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A Group of Phaselis Type 3 Amphorae by the Base of the Phaselis Central Tower: A New Pottery Dumpster (Bothros) and Amphora Production Area

UĞURCAN ORHAN*

Abstract

In 2021, seven test trenches were excavated by the base of the Central Tower using random sampling techniques. The purpose of the excavation was to assess the potential for conservation and landscaping projects planned for the area north of the Phaselis city center. Although the trenches are independent from each other, they were determined systematically. The finds indicate the production of ceramics and amphorae. In relation to this production organization, numerous fragments of broken or incomplete amphorae were also found in the area. Their discovery sheds light on the production organization of Phaselis. Among them are locally produced Phaselis amphorae, which have recently been introduced to the literature, as well as imported and imitation amphorae. New types of Phaselis amphorae were also identified based on their morphological characteristics. This study focuses on the forms belonging to Type 3 Phaselis amphorae, as faulty examples of this type were identified. The studies conducted in these test trenches revealed a new ceramic dumpster (bothros) and amphora production area in addition to the Hellenistic Temple Area. The production of ceramics and amphorae was carried out in different areas in a process-dependent manner, as shown chronologically. The aim is to reveal the production and consumption organization

Öz

2021 yılında Merkezi Kule'nin eteklerinde rastgele örnekleme teknikleri kullanılarak yedi test açması kazılmıştır. Bu kazının amacı Phaselis kent merkezinin kuzeyindeki alan için planlanan olası çevre düzenleme ve koruma projelerinin potansiyelini değerlendirmekti. Birbirinden bağımsız olmakla birlikte belirli bir sistematikle kararlaştırılan açmaların bulunduğu alanda yapılan çalışmalarda seramik ve amphora üretimini işaret eden buluntular elde edilmiştir. Bunlar arasında Phaselis'in üretim organizasyonuna ışık tutan önemli miktarda kırık-eksik amphora parçaları ön plana çıkmaktadır. Bu amphoralardan bazıları kısa süre önce literatüre kazandırılan yerel üretim Phaselis amphoraları iken bazıları ithal ve taklit üretim amphoraları işaret etmektedir. Ele geçen Phaselis amphoralarının içerisinde mevcut bilinen formların yanı sıra morfolojik özelliklerinden yola çıkarak, yeni tip Phaselis amphoraları da saptanmıştır. Phaselis amphoraları içerisinde ise Tip 3'e ait üretim hatalı örnekler tespit edilmiş ve bu çalışmanın ana materyali olarak Tip 3'e ait formlar çalışmanın odağına alınmıştır. Söz konusu test açmalarında yapılan çalışmalarda Phaselis'te Hellenistik Tapınak Alanı dışında yeni bir seramik çöplüğü (bothros) ile amphora üretim alanı olduğu ve seramik / amphora üretiminin farklı alanlarda kronolojik olarak süreç bağımlı bir şekilde sürdürüldüğü anlaşılmıştır.

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in the area from the fifth century BC to the third century BC. A new ceramic dumpsite and amphora production area are introduced to the literature.

Keywords: Eastern Mediterranean, Phaselis, pottery dump, amphora production, Phaselis amphorae, trade

Sonuç itibarıyla söz konusu alanda MÖ beşinci yy.'dan MÖ üçüncü yy.'a kadar kentin üretim / tüketim organizasyonlarının ortaya konulması hedeflenmiş ve Phaselis'te yapılan çalışmalarda yeni bir seramik çöplüğü ile yeni bir amphora üretim alanı daha belgeleriyle birlikte literatüre kazandırılmıştır.

Anahtar Kelimeler: Doğu Akdeniz, Phaselis, seramik çöplüğü, amphora üretimi, Phaselis amphoraları, ticaret

Introduction[1]

Phaselis was formerly a city on the western coast of the Pamphylia Gulf, currently located within the borders of the Tekirova quarter of the district of Kemer District in the province of Antalya Province. The site is just south of the modern Antalya-Kumluca highway. Phaselis was an independent city-state in ancient times. It lays on the borders of Lycia, Pamphylia and Pisidia. With its three harbors and lagoon, the city was one of the leading trade centers of the Eastern Mediterranean. Due to its strategic location between the Eastern and the Western Mediterranean, some conservation and landscaping projects have been initiated to protect the cultural heritage of Phaselis. In 2021, due to the potential for conservation and landscaping projects, seven test trenches were excavated at the base of the Central Tower, which is located on the northern slopes of the city center (fig. 1).[2]

In the studies conducted, finds were made in only three out of the seven test trenches (DNM-D, G, and F trenches). These finds in the hundreds offered a wide range of typology and forms. It was observed that the finds included defective pottery and amphora fragments indicating production in the area, amorphous and slag fragments, components related to pottery kilns, black-glazed pottery groups, coarse ceramics, and amphora fragments (fig. 5).[3] Numerically, the majority of the finds in the area are amphora fragments. Among the amphorae recovered from the test trenches and identified in terms of their forms, local amphorae (Phaselis amphorae), imported groups, and imitation production amphorae were identified. Among all these amphorae, the main material of the study consists of the Type 3 variant of local production Phaselis amphorae.

The scientific excavation system consists of multiple stages. The first stage includes creating a survey-plan map to document the current state of the area, topographic measurements, and photogrammetric studies. After documenting the entire area with a remote sensing aerial vehicle (drone) in the first stage, photogrammetric studies were conducted. Then aerial photographs were combined with CORS to obtain the topographic data of the area. The data obtained from PMK[4] Pottery Dumpsite and Amphora Production Area with CORS assistance were

[1] This study was supported by Koç University Suna & İnan Kıraç Mediterranean Civilizations Research Center (=AKMED) under project number KU AKMED 2023/P.1073.

[2] The Central Tower was built on a dominant point that can see all the harbors of Phaselis, especially important in terms of harbor security; see Kızgut 2017, 211-13; Taşkıran 2021, 10-17. The Phaselis team has been conducting research and excavation in this area since 2012; see Arslan 2018, 15-46; Arslan and Tüner Önen 2014, 78-82; 2016, 69-80; 2018, 295-301; 2019; 446-48, figs. 56-60; 2021; 153-58, figs. 15-25; 2023.

[3] For finds and artifacts indicating production, see Orhan 2023b.

[4] The abbreviation "PMK" is used for Phaselis Central Tower.

then transferred to CAD software. After this documentation stage, high-resolution photographs of the entire site were taken, topographic data were obtained, and orthophotos were created (fig. 2). This process allowed for understanding the relationship, position, condition, and distribution areas of the finds with respect to each other.

After the first phase, the locations of seven test trenches were determined by random sampling technique as a result of both remote sensing instruments and field investigations. With the start of the archaeological excavations, systematic documentation, classification, and recording of the finds began. The investigation of the finds in the PMK pottery dumpsite (bothros) and amfora production areas has started. The current status of the field is being documented. In this stage, all the amphorae that were found were classified according to their discovery areas. Once classified by discovery areas, they were further grouped based on their clay characteristics. Subsequently, they were numbered and photographed in a controlled environment. After obtaining scaled photographs of the amphorae, some digital processes were applied, such as creating a transparent background and digital scaling in Photoshop, to prepare them for the catalog. Following this, technical drawings of the amphorae were created, and clay structures and clay-lining color codes were determined using the Munsell catalog. Color codes and other information were added to the catalog, and cross-sectional views of the amphorae at 1000x magnification were photographed to determine their contents. Once the catalog data was complete and scaled drawings on paper were made, the amphorae were digitally drawn using CAD-based drawing software in the subsequent process. After these processes, catalogs containing technical information for all amphorae were prepared. When examining amphora finds, priority was given to evaluating them based on their stratigraphic context. The amphorae were then grouped typologically, and all groups were compared and classified.

In the classification of amphorae, priority was given to the mode of material, that is, clay structure. In this context, previous archaeometric studies conducted on amphorae from the Hellenistic Temple Area, amorphous fragments, defective production fragments, and raw clay obtained from clay deposits within the city were taken into consideration. These studies revealed that the clay structure of the amphorae from the local production, as proven in the Hellenistic Temple Area, was the same as the amphorae from the PMK Pottery Dumpsite and Amphora Production Area.

The research conducted indicates that local groups with typological continuity of amphora forms also demonstrate chronological continuity. Among the recovered Phaselis amphora groups, fragments belonging to Phaselis Type 1, Type 2, Type 3, and Small Scale Phaselis amphorae were identified. Within the Phaselis groups, production errors were observed in the Type 3 group. With the discovery of these production error examples, the focus of this study shifted to Phaselis Type 3 amphorae.

In previous studies conducted in the Hellenistic Temple Area, local production amphorae were identified. It was determined that these amphorae had four different types and two different subtypes from the mid-fifth century BC to the late fourth century BC.[5] Indeed, similar finds and artifacts indicating the same production area were encountered in the PMK Pottery Dumpsite and Amphora Production Area. Another noteworthy feature for these two production areas is their historical range. This historical range suggests that the two different areas

[5] Both concrete archaeological evidence and archaeometric analyses have confirmed the Phaselis workshop. The finds related to this workshop are particularly supported by archaeological evidence obtained during excavations and scientific analyses; see Orhan et al. 2022, 2:558-70.

continued their production activities as an extension of each other. In this study, our primary aim is to introduce this new production area, the PMK Pottery Dumpsite and Amphora Production Area, and provide concrete data on the artifacts and their connections to the production area in the Hellenistic Temple Area. Additionally, we aim to propose some solutions regarding the location / localization and function / quality of this new production area. In addition to these goals, we also aim to present new insights into the city's production organization, interregional trade, and the area's connections with the Inner Harbor based on the data obtained from this new dumpsite and production area. Ultimately, the aim is to contribute to our understanding of Phaselis production activities in antiquity through the finds and artifacts from the PMK Pottery Dumpsite and Amphora Production Area.

