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A New Amphora and Pottery Production Area in Phaselis: Evaluation of Discoveries and Finds

Phaselis'te Yeni Bir Amphora/Seramik Üretim Alanı: Bulgu ve Buluntuların Değerlendirilmesi

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Abstract: A new amphora and pottery production site was identified during excavations on the flat side of the *Central Tower* slopes in Phaselis. A large number of amphoras and pottery forms have been identified, especially in certain areas, as well as defective examples of amorphous material, slag, production, firing and workshop waste. These are the most important evidence that points to production in the field. In this study, the artifacts that were recovered during excavations carried out under the landscaping project in Phaselis and which point to amphora and pottery production waste and production process are evaluated. Other archaeological excavations and research in Phaselis have also found significant amounts of amorphous material, slags, oven parts, production waste amphora and pottery pieces. At different points in the city, especially in the *Hellenistic Temple Area*, production waste amphora fragments are numerous. The morphological properties of amphoras produced defectively are similar to those of well-produced examples that have been recovered in different areas in Phaselis. In summary, the current findings and results illuminate the IVth-IIIrd century B.C. amphora and pottery production in Phaselis and contribute to the history of production in the city.

Keywords: East Mediterranean • Phaselis • Amphora • Pottery • Production • Pottery Waste Dump and Debris Area

Öz: Phaselis'te *Merkezi Kule* yamaçlarındaki düzlük kısımda yapılan kazı çalışmalarında, yeni bir amphora/seramik üretim sahası tespit edilmiştir. Özellikle belirli alanlarda oldukça yoğun amphora ve seramik kap formlarıyla amorf, cüruf, üretim/pişme hatalı örnekler ve atölye atıkları ele geçmiştir. Nitekim söz konusu buluntular, alandaki üretimi işaret eden en önemli kanıtlar olarak karşımıza çıkmaktadır. Zira bu çalışmada, Phaselis'te çevre düzenleme projesi kapsamında yapılan kazılar sırasında ele geçen ve amphora/seramik üretim atıkları ile üretim sürecine işaret eden bulgu ve buluntular değerlendirilmektedir. Öyle ki Phaselis'teki diğer arkeolojik kazı ve araştırmalarda da önemli ölçekte amorflar, cüruflar, fırın parçaları, üretim atığı amphora ve seramik parçalar ele geçmiştir. Kentin farklı noktalarından, özellikle *Hellenistik Tapınak Alanı*'ndan, ele geçen üretim atığı amphora parçalarının ise yoğunlukta olduğu görülmektedir. Hatalı üretim amphoraların ise morfolojik özellikleri, Phaselis'te farklı alanlarda ele geçen iyi üretilmiş örnekler ile benzerdir. Bu bulgular da bu sebeplerden dolayı, Phaselis'te farklı bir amphora/seramik üretim alanı için kanıt niteliğinde olduğu söylenebilmektedir. Netice itibariyle, eldeki mevcut bulgu ve buluntular; Phaselis'in MÖ IV-III. yüzyıldaki amphora/seramik üretim repertuarına ışık tutması ve kentin üretim tarihine katkı sağlaması bakımından, önemini arz etmektedir.

Anahtar Kelimeler: Doğu Akdeniz • Phaselis • Amphora • Seramik • Üretim •

Introduction

Phaselis, in antiquity a city on the western coast of the Pamphylian Gulf, today within the borders of Tekirova Quarter, Kemer District, Antalya Province, just south of the modern Antalya-Kumluca

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highway. Some conservation and landscaping projects have been initiated to protect the cultural legacy of Phaselis. During the Phaselis landscaping project, seven test trenches were opened on the flat field below the *Central Tower*[1], located on the northern slopes of the city center (Fig.1).

