

Early Byzantine vases carved in Prokonnesian marble from ancient Halasarna (Kos Island, Dodecanese, Greece)



Abstract: The paper stems from archaeometric provenance studies, which proved that some vases from excavations at Kardamaina, ancient Halasarna, of Kos had been carved in Prokonnesian marble. The items under consideration are four-handled bowls whose grips are decorated with incised motifs. The proven use of Prokonnesian marble not only for architectural members, but also for smaller artifacts indicates that vases were among the Prokonnesian marble products imported to Kos from Constantinopolitan workshops. These imports are dated to the 5th and 6th centuries AD, a time of intense building activity not only in the town of Kos, but also in the island's seaside settlements (Kardamaina, Mastichari, Antimacheia, Kefalos, etc.). It remains, however, unclear if these vases were imported finished or semi-finished from Prokonnesos, together with architectural members, aboard stone-carrying ships sailing across the Mediterranean and the Black Sea.

Keywords: Halasarna of Kos, Prokonnesos, marble, quarries, bowls

INTRODUCTION

Macroscopic observation led to the view that fine-quality marble quarried in Kos was used for Koan vases throughout Antiquity (Poupaki 2011a: 28, note 48), and therefore these stone vessels were products of Koan marble-carving sculpture workshops. This assumption was based on visual observation and on the fact that sev-

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eral other Koan rock types were used for carving vessels. However, archaeometric analysis of marble samples collected from

vases found in Halasarna (Poupaki 2011a: Nos 18–22) has shown that they were in fact carved in Prokonnesian marble.

ACTIVITY OF PROKONNESIAN QUARRIES: A HISTORICAL OUTLINE

The beginnings of marble exploitation on Marmara Island (ancient Prokonnesos) in the Marmara Sea have generally been traced back to the Archaic period. Indeed, the earliest sculptures considered to have been carved in Prokonnesian marble are the torsos of Kore (No. MΘ 929) and Kouros (No. MΘ 930) from the Rhaidestos collection in the Archaeological Museum of Thessaloniki, both dated to the Archaic period (Chatzinikolaou 2016: 177). Isotopic analysis of marble samples from the grave stele of Phanodikos from Sigeion (550–540 BC), now in the British Museum (Walker 1985: 58), proved that grave monuments in the Thracian Peninsula and northern Asia Minor had been carved in Prokonnesian marble since Archaic times (Kokkorou-Alevras et al. 2005: 161–162). Additionally, the building material of the Archaic temple of Artemis in Ephesos has also been attributed to Prokonnesos (Walker 1985: 58, note 4).

During the Classical period, Prokonnesian marble continued to be used for sculpture (Kokkorou-Alevras et al. 2005: 164–165; Chatzinikolaou 2016: 177–178). Its use for architectural purposes outside the island, formerly considered uncertain, has been confirmed with archaeometric methods at the Maussoleion of Halikarnassos (Walker and Matthews 1997), although it should be reexamined further.

In Hellenistic times, the Prokonnesian quarries were taken over by the rulers of Pergamon, the Attalids, who employed the marble widely not only for the erection of monuments in Pergamon, but also for edifices erected elsewhere under their patronage (Hoepfner 1997: 25–26, notes 20–21; Cramer 1998; Cramer, Germann, and Heilmeyer 2002; Cramer 2004; Poupaki 2011b/A: 204–205).

During the Roman era, the quarries of Prokonnesos produced huge quantities of marble subsequently distributed across the Empire. For more than three centuries (from the 1st to the 3rd century AD), the Roman imperial marble trade guaranteed the supply of the best-quality building material, and marble, a symbol of prosperity and wealth, was shipped throughout the Empire (Kokkorou-Alevras et al. 2005: 167–173). However, the distribution of marble in the Roman Empire cannot only be seen as “part of a cargo of booty or tribute”, but also as “the transport of imperial-ly owned products for imperial use”, and as the usual “trade in goods that were made available to the general public” (Strauss 2006: 167). That is why the low-priced Prokonnesian marble was largely exported to the Italian Peninsula, as indicated in Diocletian’s Edict on Maximum Prices (Lauffer 1971; Giacchero 1974). Following a radical reorganization of the quarries in the Flavian period, Prokonnesian products

started to rapidly dominate over Carrara and Pentelic ones in Asia Minor, and in the Imperial period they circulated widely throughout the empire (Waelkens, De Paepe, and Moens 1988: 20; 1990: note 81; Attanasio 2003: 21; Kokkorou-Alevras et al. 2005: 168; Fischer 2007: 254). These items were stored in large quantities in special deposits on Prokonnesos, as well as in *stationes marmorum* (Hirt 2010: 344–356; Russell 2013: 51–52) at the most important harbor sites of the Empire, for instance Ephesos (Bouras 2011) and Ostia (Rickman 2002; Pensabene 2007; Keay 2012). They were shipped, mainly in unfinished state, to the remotest parts of the Empire.

