Abstract: In the field of lychnological studies, recent decades of research have offered a huge number of monographs presenting thousands of lamps. Despite this exponentially growing body of data, iconographical studies are in regress compared to other themes reaching beyond simple corpus catalogs. This paper focuses on an interesting yet unstudied Roman discus-lamp motif: the equid-driven mill. Among the representations one can easily distinguish mills driven by a donkey (mola asinaria) and by a horse (mola jumentaria). The practically exhaustive catalog of lamps adorned with those two representations is followed by a discussion of the geographical and chronological frame for each of the types.

Keywords: Roman lamps, iconography, equid-driven mill scene, mola asinaria, mola jumentaria

Scenes relating to human activities, regardless of their nature, are just as numerous as divine representations in the Mediterranean world. They were another great—and inexhaustible—source of inspiration, for artists as well as artisans. Everyday objects, whether luxurious or not, coming from archaeological excavations, prove that this non-religious artistic expression also had a privileged place in pictorial compositions. The making of clay vessels and more particularly terracotta lamps does not escape this rule.
Acknowledgments

I would like to thank Hans Timmermans of the Het Valkhof Museum in Nijmegen, Julien Cosnuau of the Besançon Museum and Pierre Caussade, PhD student at the University of Bordeaux 3, for their collaboration.

Vignette: *Mola asinaria* of the "Pompeii" type (After Picavet, Fronteau, and Boyer 2011: 191, Fig. 25)
Indeed, from a very early date, from the Augustan period onward, these supports were chosen to bear a huge variety and diversity of decorative themes which, once manufactured, were massively exported from Italy to the newly Romanized populations. These new images, adopted by some inhabitants, are rightly considered as a tangible sign of Romanization.

However, if lychnology in recent years has witnessed the publication of many monographs dedicated to lighting devices, sometimes too generic for the present author’s taste, only a few studies have been specifically devoted to iconographic subjects or to a set of motifs used by a single potter or workshop. Some examples in point include: Bonnet and Delplace 1983; Bonnet 1988; Bémont 1999; Tran Tam Tinh 1990; Podvin 2003; Rivet 2004; Dardenay 2005; Podvin 2005; Chrzanovski 2016.

Keeping this in mind, it is deemed wise to present this short study on a rather banal subject: representations of “Pompeii-type” grain millstones [Fig. 1].

Bakeries and other points of sale are known to have played a key role, both economically and socially, in the neighborhoods of ancient cities, especially when the fundamental role of bread is considered, not only as actual food, but a true symbol of nourishment in Roman times.¹ For this

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¹ See on this subject the Pistrina project on bakeries in Roman Italy, initiated by Nicolas Monteix, EFR.

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Fig. 1. Grain wheel mounted on a masonry podium from the bakery (Pistrina) VI,3 in Pompeii; right, details of the mill (Photo C. Malagoli)
purpose, all the known representations from the northwestern provinces of the Roman Empire (including the Mediterranean basin) have been identified, spanning a chronological period from the 1st to the 2nd century AD [Fig. 2]. The data collected are partly the result of discoveries made in the 19th century and partly archaeological excavations carried out in the course of the 20th century. In many cases, the stratigraphic contexts are more or less documented. Also included are artifacts from different European museums, sometimes unpublished. The corpus is currently limited to a dozen specimens which may not seem much, but enough for two distinct subjects to be identified. It was also possible to propose a chronological range for their dissemination, to codify the various stylistic aspects and to highlight, with all due reservations, the pertinent cultural areas they belonged to. In this way, the representations of the “Pompeii-type” grain wheels can be subdivided as follows: a large biconical mill with a donkey that turns it corresponding to the *mola asinaria* (type I)² and the same mill shape but with a horse to provide traction, the *mola jumentaria* (type II).

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2 See the reconstruction of a *mola asinaria* in Picavet, Fronteau, and Boyer 2011: 191, Fig. 25.
**TYPE I  MOLA ASINARIA**

In the background, a donkey stands in left profile, yoked by the neck. In the foreground, there is a peripheral animal-traction wheel of the “Pompeii” type: a *catillus* (upper rotating stone) surmounted by a frame (made of wood) with two ears in the middle part, set up on a *meta* (lower fixed stone) of concave shape.