PMK Pottery Dumpsite (Bothros) and Amphora Production Area Excavations

In the excavations initiated by the base of the Central Tower on the northern slopes of the city center, seven test trenches were planned (fig. 1).[6] Although these trenches were selected using a random sampling technique, the excavation progressed according to a predetermined plan. Once the predetermined levels and dimensions were reached based on the condition of the area, the excavations in that trench were concluded. Excavations revealed finds in only three of the established trenches. When examining these trenches, it was determined that no archaeological remains were in trenches 21DNM-A, 21DNM-B, 21DNM-C, and 21DNM-E. In contrast, trenches 21DNM-D, 21DNM-F, and 21DNM-G yielded numerous pottery fragments and a significant number of amphorae. In this context, when inspecting squares 21DNM-A, C, and E, remnants of river stones, clay-like soil, sea sand, and traces of marine organisms were identified on the ground. Indeed, no archaeological finds were recovered from these trenches, strongly suggesting that during the respective period, this area may have been part of the lagoon (figs. 1-2).[7] This is further supported by the absence of any archaeological finds in trench 21DNM-B, where rubble stones from the slope had fallen into the trench.

In the trenches that presented archaeological finds, specifically in square 21DNM-D, numerous amorphous pottery artifacts were discovered, along with rim, handle, and foot pieces of amphorae, and some pottery vessel forms. Furthermore, there is a wall line on the northern side of the aforementioned square "D." his wall, constructed with rubble stones and not of very high quality, is likely a terrace wall in an east-west direction. Another trench where finds were encountered is 21DNM-F. Within all the excavation areas, only ceramic deposits were identified, measuring 1.90 meters in length and 1.30 meters in depth in the eastern and western sections of F trench, which contains a considerable number of artifacts (fig. 3). Another point to be mentioned regarding F trench is the quality, function, and preservation status of the ceramic finds. In F trench, the ceramic artifacts were discovered in piles and remained in contact with both fresh and saltwater for an extended period.[8] When looking at the range of finds from the 21DNM-F trench, black glazed pottery, coarse pottery, roof tiles (stroter and kalypter pieces), and amphorae were found. Additionally, there are pieces of black glazed fish plates,

6 The labeling of the seven test trenches follow the alphabetical order starting from 21DNM abbreviation A to G. For the preliminary report of this work, see Arslan and Tüner Önen 2021, 153-58, figs. 15-25.

7 For research on the geography of Phaselis, see Genişyürek et al. 2022; Akköprü et al. 2022.

8 A kekamoz layer similar to the one observed on pottery or amphorae in underwater research was also seen on the finds in PMK. Therefore, it is believed that the aforementioned archaeological layer had been submerged under the water for an extended period. The presence of water in this area indicates that the lagoon within the city extends to this point.

bowls, brazier fragments, coarse wares, and components of ceramic kilns (bricks of kilns and plaster pieces), along with a substantial amount of ceramic slag and defective production amphora fragments.

The last trench providing artifacts from the area is 21DNM-G. In the studies conducted within the trench, a wall line constructed from a single row of cut stones that can be followed in continuous sections was revealed. Additionally, within "G" trench to the north of the wall line, a group of pottery fragments was also discovered. During the examination of these forms, fragments of black glazed pottery, including skyphos foot and body pieces, as well as fragments belonging to amphorae, were discovered.

Phaselis Type 3 Amphorae

Archaeometric analyses[9] have been conducted on Phaselis amphorae, for which it is certain that they were produced in Phaselis, based on findings from previous research in the Hellenistic Temple Area.[10] In this context, archaeometric analyses were performed on a total of 40 samples, including amphorae from different origins, amorphous / slag groups, clay clumps found during excavations, production residues, flawed production examples, and raw clay taken from the lagoon within the city.[11]

In the analyses conducted, four different clay groups were identified, with three found to be directly compatibile with formation in Phaselis and its surroundings.[12] The first of these three groups, consisting entirely of Phaselis amphorae samples, was found to be consistent with flawed production / firing faulty examples and raw clay samples, both in terms of petrographic and chemical analysis values.[13]

When examining the general clay composition of Phaselis amphorae,[14] microscopic examinations have revealed the presence of mica, limestone, sand particles, and thin-coarse iron oxide content. Through petrographic analysis, the following rock fragments were identified as part of these clay characteristics: serpentinite, diabase, basalt, gabbro, schist, and quartzite. In terms of minerals, the clay includes quartz, plagioclase, radiolarite, chert, pyroxene, chromite, magnetite, and leucite.[15]

Analyses were also conducted on the red particles that resemble brick-ceramic fragments (chamotte) at a macroscopic level. The results of these analyses revealed that these particles,

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9 The analyses were conducted in accordance with the letter from the Antalya Provincial Directorate of Culture and Tourism dated 05.10.2021 and with reference number E.1781311 and the permissions granted by the Antalya Museum 06.10.2021 with reference number 1787476.

10 For the studies and finds from the Hellenistic Temple Area, see Orhan 2020; for petrographic and chemical analyses (Section, XRD and XRF), see in detail Orhan 2023a, 37-42, 220-23, tables 11-14.

11 Orhan et al. 2022, 2:558-70; Orhan 2023a, 37-42, 218-23, tables 10-14.

12 Orhan et al. 2022, 2:564-70, figs. 7-15; Orhan 2023a, 37-42.

13 Although the finds and artifacts indicating production at these workshops are known to point to the production of amphorae, archaeometric analyses have also been conducted to answer the question of which types of amphorae were produced. The results of these analyses have made significant contributions in providing answers to these questions.

14 Another feature that easily distinguishes Phaselis amphorae from other forms, aside from typology, is their clay structure. The large granular chamotte-like iron oxide particles found in the clay allow Phaselis amphorae to be easily differentiated from other groups. In archaeometric analyses, large amounts of coarse iron oxide particles have also been detected in the raw clay taken from the lagoon in Phaselis; see Orhan 2023a, 37-42, 168, fig. 43.

15 Besides the defective production samples, Phaselis amphorae also possess a hard and well-fired clay structure.

initially thought to be chamotte, emerged through the transformation of pyroxenes in the soil into iron oxides, as determined by petrographic analysis. It was determined that these red particles are iron oxide-hematite.[16] Consequently, the identification of hematite (iron oxide) in both clay samples, slag, and amphorae serve as another piece of evidence indicating the production of iron oxide-containing amphorae in Phaselis.[17]

In previous studies, four different types of Phaselis amphorae have been identified, which were previously misclassified as Lycian amphorae.[18] When looking at the general typological characteristics of Phaselis amphorae, similarities can be observed with Aegean and Northern Aegean amphorae, especially with the Chian, Thasian, and Mendean groups, as well as with the Cypriot amphorae in the Eastern Mediterranean. However, this similarity is not entirely explained by a single form; instead, it appears to be a combination and transformation of several amphorae. When examining the general form typology, it is evident that the rim, neck, shoulders, and body projection are quite similar to Thasian and Mendean amphorae.[19] The angle at which the handles join the shoulders, broad shoulders, and spherical body structure resemble Mendean and Thasian amphorae,[20] while the bottom projection is similar to Chian and Cypriot amphorae.[21] In addition to these similarities,[22] there are finger impressions under the handles, which are also a common feature in Mendean and Thasian amphorae.[23] Apart from these similarities, there are also many distinguishing features that set these amphorae apart from each other.[24]

Traces of resin have been found in some samples of Phaselis amphorae. Although no analysis has been conducted to determine the product transported in these amphorae, ancient writers, inscriptions, and archaeological data provide some insights into the transported products.[25]

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16 A Raman analysis has also been conducted on the red hematite sample, and it was determined to be hematite-iron oxide; see Orhan 2023a, 167-69, fig. 43.

17 Within our analysis groups, these iron oxide particles are not found in the Mendean and Thasian amphorae but only observed in groups associated with Phaselis clay.

18 The amphorae, described in the literature as Lycian amphorae, were found to be of Phaselis origin. That these amphorae are named Lycian makes it appear that all Lycian cities used these amphorae. As a result, it is of great importance to revise these groups incorrectly named Lycian amphorae and identify them as Phaselis amphorae to eliminate this error in the literature; see especially Dündar 2012a, 47-48, figs. 6-7; 2017, 51-60, figs. 43-55.

19 Monachov 1999, 189, figs. 20.10-12; 192, figs. 28-29; 194, fig. 31.

20 For Mendean amphorae, see Monachov 1999, 194, fig. 31; Lawall 1995, 360-61, figs. 37-39; 1998, 18, fig. 3. For Thasian amphorae, see Lawall 1995, 362-63, figs. 42-47.

21 The feet of the Chian amphorae bear only a formal resemblance; see Monachov 1999, 188, figs. 19.7-9. For the Cypriot amphora, see Şenol 2009, 193, no. 17.

22 Considering the similarities of Phaselis amphorae to Mendean, Thasian, Chian, and Cypriot amphorae, it is believed that the organic connection among these amphorae is not coincidental. Indeed, looking at the political and commercial history of Phaselis in antiquity, its trade connections with Chios and Mende have been ongoing since the Archaic Period. It is also believed that they had interaction over trade routes with Thasos and Cyprus. Both Demosthenes and Plutarch provide insights regarding the commercial / political communication of Phaselis with Chios and Mende; see Tüner Önen 2008, 215-18, TLit. 39a.

23 A feature that consistently appears in Phaselis amphorae is the fingerprints beneath the handles, which are also observed in the Thasian and Mendean amphora groups. The presence of these fingerprints only in specific groups is notable. Furthermore, in Phaselis amphorae, only one sample has been found with plaster-filled and painted fingerprints. In another example, they can be faintly seen. It is believed that these painted finger prints serve a specific purpose rather than being coincidental. While research on this topic continues, plaster-filled and painted fingerprints have only been encountered in samples from Phaselis.

24 For the differences between the amphorae, see Orhan 2023a, 69-76.

25 For Phaselis' production organization, wine and olive oil production, export products, and economy, see Orhan 2023a, 10-17.

The information from these ancient sources reveals that Phaselis was a significant exporter of olive oil and wine.[26] It is believed that these amphorae were mainly used to transport wine and olive oil, both in domestic and regional trade, due to their shape and size, which were ideal for storing and transporting such liquids.

