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Ilustrația de pe coperțile 1, 4: Poarta de nord a „cetății vechi” de la Axiopolis, vedere dinspre exteriorul incintei (după Netzhammer, R. 1918. Die christlichen Altertümer der Dobrudscha. București: Socec & Co: p. 118, fig. 37).

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Repair of ceramics in Antiquity: Examples from Myra (Lycia)

CÜNEYT ÖZ

To all the workers at Myra

Abstract

The repair of ancient ceramics has become a topic of growing interest to scholars of Greek and Roman ceramics. This study focuses on the ancient ceramic repairs uncovered at the city of Myra in the Lycian region. An analysis is presented regarding the repairs made to the Roman and Byzantine pithos, amphorae and green glazed bowl uncovered in the Myros Valley, the Acropolis and the Agora. The reasons for the ceramic repair in Myra are also discussed.

Zusammenfassung: Reparatur von Keramische in der Antike: Beispiele aus Myra (Lykien)

Die Reparatur antiker Keramik ist für Wissenschaftler der griechischen und römischen Keramik zu einem Thema von wachsendem Interesse geworden. Diese Studie konzentriert sich auf die antiken Keramikreparaturen, die in der Stadt Myra in der lykischen Region entdeckt wurden. Es wird eine Analyse der Reparaturen vorgelegt, die an den römischen und byzantinischen pithos, Amphoren und grün glasierten Schalen vorgenommen wurden, die im Myros-Tal, auf der Akropolis und auf der Agora freigelegt wurden. Auch die Gründe für die Keramikreparatur in Myra werden diskutiert.

Keywords: Myra (Lycia), Roman and Byzantine Period, Ceramic, Antiquity, Ceramic Repair.

Schlüsselwörter: Myra (Lykien), Römische und Byzantinische Zeit, Keramische, Die Antike, Keramische Reparatur.

Introduction

The city of Myra, located west of the Antalya Gulf, on the southern coast of the Teke Peninsula, is now in the Demre District of Antalya Province. To the east of the city is the Myros/Demre Stream, which has two main branches (Kıbrıs and Tokluca) and merges after the settlement of Dereağzı, flowing through a deep and narrow valley about 26 km[1] long before emptying into the Mediterranean Sea[2] (Fig. 1). The delta formed by the alluvium carried by the Myros/Demre stream provided suitable plains for the settlement of both Myra in the ancient period and Demre in the present day. Myros/Demre Stream has changed its bed many times until today due to the ground that has lost its slope over time with the sediments it carries.[3] A rescue excavation was made in 2010 on the ancient remains that were uncovered due to these bed changes.[4] The discovery of a piece of a pithos which was repaired in antiquity possibly at a workshop is the main motivation for this paper. This pithos fragment and other ceramics reveal the tendency of the inhabitants of Myra to repair damaged ceramic in antiquity. A brief assessment of ancient repair techniques and practices is deemed necessary before considering the evidence from Myra.

1 Keser 2012, 183.
2 Öner 2001, 3; Çevik and Bulut 2010, 29.
3 Öner 2001, 7, map. 4; Keser 2012, 185 etc.
4 For excavation results, see also. Çevik and Bulut 2011, 60; Bulut and Çevik 2022, 613-614.