By the end of the 3rd century AD, the financial crisis brought about a general decline in the marble industry throughout the Empire. However, it did not seem to affect the marble quarries of Prokonnesos. They probably remained under imperial management, as in the age of Hadrian, to whom the Prokonnesian quarries had belonged directly. The establishment of Tetrarchic seats in Nikomedia and later in Constantinople proved to be a crucial

stimulator for the activity of the Prokonnesian quarries. Indeed, in the 5th and 6th centuries AD Prokonnesos became the principal source of building material used in the entire Byzantine Empire, as proven mainly by the archaeological research of Nuşin Asgari in the Prokonnesian quarries, where various products have been found in situ (Asgari 1978; 1990; 1994).¹ Moreover, the increased circulation of Prokonnesian marble products in the Mediterranean during that period was related to the interference of Imperial authorities, whether secular or ecclesiastical, in their distribution. Theodosius and Justinian imposed special laws to ensure constant supply of quarry products of the island to the new capital following the Roman organizational model (Asgari and Drew-Bear 2002: 17–18). Inscriptions at several quarries of the island indicate that they belonged directly to monasteries, and that some of them provided the necessary material for specific buildings, including churches (Asgari and Drew-Bear 2002: Nos 7, 40). The Prokonnesian quarry products, some of which still remain in the ancient quarries, would be used for the erection of basilicas, whose architectural decoration was commissioned exclusively from these quarries. The fact that “this sort of marble was characterized by its availability, good quality, and low price” (Al-Bashaireh, Abudanah, and Driessen 2020: 25) explains why stone-carrying ships transporting Prokonnesian marble artifacts for Byzantine churches have been traced all over the Mediterranean. Numerous prefabricated architectural members, liturgical furnishings,



Fig. 1. Semi-carved four-handed bowl at Panormi, Prokonnesos Island (Photo Eir. Poupaki)

1 For a full discussion, see Kokkorou-Alevras et al. 2005: 173–181.

and sarcophagi can be seen nowadays in open-air museums of Prokonnesos (Asgari 1978; 1995). These products were the main cargo of stone-carrying ships crossing the Mediterranean² and the Black Sea (Beykan 1988; Carlson 2006). A huge variety of Prokonnesian semi-finished or complete architectural members has been revealed during underwater research at investigated shipwrecks discovered on major maritime transport routes of the Empire (Beykan 1988; Minchev 2012; Barsanti and Paribeni 2016; Marano 2016). In the times

of Theodosius and Justinian, professional quarrymen and stonemasons were officially forbidden to leave Prokonnesos to travel elsewhere (*Cod. Theod.* XI, 28.9; *Cod. Iust.*, *Corpus Iuris Civilis* II, 430 XIVII). However, it should be further examined whether they may have traveled after all, with official permission, to the final destinations of the marble cargoes, where they would have been able to imbue the sculptural works with a Constantinopolitan flavor and share their technical skills with other stone carvers.

PROKONNESIAN MARBLE USE IN THE MANUFACTURE OF VASES: AN OVERVIEW

The use of Prokonnesian marble has thus far been attested mainly for architectural elements and sculptural decoration of secular and religious buildings, as well as for funerary monuments: tombstones and sarcophagi. There are rare mentions of use of Prokonnesian marble for minor objects, such as vases (Harrison 1986: 234; Asgari 1990: Fig. 10; Kokkorou-Alevras et al. 2005: 188, No. K. 25, Pl. 13β; Carlson 2006: Fig. 8), or for liturgical equipment, such as *mensae* (Asgari 1994: 104; Kokkorou-Alevras et al. 2005: 191, No. K. 61, Pl. 13β), and other related artifacts. Asgari (Asgari 1990: Fig. 10) published a photo showing a group of semi-carved mortars, *holmoi*, used for crushing cereals, found on Marmara Island and probably dated to the Late Roman or Byzantine period. An unfinished four-handled

bowl was found close to the modern marble workshop of Panormi [Fig. 1], and marble mortars of various shapes [Fig. 2] were also recorded by a team from the University of Athens during their visit to Marmara Island in 2003 (Kokkorou-Alevras et al. 2005: 182).

Vases in the shape of bowls were also produced in Prokonnesian quarries since the Hellenistic period, as attested by the discovery of a roughed-out four-handled bowl in the Kızılburun shipwreck south of Chios, dated to the 1st century BC (Carlson 2006: Fig. 8). These items also reached the Western provinces of the Empire in the Roman period, as corroborated by the discovery of several vases of Prokonnesian marble in the form of simple basins (used as *perirrhantaria* or *louteria*³). Other such finds are round tables of the 1st century AD at the House of

2 For the Adriatic, see Marano 2016.

3 For the use of these vases, see Poupaki 2002.

the Vettii in Pompeii (Fant et al. 2002), as well as bowls in the Roman oppidum of Bibracte in Burgundy, France (Verbrughe, Jaccottey, and Boyer 2019) and at the Şile shipwreck site in the Black Sea, dated to AD 100–125 (Beykan 1988: 127). Notably, the use of Prokonnesian marble for Roman funerary urns (containers for ashes of the deceased), like the ones from the Sedgwick Museum of Earth Sciences, was fairly rare (Watson 1916: 245).

