbered from US 100, US 200, and US 300 accordingly. The limits of the rectangular building with a single room and cobblestone foundations were identified. The foundation was cut into the clayish natural soil, that had been lowered within the wall perimeter.[49]

Until now, the site is still being under ongoing research. The article by M. Battaglia and E. V. Maino in 2022 marked the beginning of the publication of data and materials resulting from this project.[50]

An overview of the significant structural elements revealed during the archaeological investigation is presented in the following. Information is based on the 2019-2023 excavation reports unless specified otherwise.

II.1. Late Republican structures

One of the remarkable structures of Cascina Isola Felice is the stonework of the wall foundation of the rectangular building, detected already at the stage of studying the aerial photographs due to well-defined cropmarks (Fig. 3). It is oriented NW-SE, and its perimeter is approximately 23 x 12 m (Fig.4.3). The construction technique involved using medium-sized river pebbles, most likely from the course of the Staffora River, placed dry without binding materials or bound by a small amount of clay.[51] The average width of the foundation varies from 50–60 cm in the western and northern sections to 70 cm in the southern section, resulting from the additional rows of stones, up to 4 rows, on the southern side, meanwhile, the others are constructed in a set of two rows, sometimes with the third central row of small pebbles. This masonry technique of exclusively unworked stones put in place without binding material is a particular construction practice widespread in pre-Roman times or at the early stages of the Romanization of the area.[52]

Stratigraphical excavations have revealed that rather compact yellowish silty-sandy sterile layers (USs 104, 204, 304, 5302) were cut by the foundation of the building, even though the cut (US 211) was clearly visible only along one part of the northern wall and was filled by a grey clay without inclusions (US 212).

[48] MILAN, RIVANAZZANO TERME 2022.
[49] MILAN, RIVANAZZANO TERME 2023.
[50] BATTAGLIA, MAINO 2022.
[51] BATTAGLIA, MAINO 2022. P. 128; BATTAGLIA 2024. P. 59
[52] BACCHETTA 2003. PP. 81–94

Figure 3. Cascina Isola Felice. Photointerpretation of cropmarks (by BATTAGLIA MAINO 2022. Fig. 1.1).

Figure 4. Cascina Isola Felice: 1– a well-cemented layer of gravel (US 5504) (by BATTAGLIA MAINO 2022. Fig. 3.3); 2 – part of the northern wall foundation and wall's collapse (USs 207, 205); 3 – a panoramic view at the end of the 2023 excavation campaign.

The southeastern sector of the studied area was occupied by a well-cemented and compact layer (USs 5305, 5504), about 20–30 cm thick, of gravel mixed with pebbles. It had an irregular surface (Fig.4.1), perhaps due to later activities, and stopped abruptly at about three-quarters of the length of the adjacent masonry of the northern wall (USs 5304, 5505). At the same time, the eastern wall has not been observed, meaning it is probable that the building was open on one side. Hence, the compressed layer of gravel may have been a part of an open portico.[53] Among the dating materials, a denarius of Mark Antony is the most prominent and accurate. It includes the title [AN]T.AUG – III VIR R.P.C. and belongs to the emission made in 32–31 BCE. Pottery discovered in the same layers corresponds to the time between La Tène C of the Cisalpine area and the early Imperial age.[54]

In the northwestern part of the building, a silty-clayish very thin layer (US 208) was unearthed, containing pieces of carbon, small fragments of bricks, and ceramics of various classes, including a sherd of coarse-ware pottery with comb decoration typical of La Tène traditions. It is not to be excluded that this layer might have been the original ground level of the building.

In the southwestern area of the building, a 20 cm thick concentration of gravel mixed with pebbles and bricks (US 306) and a dark sandy layer (US 305) with a prominent presence of carbon and pottery fragments were identified. Among the finds from these layers are the terra sigillata and thin-walled pottery, as well as several lamps' fragments and a base of glass balsamarium. The limits and the relation of these two layers, unfortunately, are not definitive, as they were disturbed by the above-mentioned collapse. However, these stratigraphic units may correspond to the level of primary occupation of the building.

Most parts of the inner perimeter of the aforementioned building were covered by layers of about 40 cm of medium-sized pebbles and tiles (Fig.4.2), which is more likely the result of the collapse of the building walls (USs 5506, 109, 205, 209, 307). Inside the collapse layers, there were found fragments of black-glazed, thin-walled, depurated, and coarse-ware pottery, amphorae, and lamps, which presumably belonged to the layer below but were disturbed by the collapse.

In various areas inside the walls, gray clayish layers (USs 102, 202, 302) were identified above the collapse layer; it consisted of numerous charcoal remains and crude clay and is suggested to correspond to the abandonment of the site. This layer included a lot of fragments of bricks, tiles, amphorae, glass, lamps, and various pottery. Their spread and density in different areas are not consistent, which may indicate their provenance from underlying strata.

[53] BATTAGLIA, MAINO 2022. P. 133
[54] BATTAGLIA, MAINO 2022. P. 131–132

The function of the building remains to be investigated. The layout, featuring a single large room, open on one side, does not align with typical residential plans of the Roman time in the region. At the same time, the quality of the masonry technique and the high value of some materials found inside make it unlikely that the building served as a simple utility or production space.

II.2. The Late Antiquity activities

Another excavation area about 30 m to the north of the Late Republican building consists of a series of large pits, continuing to the area inside of the eastern part of the abovementioned building itself. The pits were excavated into the Late Antique rich in clay paleosol or, in some cases, into the layers of abandonment of earlier structures, overlapping and cutting into one another (Fig. 5.1). Despite the overlaps, the pits demonstrate relatively regular forms, characterized by a sub-oval shape, concave walls, and a rather flat bottom (see Fig.5.2). The dimensions of the pits are significant, in some cases reaching up to 10 m in length and 0,80 m in depth from the ancient surface level. The morphology of the pits as well as their stratigraphy indicates the possible use of these concavities as a source of clay. The cuts were terminated once the more superficial silty-clayish layer was exhausted, while the underlying rather sandy alluvial deposit seemed to be out of mining interest. When the pits were no longer of value for the extraction of raw materials, they were filled with domestic and construction residues, indicating the presence of households in the relative vicinity.[55]

The latter function of these concavities is determined by their fillings. The pits were used for the disposal of construction and household waste. The fillings were sometimes overlaying but loosely compacted with various materials such as pieces of painted plaster and mortar, bricks, floor tiles, bones, marble, pottery sherds, fragments of lamps and amphorae, and fragmented metal objects. Among the most notable finds is the tile with the mark FELIX followed by a letter M that is only partially preserved. While exact comparisons of this mark on bricks have not yet been discovered, the *cognomen Felix* is commonly found on early Imperial pottery of presumably local production, including terra sigillata, lamps, and amphorae. The large concentration of construction waste dating to the first century B.C. may indicate the presence of a villa of this period in the vicinity, which has not yet been discovered.[56]

[55] BATTAGLIA, MAINO 2022. P. 134–135
[56] BATTAGLIA, MAINO 2022. P. 134; DELLA PORTA 1998, P. 107

In addition, in the territory of a 'dump', the remains of an animal – a dog or a young wolf – were found (Fig.5.3). The burial of the animal was made in an elaborate manner in a small pit excavated in the paleosol: an iron nail discovered in the same pit may indicate the presence of a non-preserved wooden box.[57]

Late Antique occupation of the site may be dated between the late 3rd – 6th centuries CE. Among the dating materials are numerous fragments of soapstone vessels, typical for the Late Imperial period, and a coin of Emperor Probus (276–282 CE) in one of the pits. A coin of Valentinian I or II found on the interface of a superficial layer (US 112) and a filling of one of the pits (US 111) allow us to date the closure of this pit to the end of the 4th century CE. At the same time, the studies of the pottery recovered from the pits suggest that their use may have continued to the 6th century CE when the site was finally abandoned due to the hydrogeological instability of the region and barbaric invasions.[58]

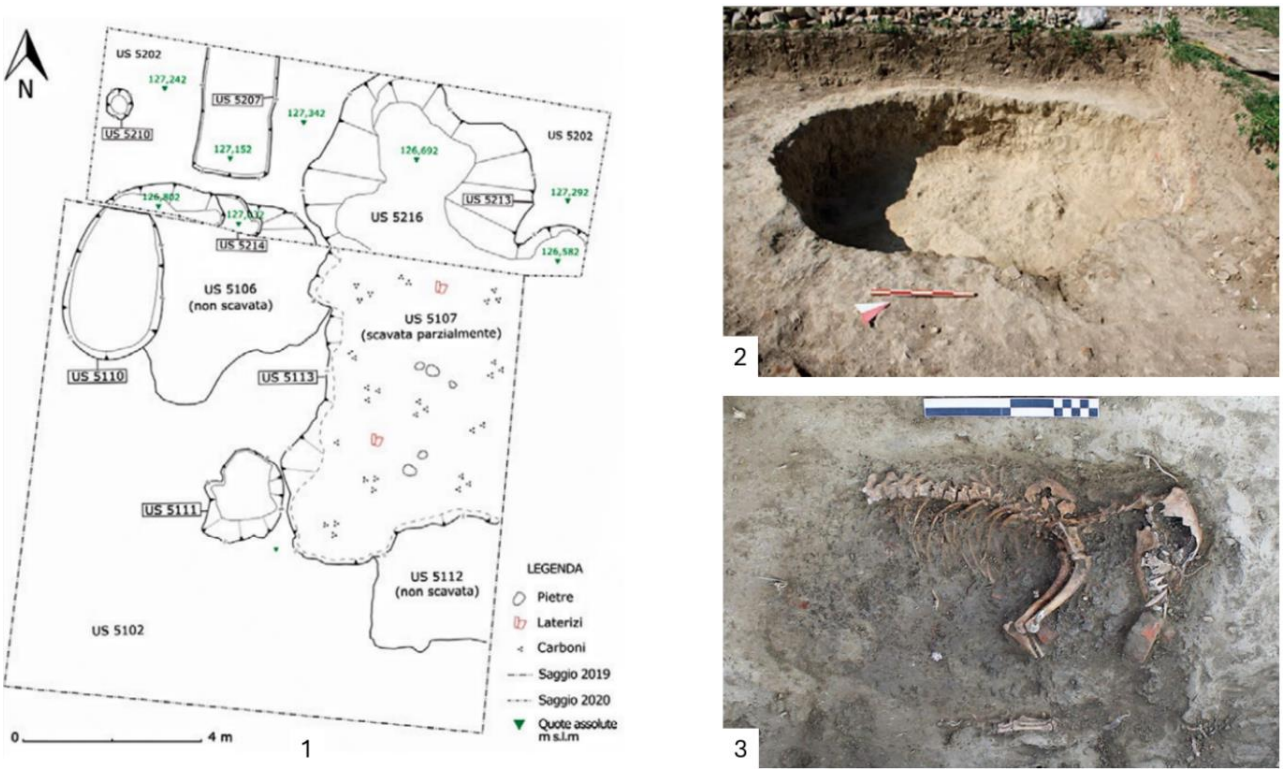


Figure 5. Late Antique pits in Cascina Isola Felice: 1 – a layout of Late Antique cuts excavated in 2019–2020; 2 – a cut of a pit in the western part of trench *Omega* (US 5110); 3 – animal's remains (US 5208-10) (by BATTAGLIA MAINO 2022. Fig. 6.1-2; fig. 5).

[57] BATTAGLIA, MAINO 2022. P. 133
[58] BATTAGLIA 2024. P. 66

Therefore, the site was founded in the Late Republican – Augustan age, presumably in the 1st century BCE, hence being earlier than neighboring Cascina Boarezza, founded in the Early Imperial age, in the 1st – early 2nd centuries CE and perhaps contemporary to the first phases of Cascina Pizzone.[59] During the early Imperial era, the building collapsed and was finally abandoned. The site, however, was partially reoccupied in the Late Antiquity, between the late 3rd and the 5th centuries CE.

[59] ZAMBONI 2022. P. 116–124; BATTAGLIA 2024. P. 56–59.

Chapter III. Roman clay lamps

Lamps are a special class of antiquity objects used to illuminate spaces. In ancient times, lamps were filled with flammable liquids, usually, oil, and an organic wick was inserted allowing the burning to last long. In Roman times, lamps could be made of ceramic, bronze, or glass[60], but the present work will focus on the study of ceramic lamps according to the species to be analyzed in Cascina Isola Felice.