As s well known, determining the origin holds great significance in amphora studies.[27] Indeed, because Phaselis amphorae have only recently entered the literature, they seem to have gone unidentified, despite being detected as finds by different researchers. For these reasons, based on published examples, similarities to Phaselis amphorae have been encountered in the Eastern Mediterranean, Anatolian coasts, and Cyprus. Meanwhile, a new sample has also been identified in the Aegean. When looking specifically at the areas where these amphorae were found, examples have been identified in Caunus,[28] Xanthus,[29] Patara,[30] Avşar Tepesi,[31] Ağva Necropolis,[32] Karaçallı Necropolis,[33] Side,[34] Celenderis,[35] İzmir Archaeology Museum,[36] Ephesus,[37] Cyprus,[38] Tell el-Herr on the northern Sinai peninsula,[39] Euesperides,[40] and in some Black Sea centers.[41] Based on the studies conducted so far, the distribution of these amphorae has been traced to specific areas in the Eastern Mediterranean and the Aegean (fig. 4).

The hypothesis that Phaselis amphorae were produced in the region where Phaselis is located has been definitely confirmed due to the amphorae recovered from the Hellenistic Temple Pottery Dumpsite and the Amphora Production Area. In the Hellenistic Temple area, while defective production samples of different types of Phaselis groups (Phaselis Type 1,[42]

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26 The Elephantine Papyri, dated to the fifth century BC and recorded by a customs officer named Ahiqar, mention ships and their cargo traveling from Phaselis to Egypt. According to the papyrus text, 36 ships are recorded as traveling from Phaselis to Egypt within ten months with each carrying substantial amounts of olive oil and wine on every voyage; see Kuhrt 2007, 680-700; Orhan 2023a, 18-23.

27 Previously referred to as Lycian amphorae, for which a satisfactory number of similar examples could not be found, these amphorae had not been subjected to essential typology, analogy, and origin determinations. However, in later studies, it has been verified that these Lycian amphorae were produced in Phaselis, and their typology has been established. Indeed, it is believed that these types of amphorae were likely overlooked by researchers in earlier studies due to uncertainties about analogy, typology, and origin; see Göransson 2007, 9-14.

28 Bulba 1994, 34, cat. no. TH3, pl. 22, no. 3; 42, cat. no. D6, pl. 31, no. 6.

29 During the studies conducted in the Xanthus excavation storage depot between 2020-2023 (which I participated in as a committee member), similar Phaselis amphorae were encountered. I would like to express my gratitude to Prof. Dr. Erdoğan Aslan, excavation director of Xanthus-Letoon, for providing me this opportunity.

30 Dündar 2012b, 454-57, cat. nos. LyA. 1-19, pls. 23-25, LyA. 1-19; 2014, 38-41, figs. 13-15; Dündar and Işın 2015, 212-13, fig. 40; Dündar 2016, 514, fig. 11; 2017, 51-60, figs. 44-45; 453-56, cat. nos. LyA. 1-19, pls. 9-10; 2021, 62, cat. no. 21, fig. 32.

31 Rückert 2000, 115 and 135, fig. 40, no. 66.

32 For the Ağva Necropolis within the Phaselis Territory, see Özoral 1977; 1980, 96, pls. 14-15.

33 For the finds near Perge, see Çokay-Kepçe 2006, 145, cat. nos. TA 1 - TA 2.

34 For the Çenger Village and the highly probable shipwreck find related to this amphora, see Dündar 2012a, 47-49, figs. 6-10; 57, cat. nos. 6-7; 2017, 51, figs. 43; 55 and 57.

35 Zoroğlu et al. 2009, 38 and 47, fig. 4, no. 24.

36 Sezgin et al. 2022, 153-54, cat. no. 112.

37 For a controversial example, see Lawall 2006, 137, cat. nos. 228, 305, pl. 35, no. 228.

38 Gjerstadt 1948, 90, fig. 69, no. 3b; Demesticha 2021, 46, fig. 3c.

39 Phaselis amphorae have been confused with the Mendean amphora groups; see Defernez 2007, 2:590, 611, fig. 4, nos. 12, 15; 595, 615, fig. 12, no. 32.

40 For the Benghazi-Libya samples, see Göransson 2007, 70-72, nos. 88, 90.

41 Mateevici and Redina 2010, 58, pl. 30, no. 10.

42 Orhan 2023a, 277-79, cat. nos. 82-87.

Type 2,[43] and Small Scale Phaselis[44]) had been previously identified, no production traces of Type 3 were found. However, in the studies conducted at PMK, defective production samples related to Phaselis Type 3 amphorae were discovered (cat. nos. 1-2, fig. 6). Examining the rim piece of these defective samples, the neck narrows irregularly in the area where the handles meet the neck (cat. no. 1, fig. 6.1). It is highly probable that it sustained an impact during the firing process, causing the neck to narrow excessively thus rendering it unusable. Another example of a faulty production sample for Phaselis Type 3a amphorae is the foot. Subjected to high temperatures, it became deformed. Due to this intense heat, the lime within melted, creating voids. In addition to these lime cracks, there are also separations in the pedestal section (cat. no. 2, fig. 6.2). These two defective production samples, due to their clay structure, typological characteristics, and discovery at the same level as Type 3a, have been identified as faulty production waste of Type 3a.

In addition to the defective samples, parts belonging to Type 3 amphorae, which have two subgroups, have also been recovered. These groups, understood to be amphora fragments belonging to Type 3a and 3b forms, have been chronologically and typologically evaluated, with both analogy and stratigraphy considered along with their catalog information.[45]

Phaselis Type 3a

Within the Phaselis groups Type 3a, a subgroup of the Type 3 variant, was distinguished both typologically and chronologically from Phaselis Type 1, Type 2, and other variants. When the form of the Type 3a group was examined, it was characterized by an outwardly extended and sharpened rim edge, a cylindrical neck that broadened towards the body, single, double, and sometimes triple spiral grooves on the neck just below the rim, and vertically oval-sectioned handles that began just beneath the rim and converged at the shoulders. Additionally, finger impressions could be found where the handles were attached to the body. The Type 3a amphorae with an ovoidal wide body showed a projection that extended outward with an inwardly concave profile at the transition from the body to the foot. The foot sections generally had painted bands in two different colors. A characteristic of the Phaselis amphorae was the hollow that indented inward from the base's resting plane and a profile inside the hollow at the very center of the foot resembling an inverted bowl.

In terms of general form characterization, the Phaselis Type 3a, which resembled the pioneer types, had an elongated neck and handles compared to Type 1 and Type 2. The handles first curved outward and then inward, merging at the shoulders. The transition from the shoulder to the body narrowed and also reduced in volume. The foot part of these types was seen to be further distanced from the body, and the foot approached the end with a more

[43] Orhan 2023a, 395, cat. nos. 314-15.

[44] Orhan 2023a, 518-19, cat. nos. 558-60.

[45] A similar Phaselis amphora is in the Classical and Near Eastern Antiquities Collection of the National Museum of Denmark. This amphora from Tomb 80 is similar to the Phaselis amphora in its clay structure (as described). The amphorae in the collection have been compared to North Aegean amphorae of the fifth and fourth centuries BC, and their origin is uncertain. However, Cyprus has been suggested as a production site. There have also been comparisons with Mendean amphorae of a similar shape, as in our study. These amphorae have been analyzed in general terms (probably because of typological problems), and various dates proposed ranging from the second quarter of the fifth century BC to the end of the fourth century BC, according to the different finds. However, it is highly probable that the amphora in question belongs to one of the subtypes of the Phaselis amphorae. However, the exact form cannot be determined since there is no drawing in the publication; see Lawall 2013, 53-60, fig. 2.

flattened angle compared to Phaselis Type 1 and Type 2.[46] In addition to these distinctions, the outwardly pulled character of the rim and lip, the finger pressures under the handles, the spiral grooves, the painted bands, and the inverted bowl profile were preserved as in other types. Similar examples of Phaselis Type 3a were dated to 400-350 BC in the Side Museum[47] and Patara,[48] to the Classical Period and within the Late Classical Period at Avşar Tepesi,[49] to the fourth century BC for Cyrenaican amphorae with a similar foot structure found in Euesperides,[50] around 250 BC in Caunus,[51] and to 300-200 BC in the Anamur Museum.[52]

It was determined that the Phaselis Type 3a group was found in the same layer as Thasian forms 5 and 6, as well as the mushroom-rimmed Types 1-4, within the archaeological contexts of the Hellenistic Temple Area. The aforementioned context dated to the mid to late fourth century BC.[53] Consequently, the Phaselis Type 3a amphorae in the Hellenistic Temple Area were inferred to date between the mid and end of the fourth century BC.[54] Indeed, based on parallels from other similar examples and the archaeological context of the finds, the recommended dating of the Phaselis Type 3a group is between the third and fourth quarters of the fourth century BC (cat. nos. 3-17, fig. 7).

Phaselis Type 3b

Examined under sub-group 3b among Phaselis amphora types, this amphora shares similar forms with Phaselis Type 3a but is distinguished from Type 3a due to several different features. Therefore, as in all main and sub-groups, it can be observed that the general typology is maintained. This form retains its characteristics, especially with minor changes in the foot bowl profile and the foot circumference. When looking at the form of Phaselis Type 3b, it has a slightly outward pulled and rounded rim edge, a cylindrical neck expanding towards the body, sometimes single, sometimes double, and sometimes triple spiral grooves on the neck just below the rim, vertical handles with oval cross-section starting from below the rim and merging at the shoulders. Again, like other Phaselis amphora types, it has finger pressing at the area where the handles join the body, an ovoidal wide body, a projection protruding outward with a concave profile transitioning from body to foot, and a paint band on the foot circumference. It retains a foot form featuring a recess indented inward from the sitting plane of the foot and a projection in the form of an inverted bowl right in the center of the foot within the recess, a characteristic of Phaselis amphora groups. Indeed, the neck structure of Type 3b has shortened and widened compared to Type 3a, the handles have shortened compared to Type 3a, and the shoulders have narrowed resulting in a volumetric reduction compared to other groups. Finally, among all types, the foot circumference has significantly narrowed and flattened.

