Article

Served on a Plate: A Late Medieval Ceramic Vessel with Sgraffito Decoration of a Sailing Ship from the Ropotamo Underwater Excavations, Black Sea, Bulgaria

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Abstract: We report on the interpretation of a late medieval Eastern Mediterranean glazed ceramic vessel with sgraffito decoration depicting a sailing ship. The artefact represents a chance find that was recovered outside the excavation area of the Ropotamo underwater archaeological excavations on the Southern Bulgarian Black Sea Coast in 2017. Fragments of late medieval sgraffito-decorated ceramics with depictions of sailing ships are rare. Complete examples can be considered exceptional. The Ropotamo artefact is of particular interest due to the freehand execution of its decoration, which suggests some understanding of contemporary ship proportions and seafaring practices on behalf of the artisan. The specimen is analyzed against similar artefacts and discussed in the context of maritime graffiti from the Black Sea and Eastern Mediterranean regions. The aim is to establish its potential for studying archaeological ceramics and evaluate the extent to which the decoration reflects aspects of Eastern Mediterranean maritime culture of the late Byzantine and early post-Byzantine periods. More research is required to appreciate the full potential of the Ropotamo artefact. A hypothesis for origin, dating and significance has been proposed. However, due to a shortage of published parallels, it may be subject to further refinements in the future in case more stratified similis are identified.

Keywords: Black Sea; late medieval; ceramics; sgraffito; ship; iconography; ship graffiti

1. Introduction

This article is a report on the interpretation and significance of a complete late medieval Eastern Mediterranean glazed ceramic vessel with sgraffito decoration depicting a lateen-rigged sailing ship. The artefact is a chance find discovered in 2017 during an underwater archaeological campaign at the mouth of the river Ropotamo on the Southern Bulgarian Black Sea Coast. While recovered during an archaeological investigation, the artefact was identified outside the study (excavation) area, exposed on the seabed among a scatter of mixed late medieval and post-medieval materials. It most likely represents an overboard discard from a ship. The lack of stratigraphic context combined with a rarity of artefacts with similar decoration pose challenges to dating and interpretation. Nevertheless, the characteristics of the Ropotamo specimen warrant an attempt to discuss these further.

Fragments of late medieval Eastern Mediterranean sgraffito-decorated ceramics with depictions of sailing ships are rare. Complete and nearly intact examples can therefore be considered exceptional. Correspondingly rare are summarizing publications on the topic [1]. The issues of comparative material have forced previous researchers to seek parallels of ship drawings on sgraffito-decorated pottery in examples of vernacular art, such as maritime graffiti, and seemingly unrelated media, such as fabric [2] (p. 90).
While, traditionally, ships on sgraffito-decorated pottery have been subject to interpretation by experts in archaeological ceramics, this article offers a combined perspective from both the fields of ceramic studies and nautical archaeology.

The exceptional state of conservation of the Ropotamo specimen did not justify destructive sampling. The approach to analysis is therefore conventional: the artefact has been recorded and discussed against published similis of form, fabric and decoration; on a further level, the decorative motif has been discoursed in the context of maritime graffiti from various archaeological sites and built heritage items across the Black Sea and Eastern Mediterranean regions.

A working hypothesis for origin, dating and significance has been proposed as a result of the current investigation. The shortage of published and securely dated comparative material indicates this may be subject to further refinement in the future in case further stratified similis are identified and published in future studies.

2. Background

The multi-layered submerged archaeological site at the mouth of the river Ropotamo (Sveti Dimitar Cove) is located on the Southern Bulgarian Black Sea Coast, approximately 40 km south of the regional center Burgas (Figure 1). The site retains the stratified remains of an inundated early Bronze Age settlement (ca. 5600 BP) [3] and a series of post-inundation harbor deposits from the Archaic Greek period through to the late Ottoman Age (7 c. BC–19 c. AD). The harbor deposits are associated with an adjacent coastal archaeological site interpreted as the remains of the extinct ancient, medieval and post-medieval settlement of Thera/Chersonesos/Oriospotamo/Padama [4,5]. Unlike most similar sites on the Western Black Sea Coast, the mouth of the Ropotamo is not located near a modern urban center and had never been an active port in the Industrial Age. It is part of Bulgaria’s oldest nature reserve (the ‘Ropotamo Nature Reserve’, gazetted in 1940) and has never been substantially disturbed.

![Figure 1. Site location with photographic-bathymetric overlay of the Ropotamo 2017 test trench locations (map by Dragomir Garbov; photographic overlay by Rodrigo Pacheco-Ruiz; courtesy of Black Sea MAP).](image-url)

The archaeological site at the mouth of the Ropotamo River was discovered by chance in the late 1970s at the commencement of dredging for a government marina to service Communist dictator Todor Zhivkov’s nearby summer residence near the township of Primorsko. The project was abandoned upon discovery of substantial intact archaeological deposits, and between 1978 and 1989, the area was test-excavated by Burgas archaeologist Prof. Ivan Karayotov. Karayotov established the general archaeological stratigraphy and
confirmed the suspicion that, due to minimal modern impacts, the archaeological harbor deposit in Sveti Dimitar Cove is preserved in an exceptional condition [5,6].

In 2017, the archaeological test excavations at the mouth of Ropotamo were re-initiated as part of the Black Sea Maritime Archaeology Project (Black Sea MAP, www.blackseamap.com, accessed on 1 December 2021). The project was directed by Dr. Kalin Dimitrov (National Archaeological Institute with Museum of the Bulgarian Academy of Sciences—NAIM BAS) and Prof Jonathan Adams (Centre for Maritime Archaeology, University of Southampton—CMA Southampton) at the head of an international team comprising scientists and students from Bulgaria, the UK, USA and Sweden. The aim of the recently concluded testing campaign (2017–2019) as part of the overarching Black Sea MAP (2015–2017) was to collect further evidence on the absolute chronology of the Early Bronze Age settlement, its stratigraphy and paleo-environment; and accumulate data on the inundation of the micro-region in the context of the Holocene sea-level rise along the Western Black Sea [7–9].

