TABLEWARE AND CARGO AMPHORAE OF THE LATE ANTIQUE TO LATE BYZANTINE PERIODS FROM KÜÇÜKYALI (ISTANBUL)

A ceramic assemblage from the Asian hinterland of Constantinople (4th – 14th centuries CE)

by

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ABSTRACT

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Keywords: Küçükyalı, Late Antique and Byzantine Ceramics, Glazed White Ware, Late Byzantine Sgraffito Ware, Transport Amphorae, Günsenin Amphorae, Asian suburbs of Constantinople

With its large cistern framed by massive retaining walls and its domed-octagon church flanked by a funerary chapel and an impressive tower, Küçükyalı forms the largest and best-preserved archaeological site in the Asian part of modern Istanbul. While the principal elements of its architecture and architectural sculpture are dated to the second half of the 9th century, the ceramic and numismatic finds present a wide chronological range spanning from the 4th-14th centuries CE. Küçükyalı is currently interpreted as the monastery of Satyros founded by the Constantinopolitan patriarch Ignatios between 867 and 877. It certainly should be understood within the context of high-ranking Middle Byzantine patronage.

A manifold repertoire of high quality architectural ornamentation, inscriptions, various small finds and ceramics have been unearthed during excavations since 2008 and are currently the object of study. This thesis is a study of ceramics excavated inside the tower`s fills and from the 14th-century abandonment contexts around it. From the perspective of ceramics research, the stratigraphic excavations in Küçükyalı offer a unique opportunity to enhance our knowledge about medieval

ceramics from the former Byzantine capital and its immediate hinterland. This study focusses on Byzantine glazed tablewares and cargo amphorae. These are predominantly Glazed White Wares, the different kinds of Late Byzantine Sgraffito Wares and the so-called Günsenin Amphorae. Late Antique and Early Byzantine fine wares and transport jars comprise relatively small quantities.

The majority of the pottery can be dated to the 12th-14th centuries. Next to a typo-chronological analysis, the main goal is to contextualize the material within the site's archaeology and stratigraphy and to embed it into the wider research of Byzantine ceramics. While most of the other significant excavations in Istanbul have taken place inside its historical peninsula, Küçükyalı is distinctively situated deep in the city's Asian suburbs. Abundant ceramic evidence from around the 13th century raises the question of the site's strategic importance within medieval exchange patterns between the areas of the Aegean and the Black Sea during the periods of Komnenian, Latin and Palaeologan rule.

ÖZET

KÜÇÜKYALI (İSTANBUL)'DAN GEÇ ANTİK DÖNEMDEN GEÇ BİZANS DÖNEMİNE SOFRA KAPLARI VE TİCARİ AMFORALAR

Konstantinopolis'in Anadolu hinterlantından (M.S. 4.-14. yüzyıl) seramik örnekleri

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Tez Danışmanı: Alessandra Ricci

Anahtar Kelimeler: Küçükyalı, Geç Antik ve Bizans Seramikleri, Beyaz Hamurlu Seramikler, Geç Bizans Sgraffito Seramikleri, Ticari Amforalar, Günsenin Amforaları, Konstantinopolis'in Anadolu yakasındaki banliyöleri

Küçükyalı, bir mezar şapeli ve etkileyici bir kule ile çevrilmiş kubbeli sekizgen planlı kilisesi ve heybetli istinat duvarlarıyla çerçevelenmiş büyük sarnıcı ile modern İstanbul'un Anadolu yakasındaki en büyük ve en iyi korunmuş arkeolojik sit alanını oluşturur. Başlıca mimari ve mimari plastik öğelerin 9. yüzyılın ikinci yarısına tarihlenmekle birlikte seramik ve nümizmatik buluntular M.S. 4. ve 14. yüzyıllar arasına yayılan geniş bir kronolojik aralık sunmaktadır. Küçükyalı mevcut durumda Konstantinopolis Patriği İgnatios tarafından 867 ve 877 yılları arasında kurulan Satyros Manastırı olarak yorumlanmaktadır ve şüphesizki Orta Bizans döneminin üst düzey baniliği kapsamında anlaşılmadır.

2008 yılından beri kazılar sırasında pek çok ve çeşitli türde yüksek kaliteli mimari süsleme, yazıtlar, çeşitli küçük buluntular ve seramikler ortaya çıkarılmıştır ve şu anda incelemeleri devam etmektedir. Bu tez, kulenin içindeki dolguda ve çevresindeki 14. yüzyılda terkedilmiş alanda yürütülen kazılarda ortaya çıkarılan seramikleri incelemektedir. Seramik araştırmaları perspektifinden bakıldığında

Küçükyalı kazıları, eski Bizans başkentinden ve yakın hinterlantından ortaçağ seramikleri hakkındaki bilgilerimizi artırmak için eşsiz bir fırsat sunmaktadır. Bu tez çalışması, Bizans sırlı seramiklerine ve ticari amforalarına odaklanmaktadır. Bunlar ağırlıklı olarak Beyaz Hamurlu Seramikler, farklı çeşitlerde Geç Bizans Sgraffito Seramikleri ve Günsenin tipi amforalardır. Geç Antik ve Erken Bizans dönemi sofra kapları ve nakliye kapları nispeten daha az miktarlarda bulunmaktadır.

Seramiklerin çoğunluğu 12.-14. yüzyıllara tarihlenebilmektedir. Ana amaç, bir tipokronolojik analizin yanısıra, malzemeyi alanın arkeolojisi ve stratigrafisi içinde uygun bir bağlamda ele almak ve Bizans seramikleri araştırmalarının içine yerleştirmektir. İstanbul'daki önemli kazıların çoğu tarihi yarımadada yer alırken Küçükyalı, farklı olarak şehrin Anadolu yakasındaki banliyölerinin derinliklerinde bulunmaktadır. 13. yüzyıl civarına tarihlenen çok sayıdaki seramik bulgu, alanın Komnenos, Latin ve Paleologos hükümdarlık dönemleri boyunca Ege Denizi ve Karadeniz bölgeleri arasındaki ortaçağ değiştokuş biçimleri içindeki stratejik önemini gündeme getirmektedir.

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List of Abbreviations

ARS	African Red Slip Ware
CE	Common/Current Era (*based on the Gregorian calendar*)
cf.	compare (*Latin: confere*)
Ch.	Chapter
ED	refers to catalog entries in DEMİRTİKEN 2012 ("*Elif Demirtiken*")
et al.	and others (*Latin: et alii*)
EVE	estimated vessel equivalent
Fig./fig.	Figure (*capitalized gives reference within this thesis*)
GWW	Glazed White Ware
ibid.	in the same place (*Latin: ibidem*)
KAP	Küçükyalı Arkeopark Project
LBSgr	Late Byzantine Sgraffito Wares
lit.	literature
LRA	Late Roman Amphora
LRC	Late Roman C Ware (*Phocean Red Slip Ware*)
LRD	Late Roman D Ware (*Cypriot Red Slip Ware*)
LRFW	Late Roman Fine Ware (*Late Roman Red Slip Ware*)
MBP	main "Middle Byzantine Production"
Pl./pl.	Plate (*capitalized gives reference within this thesis*)
US	unit of stratification (*archaeological layer or deposit*)

INTRODUCTION

What is now the historical peninsula of the modern metropolis of Istanbul was once the capital of the former Byzantine Empire. It once held the name of Constantinople, which was heavily walled and the maybe best protected city of medieval Europe and the Mediterranean. While its Late Antique and Byzantine topography, art history and archaeology, monuments and ruins are relatively well documented and researched (see for an overview e.g. MÜLLER-WIENER 1977; NECIPOĞLU 2001; MANGO 2005), the situation changes rapidly outside the city walls. This as well applies to Constantinople's Asian suburbs such as Chrysopolis (Üsküdar) or Chalcedon (Kadıköy), to name the historically most famous ones. A bit further east along the Marmara Sea shore, located between Bostancı and Maltepe, lies the modern district of Küçükyalı (Fig. 1), which accommodates "the largest known surviving archaeological site on the Asian side of contemporary Istanbul" (RICCI 2014, 372).

In Küçükyalı, archaeological and architectural investigations in the form of surface surveys and stratigraphic excavation have been conducted, with breaks, since 2001. The complex as a whole is currently interpreted as a monastery founded in the second half of the 9th century CE (see Ch. 1). This MA thesis presents one specific aspect of the site's archaeological research, namely the study of fragmented pottery retrieved from deposits excavated during the 2010 season. Amongst others, one main focus of the 2010 excavations was located inside and directly around some massive wall structures, interpreted as remains of a monumental tower (see Ch. 1.3; Fig. 5). All pieces of ceramic tableware and transport amphorae that were retrieved from the so-called "Tower" and "Tower Area" deposits in 2010 became subject of this study.

To exclude the material from other excavation units ("Road Area") was a choice made in order to maintain the quantitative limits of an MA thesis. The stratigraphic units (US) documented in Tower and Tower Area and their overall picture so far bear the highest degree of archaeological information, which was the reason to pick them for this study and not the afore-mentioned area. A similar motivation lies behind the restriction to tableware and cargo containers. Since no broader foundation for ceramic research in Küçükyalı has been laid so far[1], it seemed imperative to begin studying ware groups whose typo-chronological framework is relatively strong throughout the published literature.

Although the architectural remains so far cannot be dated earlier than to the second half of the 9th century CE (RICCI 2012, 150; see Ch. 1), the revealed material includes also predating pottery such as Late Roman Fine Wares (LRFW), Late Roman Amphorae (LRA) or early glazed products (e.g. GWW I), all of them present in the 4th to 9th centuries. The major part of the ceramic evidence, however, consists of Middle and Late Byzantine glazed tablewares, as well as various amphorae, predominantly the so-called Günsenin types (Ch. 3 and 4). Lamps, roof and wall tiles are worth mentioning, but could not be part of this study. Ceramic wall revetments have not been attested in Küçükyalı so far.

The quantitative approach applied here (see Ch. 2.2) led on the one hand towards a generalized picture of the typo-chronological ceramics repertoire found at Küçükyalı. On the other hand, a representative selection of pieces from different ware types has been made for the purpose of illustrating the character of the Küçükyalı pottery and comparing it to pieces from other sites. In this way, it has

[1] A relatively small context has been analyzed in restriction to its diagnostic glazed tableware as an MA thesis at Koç University (DEMİRTİKEN 2012). However, the batch was rather small and only superficially analyzed and therefore does not form a consistent ceramological foundation. All its fragments were re-identified within this work and if illustrated, their previous ID number is indicated as "ED", as it is done in IBID. (see Plates at the end of this thesis).

been the aim to scholarly prepare and layout the foundations for comprehensive ceramics studies at Küçükyalı. It is furthermore a goal of this work to present an assemblage of Byzantine pottery from Constantinople's Asian suburbs to the scholarly public of archaeologists working on the Byzantine period.

This thesis is organized in five chapters, beginning with an overview of the site and a description of the principal architecture and the relevant archaeological features. Chapter 2 provides a brief review on the research on Byzantine pottery and an explanation of the methodology applied here. Chapters 3 and 4 form the core part of this thesis, presenting all types of tableware and amphorae that were identifiable by the author. Following a standard procedure, characteristics of fabric, surface treatment, decoration or vessel shape are described in respect to the relevant published material, mentioning as well features that are specific for Küçükyalı. A representative selection is illustrated in the plates at the end of this thesis. Chapter 5 concludes and addresses the overall relevance of the Küçükyalı pottery in its local and regional contexts. The closing catalog is organized by the Stratigraphic Units (US) which were removed and documented during the excavation process. The catalog briefly presents the different archaeological features, the quantifications of ceramic ware types retrieved from the various US and the resulting chronological framework of each US that is under study here.

CHAPTER 1

The site of Küçükyalı

1.1 Overview and Research History

The archaeological site of Küçükyalı is located on the Asian side of the modern city of Istanbul (Maltepe District, Çınar Mahallesi). It is close to the shoreline of the Marmara Sea facing the Princes' Islands (Fig. 1). Heavily harmed by rapid urbanization processes during the second half of the 20th century (RICCI 2014, 368-371, with note 77), the archaeological complex of Küçükyalı was preserved only in its core parts, characterized by an elevated platform of roughly 4000 square meters (Fig. 3). In a first scholarly recognition in the early 20th century (PARGOIRE 1901, 62-78; LEHMANN-HARTLEBEN 1922, 103-106; MAMBOURY 1922, 322-330), it had been interpreted as a 9th-century Byzantine monastery founded by the patriarch *Ignatios*, who acted as the Constantinopolitan bishop from 843-858 and 867-877 CE. These inferences were mostly based on written sources and the visible architectural remains, without evidence from detailed archaeological survey or excavation. A more comprehensive architectural examination was conducted in the 1950s, which yielded to the interpretation of the site as an Islamicized palace, the so-called *Bryas* Palace constructed under the emperor Theophilos before 842 CE (EYICE 1959a; 1959b; RICCI 1998; 2012, 148; 2014, 373).