From the early Byzantine period, however, known examples of vases carved in Prokonnesian marble are quite rare, too. An example is a plate from a Byzantine church in south Jordan (Al-Bashaireh, Abudanah, and Driessen 2020: No. 21), a region where Prokonnesian marble was otherwise widely used during the Roman and Byzantine periods (Al-Naddaf, Al-Bashaireh, and Al-Waked 2010: 76, 81).

EARLY BYZANTINE VASES OF PROKONNESIAN MARBLE FROM HALASARNA

Thus far, identification of the marble used for making the vases mentioned above has been based only on visual

observation of the material, and specimens investigated using state-of-the-art archaeometric methods were few. Some



Fig. 2. Semi-carved mortars in the Palatia (Saraylar) open-air museum, Prokonnesos Island (Photo G. Kokkorou-Alevras)

years ago, however, optical examination and analytical techniques (Electron Paramagnetic Resonance (EPR) and Isotope Ratio Mass Spectroscopy (IRMS)) applied to samples of marble vases, specifically early Byzantine marble bowls from excavations at Kardamaina (ancient Halasarna) on Kos Island (Dodecanese, Greece –Fig. 3), proved that five [Figs 5:a, b, d, e and 6:a] out of eight early Byzantine specimens examined had been carved in Prokonnesian marble (Poupaki 2011a: Nos 18–19, 21–22; Tambakopoulos and Maniatis 2017: 219–220, 235, Table 12).⁴ The obtained provenance results have indicated, therefore, that the bowls were imports from the famous Constantinopolitan workshop of Prokonnesos. The chemical analyses were undertaken at the Laborato-

ries of the National Centre for Scientific Research “Demokritos”. The methodology adopted, and the data obtained as a result of this archaeometric study, were discussed in a relevant article of Yannis Maniatis and Dimitris Tambakopoulos published by the University of Athens in the 6th volume of the *ALASARNA* monograph series (Tambakopoulos and Maniatis 2017).

Excavations of the University of Athens in Halasarna began in 1985 following illicit construction activity at a seaside hotel complex, which had caused irreversible damage to the center of the ancient deme of Halasarnitae, the location of the site’s most important Hellenistic public buildings and sanctuaries and the early Byzantine structures overlying the Hellenistic and Roman



Fig. 3. Kos Island, Dodecanese, Greece (Basemap: Google Earth; processing W. Dzierzbicki)

4 For vases Nos 18 and 21 [Figs 4:a and 5:a], the analyses also indicated Miletos, besides Prokonnesos, as a possible place of origin, but due to the lack of adequate documentation, that assumption was rejected.

phases of the excavation, which belonged to a prosperous seaside settlement that flourished from the Late Roman period until

the 7th century AD. Its acme was reached in the 5th and 6th centuries AD, a time of prosperity also for other early Byzantine



Fig. 4. Aerial view of the excavation at Kardamaina (ancient Halasarna), Kos Island (Photo G. Kokkorou-Alevras)