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<tr>
<td><strong>No. 1</strong>&lt;br&gt;[Fig. 3]</td>
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<td><strong>Form:</strong> Loeschcke IV</td>
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| **No. 2**<br>[Fig. 3] | **Provenance/context/collection:** Villeneuve-sur-Lot (31), Eysses neighborhood / excavation / Archaeological Museum of Eysses (inventory number not specified) | **Dating:** AD 40–100 (Bailey 1980) Contextual dating not specified |
| **Form:** Undetermined | **Description:** Decorated concave discus | **Fabric:** Beige to slightly pinkish beige clay matt brown-red slip<br>**Dimensions:** L. >4.9 cm<br>**State of preservation:** Fragment | **Reference:** Unpublished |

<p>| <strong>No. 3</strong>&lt;br&gt;[Fig. 3] | <strong>Provenance/context/collection:</strong> Lyon, la Butte (69) / isolated find / Musée gallo-romain de la ville de Lyon, COM.567 | <strong>Dating:</strong> AD 40–100 (Bailey 1980) Contextual dating not specified |
| <strong>Form:</strong> Loeschcke IV | <strong>Description:</strong> Lamp, round nozzle flanked by double volutes, decorated concave discus, flat shoulder (type L.3a). Truncated cone-shaped reservoir. Flat bottom surrounded by a groove. | <strong>Fabric:</strong> Light beige clay, orange-brown slip&lt;br&gt;<strong>Dimensions:</strong> L. 10.2; W. discus 7.2 cm&lt;br&gt;<strong>State of preservation:</strong> Complete except for small part broken from the right side of the discus | <strong>Reference:</strong> Bertrand et al. 1998: 19, 38, Pl. 6, No. 15 |</p>
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<th>No.</th>
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<tr>
<td>4</td>
<td>Provenance/context/collection: Bilbilis (Spain) / excavation / Calatayud Municipal Museum (inventory number not specified)</td>
<td>AD 40–100 (Bailey 1980)</td>
<td>Undetermined</td>
<td>Decorated concave discus, bordered by a flat shoulder (type L.3a)</td>
<td>Clay and slip not specified</td>
<td>L. &gt;3.75 cm</td>
<td>Fragment</td>
<td>Amaré Tafalla 1988: 34, 55, Pl. VII, No. 44</td>
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<tr>
<td>5</td>
<td>Provenance/context/collection: London (United Kingdom), St Saviour’s Southwark (1837) / isolated find / British Museum, 1856.0701.339</td>
<td>AD 40–100 (Bailey 1980)</td>
<td>Loeschcke IV</td>
<td>Decorated, concave medallion lamp, bordered by a flat shoulder (type L.3a Var.)</td>
<td>Light reddish brown clay, reddish brown slip</td>
<td>L. &gt;7.1 cm</td>
<td>Three-quarters of the discus and the upper part of the lamp</td>
<td>Walters 1914: 105, No. 689; Bailey 1988: Q 1508; Comment: Base of left volute seen in the photograph archived at the British Museum, contrary to the drawing made for the Walters catalog</td>
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<tr>
<td>6</td>
<td>Provenance/context/collection: London (United Kingdom) / isolated find / British Museum, 1856.0701.338</td>
<td>AD 40–100 (Bailey 1980)</td>
<td>Loeschcke IV</td>
<td>Lamp with round nozzle, flanked by double volutes, decorated concave discus, surrounded by flat shoulder (type L.3a Var.). Truncated cone-shaped reservoir. Flat bottom surrounded by a groove.</td>
<td>Light beige clay, orange-brown slip</td>
<td>L. &gt;6.1; W. discus 5.3; H. 1.92 cm</td>
<td>Intact, missing nozzle</td>
<td>Walters 1914: 105, No. 688; Bailey 1988: Q 1522</td>
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<td>7</td>
<td>Provenance/context/collection: Nijmegen (Netherlands) / isolated find / Museum Het Valkhof of Nijmegen, XIX.a.123</td>
<td>AD 40–100 (Bailey 1980)</td>
<td>Loeschcke IV</td>
<td>Lamp with round nozzle, flanked by double volutes, decorated concave discus, surrounded by a flat shoulder (type L.3a Var.). Truncated cone-shaped reservoir. Flat bottom surrounded by a groove.</td>
<td>Light beige clay, orange-brown slip</td>
<td>L. 10.8; W. discus 7.5 cm</td>
<td>Intact</td>
<td>Evelein 1928: 17, No. 5</td>
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Fig. 3. Overview of known lamps with representations of the *mola asinaria* type of grain millstones (Processing C. Malagoli; for sources, see the entries in the catalog)
**TYPE II  MOLA JUMENTARIA**