From 2001 to 2004, Kücükyalı was part of an extensive field survey project (RICCI 2003; 2012, 149f). The surface cleaning revealed remains of monumental architecture, which reopened the possibility for an interpretation reflecting the monastic character of the site. Surrounded by massive retaining walls, the two most outstanding components of the complex are a rectangular underground cistern with a domed ceiling and the remains of a church constructed directly on top of the cisterns eastern portion (Figs. 2-3). On the basis of architectural analysis, these major structures can be dated between the second half of the 9th and the middle of the 10th century (see Ch. 1.2).

Preceded by geophysical exploration, systematic excavations were eventually carried out in short seasons in 2008 and 2009. An extensive campaign, which yielded the bulk of the archaeological finds, took place in 2010, while the remains at Küçükyalı continued to be the object of stratigraphic excavation and restoration in fall 2014 and summer 2015. The scholarly research and field-work in all cases were managed and executed by Alessandra Ricci (Koç University) under the headship of the Istanbul Archaeological Museums (RICCI 2012, 150, note 14). Further work on a broad scale is scheduled for summer 2016.

In general, the *Küçükyalı Arkeopark Project* has to be considered as an exceptional undertaking of urban archaeology, which is certainly unique for Istanbul if not for all Turkish cities. Different from rescue excavations (which usually precede the total destruction of archaeological monuments), the site stands in permanent interaction with the public and shall be preserved as an open "eco-archaeological" space for future generations. In the background of this sustainability claim, every major step has to be thoroughly coordinated, not only with the Istanbul Archaeological Museums as directing authority, but as well with local stakeholders

Fig. 1: Location of Küçükyalı within the Asian suburbs of medieval Constantinople [RICCI 2012, 148 fig. 1].

such as the municipality, oftentimes even down to the individual residents of the neighborhood. Despite the undeterminable loss of archaeological information during enormous urban construction processes after the 1950s, the problems of public awareness and treatment of cultural heritage form certain limitations for the project. That indirectly affects also the archaeological research, which therefore is just one part of a complex community relationship.[1]

1.2 Principal features of the site's architecture[2]

As already mentioned, the main features visible in Küçükyalı today consist of an elevated rectangular platform (69 by 57 m) retained by massive walls and a cistern-church-complex, all in-plan with a NW-SE orientation (Fig. 2). Best preserved and most exposed in its NW-front, the retaining walls have a maximum height of 6 meters above ground level and are heavily buttressed every 2-3 meters. In its lower part, alternating layers of brick bands and ashlar blocks (RICCI 1998, 145) or rougher chipped cobblestone form the masonry framework, which is filled with a core of rubble and mortar. The upper portions of the walls consist of brickwork almost exclusively. The absence of the so-called recessed brick technique makes a pre-11th-century construction of these walls very likely (OUSTERHOUT 2008, 174-179). Being

[1] For detailed aspects of the cultural heritage management in Küçükyalı and the integration of the local population see RICCI 2014, 370-381, esp. 375f, 377-381 (referring to English version). On general aspects of Community Archaeology see e.g. JAMESON/BAUGHER 2007; SMITH/WATERTON 2009.

[2] The information and details used in this subchapter are summarized in RICCI 1998, 144-147; 2012, 149f; A comprehensive study of the site's architecture was conducted by Alessandra Ricci in the course of her PhD dissertation (RICCI 2008). A rather extensive description is as well provided by DEMİRTİKEN 2012, 12-28. Further details can be retrieved from the unpublished excavation reports stored in the Küçükyalı Arkeopark Archives in the dig house immediately next to the site.

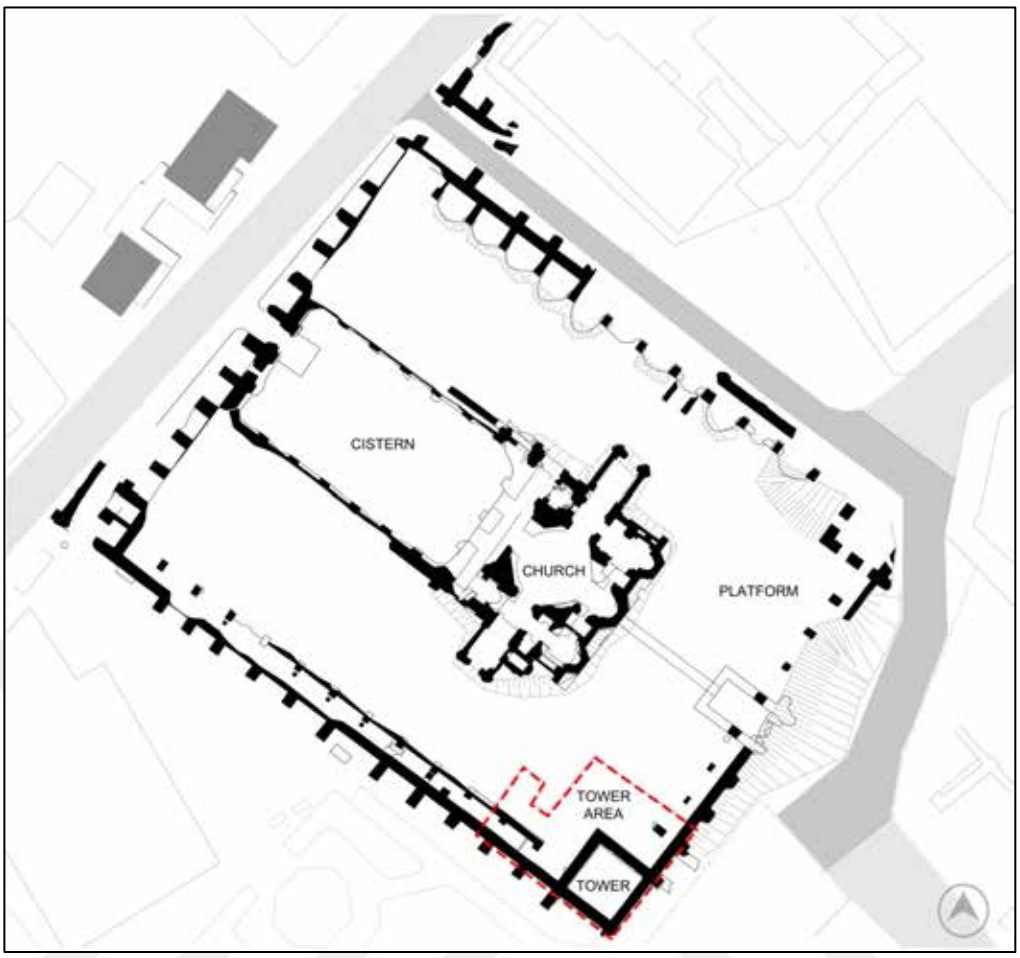

Fig. 2: Site plan of Küçükyalı, showing the elevated platform with church, cistern, tower and tower area [KYAP 2015, with additions by the author].

Fig. 3: Overview of the site of Küçükyalı. Photograph taken from the Çınar Mosque's minaret, facing northeast [KYAP 2010].

double-tiered on its longer sides (NE and SW fronts), the inner line of the retaining wall shows brick arches, filling the span between the buttresses (RICCI 1998, 144). The arches do not seem to be bonding with the buttresses and their bricks differ in size as well, which indicates a later construction phase.

The lower level of the platform contains a large (45 by 14.5 m) rectangular cistern in the same NW-SE orientation as the whole complex. Its western part is now open-air (Fig. 4) and was once covered by a ceiling, which is now collapsed and had consisted of twenty-eight domes supported by columns or piers (cf. reconstruction in RICCI 1998, fig. 11.5). Large parts of the interior wall surface are still covered with hydraulic mortar that made it waterproof during the time of its primary use and strongly supports the structure's use as a water reservoir. The eastern part of the cistern is fully preserved including its ceiling. It has a central-domed plan and resembles, together with the now open-air portion of the cistern, the masonry technique of the retaining walls as described above. Outstanding and unique among known Constantinopolitan cisterns is a water-feeding channel entering the platform in the center of its SE wall in the form of a preliminary rectangular tank and proceeding underground straight into the cistern (RICCI 1998, 146).

Access to the top part of the platform was probably provided by two ramps, which were integrated in the center of the NE and SW wall and could be verified in 2010 through geophysical exploration and, in case of the northern one, excavation. Those *protyra* are directly aligned to the church's north and south entrances. The church building is constructed immediately on top of the domed part of the cistern, having the same general ground plan as such, including the four massive piers. Typical for the Middle Byzantine period, it was executed in a cross-in-square design with three polygonal apses on the exterior facing east and it was covered with a central

octagonal dome, probably on squinches (RICCI 1998, 146f). With the NE chapel and the adjoining part of the narthex, only a very small portion of the church has been excavated yet (2014 and 2015 campaigns). At the eastern junction of the church's southern wall and its entrance porch, a small rectangular, non-bonding structure was discovered. Its apse shows the same orientation as those of the church and it most probably functioned as a funerary chapel, which had been added after its adjoining walls had been built (RICCI 2012, 150; 2014, 376, fig. 23). Almost entirely collapsed into the cistern, a small part of the church's *narthex* could be identified during the 2014 excavation season.

The last architectural subject to be presented here is the tower. Already noticed in the visual results of the geophysical survey, it has been unearthed in the platform's southern corner during the 2008-2010 excavation seasons. It measures 6.5 by 6.5 meters and is structurally bound with the retaining walls and its buttresses. Together with the fact that its masonry technique resembles that of walls and cistern, it is certain that the tower was part of the initial layout of the complex and was composed and built in coherence with its other main components (RICCI 2012, 151). The tower's inner walls bear four arched openings which connected it in some way to the lower level of the platform (Fig. 4; RICCI 2012, 153, fig. 5). The ceramics, or more precisely, the tableware and cargo amphorae, of the tower fill and those of the archaeological deposits from its immediate environment (tower area), form the main subject of this thesis (Fig. 9).

Based on close observation of the masonry technique and bonding features, it can be concluded that the platform's retaining walls, the tower, the cistern and the church form a contemporaneous and coherently built compound. General technical aspects of construction and the stylistic implementation of architectural sculpture found

during excavations, refer to a chronological range from the second half of the 9th to the first half of the 10th century. Considering this together with written and pictorial sources (RICCI 1998, 148, fig. 11.6), it could be assumed that the archaeological structures of Küçükyalı are to be identified as the Monastery of *Satyros*, built under the patronage of the Constantinopolitan patriarch *Ignatios*, most probably during his second tenure between 867 and 877. The church would then be the monastic *katholikon* (dedicated to St. Michael Archangel) and the funerary chapel could have been the one of *Ignatios* himself (RICCI 2012, 150; 2014, 374, 376f). To further engage into the scholarly discussion about the identification of the site as the Bryas Palace or the Monastery of *Satyros*, which existed contemporarily in close proximity to each other, would be outside the general topic and therefore beyond the scope of this thesis (see RICCI 1998, esp. 131-136 and 147-149, providing further lit. and primary sources; cf. RICCI 2014, 379 note 93).

Fig. 4: Partly excavated Tower and Tower Area, facing northwest. Covered church foundations and open part of the cistern in the background [KYAP 2009].

1.3 The relevant archaeological contexts - Tower and Tower Area[3]

Besides the excavations which followed the removal of an illegally built road parallel to the platform's NE front ("road area"), one of the focal points of the 2010 season was the southern junction of the platform. The work conducted there lead to the discovery of massive walls that apparently belonged to a large tower (see Ch. 1.2). The fill of the tower's interior (US 1003-1004, 1006, 1008, 1014, 1052, 1075) reached some 6 m in depth measured from the preserved top of its walls. It can be characterized as relatively loose layers of debris, including a lot of medium sized and large stones, rubble and gravel as well as brick and tile fragments (RICCI 2012, 152f). In a depth of almost 3 m, a separate layer (US 1052) began at the same level as the lower ends of the arched portals at the tower's NE and NW walls (Fig. 5). Consisting of rather loose debris with a higher amount of larger stones than in the above layer (US 1006), this fill was very hard and compact on its top. However, no explicit evidence for any kind of flooring could be attested (IBID. 153).