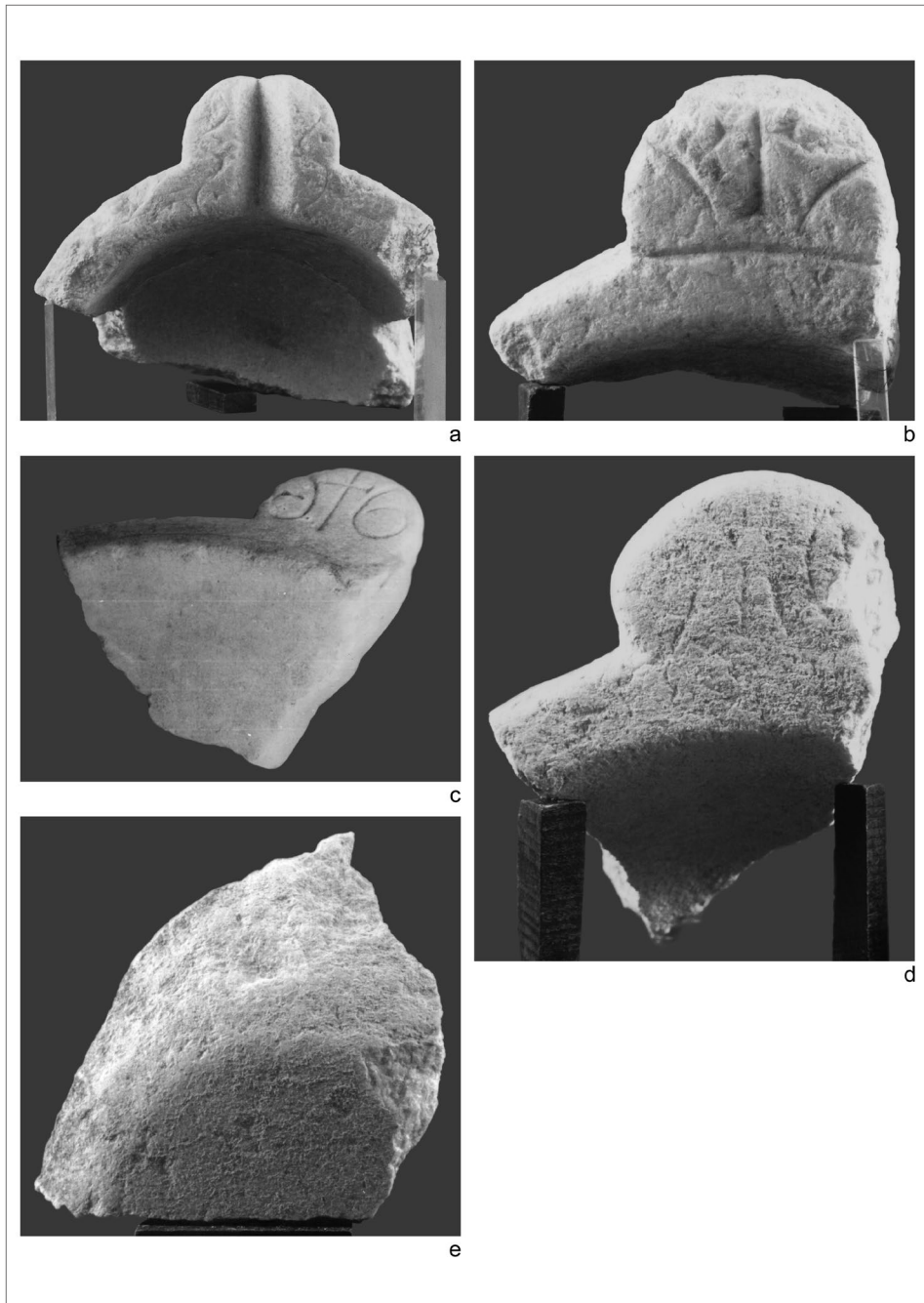


Fig. 5. Vase fragments of Prokonnesian marble at Kardamaina: a – embedded in a wall of an early Byzantine residence, late 4th – late 6th century AD; b – found at the Hellenistic temple (building Γ), 7th century AD; c – found at an early Byzantine residence, 7th century AD; d, e – found close to the Hellenistic temple (building Γ), late 4th – late 6th century AD (Photos N. Antoniadis)

