

A Roman Shipwreck off the Island of Capraia, Italy

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Introduction

In June 2009, ProMare and SBAToscana (Soprintendenza per i Beni Archeologici per la Toscana) carried out an archaeology project near the Island of Capraia, Italy. The project entailed mapping, recording, and partial excavation of an underwater site that contains artifacts mostly from the second and first centuries BC. General artifact assemblage and distribution indicates a shipwreck in this location, and the analysis of the data collected over a series of seasons of archaeological work contributes to a better understanding of the site as well as the commercial and social history of the island.

Capraia is part of the Tuscan Archipelago, off the northwest coast of Italy, between Italian mainland and the north point of Corsica. It is 62 km west of the city of Livorno, and 32 km northwest of the island of Elba. The volcanic island has a surface area of 19 km² and its highest point measures 447m above sea level. Settlement is limited to the port area and a small village above it, with a population of 366 people based on the count from 2004. Architectural remains of a Roman villa were discovered near the modern port, but little is known about the Roman history of the island and the occupants of the villa are unknown. The island was under Genoese control in the sixteenth century and the small settlement was fortified in 1527, in 1872 an agricultural penal colony was established in Capraia which was active until 1986.

Site topology and physical description

The underwater site investigated by the team is located near the northern tip of the island, facing the promontory called *Punta Teglia*. The submerged reef, approximately 20 meters from the artifact scatter has a protruding tip above the sea level. Small size and dark color of these rocks, called *Le Formiche* (ants) on modern charts resemble ants walking on the sea. It is evident that the reef has been a navigational hazard for ships throughout history.

The site lies in a clearing on the edge of a large area of posidonia grass that surrounds the shallow rock outcrops. To the north is a flat area of sand that extends 60m to the north-east until it again meets an area of posidonia grass (*posidonia oceanica*). The edge of the posidonia forms a vertical wall of roots 1m high on top of a shallow gradient foreslope 0.5m high, the top of the root is covered in ribbon-like green foliage 1m high (fig. 1). The posido-

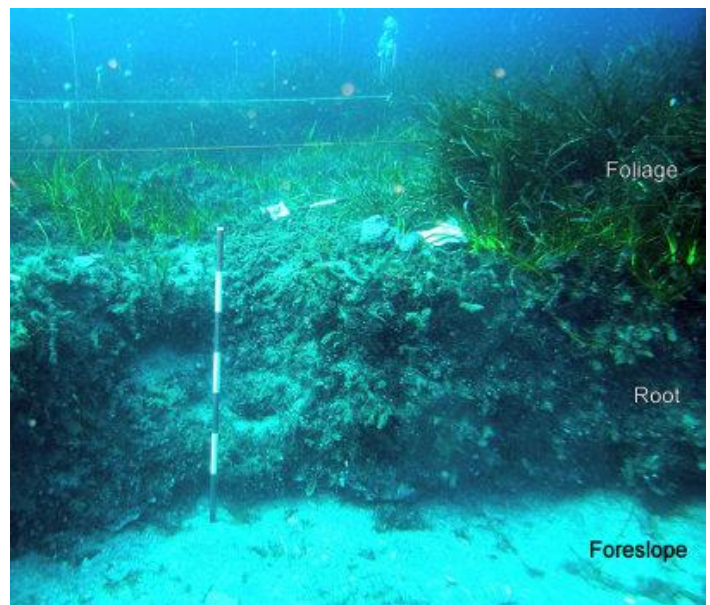


Fig. 1. Cross section through the posidonia near Q1 (Photo: P. Holt).

nia acts as a sediment trap allowing fine particulates to drop out of suspension forming a solid mass at the roots. The surface sediment in the sandy areas is made up of volcanic sand with a high proportion of shell; underneath this is a solid while coralline matrix mixed with old posidonia root. Close to the posidonia the sandy seabed is flat but further to the north is an area of low sand waves. The sediment away from the posidonia is free of fine particulates down to a depth of at least 100mm suggesting a medium energy environment that is occasionally washed by storm wave action.

Based on the results of preliminary surveys, the archaeological site was described as a deposit of black-glazed bowls, cups, plates, and amphorae spread over an area of ca. 60 x 40 m. The maximum water depth of the area of archaeological interest is 18m. The sand flat close to the posidonia includes a very large number of ceramic sherds and oyster shells. Archaeological finds were located in the sand pockets inside the posidonia as well as the extremities of the marine growth, thus calling for further exploration and survey to determine the extent of the site obscured by marine growth and whether or not the artifact assemblage represented a shipwreck.

The underwater visibility on site was more than 20m vertically and horizontally for the majority of the days when work could be done on site, but visibility was reduced on days after a storm. Water current was negligible for the first few days however a strong current set up after the first storm and would run in the direction north-west to south-east before reversing direction. The current was sufficiently strong to make it difficult to swim against underwater.

Discovery of the site and previous surveys carried out by SBAToscana and ProMare

After the introduction of scuba diving in mid 1970's, sport divers discovered the archaeological deposit near the reef named *Le Formiche*, and reports indicate that quantities of artifacts were removed from the site between 1975 and 1988¹. A specific report notes that in 1980 the local Coast Guard received 199 pottery and amphora sherds and deposited these finds at the residence of honorary inspector of the Tuscan Superintendency, Angelo Boccanera. Diagnostic artifacts from this assemblage included a Graeco-Italic amphora, about 40 fragments of black-glazed plates and bowls, two lead rings (possibly brail-rings), along with a lead anchor stock. The anchor stock was found in 1978 at a depth of 34 m, ca. 300 m to the east of *Le Formiche*. The stock weighs 550-600 kg, it is 2.20 m long, and has a collar of 0.30 x 0.30 x 0.23 m².

The first systematic survey of the site was carried out in April 2007 by SBAToscana under the direction of Dr. Pamela Gambogi. The site was located and documented, and a group of diagnostic artifacts were raised for further study. Preliminary examination of the artifacts indicate that the Campanian A pottery (i.e. black glazed bowls, cups and jars), and the amphorae (of Dressel 1A and 1B types) date to ca. 150-140 BC. After this survey, the area was declared an official protected archaeological site and access to it by boats and divers was prohibited.

SBAToscana and ProMare visited the site a second time in October 2008. During the weeks the team spent at Capraia the site was prepared for the excavation of a test trench: clump weights were dropped around the site to be used as moorings and several exploratory dives were carried out to achieve a better understanding of the extent of the site. Divers observed that the artifact scatter continued under the roots of the posidonia, suggesting that the site might be at least partially obstructed by marine growth. Because of the currents around the reef, most exposed artifacts were broken and scattered. Thus it was concluded that a test excavation into the parts covered by posidonia was warranted in order to determine if the site extended in these areas, and if the marine growth might have preserved some of the ship's cargo.

Methodology

Existing Site Data

Information about the site was captured in electronic form using the Site Recorder 4 information management software, and this program was also used to process all survey measurements and record the finds³. Digital charts of the area were obtained and used as an initial framework on which to position other plans and maps. The existing site plan created during a previous season's work was georeferenced by aligning a coastline shown on the plan with the same coastline shown on a digital chart. Very high resolution aerial photographs of the area were available from Google Earth so these were also included⁴. Each of the charts, maps and aerial photographs was then referenced to the new GPS fix points (fig. 2).

¹ FIRMATI 1998: 166.

² FIRMATI 1998: 166; COCCHI 1982: 86.

³ HOLT 2007.