Fig. 5: Tower. Top of the debris fill US 1052, beginning at the lower ends of the arched portals [KYAP 2010].

[3] Details which are not explicitly cited are retrieved from the unpublished report on the stratigraphy of tower and tower area, stored in the Küçükyalı Arkeopark archives (URCIA 2010).

In a trench at the tower's interior north corner, the excavators went further down in depth (US 1075, 1077-1078), attempting to discover the building's foundation. Approximately 6 m in depth the regular wall apparently stops and a structure of

Fig. 6: Tower. Trench by the N-corner, showing foundation (US 1077) and the adjoining layer (US 1078) [KYAP 2010, with additions by the author].

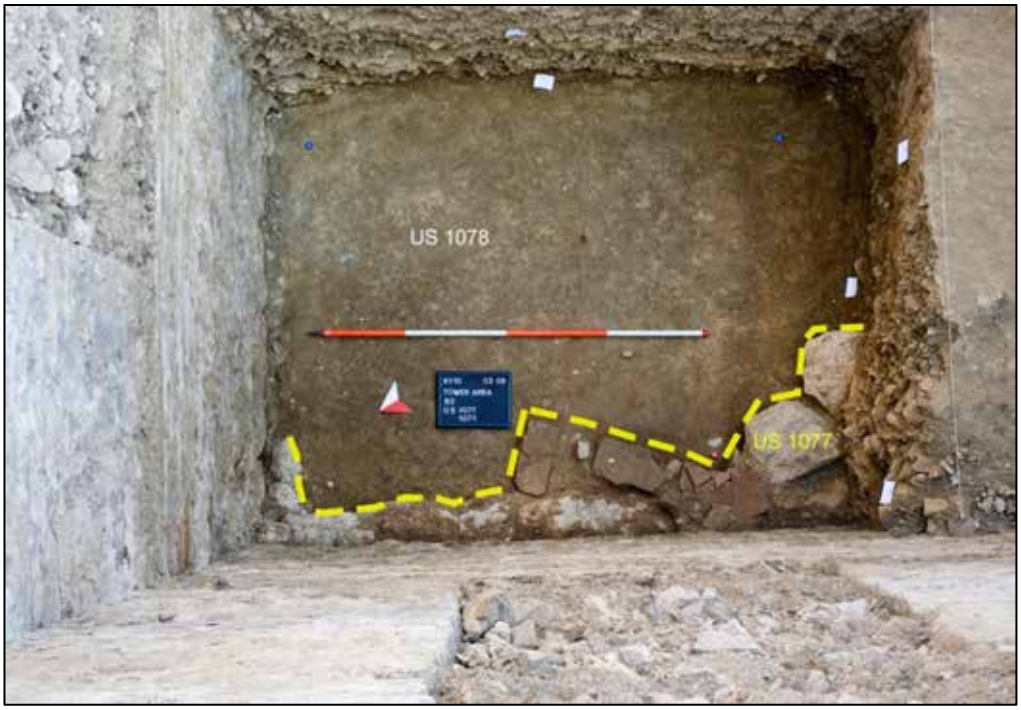

Fig. 7: Tower. Trench by the N-corner view from the top, showing foundation (US 1077) and the adjoining layer (US 1078) [KYAP 2010, with additions by the author].

bricks and stones covered by mortar appears to be such a foundation wall (US 1077, Figs. 6-7). The vertical profile of the deposits in this depth shows the abrupt end of the debris fill US 1052. In a very plane and horizontal border it covers a dense clayey, somewhat moist layer without stones, rubble or brick (US 1078; Fig. 8). This one seems to slightly cover or be in one level with the presumable foundation US 1077. Being located approximately 1.80 m deeper than the lower ends of the opening arches and directly above the upper parts of the foundation, this clay layer (US 1078) could be the original floor-level of the tower. Due to the very limited space of excavation in this depth, only further excavations would be able to ultimately prove these assumptions. Unfortunately the presumable foundation layers of the tower (US 1077-1078) did not include any pottery or other finds suitable for dating.

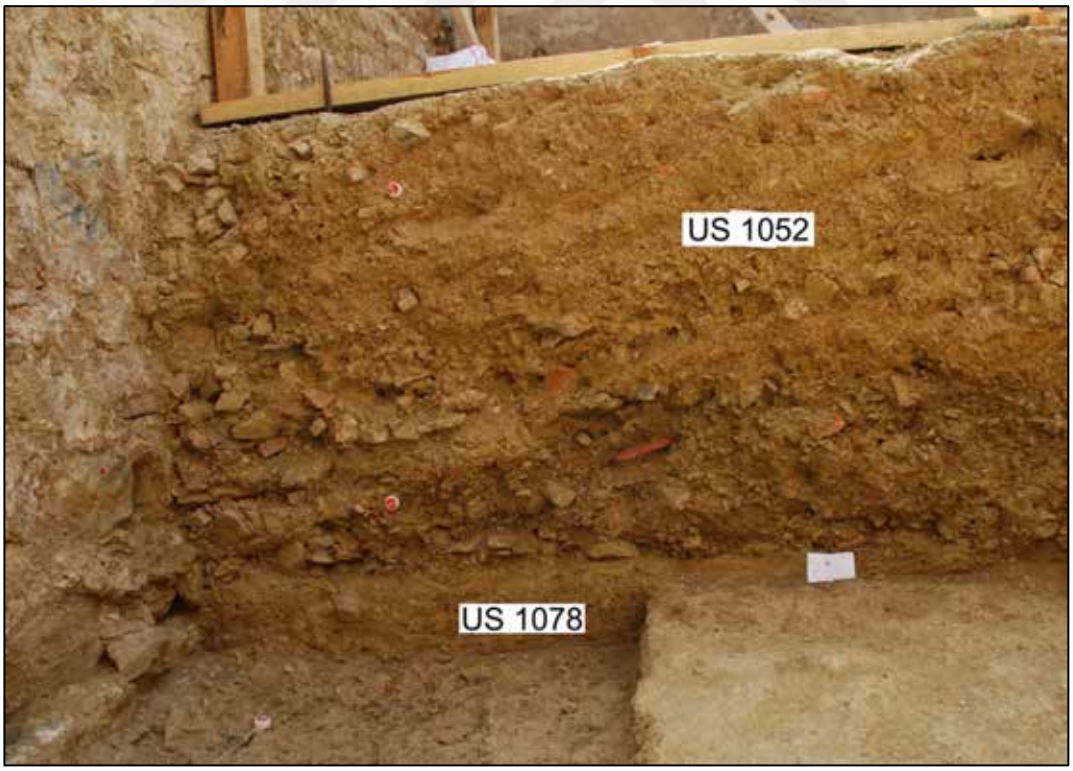

Fig. 8: Tower. Vertical profile showing the transition from the debris fill US 1052 to the possible flooring level US 1078 [KYAP 2010, with additions by the author].

In relation to its spatial dimensions the tower fill (US 1052) contained only relatively little pottery. It is remarkable that it predominantly belongs to the Late Antique and Early Byzantine periods (Ch. 3.1 and 4.1; see catalog). Worth mentioning in this context are also one coin of Justinian I (527-565 CE) and fragments of 6th-7th-century oil lamps (RICCI 2012, 154-156). However, although this debris layer revealed the great majority of all Early Byzantine finds in Küçükyalı, it is unfortunately disturbed by very few modern objects such as pieces of plastic. But also some Middle and Late Byzantine ceramic fragments were among the finds from the tower fill. It is therefore hard to tell when the tower ceased to be operational but it most probably happened quite early in the site's history. The tower might have been a dump space up until the 20th century.

A magnificent variety of artifacts, including vast amounts of archaeological sculpture and glazed pottery, were retrieved from the Late Byzantine abandonment contexts in the immediate surroundings of the tower, in the so-called "tower area" (grids A3, A4, B1-B4, C1-C3; Figs. 9-10). Spoliated marble slabs and ceramic tiles were laid out in a mortar bed on top of a layer that contained pottery, fragments of glass and different organic material (US 1002). The numismatic evidence of two silver coins (Andronikos II, 1282-1328 and Andronikos III, 1328-1341) suggests a dating for this context of not earlier than the second quarter of the 14th century (RICCI 2012, 157-159). These signs of reuse probably represent one of the last occupational phases at Küçükyalı, shortly before its total abandonment. Just a few meters to the NW, very recent excavations in summer 2015 yielded to a situation with very similar archaeological connotations. In a similar level as the spoliated floor discovered in 2009-2010, closely beneath the modern topsoil, a calcareous floor level was exposed. Embedded into it was a very large Günsenin 4 amphora, showing a secondary usage

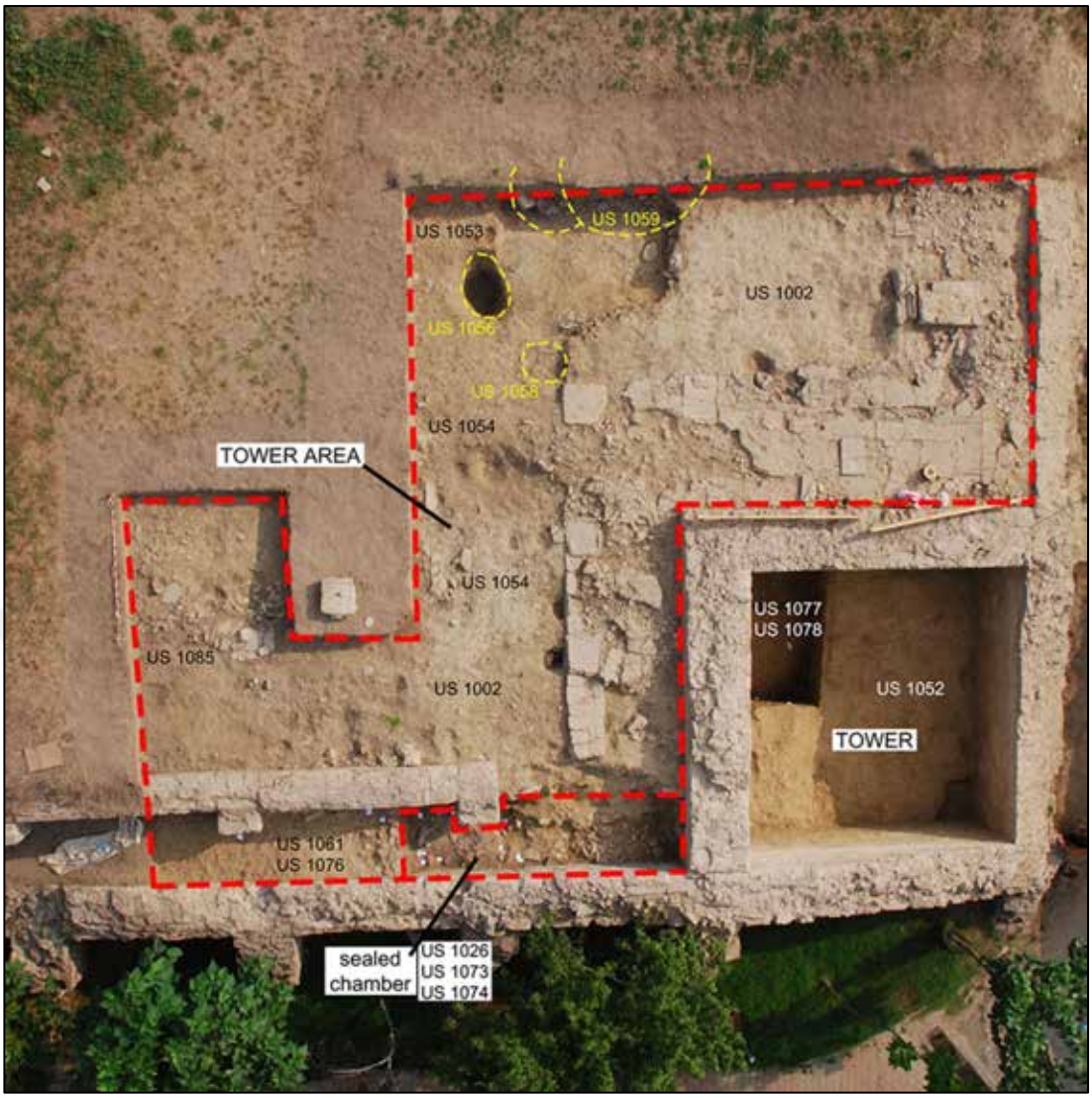

Fig. 9: Arial photograph of tower and tower area at the final stage of excavation, showing the spoliated marble floor and the surrounding archaeological features. Pits in yellow, layers in black (tower area) and white (tower). Red dashed line shows the excavation zone of the tower area [KYAP 2010, with additions by the author].