According to this functioning principle, ancient lamps usually feature some typical constituent elements (Fig.3). The main part of a lamp is a body, a rounded, biconical, or cylindrical container for fuel. Lamps stand on a base, that can be flat or concaved, in some cases decorated with some base rings and marked with workshop signature. The nozzle can be of different shapes, single or multiple, and, in the cases of closed lamp forms, include a wick-hole. Close forms also feature the shoulders, flat or rounded, which can be separated by a more or less prominent rim from a disk. A disk itself is a usually round, flat, or concave central area with a filling hole, through which the oil is poured inside; some types of lamps typically have decorated disks. Some lamps may have a handle to grab them or pierced lugs on the shoulders to hold them on suspension chains. Numerous lamps are featured with unpierced two or three lugs that lost their

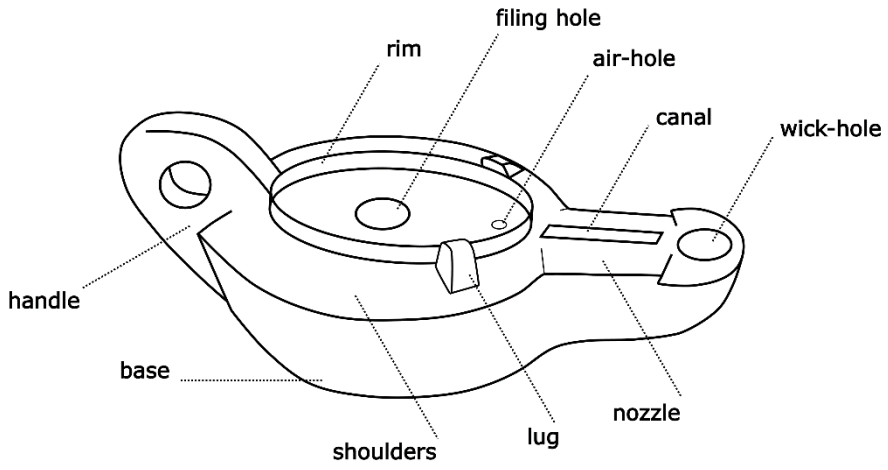


Figure 6. Lamp's structural elements (drawing by Iuneva)

[60] E.G. ARIOLI 2020.

initial function.[61]

Sometimes a small hole is also present on the nozzle canal or a disk close to the nozzle, it is commonly referred to as an air-hole, because it could have served to regulate the strength of the flame, supplying the wick with air. However, Broneer[62] questioned this statement and proposed other hypotheses for the use of this hole. According to him, some experiments showed no difference in flame whether the hole was present or not. It is also suggested to be a needle-hole, where the needle could have held the wick in place, while the lamp was not used, or pushed it forward. Moreover, initially, as Broneer believes, this hole served as an oil-hole, that allowed the spilled oil to drain back inside the lamp's body.

Speaking of the fuel, it is assumed that the most common one was olive oil, although nut, sesame, castor, mineral oils, or fish and animal fat may also have been used, as they were known to the Romans. Moreover, a mix of oils and fat with a predominance of olive oil has been revealed by the chemical analysis of some lamp samples.[63] The wick was apparently organic and may have consisted of woven threads of plant or animal origin.[64] Curiously, the Romans added salt to the fuel to produce a more stable and 60% brighter light, which is confirmed by modern experiments.[65]

III.1. History of Studies

Since the 16th century, antique lamps have attracted the attention of antiquarians and scholars: antique markets and the *Wunderkammern* were filled with them, while the scholars were making the first attempts to study them. An example is the work *De lucernis antiquorum recondites* by Fortunio Liceti, first published in 1621 in Venice. Unfortunately, it carries little scientific value but is one of the pioneers on the subject.[66] At the end of the 17th century, the catalog *Le lucerne antiche sepolcrali decorate* was compiled by Giovanni Pietro Bellori[67] giving attention to the antique lamps of the Pope's collection. In 1739-1751, the catalog *Lucernae fictiles Musei Passerii* by Giovan Battista Passeri was published, highlighting the iconographical aspect of ancient lamps. Later, however, Heinrich Dressel ascertained that most of the items in Passeri's collection were fake, being modern imitations.[68]

[61] BUSSIÈRE, WOHL 2017. P. 308
[62] BRONEER 1930. P. 9–17
[63] KIMPE ET AL. 2001.
[64] BAILEY 1963, P. 10; PROVOOST 1976, PP. 10-11.
[65] GONÇALVES ET AL. 2008. S. 4.1. and 5.1
[66] CAPELLINI, CORTI 2020. P. 9
[67] BELLORI 1704.
[68] CECI 2005. P. 311

In addition to being an outstanding class of objects for the study of commercial relationships, pottery production techniques, and the everyday or sacred life of the ancients, lamps are also a valid dating material due to their evolution of forms and types through different stages of antiquity. For this reason, starting from the 19th century, a large number of different classifications and dating have been proposed for antique lamps. Most classifications that have been published were either based on particular museum collections or excavation materials from a specific site. Individual publications may focus on lamps of a single region or period, or a specific type of lamp according to already existing typologies. The following will review the most important publications in terms of the development of the typological and chronological classification of Roman clay lamps.

The first general typological classification of antique lamps was done by Heinrich Dressel in 1899[69], who divided antique lamps into 31 forms. Dressel divided the lamps into 31 forms, however, without reference to chronology, since there was no chronological classification for terra sigillata in his time. In this consideration, Dressel's work is relevant nowadays only for determining the typology of lamps. Dressel's classification was later revised by Nino Lamboglia[70], who divided the lamp's types into five chronological/typological groups: republican (2nd – 1st cc. BCE), volute lamps (1st c. CE), canal lamps or *Firmalampen* (after 60s CE), disk lamps (2nd – 4th c. CE), Christian lamps (after the 4th c. CE).

Among the earliest works devoted entirely to lamps is a 1914 Catalog of the Greek and Roman Lamps in the British Museum by Henry B. Walters[71]. The same year, the catalog of antique lamps in the Hermitage's collection was published by Oskar Waldhauer[72]. Publication of big collections allowed researchers to obtain information, photographs, and drawings of numerous lamps to investigate.

Shortly after, Siegfried Loeschcke's fundamental work[73] on lamps from the archaeological site of Vindonissa (Switzerland) was published. He developed a classification of ceramic lamps that included 14 different types, divided into three big groups – *Bildlampen*, *Firmalampen,* and *Offene Lampen* – proposing dates based on lamp finds in closed contexts (e.g., burials) at both Vindonissa and other contemporaneous sites. For the *Bildlampen* and *Firmalampen,* he also developed the typology of the shoulder forms (Fig. 7), which allows a more detailed chronological timeline to be determined. Moreover, for many of the distinguished lamp types, Loeschcke proposed an inner classification based on the shape of the nozzle. Much later, in 1985, this clas-

[69] DRESSEL 1899.
[70] LAMBOGLIA 1952.
[71] WALTERS 1914.
[72] WALDHAUER 1914.
[73] LOESCHCKE 1919.

sification was updated by Karin von Goethert-Polaschek[74] in the publication of lamps from the Rheinischen Landsmuseums Trier in Germany. She suggested another type of nozzle for volute lamps and revised the shoulder forms proposed by Loeschcke. However, his classification was rather narrowly limited chronologically, since the lamp collection from Vindonissa belonged mainly to the early Imperial period.

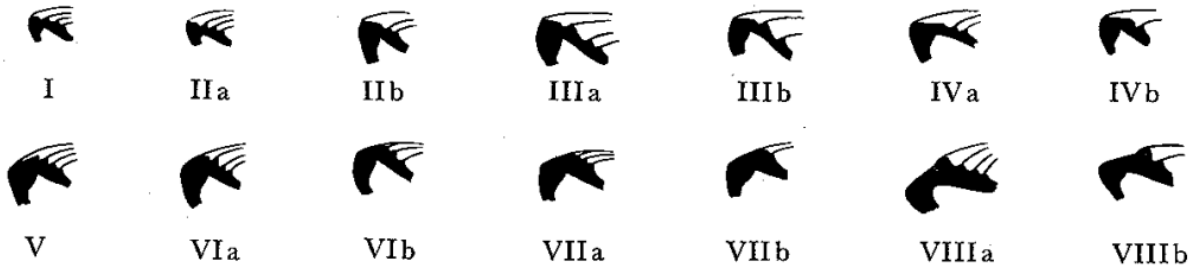


Figure 7. Loeschcke's shoulder forms (by LOESCHCKE 1919. Fig. 2: redrawn by BAILEY 1980. P. XI)

In 1930, another classification of antique clay lamps was done by Oscar Broneer[75] on the materials from Corinth, He presented a catalog with a developed typology consisted of thirty-seven types of Greek, Hellenistic, Roman, Early Christian and Byzantine lamps, emphasizing the gradual evolution of forms from one historical period to another.

The publication of antique lamps collections became more intensive after the Second World War. In 1969, Jean Deneauve[76] published an enormous collection of lamps in the National Museum of Carthage, including the Phoenician, Greek and Roman lamps present in the Museum. He developed a detailed classification for all three categories of lamps, giving a full description of each type, but not tying them to specific dates.

In 1975, Ezio Buchi[77] initiated the publication of antique lamps from the collection of the Museum of Aquileia. His work focused on *Firmalampen* from this museum, for which he proposed a more precise classification based on the one created by Loeschcke. Buchi suggested the subdivision of Loeschcke types IX and X into IX-a, IX-b, IX-c, X-a, X-b, X-c, and X-forma corta according to the form, shape or length of the nozzle canal. The publication of Roman lamps of the Museum of Aquileia was continued much later, in 1988, by Elena di Filippo Balestrazzi who paid precise attention also to the iconographical aspects of the scenes on lamps' disks.

In 1975 and 1980, a renewed Catalogue of the Lamps in the British Museum was published by Donald M. Bailey[78] in two volumes. Bailey suggested his own typology and chronolo-

[74] GOETHERT-POLASCHEK 1985.
[75] BRONEER 1930.
[76] DENEAUVE 1969.
[77] BUCHI 1975.
[78] BAILEY 1975; BAILEY 1980.

gy for the Roman lamps combining and adding some details to the previous classifications to provide order in his catalog.

Separately noteworthy is an essay by Arnold Provoost[79], which suggested methodological tools for the study of terracotta lamps. He proposed terminology in five languages (Latin, French, English, Italian, and German) for the constituent elements of the lamps, as well as ways of determining the type and dating, and outlined the functions of the lamps and the principle of their functioning.

In recent decades, the publication of collections of antique terracotta lamps has continued, whether they are museum collections or a class of objects from a particular site. Despite the voluminous number of research works on this subject, the problem requires further consideration due to the arrival and accumulation of unpublished materials.

Nowadays, the studies of ancient lamps imply not only archaeological methods and typological analysis but also quantitative analysis for better understanding of lamps' functions[80], laser scanning and 3D modeling for documentation and preservation purposes[81], fingerprints studying[82], chemometric analysis including Inductively Coupled Optical Emission Spectrometry and X-ray Diffraction to define the clay composition[83], and many other scientific approaches.

III.2. Lamp production in Roman Italy

Oil lamps have been known in Europe since prehistory and already in the Upper Paleolithic people used lamps to light up dark spaces like caves or mines[84], however, those lamps were made of stone and filled with charcoal or animal fat[85]. Ceramic lamps were invented in the Neolithic[86], together with pottery itself.

In classical antiquity, oil clay lamps were incredibly widespread since the end of the 7th century BCE.[87] Starting from the end of the 4th century BCE, lamp production in Magna Grecia was large enough to be completely autonomous from Greece. Moreover, at the same time, the Apulian-type lamps became widespread in Apulia, Campania, and Lucania.[88] Although in Central and Northern Italy, the lamps remained unknown for a longer period: in the second half of the 3rd century clay lamps appeared among the finds in Etruria and Lazio, and in the 2nd – 1st cen-

[79] PROVOOST 1976.
[80] MOULLOU 2015.
[81] LAPP, NICOLI 2014.
[82] LISHTENBERGER, MORAN 2018.
[83] TEJO 2023.
[84] E.g. BEAUNE 2002; TARANTINI ET AL. 2011.
[85] E.g. DELLUC ET AL. 1979.; BEAUNE 2002.
[86] E.g. HERON ET AL. 2013.
[87] BRONEER 1930. P. 5
[88] CECI 2005. P. 312

turies BCE biconical and cylindrical, black-glazed lamps got spread and even locally imitated in northern Italy (Esquiline type lamps), marking the first Roman lamp production.[89]

Greek, some Hellenistic, and early Roman lamps were formed on the wheel. Early lamps were open-shaped, but over time the rim became wider and closer to prevent spilling, at the same time the nozzle changed, becoming longer with a smaller wick-hole. Among the wheel-made types are the biconical Esquiline type lamps, which were popular all over the Western part of the Mediterranean between 250 and 50 BCE. Around 150 BCE, however, another wheel-made type of cylindrical lamps developed in Italy. They were locally produced till the mid-1st century BCE.[90] Despite the appearance of moldmade lamps, the use of a wheel in lamp production continued till the end of the 1st century CE.[91]

Starting from the second half of the 2nd century BCE, most lamps were moldmade. The clay was pressed into a double-part mold, upper and lower, and then joined. A joint was usually smoothed over so that the fingerprints of the worker still remain visible from this process in many cases. Then, the filling, wick, and sometimes air-holes were drilled in the disk and a nozzle, and the handle could have been added to the body of the lamp.[92] In Italy, the first to discover this technique were the workshops in Magna Grecia, their first moldmade lamps were characterized by gray clay and radial decoration.[93]

The first moldmade Roman lamps were the *Warzenlampen*, popular till the end of the Augustan times. This form of lamp is characterized by a rounded body, ribbon handle, and decoration of globule rows on the shoulders. Another important feature of *Warzenlampen* is a lug on one side of the body, which was inherited from Hellenistic lamps.[94] The appearance of the *Vogelkopflampen* is dated to the same epoch, even though they were in use through the whole 1st century CE. The *Vogelkopflampen* were also moldmade, and their main characteristic is the large plain nozzle, often decorated with stylized bird's heads in relief. They also were typically featured with a ribbon handle and imitated the late Hellenistic lamps.[95]