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46 For a comparison of the amphora forms, see Orhan 2023a, 233-34, pls. 2-3.

47 Dündar 2012a, 47, figs. 6-8; 57, cat. no. 6; 2017, 51, fig. 43.

48 Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14.

49 Rückert 2000, 135, fig. 40, no. 66.

50 The context of the aforementioned finds is "Area Q," dated between 350-250 BC; see Göransson 2007, 70-72, no. 90.

51 Bulba 1994, 34, cat. no. TH3, pl. 22, no. 3.

52 Zoroğlu et al. 2009, 37-47, cat. no. 24, fig. 4.24.

53 For the contexts see Orhan 2023a, 162-63, figs. 34-35; 197-217, tables 8-9.

54 Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

A similar example of Phaselis Type 3b in the İzmir Archaeology Museum is dated to the last quarter of the fifth century BC, the first half of the fourth century BC, and the second half of the fourth century BC.[55] Additionally, amphorae with a similar foot were uncovered in Tell el-Herr and dated to the fourth century BC,[56] in the Side Museum to 400-350 BC,[57] in Patara to 400-350 BC[58] and 336-310 BC,[59] in the Mazotos Shipwreck[60] off Larnaca in southern Cyprus to the third and last quarter of the fourth century BC,[61] and similar Cyrenaican amphorae in Euesperides to 325-250 BC.[62]

In the Hellenistic Temple Area, when looking at the context of the excavation finds of the Phaselis Type 3b group, they were found in the same layer as Thasian form 5, form 6, and mushroom-rimmed Type 1-4 groups.[63] Therefore, with this layer's general context dated to the mid to late fourth century BC, we suggest that the Phaselis Type 3b should be dated to the third and fourth quarters of the fourth century BC.[64] In conclusion, the discovery of Phaselis Type 3b and mushroom-rimmed amphorae in the cargo of the Mazotos Shipwreck indicates compatibility with the contexts in our study. Due to these reasons, the Phaselis Type 3b in the PMK area should also be dated to the late fourth century BC (cat. no. 18-30, fig. 8).

Evaluation and Conclusions

Ancient societies produced some tools and utensils from clay, particularly due to its economic and functional advantages. When such pottery made of clay lost its functionality, it was not completely destructible. Hence, some areas were transformed into ceramic dumpsites. The choice of location for these dumpsites occasionally coincided with the areas where production occurred, based on their characteristics. Sometimes areas quite outside the city were also preferred. However, such dumpsites were more often encountered in production areas and used to discard production and ceramics flawed in firing, workshop materials, amorphous materials, slags, and pottery or amphorae that had lost their functionality.

Besides the pottery in the production areas, it is known that all pottery in the city, along with the materials that had lost their functionality in daily use, were discarded in these dumpsites. This practice of creating dumpsites also prevented the accumulation of defunct pottery within the city.[65] Precisely for these reasons, some production and dumpsites were encountered in Phaselis. In the studies conducted so far, two different production and dumpsites have

55 Sezgin et al. 2022, 153-54, cat. no. 112.

56 Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32.

57 Dündar 2012a, 48, figs. 9-10; 57, cat. no. 7; 2014, 38-39, fig. 13; 2016, 514, fig. 11.

58 Dündar 2012b, 454-55, cat. nos. LyA. 6, LyA. 8-10, pl. 24. LyA. 6, LyA. 8-10; 2014, 38-41, figs. 13-14; 2016, 514, fig. 11.

59 Dündar 2021, 62, cat. no. 21, fig. 32.

60 Demesticha 2021, 46, fig. 3c. When examining the cargo of the Mazotos Shipwreck, in addition to the Phaselis amphorae, Chian and mushroom-rimmed groups were also found. Indeed, chronologically, this shipwreck is closer to the last quarter of the fourth century BC in light of the aforementioned shipwreck cargo; see Demesticha 2011, 39-58; 2021, 46, fig. 3c.

61 Demesticha 2011, 39-58; 2021, 46, fig. 3c.

62 Göransson 2007, 70-72, no. 88.

63 Orhan 2023a, 162-63, figs. 34-35; 197, table 8.

64 Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

65 In some ancient societies, there was also the tradition that every piece of pottery produced had a soul. When they lost their function, they were buried like a human being.

been identified. The first is the dumpsite in the Hellenistic Temple Area. The other is the PMK Pottery Dumpsite and Amphora Production Area, where studies are still ongoing. It is located approximately 100 meters from the Hellenistic Temple Area. Seven test pits were established in this area with the first revealing finds in studies conducted in 2021. In the pits thousands of objects were unearthed. Indeed, hundreds of types of vessels ranging from black-glazed pots to roof tiles, and from commercial amphorae to coarse pottery emerged. Additionally, among the finds are components and wastes belonging to pottery production workshops, along with numerous production-related finds.[66] The recovered slags, kiln wastes, and concrete data indicating faulty production also pointed to a probable pottery workshop in this area.

Upon a general review of the finds, they did not form a complete context and were in contact with seawater or freshwater. The patina and kekamoz layers formed on the recovered findings indicate that the said materials were exposed to water for extended periods.[67] In the excavation works, a considerable number of marine shells were also observed, related again to water. When squares 21DNM-A, C, and E are reviewed, river stones, clay-like soil, sea sand, and remnants of marine organisms were identified on the ground.[68] Considering these reasons and concrete data, it is thought that a certain part of the dumpsite had a connection to the Inner Harbor during its active operational years.[69]

In addition to field research, the main material of our study consists of amphorae. Indeed, amphorae emerge as the concrete archaeological data where inter-regional commercial communication and interaction can be most clearly traced. For these reasons, our study aims to reveal the potential of local amphorae production in Phaselis production organization, distribution network, and connections with other regions (fig. 4).

In previous finds of Phaselis amphorae, faulty production examples belonging to Type 1, Type 2, and Small Scale Phaselis were obtained, while no evidence pertaining to Type 3 was identified. Hence, the concrete evidence regarding the production of Type 3, which has emerged from the PMK Pottery Dumpsite and Amphora Production Area, indicates that Phaselis amphorae were produced in multiple areas within the city. Additionally, the continuity of production at multiple points and over certain periods is another significant aspect. This is proof that Phaselis still produced amphorae to meet the demand.

From all areas of the city, a total of 199 pieces belonging to imported amphorae (examples of rim, handle, and foot) were identified, and this number constitutes 26% of the total amphora finds. In contrast to the ratios of imported amphorae, 566 Phaselis amphorae have been identified in the studies conducted so far, making up 74% of the total (fig. 5). Furthermore, within the 74% rate, 30.7% are Phaselis Type 1, 17.8% are Type 2, 18.4% are Phaselis Type 3, and 7.1% are Small Scale Phaselis amphorae. These ratios are significant in indicating the dimensions of the production organization in the city and showing that local production was more prevalent compared to imported groups.

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66 Orhan 2023b.

67 This position suggests that the Inner Harbor had a large basin up to this area and may have been a loading and unloading area. For the Inner Harbor, see Orhan 2023a, 45-46, figs. 51-53.

68 For land and sea snails, see Örstan and Yıldırım 2022; Örstan and Ovalis 2023, 1-3.

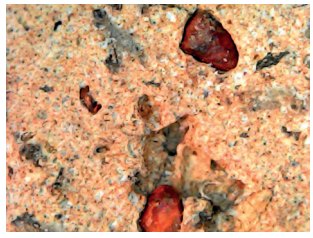
69 In underwater research conducted around the Lighthouse Breakwater in Cnidus, thousands of amphorae were identified. Indeed, this area also had terraced agricultural areas directed towards production and production workshops. It is believed that this breakwater area and its surrounding structures indicated a dock and that these amphorae were those broken during loading on to ships; see Aslan 2019, 342-45, figs. 1-6. That a practice similar to the situation in Cnidus might have occurred in Phaselis should not be overlooked.

Considering all of these factors, the broad temporal scope of the finds from PMK, along with the extensive range of pottery and amphora forms, suggests that this area was used as a dumpsite for an extended period, coinciding with the Hellenistic Temple Area. It is possible that a new manufacturing area was established at the PMK site after the temple area ceased to function. This is due to the concrete archaeological evidence obtained in this area for Phaselis amphorae dated to 450-400 BC (Phaselis Type 1, Type 2, and Small Scale Phaselis). However, the absence of any production traces of Phaselis Type 3 amphorae in the temple area suggests that production workshops were relocated from this area. This temple area was used as a dumpsite for a while longer and likely saw the termination of production activities and dumpsite usage with the commencement of the temple construction. It was then moved entirely to the PMK area. The Hellenistic Temple Area Dumpsite finds date to the early third century BC, while the PMK Dumpsite Area finds can be traced to the first century AD.

The studies described above lead to four possible conclusions based on objective evaluations. These are summarized as follows: First, the Central Tower Area (PMK) is connected to the Inner Harbor. Second, PMK is a dumpsite located near the pottery workshops region. Third, production activities continued in PMK after the cessation of production in the Hellenistic Temple Area. Finally, local production of Phaselis Type 3 continued in the workshops until the late fourth century BC. Further research is planned to gather additional data and provide insight into topics not yet conclusively determined from new perspectives.

Catalogue

Cat.: 1 (fig. 6.1)



Microscopic Section

Excavation Find No: 21PHA.DNM-F2-15

Findspot: PMK[70] Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil

Height: 10 cm

Rim Dia. Min / Max: 10 / 11.5 cm

Thickness: 1 cm

Colour of clay: 2.5 YR 6 / 8 light red

Colour of surface: 2.5 YR 7 / 8 light red

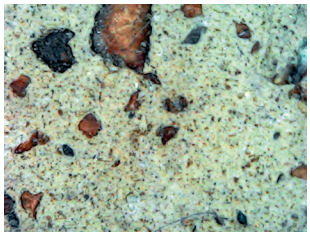
Inclusions: Few thin mica, few thin limestone, few medium sand and medium coarse iron oxide particles

Texture of clay: Medium Soft

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80 and 460-86, cat. nos. 443-95.

[70] Phaselis Central Tower.