In June–July 2017, two 5 × 5 m test trenches were laid out and excavated (T1 and T2; Figure 2). In pursuit of its goals of establishing Bronze Age chronologies, the 2017 expedition had to excavate through the overlying harbor deposits accumulating an outstanding collection of archaeological ceramics from the late Roman to the late Ottoman Age (3–18/19 c. AD). Nevertheless, and as it often occurs in archaeological pursuit, one of the most interesting finds of the 2017 campaign was accidental and identified by chance outside the excavation area (Figure 2).

Figure 2. Site plan of the 2017 underwater excavations at Ropotamo with location of the find marked by a star (map by Rodrigo Pacheco-Ruiz, courtesy of Black Sea MAP).

3. The Artefact

The artefact discussed in the current article was discovered on 4 July 2017 on the seabed beyond the northern wall of trench T2. It was identified exposed on the seabed among an extensive scatter of late medieval and post-medieval materials, including various fragmented and complete ceramics and metal objects.

While this scatter most likely marked the partially disturbed and exposed upper strata of the Ropotamo harbor deposit, no secure stratigraphic context can be attributed to this artefact. The complete and nearly pristine nature of the item indicates that it was rather deposited in this location as a result of a single action (e.g. discarded from a ship?), rather than having been transported there via taphonomic processes (Figure 3).

The inventory number assigned to the artefact was RP17_001. It is currently on display in the exhibition of the Historical Museum of Primorsko, Bulgaria.
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Figure 3. The artefact as discovered (photograph by Kalin Dimitrov).

3.1. Morphology

The ceramic vessel from Ropotamo represents a round and relatively flat open form (a ‘plate’) (The authors refrain from functionalist interpretations and note that functional definitions such as ‘plate’, ‘bowl’ etc. have been utilized in this article with the sole purpose of facilitating description), with a rim diameter of 232 mm and a base diameter of 81 mm. Although the vessel was thrown on a fast potter’s wheel, vertical symmetry was not achieved, and its total height varies between 68 and 75 mm (Figure 4). The rim is nearly flat, with a slight downward curve on the upper surface, and projects outwards, terminating with a rounded lip. The transition from rim to the body is reasonably sharp at an angle of c. 120°. The body represents an inverted bi-partite open cone with a well-pronounced shoulder located c. 20 mm below the rim. This shoulder separates the body into two distinct portions (a vertically shorter, more cylindrical upper part and a vertically taller, more conical lower part) and determines the vessel’s slightly S-shaped overall profile. The base is stout (c. 16–18 mm) with a slightly conical shape and is morphologically separated from the body via a horizontal groove on the exterior surface. The ceramic is uniformly fired at a high apparent temperature; the fabric is pinkish-brown, with a relatively pure texture and minor inclusions of organics, mica, sand, chamotte (grog) and occasional small pebbles (<0.5 mm).

The vessel’s inner surface is fully coated with white slip, which also extends beyond the lip over the outer surface, with several drops visible on the lower side of the body and on the base (Figure 5). The glaze was applied over the slip. It covers the inner surface and extends on the exterior side down to the transition from rim to body. Several small drops are visible on the body’s lower surface. After the final firing, the slipped surface has received a characteristic ‘mustard’ yellow color. The areas where the glaze was fired over surfaces not covered with slip (e.g., drops of glaze on the outer surface) or where the slip had been intentionally removed (the incised decoration) have received a dark brown color. The imprint of a ceramic separator-tripod, as typical for post-13th century mass-produced Byzantine and post-Byzantine glazed pottery, is clearly visible in the center of the interior surface.
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Figure 4. Vector illustration (illustration by Dragomir Garbov).
Figure 5. Photographic recording (photographs and collage by Dragomir Garbov).
3.2. Decoration

The decorative composition represents an incised freehand drawing of the lateen-rigged sailing ship. It is located on the interior surface of the vessel and, from the observer’s point of view, appears as shifted off-center towards the upper portion of the circular field available for decorating. It is executed in the *sgraffito* technique and represents a constellation of straight and curved incisions achieved via two sharp implements (*styli*) through the vessel’s slip prior to the first firing. It consists of a preparatory (practice?) sketch executed with a thinner sharp stylus (c. 1 mm), and the main motif, executed with a wider stylus (c. 3 mm), which effectively traces and, in some areas, adjusts the preparatory sketch (Figure 6).

![Figure 6. Vector illustration of decorative motif showing preparatory incisions in red and final drawing in black; the imprint of the separator tripod is dotted (illustration by Dragomir Garbov).](image)

The main motif is executed via 16 straight and curved lines. It represents a view to the port side of a lateen-rigged ship sailing large westward (bow pointing left). The bow is low and raking forward. The side displays a lot of sheer and little freeboard amidships. The stern is tall with a slight rake. The mast is vertical and located abaft the midship area. A large triangular pennant is flying at the mast top. The main yard is hoisted to two-thirds the height of the mast. Its inclination, together with the direction of the pennant and the shape of the sail, indicates a fair breeze on the stern quarter. The lateen sail consists of five cross-cut vertical panels. It is moderately full and gently sweeping aft. A backstay extends from the main yard towards the stern.