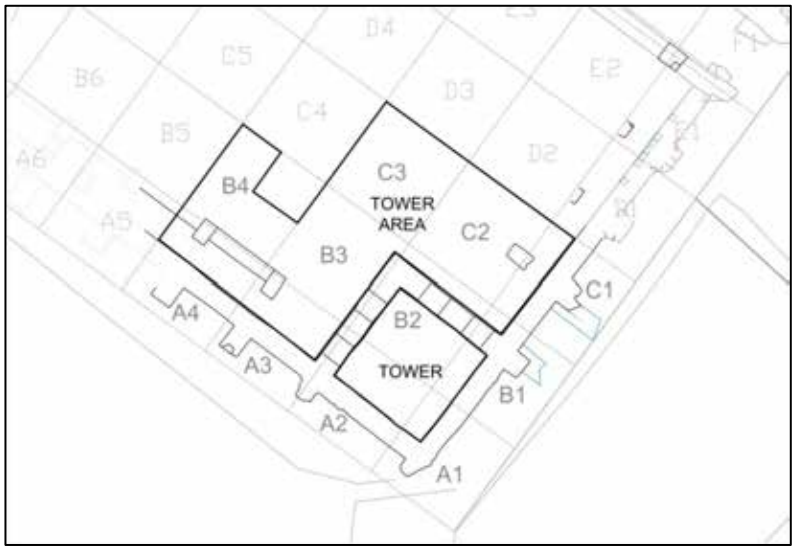

Fig. 10: Grid plan showing Tower and Tower Area [KYAP 2010, with additions by the author].

as storage jar.[4]

The described cultural layer US 1002, which stretches out over the entire excavated zone within the tower area, covered or was disturbed by several pits of various shapes. They can be funnel-shaped and rather deep like US 1056, small and flat like US 1058 or around 2 m wide and relatively flat like US 1059 (Fig. 9). They show a broad range of predominantly Middle and Late Byzantine tableware and amphora fragments, which places their end stage of usage between the middle of the 13th and the late 14th centuries. The example of US 1059 shows that also a high amount of brick and tile fragments could characterize the filling of a pit. US 1059 stretches into grid D3, outside of the excavation zone and its investigation therefore stayed incomplete. Only by observing the vertical profile at the NE-border of the tower area, it becomes recognizable that US 1059 probably cuts through an earlier pit which contained darker soil and included many larger stones (Fig. 11). The described pits are in immediate proximity to the spoliated marble floor and are to be understood within the context of the Late Byzantine abandonment phase which probably took place in Küçükyalı during the first half of the 14th century.

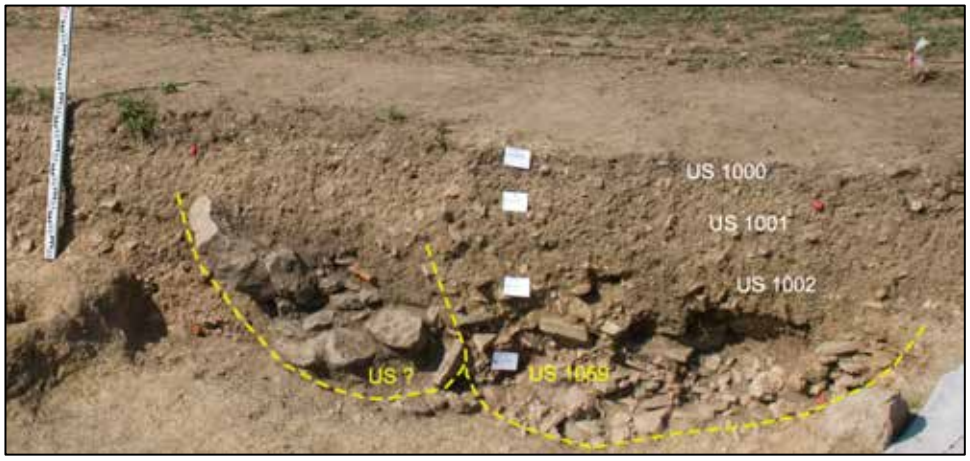

Fig. 11: Tower Area. Vertical profile at the NE-border of the excavation zone. Showing the situation of two pits disturbing each other (US 1059 and one without number) [KYAP 2010, with additions by the author].

[4] Personal communication with Alessandra Ricci (Küçükyalı Arkeopark Project).

Covered by the aforementioned *stratum* US 1002 and directly attached to the tower's NW wall, a so-called sealed chamber (1 by 5 m) was unearthed in 2010 (Fig. 9). Its glazed pottery has already been investigated in a MA thesis (DEMİRTİKEN 2012).

The structure's walls are rather poorly constructed and neither bond with the wall of the tower, nor with the platform's retaining wall - clear evidence for a later addition of the chamber. Its first layer was somewhat capped by a high amount of tiles and brick fragments (US 1026). The succeeding deposit (US 1073) included a large accumulation of extraordinary pieces of architectural sculpture and decorative elements such as *opus sectile* and mosaic fragments (Fig. 12). Most of this material seems to originate from the church's interior, as it bears ecclesiastical features. Another highlight was a $12^{th}/13^{th}$-century Glazed White Ware IV pitcher filled with grain seeds (Pl. 10.3). The research of this thesis could further reveal the existence of at least one (maybe two) complete Günsenin 4 amphora(e) within this deposit, dated between the 12^{th} and 14^{th} centuries (Ch. 4.2.3; Pl. 10.1-2). The excavation of the chamber's lowest *stratum* (US 1074) could not be completed. High amounts of fragmented course ware, probably belonging to amphorae or storage jars, still await their excavation (Fig. 13). The high density of intentionally placed artifacts of very high symbolic value in this chamber can certainly be read as a rather impressive sign of a human action that preceded abandonment. At a time, supposedly when the church ceased to function as such, important objects of a special symbolic, probably even ritual, meaning were hidden in a most secure place, so that they would survive there over the centuries until their recent discovery.

Fig. 12: Tower Area. Sealed chamber, US 1073 with high amounts of architectural sculpture [KYAP 2010].

Fig. 13: Tower Area. Sealed chamber, US 1073 with high amounts of course ware pottery [KY AP 2010].

CHAPTER 2

Research on Byzantine Ceramics

2.1 A review of significant publications focusing on Constantinople

Two catalogues produced in the beginning of the 20th century can be considered as the pioneering works on medieval pottery from Constantinople (VROOM 2003, 33). They present glazed material from excavations for construction works at the 'new Post Office' (WALLIS 1907), the Old Palace, the Botanical Garden and at the New Museum (EBERSOLT 1910). Although important indicators of the first scholarly recognition of the material, they followed without exception a strong art-historical approach and took only the glazed and ornamented tablewares into account. Unsurprisingly for that time, archaeological questions or socio-economic inferences were not part of the research. However, one can only agree with Joanita VROOM (2003, 35) that it is remarkable this material got published at all and could thus form the foundation for future research.

Between the two world wars (i.e. 1921-1937) a number of extensive excavations were carried out by French and British researchers in Istanbul's Mangana area (east of the Topkapı Palace), the Hippodrome and the Great Palace (DEMANGEL/MAMBOURY 1939; RICE 1928; 1929; 1930; 1958; STEVENSON 1947). The ceramics from the Hippodrome excavations (1927-28) became the basic evidence for the ground-breaking book "Byzantine Glazed Pottery" by David Talbot RICE (1930). This volume may be considered as the first breakthrough replacing the traditional art-

historical methodologies with an archaeological approach that distinguished between glazed white ware and glazed red wares. Furthermore, this work placed emphasis on the relevance of pottery for the establishment of general chronological frameworks within the slowly emerging field of "Byzantine Archaeology" (VROOM 2003, 36f). However, the standard way of addressing the different pottery types should remain purely art-historical (typology, shapes, decoration) for the next five decades at least.

Also part of the British Hippodrome excavations was the partial uncovering of the Baths of Zeuxippus located north of the tomb of Sultan Ahmet I (Trench V). The finds from there revealed a distinctive type of Late Byzantine pottery, the so-called "Zeuxippos Ware". Initially it was thought to have its only center of production in Constantinople but further research soon brought reason for reconsideration and multiple places of manufacturing along with many subtypes from Italy to Cyprus could be identified (MEGAW 1968; VROOM 2003, 65; see Ch. 3.4).

The first major stratigraphic evidence for Middle Byzantine ceramics from Constantinople originated from the Great Palace excavations (1936-37) published by Robert STEVENSON (1947) and, in a brief addition, by D. T. RICE (1958). A large quantity of sherds (approximately 7000) were correlated with layers that featured a coin-based dating for the periods from Late Antiquity up to around 1200 CE. This yielded to "a much more refined chronological division of Byzantine glazed pottery" particularly for the material from the Empire's capital (VROOM 2003, 40).

Except for the very brief report on the Kalenderhane pottery (SABUNCU 1975), nothing substantial about Constantinopolitan Glazed White Wares, as the major group of the Middle Byzantine period, or other Byzantine pottery from the capital was published for the next thirty years. That was when Urs PESCHLOW (1977/78) discussed in some detail the ceramic finds from the church of St. Eirene. Providing

comprehensive image and catalogue sections, PESCHLOW (1977/78) includes not only the glazed tablewares (plates, bowls, chafing dishes, cups) but also unglazed common wares (jugs, pitchers, bottles), cooking pots and amphorae. That was not at all a common procedure at this point in time and somewhat a newcomer in publications of Byzantine ceramics from Istanbul. Although he had a fairly high quantity of very well preserved vessels at his disposal, the excavator and author decided not to create a new classification system with the note that larger and better stratified assemblages from the Kalenderhane and Saraçhane excavations awaited publication (IBID. 368). Therefore, PESCHLOW (1977/78) follows the standard typologies established from the old Hippodrome and Palace excavations (RICE 1930; STEVENSON 1947), as well as the ones from the Athenian Agora (FRANTZ 1938) and he also uses the group system which MORGAN (1942) developed from the Corinthian material. By PESCHLOW (1977/78) still dated from the mid-9th to the end of the 10th century, later opinions suggest a dating for the St. Eirene deposits from the late 10th to the early 12th century (VROOM 2003, 59, after HAYES 1992, 13 and SANDERS 1995, 25). Worthy of mention are the excavations at the Bodrum Camii (Myrelaion) located in Istanbul's Aksaray district (STRIKER 1981). Only three contexts below a Late Byzantine floor level contained very small amounts of pottery from Byzantine periods, generally dated to the 13th and 14th centuries (HAYES 1981, 36 and fig. 78).

The main pillars of the current stage of research on Late Antique, Early and Middle Byzantine pottery from Constantinople, are built by the material from Istanbul's Saraçhane district (church of Hagios Polyeuktos). The excavation took place from 1964 to 1969 as a Dumbarton Oaks co-project and the bulk of the ceramic material was published in 1992 (HAYES 1992). Only a small assemblage consisting of some important 7th-century pieces was presented to the public right away (HAYES

1968). Beginning in the 4th century, the chronology of the Late Antique and Byzantine finds from Saraçhane stops abruptly in the early 13th century, most likely related to the event of the Fourth Crusade in 1204. One of the biggest novelties of Hayes' Saraçhane book is the typo-chronological redefinition of the *Glazed White Wares* (I-V) which treats the *Polychrome Ware* as an extra ware group. His work categorizes the different pottery types strictly by fabric and is not focused anymore on the decorative elements as it was the case in the foundational works by RICE (1930) and STEVENSON (1947). According to the massive amounts but without any further evidence, HAYES (1992, 12) suggests that the production of *Glazed White Wares* was centered in Constantinople, which is still the general assumption within the scholarship (VROOM 2003, 60; see Ch. 3.2.1). As there is a lack of evidence from the early 13th century onwards in Saraçhane, the contexts of the Kalenderhane Camii excavations become very important, since they cover also the time of the Latin conquest and the Palaeologan period into the 15th century (STRIKER/KUBAN 2007). Unfortunately only a catalogue, accompanied by line drawings without photographs, was published (HERRIN/TOYDEMIR 2007).