Roman lamps which were not that strongly influenced by Greek and Hellenistic lamps, the voluted lamps, appeared in the second half of the 1st century and are marked by a round, wide disk, often decorated and distinctly separated from the shoulders, and a more articulated nozzle.[96] Contemporary to *Warzenlampen* and *Vogelkopflampen*, the volute lamps started to be widely produced in the Augustan age, featuring an angled nozzle, decorated with two flanking

[89] GRANCHELLI ET AL. 1997. P. 21–22; CAPELLINI, CORTI 2020. P. 27
[90] CECI 2005. P. 312
[91] BRONEER 1930. P. 7
[92] INVERNIZZI 2016. P. 9
[93] CECI 2005. P. 313
[94] BUSSIÈRE, WOHL 2017. P. 57;
[95] GRANCHELLI ET AL. 1997. P. 22
[96] FERRARESI 2000. P. 103

volutes. They later evolved in the half-volute lams or lamps with degenerate volute in the time of Claudius and were manufactured till the 2nd century CE.[97]

Mid-1st century CE is the time of the appearance of several important lamp forms. The disk lamps are characterized by a broad, decorated disk and short and rounded nozzle. Their production continued till the 4th century CE, even though the quality of decorations and the clay itself gradually worsened.[98] In the second half of the 1st century, the *Firmalampen* were introduced to the north Italian lamp market by the workshops in the Po Valley. They featured flat shoulders separated from a plain disk by a prominent rim. Typically, there are workshop signatures in capital letters on the flat bases of the lamps' bodies. Different forms of Firmalampen were still in use in the 5th and maybe even the 6th centuries.[99]

In Late Antiquity, the Italian market was flooded with lamps manufactured in Africa and then imitated elsewhere in the Mediterranean, including western Sicily. They were done in *terra sigillata* and marked by the shoulders, decorated by palmettes, small disks with some, often Christian, decorations, and a large canal from the disk to the nozzle.[100]

III.3. Functions and role of lamps in Roman culture

Lamps in Antiquity were multifunctional as usually they have been found in various contexts. In addition to fulfilling their direct function of illuminating dark spaces, the lamps appear to have had symbolic significance playing the role of votive objects, grave goods, apotropaic items in buildings' foundations, or simply souvenirs.[101] Some information on the use of lamps can be gleaned from literary sources, for example, from the novel The Metamorphoses, or The Golden Ass, written by the 2nd century CE author Apuleius: "The first ["priest of the cult"] held up a lamp burning with a bright flame, not one like those which light our dinner-tables at night, but a boat-shaped vessel of gold feeding a more ample flame from its central opening"[102]. Here he mentioned both the use of lamps for everyday life, during the dinner, when the lamp was placed directly on the table, and in a cult procession, when the priest was holding a lamp.

In a domestic context, the lamps could have been placed on bronze lampstands, directly on the furniture, or inside the specific niches in the walls, otherwise, they could have been suspended from the ceiling by chains and carried in hand[103]. Some wall niches, revealed at Pompeii,

[97] CECI 2005. P. 313
[98] GRANCHELLI ET AL. 1997. P. 23
[99] BUCHI 1975. P. XXXII-III
[100] GRANCHELLI ET AL. 1997. P. 23; CECI 2005. P. 323
[101] PROVOOST 1976. P. 11
[102] APULEIUS. I.12
[103] INVERNIZZI 2016. P. 13.

seem to have served exclusively for this purpose.[104] The number of lamps used in the house depended on the house's wealth, however, even 1 or 2 lamps would meet the basic needs of lighting the house. Despite the lamps being the category of movable items, they were frequently unearthed in certain areas of ancient houses. It is especially interesting to analyze the case of Pompeii where life was suddenly interrupted, therefore the lamps were preserved *in situ*. The biggest number of lamps were found on the upper floor of the houses, in *cenaculum*, in the front hall area's bedrooms, *cubicula*, and in reception halls, *tablina.*[105]

As has been mentioned before, the lamps had also some religious functions, being carried in cult processions or lightning up the temples. However, in the second case, it can be difficult to distinguish between the lamps that were used as a source of illumination or were dedicated as votive objects. It has happened at Pompei, where in the temple of Isis, a large number of lamps were found in a storeroom, and the purpose of their use has not been fully understood.[106] Occasionally, the symbolic role of a lamp can be emphasized by its size, as in the case of miniature lamps, or by a specific shape, such as a phallus,[107] which, however, may not negate their original more practical function as a light source.

Another widespread context in which Roman oil lamps are to be found is burial places. It was quite often to bury unused lamps, manufactured or purchased specifically for a funerary purpose.[108] Lamps are one of the most frequently repeated finds among the grave goods, along with coins. They are so widespread that they are considered "standard" for specifically Roman funerary practices.[109] The tradition of placing lamps in burials in Roman practice may have had at least two connotations. First, lamps were placed in burials among other objects of domestic or personal use, whether tools for work, jewelry, or tableware. Second, lamps may have had a more symbolic significance as objects that illuminated the darkness of the realm of the dead and preserved the "life" within.[110]

To conclude this chapter, Roman clay lamps are not only ancient tools for illuminating dark spaces. For the researchers, they are a clear chronological marker, a tremendous material for the study of iconographic motifs and the development of sophisticated ceramic techniques, as well as a source of information on the daily life and religious practices of the ancient Romans.

[104] JASHEMSKI 1977. P. 226; CAMPBELL, GRIFFITH 2014. P. 21
[105] MOULLOU 2015. P. 203–204
[106] CAMPBELL, GRIFFITH 2014. P. 22
[107] CAPELLINI, CORTI 2020. P. 27
[108] CAMPBELL, GRIFFITH 2014. P. 22
[109] CAPELLINI, CORTI 2020. P. 28
[110] TIBILETTI 2011. P. 199; INVERNIZZI 2016. P. 16–17

For the ancient Romans themselves, despite changes in fashion through time, they remained the multifunctional objects that accompanied people in their life and death.

Chapter IV. Lamps from Cascina Isola Felice

During the excavations in Cascina Isola Felice, among the many artifacts recovered, a series of fragments and fragmented lamps were unearthed both in the layers inside the remains of the Late Republic building (USs 5702, 5302, 301, 302, 305, 306, 307) and the fillings of the Late Antique pits (USs 5406, 5803). Four lamp fragments (L7, L8, L9, and L10) were located in US 302, the gray clayish layer inside the building perimeter, which could have corresponded to the time of abandonment of the building. Another concentration of lamp fragments was identified in the US 305, a dark sandy layer in the SW part of the building, where L11, L12, L13, L15, and L16 were found. While most of these lamps are highly fragmented, as typical of finds on the settlements, a few exceptional examples have survived with most of their pieces intact. This has allowed a more detailed analysis of their form and decorations to be conducted as presented in the following chapter.

In preparing this catalog, a typological analysis of the lamp fragments recovered was carried out. The studied artifacts belong mainly to three types of lamps: *Warzenlampen* (L1), volute lamps (L8, L11, L14-L15), and *Firmalampen* (L2–L7, L9-L10, L12-L13). The typology of lamps in the catalog is given according to Dressel[111] and Loeschcke[112]. The typology of the latter was extended by Buchi[113] and Goethert-Polaschek[114], which is also considered in this catalog. A detailed study of the typology and dating of these forms of lamps will be presented in the next chapter of this volume.

In addition, a typology of the clay from which the lamp samples under study were made was prepared. In total, five types of material were identified, distinguished by color, consistency, hardness, surface characteristics, and the presence of inclusions (see Table 1). The Munsell Soil Color Chart was applied to specify the colors of researched fragments.

Eight fragments (L1, L5-L6, L9-L10, L12-L13, L16) belong to the type I of clay, which is characterized by an orange and uniform color, slightly roughened surface without glaze, and is purified and soft.

Type II of the clay is presented by four fragments (L8, L11, L14-L15), being beige and uniform in color, purified, with a smooth surface covered by red glaze. Fragment L7 is unique in clay type III, having a grayish brown and uniform color, poorly purified hard clay with fine non-organic white inclusions, and weak red color in fracture. Lamps L2 and L3 are united by clay type IV, which is pinkish gray and non-uniform in color, coarse and hard with a roughened sur-

[111] DRESSEL 1899.
[112] LOESCHCKE 1919.
[113] BUCHI 1975.
[114] GOETHERT-POLASCHEK 1985.

face. The inclusions in this type of clay are medium-sized non-organic black and white and possibly organic. Clay type V is distinguished particularly for its yellowish brown non-uniform color. It is coarse and hard with medium-sized non-organic black and white inclusions and a grainy surface. It is characteristic of the fragment L4.

Clay type	**Description**	**Color (Munsell)**
I	Orange and uniform in color, purified soft clay with a slightly roughened surface, and with no glaze	5YR 5/8
II	Beige and uniform in color, red-glazed purified soft clay with a smooth surface	7.5YR 7/4
III	Grayish brown and uniform in color, poorly purified hard clay with fine non-organic white inclusions, smooth surface, weak red color in fracture	10YR 5/2 surface, 10R 4/4 in fracture
IV	Pinkish gray non-uniform in color, coarse and hard clay with non-organic black and white and possible organic inclusions, and with a roughened surface	7.5YR 7/1, 6/2
V	Yellowish brown non-uniform in color, coarse and hard clay with non-organic black and white inclusions, and a grainy surface	10 YR 6/4, 5/4

Table 1. Clay types of the lamps from Casina Isola Felice

IV.1. Catalog

L1. *Warzenlampe* (US 5302)

Type: Dressel 2.

Clay: type I (?).

Dimensions: $Ø_d$ 28 mm.

Description: a fragment of a moldmade lamp. The shoulders are separated from the disk by a prominent single molding and decorated with rows of globules (*Warzen*).

Date: second half of the 1st c. BCE – first half of the 1st c. CE.

Bibl. Battaglia et Maino 2022.

L2. Fragment of a *Firmalampe* (US 5406)

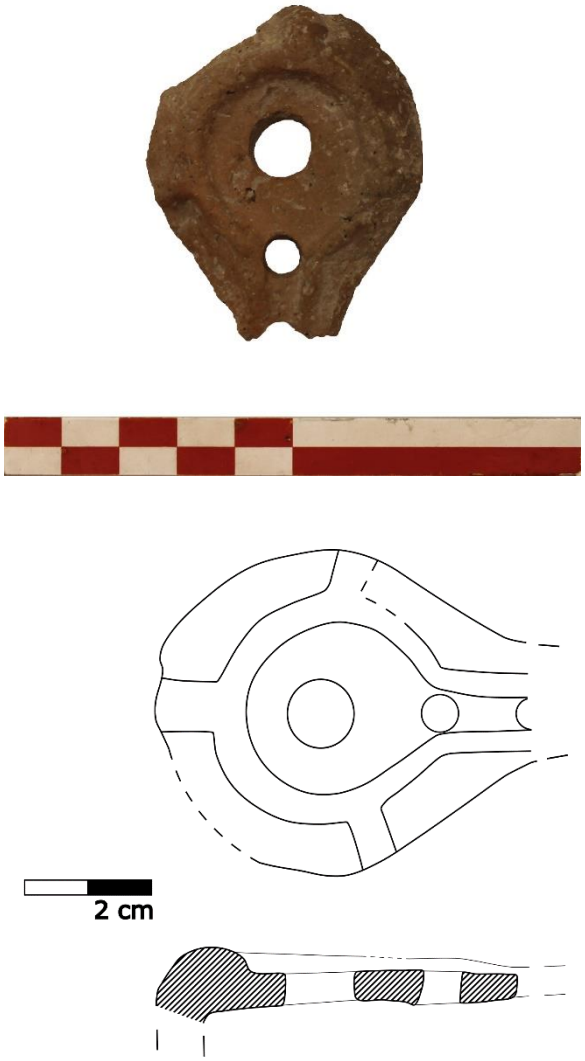
Type: Loeschcke – Buchi Xc.

Clay: type IV.

Dimensions: $Ø_d$ 24 mm of a disk.

Description: a fragment of an upper part of a moldmade lamp. A slightly prominent molding separates an asymmetrical plain disk from the shoulders; a central filling hole; three unpierced lugs on the shoulders. A rather big air-hole is pierced in the open nozzle channel near the disk. The nozzle tip is not preserved.

Date: 3rd – 4th c. CE.