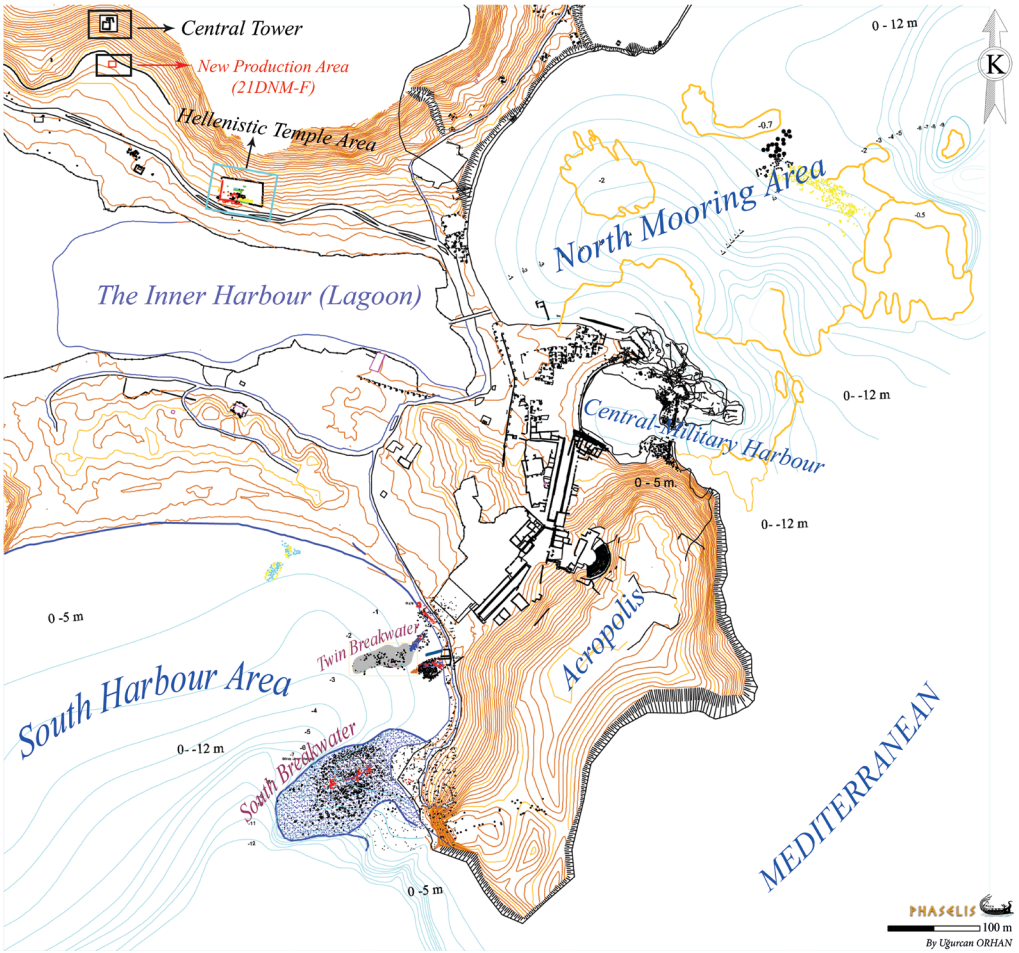

Fig. 1. The Phaselis City Plan

These trenches yielded a great deal of new information and data[2] which has improved the understanding of the quality and function of the work area as a whole. In fact, the thousands of terra cotta brick finds unearthed from the area that we believe to be a new pottery and amphora production area, some amorphous material, slag, and pottery pieces that are remnants of defective production or firing, indicating production, as well as brick and kiln plasters that are believed to be from the workshop, constitute the primary material of this study[3]. These finds, which indicate production and the

[1] The Central Tower was built on a dominant point that can see all the harbours of Phaselis, which was especially important in terms of harbour security, see Taşkıran 2021, 10-17.

[2] The labelling of the seven test trenches follow the alphabetical order starting from 21DNM abbreviation A to G. For the preliminary report of this work, see Orhan 2021, 153-158, fig. 15-25.

[3] After the finds in the *Hellenistic Temple Area* waste area, particularly those indicating production, and certain groups were proven to be local production, the finds in the new production area were deemed worthy of examination and served as the foundation for the preparation of this study.

21DNM-F Square and falls within the scope of the topic, were examined within a particular framework in an effort to pinpoint their historical period. In addition, studies have been carried out to determine the pottery group the production wastes belonged to in relation to the pottery groups that constitute historical and typological analogues. Indeed, classifications were made for both the type and origin of pottery groups exhibiting production and firing defects, and attempts were made to determine the historical scale utilizing analogous amphora groups.

Fig. 2. Localization of Amphora and Pottery Production Area

This area on the slope below the Central Tower is not the first place in Phaselis where evidence for ceramic and amphora production has been discovered. In fact, the group of finds identified during the excavations on the slope of the Central Tower and which pointed to production, had previously been identified during Sector-based research and excavations in the Hellenistic Temple Area[4]. The Hellenistic Temple Area[5] and the waste site on the slope of the Central Tower are very close to each other (Fig. 2). Apart from their proximity, the two production areas also share other characteristics. First, both places constitute wide, open areas close to natural materials and water. Second, during Antiquity both places must have been at the shore of the lagoon (*Inner Harbour*)[6].