Cat.: 2 (fig. 6.2)


Microscopic Section

Excavation Find No: 21PHA.DNM-F-34

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil

Height: 10.7 cm

Foot D. Min / Max: 3.6 / 5.8 cm

Inner Profile of Foot: 0.1 cm

Colour of clay: 5 YR 7 / 6 reddish yellow

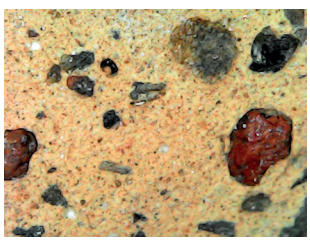
Colour of surface: 5 YR 7 / 6 reddish yellow

Inclusions: Few medium mica, medium thin limestone, few coarse sand and a lot of coarse iron oxide particles

Texture of clay: Medium Soft

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 3 (fig. 7.3)


Microscopic Section

Excavation Find No: 21PHA.DNM-F-2

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil

Height: 7.7 cm

Rim Dia. Min / Max: 13.3 / 14.5 cm

Thickness: 0.9 cm

Colour of clay: 2.5 YR 7 / 8 light red

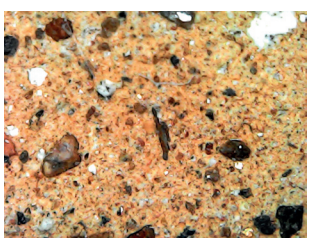
Colour of surface: 5 YR 7 / 6 reddish yellow

Inclusions: Few thin mica, few medium limestone, medium coarse sand and medium very coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA.13-14; Orhan 2023a, 79-80 and 460-86, cat. nos. 443-95.

Cat.: 4 (fig. 7.4)


Microscopic Section

Excavation Find No: 21PHA.DNM-F1-19

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil

Height: 7.5 cm

Rim Dia. Min / Max: 13 / 14.8 cm

Thickness: 1.2 cm

Colour of clay: 2.5 YR 6 / 8 light red

Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Medium thin mica, medium coarse limestone, medium coarse sand and medium coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 5 (fig. 7.5)

Microscopic Section

Excavation Find No: 21PHA.DNM-F2-22

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil

Height: 8.4 cm

Rim Dia. Min / Max: 13 / 14.9 cm

Thickness: 0.9 cm

Colour of clay: 2.5 YR 6 / 8 light red

Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Few thin mica, a lot of coarse limestone, a lot of coarse sand and medium coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 6 (fig. 7.6)

Microscopic Section

Excavation Find No: 21PHA.DNM-F2-14

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil

Height: 11.5 cm

Rim Dia. Min / Max: 11.8 / 13.6 cm

Thickness: 1.4 cm

Colour of clay: 2.5 YR 6 / 8 light red

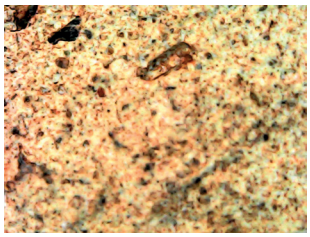
Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Few thin mica, few thin limestone, few coarse sand and a lot of very coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 7 (fig. 7.7)



Microscopic Section

Excavation Find No: 21PHA.DNM-F-8

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil

Height: 20.4 cm

Depth of finger pressure: 0.4 cm

Colour of clay: 2.5 YR 7 / 8 light red

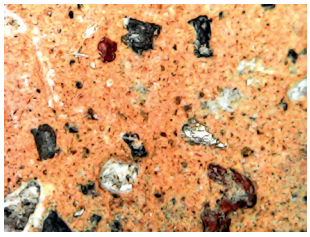
Colour of surface: 5 YR 7 / 6 reddish yellow

Inclusions: Few thin mica, few thin limestone, few coarse sand and a lot of thin iron oxide particles

Texture of clay: Medium hard

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 8 (fig. 7.8)



Microscopic Section

Excavation Find No: 21PHA.DNM-F-6

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil

Height: 16.9 cm

Depth of finger pressure: 0.3 cm

Colour of clay: 2.5 YR 6 / 8 light red

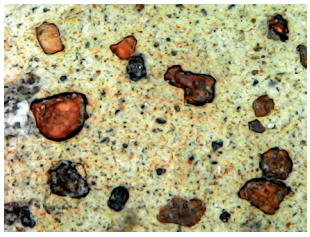
Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Few coarse mica, medium coarse limestone, medium coarse sand and few coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 9 (fig. 7.9)



Microscopic Section

Excavation Find No: 21PHA.DNM-F-9

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil

Height: 18.8 cm

Depth of finger pressure: 0.2 cm

Colour of clay: 2.5 YR 6 / 8 light red

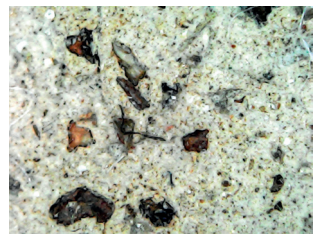
Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Few thin mica, few thin limestone, medium coarse sand and a lot of very coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 10 (fig. 7.10)



Microscopic Section

Excavation Find No: 21PHA.DNM-F1-16

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil

Height: 7.5 cm

Depth of finger pressure: 0.35 cm

Colour of clay: 2.5 YR 6 / 8 light red

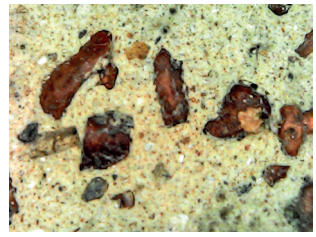
Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Few thin mica, few thin limestone, medium coarse sand and medium coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 11 (fig. 7.11)



Microscopic Section

Excavation Find No: 21PHA.DNM-D-3

Findspot: PMK Pottery Dump and Amphora Production Area, Trench D

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil

Height: 7.2 cm

Foot D. Min / Max: 4.7 / 5.6 cm

Inner profile of foot: 0.9 cm

Colour of clay: 2.5 YR 7 / 8 light red

Colour of surface: 5 YR 7 / 6 reddish yellow

Inclusions: Few thin mica, few thin limestone, few coarse sand and a lot of very coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 12 (fig. 7.12)

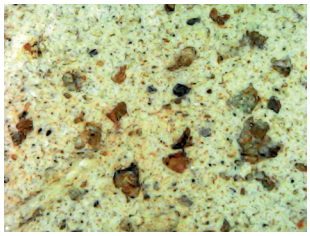
Excavation Find No: 21PHA.DNM-D-4

Findspot: PMK Pottery Dump and Amphora Production Area, Trench D

Type: Phaselis Type 3a

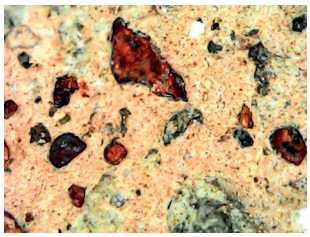
Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil
Height: 8.73 cm
Foot D. Min / Max: 5.4 / 6.9 cm
Inner profile of foot: 0.35 cm
Colour of band and: 2.5 YR 5 / 8 red
Colour of clay: 2.5 YR 7 / 8 light red
Colour of surface: 5 YR 7 / 6 reddish yellow
Inclusions: Few thin mica, few thin limestone, medium coarse sand and a lot of coarse iron oxide particles
Texture of clay: Medium hard


Microscopic Section

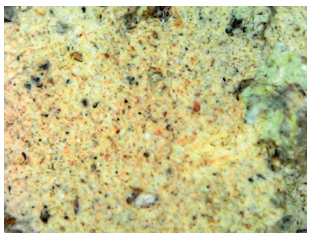
Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 13 (fig. 7.13)
Excavation Find No: 21PHA.DNM-D-5
Findspot: PMK Pottery Dump and Amphora Production Area, Trench D
Type: Phaselis Type 3a
Date: Between the third and last quarter of the fourth century BC.
Contents: Wine and olive oil
Height: 6.2 cm
Foot D. Min / Max: 6 / 4.4 cm
Inner profile of foot: 0.3 cm
Colour of clay: 2.5 YR 7 / 8 light red
Colour of surface: 5 YR 7 / 6 reddish yellow
Inclusions: Few thin mica, few thin limestone, few coarse sand and a lot of very coarse iron oxide particles
Texture of clay: Medium hard


Microscopic Section

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

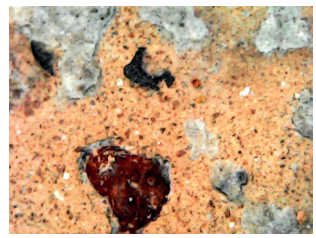
Cat.: 14 (fig. 7.14)
Excavation Find No: 21PHA.DNM-G-3
Findspot: PMK Pottery Dump and Amphora Production Area, Trench G
Type: Phaselis Type 3a
Date: Between the third and last quarter of the fourth century BC.
Contents: Wine and olive oil
Height: 6.5 cm
Foot D. Min / Max: 4.7 / 6.5 cm
Inner profile of foot: 0.3 cm
Colour of band: 7.5 YR 6 / 4 light brown
Colour of clay: 2.5 YR 7 / 8 light red
Colour of surface: 7.5 YR 7 / 6 reddish yellow
Inclusions: Few thin mica, medium thin limestone, medium thin sand and few thin iron oxide particles


Microscopic Section

Texture of clay: Medium hard

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 15 (fig. 7.15)



Microscopic Section

Excavation Find No: 21PHA.DNM-F-11

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil

Height: 7.55 cm

Foot D. Min / Max: 4.5 / 5.7 cm

Inner profile of foot: 1 cm

Colour of clay: 2.5 YR 6 / 8 light red

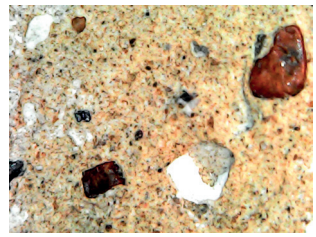
Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Few thin mica, few thin limestone, few medium sand and few very coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 16 (fig. 7.16)



Microscopic Section

Excavation Find No: 21PHA.DNM-F-18

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil

Height: 8.1 cm

Foot D. Min / Max: 4.1 / 5.6 cm

Inner profile of foot: 0.7 cm

Colour of clay: 2.5 YR 6 / 8 light red

Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Medium thin mica, medium very coarse limestone, few medium sand and medium very coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 17 (fig. 7.17)

Excavation Find No: 21PHA.DNM-F1-10

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3a

Date: Between the third and last quarter of the fourth century BC.