Due to the use of a relatively broad implement, while incising the lines of the main motif, the artisan has removed and displaced small strips of slip from the vessel’s interior. Thus, minor lumps of (then still wet) slip were accumulated at the beginnings and ends of most lines comprising the motif, and ‘windrows’ of displaced slip were formed alongside the thickest of lines. Some of these lumps and ‘windrows’ overlay one or two of their adjacent counterparts, indicating that the relevant line they belong to has been incised after the one that they overlay. Thus, in the course of incising the main motif, a *sui generis* ‘stratigraphy’ of lines has been created, which allows for attempting a reconstruction of the main motif’s execution sequence (Figure 7).
According to our reconstruction, the first line to be put down marked the ship’s planksheer or sheerline (Figure 7A). Next came the bow and the stern lines, followed by the waterline (Figure 7B,C). The mast followed (Figure 7D). As the lines comprising the pennant and mainsail do not overlap, it is difficult to interpret which feature came first. In this reconstruction, we suggest that the mainsail was first. However, this cannot be conclusively established. The line marking the main yard was incised over the mast (Figure 7E), and over it, the six lines establishing the sail’s main features were drawn (Figure 7F). The next two lines to be put down were those composing the backstay (Figure 7G,H). We propose that the pennant came last (Figure 7I).

3.3. Similis, Dating and Provenance

Fragments of Eastern Mediterranean sgraffito-decorated ceramics with depictions of sailing ships are rare [1] (p. 181). Complete and nearly intact specimens such as the Ropotamo artefact can therefore be considered exceptional. Among the few known complete examples are a small (134 mm diameter) polychrome Cypriot vessel from the Lusignan period dated to the 13th century and auctioned in the UK in 2019 [10] and a
post-Byzantine polychrome vessel from the Byzantine and Christian Museum in Athens tentatively dated to the 16th century [11] (p. 100). Neither of these artefacts relates in strict typological terms to the artefact from Ropotamo. While both depict lateen-rigged sailing ships, in terms of their artistic execution, these ships can hardly be discussed as stylistically close to the Ropotamo specimen (Figure 8a,b). No more than a hint of similarity in terms of general shape and proportion can be found in reviewing the ship on the later artefact (Figure 8b).

![Figure 8](image_url)

**Figure 8.** *Sgraffito* drawings of lateen-rigged sailing ships from complete Eastern Mediterranean ceramic vessels: (a) the 13th century Lusignan period ‘bowl’ from Cyprus (a) and (b) the 16th-century post-Byzantine ‘bowl’ from Athens (redrawn by Dragomir Garbov after [10,11]).

In terms of the Ropotamo vessel’s principal chronological and typological parameters, notes can be made on known *similis* of shape, proportion, and fabric. As mentioned, the presence of a clay separator tripod imprint on the interior of the Ropotamo vessel indicates a date post the beginning of the 13th century when these devices were first introduced. The general form is known from examples from 13th- and 14th-century horizons at Serres [12] (p. 116, Figure 5, 3) and Corinth [13] (pp. 159–177), although the Corinthian examples lack evidence for the use of separator tripods. A *sgraffito*-decorated vessel of nearly identical shape and proportions, however of a different fabric (white clay), was recovered from a 13th-century destruction horizon in Cherson (Crimea) and published by Romanchuk [14] (p. 415, Figure 13, 2). A nearly identical example to the one from Ropotamo in terms of both proportions and size, but also with matching fabric, slip and glaze was identified in the Golden Horde period horizons of Azak (present-day Azov, eastern Ukraine). Bocharov and Maslovskiy dated this example also to the late 13th–early 14th century; unfortunately, the decorative composition of this artefact has not been shown on the relevant images [15] (pp. 28–29; Figure 3, 2).

Probably one of the largest collections of ceramics with broadly similar fabric, slip and glaze, and similar proportions were accumulated during the investigation of the Novy Svet shipwreck near Sudak (Crimea) [16] and [17] (pp. 156–176), [18,19]. This underwater archaeological site has been interpreted as the remains of a Pisan merchantman, which sank (according to historical interpretation) as a result of naval combat in 1277 [17]. The so-called Novy Svet Ware represents a distinct category of ceramics from this shipwreck, which also constituted a significant portion of its cargo. Laboratory analysis has determined that the Novy Svet Ware originated from a single production center. While it was unable to pinpoint this center, it enabled the identification of several distribution areas of similar ceramics across the Aegean, Asia Minor and the Near East [18]. The Ropotamo ‘plate’ shares similar characteristics to some of the specimens of Novy Svet Ware, Type 1 [19] (p. 360; Figure 3, 2), nevertheless most items from the Novy Svet Ware collection have different decorations characterized by geometrical motifs (usually concentric circles and curved lines). None of the known Novy Svet specimens bears depictions of sailing ships.
While lateen-rigged ships appear reasonably often on 13th- and 14th-century proto-majolica ceramics from Southern Italy and Greece with known examples from some of the foremost published collections, such as, e.g., Corinth [13] (p. 108; Figure 84), they are generally uncommon for sgraffito-decorated pottery.

Several fragments of ceramic vessels with sgraffito drawings of sailing ships have been published with the Byzantine ceramic collection of Thasos [2] (p. 90; Figures 12 and 13; Plate 12). These represent five specimens of various forms and decorative motifs. Unfortunately, the fragmentary state of these artefacts did not allow Veronique François to achieve intelligible reconstructions of either. Correspondingly broad are the proposed dates, which range from the 13th to the early 16th century. The artefacts are discussed as being of potentially Aegean origin. While we can find certain similarities between the type of slip and the decoration of the Ropotamo specimen and those of specimens ’c 81’ and ’c 82’, from the Thasos collection (dated to the 13th and 14th centuries), we note that the Thasos examples display a green glaze. We also need to point out that the most appropriate depiction parallels of specimen ’c 87’ per François can rather be referred to the manuscript of Michele di Rhodi, mentioned further down in the current article, which dates to c. 1434.