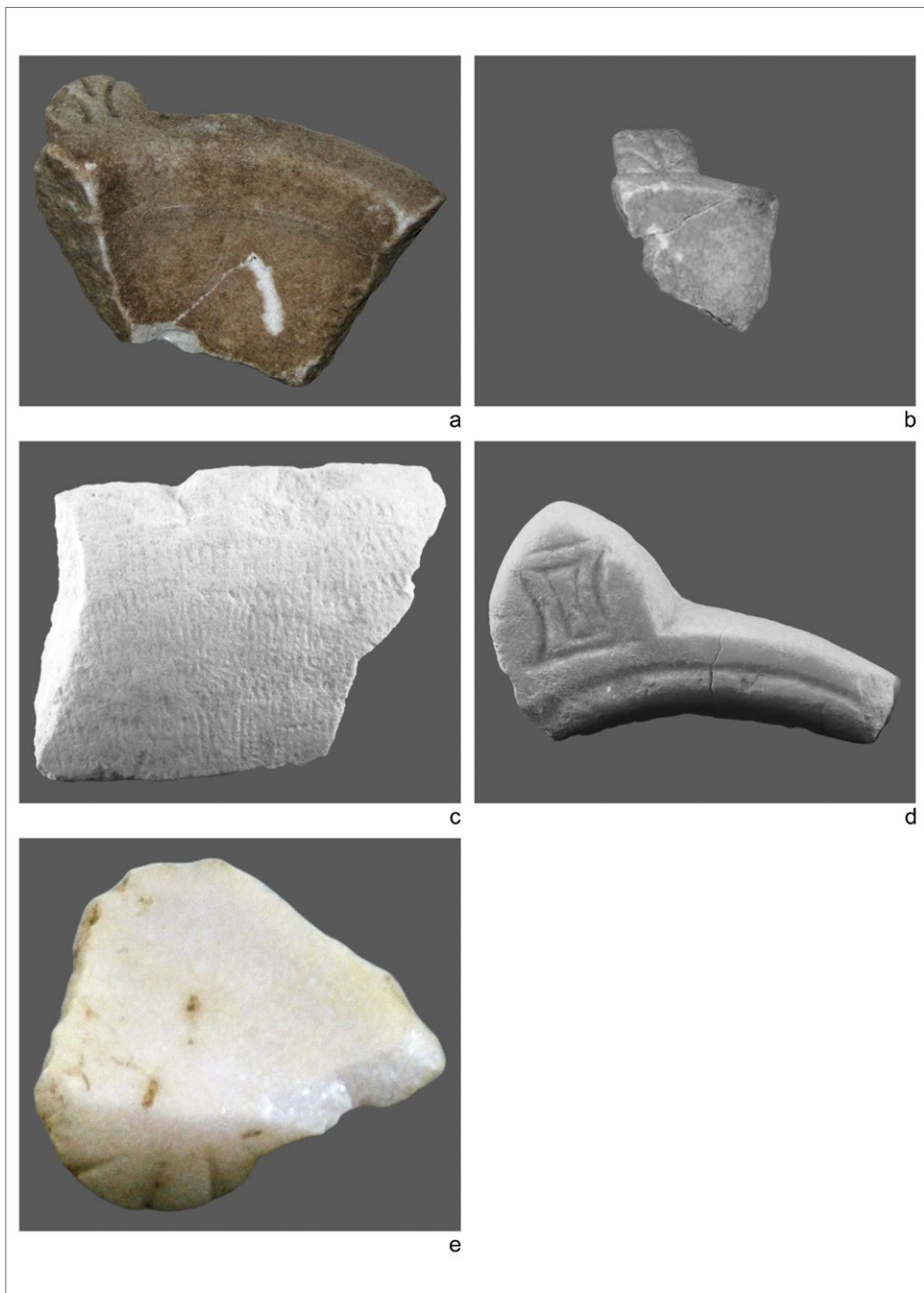


Fig. 6. a, b – vase fragments of Prokonnesian marble (identification tentative in case of b) found at an early Byzantine residence at Kardamaina, late 4th – late 6th century AD (Photos Eir. Poupaki); c, d – vase fragments of Koan limestone from Kardamaina, 3rd century AD (Photos N. Antoniadis); e – vase fragment of Koan marble from Kardamaina, 3rd century AD (Photo Eir. Poupaki)

settlements (Kardamaina, Mastichari, Antimacheia and Kephalos) and a period of economic growth on Kos, which many scholars associate with its demographic expansion and the spread of the Christian cult.

The most important structures discovered during the archaeological investigation of the site are the ruins of a 3rd century BC distyle *in antis* temple of Apollo Pytheus (building Γ), a smaller Roman temple, also a distyle *in antis* (building Δ), probably associated with the Imperial cult, as well as two unidentified late Hellenistic buildings (buildings A and B), a part of a propylon (building E), and a stoa (building Z)⁵ [Fig. 4].

Fragments of the marble vases in question were found, among others, in the Hellenistic temple (Poupaki 2011a: No. 19 [Fig. 5:b]), or just beside it (Poupaki 2011a: Nos 21–22 [Fig. 5:d–e]), and either in Byzantine residences (Poupaki 2011a: No. 98 [Fig. 6:a]) or embedded in their masonries (Poupaki 2011a: No. 18 [Fig. 5:a]). They are fragments of four-handled or three-handled spouted bowls. The handles are usually quarter-spherical with the exception of a parallelepiped one, decorated with linear or geometric motifs, which are also rarely found on their rims or spouts and are probably patterned after the decoration of metalwork. The most typical decorative patterns are: radiant lines, a perpendicular line interposed between a pair or pairs

of curved lines, and a cross interposed between curved lines. These marble vases are generally dated between the late 4th and the late 6th centuries AD (Poupaki 2011a: Nos 18, 21–22, see Fig. 5:a, d, e) and into the 7th century AD (Poupaki 2011a: No. 19, see Fig. 5:b) based on stratigraphic context data and published parallels.⁶ The studied marble vases are the most representative group not only in the ancient deme of Halasarna, but also on the whole island during the early Byzantine period. Nearly all the studied artifacts are fragments of a rim with a handle or spout; in fact, among them there are only two plain wall fragments, one of which is carved in Prokonnesian marble (Poupaki 2011a: No. 21, see Fig. 5:e) and the other in Koan limestone (Poupaki 2011a: No. 17, see Fig. 6:c).

Vessels of the described type occur rather commonly in the whole Byzantine Empire from the 4th until the 10th and 11th centuries AD. They adopt and modify the well-known type of Hellenistic/Roman bowls,⁷ but the early Byzantine vessels have thicker walls and a coarser sculpturing (Poupaki 2017b: 73–74). The final elaboration of their external surfaces is achieved with a tooth-chisel (ντισιλίδικο), their grips are less carefully worked, bigger and quarter-spherical, while the internal and upper sur-

5 For a short description of the monuments of Halasarna, see Kokkorou-Alevras, Kalopissi-Verti, and Panayotidi-Kesisoglou 2010. For up-to-date reports, see Kokkorou-Alevras 2020; Kalopissi-Verti and Panayotidi-Kesisoglou 2020 (with earlier literature).