In terms of stratified Late Roman, Early and Middle Byzantine ceramics from Istanbul, the Saraçhane material remains the most recently and most comprehensively published. One of the largest modern excavation projects, not only in Turkey but probably in the whole world, took place from 2004 onwards for over ten years in Yenikapı, located on the southern shore of Istanbul's historical peninsula (KARAMUT 2007; ASAL 2013). Next to the thirty-seven ancient and medieval shipwrecks, an extraordinary amount of small finds and several tons of pottery were unearthed there. Except for a relatively small amount of mainly cargo amphorae, some lamps and very little tableware (BROUGHT TO DAYLIGHT 2007, 258-302; POLAT 2013; DENKER

ET AL. 2013a; 2013b), the majority of the ceramic material remains unpublished for now. A comprehensive study and publication of the Yenikapı pottery will hopefully take place in the near future and consequently enrich the scholarship on Byzantine ceramics, probably in a far-reaching way.

While there is still no absolute and undoubted proof for a Middle Byzantine white ware production in Constantinople, recent discoveries lead to new results for the localization of the manufacturing of certain Late Byzantine Wares. In the course of the "Marmaray-Project" in Istanbul, wasters, tripods and at least one kiln have been unearthed during the excavations at the Sirkeci train station (WAKSMAN/GIRGIN 2008; WAKSMAN 2012, 147). Those finds provide the first substantial archaeological record of Constantinopolitan pottery production during the entire Byzantine period. Among the retrieved pottery was also Sgraffito Ware with distinctive bird motifs as they were formerly thought to belong to products from Thessaloniki only (WAKSMAN 2012, 151; cf. VROOM 2005a, 114f; see Ch. 3.4).

Besides publications which describe pottery assemblages only from Constantinople, important works of a wider geographical scope are to be mentioned here as well. An early, but still very helpful product of international scholarship is the essay collection "Recherches sur la céramique byzantine" (DÉROCHE/SPIESER 1989). It does not define a unified terminology or a broad synthesis yet, but its different contributions provide manifold comparative material throughout the whole spectrum of Byzantine ceramics. On the field of Middle and Late Byzantine Glazed Tableware the groundbreaking work by Beate BÖHLENDORF-ARSLAN (2004) remains a standard reference. Especially its numerous examples of Late Byzantine Sgraffito Wares from Istanbul and the big excavation projects from Western Asia Minor (Pergamon, Ephesos, Miletos) are extremely important for a categorization of the Küçükyalı

ceramics. The field guide by Joanita VROOM (2005a) was a totally new and necessary approach. For the first time it brought all the main types of Byzantine ceramics together (including amphorae) with a full but brief description of their fabric, shape, decoration and chronology. Accompanied not only by line drawings but color photographs as well, it lead scholars towards a much easier and somewhat more unified typological identification of ceramic objects, if they work outside in the field or in the museums, if they are experienced or not.

A quite recent essay collection, similar in style to DÉROCHE/SPIESER 1989, is the volume titled "Çanak" (BÖHLENDORF-ARSLAN ET AL. 2007). Rich of case studies from all over the Eastern Mediterranean and Black Sea region, it provides an updated and indispensable typo-chronological overview, not only for Late Antique and Byzantine, but also for Seljuk and Ottoman ceramics and tiles.

Another group of publications consists of museum catalogs. Although many collections contain a lot of decontextualized pottery of less known origin, they still provide an enormous body of well-preserved vessels and are therefore indispensable for a comparative classification of ceramic material. Very helpful for instance, with a great number of well-presented Middle and Late Byzantine tablewares mainly from the Aegean, are the catalog of the Benaki Museum in Athens (PAPANIKOLA-BAKIRTZI ET AL. 1999) and the one of the Museum of Byzantine Culture in Thessaloniki (PAPANIKOLA-BAKIRTZI 1999). More recent are some Turkish contributions, which again present excellent examples of glazed tableware (ÖDEKAN 2007; BYZANTINE PALACES 2011), but Late Antique and medieval amphorae as well (BROUGHT TO DAYLIGHT 2007; YENIKAPI SHIPWRECKS 2013). With more than one-thousand objects from Istanbul, the recent catalog from the "Museum für Byzantinische Kunst" in Berlin (BÖHLENDORF-ARSLAN 2013) publishes

comprehensively a large spectrum of Byzantine ceramics, mainly found within the historical city of Constantinople (IBID. 19). Following a brief but updated typological summary, the extensive catalog with detailed descriptions and illustrations offers a fresh contribution to Byzantine ceramics research, particularly on White Wares and Sgraffito Wares from Constantinople and the wider Aegean network.

2.2 Methodology of Classification, Typology and Dating for the Küçükyalı ceramics

The pottery discussed here has been retrieved during the 2010 season from the deposits of the so-called "Tower" and "Tower Area" (Figs. 4-6), without any exception. These appeared as significant archaeological contexts with the highest value of information. Another reason why no material from the so-called "Road Area" or from other areas on the platform (seasons 2014 and 2015) has been studied, originates in the scope of an MA thesis and the entire ceramics from Küçükyalı clearly lies beyond such. Out of the same motive only tableware and amphorae were chosen, the more so as their chronological value is generally higher than the one of domestic pottery.

Inferring from the information stated above (Ch. 1.3), the 2010 excavations in Küçükyalı yielded closed contexts only in a few exceptional cases. A long lasting stratigraphy, with a number of successive occupation layers or deposits that can be connected to different settlement phases, is as good as nonexistent. Establishing pottery sequences which would cover at least a couple of centuries has therefore been impossible (cf. BÖHLENDORF-ARSLAN 2004, 2). No significant evidence was produced, that could shed new light on relative or absolute chronologies of certain ware types. Thus, the existing publications mentioned before (Ch. 2.1) form the only base for the identification and dating of the different ware types discovered at

Küçükyalı. Standard references, such as HAYES' (1992) Saraçhane volume, BÖHLENDORF-ARSLAN's (2004) Glazed Byzantine Pottery from Turkey or VROOM's (2005a) guidebook for medieval and modern ceramics in the Aegean, clearly build the most important foundations for the typo-chronology used in this work. Further details and additions are cited respectively in the subchapters on each ware type (Ch. 3-4).

Altogether it has been dealt with 1584 "estimated vessel equivalents" (EVE), a way of counting which does not consider the single fragments, but the number of different vessels that can be identified. Thus, no matter if one or more fragments can be affiliated to one vessel, it always counts as one. If the fragmentation is too strong it naturally can be difficult to determine if several fragments belonged to the same or to different vessels. If that's the case, they are counted as single EVE, which is still an erroneous counting method, but more realistic in terms of actual vessel amounts than counting every fragment as one individual. This way, also the alleged undiagnostic sherds (no rim, base or handle fragments) become important, at least for the quantification of distinct ware types. A body sherd as the only representative of a former vessel gets attributed the same quantitative value as a complete vessel. The catalog at the end of this work shows the ware type quantifications (EVE) for each studied archaeological context (US). In most cases they form the basis for a determination of the chronological range and eventually for the absolute dating of the deposits, if there is no numismatic or other strong evidence for it.

Questions of terminology and classification are generally an issue of debate within most archaeological subjects, also and especially in ceramic studies, no matter which geographical region or chronological period. Skipping a broad theoretical

discussion, I shall here attempt to implement a tool for the classification of pottery which is hitherto unknown within Byzantine ceramics studies.

With an increasing variety of ceramic wares, ware groups and ware types, it more and more became a problem to name and distinguish all the different subcategories in a proper, correct but also practical way. Based on technological aspects such as fabric and surface treatments, but including stylistic approaches as well, I suggest using a unified number-code-system as it is already applied in Medieval and Historic Archaeology in Germany (STEPHAN 1978, 56-91; BIERMANN 2002; 2010, 205, note 524). While the simple numbering of ware types is of course not uncommon (see e.g. HAYES 1992; VROOM 2003; 2005a), a multi-digit code allows clear determination and highest flexibility to later additions within the main groups. It functions in a way of "stepped" main- and subgroups, going down to the single ceramic ware type, in some cases even as far as the different vessel and rim shapes. The Late Roman Red Slip Ware / Late Roman Fine Ware (LRFW), for instance, is represented by the three-digit code "100", African Red Slip Ware (ARS) by "110", Late Roman C Ware (LRC) by "120" and so on. As a subcategory of "Lead-Glazed Earthenware" (200), Glazed White Ware is determined as "220" with the subgroups of Plain Glazed White Ware (221) and Polychrome Glazed White Ware (222). Glazed White Ware I-V is therefore coded as "221.1"-"221.5", which already shows the biggest difference to the "German" system that gets along without this punctuation. The LRC type Hayes 3, for example would be replaced by 120.3. The following schematic shows the coding for the most common Byzantine Wares, including some which do not occur in Küçükyalı so far (in square brackets) and suggestions for some later developments such as Maiolica, Iznik Ware or Porcelain.

Schematic representation of a suggested coding system for Byzantine Ceramics

100 Late Roman Red Slip Ware / Late Roman Fine Ware (LRFW)

110 African Red Slip Ware (ARS)
120 Late Roman C Ware (LRC) / Phocean Red Slip Ware
130 Late Roman D Ware (LRD) / Cypriot Red Slip Ware

200 Lead-Glazed Earthenware

210 [Late Roman Glazed Ware]

220 Glazed ware in a white or pink fabric
- **221** Plain Glazed White Ware
  - 221.1 Glazed White Ware I (GWW I)
  - 221.2 Glazed White Ware II (GWW II)
    - 221.2.1 Glazed White Ware II with a pure white fabric
    - 221.2.2 Glazed White Ware II with a pink fabric at the core or all over
  - 221.3 Glazed White Ware III (GWW III)
  - 221.4 Glazed White Ware IV (GWW IV)
  - 221.5 Glazed White Ware V (GWW V)
- **222** Polychrome Glazed White Ware

230 Glazed ware in a red fabric
- **231** Plain Glazed Red Ware
  - 231.1 Early Plain Glazed Red Ware
  - 231.2 Plain Glazed Ware in a red and grey fabric
- **232** Painted Glazed Red Ware
  - 232.1 Slip-Painted Ware (in KY only: 232.1.3-4)
  - [232.2 Green and Brown Painted Ware]
  - [232.3 Spatter Painted Glazed Red Ware]
- **233** Sgraffito Ware (Incised glazed ware in a red fabric)

Main Middle Byzantine Production (MBP)

Middle Byzantine Sgraffito Ware
- [233.1 Fine Sgraffito Ware, including its painted and slip-painted versions]
- 233.2 Incised Sgraffito Ware / Aegean Ware
- 233.3 Champlevé Ware / Aegean Ware
- 233.4 Zeuxippus Ware
  - 233.4.1 Zeuxippus Ware *stricto sensu*

Late Byzantine Sgraffito Ware
- 233.4.2 Zeuxippus Ware Family / Sgraffito with Concentric Circles
- 233.5 Elaborate Incised Ware and Orange Brown Glazed Ware
- 233.6 Western Sgraffito Ware
- 233.7 Sgraffito Ware in "Thessaloniki/Sirkeci style"
- 233.8 "Fette" Ware
- 233.9 Sgraffito Ware from Serres

Palaeologan Sgraffito Wares

[**240** Glazed Domestic Ware]
- [**241** Glazed Cooking Ware]
- [**242** Glazed Common Ware (storage jars, kitchenware]

300 Unglazed Earthenware (without Cargo Amphorae)

310 Unglazed White Ware
- [**311** Unglazed White Ware I]
- [**312** Unglazed White Ware II]
- **313** Unglazed White Ware III
- **[314** Unglazed White Ware IV]
- **315** Unglazed White Ware V

[**320** Unglazed Domestic Ware]
[321 Unglazed Cooking Ware]
[**322** Unglazed Common Ware (storage jars, kitchenware)]

[**330** Unguentaria]

[340 Lamps]

400 Cargo Amphorae

410 Late Antique, Early Byzantine and "Dark Age" Amphorae
411 Late Roman Amphora 1 (LRA 1)
412 Late Roman Amphora 2 (LRA 2)
[**413** Late Roman Amphora 3 (LRA 3)]
[**414** Late Roman Amphora 4 (LRA 4)]
[**415** Late Roman Amphora 5/6 (LRA 5/6)]
416 (Byzantine) Globular Amphora / Late Roman Amphora 2/13 variant / Saraçhane Amphora 29, 32-42
[417 Late Roman Amphora 7 (LRA 7)]
418 Spatheion

420 Middle (and Late) Byzantine Amphorae
421 Günsenin Amphora 1 / Saraçhane Amphora 54
[**422** Günsenin Amphora 2 / Saraçhane Amphora 60]
423 Günsenin Amphora 3 / Saraçhane Amphora 61
424 Günsenin Amphora 4 (also Late Byzantine; up to 14th/early 15th c. CE)
425 Otranto Amphora 1
426 Otranto Amphora 2 / Saraçhane Amphora 67
427 Bjelajac Amphora 2

[500 Mixed- and Tin-Glazed Earthenware]
[**510** Miletus Ware]
[**520** Proto-Maiolica]
[**530** Spanish Lustre Ware]
[**540** Maiolica]

[600 Wares with synthetic pastures]
[**610** Iznik Ware]

[700 Porcelain]

A coding system like this is purposed to get as close as possible to unequivocal designations for every single ceramic ware type and all its subtypes. At the same time it provides the option to divide rather undiagnostic fragments into generalized main groups such as Glazed White Ware (220) or Sgraffito Ware (233), which gives them a higher degree of information than just leaving them as "undiagnostic". Other advantages are practicalities for the composition and usage of verbal descriptions, especially for databases or graphs and tables concerning chronology (Fig. 7) or

quantifications. Instead of "Glazed White Ware II with a pink fabric at the core or all over", the code 221.2.2 can be used, to give an extreme example.