A summary of ship decorations on late Roman and Byzantine pottery was published by Prof. Böhendorf-Arslan of Marburg University [1]. Among other artefacts, this article discusses the potentially closest parallel of the Ropotamo specimen’s fabric, slip, glaze and decoration that these authors are currently aware of. The artefact represents a fragmented ceramic vessel discovered in Istanbul and currently kept in the Museum for Byzantine Art in Berlin. It was initially published by Böhendorf-Arsalan in her catalogue of late Antique, Byzantine and post-Byzantine ceramics in the State Museums of Berlin [20] (349 f, No. 831).

While belonging to a more convex form (a ‘bowl’), the Berlin specimen displays a nearly identical pinkish-brown fabric, pale slip and mustard-colored glaze to the one of Ropotamo, as well as the characteristic separator tripod imprint on its interior surface. The identical placement of the tripod in relation to the ship drawing may be coincidental.

The decorative motif of the Berlin example is represented by a lateen-rigged vessel closely similar in general proportions to the one from Ropotamo (Figure 9). The overall artistic treatment can be discussed as nearly identical. The ship has been incised using a reasonably thick implement, similar to the one used for the main motif of the Ropotamo artefact. Traces of a thinner preparatory sketch, however, are not reported by the author and are not visible on the provided photograph.

![Figure 9](image-url)
On the Berlin example, the sailing ship is depicted as sailing east (bow to the right). As in the example from Bulgaria, the bow is low and raking forward, and the stern is taller with a pronounced rake. The hull displays ample sheer and little freeboard amidships. The mast and sail are in a similar location. The main distinguishing feature between the two specimens is the treatment of the sail, which in the Berlin example is displayed as sweeping towards the aft starboard side of the vessel, indicating that the ship is reaching on the port tack.

Another distinguishing feature of the overall composition is the presence of numerous pennants both on the Berlin sgraffito’s ship itself and altogether in the upper portion of the composition. While a triangular pennant is flying on the main mast of both the Bulgarian and Turkish/German specimens, contrastingly to the one from Ropotamo, the Istanbul/Berlin ship has two additional small pennants flying at the stern. A specific feature that needs noting here is represented by three ‘triangular’ geometric motifs drawn in the lower portion of the composition ‘beneath’ the Berlin ship. While at first glance, the farthest left motif appears as connected to the stern of the vessel via a thick incision (and therefore may consequently represent a quarter rudder), a closer look seems to reveal that this line may have been unintentional and rather representing secondary damage. This view is further supported both by the relative thickness of this line compared to the rest of the composition, as well as by the lack of any function to be attributed to the other two motifs, should the left one be indeed a quarter-rudder. The low quality of the image, however, prohibits us from a making definitive statement. The same goes for the three semi-circular incisions on the right side of the mainsail, which cannot be discussed as easily explicable and, while potentially part of the original composition, may also represent further damage (Figure 9A,B). Overall, it must be noted that the condition of the Berlin/Istanbul specimen is fragmentary and the preservation of its inner surface notably worse than the specimen from Ropotamo.

According to Böhlendorf-Arslan’s research, in terms of form, fabric and glaze, the Istanbul/Berlin specimen matches some 14th-century sgraffito wares identified on the Aegean Isles of Lemnos and Thasos [1] (p. 180). However, the author does not propose a firm date or origin.

In summary, the main features of form, fabric and glaze of the Ropotamo ‘plate' indicate that the artefact was likely produced during the late Byzantine or post-Byzantine (early Ottoman) periods (13th–16th c. AD) [21]. Separator tripods were introduced in the Byzantine ceramic industry in the early 13th century. The general type of form and fabric are attested in the archaeological record since the mid-13th and 14th centuries. However, as the decorations on sgraffito pottery from this period are usually characterized by stricter, more standardized compositions incised via finer implements, if dated to the 13th or 14th centuries, the Ropotamo specimen would rather represent an outlier. While it cannot be excluded that the Ropotamo specimen could have been the rare product of a regional late 14th century Byzantine workshop and an artisan, whose distinctive work was hitherto unknown, the rare nature of the decoration, the freehand style of drawing and the reasonably thick stylus utilized for the main motif suggest that favor should rather be given to a later date, potentially in the 15th century. However, a 1500s date cannot yet be excluded. The dating of the Ropotamo specimen will therefore be subject to further refinement in the future, given the scarcity of securely dated comparative material and in case that further similis are revealed by future studies.

4. The Decoration in the Context of Maritime Graffiti

By definition, sgraffito decoration is incised into the surface of a ceramic vessel before the application of the glaze. Therefore, it represents an intentional, planned decorative element rather than an afterthought by a consumer. Despite the apparent crudeness, this suggests that the depiction on the Ropotamo specimen ought to be taken with at least some confidence in its reliability as illustrative of contemporary vessels. Nothing in the drawing offers us clues to determine an even approximate scale for the depicted vessel. No more
than a hunch suggests that it is likely to be more than an open boat. The drawing lacks diagnostic elements that could help date it. Thus, the date the authors propose is based entirely on the characteristics of the ceramic vessel itself.

4.1. Analysis of Nautical Features

As mentioned, the decorative motif on the Ropotamo specimen represents a sailing vessel sailing west. As with all maritime graffiti, here, too, there is the question of what was intended to be depicted and had a meaning—at least in the mind of the artisan—and what were accidental lines, a result of slippage or less-than-careful following of the design. There always is the danger of seeing more than there actually is present in the drawing.

The vessel depicted is a single-masted ship, with the mast close to the middle of the length, which is a reasonable depiction from what we know of lateen-rigged craft from archaeological excavations [22–26]. The sternpost is straight, raking aft. Its length is 6 cm, and it is depicted with a thick, deeply incised line. A stern-hung rudder is not illustrated. Neither, however, is there a depiction of a quarter rudder. The stem of the ship is lower, shorter than the sternpost and is curved. It, too, has a visible rake forward. The upper half of it is thickly cut, while a light outline forms its lower part. No structures are depicted either in the bow or stern of the ship that could be interpreted as castles.