6 From Salone (modern-day Solin) in Dalmatia (Croatia) (Brøndsted 1928: 93, 99–101), Lindos on Rhodes (Dyggve 1960: 312–313, 523–525, Fig. VII. 43, 46), Corinth (Davidson 1952: 125, Nos 827, 829, Pl. 61.827, 829), Samos (Hiesel 1967: 95, No. 128, 96, Pl. 19.128) and Palestine (Bliss and Macalister 1902: 202, Pl. 90).

7 Similar vases were carved in neo-Attic workshops in the Hellenistic and early Roman periods: Poupaki 2017b: 74–75; 2020b: 340 (with bibliography).

faces of the lip and the grip are usually smoothed with a flat chisel (γλώσσα / σμίλη). Their characteristic features are engraved decorative patterns, some of which are commonly found also on their Koan Roman counterparts.⁸ In addition to the described motifs identified on the Halasarna vases, more decorative patterns appear on vase handles from other sites of the Byzantine Empire.⁹ They were also adopted as handle decoration in bigger vases of the same type, such as *phialae* and *perirrhanteria*, whose rims additionally bear short inscriptions (Niewöhner 2006: 452, No. 76; Poupaki 2019b: 226–227, No. 23, Figs 4–6).

The aforementioned vases are usually interpreted as mortars, that is, household utensils for grinding spices or grains and fruits, as well as bowls for processing pigments and cosmetic or medicinal substances. However, after a thorough investigation of the Halasarna material, its archaeological context and decoration of the grips, it seems fairly probable that the Halasarna marble bowls were in fact used as *chernives*, ritual water containers. Rinsing hands or fingers in water was a ritual act of priests during the Christian liturgy. As containers for holy water, these vases were also used during the Rite of Benediction. Bigger vases of the same type, known as *phialae* or *perirrhanteria*, contained holy water, wherein, upon entering a Christian church, worship-

pers would dip their hands in a symbolic gesture echoing pagan practice (Poupaki 2019a: 158–160).

The marble of the Halasarna vases is white with scarce, fine, gray veins, and indeed does not look like typical Prokonnesian marble, which has a gray tinge or gray veins. On the contrary, the Prokonnesian marble used for Koan vessels is of higher quality, whiter and very coarse. Marble like that had been quarried at many sites on the island. White, fine-grained and translucent marble, suitable for mosaics, was quarried in Badalan of Prokonnesos (Marmara) Island, whereas coarse-grained and light blue marble without veins, suitable for sculpture, was extracted from various sites elsewhere on the island (Asgari 1978: 468). This explains why the Prokonnesian marble used for the Halasarna vases has a lighter tinge, and thus, macroscopically, can easily be confused with Koan.

With the above in mind, two more fragments of the Halasarna vases may be assumed to have been carved in Prokonnesian marble: one with a quarter-spherical grip decorated with a cross between curved lines (Poupaki 2011a: No. 20, see *Fig. 5:c*), and a vase with a parallelepiped grip decorated with radiant lines (Poupaki 2017b: No. 11, see *Fig. 6:b*). Some other early Byzantine vases from the town of Kos were carved in similar marble (Poupaki 2019a: Nos 18, 10, 22–24, 29). Identifying marble

8 For Roman-period examples, see Poupaki 2011a: No. 23; 2017b: No. 7; 2019a: No. 3.

9 From Saraçhane at Constantinople (Harrison 1986: 234), Thessaloniki (Tzitzibassi 2000: No. 5), Sparta (Poupaki 2019b: 226–227, Nos 23–24), Emborio of Chios (Ballance et al. 1989: 124, Fig. 49), Lindos of Rhodes (Dyggve 1960: 312–313, Fig. VII. 43, 46), Sardis (Crawford 1990: Figs 59 and 333), Ephesos (Quatember 2003: Nos M104, M44, M33, M50, Pls 59–60), etc.

provenance based solely on visual observation is indeed a challenge. Macroscopic features of Koan marble vary depending on the quarry (Poupaki 2017a): the marble from the Marmara region, close to Kardamaina, is grayish with dense blue or gray veins, while the stone from Kakoskali on Dikaios Mountain is white and translucent or gray with dark veins. The graph showing relative values of carbon and oxygen isotopes may be considered characteristic for these marbles (Tam-

bakopoulos and Maniatis 2017: 212) despite the fact that it differs from the isotopic graphs published earlier by Lazzarini and Malacrino (2010) from the area of Marmara close to Kardamaina.¹⁰ The affinity of the Koan marble from Marmara to the Prokonnesian marble used for the Halasarnian vases is remarkable. The latter marble is grayish or whitish, of low translucency, with dark parallel veins or bands (Tambakopoulos and Maniatis 2017: 219).