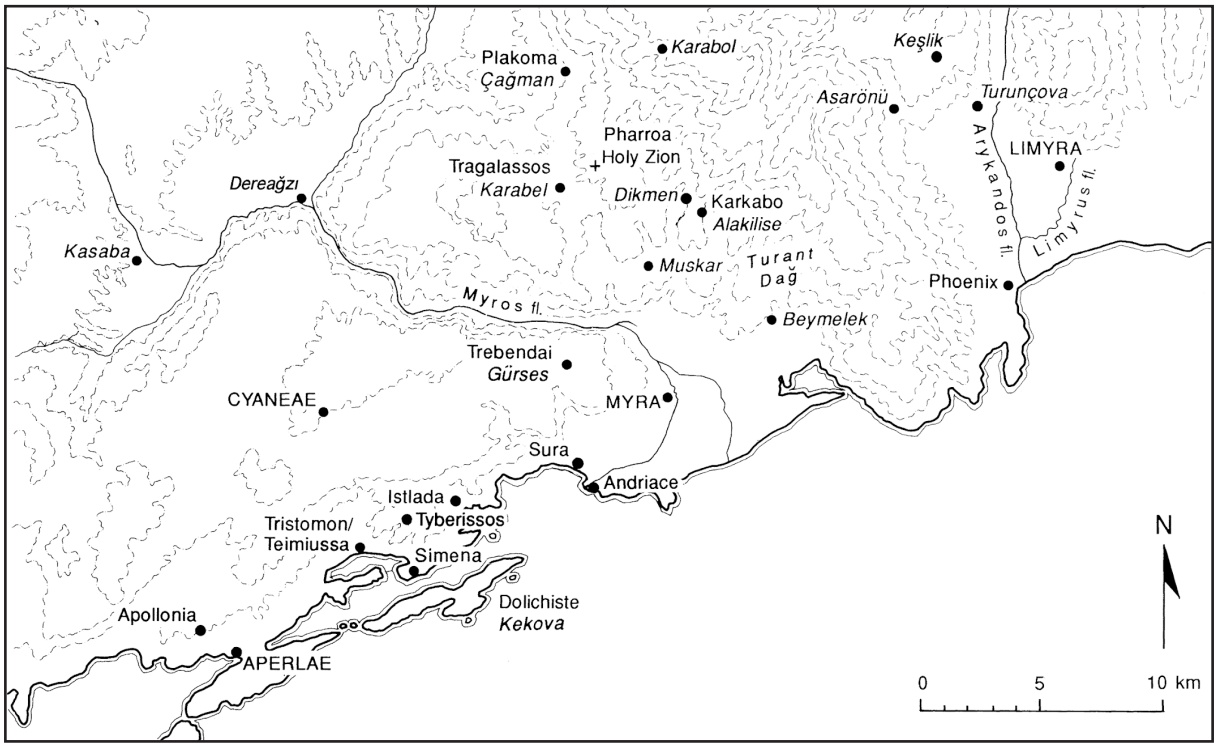

Fig. 1: Location of Myra (Foss 1994, Map II)

Repair of Ceramics in Antiquity

Archaeologists, restorers and conservators time to time find ancient repairs during excavations in ancient cities. Holes, clamps, patches or traces of glue on the ceramics show how people in the past practised to ensure durability of the life cycle of the vessels. In spite of their frequent appearance, there are only a few detailed studies on ancient repairs.[5] However, descriptive and theoretical studies on this topic have increased in recent years.[6] Ancient repairs were first studied by restorers and conservators.[7] Therefore, most of our limited information on the topic is obtained from conservators working in museum collections.[8] In recent years, studies on ancient repaired ceramics found during excavations in ancient cities have improved our information on the topic.[9] It is difficult to get an idea of how much and how often ceramic repair was practised in antiquity, or how it was organised since, the repairs were studied individually.[10]

When the ceramics are examined, uniformity can be mentioned in terms of repair techniques. While small fractures or cracks can be repaired with glue or filling, large fractures that weaken the ceramic as a whole are repaired by connecting the pieces with rope (organic or leather), lead or bronze clamps and clamps passed through the holes drilled on both sides of the fracture.[11] Lead (*plumbum*, *nigrum*) is the most commonly used metal in ancient repairs due to its low melting temperature (327.5 °C), low cost,[12] easy processing and shaping.[13] In addition, since lead softens quickly when heated, it can enable a repair error to be corrected without damaging the ceramic.

5 Hemelrijk 1986.

6 Bentz and Kästner 2007; Chapman and Gaydarska 2007; Peña 2007; Dooijes and Nieuwenhuyse 2007, 2009; Bilde and Handberg 2012.

7 Nadalini 2003, 2007; Dooijes and Nieuwenhuyse 2007, 2009.

8 Elston 1990; Pfisterer-Haas and Schmidt 1998; Pfisterer-Hass 2002; Bentz et al. 2010, 104-110.

9 Dooijes and Nieuwenhuyse 2009; Tomber 2011, 108-116; Slane 2011, 96-106; Rotroff 2011, 117-134; Bilde and Handberg 2012; Bentz 2013, 349-354; Miloglav 2020, 120-127.

10 Rotroff 2011, 117.

11 Bilde and Handberg 2012, 462-463.

12 Pliny gived 7 *denarii* (1 Attic *drachma*) as the price of 1 *libra* (325 g) of lead (Pliny. *Nat.His*. 34.16). Building records from Epidaurus show that 1 *talent* (25.86 kg.) of lead was bought for 1 *drachma* and 3 *obols*, and seven years later, the same amount of lead was bought for 3 *drachmas* (Burford 1969, 181).

13 In addition to lead (Lazaridou 2011, 106, cat. 52), bronze (Elston 1990, Figs. 1-4) and iron (Slane 2011, 96-97, Fig. 1a-b) clamps were also used in ancient repairs.

Three main techniques[14] are at the forefront of the ancient repair typology;

Drilling and Lacing Technique

It is the simplest ancient repair technique used since the Neolithic Period.[15] The ceramics were brought together by tying leather, rope or other organic material to the holes drilled along the fractures. Bitumen or gypsum was used as an glue for the cracks.[16]

The Mortise and Tenon Technique

In this technique, double dovetail-shaped lead clamps were embedded in the cuts made in the broken part of the ceramic and the fractures were joined. It is thought that the method was adapted from the doweling technique[17] used in architecture.[18]

The Hole and Clamp Technique

In this technique, which is more common than the two, repairs were made by attaching the outer lead clamps to each other with the bars passed through the holes drilled on both sides of the broken part. Traces of glue were found on the lead clamps.[19] According to the mortise and tenon technique, lead clamps are not embedded in the body of the ceramic but extend along the surface of the vessel.[20] In fact, it appears that no attempts were taken to correct the bulky appearance of the lead bars extending along the inner and outer surface of the vessels.