A thin, more or less horizontal line with slight curvature seems to be intended as a depiction of the bottom or keel of the ship as it touches the lower end of the stem, but it disappears about 2/5ths aft of the stem, where the imprint of the separator tripod’s leg is. The ship has a strong sheerline that rises and steepens towards the stern. The lowest freeboard is reached about one-third the length of the ship aft of the stem.

A thick, deeply incised line intersects the stem at the lower end of the thick line and the sternpost. It continues forward of the bow for 2.5 cm and about half a centimeter aft of the sternpost. The most reasonable interpretation is that it depicts the surface of the water. Alternatively, but far less convincingly, one could argue that it is intended to represent a whale and a protruding spur as seen on galleys and Mediterranean tartans.

The mast is vertical, without a rake and carries a single lateen sail with a triangular flag at the top. The lines forming the flag intersect each other and continue into two short tails. It is possible that a swallow-tailed pennant was intended to be depicted, but the overall impression of the sgraffito drawing is such as to suggest the flag’s shape is a result of sloppy work rather than design. The yard is carelessly drawn, too. Thin lines left from the outline drawing are clearly visible above the thicker line that ended up forming the yard. The lines depicting the cloths of the sail are badly drawn and though depicting well the curvature of full sail, stretch above the yard and end up only at the light outline above it. The line of the aft edge of the sail intersects the yard and stretches above it almost to the same height as the masthead. Their lower ends overlap the planksheer of the ship. The vessel is sailing on the starboard tack, which may explain the lack of shrouds. On a lateen-rigged ship, the lee shrouds would not be set. A single line stretches from the yard just forward of the mast to the stern. It could have been intended to represent a backstay, though it is hard to see how it would be set with the sail to port. A second line intersects it and also reaches the stern. It does not terminate at the “backstay”, though. This may be a slip of the stylus used to cut the lines rather than an intentional positioning. An alternative and perhaps the most probable identification of the lines would be as tye and halyard tackle for hoisting the yard, which one would expect to see on the weather side of the sail.

Overall, the impression left by the depiction is of work by a person who had seen similar vessels and appreciated or was interested in them but did not necessarily know that much about their technical aspects. Although there was an underlying sketch prepared before the final drawing was incised, it is clear that the artist did not follow it slavishly and used it only as a general guide. This would explain why the upper part of the mast is visible “through” the sail but does not reach the sheer of the ship. Neither was the artisan precise in cutting the lines: frequently, they overrun and do not end up where logic dictates they ought to have ended. Thus, it is hard to determine how much of what
is visible should be taken literally and how much is a product of this lack of precision. The overall characteristics of higher stern than a bow, some overhang to both bow and stern, straight sternpost and curving stem, single-masted lateen rig are convincing. Similar vessels continued to ply the waters of the Eastern Mediterranean and the Black Sea until fairly recent times. Thus, absolutely nothing in the illustration offers us clues to the date or origin of the vessel. It is timeless. It could be medieval, but just as easily, it could date to the Ottoman period. At first observation, one of the authors (Batchvarov) was inclined to see an Ottoman post-medieval vessel in the illustration because of the lack of a quarter rudder. The pottery dating, however, indicates that late medieval: late Byzantine or post-Byzantine (early Ottoman) dates are far more probable (Garbov).

4.2. Comparison with Ship Graffito

Ship graffito from the Eastern Mediterranean and even the Black Sea are plentiful. Most, of course, are hard to date, and none are an exact parallel for the ship from the Ropotamo plate. There are, however, quite a few images that appear to represent the same type of ship and treat the subject in a similar way. The closest parallel has already been described above.

A graffito with a similar high-curving bow and straight sternpost is reported from the fortification wall of Pliska, the capital of the First Bulgarian State, during the pagan period (7th–10th c. AD) [27] (p.60, Figure 1). This would date the graffito to after the beginning of the 8th century AD, when the stone fortifications were completed. A terminus ante quem for the graffito would be sometime in the 10th century most likely, as in its third quarter, the city and fortress were captured by the Byzantine Empire, and its importance dwindled. The depicted vessel has a forward raking mast with a yard and possibly a pennant at the top of the mast, though the line may be a fragment intended to depict the forestay. Lines under the outline of the ship may be interpreted as waves. Two very short lines protrude at an angle from the corner of the sternpost and keel. They are the only two lines that touch the ship’s outline and, thus, with considerable artistic license, might be interpreted as quarter rudders (Figure 10).

![Figure 10](image_url) Ship graffito from Pliska (redrawn by Dragomir Garbov after [27]).

Another graffito from the First Bulgarian State, potentially from the period of the First Empire (10th–11th c. AD) was found at the medieval site of Basarab or Murfatlar in Northeastern Dobrudja (Figure 11). The Murfatlar complex of caves has been identified as a Monastic establishment and has the largest collection of Bulgarian Cyrillic inscriptions from the period. It is reasonably closely dated to the end of the 9th and the 10th centuries, though some runic inscriptions in early Bulgar might be earlier. The depicted ship differs considerably from the previously described ones by having heavily curving stem- and sternposts [27] (p. 60, Figure 2). A mast and yard with furled sail are visible, but as the yard is horizontal, it is unlikely to represent a lateen sail. Interpreting it as a square sail seems more reasonable. Notable is the presence of an undoubted quarter rudder held by a human Figure. As with most graffiti, dating it is hard. A very tentative suggestion of a date
between 968 and 971 AD is offered here. The unusual shape and even more unusual square rig identify the vessel as a completely different type from the Eastern Mediterranean and the Black Sea ships seen on graffiti. Viking ships, however, had exactly these characteristics. The Kiyvan principality, founded by Vikings in the 9th century, invaded Bulgaria in 968 AD. It is entirely possible that the ship graffiti dates to this period when the artist could have seen the Kyivan Knyaz Svyatoslav’s ships. The importance of the graffiti for this paper lies in the clear presence of a quarter rudder.