IMPORTS OF ARCHITECTURAL MEMBERS AND ARTIFACTS OF PROKONNESIAN MARBLE TO KOS

Despite the lack of archaeometric analyses, an early date for imports of Prokonnesian marble artifacts to Kos, already in the Archaic period, seems plausible given the Koan commercial relations with the Black Sea region (Sherwin-White 1978: 137, note 292; 118, note 188; 243–244). Sea routes connected Kos with Prokonnesos for centuries, enabling trade in raw material and semi-finished artifacts. Kos was a transshipment hub for Byzantine merchant ships carrying cereals from Egypt to Constantinople (Poupaki 2011b/A: 227, notes 1820–1822). Imports of architectural elements and other artifacts made from Prokonnesian marble were fairly common in Kos since the Hellenistic age. As mentioned above, Prokonnesian quarries were exploited under the Attalids, whose policy towards Kos led to the rebuilding of the town af-

ter the catastrophic earthquake of 198 BC with use of Prokonnesian marble in addition to Koan marble, travertine, and volcanic rocks (Poupaki 2011b/A: 166–167). The use of Prokonnesian marble in Kos continued in Roman times, too. Generally, it is assumed that the circulation of Prokonnesian marble in the Roman Empire began in the Flavian period and remained dominant from the mid-Hadrianic period onward (Sodini 2002: 129), except for the Italian Peninsula, where the Prokonnesian imports were limited in the 1st century AD, while in the 2nd century AD they surpassed even the use of Luna marble (Bald Romano et al. 2018: 272). Even for the Severan restorations of earlier structures it continued to be an excellent choice (Russell 2013: 186). Overall, based on the evidence provided by the study of imported marbles in Kos,

10 Lazzarini and Malacrino (2010) only visited the Marmara region close to Kardamaina, where the modern quarry lies. However, the most important quarry—probably active from the Hellenistic and Roman periods onwards—is found in Kakoskali on Dikaios Mountain. It was fully published in Tambakopoulos and Maniatis 2017 and Poupaki 2017a.

during the 2nd and 3rd centuries AD Prokonnesian marble remained a product of choice for the Koans (Poupaki 2020a: 225). Prokonnesian marble seems to be the most favored imported material in Kos even in the late 4th century AD. Intensive building activity attested in many settlements of the island (Kardamaina, Mastichari, Antimacheia,

Kephalos) in the wake of the massive earthquake of AD 469 prompted substantial imports of products carved in the Prokonnesian quarries. Indeed, the most important monuments of the island dated to the 4th and 5th centuries AD, as its renowned basilicas, boast Prokonnesian ecclesiastical furnishings (Poupaki 2011b/A: 166–172).

PLACE OF MANUFACTURE

The four-handled or three-handled marble spouted bowls are common not only in Kos, but also on the Greek mainland and on other Aegean islands, from the Hellenistic and Roman periods until the 11th century AD, as in the rest of the Byzantine Empire. Visual observation has shown that while many Koan examples were carved in Prokonnesian marble (Poupaki 2019a: Nos 8, 9, 10, 11, 12, 13 and 25), some were also executed in local limestone (Poupaki 2019a: No. 28 [Fig. 6:c]), Koan marble (Poupaki 2019a: Nos 5 [Fig. 6:e], 11–12), and travertine (Poupaki 2019a: No. 19). Affinities detected between these vases and the ones carved in Prokonnesian marble attest to the role of the latter in spreading prototypes and influencing contemporaneous workshops in other areas.¹¹ Oddly, a fragment of a vase [see Fig. 6:e] carved in Koan marble and dated, according to its archaeological context, to the 3rd century AD bears the same decorative pattern of radiant lines on its grip as its Prokonnesian counterparts. In turn, a marble vase of the 4th century AD [see Fig. 6:d] bears on its grip a fairly rare motif of a double spool, unattested

on early Byzantine vases of the same type. Both Roman vases referred to above are well elaborated and their surfaces are carefully smoothed. By comparison, the Koan vases of early Byzantine date, carved in Prokonnesian marble, feature thicker walls and larger, decorated handles, whereas the spout —when present— lacks artistic conception, but is decorated with incised patterns. The Koan vases of the 5th and 6th centuries AD, carved in Koan marble (Poupaki 2019a: Nos 11–13) and limestone [see Fig. 6:c], do not differ in form and surface elaboration from contemporaneous imports from Prokonnesos; for instance, the typical marks of the tooth-chisel (ντισιλίδικο) and the thickness of the walls are also characteristic for the Prokonnesos vases.

Prokonnesian marble products were generally transported in rough condition by stone-carrying ships sailing the Mediterranean and the Black Sea. Incidentally, however, they may have been carved in Kos during the elaboration of uncarved plinths of Prokonnesian marble transferred there, as those discovered at the Correnti ship-

11 For instance, Lakonian vases were carved in gray marble of Taygetos Mountain (Poupaki 2019b: Nos 23–24).

wreck near Syracuse, dated to AD 280–350 (Kapitän 1961: 287, Fig. 2, 288; 1971; Bartoli 2008: 58–65), and the Granitola shipwreck, close to the southwestern coast of Sicily, dated from the 3rd to the 5th century AD (G. Purpura 1977; V. Purpura 2008: 28–30). Both shipwrecks contained various unworked blocks of Prokonnesian marble, probably intended for further elaboration in local workshops of the Italian peninsula or North Africa. The same practice was also attested during the Roman period, both in Italy (e.g., the shipwreck of Punta Scifo A: Bartoli 2008: 105–107) and in the Black Sea region (e.g., blocks carried to Odessos: Minchev 2012: 49).