It has to be emphasized, however, that multi-digit codes cannot replace a thorough description of ware types, separately for each archaeological site where they are found. They need to be comparable to the material from other places in order to determine local or regional differences within the same ware groups, which can even indicate different productions. Glazed White Ware IV from Constantinople, for instance, does not necessarily have to be the same as it is found for example in Bulgaria. A number code is never totally fixed in its definition and it is definitely no substitution for the archaeological method of descriptive comparison.

The coding proposed here should be considered more as a draft and as a general suggestion to simplify and unify certain work procedures. It definitely has its problems and limitations and in case of an overall usage in the future it would have to undergo a further refinement that lies beyond the scope of this thesis.

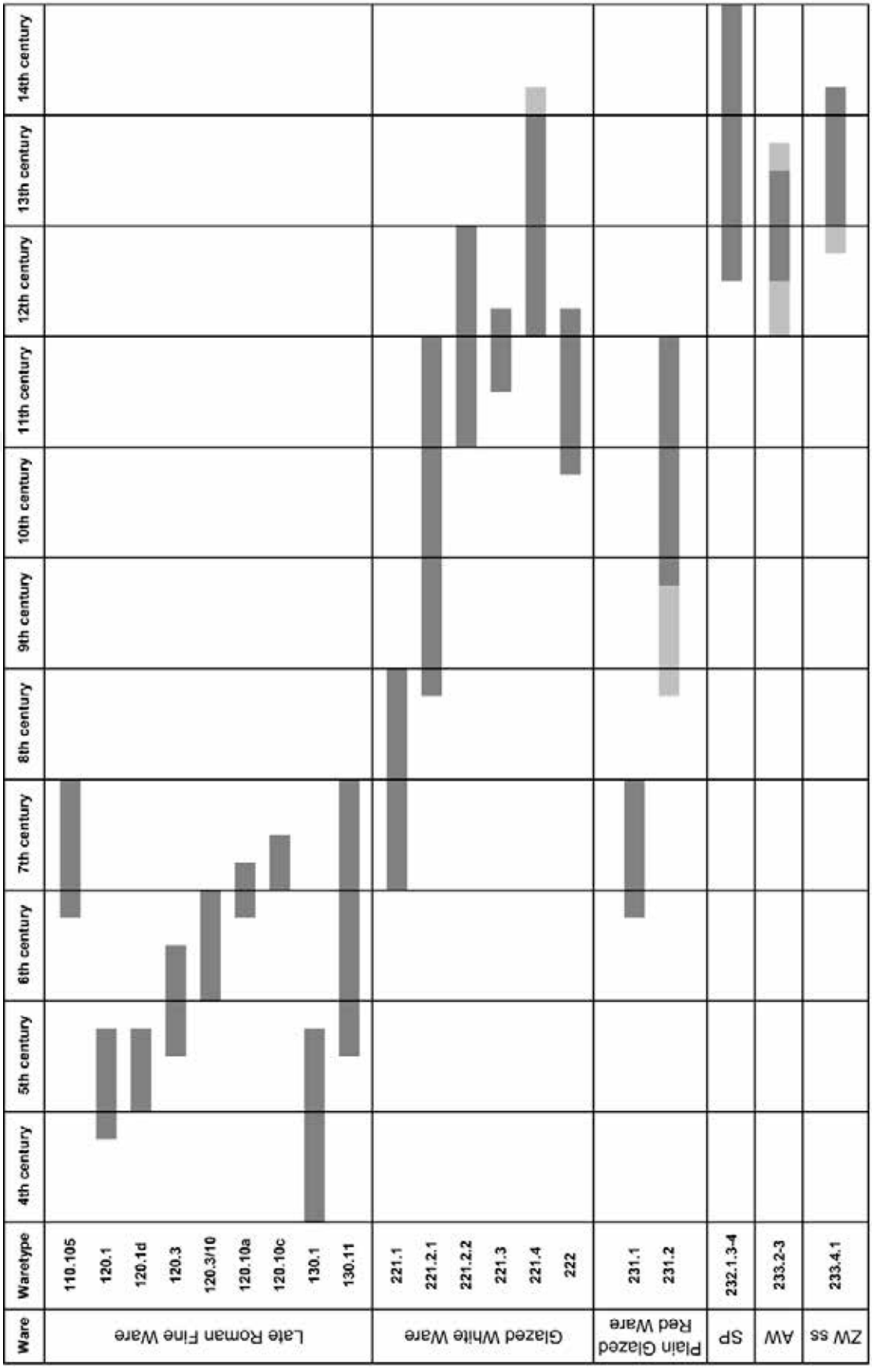

Fig. 14: see next page.

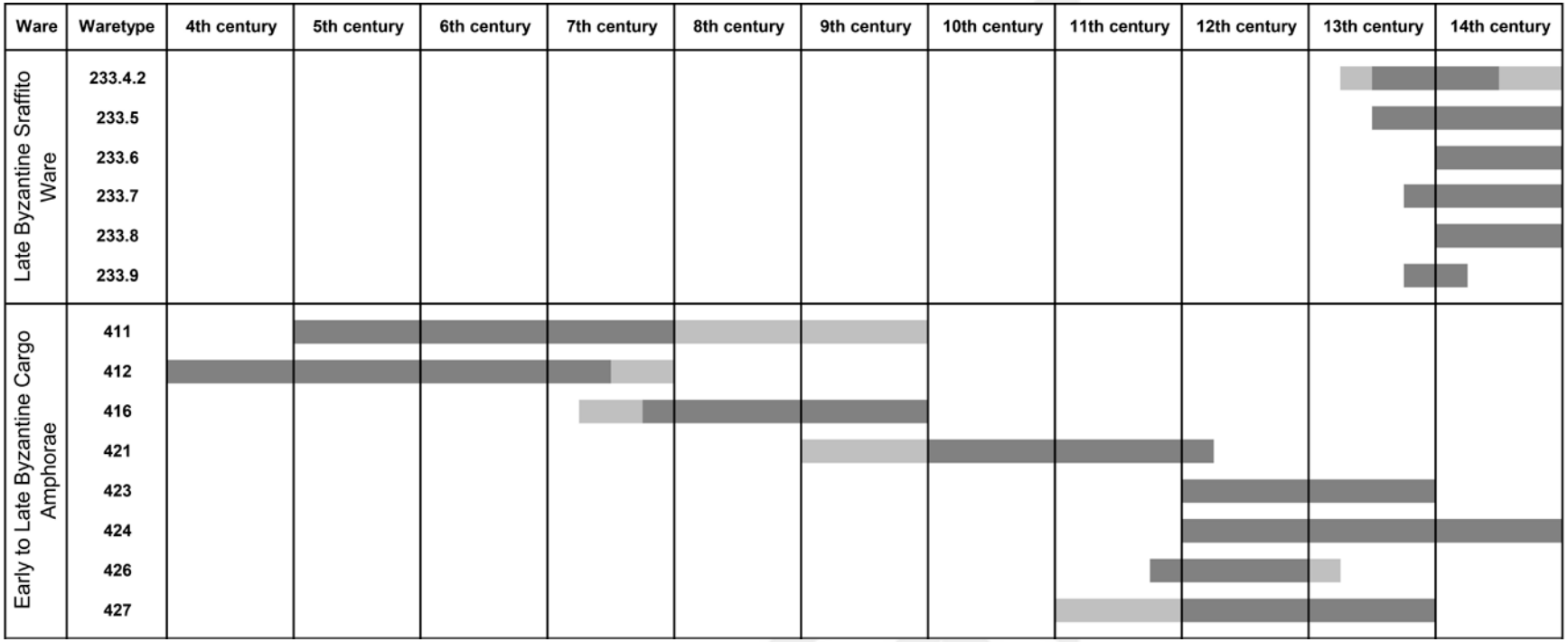

Fig. 14: Chronologies of the different ceramic ware types found at Küçükyalı. 110.105 - ARS Hayes 105; 120.1 - LRC Hayes 1; 120.3 - LRC Hayes 3; 120.10 - LRC Hayes 10; 130.1 - LRD Hayes 1; 130.11 - LRD Hayes 11; 221.1 - GWW I; 221.2.1 - GWW II (white fabric); 221.2.2 - GWW II (white and pink fabric); 221.3 - GWW III; 221.4 - GWW IV; 222 - Polychrome White Ware; 231.1 - Early Plain Glazed Red Ware; 231.2 - Plain Glazed Ware in a red and grey fabric; 232.1.3-4 - Slip-Painted Ware (SP); 233.2-3 - Aegean Ware (AW); 233.4.1 - Zeuxippus Ware *stricto sensu* (ZW ss); 233.4.2 - Zeuxippus Ware Family/Sgraffito with Concentric Circles; 233.5 - Elaborate Incised Ware and Orange Brown Glazed Ware; 233.6 - Western Sgraffito Ware; 233.7 - Sgraffito Ware in "Thessaloniki/Sirkeci style"; 233.8 - "Fette" Ware; 233.9 - Sgraffito Ware from Serres; 411 - LRA1; 412 - LRA2; 416 - (Byzantine) Globular Amphora; 421 - Günsenin Amphora 1/Saraçhane Amphora 54; 423 - Günsenin Amphora 3/Saraçhane Amphora 61; 424 - Günsenin Amphora 4; 426 - Otranto Amphora 2/Saraçhane Amphora 67; 427 - Bjelajac Amphora 2.
(Light grey indicates a lower possibility) [author].

CHAPTER 3

Tableware Types from Küçükyalı

The ceramic material studied in the course of this work includes all the tableware and amphora pieces from the "Tower" and "Tower Area" of the Küçükyalı 2010 excavations. With 65.65% (1036 EVE) the tableware accounts for roughly two third of the entire batch. The term tableware describes fine ware pottery, predominantly plates, dishes, bowls, cups and goblets, used for serving and consuming food and beverages. In the Roman and Late Antique era the clay body used to be coated with an extremely refined clay paste, while glazed dishes dominated in Byzantine times, and afterwards. Throughout the periods, tableware always was under strong influences of cultural and socio-economic shifts, which brings a high typo-chronological sensitivity with it. Opposite to the stylistically less differentiating and longer lasting typologies of domestic pottery, widely distributed tableware generally provides the chronological backbone of most archaeological sites (cf. BÖHLENDORF-ARSLAN 2004, 1). Predominantly for that reason it was preferred here to study tableware and no kitchen or common wares.

Among the tableware three main categories can be distinguished, Late Roman Fine Ware (LRFW), Glazed White Ware (GWW) and Late Byzantine Sgraffito Wares (LBSgr). The biggest part with 54.63% (566 EVE) consists of the LBSgr while GWW and LRFW hold 32.43% (336 EVE) and 6.08% (63 EVE) respectively (Fig. 15). All other groups such as Aegean Ware (233.2-3), Slip-Painted Ware

(232.1), Unglazed White Ware (310) and all further indefinable tableware sherds account together for 6.85% only ("other" in Fig. 15).