A ship graffiti from the fortress wall of Preslav, capital of the First Bulgarian Empire, is possibly the most expressive and artistic of the collection [27] (p. 61, Figure 5). It is certainly the most complex in depiction, with cross-hatching giving volume to the hull. The ship is “sailing” west or even NW. It has a curving, raked bow with a much higher and only slightly curved stern. It appears to be drawn in perspective, which may explain the light curvature to the sternpost. It has a mast and standing rigging, but the upper part of the mast and a yard are not surviving—either were never finished or the stone on which they were drawn is now missing. The ship has a single, confidently drawn quarter rudder that is hidden by the stern and therefore is on the starboard side. Preslav was founded by Tzar Simeon I, who moved the capital there from the pagan Pliska about 893 AD when he ascended the throne [27] (p. 60). Thus, the graffiti has a terminus post quem of the late 9th–early 10th century (Figure 12).

The late medieval sgraffito plate was already discussed. So here, attention will be brought to one feature significant by its absence: there are no quarter rudders illustrated. Their absence is notable as it implies that artists may well miss drawing them.

Three churches from the Bulgarian town of Nessebar, ancient Messembria, have a large collection of ship graffiti carved into their walls, usually over the frescoes. Of particular interest here is the graffiti from the church St. Spas, built in 1609, with the original frescoes surviving complete to the present day. This offers a dating for the graffiti of terminus post quem 1609 and ante quem of the mid-19th century as there are no steamships depicted [28].
The majority of the drawings are primitive to the point of being barely recognizable, but a few are executed at least as well and clearly as the one from the Ropotamo ‘vessel.’ Among them, a few show the same overall shape, such as the one from the artefact: high and curving ends, with the stern straighter and higher than the bow and with lateen rigs. Not one of the vessels has anything that can be interpreted as a quarter rudder, which is as it can be expected, taking into account the post-medieval date of the images. The vessels fall into two groups: one that shows clearly the stern-hung rudders and one that has no depiction of steering mechanisms whatsoever. In the first group fall the vessels from Ovcharov’s Images No. 31, 60, 138, 139 and 141 (Figure 13). No. 31 consists of eight vessels, but only one of them is a lateen-rigged ship, sailing east, with a sail set on the starboard tack. The vessel has a clearly visible, out of proportion, rudder with two sets of gudgeons and pintles. No. 60 is crude, but the characteristics of the Ropotamo ship are visible here, too: the double-ended hull with a higher stern, single mast with lateen sail (with a short luff, but too short to be a setee sail). The vessel has a huge, exaggerated sternpost-mounted rudder that continues under the hull as visible on vessels with curving sternposts. At the top of the mast flies a rectangular flag. Three drawings, No. 138, 139 and 141, are practically identical, with the same composition and elements represented. No. 138 has a low bow, curving and raking forward in comparison with a nearly vertical, high and almost straight sternpost. Standing rigging is depicted; a long, likely lateen, yard with a furled sail is identifiable. Interestingly, the lower end of the yard is towards the stern. At the top mast, there is a small triangular flag. The sternpost has a distinct central rudder. No. 139 is practically identical but is a little less carefully executed. It has the same elements: single mast, brailed sail, leaning towards the stern, triangular flag at the top of the mast, standing rigging (fewer lines than #138), and dominant stern hung rudder. No. 141 lacks the flag but has the standing rigging, the stern rudder, the double-ender shape with a higher stern than the bow, the brailed or furled sail, with the yard touching the stern, with the forward end up in the air. Evidently, all these vessels are sketched at anchor and may well represent craft from the port of Mesembria.

![Image](image-url)

**Figure 13.** Graffito of lateen-rigged merchantmen with stern rudders from the St. Spas church at Nessebar (redrawn by Dragomir Garbov after [28]).

The rudderless group consists of Ovcharov’s Images No. 118, 147,148, 149 and 151 (Figure 14). Graffito No. 118 shows a ship sailing east, or SE towards the viewer, on the port tack. It has a large lateen sail, curving lines on the sail likely depict the seams between the cloths, but also help with the illusion of a wind-filled sail. A small rectangular flag flies at the mast top. The hull can best be described as banana-shaped, but it is clear the artist
intended it to be a double-ended vessel with a slightly higher stern. No rudder of any kind is visible on this or any of the following vessels. Graffito No. 145 is the most basic: only six lines were used. It is sailing east, too, with a sail that may be intended to represent a lateen with short luff, though the lines for the luff and foot of the sail were never drawn. In this vessel, the bow is higher and more curving than the stern: this, however, may be an optical illusion, as the ship (or boat) is drawn in perspective. The vessel No. 146 is similar to Images No. 138–141 but does not have a rudder. The bow is pointing west, the sail is furled, and the aft end of the yard is down, touching the sternpost. No flag is visible. The sternpost has a curvature to it and is much higher than the raking stem. Only the forestay of the standing rigging is drawn. No. 147 and No. 149 are even less detailed. Both have the same overall shape—raking bows, higher sterns, single masts, long yards crossing them that likely are lateen, but they do not have any sail depicted. With the exception of No. 118, the other drawings in this group are so basic and with so few lines that perhaps this is the explanation why the artist/s missed the rudders.