⁴ When the charts and site plan were added to Site Recorder it became apparent that there were differences in coordinate frames used for each one, despite the fact that they nominally using the same datum and projection. The difference in the position of

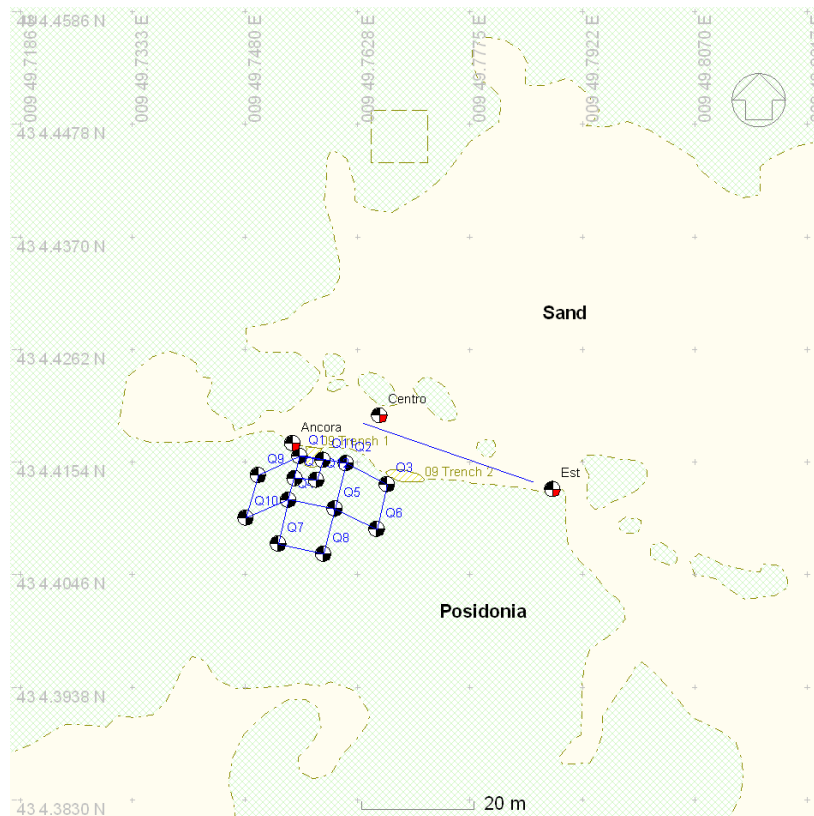


Fig. 2. Positioning of the site in relation to posidonia. Georeferenced points show the corners of the survey and excavation trenches and the baseline used for mapping the artifact distribution within the sandy area (Map: P. Holt).

Site Position

The excellent underwater visibility allowed significant features on the site to be seen from the surface. The position of the end of a weighted line dropped from the boat at slack tide could be identified and the position of that point measured on the surface using the GPS receiver. This was done for a number of points on the site allowing both the position and orientation of the site to be established. On completion, the computed position of the site agreed with the high resolution aerial image of the site to within the expected accuracy.

The aerial photograph from Google Earth at highest resolution showed variations in the color of the seabed that suggested darker areas of posidonia and lighter areas of sand. The good underwater visibility allowed the shape of the sand patches within the posidonia to be sketched during a snorkel swim on the surface. Correlating the sketch with the aerial photograph confirmed that the coloration of the image did represent the two seabed types. Other areas of clear sand were identified from this georeferenced image so it was possible to send divers to search these areas for finds by giving them a distance and bearing to swim from Trench 1 (see below). Unfortunately no additional finds were seen in these areas.

Site Survey

The first task was to position the grid frame set up on top of the posidonia that was used for a probing survey. The grid was made up of four adjoining squares nominally 8m on each side with light line defining the edges of each square. The ten corner points were named Q1 to Q10 and were positioned relative to each other using 3D trilateration, measurements were made using fibreglass tape measures with depth measurements from a dive

known features on land was significant at the scale the site was being mapped so a precise position of the site in real world coordinates was not well known.

To solve this problem a positioning survey was undertaken using differential GPS; known points on land or at sea were occupied by a GPS receiver and the positions determined by averaging a number of position fixes. These fix points were taken using a Garmin 76Csx hand held receiver with differential aiding from WAAS giving a precision of 4m, precision was determined on land by taking multiple position fixes of a known point over a period of time.

computer and were processed using Site Recorder. After adjustment the measurements fitted to within 15mm (RMS residuals).

Three primary control points were set up, two on points used in previous seasons (Centro, Ancora) and a new point to the east of the site (Est). The primary points were tied in to the secondary control points Q1-Q10.

Test trench location to the excavated (09Trench1) was completed within a smaller 4m x 4m grid square formed by the four points Q1, Q11, Q12, Q13. This was also positioned within the primary and secondary control point network.

For work on the sand flat to the east of Trench 1 a tape baseline 30m long was set up between points PM1A and PM1B, again positioned within the survey network. This baseline was used to position many finds in that area using offset measurements but was also used as position control for a photomosaic of the seabed made at an early stage of the investigation. This photomosaic only showed the visible finds in that area and later investigation showed that the surface sediment actually covered a high density of ceramic fragments covering an area too large to be investigated in detail in the time available.

Some finds were recovered to the north of the excavation and these were positioned using radial measurements (DP014, DP015).

Probing and Metal Detector Surveys

A probing survey was carried out within the grid set up on top of the posidonia. The spacing for the probes was 400 to 500mm and where a hard object was detected a marker pin with a small float attached was pushed into the seabed. At the same time a metal detector survey was completed in the same area and different color floats were used to mark these points (fig. 3).

The detection range of the metal detector is small which suggested that any targets that were detected were within the posidonia root but just below the surface so should be easy to find. When the first of these targets was investigated it was found that they were not repeatable, it was then found that the metal detector would give a detection signal if the sensor head was bounced off the seabed. This meant that the targets detected this way were caused by bouncing the sensor on the seabed rather than by legitimate targets.

To help determine the cause of this problem the metal detector was tested on an area of seabed known to be clear of artifacts using a modern coin as a test target. The instrument sensitivity was tuned so that it would detect the coin under normal working conditions so any targets detected from then on would most likely be metallic finds. Care was taken in subsequent surveys to also ensure that the sensor head did not touch the seabed.



Fig. 3. A view of the site before excavation, showing the distribution of the markers placed after spike probing and magnetometer survey (Photo: A. Pareti).

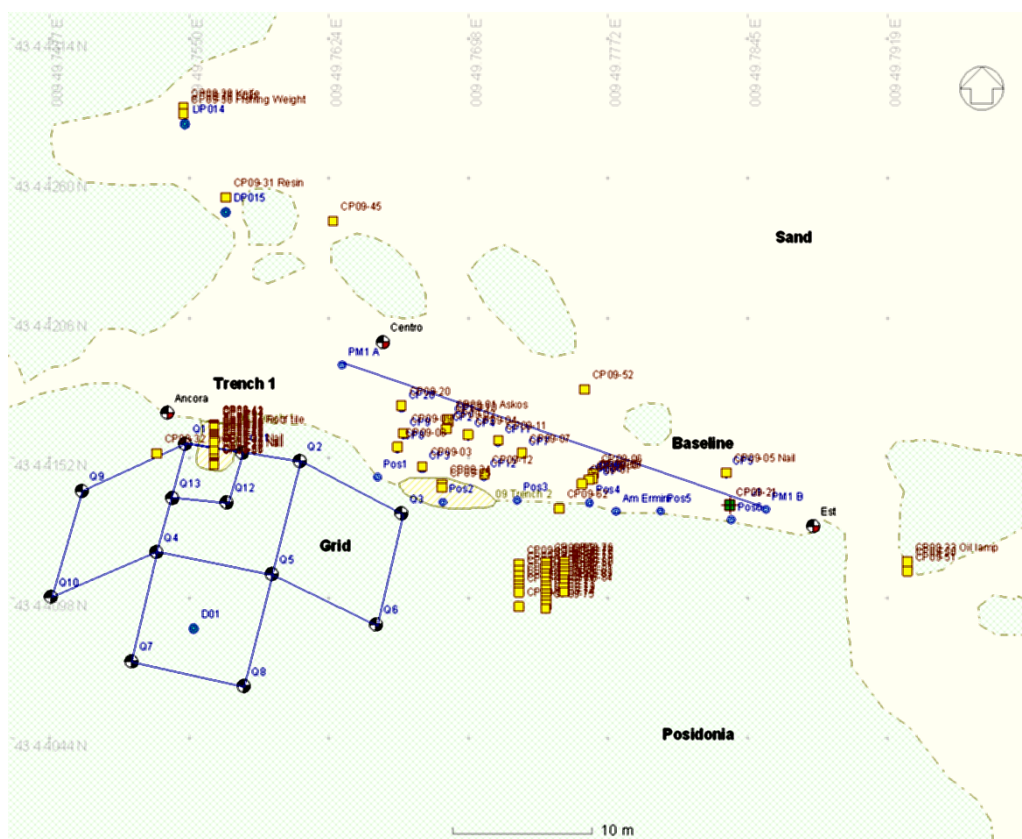


Fig. 4. A screen capture from the Site Recorder software used for mapping and cataloguing the artifacts from the site. This view shows the general artifact distribution (Database created by P. Holt).