During previous studies that were carried out on the finds from the *Hellenistic Temple Area* archaeometric analysis was also performed[7]. Archaeometric analyses determined that samples of amorphous material, slag, production or firing defects, and certain pottery and amphora groups had been produced locally[8]. It is also significant that the raw material and fabrication of the finds from the *Hellenistic Temple Area* are similar to those from the slope of the *Central Tower*.

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4 The discovery of similar groups of finds in both areas and the proximity of these two distinct sites are also noteworthy.

5 For studies on ceramics in the *Hellenistic Temple Area*, see Orhan 2020, 75-86; 2023, 35-43; Orhan *et al.* 2022, 558-574.

6 For geographical research in Phaselis, see Genişyürek *et al.* 2022, 207-222; Akköprü *et al.* 2022, 223-236.

7 Orhan *et al.* 2022, 558-574, fig. 7; Orhan 2023, 37-40.

8 Orhan *et al.* 2022, 558-574, fig. 7-13; Orhan 2023, 37-40, 155-223, fig. 11, 16, 22, 26, 43-45, pl. 10-14.

The historical spectrum of these two production sites remarkably indicates that two distinct areas continued their production activities successively. Therefore, the primary purpose of this study is to introduce the *Central Tower Area Production Site* and its finds, as well as to propose ideas about its connections with the production area in the *Hellenistic Temple Area*. Moreover, the study intends to offer some proposals regarding the localization, function and quality of this new production area. Additionally, the studies conducted throughout the *Central Tower* Surroundings *Production Site* aimed to contribute to the production activities of Phaselis in antiquity by presenting new perspectives on production, trade, and harbour connections based on the discoveries and finds from this new production area.

Central Tower Slope 21DNM-F Trench

The *Central Tower* in Phaselis is located just south of the old Antalya-Kumluca highway, northwest of Phaselis city center and the *Hellenistic Acropolis*, and approximately 250 meters northwest of the *Hellenistic Temple Area*. The *21DNM-F* trench was excavated approximately 50 meters south of the *Central Tower* as part of the landscaping project (Figs. 1-2)[9]. The excavation, designed with a 4 x 4 m east-west orientation, revealed the presence of both large and small fragments of rock that had apparently rolled downed the slope to a particular level. In this *F* grid, where no construction residue could be detected, a very dense layer of finds was reached after a certain level (Fig. 3). In fact, when observing the southern section of the *F* grid from east to west 1.60 meters, the orientation of the pottery finds layer can also be observed. The density of the finds, which began after 1.60 meters from the southeast corner of the eastern section, can be traced to the western section of the trench as far as 1.90 meters. The layer with the heap of terracotta finds continues in a layer of 88 cm (Fig. 4). It was observed that this find layer continued in the south and west sections (Figs. 3-4).

Fig. 3. 21DNM-F Overview

Fig. 4. Layer of Finds

The quality, function, and status of preservation of the terracotta material found in the trench are

[9] For the studies carried out in 21DNM-F within the scope of the landscaping project, see Orhan 2021, 155-157, fig. 15, 21, 24.

also aspects of *21DNM-F* that deserve mention. Black glazed pottery (skyphos, recessed open-mouthed bowl, kantharos, fish plate, and kylix), coarse pottery, roof tiles (stroter and calipers fragments), and amphorae were unearthed. In addition to the identified pottery groups, amorphous material, slag, and defective production and fired pottery pieces, as well as workshop waste (kiln bricks and plasters), indicate pottery and amphora production.

Examination of the general finds and the status of preservation of the unearthed terracotta material shows the finds were heaped over a certain layer and submerged for an extended period of time (most likely in sea water)[10]. Consequently, it would not be incorrect to assert that the find layer in the *21DNM-F* trench was submerged for a long time or was in contact with water periodically[11]. In all the excavations, except for the dense find groups, no construction finds were discovered. However, the finds recovered from the area strengthen the possibility of a workshop around the square *21DNM-F*. The current discoveries and finds indicate that the *F* square and its surroundings may have been the waste (debris) area associated with this center of production.

Amphora and Pottery Production

During the systematic-scientific archaeological research and excavations conducted between 2019 and 2021 in the *Hellenistic Temple Area* of Phaselis, numerous amorphous material, slag, and defective pottery pieces were recovered[12]. However, despite the existence of tangible archaeological evidence, no workshop or structure associated with pottery production was discovered in that location. Considering the general range of finds pointing to the production in the *Hellenistic Temple Area*[13], where no structures were found, a large number of terracotta bricks, perforated and flat plates, tubuli-like terracotta pipes[14], defective production vessel fragments, amorphous groups and pottery wastes (slag) was discovered[15]. Upon examining[16] the amorphous material and slag from the area where more than one clay color was detected, it was discovered that clay mixed with sand was subjected to high temperatures, resulting in a glassy sheen[17]. In fact, these finds in the *Hellenistic Temple Area* were regarded as evidence for production, and archaeometric analyses were conducted on both amphorae

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10 Barnacle layers often seen on terracotta material found underwater are likewise seen on this type of pottery and amphorae.