L2

L3. Fragment of a *Firmalampe* (US 5702)

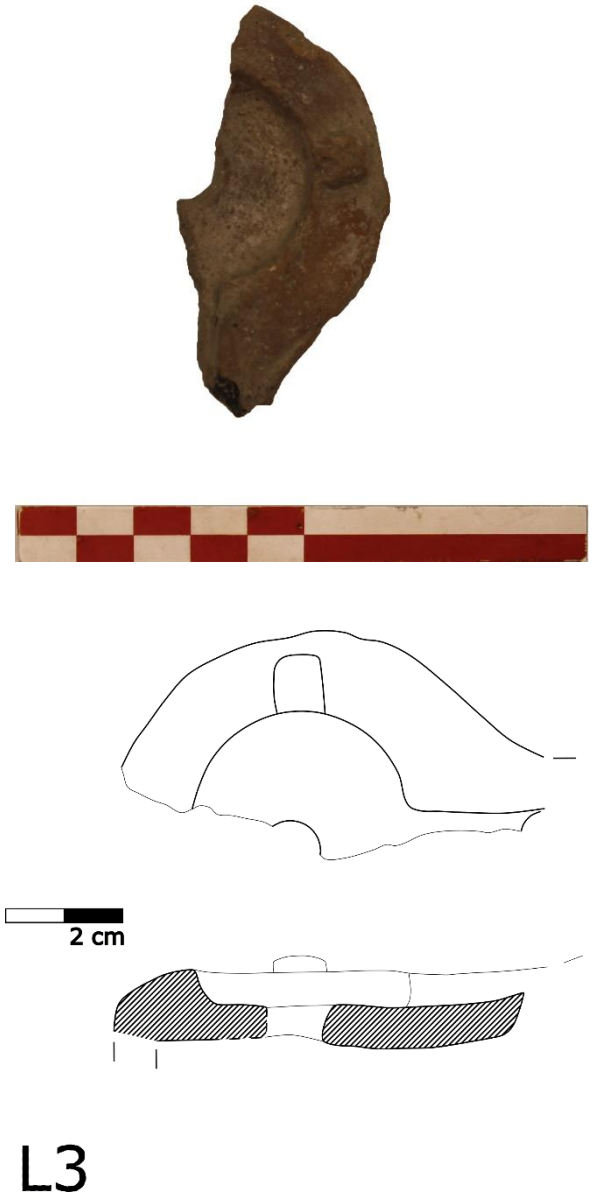
Type: Loeschcke – Buchi Xc.

Clay: type IV.

Dimensions: $Ø_d$ 36 mm.

Description: a fragment of an upper part of a moldmade lamp. The filling hole is in the center of a disk. One unpierced lug is preserved on the shoulders. The nozzle channel is open; the nozzle tip is not preserved, however, the traces of secondary burning are seen near the wick-hole.

Date: 3rd – 4th c. CE.



L3

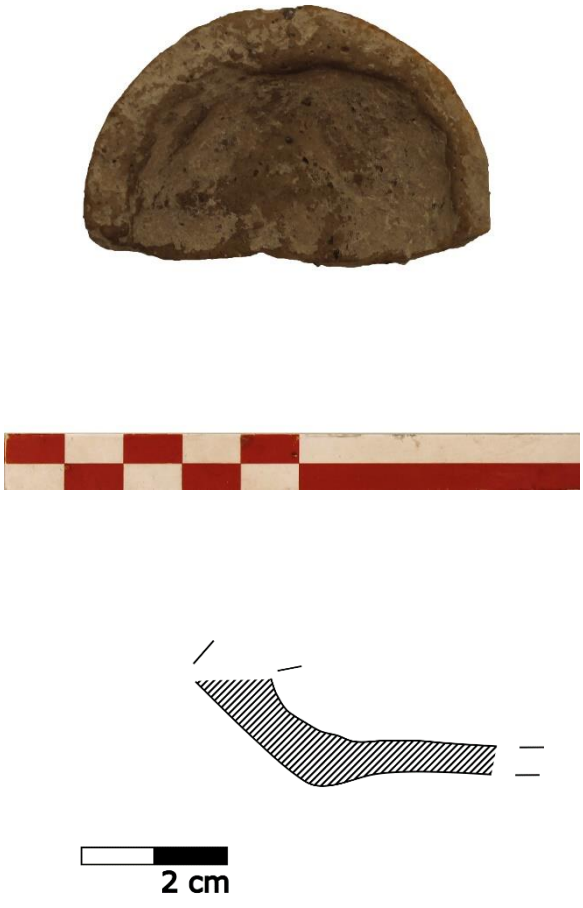
L4. Fragment of a *Firmalampe?* (US 5803)

Type: Loeschcke – Buchi Xc?

Clay: type V.

Description: a fragment of a moldmade lamp's base of rounded, slightly ovoid form. The center of the bottom is concave with no base rings or marks, which was typical for the late *Firmalampen* of Buchi Xc-type.[115]

Date: 3rd – 4th c. CE.



[115] BUCHI 1975. P. XXIV

L5. Fragment of a lamp (US 306)

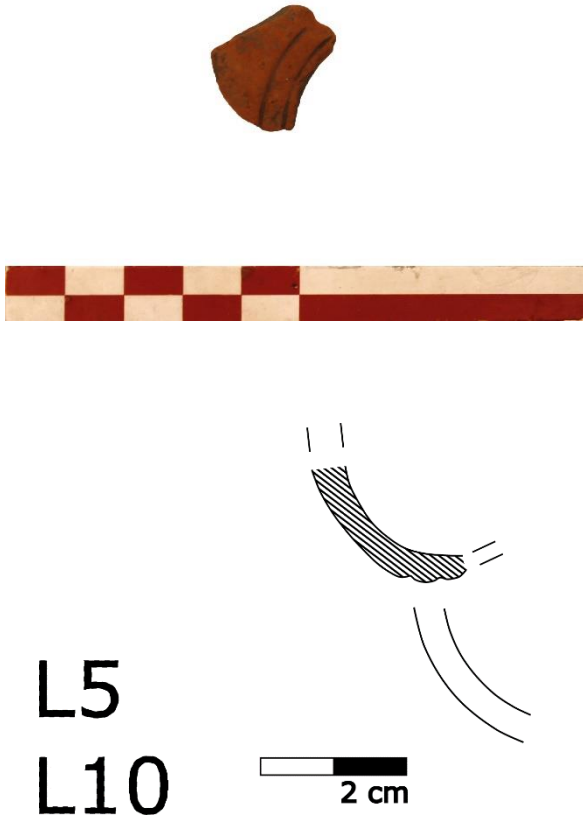
Type: Loeschcke Buchi IX – Xa-b?

Clay: type I.

Dimensions: Ø 50 mm in outer base ring.

Description: a fragment of a bottom with two incised base rings.

Date: presumably, 70s CE – the third quarter of the 2nd c. CE.



L6. Fragments of a *Firmalampe* (US 301)

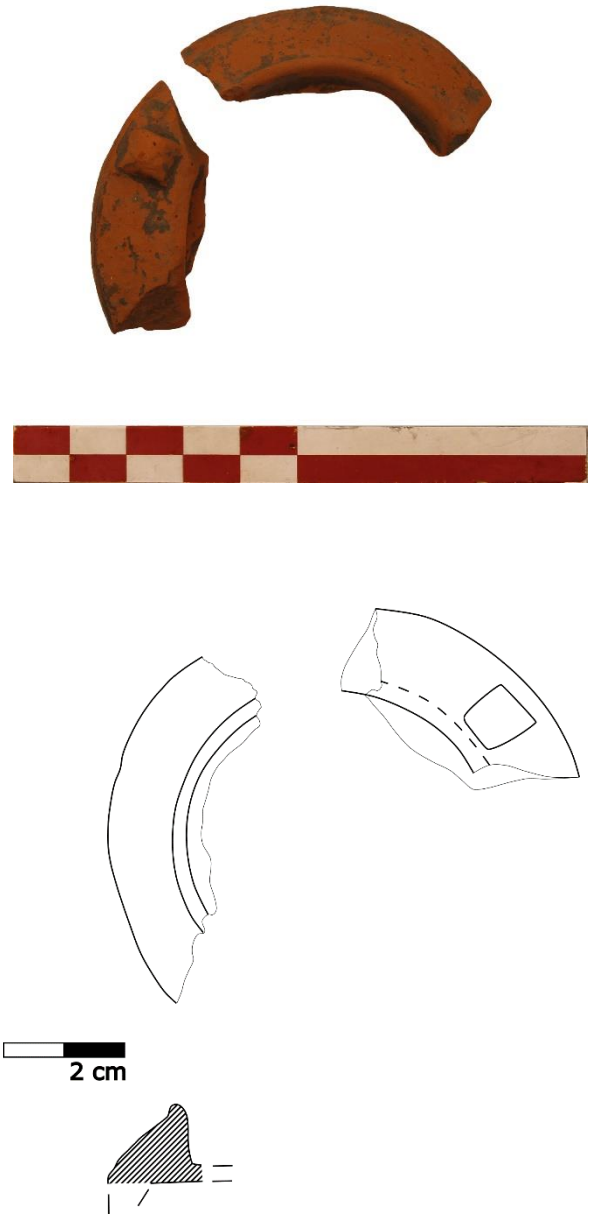
Type: Loeschcke Buchi IX – Xa-b

Clay: type I.

Dimensions: $Ø_d$ 48 mm.

Description: two fragments of moldmade lamp. Sloping shoulders are separated from the flat disk by a ridge; one unpierced lug preserved.

Date: 70s CE – the third quarter of the 2nd c. CE.



L7. Fragments of a *Firmalampen* (US 302)

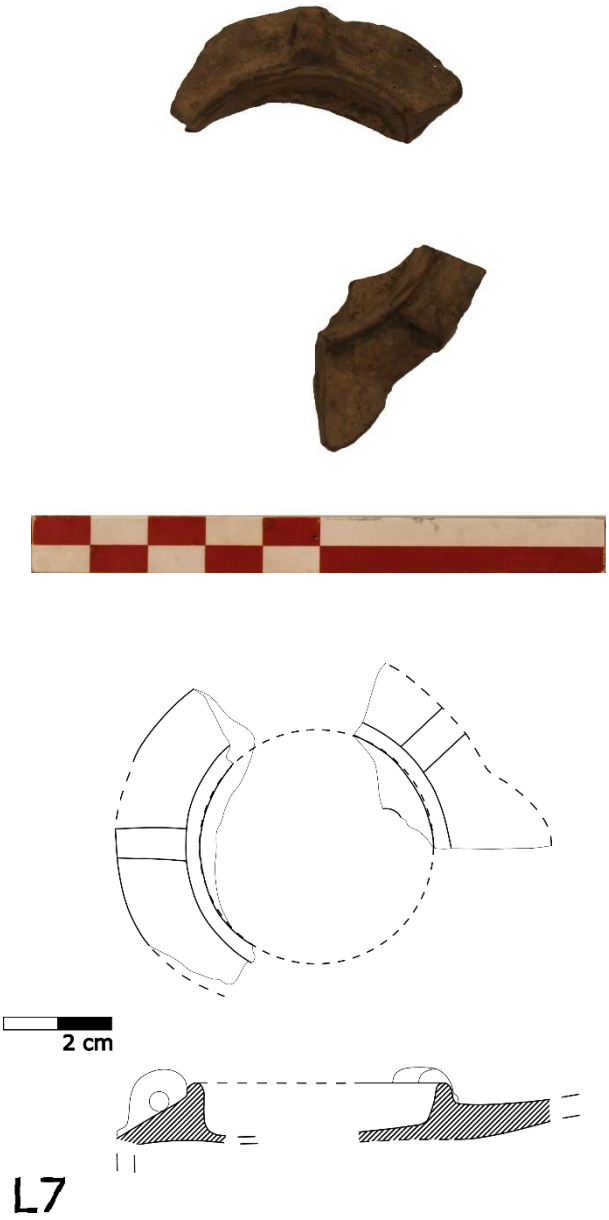
Type: Loeschcke Buchi IX – Xa-b

Clay: type III.

Dimensions: $Ø_d$ 42 mm.

Description: two fragments of moldmade lamp. Sloping shoulders are separated from the flat disk by a ridge; two pierced lugs preserved. The filling hole is situated on the lower right side of the disk.

Date: 70s CE – 3rd c. CE.



L8. Fragment of a lamp's shoulder (US 302)

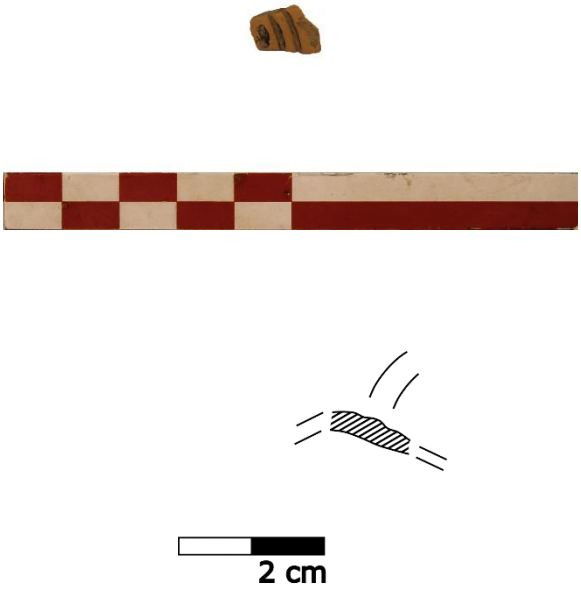
Type: Loeschcke IIb shoulder type?

Clay: type II.

Dimensions: $Ø_d$ <10%.

Description: a fragment of a moldmade lamp's shoulders with two rings. The shoulders are narrow and slightly rounded. This type of shoulders is characteristic of volute lamps (Loeschcke I; Bailey A), production of which started in the Augustan times and continued till the half of the 2nd c. CE.[116]

Date: probably the second half of the 1st c. BCE – beginning of the 2nd CE.