A metal detector search was undertaken along the baseline set up on the east of the site and it was then found that buried ceramic sherds could be detected along with copper pins. The particular ceramic material appears to have magnetic properties so some test samples were recovered for further investigation.

All the artifacts found both inside the excavation area and all over the site were tagged, received unique excavation numbers, and were georeferenced using trilateration and offset measurements in Site Recorder (fig. 4).

Artifact Assemblage and Analysis

Eighty three artifacts were catalogued during the 2009 season, sixty five of these were recovered from the seabed and brought to our study quarters for documentation. At the end of the season most finds were re-deposited at the site, and diagnostic artifacts prone to deterioration were brought to the Archaeological Museum of Florence for conservation and preservation.

SBAToscana also made the finds recovered during previous surveys available for study by our team. Fourteen diagnostic artifacts recovered in 2008 were also catalogued and documented in 2009 and are part of the analysis provided below. The first two digits appearing after the site code CP (abbreviation for Capraia), 08 and 09 (abbreviations for 2008 and 2009) indicate the year in which the artifact was recovered.

Of the total 97 artifacts analyzed here, 81 are ceramics. These were analyzed within their respective groups: (1) Commercial storage containers (amphorae), (2) Black Glazed Campanian Ceramics, and (3) Oil lamp. No wooden remains of the ship's hull were discovered but the artifacts that were parts of the ship will be discussed in the category (4) Artifacts related to the ship.

Ceramics

1. Amphorae

The first category of amphorae found in Capraia belong to type 4a in Will's typology, amphorae CP 09/71, CP 08/11, CP 09/46, CP 08/06, and CP 09/52 are in this category (fig. 5). After extensive study of this amphora form, Will concluded that the production of this type of amphora dates between late second century BC and mid first

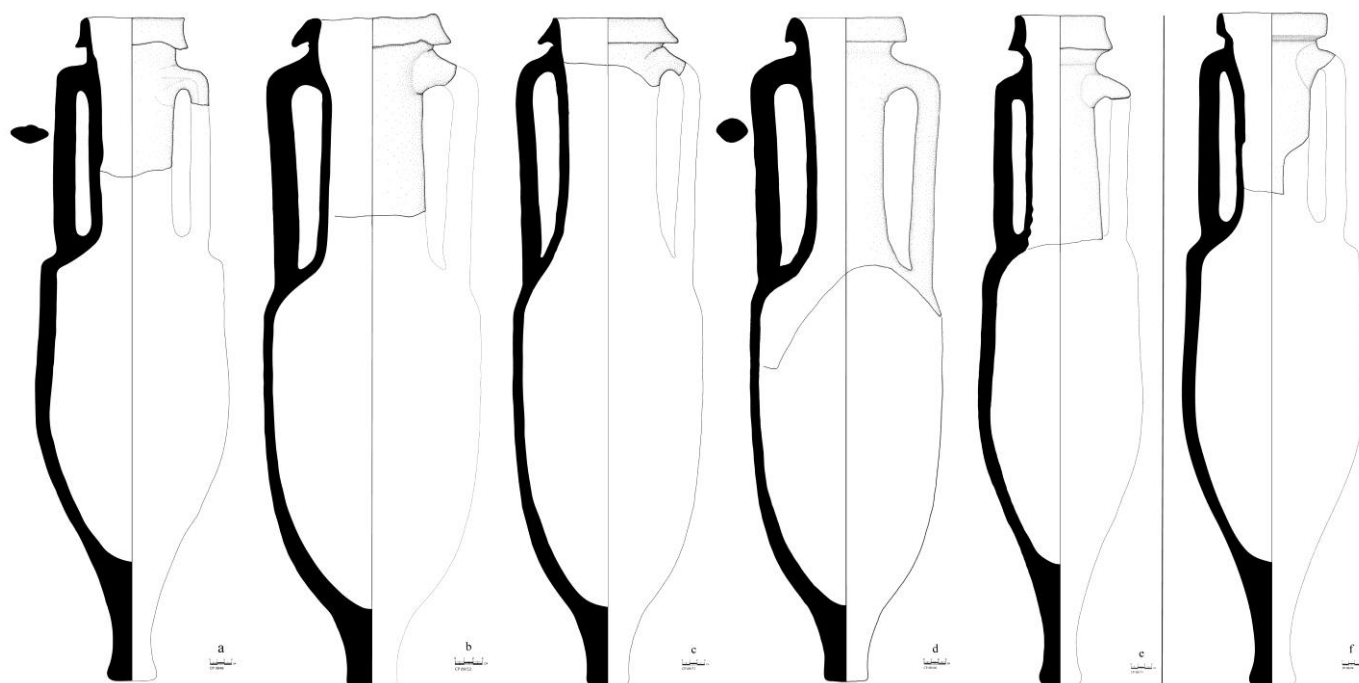


Fig. 5. Amphorae of Will Type 4a and 4b (Drawing: A. Atauz).

century BC at a factory in Cosa⁵. According to other typologies, the amphorae mentioned above belong to the general category of Dressel 1A and B forms, and according to Lamboglia's classification, 1A-B. These amphorae were classified as Class 3 and 4 by Peacock and Williams⁶, and the era of its popularity was dated between 130 BC and the last decade of the first century BC. Based on petrological characteristics conducted on samples, Peacock and Williams suggest that the production of this type concentrated in Campania, Latium and Etruria⁷. Recent fieldwork done in Albinia (near Orbetello, Tuscany) revealed two well-preserved kilns with a large quantity of Dressel 1A and 1B amphorae of which the stamps and clay have been traced in central France (Bourgogne)⁸. Amphorae of this type, which were widely produced in central Italy and generally contained wine, constituted the main cargo of several Roman shipwrecks discovered in the Ligurian sea and along the southern coast of France: Cap Roux Wreck, also known as Anthéor C is located to the south of Cannes, and Dramont A wreck slightly south of Cap Roux. Amphorae of this type were also found among the remains of Anthéor A, Maïre C, Albintimilium, Bon-Porté 2 (Saint Tropez) shipwrecks⁹, all dating to the second - first centuries BC and all in the northern Ligurian region¹⁰. An amphora of this type found near Marseilles at the Cavalière Wreck site (ca. 100 BC) is known to have contained olives¹¹. Other Roman shipwrecks that contained them include (1) Albenga shipwreck that dates to 180-80 BC¹², (2) Spargi Wreck that dates to 75 BC¹³, as well as (3) Dramont A (Saint Raphaël). It is important to note that the Albenga Wreck also had a similar cargo of fine Campanian ware. Another shipwreck near the modern city of Marseilles bears particular similarities to the artifact assemblage in Capraia. The wreck is known as Grand Congloué¹, a Roman ship wrecked in late second – early first century BC¹⁴. CP 08/14 and CP 09/92 represent examples of an amphora type produced mostly on the island of Rhodes in the southern Aegean Sea, during the late second – mid first centuries BC (fig. 6). CP 08/14 has two illegible rectangular stamps on each handles, and CP 09/92 has a 'rose' stamp on the surviving handle with parts of an inscription. Typically these stamps on Rhodian amphorae would represent the name of the *eponym* and the fabricant. The 'rose' is the symbol of the island of Rhodes, indicating the origin of the amphora content. Contemporary literary sources acknowledge that Rhodian

⁵ WILL 1987: 182.