Since most of the GWW pieces belong to its 12th-13th-century version GWW IV (Ch. 3.2.1.4; Fig. 16) and the LBSgr are a general phenomenon of the 13th to 15th centuries, it can be stated here that the predominant share of the Küçükyalı tablewares originates from the Late Byzantine period (including the time of the Latin conquest). This means chiefly the 13th and 14th centuries since no ceramics which could specifically be dated to the 15th century have been documented thus far (see Fig. 14 for a chronological overview of the different ware types).

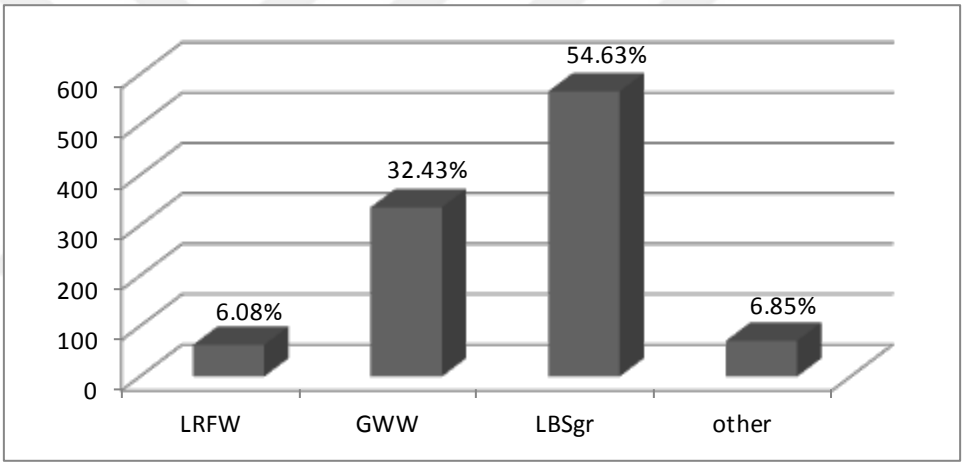

Fig. 15: Quantifications of the different tableware groups. Late Roman Fine Ware (LRFW), Glazed White Ware (GWW) and Late Byzantine Sgraffito Wares (LBSgr) [author].

3.1 Late Roman Fine Ware / Late Roman Red Slip Ware (4th-7th centuries CE)

Essential for an understanding of the early chronology of the site are the different types of Late Antique Tableware found at Küçükyalı, also known as Late Roman Red Slip or Late Roman Fine Ware (LRFW). With sixty-three identified individuals (EVE) they make only 6.08% of the tablewares studied here. Except for five examples they predominantly were discovered in the fill from inside the Tower (US 1006, 1052, 1075). African Red Slip (110), Late Roman C (120) and Late Roman D

Ware (130) could be recognized as the three main groups. Their typo-chronological and terminological treatment is still largely based on the ground-breaking work by John HAYES (1972; 1980). Since then a number of changes and additions according morphology, chronology and provenance have been made (see below). Those are, however, only of a minor relevance for the Küçükyalı finds, since the late forms, in particular of Late Roman D Ware, do not occur among the material presented here. Extensive descriptions of fabric, surface treatment and colors, as well as a discussion on origin and distribution have been made in many cases elsewhere and are left out for the few pieces here.

3.1.1 African Red Slip Ware (110)

[Pl. 1.6]

Only two pieces of African Red Slip Ware (ARS) could be recognized among studied material from Küçükyalı. Just one is identified closer as the Hayes form H105 (110.105; Pl. 1.6), a large dish that is generally dated from the late 6th to the late 7th century (HAYES 1972, 166-169, figs. 31-32). The latest comprehensive work on Late Antique ceramics from North Africa was compiled by Michel BONIFAY (2004), who divides the form into three variants. The sherd from Küçükyalı matches with his variant B and can therefore put into the middle of the 7th century (IBID. 183-185).

3.1.2 Late Roman C Ware (120)

[Pl. 1.1-5, 9.1, 11.1-21]

With more than 57% (36 EVE), Late Roman C Ware (LRC) is by far the most common type of Late Antique Tablewares in Küçükyalı. This is probably the case because of the relatively close proximity to its production center in the region of

Phocaea (Foça) in Western Turkey, which gives it the simultaneously used name of Phocaean Red Slip Ware. Next to the standard description by HAYES (1972, 323-370), summarizing contributions to LRC typology, its stamped decoration and the ware's fabric characteristics have for instance been provided by VAAG (2001) and LADSTÄTTER/SAUER (2005, 144-152). The Küçükyalı pieces offer no surprise in this regard. With the HAYES (1972, 325-346) forms H1 (120.1), H3 (120.3; Pl. 1.1-4, 9.1, 11.1-16) and H10 (120.10; Pl. 1.5, 11.17-21), only some of the known shapes could be recognized among the Küçükyalı assemblage. Generally being the commonest type throughout the entire LRC production (IBID. 329; LADSTÄTTER/SAUER 2005, 149), the form H3 is also here the unquestioned leader with twenty-five out of thirty-six LRC fragments (69.44%). Including all its subtypes it is to be dated into a 150-year-frame from the first half of the 5th to the middle or the second half of the 6th century (HAYES 1972, 329, 336-338; LADSTÄTTER/SAUER 2005, 149-150). The later form H10 is with eight pieces the second largest group of the LRC types. Two subtypes are noticeable, one with a squarish knobbed rim (H10a) and a flattened variant (H10c). The dating of both subtypes ranges between the late 6th and the mid-7th century (HAYES 1972, 345-346; LADSTÄTTER/SAUER 2005, 151). The two examples of form H1 can be assigned to the late 4th/5th century (HAYES 1972, 325-327; LADSTÄTTER/SAUER 2005, 149).

3.1.3 Late Roman D Ware (130)

[Pl. 1.7, 5.1]

Based on the assumption of a Cypriot production for this Late Antique Fine Ware, HAYES (1972, 371) favored the term Cypriot Red Slip Ware (CRS) instead of the older but neutral designation of Late Roman D Ware (LRD). While a production on Cyprus is not entirely proven until today, recent discoveries show that major

manufacturing centers of so-called CRS can finally be archaeologically confirmed in southern Asia Minor (JACKSON et al. 2012), which makes a single-centered fabrication on Cyprus obsolete. Therefore the traditional term LRD should be used, how it is common practice in Levantine Archaeology (ARMSTRONG 2009, 158f; JACKSON et al. 2012, 113). A comprehensive summery of its fabric (clay color, inclusions, etc.) is given by POBLOME/FIRAT (2011, 49f), which finds no differences among the five examples from Küçükyalı. Recognized shapes in Küçükyalı are the dish form H1 (130.1; Pl. 5.1) and the thick walled basin H11 (130.11; Pl. 1.7) (cf. HAYES 1972, 372f, 383). H1 occurs between the end of the 4th and the late 5th centuries (MEYZA 2007, 44-48, 160), while H11 can be dated from the mid-5th to 7th centuries (IBID. 73-75, 160; cf. POBLOME/FIRAT 2011, 53 with further lit.). The H9b (130.9b) type, which can be dated well into the second half of the 8th century (ARMSTRONG 2006, 21-25; 2009, 158-162; cf. VROOM 2005a, 39), or the "Anemurium well form" which was found even in mid-10th-century contexts in Limyra (VROOM 2007, 271, 277, 287), have not been attested in Küçükyalı so far.

3.2 Early and Middle Byzantine Tableware (late 6th-13th centuries CE)

3.2.1 Glazed ware in a white or pink fabric (220)

In his seminal work on the ceramics from *Saraçhane*, John HAYES (1992, 12-34) reorganized the entire typo-chronology of the Byzantine Glazed White Wares (GWW) in a system which is still commonly in use. Based on the previous publications of Constantinopolitan excavations that included significant information on pottery (RICE 1930; STEVENSON 1947; PESCHLOW 1977/78) and to a large extent on the contexts from Saraçhane itself, he regrouped them into GWW I-V, dated from the 7th-13th centuries CE. With no extensive archaeological evidence attested, but

with by far the biggest unearthed quantities, Constantinople and its immediate hinterland are considered to be the unquestionable point of origin. This notion is further endorsed by a locally produced "Colour Coated White Ware" of the 6th to 7th centuries (HAYES 1992, 11-12). Most common and well known are the widely distributed GWW II vessels (late 8th/9th - 12th centuries) with a later derivative named GWW IV (12th-13th centuries) which is more restricted to the Capital. From the 13th century onwards the Constantinopolitan White Wares lose their significance to the red-bodied painted wares and in particular to the mono- or polychrome incised ceramics. In the course of this development they vanish entirely at the very latest by the beginning of the 14th century and make place for the Late Byzantine Sgraffito Wares which are under strong influence from Western (Italy) as well as Seljuq and Levantine productions.

A question discussed in large diversity is the advent of Byzantine glazed ceramics and the provenance of the glazing technique. The production of lead glazed pottery in the Mediterranean can be traced back into the Early Roman period with substantial archaeological evidence from Asia Minor. Emanating from Western Asia and the Eastern Mediterranean the technical 'know how' of glazing was carried on into the West probably during the 1st century CE (WHITEHOUSE 1967, 43). After a hiatus in the 3rd and a reintroduction in the 4th, it was assumed for quite some time that due to barbaric invasions, Roman glazed ceramics ceased to exist in the first half of the 5th century and the glazing technique would have been reestablished in 7th-century Byzantium. The latter would have adopted it from Late Sasanian Persia in the first place. Through Byzantine-Italian contacts, lead glazed pottery would then eventually have reoccurred in the West by the later 8th century in form of the central Italian 'Forum Ware' (IBID. 83f; HAYES 1992, 13f). These hypotheses could, however, be

corrected by reevaluating the date of the 'Forum Ware' from the City of Rome into the 6th century. Nevertheless more important for this matter had been new evidence from a Northern Italian circle where glazed pottery was produced between the 4th and 7th centuries (HAYES 1992, 15 with further lit.; CVJETIĆANIN 2006, 180-182, 195). Those new research perspectives caused John HAYES (IBID.) to move towards an interpretation that favored an Italian rather than a Persian influence on the concept of Byzantine Glazed White Wares.

The strong evidence from different places in Northern Italy where Late Roman Glazed Ware was produced and used until the 6th and 7th centuries (CVJETIĆANIN 2006, 180-182, 195; cf. also IBID. 262-264), gets supported by recent research from the Balkans. With the towns of Ras and Postenje in the Novi Pazar valley and the famous Iustiniana Prima (Caričin Grad), several sites located in modern-day Serbia account for a production of glazed pottery at least until the 6th century (IBID. 171; cf. also IBID. 183, Fig. 27). Together with the Early Plain Glazed Red Ware (231.1) known from the 7th-century Yassi Ada shipwreck (BASS 1982, 165f) and from some late 6th-century deposits in Corinth and Saraçhane (HAYES 1992, 9f, 13), as well as with the GWW I and "Forum Ware" products of the 7th-8th centuries, a parallel and somewhat continuous production of 6th-8th-century glazed ceramics from Central and Northern Italy, through the Balkans to the Aegean and Constantinople can be claimed. While the Italian and Danubian production groups already start in the 4th and last into the 6th and in case of the Italian until the 7th centuries[5], a serious production of lead glazed pottery in the Byzantine East does not seem to start before the 7th century.

[5] For the 'Forum Ware' until the first half of the 9th century (cf. WHITEHOUSE 1967, 84, Fig. 13).

The possibility of a strong Western input on the early Byzantine Glazed Wares gets reinforced from the point of view of chemical analysis. Following the latest research (WAKSMAN et al. 2007; 2008), the first Byzantine White Wares are chemically closer to the Late Antique productions from the Balkans (Caričin Grad) and Northern Italy than to Middle Eastern products. Concerning details of the glaze application, this applies as well to the manufacturing technique. Although more sampling needs to be done, the probability is high that the glazing technique was reinstated to Byzantine craftsmanship through the Western provinces of the Late Roman Empire, predominantly from the Balkans and Italy, than through the Islamic Near East (IBID. 2007, 134). The latter region, however, seems to be of importance for a change towards alkali-rich glazes of the later Byzantine White Wares (IBID.).