On the left, a horse standing in left profile, its head turned back, its right front leg raised and bent at the knee. Ground line under the animal. To the right, a peripheral animal-traction wheel of the “Pompeii” type: catillus surmounted by a frame (made of wood) with two ears in the middle part, set up on a meta of concave shape.

**CATALOG**

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<th>No. 8</th>
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<td>[Fig. 4]</td>
<td>Bilbilis (Spain) / excavation / Calatayud Municipal Museum (inventory number not specified)</td>
<td>AD 40–100 (Bailey 1980)</td>
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*Form:* Undetermined  
*Description:* Decorated concave discus, bordered by a flat shoulder (type L. 3a)  
*Fabric:* Clay and slip not specified  
*Dimensions:* L. >3.75 cm  
*State of preservation:* Fragment

*Reference:* Amaré Tafalla 1988: 34, 55, Pl. VII, No. 44

Fig. 4. Overview of known lamps with representations of the *mola jumentaria* type of grain millstones (Processing C. Malagoli, for sources, see the entries in the catalog)
No. 9  
[Fig. 4]  
Provenance/context/collection: Cartagena (Spain) / excavation / Municipal Archaeological Museum of Cartagena, 2.836  
Dating: AD 40–100 (Bailey 1980)  
Contextual dating not specified  

**Form:** Undetermined  
**Description:** Decorated concave discus  
**Fabric:** Clay and slip not specified  
**Dimensions:** Not given  
**State of preservation:** Fragment  

**Reference:** Amante Sánchez 1988: 228, 227, Pl. IV, No. 72  
**Comment:** Assigned to type II, based on a lamp found in Carthage

No. 10  
[Fig. 4]  
Provenance/context/collection: Carthage (Tunisia), necropolis of the Officiales / excavation / National Museum of Carthage, 46.206  
Dating: AD 40–100 (Bailey 1980)  
No contextual dating  

**Form:** Undetermined  
**Description:** Lamp with round nozzle, flanked by double volutes, decorated concave discus, surrounded by a flat shoulder (type L.3a). Truncated cone-shaped reservoir. Flat bottom surrounded by a groove.  
**Fabric:** Matt brown clay, red slip  
**Dimensions:** 12.9; W. discus 9.3; H. 3.2 cm  
**State of preservation:** Complete  

**Reference:** Amante Sánchez 1988: 228, 227, Pl. IV, No. 72  
**Comment:** Deneauve 1974: Pl. LI, No. 496

**DATE, TYPE AND PRODUCTION SOURCE**

According to the typology of Siegfried Loeschcke (1919), the lamp form that the potters adorned with representations of the *mola asinaria* and *mola jumentaria* corresponds to the Loeschcke IV type with a flat shoulder ornamented with oblique moldings of type L.3a or L.3a Var. (=Bailey B2 [Bailey 1980]; Leibundgut XII [Leibundgut 1977]; Goethert-Polaschek Xb [Goethert-Polaschek 1985]). Quite remarkably, this motif is found only on this particular type of lamp; a review of most European catalogs did not reveal its presence on any other types from the imperial period. Consequently, these two iconographic subjects cannot be dated before the middle or second half of the 1st century AD, setting a chronological frame limited to the years AD 40–100. At least two lamps were produced in Gallo-Roman workshops, known for their manufacturing of terracotta lamps among others, namely Montans and Lyon [Cat. 2–3; see Fig. 3]. Indeed, the technical aspect of the fragment found at Eysses (slightly pinkish beige clay coated with a matt brown-red slip) clearly indicates that it comes from the Montans workshop (Bergès 1989: 25–26). In the case of Lyon, the lamp comes from the old col-
lection of the Museum of Gallo-Roman Civilization (Comarmond collection), yet it is attributable to the Atelier de la Butte, quai Saint-Vincent (Bertrand et al. 1998: 12). As a reminder, the Montans lamps were distributed mainly in AD 40–100/110 (Bergès 1989: 56), as were those of Lyon (Bertrand et al. 1998: 12).