⁶ PEACOCK, WILLIAMS 1986: 86-90.

⁷ PEACOCK, WILLIAMS 1986: 87.

⁸ VITALI, LAUBENHEIMER, BENQUET 2007: 191-197.

⁹ TCHERNIA 1986: 316.

¹⁰ BELTRÁN LLORIS 1970: 304; SCIALLANO, SIBELLA: 1991.

¹¹ CHARLIN *ET AL.* 1978: 81-82; SCIALLANO, SIBELLA: 1991.

¹² LAMBOGLIA 1952; BELTRÁN LLORIS 1970: 306; WILL 1987: 219.

¹³ WILL 1987: 219.

¹⁴ TCHERNIA 1986: 317.

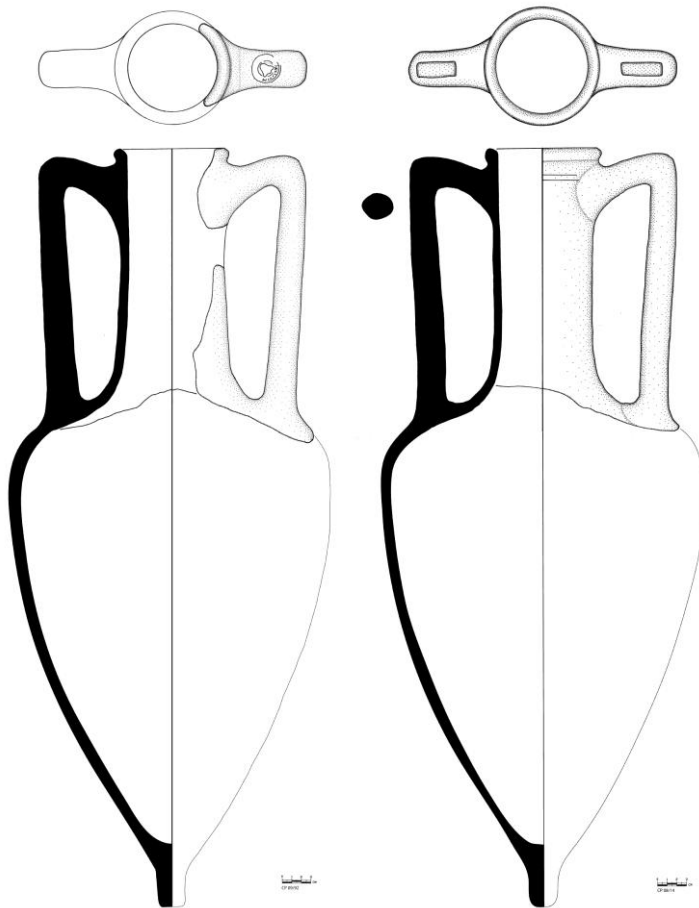


Fig. 6. Rhodian Amphorae: CP 08/14 and CP 09/92 (Drawing: A. Atauz).

amphorae contained wine¹⁵. Parallels we identified for these artifacts were dated as early as 197 BC and as late as mid first century BC¹⁶. Generally speaking, parallels for CP 08/14 and CP 09/92, have a widespread distribution around the Mediterranean and were found in land contexts generally dating to the second century BC; the Grand Congloué 1 shipwreck included examples of this amphora that have been dated to the beginning of the second century BC¹⁷.

Amphorae CP 08/10 and CP 08/13, two Dressel 20 types, have a widespread distribution around the Mediterranean (fig. 7). Based on archaeological evidence¹⁸ and petrological studies¹⁹ these amphorae were produced along the Guadalquivir river in Southern Spain (province of Baetica) between first and third centuries AD for the transportation and export of that region's olive oil²⁰. According to the distribution of Dressel types 19 and 20 the form has been dated to as early as the late first century BC. But according to Peacock and Williams' typological study, CP 08/13's rim indicate that it might date to the end of the first, second century AD; according to the variant D of Martin-Kilcher, it should be dated to the second century AD²¹.

Underwater archaeological surveys conducted along the Mediterranean coast of France identified hundreds of shipwrecks from the late second-early first century BC with amphora cargoes very similar to the ones we found in Capraia, which would be on the maritime route between central Italy and southern coast of France. Unfortunately, our amphorae do not bear legible stamps to determine their precise places of production. Based on statistical analysis of all amphorae discovered on land sites, only ten percent of Roman amphorae were stamped²², and the poor preservation of the site at

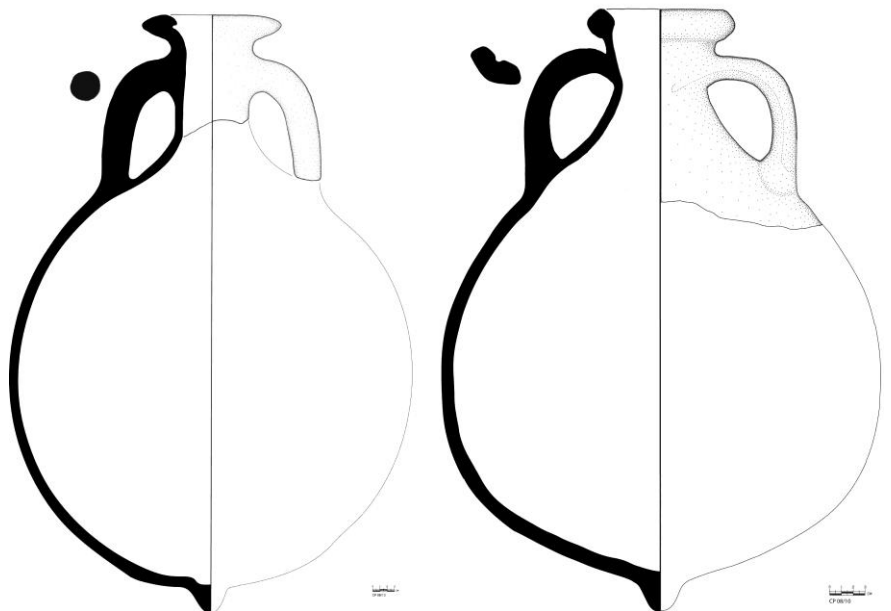


Fig. 7. Amphorae CP 08/13 and CP 08/10 (Drawing: A. Atauz).

¹⁵ ATHENAEUS I, 32; POLYBIUS IV, lvi, 3.

¹⁶ NICOLAOU, EMPEREUR 1986: 515-531; GRACE 1965: 5-17; GRACE 1985: 1-54.

¹⁷ LONG 1987: 11.

¹⁸ CLARK-MAXWELL 1899: 245-305; WILL 1983: 392-440.

¹⁹ PEACOCK, WILLIAMS 1986: 136.

²⁰ BELTRAN 1970.

²¹ PEACOCK, WILLIAMS 1986: 137; Martin-Kilcher 1987: 54-56.

²² WILL 1987: 183.

Capraia also contributes to the difficulties encountered in narrowing the production place and date of this cargo.

Specific parallels for CP 09/71 (fig. 5c): Cosa (WILL 1987: 207, fig IX, cat # A119 / late 2nd-mid 1st century BC); Cap Roux Wreck (BENOÎT 1958: 29-30); Antheor C Wreck (BENOÎT 1957: 254, fig. 5 / late 2nd-early 1st century BC); Dramont A Wreck (JONCHERAY 1971: 13-14, PI IV no 8/ 30 BC).

Specific parallels for CP 08/11 (fig. 5e): Cosa (WILL 1987, fig IX 109, 110, 111, cat # A73; fig. IX 172, 173, 174, cat # 102; fig. IX 168, 169, 170, cat # 100/ late 2nd-mid 1st century BC); Dramont Wreck (BENOÎT 1958: 18, fig. 16a / 1st century BC); Dramont A Wreck (JONCHERAY 1971: 13-14, PI IV: no 8 / 30 BC).