Fig. 2: Pithos repaired in antiquity (© Myra Excavation Archive)

Repaired of Ceramics at Myra

There are four ceramic fragments that are thought to have been repaired at Myra in antiquity. Three examples are from the Roman period (Figs. 2-3) and one is from the Byzantine period (Fig. 4). The first example is the lower part of a pithos, which still contains lead clamps and bars (Fig. 2).

The pithos was repaired with the hole and clamp technique. The bars, which are inserted into the holes drilled[21] on both sides of the broken parts, are attached outside and inside with semi-circular clamps. It was also ensured that the clamps hold more tightly by pouring melted lead between them and the pithos body (Fig. 2). Pouring melted lead is interesting. Due to ancient repairs, the clamps are usually supported with glue. The pithos must have been broken and repaired in too many places. Because only the lower body has four clamps.

The second and third examples relate to the rims and body parts of the amphora (Fig. 3: 1-2). There are not lead clamps on both fragments. However, both have proper circular holes drilled with a drill. Although the lead clamps were not preserved, some

[14] Apart from these, there is a fourth technique (The use of 'alien' fragments) (Dooijes and Nieuwenhuyse 2007, 19-20).

[15] Dooijes and Nieuwenhuyse 2007, 19, Fig. 2; Dooijes and Nieuwenhuyse 2009, 8, Figs. 1-4. For examples from Roman Period, see also. Tomber 2011, 109, Fig. 2.

[16] Dooijes and Nieuwenhuyse 2009, 8; Bilde and Handberg 2012, 463.

[17] The technique of dowelling in architecture was used from the Archaic Period to the Late Classical Period (Cooper 1996, 172-173, dn. 7).

[18] Bilde and Handberg 2012, 463-464, Fig. 2.

[19] Charters et al. 1993; Nadalini 2003, 202.

[20] For examples, see. Dooijes and Nieuwenhuyse 2007, 19, Fig. 4; Slane 2011, 97, Figs. 1-2; Bilde and Handberg 2012, 469-470, Fig. 9-10.

[21] For images of drills in antiquity, see. Nadalini 2003, 197, Fig. 2; Ilan 2016, 3, Fig. 2. The earliest examples were thought to use a flintstone or obsidian tool to make holes (Dooijes – Nieuwenhuyse 2007, 18).

holes drilled on the ceramics indicate that they were repaired.[22] The holes in the Myra examples are thought to be repair holes drilled in antiquity. Considering that the fragments belong to commercial amphorae and transporting the materials they carry without spilling are an important purpose in trade, it can be considered that these holes are not opened for any other purpose. In the first fragment of amphora, holes were drilled between the rim and the neck (Fig. 3: 1). The hole on the second amphora was drilled into the body (Fig. 3: 2). As a result, it appears that the first amphora was broken at the edge of the rim and the second at the body. After being repaired, these amphorae can be used to store or transport dry food such as grains or cereals instead of liquids.

Fig. 3: Amphora fragments repaired in antiquity (© Myra Excavation Archive)

The fourth example is a green glazed bowl from the Byzantine Period (Fig. 4). The rim of the bowl was drilled by three holes along the fractures. Compared to other examples, the small diameter of the holes here is related to the small size of the bowl. Lead clamp marks were not observed in the holes. It is understood from the number of holes that the rim of the bowl is broken in two different parts.

Fig. 4: Green glazed bowl repaired in antiquity (© Myra Excavation Archive)

Conclusion

A pithos of the Roman Period (Fig. 2), which was unearthed in 2010, during the workshop excavations in the valley where the Myros/Demre Stream flows in 2010, is the main subject of this study. The lead clamps on the pithos, which was repaired in antiquity, have survived without deterioration. The lower body of the pithos was repaired using the hole and clamp technique. The lead bars placed in the holes drilled along the fractures were attached with lead clamps both the inside and outside. In addition, melted lead was poured between lead clamps and the body of the pithos to increase its rigidity (Fig. 2). The reason for pouring melted lead may be to prevent leakage of the liquid food intended to be stored in the pithos. The other examples of the study are two commercial amphora fragments from the Roman Period and a green glazed bowl from the Byzantine Period (Fig. 3-4). The lead clamps on these ceramics have not survived to the present day. The holes found on commercial amphorae are thought to be repair holes (Fig. 3). It is a fact that these holes can not be opened consciously, as it is intended not to pour liquid or dry food to be transported inside. The holes in the rim of the green glazed bowl were drilled along the fractures. Therefore, it is believed that these holes were drilled for the purpose of repair. Ceramic repair in antiquity may have been carried out for declaration of ownership, aesthetic, economic and functional reasons.[23] Considering the numerical scarcity of pithos and green glazed ceramics at Myra compared to others, their repair can be associated with economic and functional reasons. Moreover, the repair of the ceramics found in the city indicates the lack of a new one or the inability of the people to replace it. The repair of the amphorae may be due to the intention for their secondary use to store dry food. As a result, it is assumed that the basic reason for the ceramic repairs in Myra were economical and functional during the Roman and Byzantine periods.

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I would like to Express my gratitude to Prof. Dr. Nevzat ÇEVİK, the head of the Myra excavations, who permitted me to work on the ancient repairs of ceramic fragments.

[22] Bilde and Handberg 2012, 464.
[23] Bilde and Handberg 2012, 473.

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