11 At present there is no running water or possibility of contact with sea water in the locality of 21DNM-F. But, as in all seven test trenches after a certain level of elevation, sandy, clayey soil and some sea creatures were found. These observations probably indicate that the lagoon periodically extended up to the location of the test trenches. For studies on land and sea snails in Phaselis, see Örstan & Yıldırım 2022, 17-25; Örstan & Ovalis 2023, 1-3.

12 Orhan 2020, 75-86; 2023, 155-161, fig. 11, 16-17, 22, 26-28, 32-33; Orhan *et al.* 2022, 558-561, fig. 1-6.

13 The absence of a production workshop in the *Hellenistic Temple Area* is most likely related to the temple having been constructed there after production had stopped or had been moved elsewhere. It is believed that these structures were removed during the temple's construction.

14 For tubuli samples, see Kassab-Tezgör & Özsalar 2010, 199-216, fig. 5-7; Demirel 2020, 13, fig. 46.

15 For examples of faulty production and amorphous-slag samples in Rhodiapolis, see. Çetintaş 2016, 123-136, fig. 1-47; 2018, 93-105, fig. 1-12. Also, for the ceramic kilns and wastes in the Hasankeyf excavation, see. Çeken 2007, 245-252, foto. 6.

16 The mentioned color differences are most likely related to firing temperatures.

17 It is also thought that the wastes in question, which were exposed to very high temperatures and acquired a glassy shine, may be kiln plaster. For examples from Rhodiapolis, see Çetintaş 2018, 93-104, fig. 11.

and production defects, amorphous and slag groups. The analyses determined that clay samples obtained from the lagoon in Phaselis at specific depths in the identified areas were highly similar to the finds and amphoras, indicating production in the temple area[18]. Archaeometric analyses thus proved that most pottery groups in the Hellenistic Temple Area were produced using raw materials from the lagoon[19].

Parallel to the excavations and studies carried out in the *Hellenistic Temple Area*, as part of the landscaping project similar groups of production-related finds were discovered in the *Central Tower* slope *21DNM-F* Trench and its surroundings. The finds of *21DNM-F,* were determined to be similar to those from the temple area but were significantly more numerous, were primarily analyzed petrographically. In the course of the examinations, it was determined that the structure of the clay was comparable to that found in the temple area but differentiated chronologically[20]. This new production area yielded, similar to the temple area, groups of plastered and unplastered kiln bricks, amorphous material and slag samples, firing and production defective pottery, and amphora fragments that had deteriorated structurally and physically by exposure to high temperatures[21] (Figs. 5-8).

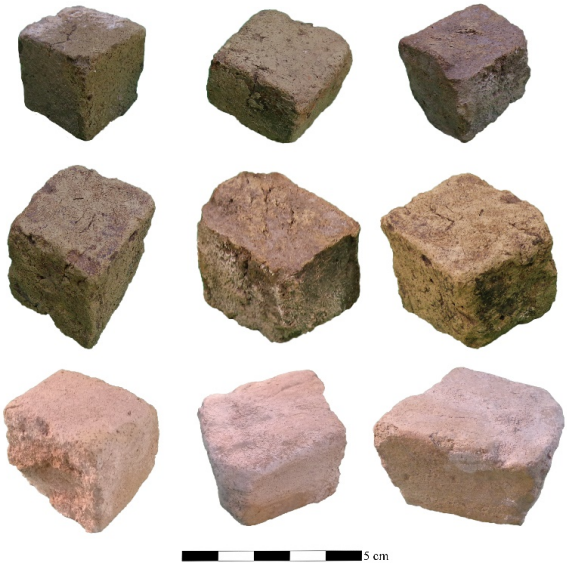

Fig. 5. Plastered and Non-Plastered Terra Cotta Oven Bricks

The *21DNM-F* finds consist of a group of terracotta bricks, which are believed to have functioned in the workshop or during production[22] (Fig. 5). Some of these broken and fragmented rectangular bricks, which have a thick and solid well-fired structure, were determined to have been subjected to quite high temperatures, as lime flakes were discovered on them[23]. It was also observed that some of

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18 Petrographic analysis was also carried out on red particles macroscopically resembling brick fragments in the raw clay taken from the lagoon. The results of these analyses indicated that these particles, which were thought to be chamotte at the beginning, had formed by the conversion of pyroxenes in the soil into iron oxides and that these red particles were iron oxide (hematite). Thus, the identification of hematite in both clay samples, slags and amphorae is further evidence that amphorae containing iron oxide were produced in Phaselis. Also see Orhan *et al.* 2022, 50-53, fig. 43-45.