Specific parallels for CP 09/46 (fig. 5a): Cosa (WILL 1987, Type 4a, fig IX, 109, 110,111, cat # A73/ late 2nd-mid 1st century BC); Dramont A Wreck (JONCHERAY 1971: 13-14, PI IV, no 8 / 30 BC).

Specific parallels for CP 08/06 (fig. 6d): Cosa (WILL 1987, pp. 37/ late 2nd-mid 1st century BC); Grand Congloué Wreck (BENOÎT 1961: 31 / late 2nd century BC; JONCHERAY 1971: 10, PI III, 3c / late 2nd – mid 1st century BC); Dramont A Wreck (JONCHERAY 1971: 13-14, PI IV, no 8/ 30 BC).

Specific parallels for CP 09/50 (fig. 5f): Cosa (WILL 1987, fig. IX 317, 318, 319, cat # 202/ 25-50 BC; pp. 197, fig. IX 292 and 294 cat # A193); Dramont Wreck (BENOÎT 1954: 18, fig. 16); Grand Congloué Wreck (JONCHERAY 1971: 10, pl. III, 3c / late 2nd – mid 1st century BC).

Specific parallels for CP 08/14 (fig. 6): Rhodes (NICOLAU, EMPEREUR 1986: 516, no 2 / 197-195 BC; pp. 516,517,518, no 3 / 183 BC; pp. 518-519, no 4/182-176 BC; nos. 6-12/ 150 BC); Athens (GRACE 1985: 9, 13/ mid 2nd century BC); Grand Congloué 1 Wreck (BENOÎT 1954: 37, late 2nd –mid 1st century BC).

Specific parallels for CP 09/92 (fig. 6): Rhodes (NICOLAU, EMPEREUR 1986, no 5/ 182-176 BC); Athens (GRACE 1985: 8-9).

Specific parallels for CP 08/10, CP 08/13 (fig. 7): Cosa (WILL 1987: 212, fig. IX 429,430, cat # 287 / 2nd-3rd century AD); Villepey Wreck (BENOÎT 1960: 48, fig 15); Ostia (PANELLA 1972: 78, fig. 13-14 / 1st – early 2nd AD); Villepey and Saint Raphael Wrecks (JONCHERAY 1971: 22, PI. VII, 3a / end of 1st century BC-3rd century AD).

2. Black-Glazed Campanian Ceramics

The second major artifact group from the site is black-glazed Campanian ceramics. Dozens of fragments of this type were observed, recovered and studied. The most diagnostic and complete examples will be analyzed below to determine their production, circulation dates, and provenance.

As already Firmati noted, the closest parallels for our artifacts can be found in the Campanian A production, dating to the third quarter of the second century BC²³. In particular, the shapes Morel 1312, 2614, and 2825 have close parallels in the artifacts from the ship-wreck of Punta Scaletta (Giannutri), which dates to 140-130 BC²⁴. Artifacts CP 09/47 (fig. 8c), CP 09/86 (fig. 8d), CP 09/88 (fig. 9e), CP 08/02 (fig. 8a) and CP 09/87 (fig. 9c) can be dated, based on their sectional forms to the third quarter of the second century BC. Bowls numbered CP 09/85 (fig. 8b), CP 08/02 (fig. 8a), CP 09/86 (fig. 8d), CP 09/47 (fig. 8c) and CP 09/69 (fig. 8e) bear stamped decorations. Stamping patterns on these bowls constitutes a significant element for determining their dates and typologies as forms and profiles on small bowls may remain constant over centuries, but the decoration trends change rather distinctively. Common decorative stamp patterns for Campanian pottery are central rosettes (or stars), and four stylized palmettes that appear like leaves (as seen on CP 09/85 and CP 08/02). Similar stamps were found on bowls from Cales excavation contexts²⁵ that date mostly to the second century BC. Palmettes with six outcurved petals with a central stem seen on the bowls CP 09/86 and CP 09/47 also represent a Campanian tradition seen on parallel artifacts found in Cales.

Artifacts numbered CP 09/01 and CP 08/01 are black glazed ceramics of a form referred to as *askos* or *guttus* (fig. 10). It is a closed vessel with an opening at its base for filling. We could not identify a close parallel for these two artifacts from Capraia, but in general the function of this type of vessel is to contain oil or milk. Teeth marks on certain examples of *askos* suggest that they might have been used for feeding children or invalids. Although there are no close parallels for these two artifacts, based on the type of fabric and glaze, we will suggest that they were contemporary with the other black glazed ceramics from this site and belonged to the same group.

Overall, it is possible to say that all of our black glazed ceramics date to mid second - mid first centuries BC, and were produced in Campania. Contemporary shipwreck sites from the southern coast of France that contain Campanian A and B ceramics with similar forms and decorations include Titan, Dramont, Cap Roux, Antibes, and Fos²⁶. The Pegli Shipwreck near Genoa (mid second century BC), The Spargi Shipwreck north of Sardinia (120-100 BC), The Albenga Shipwreck between Genoa and Nice (mid first century BC) also contained Campanian ceramics in

²³ FIRMATI 1998: 166-169.

²⁴ FIRMATI 1998: 167; LAMBOGLIA 1964: 229-257.

²⁵ PEDRONI 1990: Tables 19-70.

²⁶ BENOÎT 1958: 5-35.

