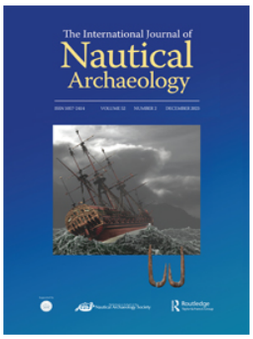

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Recent Studies on the South Harbour of Ancient Phaselis, Türkiye: A Newly-Discovered Breakwater, Amphorae and Trade

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ABSTRACT

The subject of the study, ancient Phaselis, is located within the borders of the Kemer district of Antalya province in Türkiye. Located on the west coast of the Gulf of Pamphylia, Phaselis had geopolitical and geostrategic importance in the Mediterranean region during the Classical and Hellenistic Periods. Because of its importance, underwater surveys of the harbour were carried out in Phaselis in 2012–23. During this research, many new finds and artefacts were identified in the South Harbour Area. Apart from the amphorae found under water, which are of great importance for dating the harbour's period of activity, a breakwater structure, called the Twin Breakwater, was also found. Based on these new findings, this study aims to determine the phases of use of the Phaselis South Harbour Area.

Estudios recientes en el Puerto Sur de la Antigua Fasélide, Turquía: un rompeolas recientemente descubierto, ánforas y comercio

RESUMEN

La antigua Fasélide, asunto de estudio, está localizada dentro del distrito de Kemer, en la provincia de Antalya en Turquía. Situada en la costa oeste del golfo de Panfilia, Fasélide tuvo una importancia geopolítica y geoestratégica en la región del Mediterráneo durante los periodos Clásico y Helenístico. Debido a su importancia, se llevaron a cabo prospecciones subacuáticas del puerto de Fasélide entre 2012 y 2023. Durante esta investigación, se identificaron varios hallazgos y artefactos nuevos en la Zona Sur del Puerto. Además de las ánforas halladas debajo del agua, que son de gran importancia para datar el periodo de actividad del puerto, se halló también una estructura rompeolas, llamada Rompeolas Gemelo. Este estudio apunta a determinar las fases de uso de la Zona Sur del Puerto de Fasélide a partir de estos nuevos hallazgos.

土耳其古代法塞利斯南港最新研究：新发现的防波堤、双耳细颈瓶及贸易

摘要

作为研究对象的古法塞利斯位于土耳其安塔利亚省凯梅尔区境内。处在潘菲利亚湾西岸的法塞利斯在古典和希腊化时期对地中海地区具有重要的地缘政治和地缘战略意义。鉴于其重要性，2012—23年期间在法塞利斯对其港口进行了水下勘查。在这一调查期间，南港区域内确认了许多新发现和文物。除了水下发现的对确定港口活动年代极为重要的双耳细颈瓶之外，还发现了一个称为"双防波堤"的防波堤结构。根据这些新发现，本研究旨在确定法塞利斯南港区的使用阶段。

土耳其古代法塞利斯南港最新研究：新發現的防波堤、雙耳細頸瓶及貿易

摘要

作為研究對象的古法塞利斯位於土耳其安塔利亞省凱梅爾區境內。處在潘菲利亞灣西岸的法塞利斯在古典和希臘化時期對地中海地區具有重要的地緣政治和地緣戰略意義。鑒於其重要性，2012—23年期間在法塞利斯對之港口進行了水下勘查。在這一調查期間，南港區域內確認了許多新發現和文物。除了水下發現的對確定港口活動年代極為重要的雙耳細頸瓶之外，還發現了一個稱為「雙防波堤」的防波堤結構。根據這些新發現，本研究旨在確定法塞利斯南港區的使用階段。

دراسات حديثة عن الميناء الجنوبي لفاسيليس القديمة في تركيا: كاسر الأمواج والأمفورات والتجارة المكتشفة حديثاً

المُستخلص

تقع فاسيليس القديمة (موضوع الدراسة) ضمن حدود منطقة كيمير التابعة لمقاطعة أنطاليا في تركيا، على الساحل الغربي لخليج بامفيليا. وكان لفاسيليس أهمية جيوسياسية وجيواستراتيجية في منطقة البحر الأبيض المتوسط وذلك خلال الفترات الكلاسيكية والهلينستية. ونظراً لأهميتها، تم إجراء مسوحات تحت الماء للميناء في فاسيليس في الفترة من ٢٠١٢ إلى ٢٠٢٣. وخلال هذا البحث، تم العثور على العديد من اللقى والقطع الأثرية في منطقة الميناء الجنوبي. وبصرف النظر عن الأمفورات التي تم العثورعليها تحت الماء، والتي لها أهمية كبيرة في تحديد فترة نشاط الميناء، إلا أن تم العثور أيضاً على هيكل كاسر الأمواج والذي يسمى بكاسر الأمواج المزدوج. وبناءً على هذه النتائج الجديدة، تهدف هذه الدراسة إلى تحديد مراحل استخدام منطقة ميناء فاسيليس الجنوبي.

KEYWORDS
Mediterranean; Lycia; Pamphylia; ancient harbour; underwater archaeology

PALABRAS CLAVE
Mediterráneo; Licia; Panfilia; puerto antiguo; arqueología subacuática

关键词
地中海; 利西亚; 潘菲利亚; 古代港口; 水下考古

關鍵詞
地中海; 利西亞; 旁非利亞; 古代港口; 水下考古

الكلمات الدلالية
البحر الأبيض المتوسط
ليقيا
بامفيليا
الميناء القديم
علم الآثار التحتمائي

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Introduction

According to ancient sources, Phaselis was founded around the years 691/690 BC under the leadership of the city of Lindos on Rhodes (Schäfer et al., 1981, pp. 31–37). Despite considerable debate regarding this founding, research has indicated that Phaselis was established by colonists from Lindos during the early 7th century BC, in the course of the second wave of colonization (Orhan, 2023, p. 9). Following its establishment, Phaselis was among the most significant cities in the region and is listed in Late Antique sources as the only station in Lycia between Korydalla and Attaleia. In the 7th century AD, Phaselis, like other cities in the area, was subjected to Arab raids. After these raids, the city fell into a state of disrepair, and its name appears in the *Notitiae* lists of the 8th and 11th centuries. There it is referred to as the easternmost city of Lycia (Hellenkemper & Hild, 2004, p. 799; Schäfer et al., 1981, p. 37). Indeed, following these years, Phaselis shrank significantly and lost its former prominence, being conquered by the Seljuks in 1158 (Schäfer et al., 1981, p. 37). Until now, all studies have suggested that Phaselis was abandoned in the year 1158. However, with this present research, such conclusions are no longer valid.

In general, harbours differ in terms of size and typology, firstly according to topography and then according to needs. Therefore, it is partially possible to compare ancient harbours in the Mediterranean, which differ and vary according to topography, with those of similar typology. These include harbours where natural bays are used; artificial harbours built on natural bays; and harbours built artificially on a flat coastline without natural bays. In this context, the harbour of Adramytteion in Edremit Ören (Türkiye) is the best example of harbours built in natural bays (Aslan, 2011, pp. 24–27, 2014, pp. 138–141; Aslan et al., 2021, pp. 375–386, figs. 1–13).

Located on the west coast of the Gulf of Pamphylia in the Mediterranean Sea, ancient Phaselis has a mooring area and three harbours built in natural bays (Blackman, 1973, pp. 355–357, fig. 4). An underwater survey was initiated in 2013 in order to understand the harbour structures, equipment and functions as well as to reveal their construction technology (Aslan & Baybo, 2015, pp. 1–17; Arslan & Tüner-Önen, 2016, p. 71). In this context, research focused on the North Mooring Area, the South Harbour Area and the Inner Harbour (Lagoon), especially the Central-Military Harbour (Orhan, 2023, pp. 43–54, figs. 47–102) (Figure 1).

Many ancient sources allow us to get an idea about the South Harbour of Phaselis (Thucydides, 2009, *Peloponnesian War*, 2.69; Strabo, 2000, *Geography*, 14.3.9, 5.7; Titus Livius, 1967, *Ab Urbe Condita,* 37.22). Dozens of amphora finds were also discovered in the underwater research carried out in the South Harbour, which constitutes the focus of the present study. If we look at the general distribution of finds in the study areas, the majority are commercial amphorae. However, architectural structural elements, grave stele, metal anchor fragments and roof tiles, floor coverings, kitchen utensils (probably belonging to the galley), and daily-use vessels were also identified (Aslan & Orhan, 2019, pp. 85–99; Orhan, 2017, pp. 141–148).

This research aimed to determine the location, historical scale and stages of chronological development of the South Harbour. It also aimed to determine the functions of the harbour structures and equipment, and to understand the technology used for the construction of the harbour. In this context, studies were also carried out to determine the commercial functions of the harbours through the material cultural remains. As a result, theses latest findings change the previously-known terminal phase of the harbour, and a 3D restoration of the South Harbour during its years of operation has been proposed (see Figure 10).

Aims and Methodology

The studies carried out within the scope of systematic underwater research consist of several stages. The first was an underwater survey with SCUBA diving. After the first phase, others included the production of a survey map of the coastline and harbour areas, the formation of an underwater culture inventory map, photogrammetric studies, Side Scan Sonar survey, imaging of possible submerged areas with a ROV, and additional SCUBA diving surveys. Due to the scope of our study, a staged work plan was determined in the South Harbour, which served as the commercial harbour of Phaselis. First, after documenting the current situation of the entire harbour with an unmanned aerial vehicle (drone), photogrammetric studies were carried out. Afterwards, each of the *in situ* and scattered blocks forming the harbour's breakwaters were numbered, documented with the help of CORS (RTK), total station and GPS, and then transferred to the CAD environment. Thus, the elevation of the rows of blocks, the distribution of the scattered blocks, and the detected examples of blocks with different characteristics were documented at the site of the harbour breakwaters. With this study, stone plans and sections were extracted to evaluate the character and phases of the harbour's architecture.