[116] LOESCHCKE 1919. Pp. 29–30; BAILEY 1980. P. 126: CAPELLINI, CORTI 2020. Pp. 38–39

L9. Fragment of a *Firmalampe* (US 302)

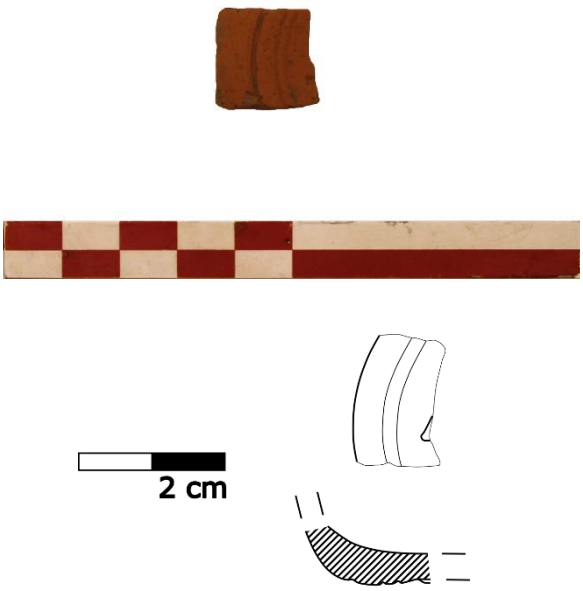
Type: Loeschcke Buchi IX – Xa

Clay: type I.

Dimensions: Ø 46 mm of an outer base ring.

Description: a fragment of the bottom of a *Firmalampe* with an illegible fragment of a workshop signature in relief, which is a letter with a slightly inclined lower left corner (e.g. “A”/“M”). It has three base rings, the outer one is thicker than two inner ones.

Date: 70s CE – the third quarter of the 2nd c. CE.



L9

L10. Fragment of a lamp (US 302)

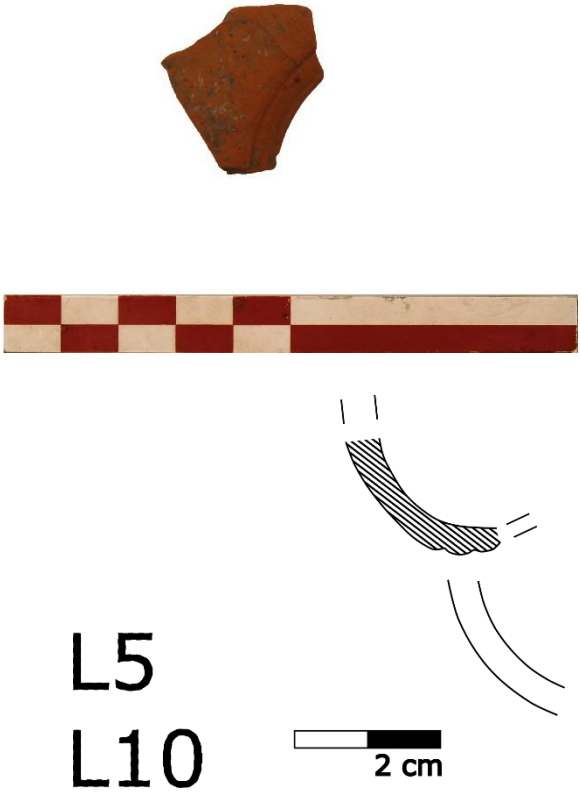
Type: Loeschcke Buchi IX – Xa-b?

Clay: type I.

Dimensions: Ø 50 mm in outer base ring.

Description: a fragment of a bottom with two incised base rings. Considering the identical characteristics, it might be a part of the same lamp as L5.

Date: presumably, 70s CE – the third quarter of the 2nd c. CE.



L11. Volute lamp (US 305)

Type: Loeschcke IB/C

Clay: type II.

Dimensions: L. 87 mm; $Ø_d$ 40 mm.

Description: fragmented lamp with slightly asymmetrical volutes. Poorly moldmade. The shoulders are rounded (Loeschcke shoulder form IIIa) and separated with a disk by a sloping rim with three rings. The disk is decorated with a sitting bird (dove?) in relief. The beak of the bird is short, the wing is marked with three short lines. The legs are not separated from each other. The filling hole is positioned on a lower left side of the disk. The nozzle is asymmetric and angular. The distance between the two angled sides of the nozzle tip and between the volute-spines are nearly identical, which is the characteristic of Loeschcke type I B/C according to Goethert-Polaschek[117]. The lamp stands on a slightly raised rounded base marked with one base ring.

Date: 1st – beginning of the 2nd c. CE.

[117] GOETHERT-POLASCHEK 1985. P. 16, 74-75

L12. Fragments of *Firmalampe* (US 305)

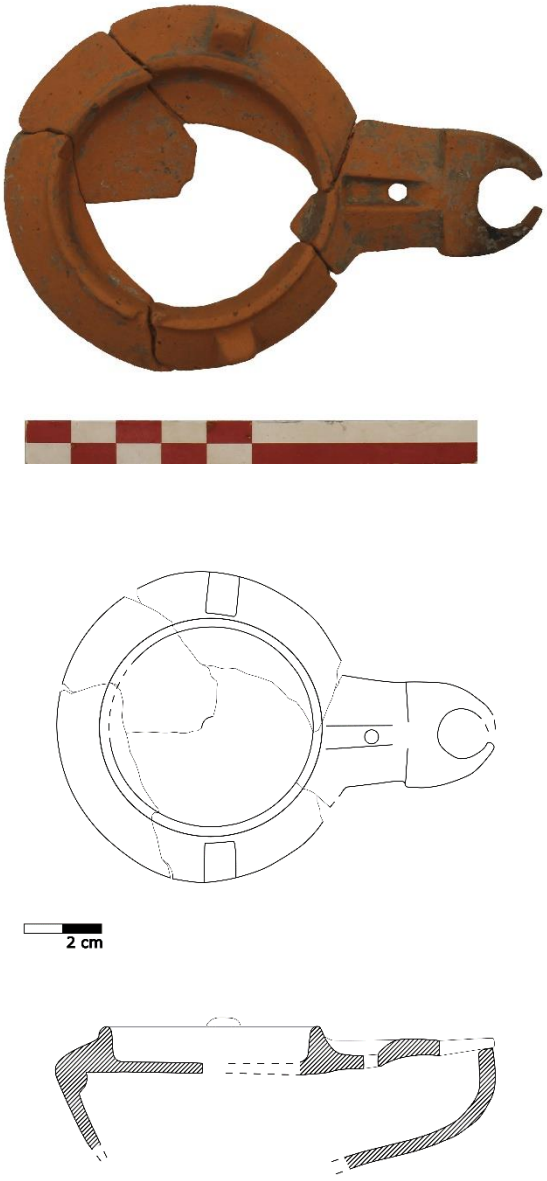
Type: Loeschcke Buchi IXb

Clay: type I.

Dimensions: H: undefined; L. 110 mm; $Ø_d$ 46 mm.

Description: fragments of a moldmade lamp. Sloping shoulders are separated from the flat disk by a ridge; two unpierced lags are placed symmetrically on each side just below the central horizontal axes. The filling hole is central; a small air-hole is pierced inside the closed canal on the nozzle neck; the wick-hole area is flat and has traces of a secondary burning.

Date: 70s CE – early 2nd c. CE.



L13. Fragments of a *Firmalampe* (US 305)

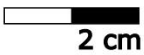
Type: Loeschcke Buchi IX – X

Clay: type I.

Dimensions: Ø 46 mm of an outer base ring.

Description: a fragment of a flat bottom of a *Firmalampe* with a fragmented workshop signature in relief "MIL". It has three base rings; the outer one is thicker than the two inner ones. Considering the identical characteristics, it might be a part of the same lamp as L9.

Date: 60-70 CE – the third quarter of the 2nd c. CE.



L14. Fragment of a volute lamp's nozzle

(US 307)

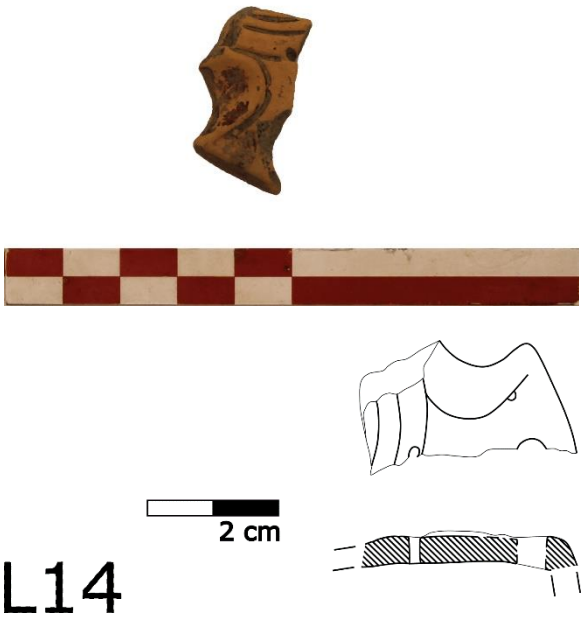
Type: Loeschcke I.

Clay: type II.

Dimensions:

Description: a fragment of a lamp's nozzle. The nozzle is angular and flanked by the volutes. A small air-hole is pierced in the center of an upper part of the nozzle. Two slightly prominent rings divide the nozzle from the disk.

Date: second half of the 1st c. BCE – beginning of the 2nd CE.



L15. Fragment of a lamp's shoulder (US 305)

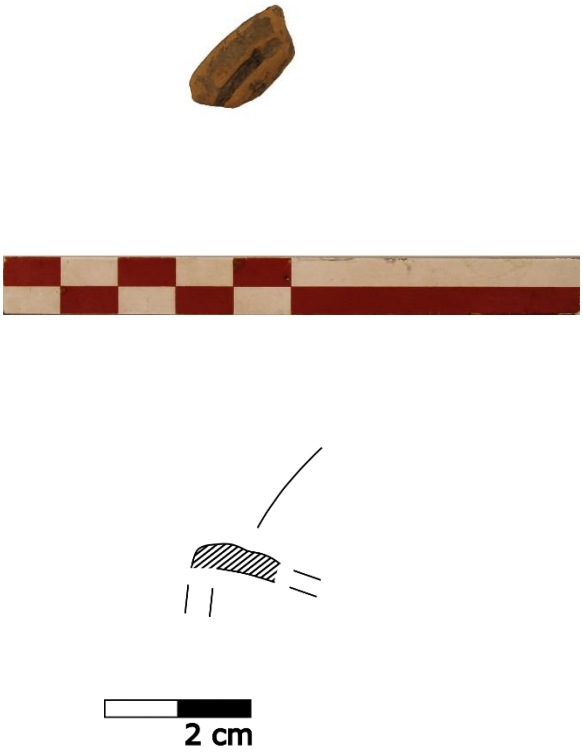
Type: Loeschcke IIIa/IVa shoulder type?

Clay: type II.

Dimensions: $Ø_d$ <10%.

Description: a fragment of a moldmade lamp. The shoulders are flat and separated from the disk by, at least, two rings. These shoulder types may be characteristic of Loeschcke I type of lamps.

Date: probably the second half of the 1st c. BCE – beginning of the 2nd CE.



L16. Fragments of a lamp's base (US 305)

Type: undefined.

Clay: type I.

Description: two fragments of moldmade lamps, which can be identified as bottoms of nozzles.

Date: undefined.

Chapter V. Lamps of Cascina Isola Felice: analysis

Lamps found in Cascina Isola Felice, as can be seen from the Catalogue above, fall into three categories, when they are identifiable: *Warzenlampen,* voluted lamps, and *Firmalampen*. The following is a more detailed examination of the history and characteristics of these groups of lamps, their typology, and chronology. In addition, this chapter diskses where the lamps were originally located on a site and their possible relation to the context.

V.1. Typology and chronology

Warzenlampen

One of the earliest lamps, found in Cascina Isola Felice, is a fragment L1, a fragment of *Warzenlampe*[118]. They belong to one of the first types of Roman lamps being moldmade. Among the characteristics of this type are a small slightly concaved disk, typical for Hellenistic lamps one-side lug and ribbon handle, a round body, and distinctive decorations with rows of convex globules (*Warzen*). These lamps correspond to the lamp types Dressel 2 and Deneauve I and were manufactured in central Italy from the Late Republican period, 1st century BCE to early the mid-1st century CE.[119] The researchers from the J, Paul Getty Museum, J. Bussière and B. L. Wohl, propose an even shorter period of their production, they suggest a shorter timeline for the production of these lamps, limiting it from 70 BC to the end of Augustus' reign. Moreover, according to these researchers, *Warzenlampen* were produced black-glazed but from 50 BCE onwards red-slipped ones replaced them.[120] The bases of *Warzenlampen* usually feature one or more base rings in a low relief and, frequently, contain marks of a workshop consisting of letters or impressed points.[121]

Unfortunately, the fragment L1, found on the surface of layer US 5302 in Cascina Isola Felice, is too small to provide a large amount of data. Its main distinctive feature is a decoration of at least three rows of globules. Among the morphologically closest analogies is a lamp inv. 18204 from the Pisani Dossi collection, which also has a distinctive rim.[122]

The decorative motif in the shape of closely spaced rows of convex globules returned to fashion in the 3rd – 4th centuries CE[123], but the lamps of this later period had more spheroidal

[118] BATTAGLIA, MAINO 2022. P. 132
[119] CAPELLINI, CORTI 2020. P. 36
[120] BUSSIÈRE, WOHL 2017. P. 57
[121] BUSSIÈRE, WOHL 2017. P. 57
[122] GRANCHELLI ET AL. P. 42. Tav. 3. № 12.
[123] BAILEY 1980. P. 377; CAPELLINI, CORTI 2020. P. 36

bodies, flat shoulders, and only a few, 2 or 3 rows of globules, and did not have such Hellenistic features as a one-side lug. They correspond to the types of Dressel 30, Deneauve XI, and Bailey R.