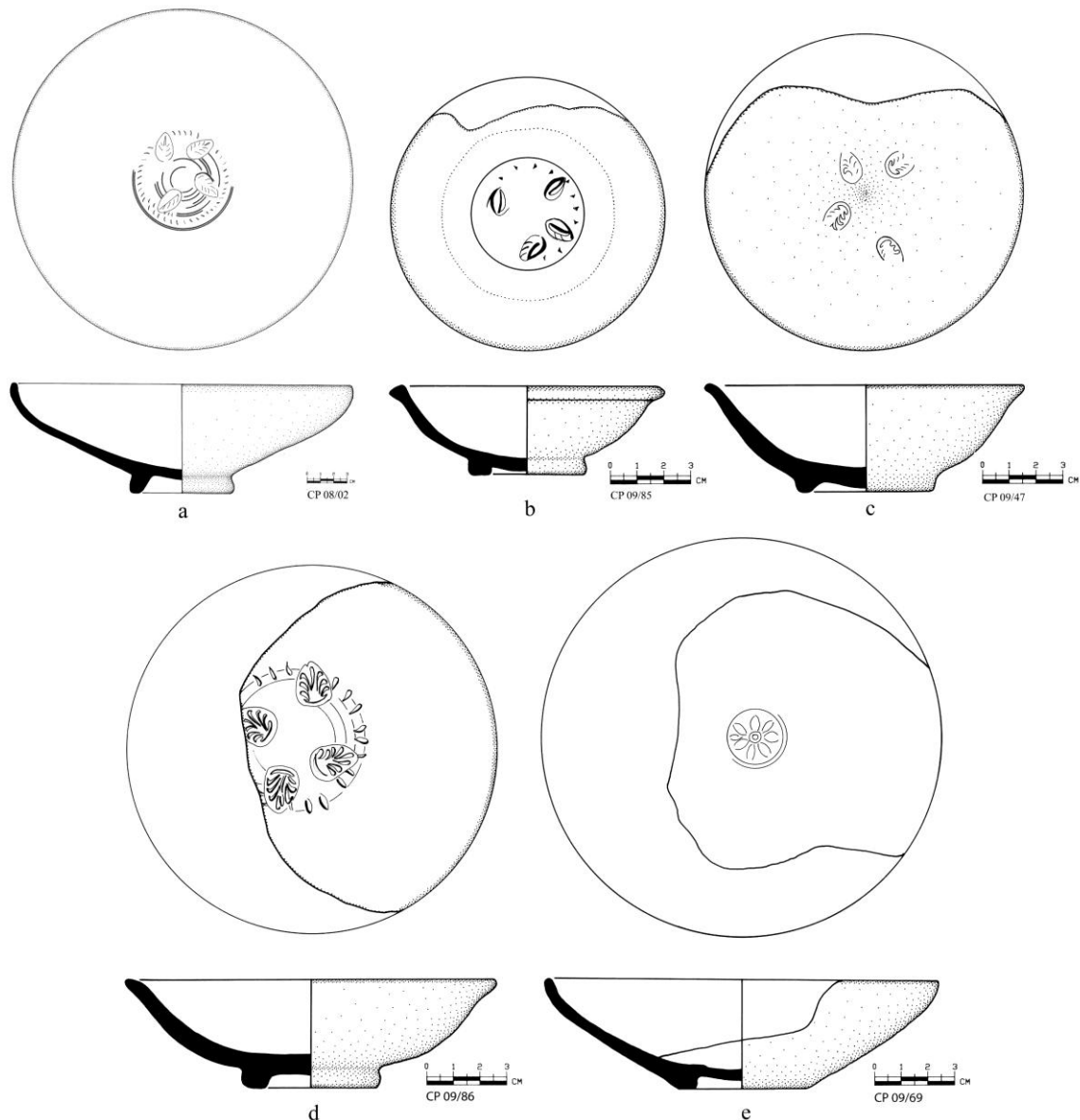


Fig. 8. Stamped Campanian bowls (Drawing: A. Atauz).

quantities to suggest their transportation as commercial cargoes²⁷. Frequent appearance of black glazed ceramics of Campanian origin on shipwrecks discovered in the northern Tyrrhenian coast indicates the substantial popularity and export of this product to Gaul.

Specific parallels for CP 09/01 and CP 08/01/ Black Glazed Askos (fig. 10): Athens (ROTROFF 1997: 353, No 1153).

Specific parallels for CP 08/02 (fig. 8a): MOREL 1994: 218-219 (shape 2762d 1); Parallels for the stamps: PEDRONI 1990: 93, 101; Tav. 57 n. 1071, Tav. 62 n. 1096.

Specific parallels for CP 09/85 (fig. 8b): MOREL 1994: 115-116 (shape 1464b 1); Parallels for the stamps: PEDRONI 1990: 95, 96, 102, 111; Tav. 58 n. 1079, Tav. 63 n. 1099, Tav. 69 n. 1127.

Specific parallels for CP 09/47 (fig. 8c): MOREL 1994: 191 (shape 2614d 1); Punta Scaletta shipwreck (LAMBOGLIA 1964: 245); Ile de Riou shipwreck (BENOÎT 1961, PI Xb, nos 1 and 2). Parallels for the stamps: PEDRONI 1990: 99, 101; Tav. 61, n. 1090; Tav. 62 n. 1096.

Specific parallels for CP 09/86 (fig. 8d): MOREL 1994: 190-191 (shape 2611a 1); Ile de Riou shipwreck (BENOÎT 1961, PI Xb, nos 1 and 2). Parallels for the stamp: PEDRONI 1990: 95, 99, 111; Tav. 58, n. 1079; Tav. 61, n. 1090; Tav. 69. N. 1127.

²⁷ MOREL 1965: 27-28.

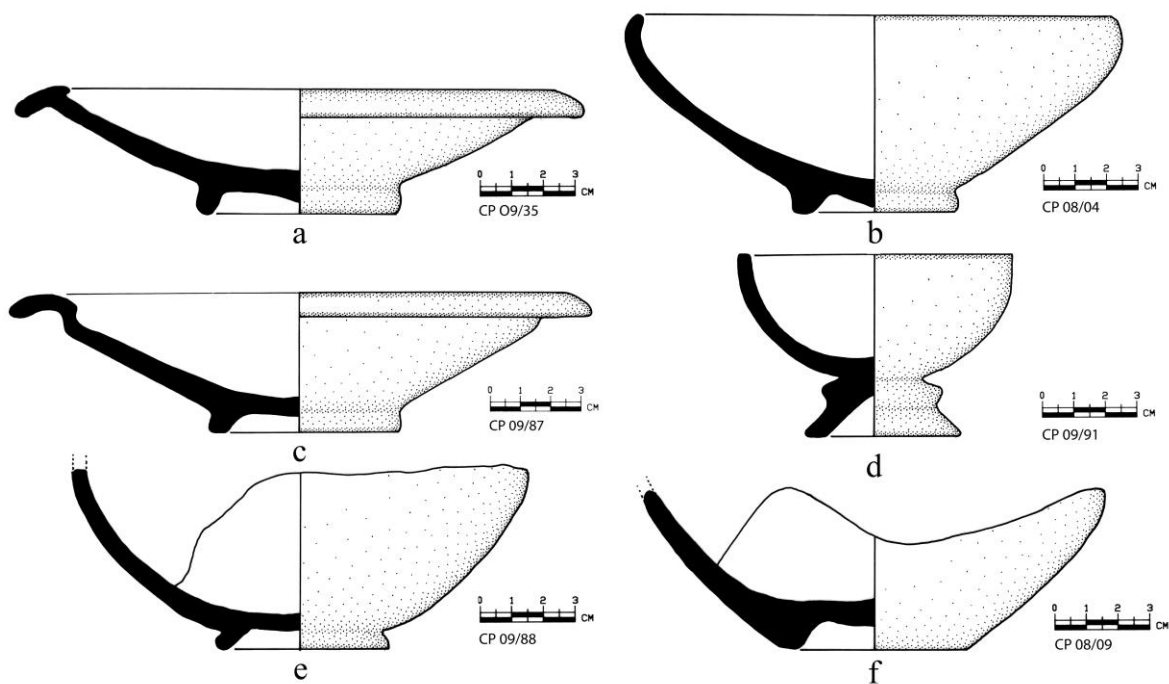


Fig. 9. Undecorated Campanian ceramics (Drawing: A. Atauz).

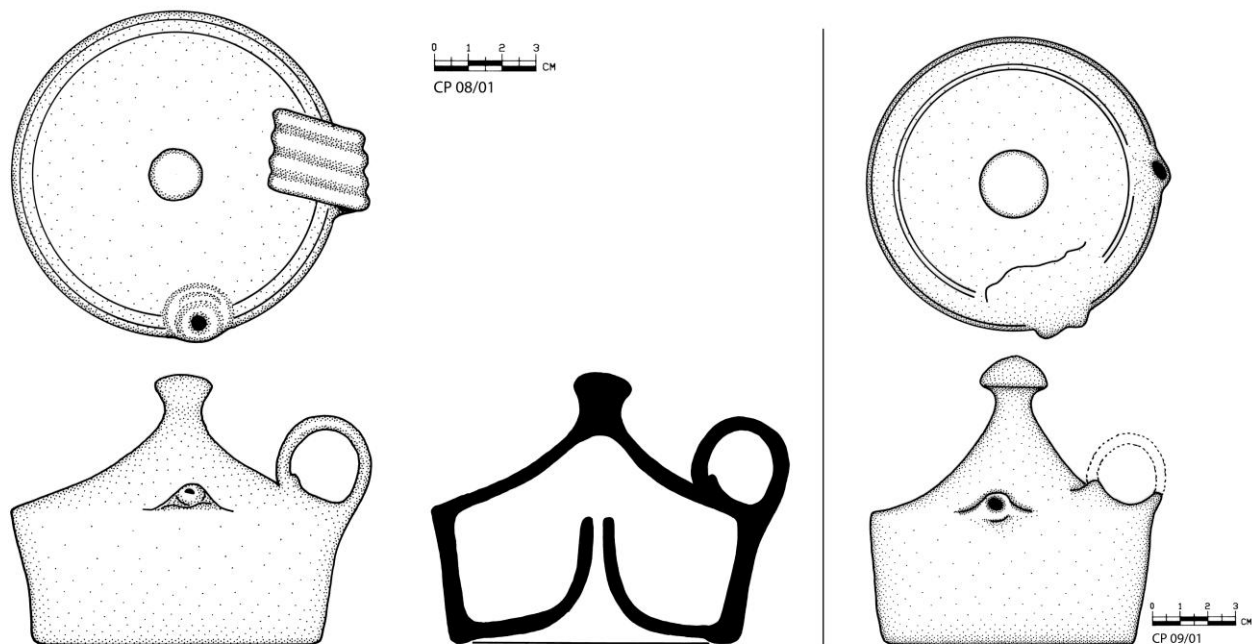


Fig. 10. Campanian ceramics: Askoi CP 09/01 and CP 08/01 (Drawing: A. Atauz).