In the last stage, SCUBA dives were carried out at depths ranging from -2 to -30 m in areas where the measurement processes were completed in the South Harbour. Thanks to these dives, high-resolution photographs were taken under water, plans were drawn, measurements were taken, and significant

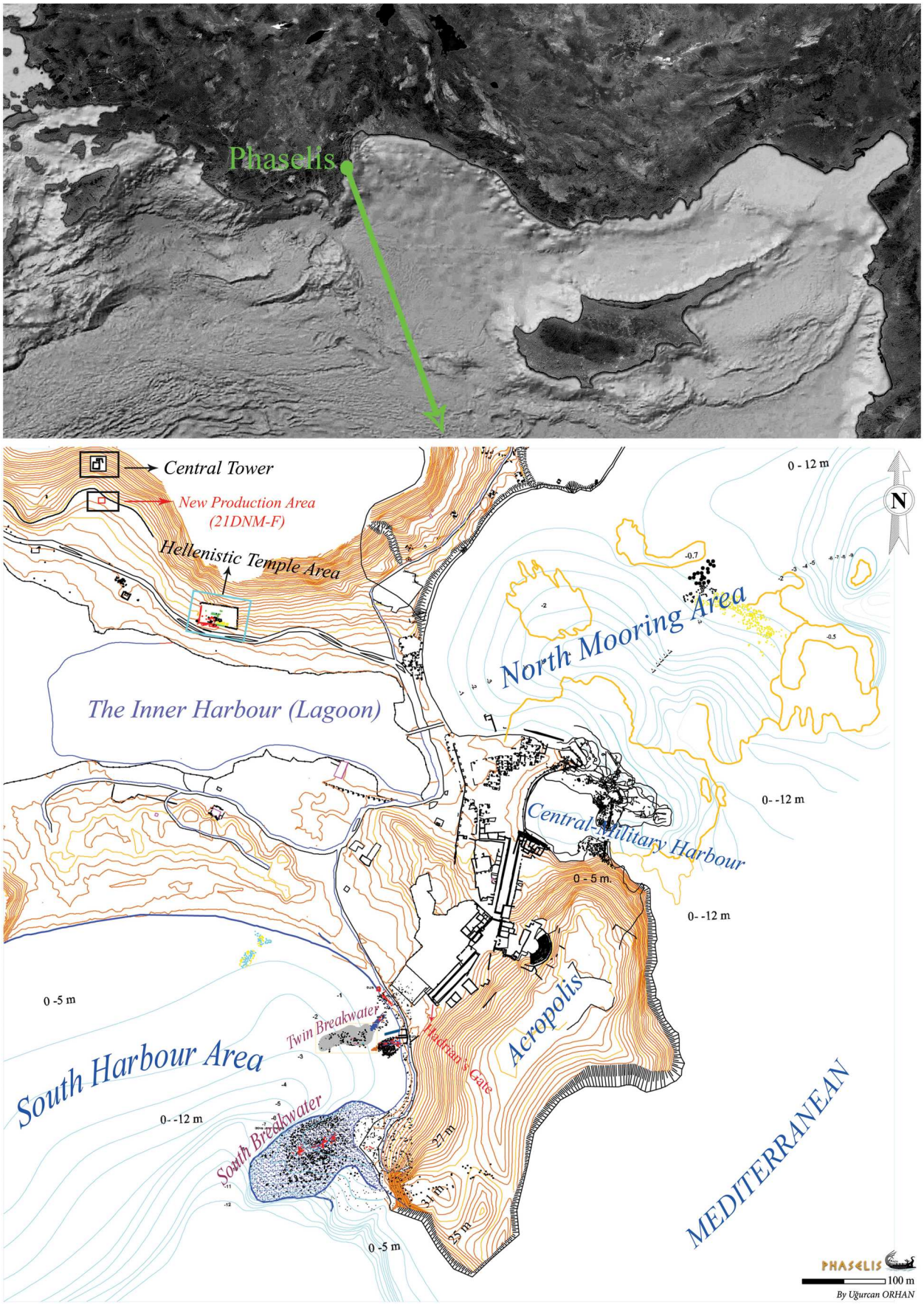

Figure 1. Location and general plan of Phaselis (Google Earth © 2024 Terrametrics/Data: SIO, NOAA, US NAvy, NGA, GEBCO; Orhan, 2023, p. 149, fig. 1).

finds were documented in detail. Using these documentation studies, orthophotos of the study areas were formed in order to process the data obtained from this underwater research to determine the area

and to understand the location of cultural assets in this location (Figure 2). Thanks to the photogrammetric studies and the orthophotos, it is now possible to locate precisely the newly-discovered cultural assets (Figure 6a).

Through this process, the interrelationship of the finds, their location, position and distribution areas could be understood. As a result, a 3D restoration was prepared by forming the survey plans of the harbour and harbour reinforcements in the South Harbour (Figures 3, 10).

South Harbour Area

There are numerous studies of Phaselis by various researchers, especially concerning the harbour areas (Schäfer et al., 1981, pp. 13–16). If we look at these studies chronologically, the first is F. Beaufort who in 1818 provides information about Phaselis. In his account, Beaufort refers to the South Harbour as the city's main port (Beaufort, 1818, pp. 58–59). Apart from Beaufort's reports, the first serious harbour and underwater survey of Phaselis was carried out by D. J. Blackman in the 1970s. Blackman states that the city basically had only one commercial harbour, complete with a quay and all other facilities (Blackman, 1973, pp. 358–359). Blackman also mentions that the present southern breakwater of the South Harbour is too damaged to be dated or interpreted. Following Blackman's studies, the South Harbour was re-examined using modern technology. These studies mapped and documented all the facilities and piers in the South Harbour (Aslan et al., 2018a, pp. 1–13, fig. 1–10). The plans resulting from them were used to date the South Harbour by comparing it with its counterparts. In studies from 2019 to date, more concrete results have clarified the existing questions and the dating of the South Harbour. In particular, the newly-discovered Twin Breakwater in the South Harbour and numerous archaeological finds, especially amphorae (see Appendix 1), have clarified the situation of the South Harbour.

Situated on the eastern side of the large bay to the south-west of the city's Acropolis, the South Harbour is relatively sheltered from winds and waves thanks to the high terrain, some 30 m above sea level, to the north and east. These features allow the South Harbour Area to be a sheltered area with the appearance of a natural bay. Its sheltered situation was strengthened using breakwaters (Figures 1–2). The acropolis along with the Taurus Mountains protect the basin from the prevailing westerly winds in the region (Aslan & Baybo, 2015, p. 2, fig. 1) (Figure 1). Despite protection on three sides, the harbour remained open to severe southerly winds, especially in the winter months. For this reason, breakwaters were built to block the effects of these winds and to make the harbour basin more sheltered (Aslan et al., 2018a, p. 4). Additionally, the shallow rocky areas in the north and west allowed for construction activity (Figure 3).

Commercial harbours typically host an extensive infrastructure such as piers, jetties, warehouses,

Figure 2. Phaselis South Harbour Area (author).

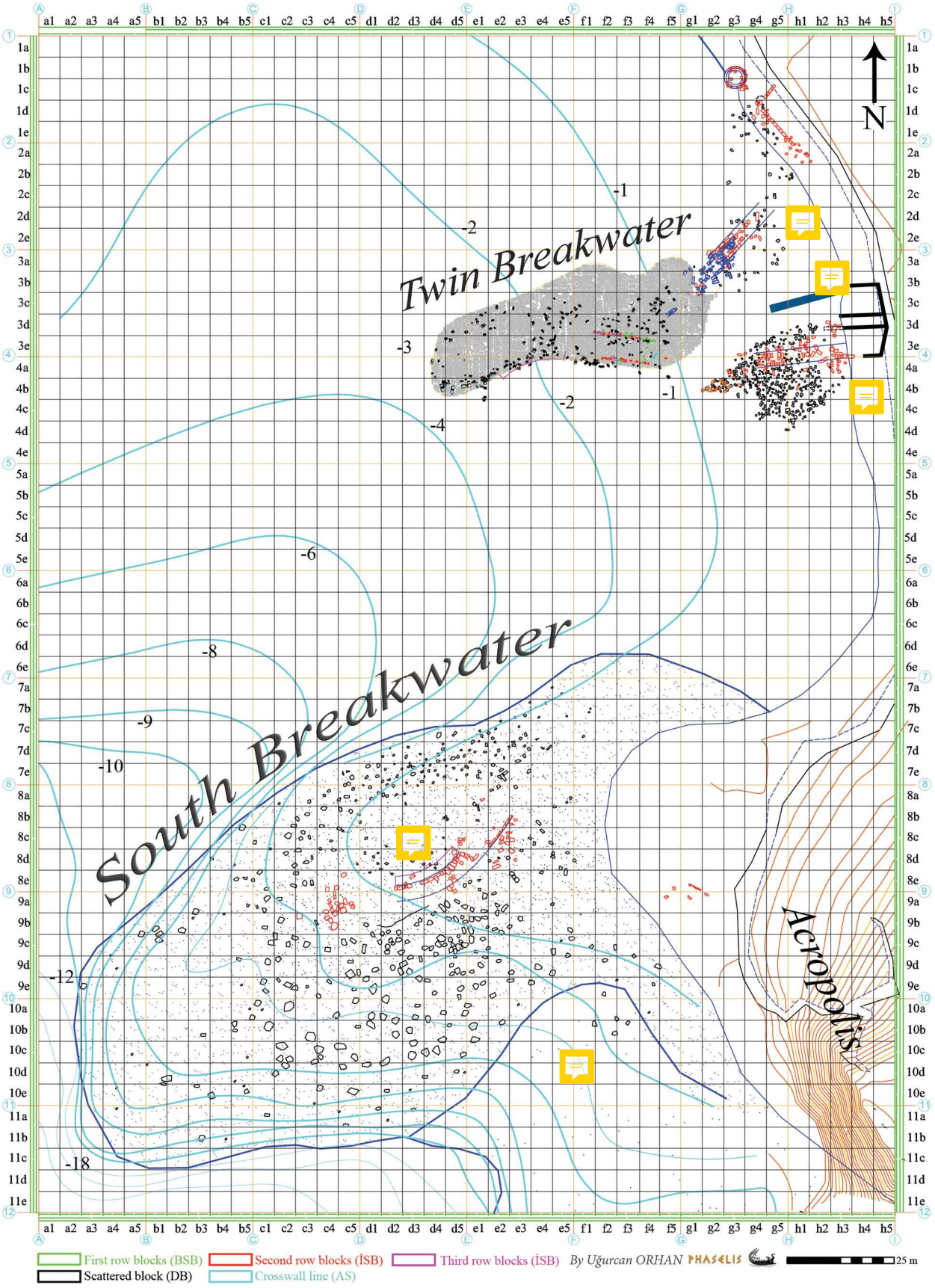

Figure 3. General Plan of the South Harbour of Phaselis (author).