Thus, for these two specimens it can be said that they were produced locally using the overmolding technique (presence of bubbles in the molding and hence on the decoration of the lamp); for the others, it is more difficult to propose a provenance. The Besançon lamp with yellow clay and large discus (7.4 cm in diameter) is very similar to the Lyon products [Cat. 1; see Fig. 3]. In his recent doctoral thesis, the author has shown multiple links between the La Butte workshop and Besançon’s urban and territorial consumption sites, and even beyond, as is the case, for example, of the town of Mandeure (Malagoli 2016: 531, Fig. 203).

One of the two fragments from Augusta Bilbilis [Cat. 4; see Fig. 3], located northwards of the current city of Calatayud (province of Zaragoza), seems very close to the lamp discovered at Eysses in Nouvelle-Aquitaine (see below). If the attribution to the Montans workshop for the latter piece is correct, it can be assumed that the Spanish piece may be of the same origin. In favor of this idea are some terra sigillata vessels made in Montans and reported from excavations in the Duero valley (Martin 1996: 50), which begins its course in the Iberian mountain range, in the province of Sória, to the west of the ancient city of Bilbilis. In the case of both the London lamps [Cat. 5–6; Fig. 3], it seems that they have a common origin (local production?) because of their similarities (manufacturing defects, same view of the motif). As for the Nijmegen piece [Cat. 7; Fig. 3] it appears to be unique, if only for merely stylistic reasons.

Finally, the only complete lamp of Type II [Cat. 10; see Fig. 4] suggests that the model was of Italic origin insofar as the length of the lamp and the diameter of the discus are much larger than lamps of provincial origin. The same is true of the freshness and quality of the representations, further accentuating this significant difference.

**CODIFICATION OF MOTIFS**

The two iconographic subjects were classified not according to the support and technique of execution, which here are relatively similar, but according to certain decorative specificities used by the potters, probably reflecting external influences. Indeed, characteroscopy, which is a method of comparative analysis, has identified different decorative renderings of both the catillus and the meta (Picavet, Fronteau, and Boyer 2011: 169). The following combinations of features have been identified [Fig. 5, axes of the matrix]:

**CATILLUS SERIES**
- C1: Pompeian catillus with two lateral ears, the lower part emphasized with two horizontal lines;
- C2: same shape of catillus but with a tri-
angle located in the upper part and three horizontal lines in the lower part;
- C3: same shape of *catillus* but with two short lines intersecting in the upper part and three horizontal lines in the lower part;
- C4: same shape of *catillus* but with two long lines intersecting over most of the grinding wheel and a series of vertical rays in the lower part.

**META SERIES**
- M1: *meta* of concave shape with smooth surface;
- M2: same shape of *meta* with a smooth surface and upper section decorated with a wavy band;
- M3: same shape of *meta* with a surface covered with small cup-shaped motifs.

By crossing the two series and decom-

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Fig. 5. Matrix of the associations between the *catillus* and *meta* series (DAO | C. Malagoli)
posing each of the motifs according to their geographical origin, it was possible to sketch filiation lines despite the low number of artifacts analyzed [see Fig. 5].

Within this framework, it appears that the pair C1–M1 is relatively isolated, which suggests that this subject, specific to the La Butte workshop, was confined solely to the city of Lyon, which confers on it a kind of local specificity. However, if we consider the diffusion networks known for the production made in Lyon, both in Switzerland, the Rhine limes and the Rhône valley, we are entitled to wonder about this reduced trade, which escapes all logic (Ayala 1990: 203, Fig. 17, 205, Fig. 18; Hanotte 2003: 494; Martin et al. 2016: 92, Fig. 11). Consequently, this impression of isolation can be explained by the either incomplete or not easy to use archaeological documentation. The other three pairs clearly show repartitions confined to specific geographical areas. Thus, the C2–M1 association is currently limited to the south of England and the lower Rhine valley, while the C3–M2 pair developed in southwestern France and perhaps even as far as northern Spain. Finally, the C4–M3 association, which is predominant, covers an extremely wide area of diffusion, extending from the Doubs valley through the Iberian Peninsula to northern Tunisia [Fig. 6]. This suggests extremely strong trade relations that only a major production center could develop. In the author’s