Contents: Wine and olive oil
Height: 6 cm
Foot D. Min / Max: 5.45 / 6.4 cm
Inner profile of foot: 1 cm
Colour of clay: 2.5 YR 6 / 8 light red
Colour of surface: 2.5 YR 7 / 8 light red
Inclusions: Medium thin mica, few medium limestone, few medium sand and few very coarse iron oxide particles
Texture of clay: Medium hard


Microscopic Section

Parallels: Rückert 2000, 135, fig. 40, no. 66; Dündar 2012a, 47, figs. 6-8, 57, cat. no. 6; Dündar 2012b, 456, cat. nos. LyA. 13-14, pl. 24, LyA. 13-14; Orhan 2023a, 79-80, 460-86, cat. nos. 443-95.

Cat.: 18 (fig. 8.18)
Excavation Find No: 21PHA.DNM-F-1
Findspot: PMK Pottery Dump and Amphora Production Area, Trench F
Type: Phaselis Type 3b
Date: Late fourth century BC.
Contents: Wine and olive oil
Height: 8.6 cm
Rim Dia. Min / Max: 12 / 13.25 cm
Thickness: 0.8 cm
Colour of clay: 2.5 YR 7 / 8 light red
Colour of surface: 5 YR 7 / 6 reddish yellow
Inclusions: Few thin mica, few thin limestone, few coarse sand and medium very coarse iron oxide particles
Texture of clay: Medium hard


Microscopic Section

Parallels: Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32; Dündar 2012a, 48, figs. 9-10, 57, cat. no. 7; Dündar 2021, 62, cat. no. 21, fig. 32; Demesticha 2021, 46, fig. 3c; Sezgin et al. 2022, 153-54, cat. no. 112; Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

Cat.: 19 (fig. 7.19)
Excavation Find No: 21PHA.DNM-D-8
Findspot: PMK Pottery Dump and Amphora Production Area, Trench D
Type: Phaselis Type 3b
Date: Late fourth century BC.
Contents: Wine and olive oil
Height: 6 cm
Rim Dia. Min / Max: 8.9 / 10.4 cm
Thickness: 1.1 cm
Colour of clay: 2.5 YR 7 / 8 light red
Colour of surface: 5 YR 7 / 6 reddish yellow
Inclusions: Few thin mica, few thin limestone, few coarse sand and few coarse iron oxide particles
Texture of clay: Medium hard


Microscopic Section

Parallels: Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32; Dündar 2012a, 48, figs. 9-10; 57, cat. no. 7; Dündar 2021, 62, cat. no. 21, fig. 32; Demesticha 2021, 46, fig. 3c; Sezgin et al. 2022, 153-54, cat. no. 112; Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

Cat.: 20 (fig. 8.20)


Microscopic Section

Excavation Find No: 21PHA.DNM-F1-24

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3b

Date: Late fourth century BC.

Contents: Wine and olive oil

Height: 10.9 cm

Rim Dia. Min / Max: 9.5 / 10.8 cm

Thickness: 1 cm

Colour of clay: 2.5 YR 6 / 8 light red

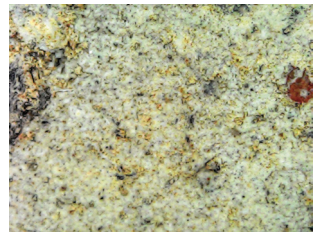
Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Few thin mica, few thin limestone, few coarse sand and medium very coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32; Dündar 2012a, 48, figs. 9-10; 57, cat. no. 7; Dündar 2021, 62, cat. no. 21, fig. 32; Demesticha 2021, 46, fig. 3c; Sezgin et al. 2022, 153-54, cat. no. 112; Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

Cat.: 21 (fig. 8.21)


Microscopic Section

Excavation Find No: 21PHA.DNM-D-9

Findspot: PMK Pottery Dump and Amphora Production Area, Trench D

Type: Phaselis Type 3b

Date: Late fourth century BC.

Contents: Wine and olive oil

Height: 6 cm

Rim Dia. Min / Max: 13 / 14.6 cm

Thickness: 1.3 cm

Colour of clay: 2.5 YR 7 / 8 light red

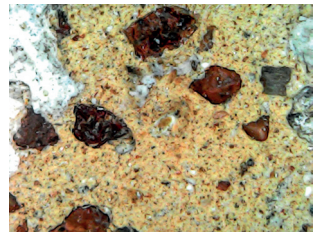
Colour of surface: 5 YR 7 / 6 reddish yellow

Inclusions: Few thin mica, few thin limestone, few thin sand and few coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32; Dündar 2012a, 48, figs. 9-10; 57, cat. no. 7; Dündar 2021, 62, cat. no. 21, fig. 32; Demesticha 2021, 46, fig. 3c; Sezgin et al. 2022, 153-54, cat. no. 112; Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

Cat.: 22 (fig. 8.22)


Microscopic Section

Excavation Find No: 21PHA.DNM-F1-23

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3b

Date: Late fourth century BC.

Contents: Wine and olive oil

Height: 6 cm

Depth of finger pressure: 0.2 cm

Colour of clay: 2.5 YR 6 / 8 light red

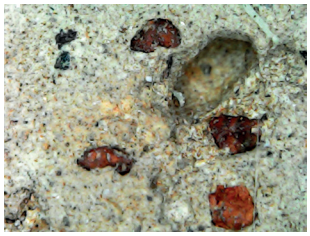
Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Few thin mica, few thin limestone, few very coarse sand and a lot of very coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32; Dündar 2012a, 48, figs. 9-10; 57, cat. no. 7; Dündar 2021, 62, cat. no. 21, fig. 32; Demesticha 2021, 46, fig. 3c; Sezgin et al. 2022, 153-54, cat. no. 112; Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

Cat.: 23 (fig. 8.23)



Microscopic Section

Excavation Find No: 21PHA.DNM-F1-22

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3b

Date: Late fourth century BC.

Contents: Wine and olive oil

Height: 10 cm

Depth of finger pressure: 0.3 cm

Colour of clay: 2.5 YR 6 / 8 light red

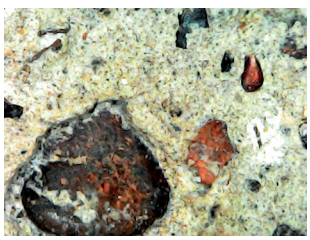
Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Few thin mica, few thin limestone, few very coarse sand and medium very coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32; Dündar 2012a, 48, figs. 9-10; 57, cat. no. 7; Dündar 2021, 62, cat. no. 21, fig. 32; Demesticha 2021, 46, fig. 3c; Sezgin et al. 2022, 153-54, cat. no. 112; Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

Cat.: 24 (fig. 8.24)



Microscopic Section

Excavation Find No: 21PHA.DNM-F1-20

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3b

Date: Late fourth century BC.

Contents: Wine and olive oil

Height: 14.8 cm

Depth of finger pressure: 0.35 cm

Colour of clay: 2.5 YR 7 / 8 light red

Colour of surface: 5 YR 7 / 6 reddish yellow

Inclusions: Few thin mica, few thin limestone, few medium sand and medium very coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32; Dündar 2012a, 48, figs. 9-10; 57, cat. no. 7; Dündar 2021, 62, cat. no. 21, fig. 32; Demesticha 2021, 46, fig. 3c; Sezgin et al. 2022, 153-54, cat. no. 112; Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

Cat.: 25 (fig. 8.25)


Microscopic Section

Excavation Find No: 21PHA.DNM-F2-23

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3b

Date: Late fourth century BC.

Contents: Wine and olive oil

Height: 15.2 cm

Depth of finger pressure: 0.1 cm

Colour of clay: 2.5 YR 6 / 8 light red

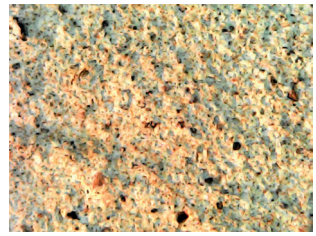
Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Few thin mica, few thin limestone, few coarse sand and a lot of very coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32; Dündar 2012a, 48, figs. 9-10; 57, cat. no. 7; Dündar 2021, 62, cat. no. 21, fig. 32; Demesticha 2021, 46, fig. 3c; Sezgin et al. 2022, 153-54, cat. no. 112; Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

Cat.: 26 (fig. 8.26)


Microscopic Section

Excavation Find No: 21PHA.DNM-F2-24

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3b

Date: Late fourth century BC.

Contents: Wine and olive oil

Height: 20.9 cm

Depth of finger pressure: 0.4 cm

Colour of clay: 2.5 YR 7 / 8 light red

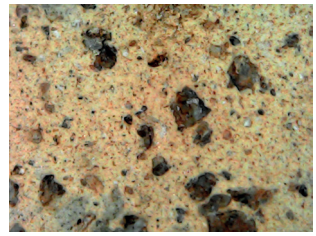
Colour of surface: 5 YR 7 / 6 reddish yellow

Inclusions: Medium thin mica, medium thin limestone, medium thin sand and medium thin iron oxide particles

Texture of clay: Medium hard

Parallels: Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32; Dündar 2012a, 48, figs. 9-10; 57, cat. no. 7; Dündar 2021, 62, cat. no. 21, fig. 32; Demesticha 2021, 46, fig. 3c; Sezgin et al. 2022, 153-54, cat. no. 112; Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

Cat.: 27 (fig. 8.27)


Microscopic Section

Excavation Find No: 21PHA.DNM-F2-6

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3b

Date: Late fourth century BC.