shops and other structures. The remains of jetty structures are seen, especially in the eastern part of the South Harbour. When the harbour is observed holistically, its sheltered nature along with enclosed construction and location all indicate a commercial function, especially when compared with similar

harbour types. While no underwater archaeological material was found in the other harbour areas, many amphorae and other finds were discovered in the South Harbour (Aslan et al., 2018a, p. 4; Blackman, 1982a, pp. 79–104, 1982b, pp. 185–221, 2008; Schäfer et al., 1981, p. 50; Shaw, 1972, pp. 87–112). If we look at the many building remains in the harbour basin (Figure 3), there are the remains of two piers in the east and one in the north. Also, there are four building remains, three in the east and one in the north (Aslan et al., 2018a, p. 4) (Figure 3). In addition to these, there are also the remains of a circular building made of rubble stones that are scattered on the northern shores (Figures 2–3). In subsequent research, some blocks of this circular structure were found around the South Harbour Breakwater. The location of this circular structure, its building form, and its proximity to the pier-harbour reinforcements suggest that this complex is a tower or lighthouse (Aslan et al., 2018a, pp. 4–8, figs. 2–10). A similar circular structure was also detected in the Central-Military Harbour in Phaselis (Aslan, 2016a, pp. 36–37, fig. 9).

The other important structure is the breakwater installed in the South Harbour for protection. This breakwater was built on the fill area starting from the mainland towards the sea (for pioneering works, see Blackman, 1973, pp. 358–359, figs. 7–8) (Figures 2–3). On this fill area are blocks both *in situ* and scattered (Aslan et al., 2018a, p. 4, fig. 4). As mentioned above, a similar application of a breakwater on fill area can be seen in the harbours at Liman Tepe (Klazomenai) and Assos (Aslan et al., 2018a, p. 4). Especially in the case of Liman Tepe, the harbour area was made more sheltered by the building of a breakwater inside the harbour (Aslan et al., 2018a, p. 4; Erkanal, 2008, pp. 181–182, fig. 3; Erkanal et al., 2017, p. 140). However, the breakwater at Phaselis was built in a such way that it turns towards the basin, as in the harbour at Assos. These arrangements at the South Breakwater were carried out in line with the same goal as the harbour at Liman Tepe (for Assos, see Arslan et al., 2017, p. 72, fig. 14; for Klazomenai/Liman Tepe Harbour see Erkanal, 2008, pp. 181–182, fig. 3, 2014, p. 300; Erkanal et al., 2017, p. 140; Şahoğlu, 2010, pp. 1571–1573).

A Newly-Discovered Harbour Structure in the South Harbour: the Twin Breakwater

A new harbour structure – a twin breakwater – was discovered during the underwater survey carried out in this area in 2019. The current situation of this 'Twin Breakwater' was documented with detailed aerial photographs with an area measuring *ca.* 30 × 20 m scanned under water. Many blocks have emerged as this is a shallower area depending on the seasonal transition and the waves dispersing the sand. These emerging rows of blocks have also changed the course of underwater research in the South Harbour (Figures 2–3). The first phase of the work began by taking aerial photographs and orthophotos of both the South Harbour Basin and the study areas. Then sketches and survey studies were started in the newly-identified Twin Breakwater. The next process was supported by dives, so that both aerial and underwater views were obtained. Then the basin, whose sketch was started, was incorporated into the grid, and the infrastructure for the survey was established. In this context, research continued by examining the blocks in the area, whose current state was documented with aerial photographs and underwater photographs. Sketches were then drawn by following the rows of the wall. In addition, the width, height and depth measurements of the *in-situ* blocks were also taken under water and recorded on the plan.

When the blocks of this newly-discovered breakwater were examined, it was observed that quite large cut stones were used. After measuring the width and height of these blocks, three different block groups were observed. The first group was made more robust and larger to provide strength according to the possible wave and wind direction. The dimensions of the first group measured 2.40 × 0.80 × 0.50 m. The row of the outer wall in the second group was smaller and measured 1.60 × 0.40 × 0.35 m. The blocks of the third group measured 1.10 × 0.40 × 0.20 m.

Besides the measurable rows of walls and blocks, we noticed other blocks that were buried in the sand (Figure 4). The remains of two rows of cross-walls were also included in the drawing of the area. These cross-walls were built with an interval of about 8 m. On the southern line of the Twin Breakwater, *in-situ* blocks were preserved in three rows in some parts (Figure 4). We observed that the blocks were overturned in the same direction along the entire breakwater. Although a more detailed investigation is needed as to the reason for this upheaval, these blocks may have overturned due to the ground's collapse in this area or from a strong wave after earthquakes in the region. In AD 141–142, during the reign of Antoninus Pius, a very big earthquake occurred around Phaselis causing great destruction (Hellenkemper & Hild, 2004, p. 799; Petersen & von Luschan, 1889, pp. 131–132). The collapsed slope of this western row is likewise depicted on our survey plan.

The Twin Breakwater blocks were separated from each other towards the south due to the subsidence of the ground (Figure 4). Although studies on the causes of this collapse are continuing, we determined that the breakwater blocks were buried in the sandy ground due to sinking/collapse (possibly from

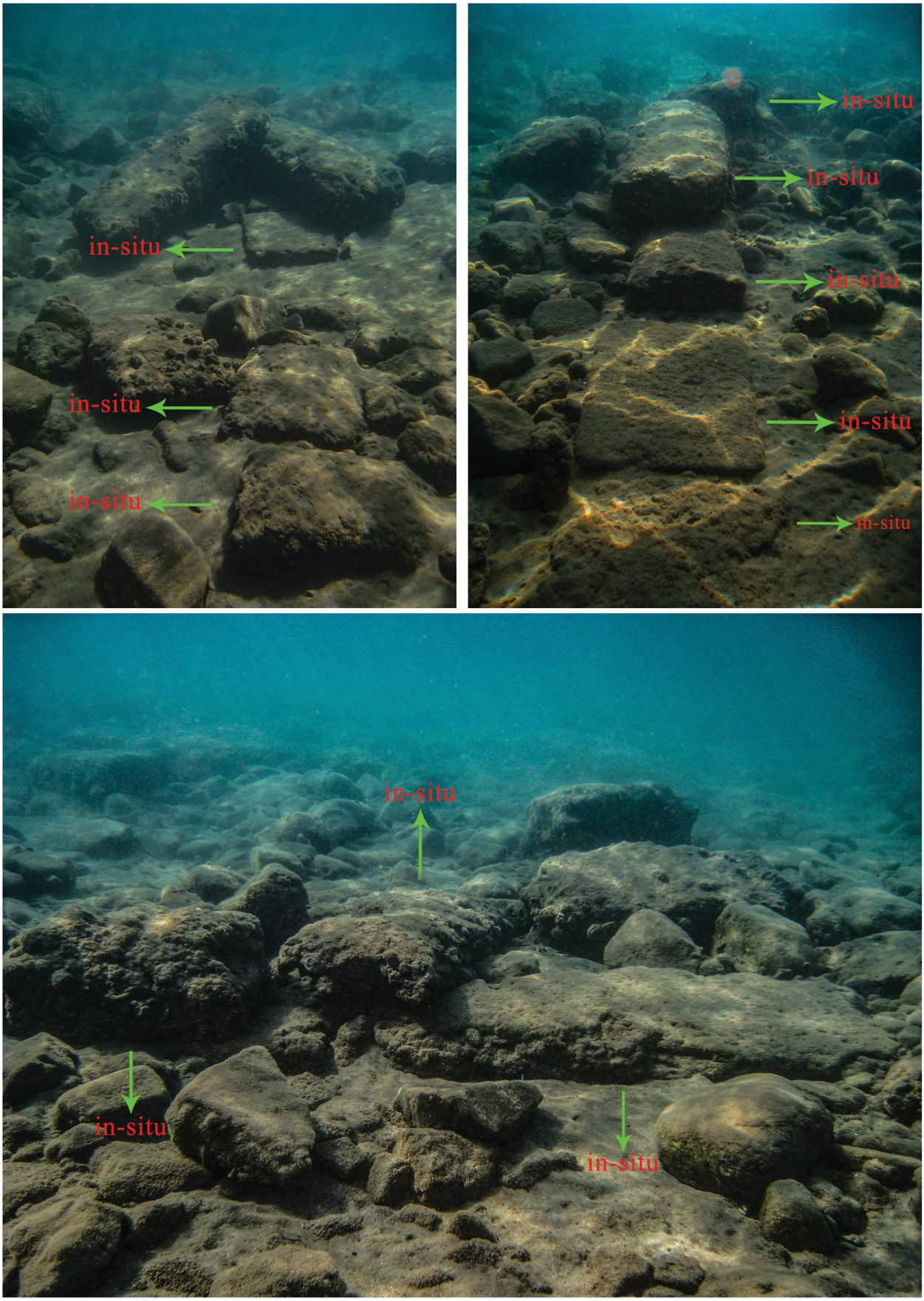

Figure 4. *In-situ* rows of the walls of the Underwater Twin Breakwater (author).

earthquakes) in the harbour basin. Thus, in the area where the block inventory and plan studies have been completed, the photogrammetric underwater imaging method was applied on the west wall of the breakwater. The row of the western wall, which appears to be *ca.* 22 m long, was noted from a depth

of *ca.* -1 m along a line from the façade. Forty-three photographs were taken to document the entire façade (Figure 4).