Another aspect requiring further investigation is the reuse of spolia of Prokonnesian marble (Gwiazda 2014: 530) for the carving of vases. This, however, cannot be corroborated for the Koan examples due to a lack of evidence.

The Koan vases discussed here are in the final state of workmanship and bear a strong resemblance to their Constantinopolitan counterparts. Unfinished vases of Prokonnesian marble are lacking in Kos. However, several semi-finished vases carved in Koan marble have been identified (Poupaki 2011b/B: Nos Ημ1, Ημ2, Ημ15; 2011b/C: Figs 491–493). Bearing in mind the lack of half-finished vases carved in Prokonnesian marble, one may assume the studied vases were made in the stone-carving workshops of Prokonnesos and subsequently transferred to Kos in a finished state. This is further confirmed by the close similarity of the studied vases to their counterparts from other sites,¹² which indicates the common

provenance of the material from the same workshop rather than their manufacture in different workshops following the same principles and prototypes.

The shipment and subsequent use of semi-finished architectural members carved in Prokonnesian marble at the monuments of Kos is, however, well documented (Poupaki 2011b/A: 193–194). Generally, most of the architectural members used for the main basilicas of Kos were Prokonnesian. They were imported in an unfinished state and sometimes placed inside the erected buildings “*αίσθητικώς ἀνεπεξέργαστα*” (=unworked) (Bouras 2002) for their special artistic qualities. These semi-finished Prokonnesian products were often used alongside Koan ones, which were probably elaborated together with Prokonnesian artifacts in the Koan workshops. That is why numerous, though minor, differences can be detected between architectural elements of the same type carved either in Koan or in Prokonnesian marble. In fact, the imported Prokonnesian capitals gained their final shape in Koan workshops, and they were transformed into various types according to the stone carver’s taste. The stonemasons managed to adopt and assimilate Constantinopolitan influences, as is made clear by the close examination of the architectural elements used in Koan basilicas. It may be assumed that in case of accidental damage or probable deficiency the Prokonnesian imported products may have been replaced with Koan ones, thus both Prokonnesian and Koan architectural elements can appear side by side in one monument (Poupaki

12 See notes 6 and 9.

2011b/A: 193–194). Certain ecclesiastical furnishings carved in Koan marble, e.g., innovative decorative patterns of Koan

ambos, distinguish the Koan sculptors from those of neighboring areas, e.g., Knidos (Poupaki 2011b/A: 123–125).

THE KOAN MARBLE WORKSHOP IN THE 5TH AND 6TH CENTURIES AD

In Kos, imported decorative elements can be traced in architecture and sculpture of the 5th and 6th centuries AD. Sculpted products from Constantinopolitan workshops were used mainly for architectural purposes and embellishment of majestic basilicas and luxurious residences erected not only in the town of Kos, but also in other places across the island, on the ruins of ancient buildings damaged by the devastating earthquake of AD 460 or 467/468 (Poupaki 2011b/A: 23, notes 205–206, with bibliography). Despite the catastrophe, the Koans managed to rebuild their town and the seaside settlements, which flourished in the age of Justinian. Testimony to their splendor is the display of wealth at the Koan religious buildings and mansions, featuring high-quality mosaics, outstanding frescoes and rich architectural decoration (Poupaki 2011b/A: 23–24).

However, the island's prosperity was seriously affected by the severe earthquake of AD 554, which destroyed the whole island. It caused a tidal wave, which flooded the seaside settlements, taking many lives, according to the historian Agathias (*The Histories* 2,16), and led to a general economic and demographic decline. Subsequently, the tremendous disaster resulted in ultimate abandonment of the major complexes of the town of Kos (Asklepieion, Western Quarter, Harbor Quarter, etc.), the general decline of the Koan stone workshops and, finally, the abandonment of the marble quarries. From this point on, the demand for stone was met by reclamation of building material from the ancient and Late-Antique buildings (Poupaki 2011b/A: 223).

CONCLUSION

To sum up, the marble bowls with four handles or with three handles and a spout are fairly popular in the early Byzantine period. Archaeometric analysis (Electron Paramagnetic Resonance — EPR and Isotope Ratio Mass Spectroscopy — IRMS) proved that most of the early Byzantine marble vases from Halasarna had been carved in Prokonnesian marble. The vases originated from Constantino-

politan workshops of Prokonnesos and were brought to Kos in a finished state of workmanship. This reflects the general tendency among the Christian population, even in remote areas of the Empire, to import precious items intended for ritual purposes (Poupaki 2011a: 56–59; 2019a: 159) and to refrain from producing their own artifacts despite their high level of craftsmanship and creativity.

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