Specific parallels for CP 09/69 (fig. 8e): MOREL 1994: 226-227 (shape 2811b 1); Parallels for the stamp: PEDRONI 1990: 95, 108; Tav. 58, n. 1078; Tav. 68, n. 1119.

Specific parallels for CP 09/35 (fig. 9a): MOREL 1994: 103-104 (shape 1312e 1); Punta Scaletta shipwreck (LAMBOGLIA 1964: 247).

Specific parallels for CP 08/04 (fig. 9b): MOREL 1994: 228-229 (shape 2825c).

Specific parallels for CP 09/87 (fig. 9c): MOREL 1994: 103-104 (shape 1312e 1); Punta Scaletta shipwreck (LAMBOGLIA 1964: 247).

Specific parallels for CP 09/91 (fig. 9d): MOREL 1994: 236 (shape 2923a 1).

Specific parallels for CP 09/88 (fig. 9e): MOREL 1994: 244-245 (shape 2984).

Specific parallels for CP 08/09 (fig. 9f): MOREL 1994: 240-242 (shape 2973b 1).

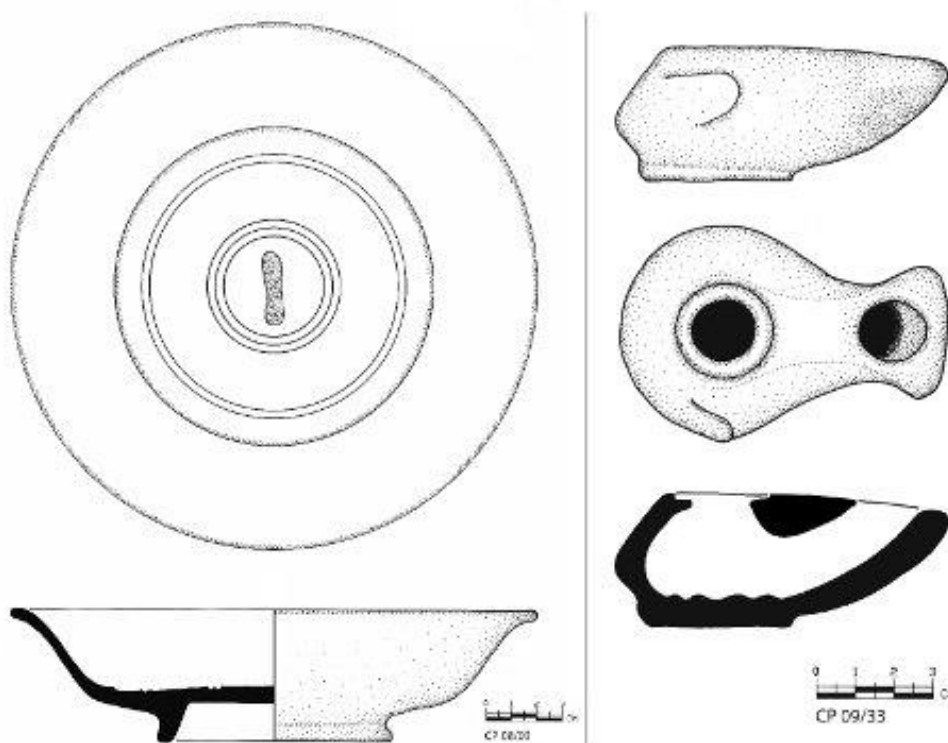


Fig. 11. Campanian ceramics: Red glazed bowl CP 08/03, Oil lamp CP 09/33 (Drawing: A. Atauz).

3. Ceramic lamp

The closest parallels for the ceramic lamp CP 09/33 (fig. 11) can be identified in the Grand Congloué 1 and Chrétienne C shipwrecks²⁸. According to the typology created by Marina Ricci, the Capraia lamp finds close parallels in Ricci's "Type B", which defines Roman Republican items produced in the middle of the second century BC in Campanian workshops, based on earlier models coming from the Greek mainland, Cyprus, and Carthage²⁹. Another similar lamp was found in Delos, in a context datable to the second-first century BC³⁰, where three approximate parallels were identified based on their general form and form of the nozzle even if they are slightly different from CP 09/33 in terms of the color of their clay, slip and in one example the decoration. In addition, these parallels come from contexts that are not securely dated and in some cases not clearly identified. Overall, these three parallels were found in the eastern Mediterranean and western North Africa, and they were dated to the first century BC. Last parallel comes from Cosa, but this lamp is only similar to CP 09/33 in terms of nozzle shape, size and top opening, but is quite different in profile section³¹. However, in lieu of the existence of strong parallels for all other artifacts from the site at Capraia, this parallel that dates to ca. 150-50 BC could be considered here.

Specific parallels for CP 09/33 (fig. 11): Grand Congloué shipwreck (BENOÎT 1954: 50, fig 10; BENOÎT 1961: 109 PI XVI no 4 / 1st century BC); Chrétienne C shipwreck (JONCHERAY 1975: 86); Delos (BRUNEAU 1965: 25, PI 4, nos. 235 and 238 / 2nd – 1st century BC); Jerusalem (BAILEY 1975: 237-38, Q 512, PI. 102,103 / Last third of the 1st century BC, first third of the 1st century AD); Algiers (BAILEY 1975: 290, Q 628, PI. 118-119 / 1st CENTURY BC); JERUSALEM (ROSENTHAL, SIVAN 1978: 59, No 235/ 1st half of the 1st century BC); COSA (FITCH, GOLDMAN 1994: 39 / ca. 150-50 BC).

²⁸ BENOÎT 1954: 50, Fig 10; RICCI 1973: 209-211.

²⁹ RICCI 1973: 209-211, Fig. 24.

³⁰ BRUNEAU 1965: 25, Tav. 4 n. 235, 238.

³¹ FITCH, GOLDMAN 1994: 39.