Contents: Wine and olive oil

Height: 9.5 cm

Foot D. Min / Max: 5.2 / 6.85 cm

Inner profile of foot: 0.14 cm

Colour of band: 10 R 5 / 8 red

Colour of clay: 2.5 YR 6 / 8 light red

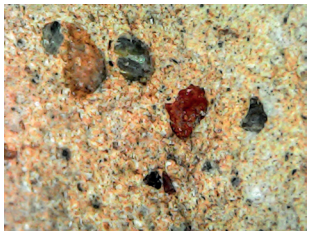
Colour of Surface: 2.5 YR 7 / 8 light red

Inclusions: Few thin mica, few thin limestone, a lot of coarse sand and medium thin iron oxide particles

Texture of clay: Medium hard

Parallels: Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32; Dündar 2012a, 48, figs. 9-10; 57, cat. no. 7; Dündar 2021, 62, cat. no. 21, fig. 32; Demesticha 2021, 46, fig. 3c; Sezgin et al. 2022, 153-54, cat. no. 112; Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

Cat.: 28 (fig. 8.28)



Microscopic Section

Excavation Find No: 21PHA.DNM-F-33

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3b

Date: Late fourth century BC.

Contents: Wine and olive oil

Height: 8 cm

Foot D. Min / Max: 5.3 / 6.6 cm

Inner profile of foot: 1 cm

Colour of clay: 2.5 YR 6 / 8 light red

Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Few thin mica, few thin limestone, medium coarse sand and medium coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32; Dündar 2012a, 48, figs. 9-10; 57, cat. no. 7; Dündar 2021, 62, cat. no. 21, fig. 32; Demesticha 2021, 46, fig. 3c; Sezgin et al. 2022, 153-54, cat. no. 112; Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

Cat.: 29 (fig. 8.29)

Microscopic Section

Excavation Find No: 21PHA.DNM-F-12

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3b

Date: Late fourth century BC.

Contents: Wine and olive oil

Height: 7.8 cm

Foot D. Min / Max: 6.1 / 7.45 cm

Inner profile of foot: 0.5 cm

Colour of clay: 2.5 YR 6 / 8 light red

Colour of surface: 2.5 YR 7 / 8 light red

Inclusions: Few thin mica, few medium limestone, medium very coarse sand and medium very coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32; Dündar 2012a, 48, figs. 9-10; 57, cat. no. 7; Dündar 2021, 62, cat. no. 21, fig. 32; Demesticha 2021, 46, fig. 3c; Sezgin et al. 2022, 153-54, cat. no. 112; Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

Cat.: 30 (fig. 8.30)


Microscopic Section

Excavation Find No: 21PHA.DNM-F-32

Findspot: PMK Pottery Dump and Amphora Production Area, Trench F

Type: Phaselis Type 3b

Date: Late fourth century BC.

Contents: Wine and olive oil

Height: 5.4 cm

Foot D. Min / Max: 4.2 / 5.7 cm

Inner profile of foot: 0.4 cm

Colour of clay: 2.5 YR 6 / 8 light red

Colour of surface: 2.5 YR 6 / 8 light red

Inclusions: Few thin mica, few coarse limestone, few coarse sand and a lot of coarse iron oxide particles

Texture of clay: Medium hard

Parallels: Defernez 2007, 2:590, cat. no. 15, fig. 4.15; 595, cat. no. 32, fig. 12, no. 32; Dündar 2012a, 48, figs. 9-10; 57, cat. no. 7; Dündar 2021, 62, cat. no. 21, fig. 32; Demesticha 2021, 46, fig. 3c; Sezgin et al. 2022, 153-54, cat. no. 112; Orhan 2023a, 80-81, 487-518, cat. nos. 496-557.

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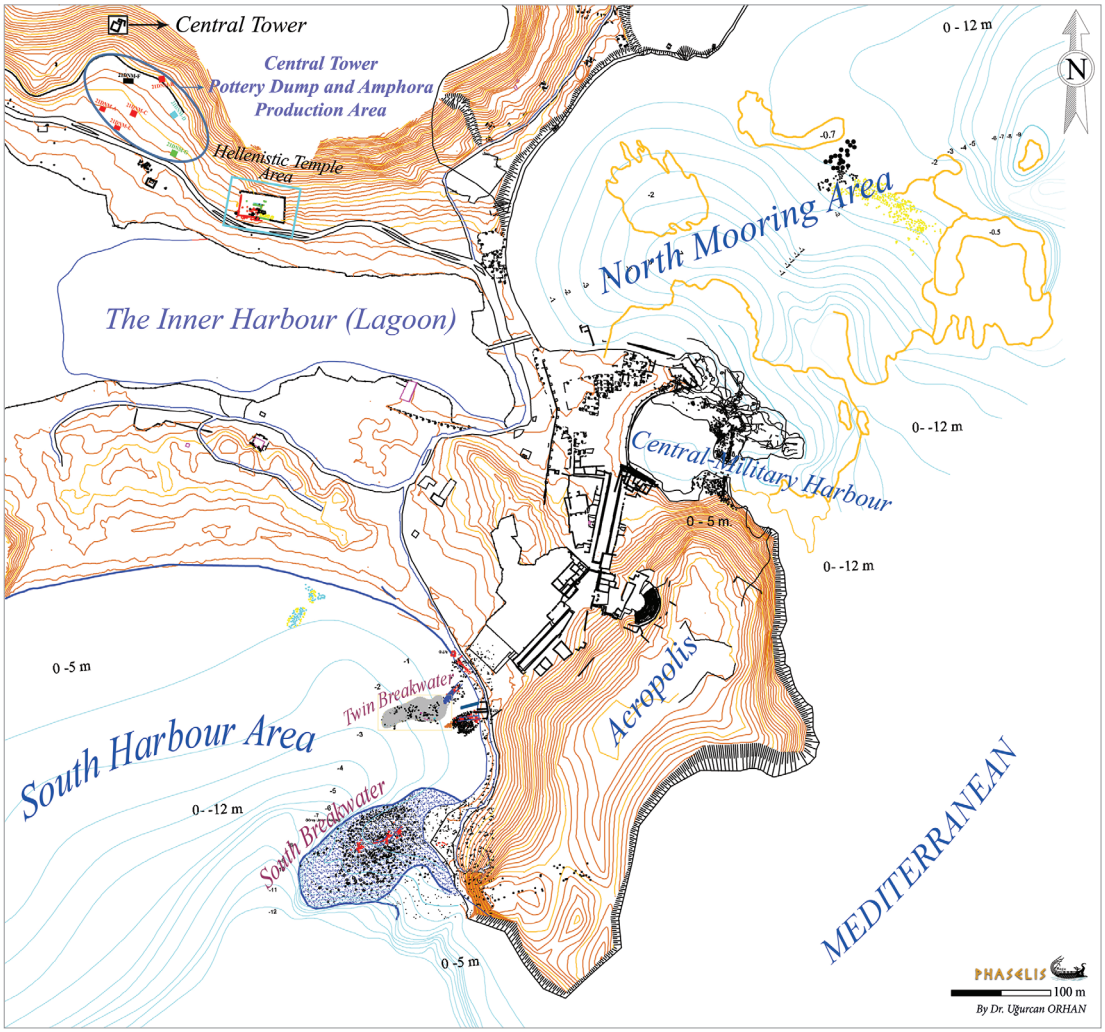

FIG. 1 Plan of Phaselis.

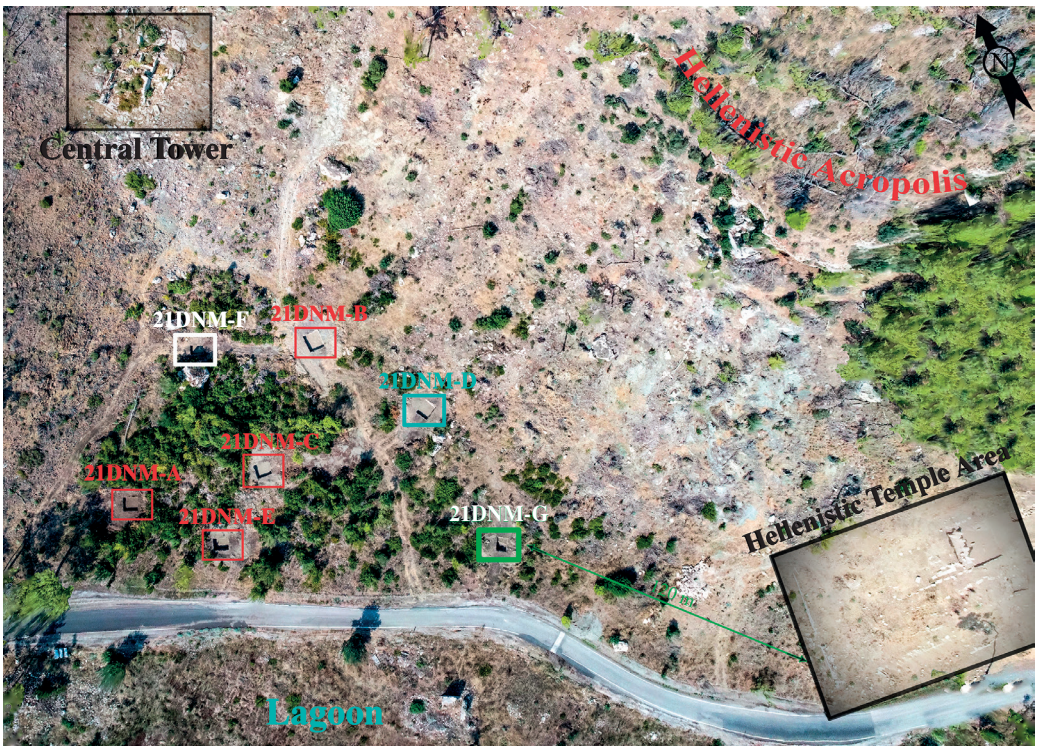

FIG. 2 PMK Pottery Dump and Amphora Production Area (Orthophoto).

FIG. 3 Trench 21DNM-F and Cross-Sections.

FIG. 4
Find Areas and Distribution Map of Phaselis Amphorae.