The sand was swept from the area to see the continuation of some blocks using manual hand-fanning. With this transfer of some sand, a continuous row of blocks under the sand emerged in a continuation of the existing blocks. As a result, the underwater inventory of a total of 101 blocks with the code (DB) was completed in this area. The work was then shaped by determining the connections of the blocks forming the First Row Blocks (BSB), Second Row Blocks (İSB), and Crosswall Line (AS) with each other (Figure 5). A total of 214 blocks from the Scattered Blocks (DB) numbered were inventoried and added to the plan (Figure 5). Besides the scattered DB blocks, 20 BSB blocks, 18 İSB blocks, seven ÜSB blocks, and nine Crosswall Lines (AS) were measured and inventoried (Figure 6). Within the scope of the Twin Breakwater surveys, 268 blocks, including all rows, were added to the plan. In addition to the blocks, rubble stones were added to the plan to ensure the integrity (Figures 5–6).

When the plan-relief drawings are correlated with the block inventory, it can be seen that more proportional cut blocks were used in the G and H squares compared to the east coast (Figure 3), that is, the grid. However, in the D4-4B square the presence of larger cut blocks in tonnage and size are observed (Figures 5–6). The reason for this is that the winds generally move along a north-south axis in Phaselis' South Harbour. The winds blowing from the south, especially in the winter months, cause quite severe waves (Aslan & Baybo, 2015, p. 2, fig. 1; Blackman, 1973, pp. 358–359; Schäfer et al., 1981, pp. 70–72, figs. 34–35). For this reason, these blocks were used in the corners to reduce the wave intensity and to provide strength for the breakwater. The breakwater wall's first row continues for 15 m, and at least four rows of blocks are preserved *in situ* (Figures 4–6). A 12 m-long continuation of the second row can be observed. The relative continuity of the blocks, with a descent of *ca.* 3%, can be followed. In addition, no mortar was used in the Twin Breakwater.

A comprehensive examination of the Twin Breakwater reveals that it aligns with the axis of the southern breakwater. The architectural layout, the arrangement of its blocks, and the preservation of the cross-walls reinforce its interpretation as a breakwater (Figure 3). Furthermore, as detailed above, the Twin Breakwater complements the southern one and constitutes a second fortification, thus sheltering the area significantly. Based on the available evidence, the Twin Breakwater is a type of breakwater featuring three preserved rows and cross-walls built at specific intervals (Figures 3–6). Its walls are quite scattered and end after a certain distance. They sank due to a ground collapse or earthquake, and therefore lost their function. (For information on the geological status of Phaselis and the changes in its relative sea level, see Schäfer et al., 1981, pp. 24–30; Figure 4.) The wall, with four rows visible in some areas, forms an east-west

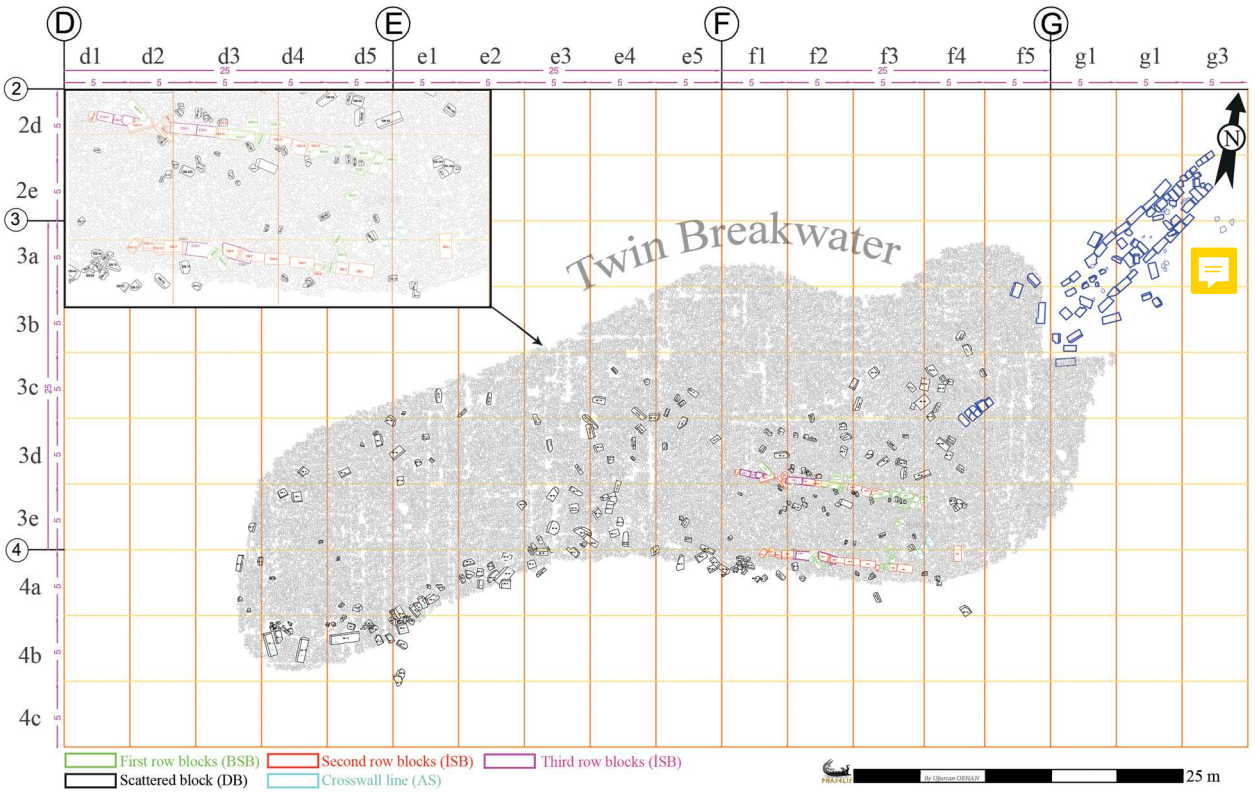

Figure 5. Plan of the Twin Breakwater (author).

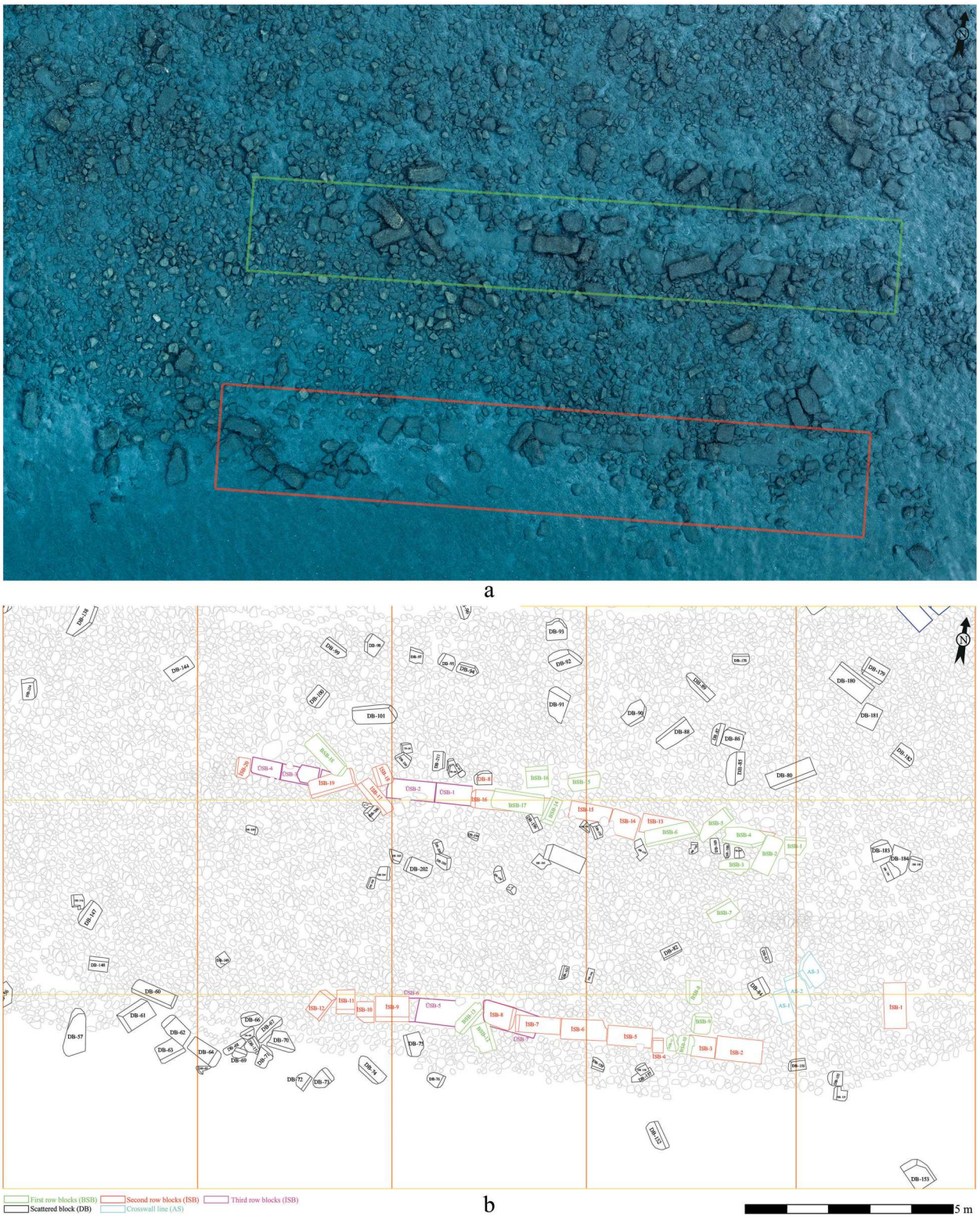

Figure 6. Twin Breakwater orthophoto and detail plan (author).

extension line. It is possible to fully reveal the blocks in Twin Breakwater by removing the sand here or by conducting underwater excavations in this area.

Amphorae and Fineware Finds in the South Harbour

Hundreds of finewares and amphora fragments were found during underwater research carried out in the harbours of Phaselis between 2012 and 2023. However, only commercial amphorae were examined within the scope of the study, as these recovered during underwater surveys are important for revealing the harbour's commercial function. Additionally, the reason for selecting amphorae in the study is to emphasize trade. With regard to other finewares, the aim is to highlight the latest usage phase of the port area. For this reason, 24 examples that best reflect their form

chronologically and typologically and whose details are evident were examined in this study (Appendix 1).