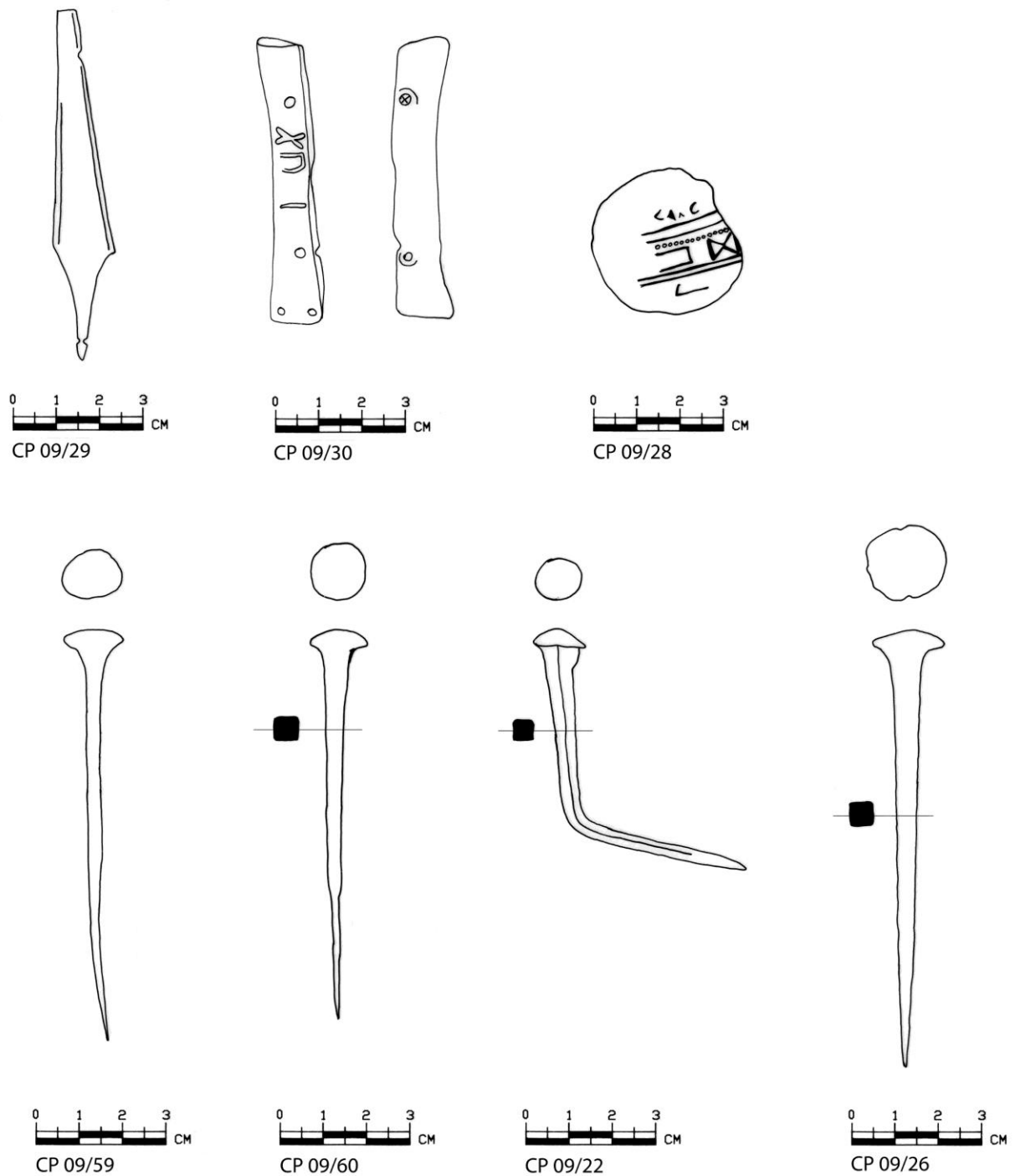


Fig. 12. Metal artifacts: Simpulum, fishing weight, coin, and clenched bronze nails (Drawing: A. Atauz).

4. Artifacts related to the ship

Several broken ceramic roof tiles were found at the Capraia site. Their shattered state and the low number suggest that these might have been the tiles from the roof of the ship's galley. Similar tiles in similarly broken state and few in numbers were also discovered in the shipwreck sites of the Grand Congloué, Albenga and Titan³². Presence of these tiles indicates that the ship carrying the cargo discovered at Capraia had sunk and the structure these tiles covered had since disintegrated under water.

Four clenched copper nails were found buried in the sand (fig. 12). Due to their poor state of preservation, these nails were brought to the conservation laboratory in Florence where they were treated and stored. Destructive

³² BENOÎT 1958: 8.

methods of analysis were not carried out due to the low number of these diagnostic artifacts, but a general study of their shapes and dimensions suggest that they are nails used to fasten frames to the hull planking. Iron concretions were also very fragile and assuming that the long journey from Capraia to Florence would most possibly destroy them, we have decided to re-deposit them at the site until better transportation and packing means could be provided. Based on the size and general shape of these concretions it seemed possible that they may have been tools.

5. Miscellaneous artifacts

We have found one small glass fragment, possibly the base of a small bowl. It is not possible to determine a typology or date for this fragment based on the small surviving portion, apart from the fact that it does seem to be contemporary with the black glazed Campanian ware found at the site.

There were a number of metal artifacts, including the handle of a *simpulum*, a ladle with a long handle in common use during Roman period (CP 09/29, fig. 12a). A coin (CP 09/28, fig. 12c) in deteriorated state was also found buried under the sand, this was a Roman As with a head of Janus laureate on the *recto* and the prow of a ship on the *verso*, with inscription ROMA below the ship (not preserved in our example). The coin dates to early-mid second century, when bronze coins were minted to balance the fiscal problems faced after the cost of the Punic Wars was absorbed into the economy³³. Earlier silver versions of the coin date to ca. 211 BC based on parallels³⁴. CP 09/30 is a lead fishing weight with an inscription on it (fig. 12b). Studies regarding these artifacts are rare and their dating is generally unknown, but a parallel for this article was identified from a contemporary shipwreck in southern France³⁵. The presence of the fishing weight merely suggest the obvious fact that the sailors were consuming fish: an extraordinary abundance of oyster shells was observed, which might suggest that these were either part of a small cargo, or perhaps consumed on board. A few examples of these were recovered and re-deposited after preliminary documentation.

Conclusions

Results of the survey of the underwater site near the island of Capraia indicates that the nature of the artifacts and their distribution in relation to the reef in this location suggests the presence of at least one shipwreck here. Location of the previously discovered contemporary anchor stock, the presence of roof tiles and nails that belonged to the ship structures constitutes evidence that a ship sank in this location. Proximity of the reef to the shore along with the shallow depth of the area and the artifact scatter suggests that this site has been disturbed by environmental effects through the past two millennia. While it is possible that some artifacts might have been removed by scuba divers in the past decades, it is also likely that at least some parts of the site are obscured by the thick *posidonia* grass. The excavation of a small test trench into the *posidonia* during the summer of 2009 yielded many artifacts, suggesting that the site extends into this area. On the other hand, the fragments found within the test trench did not alter our general understanding of the site in terms of its date and contents.

Most artifacts from the Capraia site date to the mid second century BC. It is likely that most ceramics were produced in central Italy, and the main cargo of the ship was probably wine. Based on archaeological material and historical documents from this period, it is possible to suggest that this was a small ship originating from a port on the western coast of central Italy sailing north with a destination in southern France. This was a well-known route frequented by many similar ships in this period. Archaeological remains of several ships that carried amphorae from central Italy and black glazed Campanian ware were discovered along the Italian and French coasts of the Tyrrhenian and Ligurian Sea. It is clear that what caused the wreckage near Capraia was the protruding reef of the Formiche.

It is necessary to mention that there was one particular artifact recovered from the site in 2008 that was definitely not contemporaneous with the rest of the artifacts. CP 08/03 (fig. 11) is a red glazed bowl, a very typical artifact of the first century AD, based on parallels from Athens and Cosa³⁶. The bowl has three circular bands of rouletting and is stamped in the center, possibly with the name of the potter. Parallels mentioned above are similar to the bowl with the exception of the legible letters of the inscription. This artifact illustrates the fact that other ships experienced difficulties around the reef, and perhaps lost some of their cargo in this location.

Archaeological remains of a villa near the natural harbor of Capraia indicate that there was a Roman settlement in the area³⁷. It must have been impossible for the islanders to miss the location of this navigational

³³ CRAWFORD 1985: 72-73; MAREK 1985: 24, Tav.VI, n. 24a.

³⁴ CARSON 1978: 25, n. 47; HASSEL 1985: 17, n. 34.8.

³⁵ BENOIT 1961: 177, Tav. XXXI, n. 13.

³⁶ ROBINSON 1959: 25, Tavv. 5 e 57, n.G 53, 55 e 56; MARABINI MOEVS: 61, AB 21126 / CE. 179, Tavv. 56 e 29.

³⁷ The Roman villa seems to have been abandoned between 300 and 250 BC and rebuilt in the early first century AD (FIRMATI 1998, 165.) Therefore, it seems that the villa was uninhabited when the shipwreck took place.

hazard so close to the harbor entrance and it is conceivable that wreckage in this location was regularly salvaged from the manageable depth of 18 meters. This theory helps to explain the absence of more amphorae, especially complete ones, since they may have been salvaged. It is also possible that there are artifacts obscured by marine growth and further excavation and removal of the posidonia might reveal other clues to determine the precise nature of this site.

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