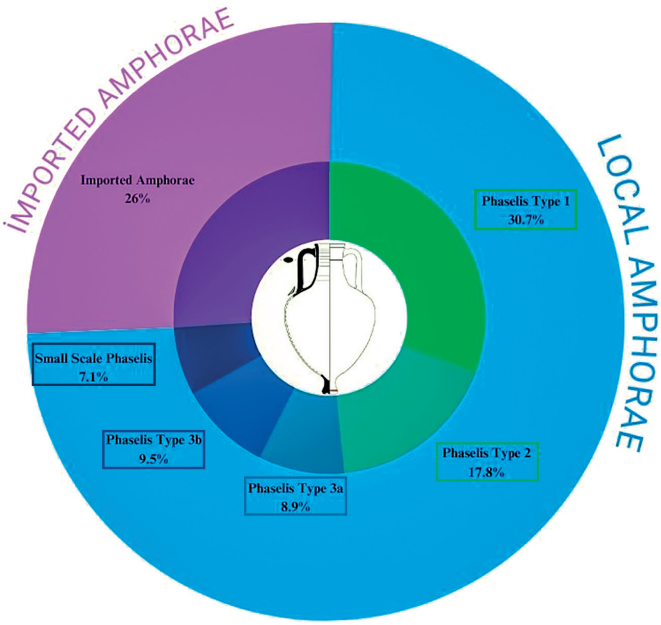

FIG. 5
Proportional Graph of Imported and Local Amphora Finds in Phaselis.

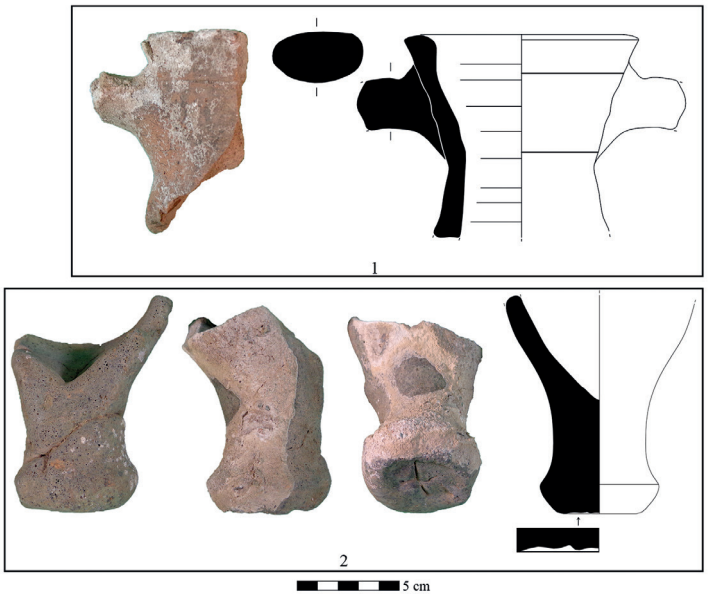

FIG. 6
Faulty Production Rim and Foot Fragment of Phaselis Type 3 Amphorae.

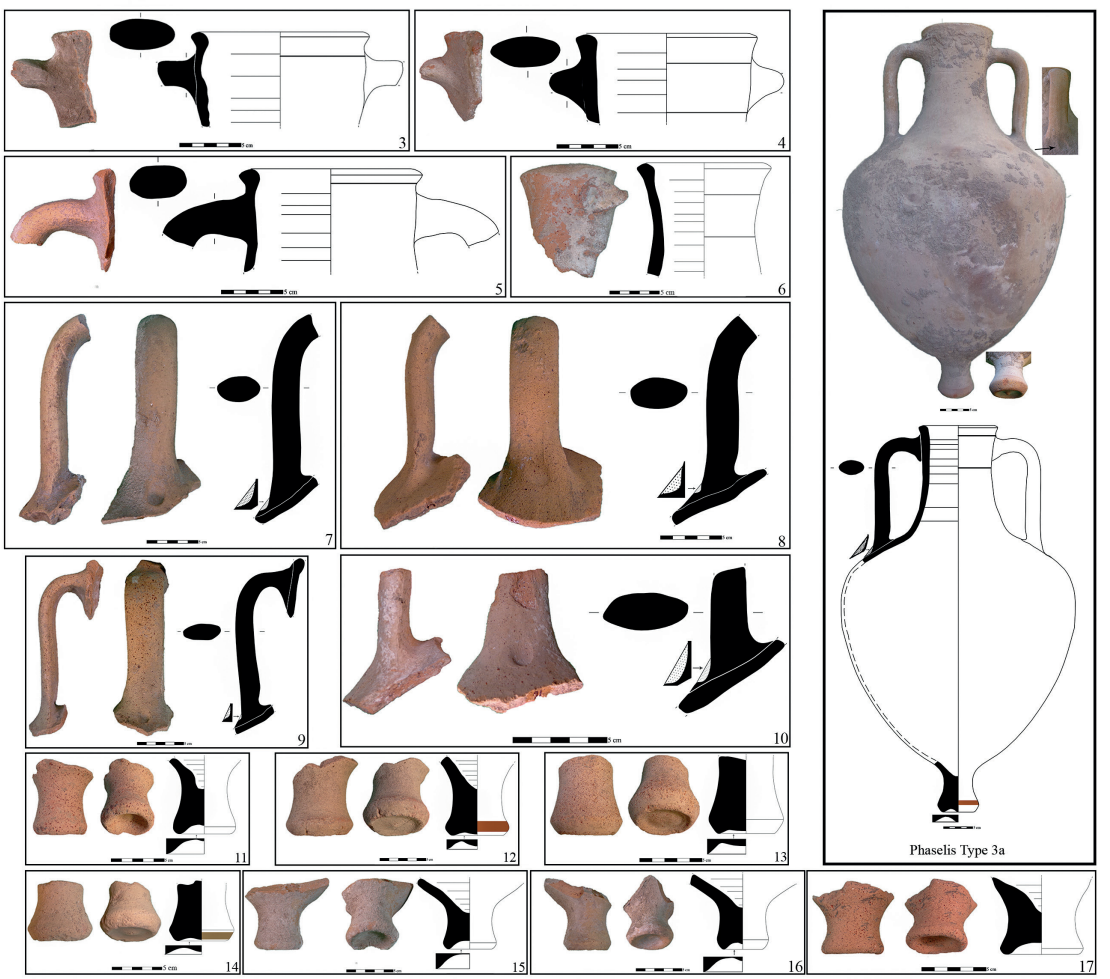

FIG. 7 Phaselis Type 3a.

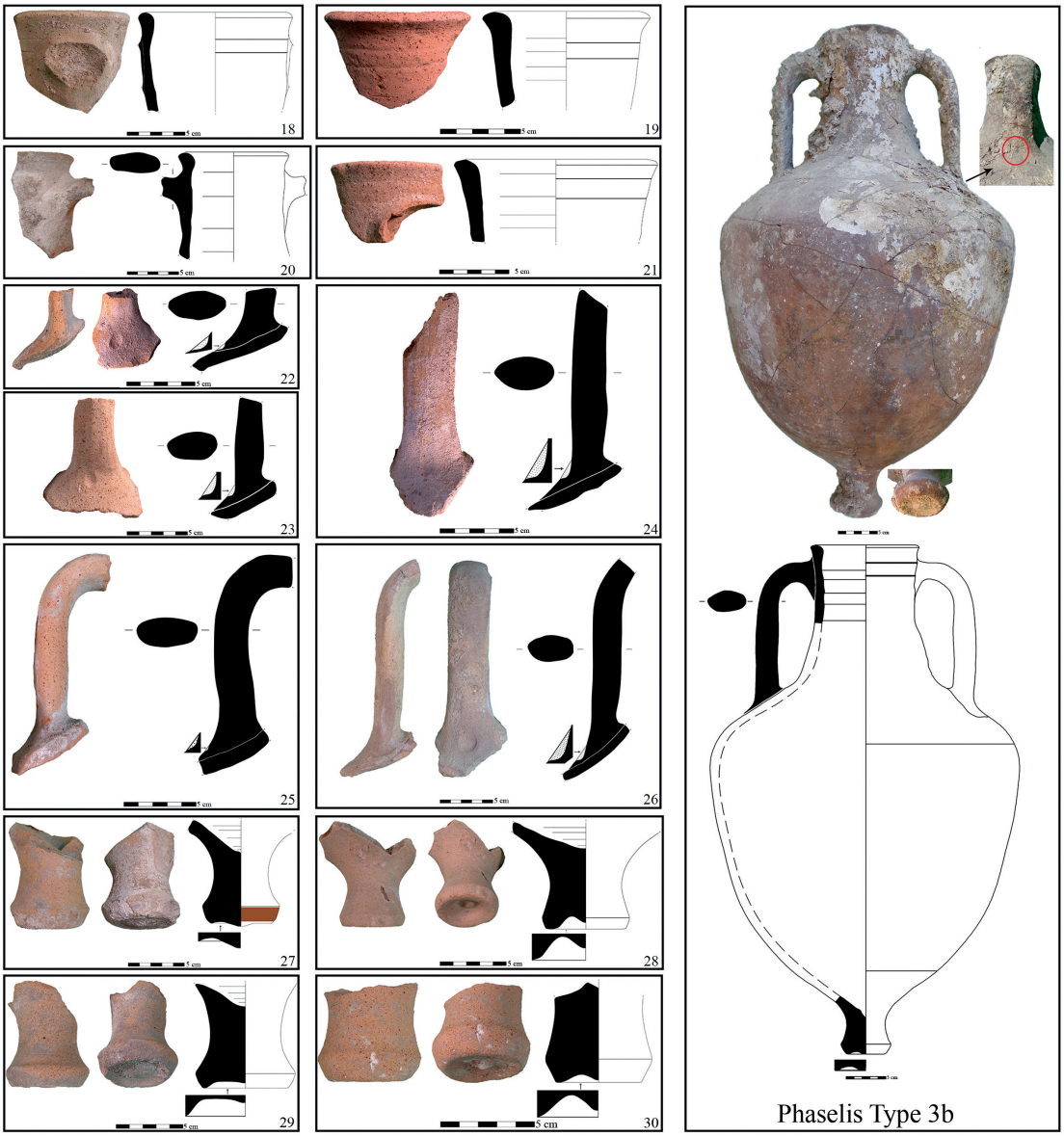

FIG. 8 Phaselis Type 3b.