19 For details, see the *Hellenistic Temple Area Production Site and Ceramic Analysis* title of this study.

20 It has been determined that the clay from the *Central Tower* Surroundings *Production Site* contain coarse iron oxide (hematite) as were found in the finds in the *Hellenistic Temple Area*.

21 Fragments of Phaselis amphorae, the production of which we know from the *Hellenistic Temple Area Production Site*, were found in the *Central Tower* Surroundings *Production Site*. These amphorae are also of great importance in terms of the chronology of production.

22 Similar bricks, thought to belong to the kitchen part of a ship were found during the underwater rescue excavations of Kekova Island Shallow Reef Eastern Wreck, see Aslan & Orhan 2020, 310-312, fig. 14a.

23 For similar ones in the *Hellenistic Temple Area Production Site*, see Orhan 2020, 82, fig. 10b; 2023, 160, fig. 28; Orhan

these bricks were plastered. It is believed that these bricks[24], despite the lack of precise functional data, may have been used externally in furnaces or kilns[25] (Fig. 5).

Amorphous material and slag wastes are one of the most densely discovered finds at the *Central Tower Surroundings Production Site*[26] (Fig. 6). It has been observed that some of these wastes, which are shapeless and have developed a glassy sheen due to exposure to heat, may belong to the kiln plaster, while others are deformed bricks and veneer pieces[27] (Fig. 6). It is believed that some of these amorphous samples may have served as furnace supports[28]. Indeed, it was observed that the clay of these amorphous groups, particularly the samples on which pieces of coating were preserved, had turned dark gray or black (7.5 YR 3/1 Very Dark Gray) due to the heat generated during firing and their structure had deteriorated[29] (Fig. 7).

Fig. 6. Amorphous material and Slag Wastes

et al. 2022, 561, fig. 5. For the brick fragments found in Seleucia Sidera, see Hürmüzlü *et al.* 2020, 153, fig. 9.

24 Only a few of the hundreds of bricks identified in the area were included in this study. Also for *in situ* use of bricks, see Vargas & García 2004, 322, Fig. 31.

25 The remarkable numerical excess of the bricks identified in the study indicates that these bricks were used in the ceramic kiln. For some examples of kilns using bricks, see Swan 1984, 30-80, fig. 2-20, pl. 1-9. In addition, it is known that the pottery placement walls of kilns was later built with bricks, and then the walls were plastered and, it is thought that the plastered bricks uncovered in Phaselis were used for this function. For examples of plastered bricks in Phaselis, see Orhan *et al.* 2022, 561, fig. 5; Orhan 2023, 160, fig. 28. For pottery kilns with the mentioned function, see. Hasaki 2002, 468, pl. I-II; İren 2003, 43, fig. 47.

26 For ceramic kilns in Crete, the functions of these kilns and the pottery produced, see. Shaw *et al.* 2001, 1 etc.

27 For similar examples from Rhodiapolis, see Çetintaş 2018, 101-102, fig. 11-12; For examples of kiln waste and slag found in Seleukeia Sidera, see Hürmüzlü *et al.* 2020, 153, fig. 7, 9.

28 Similar examples were also obtained from the *Hellenistic Temple Area Production Site*, see. Orhan 2020, 82, fig. 10a; 2023, 155-160, fig. 11a, 16, 22, 26, 27a; Orhan *et al.* 2022, 561, fig.4a. Also see Hasaki 2002, 477-478, pl. II. 12-13.

29 It is highly likely that these pottery were overturned and got stuck to other pottery during firing and that they were later discarded due to their defects.

In addition to the amorphous material and slag groups, some pottery and fused amphora fragments with firing and production defects were also discovered in the area[30] (Fig. 8). Among these, the pieces of defective pottery that stuck together during firing provide the most convincing evidence of production in this area[31] (Fig. 8a). Again, production is clearly indicated by the presence of a sea shell that was stuck to the tondo part of a pottery bowl during firing (Fig. 8b).