There are some difficulties and disadvantages of conducting research under water. The typology of only 24 different types of amphorae was obtained by selecting only one example that best reflects the characteristics out of dozens of submerged pieces. Because the study was carried out under water, its duration was limited, and physical intervention was not possible due to the permits obtained. As is known, petrographic analysis and colour codes are important data used in determining the origin and production places of amphorae in studies of typology. However, these data could not be obtained because the amphorae had to remain under water and because of the loss of colour at certain depths. Therefore, only the form characteristics of the amphorae were evaluated, and dating was attempted by type comparison.

Chronologically, the earliest find is the Proto-Cnidian amphora dating to the end of the 4th century BC and the beginning of the 3rd century BC. It was found between the Twin Breakwater blocks (Cat. no. 1, Fig. 8a). The Egyptian Amphora (AE) 1A amphora appears next, which is dated between the last quarter of the 3rd century BC and the first quarter of the 2nd century BC (Cat. no. 16, Fig. 8p).

When looking at the general findings of only amphorae and finewares, their date range is very wide from the late 4th century BC to 12th–13th centuries AD. These amphorae cover a period of *ca.* 1600 years, and their 24 different types have 13 different origins (Appendix 1, Cat. nos. 1–24, Fig. 8) (Aslan & Orhan, 2019, pp. 85–99; Orhan, 2017, pp. 141–48).

In the latest research, glazed ceramics were also found in the South Harbour Area. These single-coloured bowls and lamp fragments in green and its shades date to the Eastern Roman and Turkish-Islamic periods (Diri-Apaydın, 2022, pp. 72–77, pls. 3, 9) (Figure 9). These and similar groups, dated to quite late periods, are also found in Beçin Castle (Diri-Apaydın, 2022, pp. 72–77, pls. 3, 9), Niğde/Tyana (Karasu, 2022, pp. 287–295, figs. 1–6), Ani (Karamağaralı & Yazar, 2007, pp. 123–131), Amorium (Doğer & Armağan, 2020, pp. 79–97, pls. 1–16), Balatlar Church (İnanan, 2012, pp. 148–158, fig. 4, pls. 1–4) as well as in St Jean Church (Yılmaz, 2015, pp. 767–777).

Discussion

Harbours are natural areas sheltered against sea events to which ships carry material and passengers and anchor in line with their needs. Harbours also serve as doors through which cities can communicate with the outside world. They are also important socio-economically, culturally, strategically, technologically and chronologically. Phaselis was an important commercial centre among cities with three harbours, a feature rarely encountered in the ancient Mediterranean. (Piraeus was also a city with three harbours; see Blackman, 1982b, pp. 188–89, fig. 3.)

Harbours were made more sheltered using breakwaters. Some comparison is possible among harbours whose dimensions, typologies and construction technologies are dependent entirely on needs and topography (Aslan & Baybo, 2015, p. 13). Nevertheless, only a partial classification can be made (Aslan, 2011, pp. 24–27, 2016b, pp. 15–18). Phaselis features a harbour (Inner Harbour) built completely within a natural bay, a mooring area sheltered by breakwaters in a natural bay (North Mooring Area), and two harbours (Central-Military and South Harbour) constructed with breakwaters in the natural bay (Aslan, 2016a; Aslan & Baybo, 2015) (Figure 1).

Beaufort, Schäfer et al. and Blackman led the first studies on the harbour and harbour areas in Phaselis (Beaufort, 1818, pp. 56–70; Blackman, 1973, pp. 355–364; Schäfer et al., 1981, pp. 13–18, 75–85). With the advancing technologies and modern methods used in this study, the South Harbour of Phaselis has been studied in more detail. In this context, another branch of the harbour studies in Phaselis is the underwater surveys carried out both in the harbour areas and along its shores. As mentioned above, these studies' methodology consisted of certain systematics and stages. Hundreds of concrete archaeological finds were found in the underwater research carried out to support the harbour research. During the research, no shipwreck or shipwreck context was found in Phaselis and its surroundings, but only individual finds were uncovered and all documentation phases were completed under water. When the distribution of the finds was examined, the majority were commercial amphorae and architectural building elements, burial stele, metal anchor fragments and objects, roof tiles, floor coverings, kitchen utensils (probably belonging to the galleys of ships) and daily use vessels. These were identified and documented under water. The earliest amphora find in the South Harbour was the Proto-Cnidian amphora dated to the end of the 4th century to the beginning of the 3rd century BC; the latest finds were the Günsenin type IV of Marmara-Black Sea origin and the Hayes type 65 amphorae whose origin is not known precisely. Both are dated to the 12th–13th century AD (Figures 7c-8). In addition to the amphorae, finds dating to the Eastern Roman and Turkish-Islamic periods were also found in the South Harbour (Figure 9). Considering these finds, it appears that the South Harbour was actively used from the foundation of the city until the late Eastern Roman Period and Turkish-Islamic Periods. Pseudo-Skylax provides brief information about the historical geography of the cities on the Black Sea, Mediterranean and African coasts (Pseudo-Skylax, 2012, *Periplous,* 100). Although his *Periplous* was published at the end

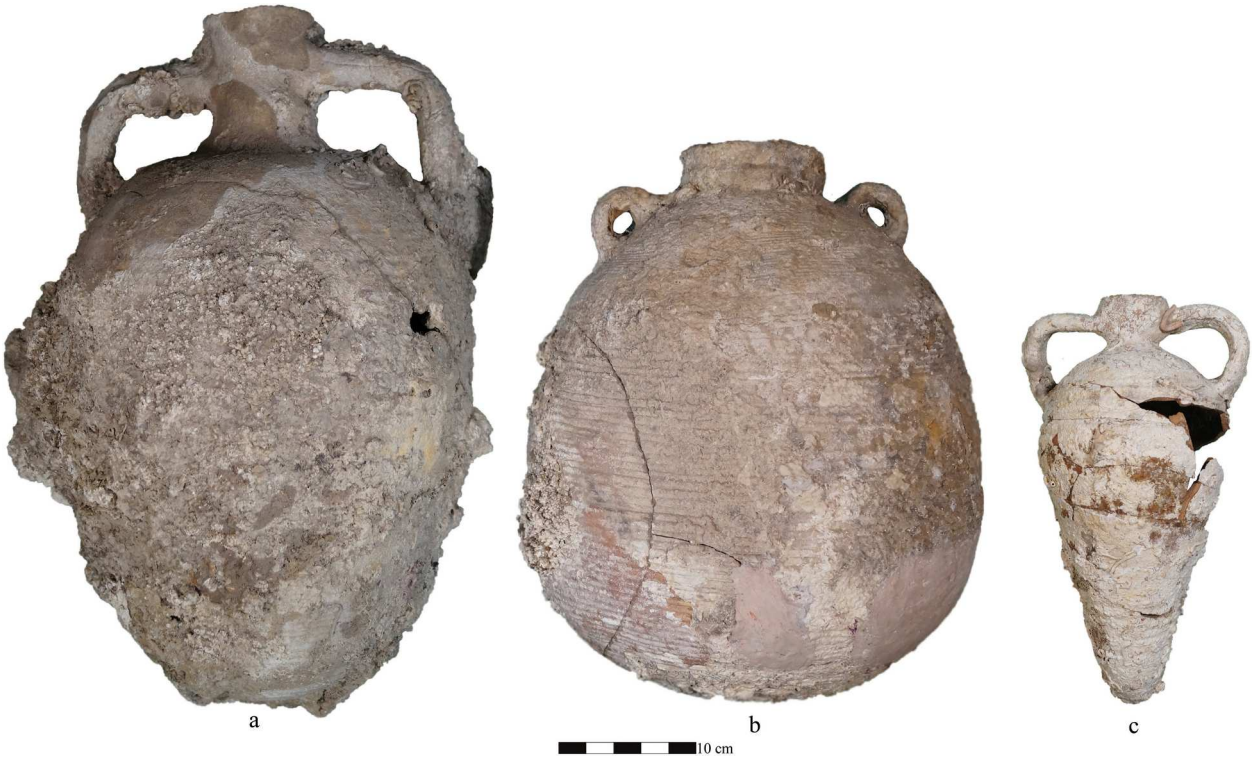

Figure 7. a. LR 1B, b. AE 5-6, c. Hayes Type 65 (author).

of the 4th century BC, it probably also cites data from before that time (Arslan, 2012, p. 251). The harbour to which he refers is most likely the South Harbour (Arslan, 2012, p. 251).

The South Harbour has a very large basin with much harbour equipment as well as breakwaters (Figures 1–3). The fact that the basin is surrounded by hills and the southern part facing the open sea is closed with a breakwater has made the South Harbour Basin very sheltered. The South Harbour with its very sheltered appearance and harbour equipment undoubtedly completes the requirements to be