Voluted lamps

Voluted lamps represent another form of moldmade lamps widespread in the Early Imperial time. They are characterized by a wide well-articulated nozzle with a rounded or obtuse-angled tip, flanked by volute-like ornaments. The volutes seem to be imitations of the chain holders on metal lamps, which abandoned their function on the clay lamps.[124] The body of voluted lamps is usually circular, with more flat or more rounded shoulders, which is one of the diagnostic features for the chronology. The disk is typically concaved and frequently decorated. A base may be surrounded by a slightly convex ring in the case of early exemplars and a grooved ring later on.

These lamps identify with the type of Loeschcke I. They were studied in detail by Loeschcke back in the early 20th century, when he proposed to distinguish 3 subtypes (I A, I B, I C)[125] according to the shape and size of the nozzle and, in addition to that, distinguished several forms of shoulders. Later, Goethert-Polaschek added one more nozzle subtype I B/C, that combines the characteristics of two Loeschcke's subtypes, and some shoulder forms.[126]

Nozzle types and shoulder forms are chronological markers of this type of lamps. A flat or slightly sloped inward rim with narrow, evenly spaced rings (types I A and I B, shoulder forms I and IIa) is an early indicator. Later, wide and inward-sloping rims with varied ring patterns (type B, shoulder forms IIIa and IIIb) emerge and remain in use throughout the 1st century CE in Italy. Another chronological indicator is a handle, that is not present either on the earliest examples or on the very late ones. Nozzle-type C, however, continued to be produced slightly later, to the beginning of the 2nd century CE.[127]

Voluted lamps originated in Italy in the Augustan era and were produced at least till the end of the Flavian period, or even the early 2nd century CE. They became the most widespread form of lamps all over the Roman Empire through export, which was led by both trade and the movement of Roman troops in different parts of the Mediterranean, and local imitations.[128]

[124] CAPELLINI, CORTI 2020. P. 38
[125] LOESCHCKE 1919. P. 213
[126] GOETHERT-POLASCHEK 1985. P.16–17
[127] BAILEY 1980. P. 126–127, 135–136
[128] DOBREVA, ZAGO 2021. P. 532

Loeschcke type I lamps were usually produced in brownish clay containing micaceous particles and were covered by orange-red or brown-red slip with some geographical differences that are difficult to trace.[129]

One fragmented lamp L11 from Cascina Isola Felice, found in a dark sandy layer US 305, corresponds to this type, in particular, Loeschcke type I B/C. It features a rounded shoulder with two rings on the rim, which can be identified as Loeschcke shoulder form IIIa. Therefore, it may be dated to the second half of the 1st century – early 2nd century CE. For the lamps of Loeschcke type I C manufactured in Northern Italy (when Goethert-Polaschek's subdivision was not published yet), Gemma Sena Chiesa[130] proposed a more profound subdivision according to lamp morphology and iconography of the disk's scenes. An example from Cascina Isola Felice may correspond to Sena Chiesa's variant a, characterized by a somewhat flat rim with 2 or 3 rings, a wide nozzle with distinctive volutes, and a flat base surrounded by one impressed ring. Dated to the mid-1st – early 2nd centuries CE, this type features a simple decoration of floral or faunal motifs retouched by a cue.

The disk of lamp L11 from Cascina Isola Felice is decorated with an image of a standing bird, which is poorly legible due to mold wear. The bird has a relatively long neck and a short "angled" tail, three lines on its wing are retouched by a cue. Scenes depicting birds are among the most typical of Roman voluted lamps. Usually, the birds are depicted resting on the ground or a tree branch, and the second type is particularly popular. This motif finds a lot of parallels in Roman art,[131] especially a funerary one, where the bird represents the immortality of the soul.[132] However, a sitting bird with a long neck with no depiction of the branch seems to be quite rare. One of the closest scenes is on a lamp num.309 from the Museum of Aquileia[133], where the bird, maybe a pigeon, without any particular details is resting on some horizontal object that may be a ground line or a branch.

Notably, the lamp L11 is not unique in its morphology in the region. A voluted lamp of the same poor quality of molding and the same characteristics of clay (beige in color with soft badly preserved reddish slip) was attested at the necropolis of Casteggio in the tomb III, dated to the second half of the 3rd century CE[134]. However, a lamp from Casteggio features another decoration motif – of a dolphin – even though it is as simple as the one from Cascina Isola Felice.

Other than that, a fragment of a voluted nozzle L14 was unearthed in Cascina Isola Felice. It has a rather small wick-hole, an air-hole right on the border between a rim and a nozzle.

[129] BAILEY 1980. P. 127
[130] SENA CHIESA 1980; revised in FERRARESSI 2000. P. 119–133
[131] BALESTRAZZI 1988. P. 146
[132] FERRARESSI 2000. P. 142
[133] BALESTRAZZI 1988. Tav. 54. Nr. 309
[134] TIBILETTI 2011. P. 203–204. Tav. XXIII.4

Unfortunately, the fragment is not representative enough to specify the subtype or to classify the shoulder form. Another two objects, L8 and L15, from Cascina Isola Felice, that were identified as fragments of voluted lamps, are too small to make any particular conclusions. However, their belonging to the group of voluted lamps can be reasoned by their form (shoulder form IIb and IIIa/IVa respectively), as well as by the type of clay – beige, red-slipped soft well-purified clay (type II in this volume) – which the specimens clearly identified as volute lamps are made from.

Firmalampen

Firmalampen or canaled lamps were extremely popular due to their simple form. They have circular bodies with rounded shoulders, prominent rims, flat disks, and long, well-articulated nozzles with a rounded tip and a groove or a canal along the nozzle's top. Some of them are simply decorated, mostly with different sorts of masks. Most lamps' bases are marked with a workshop's signature, usually in relief, and surrounded by one or more grooved rings.

This type of lamp is one of the most disksed in literature since the late 19th century. One of the first to pay attention to *Firmalampen* was Otto Fischbach publishing the lamps found in Ptuj in 1896.[135] Later on, Loeschcke[136] included the *Firmalampen* in his classification under Type IX (with variants IX-a, IX-b, IX-c), Type X, and Type X-*Kurzform,* distinguished on the base of closed (Type IX) or open (Type X) canals. In 1975, Ezio Buchi[137] made some observations on *Firmalampen* of Italian workshops, adding some more subdivisions for Loeschcke's type X (X-a, X-b, X-c) according to lamps' morphology and producing technology.

According to Bailey, Loeschcke type IX appeared under the reign of Vespasian. He based his arguments on findings of this type in Pompei and their absence at Colchester, destroyed in 61 CE but partly occupied till 65 CE.[138] Italian production of this type continued until the beginning of the 2nd century CE but imitations, especially those that originated from the Rhein area, were manufactured till the end of the same century.[139] Buchi presumed that Type IX was first made by the workshop of *Strobilus* after 75 CE, while Type X, on the other hand, was invented by the craftsmen *Fortis* around 90 CE and its production with some modifications continued, at least, until the end of the 3rd century CE, perhaps even much later.[140] Some provincial workshops, pre-

[135] FISCHBACH 1896.
[136] LOESCHCKE 1919.
[137] BUCHI 1975.
[138] BAILEY 1980. P. 274
[139] BUSSIÈRE, WOHL 2017. P. 309
[140] BUCHI 1975. P. XXIX–XXXIII

sumably in Galia and Germania, produced the imitations of *Firmalampen* till the 5th century CE.[141]

Looking specifically at workshop signatures, the craftsman's *cognomen* was usually applied, although variants with a *praenomen*, *nomen,* or *trianomina* are also found. Occasionally, the letter *F* is added before the name standing for *fecit* if the name is in the nominative case and *figlina* in the genitive case. Sometimes, instead of a craftsman's name, the production city's name was used. One of the most common to be found is *Mutina* (Modena), one of the most important centers of *Firmalampen* manufacturing.[142]

Talking about the fabric that *Firmalampen* are made from, North Italian examples share a red or red-brown purified clay with no slip, while Central Italian lamps are orange-brown, covered with an orange-red slip.[143] Later versions from Northern Italy, types X-b or X-c, are usually made of unpurified clay or coarse clay with purposefully added inclusions, and occasionally covered with slip.[144] Moreover, Bailey mentioned that the red-ware *Firmalampen* even of Loeschcke type X seemed to be produced not later than the third quarter of the 2nd century, after that there were some slipped or coarse-ware variations.[145]

Several exemplars found in Cascina Isola Felice belong to the class of *Firmalampen*. The fragmented but almost whole body of a lamp L12 (the base and part of a disk are missing), unearthed in a dark sandy layer US 305, clearly belongs to the Loeschcke type IXb due to its closed, quite deep canal with an air-hole inside it. It may be dated to early Flavian – early Trajanic times. It is made of red purified clay, typical of Northern Italy lamp production of that time. A fragmented shoulder of lamp L6, discovered in a superficial layer US 301, seems to share the same morphological features and fabric characteristics as L12, however, due to the missing nozzle, it is impossible to specify its type. Considering the material and the quality of molding, lamp L6 may be attributed to one of the relatively early *Firmalampen*, also dating from the last quarter of the 1st century CE to the beginning of the 2nd century.

Yet another *Firmalampen* L7 was discovered in the layer of abandonment (US 302). Only two fragments of the upper part are preserved, demonstrating such features as fine molding, relatively flat shoulders, a slightly raised nozzle, and, presumably, three pierced lugs (only two of them are still present). Three pierced lugs, used or suspension, may indicate that the lamp belongs to the early production of *Firmalampen*, when they were yet, perhaps, imitations of bronze

[141] FEDELI ET AL. 2023. P. 20
[142] CAPELLINI, CORTI 2021. P. 44
[143] BAILEY 1980. P. 277
[144] BUCHI 1975. P. XXIV
[145] BAILEY 1980. P. 275

lamps with canals[146]. However, this lamp is characterized by a very particular type of clay, defined as type III in this volume. It is a dark grayish brown, poorly purified, and very hard clay, uncommon for the *Firmalampen* of early Northern Italian production. Inquisitively, though, the lamp's varnished engobe has a particular color, perhaps imitating a metallic glow.

It is more difficult to be specific with the fragments of bases, L5, L9, L10, and L13. All of them share the same type of red in color, purified and unslipped clay. Species L5, from a layer of gravel US 306, and L10, from a gray layer US 302, have the same diameters of their two base rings. Even though they do not attach, it should not be ruled out that they belonged to the same lamp base, especially as they are coming from the interfacing layers.

The same situation can be applied to fragments L9 from US 302 and L13 from US 305. They share three base rings, where the outer ring is slightly deeper and wider, and a workshop signature in relief (Fig. 8). The letter on fragment L9 is illegible, even though it can be hypothesized to be “A” or “M” due to the inclination to the right of the visible part. The inscription on fragment L13 is more readable and may constitute of “MIL”, where L is hypothesized. The only common workshop signatures that include this combination of letters are P. MAMIL[147] or L. MAMIL[148], however, both of them are usually incused and belong to different lamp types and periods of production. P. MAMIL is attested on a voluted lamp of the early Augustan age, while L. MAMIL is present on a lamp of later African production (Deneauve type X A). Curiously enough, the Mamilii were members of a powerful family in Republican time, however, became less prominent after the mid-1st century BCE,[149] and the connection of these later workshops to this family has not been studied yet. Anyway, the signature MAMIL does not seem to fit in the preserved relief on lamps L9 and L13. Thus, it is problematic to identify the signature on the fragments from Cascina Isola Felice with any common workshop mark.

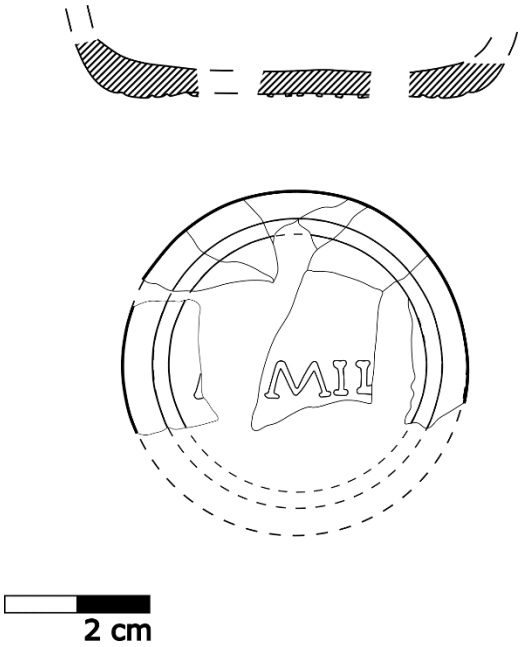


Figure 8. Hypothetical reconstruction of L9 and L13.