Ship graffito from the Hagia Sophia church in Trebizond (present-day Trabzon, Turkey) have attracted a number of scholars such as Bryer, Meinardus and Werner [29–31]. Meinardus listed the types of vessels known to have been used in the 13th–15th centuries in the Trebizond Empire until its fall to the Ottomans. In a way, his work can be seen as an update on Anthony Bryer’s article in the Mariner’s Mirror. Barkas and karabia are described as single-masted, with high poops (sterns) and no oars [30] (pp. 30–31). He believes that Black Sea ships were, on the whole, smaller than Mediterranean examples, and among them lists griparia, paraskalmia, xylaria. They are described as small transport vessels with single masts. The ship from the Ropotamo plate matches this description, too, but no differentiating characteristics are offered for the types, which makes any attempt to identify it with any of these vessels a futile exercise. On a depiction of a galley from Trebizond, dated to the 14th–15th centuries, Meinardus identifies quarter-rudders [30], (p.33). It is one of the rare examples of graffiti where the quarter rudders are drawn.

Walter Werner, too, wrote about the graffiti from the Hagia Sophia in Trebizond (present-day Trabzon, Turkey) [31]. The frescoes and mosaics in the church date to the 13th century, which offers a convenient and secure terminus post quem for the ship graffiti scratched on them [31] (p. 149). The graffiti themselves are harder to date, of course, but Werner believes them to cover a time span between the 13th and the beginning of the 19th
century as there are no steamships depicted. The rigs vary, but the lateen rig is present, though it is sometimes hard to determine which line belongs to which vessel, Werner wrote [31] (p. 149). By the first half of the 13th century, there already was the presence of Genoese merchants and ships in Trebizond. Therefore, some of the depictions likely represent Mediterranean vessels. On six graffiti, stern-hung rudders are visible [31] (p. 154, Figure 4). On the rest of the graffiti no lines can positively be identified as rudders, but the assumption is for stern-hung ones, as they are less visibly dominant features and therefore are more likely to be ignored in a depiction. Evidently, Werner did not see the lines on the galley as the looms of quarter rudders (Figure 15).

Earlier work on the same graffiti was published by Bryer, who used the drawings prepared by June Winefield of the Russel Trust [29]. He describes the larger lateen-rigged ships with two masts as Genoese in origin and refers to them as navis bucis. The Black Sea MAP expedition found one such vessel in the 2016 season with masts still standing and the yards fallen on deck but present. Bryer states that the smaller Black Sea merchant ships were rigged with square rather than lateen sails. He offers no reference for this statement and gives no specific examples. The evidence we do have for the western shore appears to be contradicting him [27–29]; [29] (p. 6). While the focus of the article is the identification of the ships from the graffiti from the Hagia Sophia church in Trebizond with specific types mentioned in the historical sources, he does offer an interpretation of one of the vessel types, which he describes as rare, the galley [29] (pp. 9–10, Figure 7). He sees her as steered by quarter rudders, whose long looms are seen protruding just at the forward end of the quarterdeck. Considering that the lines—if the redrawing of the graffiti was performed accurately—appear to originate at the waterline and the endpoints simply hang in the air, interpreting them as quarter rudders seems reasonable.

Babuin and Nakas studied ship graffiti from the church Prophet Elijah in Thessaloniki. The frescoes date to 1370–1478, but in 1451 the city fell to the Ottomans, so it is most likely that most were painted prior to this date [32] (p. 8–9). Therefore, the graffiti must date to the same period, after the completion of the frescoes. The majority of the depictions are of single-masted vessels from which the authors conclude that these must have been small fishing vessels working in the harbor of the port city ([32] (p. 11). Though the argument may be debatable, the important point is how frequent the image of single-masted ships with lateen rigs are. In Figure 16, for example, is visible a vessel, broadly similar to the one from the Ropotamo artefact (Figure 16). It has a high stern, raking stem and a lateen yard that is even longer proportionally than on the Ropotamo example. The yard in the
graffito is bare, with no sail drawn. Some rigging lines are visible. The depiction has neither quarter rudders nor a clearly visible stern-hung rudder [32] (p. 11, Figure 16).

Figure 16. Graffito of lateen-rigged sailing merchantman sans stern rudder from the church of Prophet Elias, Thessaloniki (redrawn by Dragomir Garbov after [32]).

Lucien Basch described ship graffiti from the Monastery St. Luca, Delphi, Greece. The monastery dates to 1011 AD, but Basch believed the graffiti to be representative of Eastern European ships from the 13th c. Two of the published images have a resemblance to the Ropotamo vessel: Figures 13 and 14 [33] (p. 46, Figures 13 and 14). The vessels possess the recognizable shape of high and raking posts, but unlike most depictions, these seem to have a horizontal protrusion on top of the stem (Figure 17). It may be an attempt to represent a beakhead. Although no sails are illustrated, it appears that the vessels were lateen-rigged because the long yards are sloping sharply downwards towards the presumed bows. Following the same assumption, the vessels are both “sailing East”. No rigging is visible, and nothing that can be interpreted as quarter-rudders or stern-hung rudder is drawn.

Figure 17. Graffiti from Delphi and Cyprus (redrawn by Dragomir Garbov after [33,34]).

Demesticha et al. published an excellent overview of ship graffiti from Cyprus [34]. Graffito CY011_S01_D01 has clearly illustrated and unmistakable quarter rudders, and this makes it remarkable because there are so few images that show them [34] (p. 358, Figure 8). Unfortunately, none of the published illustrations resembles the Ropotamo depiction (Figure 17).
5. Discussion

The artefact from Ropotamo is a rare example of late medieval Eastern Mediterranean sgraffito-decorated pottery. It is unlikely to have been of local (Western Black Sea) origin and would more likely have been brought to the Ropotamo harbor as a result of seaborne use or trade. Characteristic traits such as the use of a separator tripod in the firing process indicate that the specimen originates from a mass-production center. Material associations with published similis suggest that this center may have operated somewhere in the Aegean Basin. The numerous similarities between the Ropotamo and the Istanbul/Berlin examples, particularly in terms of fabric and decoration, suggest that the two artefacts are potentially synchronous and may reflect the production of related workshops. The broad dating proposed for this artefact is late Byzantine—post-Byzantine/early Ottoman (13–16 c. AD) based on comparative analysis. While a tentative narrower chronological window is proposed in the late 14th–15th century, a 16th-century date cannot be excluded.