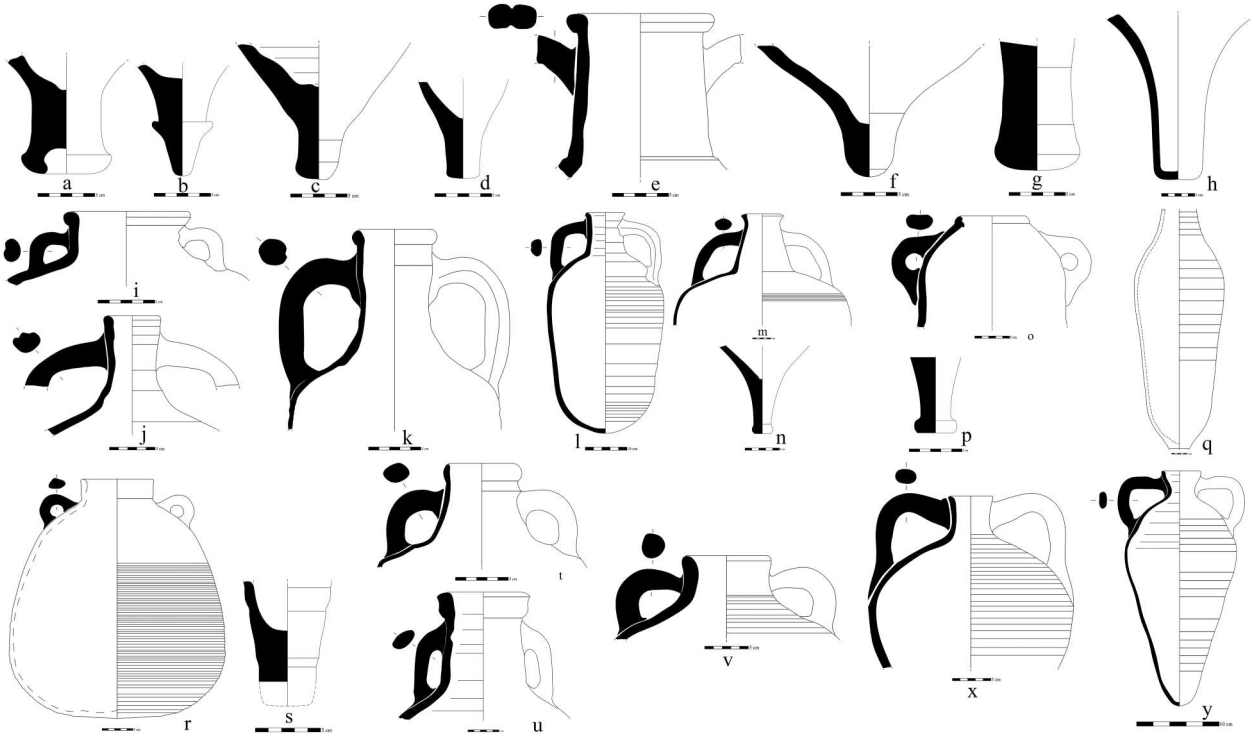

Figure 8. Amphorae detected in the South Harbour Area (author).

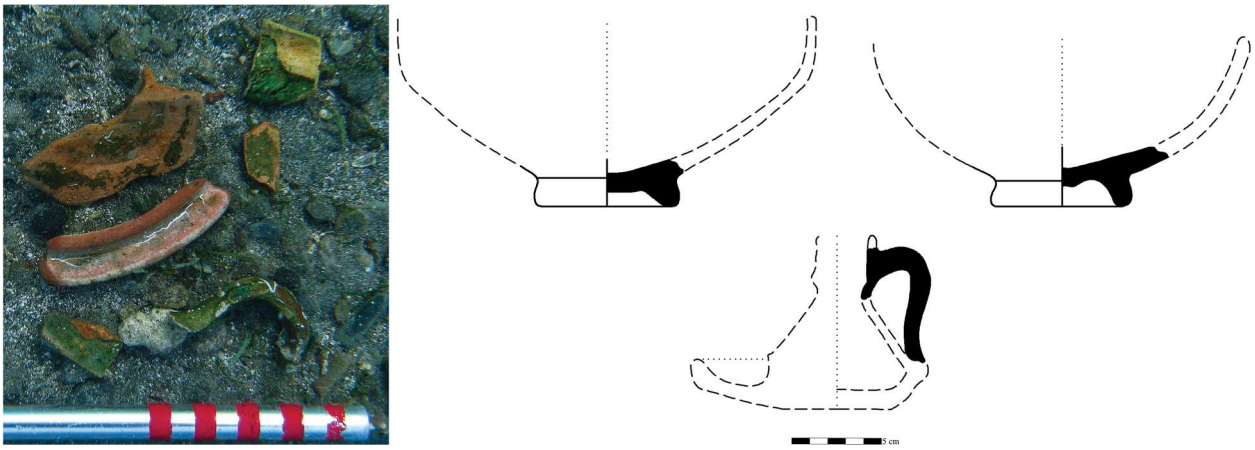

Figure 9. Types of monochrome glazed ceramics detected during underwater surveys in the South Harbour Area (author).

identified as a commercial harbour. In this context, there is a specific reason why the South Harbour Area is very sheltered and various building groups are gathered in this area: it allows commercial ships to approach the desired areas easily and to unload their cargoes or to load new products (Aslan et al., 2018a, p. 9).

The follow-up of some arrangements made at different times in the South Harbour Area was probably contemporary with the establishment of the city. For

Figure 10. 3D graphic reconstruction proposal for the Southern Harbour and its breakwaters (author).

example, that of the Inner Harbour can be followed clearly. Therefore, the fill area, which forms the southern border of the harbour and is located under the breakwater blocks, proves that the South Harbour Area was built between the 6th and 4th centuries BC. Although the earliest find identified in the underwater survey at the South Harbour is dated to the 4th century BC, it would not be incorrect to say that the South Harbour of Phaselis has been active since its establishment, especially according to ancient sources and epigraphic data. As a matter of fact, since its establishment, Phaselis has been in communication and interaction with all the eastern commercial centres, especially Egypt. The most important evidence of this claim is the papyri dated to the middle of the 5th century BC. In these, information about the cargoes, ship captains and dates of voyages going from Phaselis to Egypt is given (Kuhrt, 2007, pp. 680–703; Orhan, 2023, pp. 19–22 and 192–195, pls. 1–2). Moreover, this dating was proposed based on the comparison of the South Harbour Breakwater with Liman Tepe, which exhibits almost the same structural integrity (Aslan et al., 2018a, p. 9; Erkanal, 2014, p. 300; Erkanal & Şahoğlu, 2012, pp. 228–229; Erkanal et al., 2016, pp. 332–335, 2017, p. 144; Şahoğlu, 2010, pp. 1571–1580).

After the initial construction activities at the South Harbour, periodic modifications were made (Blackman, 1973, p. 359). In particular, the connection of the rampart structures to the southern breakwater and the construction of some new structures (such as workshops and shops) in this area during the Hellenistic Period are noteworthy (Aslan et al., 2018a, pp. 5–10, fig. 7–10; Blackman, 1973, pp. 358–359, fig. 7–9). Regarding the Imperial Period, the changes made in the South Harbour Area (both the breakwater and the harbour equipment) can be evaluated within the scope of the construction activities made during the arrival of the Roman Emperor Hadrian to Phaselis (Figure 10). The construction activities during this period can also be followed with the help of the breakwater on the embankment forming the southern border of the harbour and the pier built in the same direction as 'Liman Street' (Figure 3, g5-h4/3b-3c grids). When coming ashore from the pier structure in the South Harbour, one encounters the monumental gate built in AD 130–131 in honour of Emperor Hadrian. The cities of Phaselis, Attaleia and Perge built magnificent gates to welcome the emperor during his 'Expedition to the East'. In addition, these cities erected votive statues dedicated to both the emperor and his family. Considering the epigraphical data found in and around Hadrian's Gate in Phaselis, the construction of the gate corresponds to the 15th *Tribunica Potestas* of the emperor, that is, between 10 December AD 130 or 9 December AD 131. The inscription on the side of the gate facing the harbour shows that the emperor landed from this area and that the pier arrangements here can be dated to the same period (Akurgal, 1970, p. 266; Blackman, 1981, pp. 138–163; Tüner-Önen, 2008, pp. 158, 313–314, 320–321, 2013, pp. 93–106, 2015, p. 24).

As a result, the plan-relief works of the Twin Breakwater have been completed, and its blocks have been inventoried and added to the city plan. In this way, its connection with the South Harbour Breakwater was established. However, there was not enough data *in situ* to suggest a date for the Twin Breakwater in its current state. However, the fact that the Twin Breakwater is in line with Hadrian's Gate and shows a relationship with the structures in the area suggests that the breakwater was definitely built before AD 130–131 (Blackman, 1981, pp. 138–163; Schäfer et al., 1981, pp. 151–154).

Conclusion

Underwater surveys were carried out in all harbour areas (North Mooring Area, South Harbour Area, Inner Harbour (Lagoon) and Central-Military Harbour) in Phaselis. During these surveys, no contextual archaeological finds have been detected in the North Mooring Area, Inner Harbour (Lagoon) and Central-Military Harbour. The finds in the South Harbour have more commercial amphora remains, both numerically and chronologically. For these reasons, the research conducted at the South Harbour has suggested that the main commercial harbour of Phaselis was this one.

With the evaluation of the amphorae found, Phaselis is seen to have played an important role in Mediterranean trade by engaging in commercial communication and interaction with at least 13 different regions. Both the harbour areas and this commercial feature show that Phaselis has actively functioned from its foundation to the Eastern Roman and Turkish-Islamic Periods. In addition, the political history of Phaselis known to date was that it was erased from the record after it was conquered by the Seljuk Turks in 1158. However, the studies carried out in the South Harbour Area show that Phaselis continued to exist to the end of the Eastern Roman and Turkish-Islamic Periods.

In conclusion, the South Harbour served as the primary commercial harbour for the ancient city and featured Twin Breakwaters. Based on the available archaeological evidence, it can be stated that the South Harbour was integrated into an organized commercial enterprise from the early 4th century BC until the Turkish-Islamic Periods, with its workshops, facilities, and shops.

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Conflict of Interest Statement

The author state that they have no conflict of interest.

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Appendix 1: Ceramic Catalogue

Cat. No: 1 (Figure 8a)
Findspot: South Harbour
Layer/Depth: -6 m.
Type: Proto-Cnidian
Date: Between late 4th century BC and early 3rd century BC
Origin: Cnidus-Datça
Distribution: Some centres in the Eastern Mediterranean, Aegean and Black Sea coasts.
Contents: Wine
Parallels: Monachov, 1999, pp. 161–172, figs. 1–12; Lawall, 2011, pp. 673–683, pl. 281, no. 454; Sakarya, 2016, pp. 190–191, cat. nos. 64–65, 69, pl. XXII; Şenol, 2018, p. 397, fig. 329.

Cat. No: 2 (Figure 8b)
Findspot: South Harbour
Layer/Depth: -5.4 m.
Type: Late Cnidian
Date: 3rd century AD
Origin: Cnidus-Datça
Distribution: Centers located on the Eastern and Western Mediterranean, coasts Aegean and Black Sea coasts.
Contents: Wine
Parallels: Brun, 1994, pp. 12–13, fig. 6, Amphore de Cnide; Alpözen et al., 1995, p. 91, inv. no. 10.1.95; Sibella, 2002, p. 8, fig. 8; Opaiț, 2014, p. 441, 447, figs. 1–2; Şenol, 2018, p. 406, figs. 339–340.