At least two lamps recovered in Cascina Isola Felice belong to the later versions of Loeschcke type X, in particular type X-c – L2 and L3. Both of them are characterized by small

[146] BAILEY 1980. P. 278
[147] BAILEY 1980. P. 97. Q 770
[148] DENEAUVE 1969. P. 90. № 1053.
[149] FARNEY 2008. P. 246

disks, irregular shoulders, poorly molded rims, and pinkish gray coarse clay with numerous inclusions. However, the rim of lamp L3 is less prominent, it has only 2 lugs and thicker walls, which may indicate its later or lower quality production compared to L2. Notably, lamps of this type are quite common in the region, having multiple parallels found in Tortona and Casteggio as well as in the neighboring Transpadana, in Vigevano and Milan.[150]

Other base fragments, L4 and L16 that were recovered in Cascina Isola Felice are problematic to classify. Fragment L4 from a layer US 5803, one of the fillings of Late Antiquity pits, is a moldmade, concaved, characterized by a yellowish-brown coarse clay, that was typical of late *Firmalampen* production, therefore, its belonging to this group can be hypothesized. Two fragments named L16 recovered in layer US 305 may be identified as the bottom parts of one or two different nozzles due to their particularly curved shape. They are made of the same red unslipped purified clay as other Early Imperial *Firmalampen* from Cascina Isola Felice, however, cannot be clearly identified as fragments of lamps of any particular type.

[150] ANTICO GALLINA 1986. № 47; TIBILETTI 2011. Tav. XXII.5-6. INVERNIZZI 2016. Cat. № 81; FEDELI ET AL. 2023. № 5, 6, 12.

V.2. Interpretation of the context

Lamp fragments at Cascina Isola Felice have been found in several contexts that vary in character and chronology. Fragment L1 of a *Warzenlampe,* dated to mid-1st century BCE – mid-1st century CE, is among one of the earliest finds on a site and, interestingly, it was found on the surface of the sterile geological level US 5302. This finding more likely belongs to the upper layer, US 5305, which is part of a compacted gravel level at the east side of the building, associated perhaps with the original ground surface of the building or its open portico. Several other finds from the same area allow us to refine the dating of the layer of the gravel (USs 5302 and 5504). There were recovered a fragment of an *olla* with crescent moon decorations, typical of the Cisalpine region between La Tène C and the Early Imperial age, a fragment of black-glazed pottery from the workshops of so-called Campana B type, one base of a *balsamario* spread between the Hellenistic age and mid-1st century BCE. One of the most significant finds in the sense of chronology is a bronze denarius of Mark Antony in a good state of preservation. The obverse is adorned with a galleon on the right and a banner at the prow and scepter, the legend is still perfectly legible and contains the titling [AN]T.AUG – III VIR R.P.C. The reverse features a depiction of the legionary eagle between two military insignia. This type of coin belongs to the emission of 32–31 BCE when Mark Antony was preparing for the battle of Actium and realized the coin issue at marching mint.[151] It is doubtful that all these objects, including the L1 lamp, were deliberately placed in the gravel layer; rather, they appeared there as part of the construction material. Taking this into account, as well as the absence of visible traces of use of this lamp, it is impossible to establish its original function for domestic or any other activity.

Five lamps (L11, L12, L13, L15, and L16) derive from a dark sandy layer with a lot of organic residues such as charcoal in the southwestern part of the building (US 305). Two of the lamps (L11 and L12) were found in a state of relatively good preservation (Fig. 9) and have traces of secondary burning around the wick-hole (L12) or on the inner surface of the nozzle (L11). All the lamps of this layer are attributed, where it is possible, as voluted lamps (L11 and L15) or *Firmalampen* (L12 and L13), demonstrating a relatively cohesive chronology of the mid-1st – early 2nd centuries CE. Besides that, fragments of red-slip and thin-walled pottery as well as a base of a glass *balsamario* were recovered in this layer, which requires further study to understand the character of the layer and materials. One lamp L5, classified as a fragment of a base of likely a *Firmalampen*, was found in the layer of gravel mixed with bricks and pebbles (US 306) in the same area of the building, where numerous fragments of amphorae, purified, and coarse

[151] BATAGLIA, MAINO 2022. P. 132

pottery were located as well. This layer was located along the walls, following the southwestern angle of the building, and the limit between it and the sandy layer of US 305 was not distinguished due to the later intervention of the collapse. Both of these layers may correspond to the living levels of the building, meaning the use of the lamps found there for some type of activity in the Flavian –Trajanic times.

Figure 9. Cascina Isola Felice. Lamp L11 *in situ* (US 305).

A contemporary fragment of a voluted lamp L14 was found in the layer of the collapse (US 307), therefore, it may have been replaced by a collapse from some of the layers below. The same must have happened to the fragmented *Firmalampen* L6, which was found in a superficial layer of modern activity (US 301).

Five exemplars of lamps (L3, L7, L8, L9, L10) belonged to the grey silty-clayish layer (USs 5702 and 302), which seemed to cover the whole area of the building and correspond to the abandonment of the site in the Imperial age (USs 5702, 102, 202, 302). Two fragments (L9 and

L10) may be the parts of lamps from the layers below (L13 and L5 respectively). In fact, this gray layer, despite the abundance of finds in it, is not uniform and it appears that the findings in it originate from the layers below: while in the northwestern part of the building (US 202), there are numerous fragments of amphorae and small brick sherds, in the southwestern angle (US 302), at the interface with USs 305 and 306, fragments of lamps, tiles and glass objects are located.

More interesting although is the presence inside this gray layer in the northeastern part of the abovementioned building (US 5702) of a later lamp L2 with traces of secondary burning around the wick-hole. It may have been replaced into the layer from those above, but it may also indicate the use of the surrounding area for habitation between the 3rd and 5th centuries when such lamps of poor quality and coarse material were used. One cannot exclude in this case also the possibility that the layer of earlier abandonment of the site was used as a ground surface for the Late Antiquity activities.

Another group of lamps (L2, L4) from Cascina Isola Felice are dated to the same period of Late Antiquity to the 3rd – 5th centuries CE. Lamp L2 was located in the filling of one of the pits unearthed to the north of the Late Republican building. This filling was characterized by the high presence of faunal and floral residues as well as pottery fragments, indicating the use of this pit as a domestic waste dump. Lamp base L4 originates in layer US 5803 of the same character – it was one of the fillings inside the pit a few meters to the south of the abovementioned one. Among the earliest finds inside these pits is the coin of Marcus Aurelius Probus (276–282), while among the latest are the fragments of glazed and molded coarse-ware pottery, dated to the 4th – 6th centuries CE. Thus, the pits could have been in use between the 3rd and the 6th centuries, indicating the presence of household and domestic activities in the vicinity of the site.

Conclusions

To summarize, the lamps from Cascina Isola Felice morphologically can be divided into three main forms: *Warzenlampen*, voluted lamps, and *Firmalampen* with parallels from other sites in the Oltrepò Pavese, Cisalpine, and further in Italy. Chronologically, though, the lamps fall into two main groups: Late Republican – Early Imperial (from the mid-1st century BCE to the beginning of the 2nd century CE) and Late Antique (from the 3rd to the 5th centuries CE). The chronological gap between these two groups corresponds to the time of non-occupation of the studied site. As it has been seen and confirmed by data provided by the studies of lamps, the site of Cascina Isola Felice was established in the period between the Late Republican and Augustan era, likely in the 1st century BCE, predating the nearby Cascina Boarezza, which was founded in the early Imperial period but, perhaps, being contemporaneous with the early phases of Cascina Pizzone. During the early Imperial era, the Late Republican building excavated in Cascina Isola Felice collapsed and was eventually abandoned, though it saw partial reoccupation during Late Antiquity, between the late 3rd and 6th centuries CE.

Speaking of the functional use of the found lamps, only three of them (L3, L11, and L12) clearly show traces of secondary burning, which may be explained by their better state of preservation, especially in the area of the wick-hole. However, lamps L2 and L4 may have been used for domestic purposes and then dumped inside the pits after being broken as they were found together with other domestic waste in the dump pits. It is more problematic to be this certain about the purpose of other lamps found on the site because their surrounding context requires further investigation. However, if the domestic or storing function of the Late Republican building in Cascina Isola Felice may be assumed, it would not be unexpected for lamps to be found there. It is quite common to find the lamps in the storage areas where they were directly used for lightning or stored during periods of disuse.[152] However, the cult, votive, or apotropaic functions of the lamps should not be excluded until obtaining a broader understanding of the other categories of findings in Cascina Isola Felice, especially because, as it was mentioned before, in some cases these functions are difficult to differentiate even in a clearly religious context.

[152] MOULLOU 2015. P. 204–205

Bibliography

ANTICO GALINA 1986

M. Antico Galina. *Lucerne a canale con firma da Dertona*, in *Aevum*, gennaio-aprile 1986, Anno 60, Fasc. 1, gennaio-aprile 1986, pp. 50–81.

APULEIUS

Apuleius. *The Golden Ass*. Kenney E. J. (Trans.). London: Penguin Books, 2004.

ARIOLI 2020

L. Arioli. *Roman glass lamps. Fragmented information in archaeological literature and a failed hybridisation in ancient material culture,* in Tagliani M., Canciani V., Tommasi Fr. (Eds.) *Humanities: approaches, contamination and perspectives. Conference proceedings*, Verona 17-18th October 2019, pp. 87–98.

BACCHETTA 2003

A. Bacchetta. *Edilizia rurale romana. Materiali e tecniche costruttive nella Pianura Padana. II secolo a.C.-IV secolo d.C.* Flos Italiae. Documenti di archeologia della Cisalpina romana, 4, Firenze 2003.

BAILEY 1975

D. M. Bailey. *A catalogue of the Lamps in the British Museum*. London, British Museum Publications Ltd. Vol. I. 1975.

BAILEY 1980

D. M. Bailey. *A catalogue of the Lamps in the British Museum*. London, British Museum Publications Ltd. Vol. II. 1980.

BALESTRAZZI 1988

E. di Filippo Balestrazzi. *Lucerne del Museo di Aquileia. Lucerne Romane di Età Repubblicana ed Imperiale*. Associazione Nazionale per Aquileia. Vol. I–II.

BATTAGLIA 2018

M. Battaglia. *I paesaggi invisibili della Valle Staffora: nuove prospettive*, in Migliario E., Prontera Fr. (Eds.) *Le Alpi degli antichi: rappresentazioni, itinerari, risorse*. Estratto da Geographia Antiqua 27. Firenze: Leo S. Olschki Editore, 2018, pp. 77–85.

BATTAGLIA 2024.

M. Battaglia. *Le Indagini sul Terreno,* in Maggi S., Battaglia M. (Eds.). *Piccola Guida Archeologica della Valle Staffora.* Pavia: Univers Edtition. 2024, pp. 54–70.

BATTAGLIA, MAINO 2022

M. Battaglia, E. V. Maino. *Rivanazzano Terme: il sito plurifase di Cashina Isola Felice,* in Maggi S., Battaglia M., Zamboni L. (eds.) *Edifici rustici romani tra Pianura e Appen-*

nino. Stato della ricerca. Atti del Convengo di Studi: Rivanazzano Terme, Casteggio (PV), 10–11 settembre 2021. Sesto Fiorentino (FI), 2022, pp. 127–140.

BEAUNE 2002

S. A. de. Beaune. *Paleolithic Lamps and Their Specialization: A Hypothesis*. *Bulletin of Primitive Technology*, 23, 2002, pp. 60–67.

BELLORI 1704

G. P. Bellori. *Le antiche lucerne sepolcrali figurate raccolte dalle caue sotteranee e grotte di Roma, nelle quali si contengono molte erudite memorie*. Roma : [nella stamperia di Domenico de Rossi], 1704.

BRONEER 1930

O. Broneer. *Corinth. Results of Excavations conducted by the American School of Classical Studies at Athens*. Vol. IV, Part II: Terracotta Lamps. Harvard University Press, 1930.

BUCHI 1975

E. Buchi. *Lucerne del Museo di Aquileia*. I*, Lucerne Romane con Marchio di Fabbrica.* Associazione nazionale per Aquileia, Aquileia, 1975.

BUSSIÈRE WOHL 2017

J. Bussière, B. L. Wohl. *Ancient Lamps in the J. Paul Getty Museum*. Los Angeles: Getty Publications, 2017.

BUTZER 1980

K. W. Butzer. Context in Archaeology: an Alternative Perspective. Journal of Field Archaeology. Vol. 7, 1980, pp. 417–422.

CAMPBELL, GRIFFITH 2013

M. L. Campbell, A. B. Griffith. *Greek and Roman Oil Lamps in Canterbury Museum: Casting a Light on Ancient Life. Records of the Canterbury Museum*, vol. 27, 2013, pp. 19–46.

CAPELLINI, CORTI 2020

S. Capellini, C. Corti. *Fiat Lux: Le Lucerne del Museo "Gaetano Chierici" di Paletnologia di Reggio Emilia.* Deputazione di Storia Patria. Fonti e studi – 9. Reggio Emilia, 2020.

CECI 2005

M. Ceci. *Le lucerne*, in D. Gandolfi (ed.). *La ceramica e i materiali di età romana: classi, produzioni, commerci e consumi*, Bordighera, Istituto internazionale di studi liguri, 2005, pp. 311–324.

CORTI 2024

E. Corti. *Il Territorio Oltrepadano nelle Fonti Antiche.* in Maggi S., Battaglia M. (Eds.). Piccola Guida Archeologica della Valle Staffora. Pavia: Univers Edtition. 2024, pp. 30–35.

DEBATTISTI 1996

F. Debattisti. *Storia di Varzi. Il Borgo e la Valle Staffora dalle origini al Medioevo.* Varzi: Guardamagna Editori, 1996.