Fig. 7. Faulty Production Ceramic Pieces with Structural Distortions

In this study, amphoras are the most significant group of finds that help to date both the general finds and the production area. Among these defective examples, summarized before and indicating direct production, the most significant finds indicating local amphora production is the base fragment of a Phaselis amphora with a firing or production defect[32]. The clay color of this Phaselis amphora turned gray (2.5 YR 4/1 Dark Reddish Gray) due to extreme heat reached during firing, and the lining texture was completely destroyed. Moreover, due to potential thermal imbalances, deep fracture splits and lime cracks formed at the bottom of the amphora during firing[33] (Fig. 8c). Despite the amphora's deformation, it was possible to determine its type and date due to well-made examples discovered in different areas of Phaselis[34]. This defective amphora bottom (Fig. 8c) is similar to Phaselis Type 3b among Phaselis amphora groups and has been dated to the third and fourth quarters of the IVth century B.C.[35].

If we examine the location of the *Central Tower Surroundings Production Area,* where the production-related materials were recovered, we find a point close to the lagoon, which is located within Phaselis city limits and most likely had a very large basin during the city's early periods.

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30 As direct evidence of production activities, defective production amphora and pottery heaps that have fused are of great importance.

31 For the context of similar finds in the *Hellenistic Temple Area Production Site*, see. Orhan *et al.* 2022, 561, fig. 4b. Also, for faulty pottery in the Hasankeyf excavation, see. Çeken 2007, 250, fig. 6. For examples from Crete, see Van de Moortel 2001, 77, fig. 42.

32 For similar examples of faulty production in different areas of Phaselis, see Orhan 2020, 82, fig. 10c-d; 2023, 157, fig. 17; Orhan *et al.* 2022, 561, fig. 4c and 6. For similar faulty production amphorae from Rhodiapolis, see Çetintaş 2016, 123-136, fig. 1-32. An amphora production area was also recently found in Pergamon.

33 These fractures, splits and ruptures on the Phaselis amphora are purely deformations caused by high temperatures. As a matter of fact, similar examples were found in the *Hellenistic Temple Area*, see Orhan 2020, 82, 10d.

34 For all types and subtypes of Phaselis amphorae, see Orhan 2023, 200-217, kat. no. 88-610, pl. 2-4.

35 Orhan 2023, 80-81, 487-518, kat. no. 496-557, pl. 2-4.

The clay and water necessary for the production of pottery (amphora) were most likely sourced from this area, given its lake-like structure and the fact that it is fed by numerous streams[36]. Moreover, considering the period[37], the fact that the production area was located outside the city in a broad valley with intense air circulation would have prevented the city from being affected by any air pollution that might have occurred during production. The discovery of materials indicating production in the area is one of the factors supporting the notion that production indeed occurred in this area[38].