Cat. No: 3 (Figure 8c)
Findspot: South Harbour
Layer/Depth: -7.8 m.
Type: Canonical Rhodian amphora
Date: Mid-2nd century BC
Origin: Rhodes and Rhodes Peraia
Distribution: Centers located on the Eastern and Western Mediterranean, Aegean and Black Sea coasts.
Contents: Wine
Parallels: Grace, 1949, p. 186, pl. 19. fig. 5; Alpözen et al., 1995, p. 92; Şenol, 2003, p. 20, inv. no. 2.1.90; Şenol & Aşkın, 2007, p. 257, cat. no. 32; Şenol, 2009, p. 203, inv. no. T022; Aslan, 2015a, p. 351, cat. no. 6, figs. 1.6, 3.6; Orhan, 2018, p. 63, cat. no. 8, fig. 16; Aslan et al., 2018b, pp. 254–255, figs. 3a–3b; Aslan et al., 2020, p. 226, 239, cat. no. 4, fig. 5.

Cat. No: 4 (Figure 8d)
Findspot: South Harbour
Layer/Depth: -4.3 m.
Type: Dressel (DR) 1B
Date: Between mid-1st century BC and late 1st century BC
Origin: Italian Peninsula (Tyrrhenian Coast)
Distribution: Eastern and Western Mediterranean.
Contents: Wine
Parallels: Benoit, 1962, p. 165, fig. 39; Arthur, 1986, pp. 241–243, fig. 2.1–9; Peacock & Williams, 1986, p. 89, fig. 28; Sciallano & Sibella, 1991, p. 33, Amphorae Dressel 1B; Bezeczky et al., 2013, p. 104, pl. 18.213; Şenol, 2018, pp. 274–275, fig. 232.

Cat. No: 5 (Figure 8e)
Findspot: South Harbour
Layer/Depth: -4.5 m.
Type: Dressel (DR) 2-4 Kos
Date: Between late 1st century BC and early 1st century AD
Origin: Kos Island
Distribution: Especially the centres in the Eastern and Western Mediterranean and some centres in the Black Sea.

Contents: Wine
Parallels: Riley, 1979, p. 150, fig. 74; Becker et al., 1986, pp. 65–71, figs. 6–7; Desbat & Picon, 1986, pp. 637–645, figs. 1, 5; Empereur & Hesnard, 1987, p. 67, fig. 39; Martin–Kilcher, 1994, taf. 121; Panella, 2001, pp. 193–195, pl. 1; Şenol, 2009, p. 218, no. 42; Kızılarslanoğlu, 2016, p. 333, cat. nos. 29–31; Şenol, 2018, pp. 334–335, fig. 285.

Cat. No: 6 (Figure 8f)
Findspot: South Harbour
Layer/Depth: -6.2 m.
Type: Dressel (DR) 2-4 Italian type
Date: 1st century AD
Origin: Italian Peninsula
Distribution: Especially the centres in the Eastern and Western Mediterranean and some centres in the Black Sea.
Contents: Wine
Parallels: Panella & Fano, 1977, pp. 149–177, figs. 1–4; Peacock & Williams, 1986, p. 105, fig. 39; Becker et al., 1986, p. 70, figs. 6.1, 7.1; Bezeczky, 1998, pp. 227–241, figs. 2.6–9, 3.2–5; Şenol, 2003, pp. 48–49, no. 22; Bezeczky et al., 2013, p. 129, pls. 29, 43; Şenol, 2018, pp. 327–331, figs. 378–382.

Cat. No: 7 (Figure 8 g)
Findspot: South Harbour
Layer/Depth: -3.7 m.
Type: Dressel (DR) 2-4 Cilicia ?
Date: Between mid-2nd century AD and late 2nd century AD
Origin: Eastern Mediterranean (Cilicia?)
Distribution: Eastern and Western Mediterranean.
Contents: Wine
Parallels: Panella & Fano, 1977, p. 169, fig. 17; Riley, 1979, pp. 150–151, pl. XXXIV, fig. 74. 118; Becker et al., 1986, p. 71, fig. 7.3; Martin–Kilcher, 1994, taf. 111, 2219, 2229; Bezeczky, 1998, p. 227, fig. 2.6; Şenol, 2018, pp. 332–336, figs. 283–336; Akkaş, 2020, p. 183, cat. nos. 4–6, fig. 4.

Cat. No: 8 (Figure 8 h)
Findspot: South Harbour
Layer/Depth: -4.3 m.
Type: Dressel (DR) 8
Date: Between early 1st century AD and mid-1st century AD
Origin: Baetica region
Distribution: Some centres in the Eastern Mediterranean, especially centres in the Western Mediterranean.
Contents: Fish products
Parallels: Beltran, 1977, p. 100, 110–111, fig. 22; Peacock & Williams, 1986, pp. 120–121, fig. 52; Sciallano & Sibella, 1991, p. 54, Amphore Dressel 8; Bezeczky, 1998, pp. 227–238, figs. 2, 6; Martin–Kilcher, 2003, pp. 73–77, fig. 7; Kızılarslanoğlu, 2016, p. 321, cat. no. 18; Şenol, 2018, pp. 338–339, no. 288, fig. 288.

Cat. No: 9 (Figure 8i)
Findspot: South Harbour
Layer/Depth: -6.3 m.
Type: M 239
Date: 4th century AD
Origin: Cilicia
Distribution: Centres in the Eastern and Western Mediterranean.
Contents: Wine
Parallels: Robinson, 1959, p. 106, pl. 28, M 239; Slane, 1994, p. 127, nos. 24–26, fig. 6; Alkaç, 2013, pp. 113–114, fig. 8; Will, 2018, pp. 10–11, figs. 26–27; Aslan & Orhan, 2019, pp. 89–90, fig. 5.

Cat. No: 10 (Figure 8j)
Findspot: South Harbour
Layer/Depth: -12.8 m.
Type: Late Roman (LR) 1A
Date: 5th century AD
Origin: Cilicia
Distribution: Centres in the Eastern Mediterranean, Western Mediterranean, Aegean and Black Sea coasts.
Contents: Olive oil, wine and other
Parallels: Riley, 1982, p. 116; Şenol, 2003, p. 85; Şenol, 2009, p. 229, no. 53; Autret et al., 2010, p. 206, fig. 6; Alkaç, 2015, p. 151, fig. 1; Şenol, 2018, pp. 511–513, nos. 430–432, figs. 430–432; Orhan, 2018, p. 41, cat. no. 20, fig. 28; Aslan & Orhan, 2019, pp. 90–92, fig. 6; Akkaş, 2020, pp. 193–196, cat. nos. 28–29, fig. 10; Aslan et al., 2020, p. 227, cat. no. 9, fig. 10.

Cat. No: 11 (Figure 8k)
Findspot: South Harbour
Layer/Depth: -6.3 m.
Type: Late Roman (LR) 1A-B
Date: Mid-5th century AD
Origin: Cilicia
Distribution: Centres in the Eastern Mediterranean, Western Mediterranean, Aegean and Black Sea coasts.
Contents: Olive oil and wine
Parallels: Riley, 1979, pp. 212–216, fig. 91; Peacock & Williams, 1986, pp. 185–187, fig. 104.B; Pieri, 2005, pp. 583–596, fig. 8.51; Pieri, 2007, pp. 297–327, fig. 2, LRA 1B sous-modules; Şenol, 2009, p. 239, no. 68; Kızılarslanoğlu, 2016, pp. 357–358, cat. no. 59; Şenol, 2018, pp. 512–513, nos. 431–432, figs. 431–432.

Cat. No: 12 (Figure 7a-8 l)
Findspot: South Harbour (Antalya Museum)
Layer/Depth: -3 m.
Type: Late Roman (LR) 1B
Date: Late 6th century AD and early 7th century AD
Origin: Cilicia
Distribution: Centres in the Eastern Mediterranean, Western Mediterranean, Marmara and Black Sea Regions.
Contents: Olive oil and wine
Parallels: Bonifay & Pieri, 1995, p. 108; Sazanov, 2000, pp. 124–126, fig. 2; Şenol, 2003, p. 88, cat. 30; Pieri, 2007, p. 3, fig. 4, no. 2; Şenol, 2009, pp. 231–238, cat. nos. 57, 59–

67; Bezeczky et al., 2013, p. 159, pl. 33, nos. 371–372; Alkaç, 2013, pp. 114–115, cat. no. 7, fig. 9; Alkaç, 2015, p. 151, figs. 2–11; Orhan, 2017, p. 146, fig. 7; Şenol, 2018, pp. 516–520, nos. 436–443, figs. 436–443; Orhan, 2018, p. 42, fig. 29, cat. no. 21; Aslan & Orhan, 2020, pp. 302–304, fig. 4.

Cat. No: 13 (Figure 8 m)
Findspot: South Harbour
Layer/Depth: -13.7 m.
Type: Late Roman (LR) 2C
Date: Late 6th century AD and early 7th century AD
Origin: Aegean region
Distribution: Some centers in the Eastern Mediterranean, Western Mediterranean, Marmara, Black Sea and North Africa.
Contents: Olive oil, wine and other
Parallels: Peacock & Williams, 1986, pp. 183–184; Doorninck, 1989, pp. 249–250, fig. 1; Hayes, 1992, pp. 62–66, figs. 22.10–11; Pieri, 1998, pp. 99–100, fig. 3; Şenol, 2003, pp. 97–98; Pieri, 2005, p. 267, pl. 27.3; Şenol, 2009, p. 248, cat. no. 83; Bezeczky et al., 2013, p. 161; pls. 48.629–633; Aslan, 2015a, pp. 355–356, cat. 22; Akkaş, 2020, p. 198, cat. no. 36.