DELLA PORTA 1998

C. Della Porta. *Terra sigillata di età alto e medio imperiale*, in *Olcese,* 1998, pp. 81–124.

DELLUC, DELLUC 1979

B. Delluc, G. Delluc. *L'éclairage*. In Leroi-Gourhan, A., Allain, J. (Eds.) *Lascaux inconnu.* CNRS, Paris, 1979, pp. 121–142.

DENEAUVE 1969

J. Deneauve. *Lampes de Carthage*. Paris : Éditions du Centre National de la Recherche Scientifique, 1969.

DOBREVA, ZAGO 2021

D. Dobreva, S. Zago. *Le Lucerne Fittili*, in Bonetto J., Mazzocchin S., Dobreva D. (eds.). *Aquileia. Fondi Cossar. Tomo 2. L'instrumentum, il materiale vitreo, metallico e gli elementi architettonico-decorativi.* Roma, 2021, pp. 515–618.

DOLCI 2001

M. Dolci. *Iría e la centuriazione del suo territorio,* in Quilici L., Quilici Gigli S. (Eds.). *Urbanizzazione delle campagne nell'Italia Antica. Atlante Temático di Topografia Antica.* Atta 10. Roma, "L'Erma" di Bretschneider, 2001, pp. 21–32.

DRESSEL 1899

H. Dressel. *Lucernae formae*, *CIL* XV, Inscriptiones Urbis Romae Latinae. Instrumentum domesticum, lam. III, Berlin, 1899.

FARNEY 2008

G. D. Farney. *The Mamilii, Mercury and the limites: Aristocratic Genealogy and Political Conflict in the Roman Republic*. *Athenaeum* 96, 2008, pp. 249–258.

FEDELI ET AL. 2023

A. M. Fedeli, C. Gastaldi, E. Grassi (Eds.). *Lux in Arena: le Lucerne e il Mondo dei Gladiatori.* Publicazione in occasione della mostra allestita presso Antiquarium 'Alda Levi' – Milano. Milano: SAP Societa Archeologica, 2023.

FERRARESI 2000

A. Ferraresi. *Le lucerne fittili delle collezioni archeologiche del Palazzo Ducale di Mantova.* Firenze: Leo S. Olschki, 2000.

FISCHBACH 1896

O. Fischbach. *Römische lampen aus Poetovio im Besitze des steiermärkischen landesmuseums Joanneum,* in *Mittheilungen des historischen Vereines fur Steiermark,* XLIV, 1896, pp. 3–64.

GABBA 1984

E. Gabba. *Ticinum: dalle origini alla fine del 3. sec. d.C.*, in *Storia di Pavia*. 1. vol.: L'età antica: a cura della Banca del Monte di Pavia. Pavia, 1984, pp. 205–248.

GAMBARO, MORDEGLIA 2016

L. Gambaro, L. Mordeglia. *Indicatori di produzione cerámica in área ligure tra seconda eta del Ferro e Romanizzazione. Alcuni esempi tra Liguria, Piemonte e Lombardia,* in *Archeologia delle produzioni ceramiche nel mondo antico*. *Spazi, prodotti, strumenti e tecniche.* 2016, pp. 109–127.

GOETHERT-POLASCHEK 1985

K. Goethert-Polaschek. *Katalog der römischen Lampen des Reinischen Landesmuseums trier. Bildlampen und sonderformen*. Mainz am Rhein, 1985.

GORODZOV 1933

V. A. Gorodzov. *The Typological Method in Archaeology*. *American Anthropologist*, New Series, Vol. 35, 1, 1933, pp. 55–102.

GRANCHELLI 1997

L. Granchelli, G. Groppelli, A. Rovida. *Lucerne romane della collezione Pisani Dossi.* Vercelli: Edizioni del Gruppo Archaeologico Vercellese, 1997.

GRASSI 2022

E. Grassi. *Il territorio dell'Oltrepo pavese in eta romana. Aggiornamenti e prospettive,* in Maggi S., Battaglia M., Zamboni L. (eds.) *Edifici rustici romani tra Pianura e Appennino. Stato della ricerca.* Atti del Convengo di Studi: Rivanazzano Terme, Casteggio (PV), 10–11 settembre 2021. Sesto Fiorentino (FI), 2022, pp. 101–112.

GONÇALVES ET AL. 2008.

A. Gonçalves, L. Magalhes, J. Moura, A. Chalmers. *Accurate Modelling of Roman Lamps in Conimbriga using High Dynamic Range*, in *Proceedings of VAST*, Eurographics, 2008.

GUZZON, RADAELLI 2022

A. Guzzon, L. Radaelli. *Il popolamento rurale oltrepadano. Análisis insediativa e inquadramento della cultura materiale*, in Maggi S., Battaglia M., Zamboni L. (eds.) *Edifici rustici romani tra Pianura e Appennino. Stato della ricerca*. Atti del Convengo di Studi:

Rivanazzano Terme, Casteggio (PV), 10–11 settembre 2021. Sesto Fiorentino (FI), 2022, pp. 141–159.

HERON ET AL. 2013.

C. Heron, S. Andersen, A. Fischer, A. Glykou, S. Hartz, H. Saul, V. Steele, O. Craig. *Illuminating the late mesolithic: residue analysis of 'blubber' lamps from northern Europe*. *Antiquity*, 87, 2013, pp. 178–188.

INVERNIZZI 2011

R. Invernizzi. *Le testimonianze archaeologiche di Clastidium: Elementi per la Ricostruzione del Sito*. In Invernizzi R. (Ed.) *...Et in memoriam eorum : la necropoli romana dell'area Pleba di Casteggio*. Casteggio: Comune di Casteggio, 2011, pp. 15–28.

INVERNIZZI 2012

R. Invernizzi. *I bronzi dallo scavo di via Anselmi a Casteggio*. Con un contributo di Valentina Dezza. Casteggio (PV), 2012.

INVERNIZZI 2016

R. Invernizzi (ed.). *Luci sul Passato: lucerne Romane della Lomellina.* Catalogo della mostra. Vigevano, 2016.

INVERNIZZI 2019

R. Invernizzi. *Conoscere per tutelare: un aggiornamento sulle indagini archeologiche in Oltrepò*, in *Lusuardi Siena*, Sironi, 2019, pp. 15–22.

Itineraria romana 1929

Itineraria romana. Itineraria Antonini Augusti et Burdigalense, ed. Otto Cuntz, in aedibus B. G. Teubneri, Lipsiae, 1929.

JASHEMSKI 1977

W. F. Jashemski. *The Excavation of a Shop-House Garden at Pompeii* (I. XX. 5). *American Journal of Archaeology*, 81(2), 1977, pp. 217–227.

KIMPE ET AL. 2001

K. Kimpe, P. A. Jacobs, M. Wealkens. *Analysis of oil used in late Roman oil lamps with different mass spectrometric techniques revealed the presence of predominantly olive oil together with traces of animal fat*. *Journal of Chromatography A*, 2001, 937, pp. 87–95.

LAMBOGLIA 1952

N. Lamboglia. *Tipologia e cronologia delle lucerne romane, classificazione Dressel. Apuntes sobra cronologia ceramica*, in *Publicaciones del Seminario de Arquelogia y Numismatica aragonesas*, III, 1952, pp. 87–89.

LAPP, NICOLI 2014

E. Lapp, J. Nicoli. *Exploring 3D modeling, fingerprint extraction, and other scanning applications for ancient clay oil lamps. Digital Applications in Archaeology and Cultural Heritage*, 2014, 1, pp. 34–44.

LICHTENBERGER, MORAN 2018

A. Lichtenberger, K. S. Moran. *Ancient fingerprints from Beit Nattif: studying Late Roman clay impressions on oil lamps and figurines*. Antiquity Publications Ltd, 2018, pp. 1–6.

LIVY

Livy. *From the Founding of the City*. Canon Roberts R. (Trans.). London: J. M. Dent & Sons, 1905.

LOESCHCKE 1919

S. Loeschcke. *Lampen aus Vindonissa. Ein Beitrag zur Geschichte von Vindonissa und des antiken Beleuchtungswesens*. Zurich, 1919.

MAGGI ET AL. 2017

S. Maggi, B. Peverelli, M. Battaglia. *Segni e material della memoria: per la musealizzazione del paesaggio storico della Valle Staffora* (PV). *SIBERIUM*, 2017, 31, pp. 105–119.

Milan, Rivanazzano Terme 2020

Milan, SABAP Archives, Excavation Report, Rivanazzano Terme 2020.

Milan, Rivanazzano Terme 2021

Milan, SABAP Archives, Excavation Report, Rivanazzano Terme 2021.

Milan, Rivanazzano Terme 2022

Milan, SABAP Archives, Excavation Report, Rivanazzano Terme 2022.

Milan, Rivanazzano Terme 2023

Milan, SABAP Archives, Excavation Report, Rivanazzano Terme 2023.

Milan, Rivanazzano Terme 2024

Milan, SABAP Archives, Excavation Report, Rivanazzano Terme 2024.

MOULLOU 2015

D. Moullou. *Lighting Night-Time Activities in Antiquity,* in Micheli M. E., Santucci A. (Eds.). *Lumina. Convegno Internazionale di Studi*. Urbino 5-7 giugno 2013. Pisa: Edizioni ETS, 2015, pp. 199–212.

PASTORINO 2009

A. M. Pastorino. *La collezione archeologica di Alexander Wolf al Museo Civico di Archeologia Ligure (Genova-Pegli),* in Lenardo L. di (ed.). *Alexander Wolf tra Piemonte e*

Friuli: archeologia, linguistica, storia e cultura nel secondo Ottocento. Udine: Forum, 2009, pp. 97–112.

PEARCE 2003

M. Pearce. *Tra il fiume e la montagna: Voghera e il Vogherese prima di Roma,* in Cau E., Paoletti P., Settia A. A. (Eds.). *Storia di Voghera. I. Dalla preistoria all'età viscontea*. Voghera: Edizioni Oltrepò, 2003, pp. 39–52.

PELLEGRINI 2024

L. Pellegrini. *Geologia e geomorfologia della Valle Staffora,* in Maggi S., Battaglia M. (Eds.) *Piccola guida archeologica della Valle Staffora*. Pavia: Univers, 2024, pp. 19–29.

PELLEGRINI ET AL. 2022

L. Pellegrini, C. Perotti, Fr. Zucca. *La Valle Staffora: aspetti geologici e geomorfologici,* in Maggi S., Battaglia M., Zamboni L. (eds.) *Edifici rustici romani tra Pianura e Appennino. Stato della ricerca.* Atti del Convengo di Studi: Rivanazzano Terme, Casteggio (PV), 10–11 settembre 2021. Sesto Fiorentino (FI), 2022, pp. 87–100.

PLINY THE ELDER

Pliny the Elder. *The Natural History*. Bostock J., M.D., F.R.S. H.T. Riley, Esq., B.A. London: Taylor and Francis, Red Lion Court, Fleet Street, 1855.

PLUTARCH

Plutarch. *The Parallel Lives*. Perrin B. (Trans.). Loeb Classical Library, Vol. V. Harvard University Press, 1917.

POLYBIUS

Polybius. The Histories. Paton W. R. (Trans.). Loeb Classical Library, Vol. I. Harvard University Press, 1922.

PROVOOST 1976

A. Provoost. *Les Lampes Antiques en Terre Cuite: Introduction et Essai de Typologie Générale avec des Détails Concernant les Lampes Trouvées en Italie*. *L'Antiquité Classique*, T. 45, Fasc. 1, 1976, pp. 5–39.

Sena Chiesa 1980

G. Sena Chiesa. *Lucerne a becco angolare da Angera*, in *Studi in onore di F. Rittatore Vonwiller II*. Como, 1980, pp. 459–485.

TARANTINI ET AL. 2011

M. Tarantini, A. Galiberti, F. Mazzarocchi. *Prehistoric Flint mines of the Gargano: an overview*. Proceedings of the 2nd International Conference of the UISPP Commission on Flint Mining in Pre- and Protohistoric Times (Madrid, 14-17 October 2009). Oxford: Archaeopress, 2011, pp. 253–263.

TEJO 2023

B. Tejo. *A Typological and Chemical Analysis of Roman Lamps from Poggio del Molino.* A master's thesis submitted to the Graduate Faculty in Liberal Studies in partial fulfillment of the requirements for the degree of Master of Arts, The City University of New York, 2023.

TIBILETTI 2011

T. Tibiletti. *Le lucerne,* in Invernizzi R. (Ed.) *...Et in memoriam eorum : la necropoli romana dell'area Pleba di Casteggio*. Casteggio: Comune di Casteggio, 2011, pp. 199–212.

WALDHAUER 1914

O. Waldhauer. *Die Antiken Tonlampen*. St.-Petersburg, 1914.

WALTERS 1914

H. B. Walters. *Catalogue of the Greek and Roman Lamps in the British Museum*. London, 1914.

ZAMBONI 2022

L. Zamboni. *L'insediamento rustico di Rivanazzano Terme: Cascina Boarezza*. In Maggi S., Battaglia M., Zamboni L. (eds.) *Edifici rustici romani tra Pianura e Appennino. Stato della ricerca*. Atti del Convengo di Studi: Rivanazzano Terme, Casteggio (PV), 10–11 settembre 2021. Sesto Fiorentino (FI), 2022, pp. 113–126.