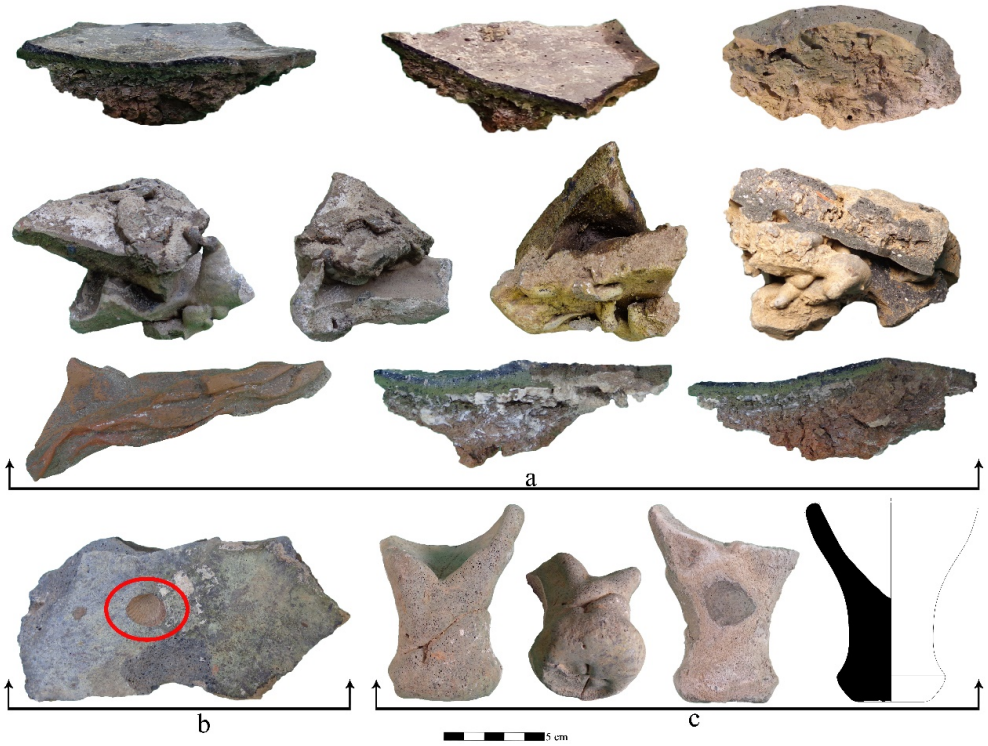

Fig. 8a. Ceramic Pieces with Production Defects, b. Ceramic Vase (tondo part) with Production Defects, c. Phaselis Amphora Feet with Production Defects.

Hellenistic Temple Area Production Site and Pottery Analysis

In the *Hellenistic Temple Area* deposit area, (Figs. 1-2), thousands of terracotta objects were found[39]. Important evidence indicating production (workshop and kiln) was uncovered in the area during

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36 The lagoon in Phaselis has a sea connection with the *Northern Harbour* (*North Anchorage Area*). In addition, the lagoon was probably used as an *Inner Harbour* in ancient times. In connection with this issue, underwater researches were also carried out in Phaselis, see Aslan & Baybo 2015, 1-17; Aslan 2016, 31-47; Aslan *et al.* 2018, 1-13; Aslan & Orhan 2019, 85-99; Orhan 2023, 43-54, fig. 47-102.

37 The current basin of the lagoon covers a very large area of 48,000 m^2. An area of this size is considered suitable for the supply of the raw material needed.

38 It is believed that the close location of the possible production site to the harbour areas would also have facilitated the loading of cargo on ships and ensured delivery to the Mediterranean market more quickly.

39 It was determined that the finds in the *Hellenistic Temple Area* had various forms and functions in a certain date range (the period from the end of the Vth century B.C. to the middle of the IVth century B.C.). In addition, based on the pottery finds of various forms and functions; it is understood that the said study area was a ceramic dump.

excavations and studies[40]. Starting from all of these production-related indicators[41], petrographic and chemical (PED-XRF) analyses[42] were conducted on 34 amphorae, four amorphous-slag pieces, clay balls unearthed during excavations, and raw clay samples obtained from the lagoon. The data were also evaluated within the context of the geology of the region. It was determined that clay, slag, and amphorae from Phaselis mostly contains ultrabasic rock fragments, serpentine, and pyroxene[43]. These rocks and minerals are associated with the Tekirova ophiolite beneath Phaselis, and the presence of these rocks and minerals, particularly in clay, slag, and amphorae, strengthens the idea that the examples were produced in Phaselis[44]. Moreover, the analyses of the clay, slag, and amphora samples in terms of petrographic contents, rock types, and mineral contents indicated that the clay used in the manufacture contained ophiolite and metamorphic rocks[45]. In fact, the clay lumps and slag fragments recovered from the lagoon in the city of Phaselis and from the trench during the excavation are petrographically similar to the amphora samples and are the strongest evidence that they were produced locally[46]. Both concrete archaeological data and archaeometric analyses prove amphoras were produced in Phaselis[47]. In summary, the morphological characteristics of the finds recovered from the *Hellenistic Temple Area* are consistent with those of the finds from the *Central Tower Surroundings Production Area*[48].

Observations & Evaluation

During the works initiated within the scope of the landscaping project, seven test trenches were opened in the flat area on the slopes of the *Central Tower*. These trenches, which were decided to be excavated at certain dimensions and depths, were created within a certain plan. Some of the trenches yielded no finds, while others yielded large numbers and kinds of pottery scale. These find groups were discovered mostly in *21DNM-F*. In fact, the most significant aspect of *21DNM-F* is the quality, function, and status of preservation of the terracotta discovered in the *F* square.

In terms of the general finds recovered from *21DNM-F*, there were a lot of black glazed pottery pieces (fish plates, bowls, kantharos, lekythos, and skyphos), brazier fragments, pieces of vessels for

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40 For all the works in the *Hellenistic Temple Area*, see Arslan & Tüner Önen 2019, 428-430, fig. 9-14; 2020, 252-258; 2021, 148-153; 2022, 248-254.

41 The finds pointing to production; flat and perforated slabs, rectangular and square shaped kiln bricks, amorphous fragments, ceramic slags and amphorae, see Orhan *et al.* 2022, 561-562, fig. 4-6; Orhan 2023, 155-161, fig. 11, 16-17, 22, 26-28, 32-33.