Cat. No: 14 (Figure 8n)
Findspot: South Harbour
Layer/Depth: -9.6 m.
Type: Samos Cistern Type
Date: Late 6th century AD and early 7th century AD
Origin: Samos Island
Distribution: Especially the centres in the western and southern coasts of Anatolia, some centers in the Western Mediterranean and the Black Sea.
Contents: Wine
Parallels: Arthur, 1990, pp. 281–290, figs. 2–3; Sibella, 2002, pp. 14–15, fig. 20; Şenol, 2009, pp. 254–256, nos. 91–93; Bezeczky et al., 2013, p. 157, pl. 36, nos. 400–401; Aslan, 2015a, p. 340, cat. no. 24, figs. 2.24–4.24; Aslan, 2015b, p. 114, fig. 22; Kızılarslanoğlu, 2016, p. 523, pl. 118, Samos; Şenol, 2018, p. 432, no. 355, fig. 355.

Cat. No: 15 (Figure 8o)
Findspot: South Harbour
Layer/Depth: -15.8 m.
Type: Late Roman (LR) 4 B-1
Date: Late 5th century AD and early 6th century AD
Origin: Gaza district
Distribution: Some centers in the Eastern Mediterranean, Aegean, the Black Sea and Western Mediterranean.
Contents: Wine
Parallels: Riley, 1979, pp. 219–223, fig. 92, nos. 351–356; Keay, 1984, pp. 278–283, figs. 121–123; Empereur & Picon, 1989, p. 240, 243, fig. 23; Majcherek, 1995, pp. 172–173, pls. 3–9; Bonifay & Pieri, 1995, p. 112, figs. 9.63–65; Sazanov, 2007, p. 808, fig. 5.20; Şenol, 2009, p. 259, no. 97; Bezeczky et al., 2013, p. 17, pl. 33.377; Alkaç, 2013, p. 116, fig. 11; Aslan, 2015b, pp. 109–111. figs. 14–15; Aslan, 2015a, p. 357, cat. no. 26; Orhan, 2017, p. 145, fig. 6; Orhan, 2018, p. 70, cat. no. 26, fig. 34; Şenol, 2018, pp. 460–462, nos. 380–383, figs. 380–383; Akkaş, 2020, p. 203, cat. nos. 43–44.

Cat. No: 16 (Figure 8p)
Findspot: South Harbour
Layer/Depth: -8.3 m.
Type: Egyptian Amphora (AE) 1A
Date: Between late 3rd century BC and early 2nd century BC
Origin: Egypt (Lake Mareotis surroundings)
Distribution: Some centers in the Eastern Mediterranean.
Contents: Wine
Parallels: Majcherek & El–Shennawi, 1992, pp. 129–133, fig. 3; Empereur & Picon, 1998, pp. 75–77, fig. 2; Şenol & Aşkın, 2007, p. 289, cat. nos. 113a–113b; Şenol, 2009, p. 49; Şenol, 2018, pp. 29–30, nos. 1–2, figs. 1–2; Aslan & Orhan, 2019, pp. 87–88, fig. 3.

Cat. No: 17 (Figure 8q)
Findspot: South Harbour
Layer/Depth: -10 m.
Type: Egyptian Amphora (AE) 3
Date: 1st-2nd century AD
Origin: Egypt (Mareotis)
Distribution: Some centres in the Western Mediterranean and Aegean, especially in the Eastern Mediterranean.
Contents: Wine and other
Parallels: Zemer, 1977, p. 49, no. 39, pl. 14; Majcherek, 1991, pp. 51–53, fig. 1.3; Sciallano & Sibella, 1991, p. 87; Empereur & Picon, 1998, p. 77, fig. 4; Tomber & Williams, 2000, pp. 43–44, figs. 2.3–4; Şenol, 2009, pp. 265–267, no. 106; Dixneuf, 2011, pp. 23–24, figs. 2, 110, figs. 91–92; Bezeczky et al., 2013, pp. 182–183, pl. 37, no. 417; Şenol, 2018, pp. 82–83, nos. 54–55, figs. 54–55; Orhan, 2018, p. 70, cat. no. 28, fig. 36.

Cat. No: 18 (Figure 7b-8r)
Findspot: South Harbour (Antalya Museum)
Layer/Depth: -
Type: Egyptian Amphora (AE) 5-6
Date: 6th-7th century AD
Origin: Egypt
Distribution: Some centres in the Western Mediterranean, Aegean and the Black Sea, especially in the Eastern Mediterranean.
Contents: Wine
Parallels: Alpözen et al., 1995, p. 65; Empereur & Picon, 1998, p. 78, fig. 6; Şenol, 2003, pp. 125–127; Şenol, 2009, pp. 272–274; Aslan, 2015a, p. 359; Orhan, 2017, p. 144, figs. 3–4; Şenol, 2018, p. 157, no. 98; Aslan & Orhan, 2020, pp. 304–305, fig. 5, cat. no. 3; Aslan et al., 2020, pp. 220–227, cat no. 8, fig. 9.

Cat. No: 19 (Figure 8s)
Findspot: South Harbour
Layer/Depth: -3.6 m.

Type: Egyptian Amphora (AE) 7
Date: 7th century AD
Origin: Egypt
Distribution: Some centres in the Western Mediterranean, especially in the Eastern Mediterranean.
Contents: Wine
Parallels: Pieri, 1998, p. 104; Empereur, 1998, p. 397, fig. 14; Pieri, 2005, pp. 128–132, fig. 86; Konstantinidou, 2010, p. 952, figs. 6–7, 22–27; Dixneuf, 2011, p. 167, fig. 159.329; Şenol, 2018, p. 172, fig. 143; Orhan, 2018, p. 52, fig. 38, cat. no. 30; Aslan & Orhan, 2020, p. 306, fig. 6.
Cat. No: 20 (Figure 8t)
Findspot: South Harbour
Layer/Depth: -9 m.
Type: Africa IIA
Date: Between late 2nd century AD and early 3rd century AD
Origin: Tunisia
Distribution: Some centers in the Eastern and Western Mediterranean.
Contents: Wine, Olive oil and fish sauce
Parallels: Sciallano & Sibella, 1991, Amphora Africane II; Panella, 2001, p. 271, no. 152; Bonifay, 2004, pp. 107–116, figs. 57–62; Şenol, 2018, p. 228, no. 189, fig. 189; Aslan & Orhan, 2019, pp. 88–89, fig. 4; Akkaş, 2020, pp. 189–191, cat. no. 18, fig. 8.

Cat. No: 21 (Figure 8u)
Findspot: South Harbour
Layer/Depth: -10 m.
Type: Tripolitania Type 1
Date: Between 1st-2nd century AD
Origin: Tunisia / Tripolitania Region
Distribution: Some centres in the Western Mediterranean (coast of Italy) and North Africa, especially in the Eastern Mediterranean.
Contents: Olive oil
Parallels: Zevi & Tchernia, 1969, pp. 193–195; Panella, 1973, pp. 568–571; Riley, 1979, p. 166, figs. 77–78; Peacock & Williams, 1986, p. 167; Sciallano & Sibella, 1991, p. 79; Williams & Carreras, 1995, p. 243, fig. 2.3; Panella, 2001, pp. 183–211, no. 180; Bonifay, 2004, pp. 104–105, fig. 55a.1; Bezeczky et al., 2013, pp. 152–153, pl. 37, no. 412; Orhan, 2017, pp. 142–143, fig. 2; Orhan, 2018, pp. 55–56, cat. no. 33, fig. 41; Şenol, 2018, p. 215, no. 180, fig. 180.

Cat. No: 22 (Figure 8v)
Findspot: South Harbour
Layer/Depth: -7.2 m.
Type: Günsenin Type I
Date: 11th-12th century AD
Origin: Marmara (Gaziköy and Hoşköy)
Distribution: Some settlements in the Aegean, Eastern and Western Mediterranean, especially in the centres in the Black Sea.
Contents: Wine
Parallels: Brusić, 1972, pp. 245–246; Arthur, 1989, p. 87; Doorninck, 1989, pp. 253–257, fig. 4; Günsenin, 1990, pp. 108–124, pls. VIII 1a–1b, VII 1a–1b, III 2a–2b; Hayes, 1992, fig. 24.1; Alpözen et al., 1995, p. 116, inv. no. 200; Sibella, 2002, pp. 15–16, figs. 22a–b; Şenol, 2003, pp. 117–118, no. 45; Şenol, 2009, pp. 293–299, nos. 141–151; Brusić, 2010, p. 246; Aslan & Orhan, 2019, pp. 93–94, fig. 8; Orhan, 2018, p. 66, cat. no. 15, fig. 23.

Cat. No: 23 (Figure 8x)
Findspot: South Harbour
Layer/Depth: -7.2 m.
Type: Günsenin Type IV
Date: Between 12th-13th- century AD
Origin: Marmara (Gaziköy and Hoşköy)
Distribution: Some centres on the Eastern and Western Mediterranean, Aegean and Black Sea coasts.
Contents: Wine and other
Parallels: Günsenin, 1989, p. 276; Günsenin, 1989, figs. 12–14; Günsenin, 1990, p. 261, pls. LIX/1a,b; Hayes, 1992, figs. 12–24; Günsenin & Özaydın, 2000, p. 345; Şenol, 2003, p. 121, no. 47; Aslan & Orhan, 2019, pp. 94–95, fig. 9.

Cat. No: 24 (Figure 7c-8y)
Findspot: South Harbour (Antalya Museum)
Layer/Depth: -
Type: Hayes Type 65
Date: Between late 12th century AD and early 13th century AD
Origin: Uncertain but probably Eastern Mediterranean region
Distribution: Some centres in the Eastern Mediterranean and especially in the centres in Black Sea coasts.
Contents: Olive oil, wine and others
Parallels: Zemer, 1977, p. 86, no. 79, pl. XXVI; Williams, 1989, p. 98, fig. 61; Hayes, 1992, pp. 74–76, fig. 26.6; Sazanov, 1997, pp. 95–97, fig. 4.47, type 47; Kassab-Tezgör & Dereli, 2001, pp. 215–225; Kassab-Tezgör & Touma, 2001, pp. 105–115; Kassab-Tezgör et al., 2003, pp. 177–178, no. 18, pl. IV, p. 18, pl. X.18; Kassab–Tezgör, 2010, pp. 167–173, pl. 3.7; Şenol, 2009, pp. 314–315, no. 170; Mimaroğlu, 2013, pp. 113–116, cat. nos. 53–56; Orhan, 2018, p. 73, cat. no. 35, fig. 43.