The artefact from Ropotamo reflects long-distance communication and contact between the Black Sea and the Eastern Mediterranean in the late Middle Ages. It marks the later phases of coastal occupation at the now-extinct township of Oriospotamo/Padama, known from Italian portolan charts of the Black Sea, which according to historical research, was abandoned in the 1600s during Cossack naval raids [5]. The rare freehand nature of the sgraffito drawing is significant for studying both archaeological ceramics and maritime culture. The Ropotamo ‘plate’ may have arrived at the harbor in Sveti Dimitar Cove on a similar ship to the one it depicts.

Search through published comparative material of maritime graffito has yielded a significant quantity of broadly similar depictions, but none that are identical to the drawing from the Ropotamo ‘plate.’ Considering the nature of graffito, this is only to be expected. In the quoted examples were found the same elements, though treated differently. First, a double-ended hull with a higher stern than the bow; second, a sternpost straighter and with less rake than the curving, lower stem and, thirdly, all are single-masted vessels with long yards. The yards may be bare, with furled sails or with sails filled by wind. Though few can be dated more closely than to a century, the dates spread from the Middle Ages to the beginning of the 19th century. Yet, they all represent practically the same type of ship. Clearly, the shape had impressive longevity in the Eastern Mediterranean and the Black Sea. In addition to graffito, the shape is attested to by archaeology. Examples of it can be quoted from the 7th century AD wreck from Yassıada, the 9th century AD shipwreck from Bozburun, the late 9th–early-10th-century wreck from the Black Sea, BSMAP_2016_Wrk_002, the 11th-century AD Serce Limanı ship through the 16th-century Yassıada Ottoman wreck, to the late 18th–early-19th century Kitten Shipwreck [22,35–39].

The one feature that could separate the medieval from the post-medieval graffito is the steering mechanism. The earliest evidence for centrally-mounted rudders is coming from the Baltic: The Kollerup cog of 1150 AD and the Kolding cog of 1189 AD [40] (p. 192–193, Figures 31.9 and 31.10). In the Mediterranean world, the stern rudder made its appearance by the first half of the 15th century, as attested to by the 1434 Treatise of Michele di Rhodi. In the treatise, there are depicted a galley with both quarter-rudders, lifted out of the water, and a sternpost-mounted central rudder (1434: 145b). Some hesitation in the adoption of the centrally-hung rudder may be suggested from the presence of both sternpost-hung rudder and two quarter-rudders on the galley. It implies its relatively recent adoption.

Thus, if it could be demonstrated that artists drawing graffito in the Mediterranean world and the Black Sea consistently drew quarter rudders in the period prior to the 15th century, but drew sternpost-hung rudders or none at all in later periods, then this could be an aid in approximate dating of graffito in general and the Ropotamo example specifically.

To this purpose, comparative material was queried in an attempt to identify diagnostic elements of the depictions that could be considered datable. In such unpromising media as graffito, the only truly diagnostic features would be the overall shape of the hull, rig and, where discernible, steering arrangements.
A few common characteristics appear together in a large number of images. These consist of curving and raking bow with higher and straighter sternpost. Virtually all vessels with this shape are single-masted, though the rig is drawn with varying detail and completeness. In most cases, it is clear that the ships were lateen-rigged. The sails themselves are not always drawn, but usually, the angle of the yard to the mast is sufficient to conclude that the artist was thinking of a lateen rig. Some images have lines that could indicate stern-hung rudders. Very few have unmistakable quarter-rudders, while the majority of the graffiti have no clear depiction of any kind of steering mechanism. It seems easiest to miss drawing stern-hung rudders as natural appendages to the sternposts and visually not easy to discern from a distance, while quarter rudders are distinctive, visually prominent features. One would expect artists to depict the quarter-rudders if the ships had them.

Thus, one would expect to see quarter rudders on the iconography of vessels prior to the 15th century, and the lack of quarter rudders on the Ropotamo plate may indicate that it could be dated to the 15th c. or later. In fact, it was here demonstrated that there does not appear to be consistency in depicting steering arrangements on ship graffiti.

If there are any greater conclusions to be drawn from this study in terms of maritime culture, it is that the dating of graffiti must depend on the context as the ship features depicted are unreliable as dating tools. Second, and perhaps more useful, is that a type of Eastern Mediterranean vessel that was also present and popular in the Black Sea region, characterized by a lateen rig, raking bow and high stern existed from at least the early medieval period until about the first half of the 19th century. It appears that the major technological changes within the type would have been the replacement of the quarter rudders with centrally mounted stern rudder and the abandonment of mortice and tenon joinery in favor of frame-dominated construction both conceptually and in construction. This type of vessel is attested both in the iconographical and archaeological records.

6. Conclusions

In 2017, a late medieval Eastern Mediterranean ceramic vessel with sgraffito decoration of a lateen-rigged sailing ship was identified by chance during underwater archaeological investigations at the mouth of the river Ropotamo on the Southern Bulgarian Black Sea Coast. The artefact is analyzed against known similis of form, fabric, and decoration and in the context of maritime graffiti from the Black Sea, and Eastern Mediterranean regions. A working hypothesis on provenance, dating, and maritime cultural significance is proposed. However, a shortage of comparative material indicates this may be subject to further refinement in future studies. While the artefact is significant for both the study of archaeological ceramics and maritime culture of the late medieval Black Sea and Eastern Mediterranean regions, further research is required to develop its full potential.

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