42 For archaeometric analysis, see. Orhan *et al.* 2022, 563-572, fig. 7-15; Orhan 2023, 37-40, fig. 43-45, pl. 10-14.

43 Orhan *et al.* 2022, 563-572.

44 As a matter of fact, the compatibility of clay samples taken from the city with both slag and amphora samples proves this idea.

45 Slag samples are also compatible with rocks and minerals. Amphora samples have similar contents with both clay and slag samples.

46 Orhan *et al.* 2022, 570-572.

47 The available data indicate the production of amphorae between 450/425-300 B.C.

48 The clay structures of the finds in the two different production areas are similar. As illustrated by previous studies, the coarse iron oxide-hematite fragments discovered in the paste of the *Central Tower* Surroundings *Production Site* finds indicate clay samples from the lagoon in Phaselis.

everyday use, and amphorae[49]. In addition to the groups whose form and analogy were determined, kiln bricks, amorphous material and slag groups, which are the main material of the study and indicate production, as well as numerous amphora and pottery pieces with production defects, were also discovered (Figs. 5-8). The preservation status of these pottery groups supporting pottery production activities reveal that the finds piled in heaps have been exposed to water (sea or stream) for long periods of time. Long-term exposure to water resulted in the formation of a layer of barnacles on them. The presence of lime and barnacles indicates that this layer was submerged for a long time. Due to the observed barnacle and calcification on these finds, two distinct hypotheses regarding the said waste area have emerged. The first hypothesis suggests that in the past the lagoon in the city reached this area, which includes hundreds of finds that support pottery production activities. In fact, the discoveries and finds indicate that the lagoon in the city continued as the clay production area throughout the periods of production and usage[50]. The second of these inferences is that this area contains a structure associated with the *Inner Harbour* (a pier where ships may be loaded)[51]. In fact, some terraces were discovered at the highest elevations of the *21DNM-F* square, *which* contains thousands of dense pottery finds. The aforementioned terraced structure also indicates that this might have been a harbour or pier, similar to the many found in Anatolia, where goods were loaded and unloaded from ships[52]. It would not be incorrect to assume that the large numbers of barnacle-encrusted finds indicate that this area was submerged during the time in question. Although it seems unlikely that this area is a pier area associated with the *Inner Harbour*, it is possible that during the active years of the waste site the lagoon extended quite close to the production site.

The discovery of this new amphora and pottery production area in Phaselis has clarified many other findings. While local groups produced from the beginning of the Vth century B.C. to the last quarter of the IVth century B.C. were identified in the *Hellenistic Temple Area*, according to the initial investigations, the *Central Tower Surroundings Production Area* yielded artifacts from the middle of the IVth century B.C. to the end of the IIIrd century B.C. In this respect, the cessation of production in the *Hellenistic Temple Area* must have accelerated or increased the activities in this new production area. Along with the production in question, some inferences regarding the late classical period socio-cultural, commercial and production life in Phaselis were also obtained.

Consequently, the available discoveries and finds indicate that *21DNM-F* and its surroundings were a production area (waste site, debris, or pottery dump), the city's lagoon extended to this area,

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49 Some of these finds were published as research reports, see Orhan 2021, 157, fig. 24.

50 As indicated previously, seven test trenches were opened in the area, and after a certain level of elevation, sandy, clayey soil and some sea animals were discovered in all of them. The presence of a clayey-sandy layer on the floor of the trenches is likely one of the most significant indicators that the lagoon, which is located within the city, periodically extended to this area.

51 For studies on harbour areas and underwater surveys in Phaselis, see: Aslan & Baybo 2015, 1-17; Aslan 2016, 31-47; Aslan *et al.* 2018, 1-13; Orhan 2023, 43-54, fig. 47-102.

52 Thousands of amphorae were found underwater around the *Lighthouse Breakwater* in Cnidus. This area had terraced agricultural fields and production workshops. This breakwater area and the construction around it point to a pier and it is thought that these amphoras were broken during loading to ships, see Aslan 2019, 342-345, fig. 1-6. The production and debris area in Phaselis is similar to the harbour area in Cnidus, both in terms of localization and material group. For these reasons, it is thought that this production area may have been a pier related to the *Inner Harbour*.

and that this new production area became active when production in the *Hellenistic Temple Area* ceased. In fact, an attempt was made to determine the amphora and pottery repertoire of Phaselis in the IVth to IIIrd centuries B.C. with the aim of contributing to the production history of the city. In this regard, it is anticipated that the nature, function, and chronological development of the production area will become clearer as more comprehensive studies are carried out subsequent years.

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