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Fig. 6. Dissemination of the different catillus and meta associations (DAO | C. Malagoli)

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3 This despite the extensive museum survey, the diffusion of the motif is currently believed to be relatively limited.
opinion, it could have been in Rome or Ostia, but the absence of finds from Italy does not allow this hypothesis to be supported at present.

Finally, additional comments can be made based on the catalog. First, the Nijmegen lamp. Contrary to the canonical posture of the donkey in the background of the grain wheel, the animal is represented with its front left leg bent, which makes it a totally atypical rendering within Type I. It seems to be a liberty taken by the potter when engraving the animal in the clay mold. Second, the horse illustrated on Type II lamps appears upon closer examination to be inspired by the image of the mythical Pegasus to compose the scene of the *mola marearia* unless, of course, it is the opposite that happened. In any case, there are many parallels here: the orientation of the animal, its right front leg lifted and bent, the other three legs resting on a ground line, and also a braided or twisted tail.

Returning to the geographical distribution of the two motifs, it seems that we are dealing with two relatively well defined cultural zones [Fig. 7]. Type I appears to cover a vast area extending from the south of England to the Rhine Valley, France and northern Spain, while Type II is limited to Spain.

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Fig. 7. Hypothetical distribution areas of types I and II (DAO | C. Malagoli)

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4 The same applies to wrecks of commercial ships from the Imperial period recorded in the Mediterranean, where this iconographic theme appears to be absent from the few studied cargoes.
and North Africa. However, it is more than likely that new lighting devices will come to light and reveal new associations, possibly changing our perception significantly. As a matter of fact, the case of Bilbilis raises many questions that remain unanswered, since it is currently the only site where both motifs were present. Thus, the iconographic similarities mentioned above do not allow a correct individualization, at least for the moment, of the real dimension of the influence of this or that technological group.

**SYNTHESIS AND CONCLUSION**

This work on the imagery of grain wheels has yielded some eloquent results: the identification of two distinct iconographic subjects, a unique lamp shape used to bear them, their distribution over a relatively short period (between AD 40/50 and 100) and their possible respective cultural areas. In addition, the study based on the characterization of the renderings gave an idea of the diversity of the repertoire and recognized some notable differences resulting for most of them from a process of mixing both artisanal innovations and copies from imported lamps. With this in mind, one should remember that at least two lamps came from Lyon and Montans, two well-known pottery workshops of the early Roman Empire. It deserves note that some of the preset observations have been cross-checked on an European territorial level by specialists working on ancient millstones.\(^5\)

As far as the nature of the consumption sites is concerned, it should be noted that the bulk of them correspond to medium and large urban areas, which is logical in this specific case, given the impact that commercial food production areas have on the population. One can imagine that the lamp owner was satisfied to see something he could identify with on a lighting device of his choice. Apart from the finds from the urban centers, there is one lamp found in a funerary context (Carthage), which unfortunately provided very little information. At most, the latter was placed in the grave after the cremation of the body, as a secondary place of deposition, considering that the lighting device was discovered intact. The same can be said of the artifact found at Eysses, which, if it comes from the cult area of this site, could be part of a votive deposit, witness of a place devoted to the popular expression of the worship of a particular deity.

In conclusion of the present study, it will hopefully contribute to a better understanding of lamps ornamented with this specific subject. To further argue the location of production sites and distribution channels within the distribution areas defined so far, it is essential to conduct physico-chemical investigations of the different types of fabrics.

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\(^5\) In this regard, some of our data were used in a joint paper produced as part of the AGSTR (Association for Ground Stone Tools Research) conference held in Mainz in September 2017.
References

Evelein, M.A. (1928). *De romeinsche Lampen (=Beschrijving van de verzameling van het Museum G.M. Kam 1).* ’s-Gravenhage: Museum G.M. Dam