3.2.1.1 Glazed White Ware I (221.1) / Early Plain Glazed Red Ware (231.1)

[Pl. 1.8, 2.6-8, 7.1, 15.1-4]

The group classified by HAYES (1968, 203; 1992, 15) as GWW I is described by him as mostly with a light to pale brown or orange fabric color, occasionally reddish or grey, but never pure white. Furthermore, Hayes names some reddish-brown inclusions and mentions a thin slip or surface wash which is supposed to be a bit darker than the body clay. Depending if the firing was oxidized or reduced the glaze is termed by HAYES (IBID.) as dark-toned, olive-green to sepia or as brown to orange-brown or deep yellow. The rough surface often causes pin-hole pitting but a glossy glaze appearance is noted as well. By adding crème, beige and 'really' white to the color spectrum of the fabric (BÖHLENDORF-ARSLAN 2004, 97; 2013, 21; VROOM 2005a, 63), later authors made only minor editions to HAYES' description.

Quite frequently problems occur with the differentiation of GWW I with the Early Plain Glazed Red Ware (231.1), which can have the same color varieties as GWW I

but tends more to red and brown (HAYES 1992, 41; BÖHLENDORF-ARSLAN 2004, 108; VROOM 2005a, 65). HAYES (IBID.) called this type "Coarse Glazed Ware I-II" and although it is supposed to be coarser (including some lime particles) and inclines more towards a red color than GWW I, he (IBID.) notes as well that both types are "not always clearly distinguishable from" each other. BÖHLENDORF-ARSLAN (2004, 108) even includes the "Glazed Ware" of the preliminary Saraçhane report by HAYES (1968, 203-205) to 231.1 whereas he ascribes it to his GWW I (IBID. 1992, 15; cf. also BÖHLENDORF-ARSLAN 2013, 26 with note 79). Those inconsistencies clearly speak for a certain indistinguishability of the two types.

Very similar difficulties came up during the work with the material from Küçükyalı and for that reason it was decided to subordinate both ware types together under one heading (221.1/231.1), having a date range from the late 6th to the late 8th centuries. Since only tableware is of importance here and most of the pieces tend more towards a lighter fabric, this type was categorized and quantified within the Glazed White Wares (220). Having its origin in Constantinople the ware was widely distributed in Greece, the Aegean, Western Asia Minor and Cyprus. Famous are the four glazed bowls from the Yassi Ada shipwreck (near Bodrum), which are with ca. 625 CE still the earliest securely dated examples for Byzantine Glazed Ware (BASS 1982, 165f; cf. VROOM 2005a, 65).

In Küçükyalı, type 221.1/231.1 plays with 5.95% (20 EVE) of the accounted Glazed White Wares a minor role in terms of quantification (Fig. 16). However, the existence of this early glazed tableware provides for the site an extremely important evidence for a more or less fluent chronological transition from Late Antiquity into the Early Byzantine and "transitional" periods (late 6th - late 8th centuries).

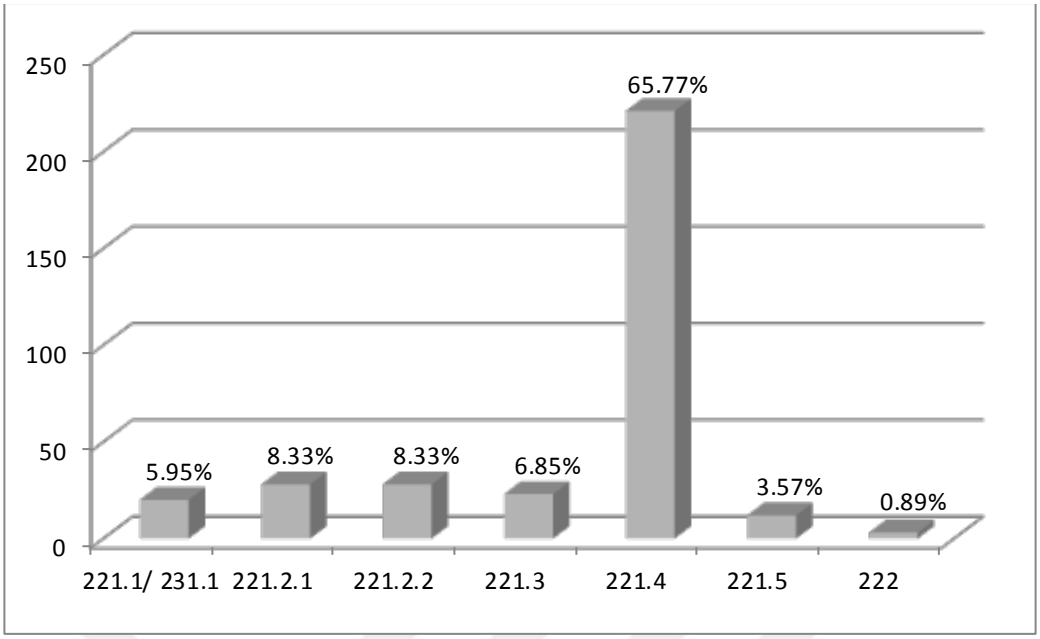

Fig. 16: Quantifications of the Glazed White Wares (GWW). GWWI and Early Plain Glazed Red Ware (221.1/231.1), GWW II (221.2.1-2), GWW III (221.3), GWW IV (221.4), GWW V (221.5) and Polychrome Glazed White Ware (222) [author].

The fabric colors of the pieces from Küçükyalı vary from dark pink (2.5YR 8/4)[6], light yellow (7.5YR 8/4), dull or pale orange (5YR 7.5/4, 5YR 8/3) to a bright (5YR 5/8) or orange-brown (2.5YR 7/6, 5YR 6/8, 5YR 7/6). The firing atmosphere can be mixed which results in a light orange mantle (5YR 8/4) and a brownish-grey (5YR 6/1) or light grey core (10YR 8/1). Sometimes the different stages of the firing process create two different colored layers within the vessel wall. One example is divided between a greyish-yellow (10YR 7/2) and a dull orange (5YR 7/4) layer, another one between light orange (5YR 8/4) and light grey (7.5YR 8/2). The hardness differs from medium-hard to hard and among the inclusions, the above mentioned reddish-brown grits and white lime particles are present. In some cases also quartz and occasionally a few tiny micaceous bits can be added. Usually the size of the inclusions lies between small and medium and their frequency within the matrix ranges from 5-15% (except for the micaceous particles).

[6] Fabric colors were determined by using the latest version of "Munsell Soil Color Charts", applied in natural light (MUNSELL 2013).

In terms of the surface treatment, also in Küçükyalı the external wash appears a bit darker than the body clay (2.5YR 6/6, 5YR 6/6, 10YR 7/4). Since most of the vessels here are open forms, the glaze is often only applied to the vessel's interior, while on the exterior just the rim zone is covered or some splashes are visible. The color spectrum of the glaze includes yellow-orange (7.5YR 7/8), yellowish-brown (2.5Y 7/8, 10YR 5/6, 10YR 5/6, 10YR 5/8), bright to orange-brown (2.5YR 5/8, 7.5YR 5/8) and a darker brown (7.5YR 4/6, 10YR 4/6). The characteristic pin-hole pitting occurs frequently. Among the vessel shapes dishes and bowls are most common but also a few jugs and one chafing dish are noticeable (Pl. 1.8, 2.6-8, 7.1).

3.2.1.2 Glazed White Ware II (221.2)

[Pl. 2.3, 3.1, 5.2, 7.2-4, 8.1, 15.5-10]

John HAYES (1992, 18) entitles GWW II as "the Byzantine 'White Ware' *par excellence*, characteristic of the Macedonian and Komnenian periods". Considering the results of the pioneering excavations at the Hippodrome and the Great Palace as well (RICE 1930; STEVENSON 1947), GWW II indeed represents the most popular tableware in Middle Byzantine Constantinople until the 12th century. It is well distributed in Italy, Albania, Thrace, Greece, the Aegean, Western Asia Minor, Cyprus, Bulgaria, Ukraine, South Russia and even as far as Sweden and Norway (BÖHLENDORF-ARSLAN 2004, 99; VROOM 2003, 150; 2005a, 75f; for Italy see D'AMICO 2007).

Among the Glazed White Ware types (220) in Küçükyalı it only has a part of approximately 16.7% (56 EVE), which has to be understood within the context of a very strong appearance of the 12th to 14th-century tablewares on this site in general. Its large amounts within the city, unpublished results of a salvage excavation in Kadiköy and clay analyses confirm Constantinople and its immediate hinterland as

the origin of the used clay (Arnavutköy) and as the primary production center of GWW II (BÖHLENDORF-ARSLAN 2004, 99f with notes 500-502; MEGAW/JONES 1983, 256-258 for the clay analyses). Wasters from Nicaea (Iznik) seem to prove the existence of a manufacturing a bit further away in North Western Asia Minor (VROOM 2003, 150 with further lit.).

HAYES (1992, 18f) distinguishes somewhat two stages in the fabric development of GWW II. The earlier examples from 10th century deposits in Saraçhane have very smooth textured, sometimes a bit granular white clay and bear usually a pale yellow, or, less common, a speckled green glaze. From the 11th century onwards the quality of the fabric generally decreases and the firing color turns pinkish-red, either just at the core or covering the entire body. The preferred glaze colors are now olive-green or orange. The glaze is always directly applied to the body clay without a slip base (see BÖHLENDORF-ARSLAN 2013, 21f for a general description and further examples). Following this distinction the GWW II pieces from Küçükyalı have been classified into the two subtypes 221.2.1 and 221.2.2 which reflect the just described earlier and later version respectively. Both are present in the same amounts with 8.33% (28 EVE) of the GWW each (Fig. 16).

Although there is no 9th-century evidence from Saraçhane, other sources (BÖHLENDORF-ARSLAN 2004, 99; VROOM 2005a, 77) and even HAYES (1992, 17f) himself imply the existence of 221.2.1 at that time and allow a dating for this subtype from the late 8th/9th to the 11th centuries. The later subtype 221.2.2 with its pinkish fabric can be dated from the 11th to the 12th century. A further division of GWW II into "Impressed White Ware", "Speckle-Glazed White Ware", "Red-Brown Painted White Ware" and "Incised White Ware", as it has been done for the material from the Kalenderhane excavations (HERRIN/TOYDEMIR 2007, 74-78) did not seem logical

here, for no impressed or red painted examples are noticed (about "Impressed White Ware" see ARMSTRONG 2002; cf. similar designations such as "Spatter Painted Ware" in Doğer 2007, 103, pl. X.f). Speckle-Glazed (Pl. 5.2, 15.8-10) and very rarely also incised pieces (Pl. 3.5, which is GWW IV) occur, but they are considered to be different decorative patterns of the same ware type and were therefore not treated separately.

The Küçükyalı examples for subtype 221.2.1 consist of a white (10YR 9.5/1), greyish-white (2.5Y 8/) or light grey (5Y 8/1, 10YR 8/1) fabric. It is hard fired and has either no visible inclusions or occasionally some small reddish-brown, greyish-brown or dark grey grits amounting to circa 5% of the clay matrix. The glaze is mainly applied to the vessel's interior but can be found on the exterior as well. Its color ranges from light or pale yellow (5Y 7/4, 5Y 8/4) to greenish-yellow (5Y 7/6) and olive green (2.5GY 5/8). Frequently the glaze is mottled (speckle-glazed) in light to bright yellow (5Y 7/4, 10YR 7/6), dark olive and brownish green (10Y 4/4, 10Y 3/4) and greyish-green or darker grey (5GY 3/4, 5GY 3/2, 10Y5/4).

The fabric of subtype 221.2.2 is often colored in a darker pink (5YR 7/4, 5YR 7/6) or pale orange (5YR 8/3, 5YR 8/4). Not unusual is a white (N 9.5/) or light grey (10YR 8/1, 10YR 8/2) core and a pinkish-yellow (2.5Y 8/3) or dark pink (5YR 7/4) mantle. The firing is medium-hard to hard and quite common are some small limestone particles such as reddish-brown or grey grits (5% of the matrix). One piece contains very few and small micaceous specks and had a bit more of a flaky texture, which implies already a direction towards a GWW IV fabric. The glaze of 221.2.2 appears in yellow orange (7.5YR 7/8), bright to yellowish-brown (10YR 6.5/8) or can be mottled in olive (5Y 5/6) and dark olive green (7.5Y 4/3). Among the vessel shapes of GWW II in Küçükyalı dishes and bowls are clearly dominating (Pl. 2.3,

8.1, 15.5-7). One exceptional piece is a fragment of a lamp which might have had a saucer attached on top of it (Pl. 3.1;cf. HAYES 1992, 29, Types 16-17, fig. 10.2-3).

Parallel to the later GWW II subtype (221.2.2) a new generation of Glazed White Wares occurs during the developed 11th century. They are introduced by HAYES (1992, 29f) as GWW III-V and either show a big difference in glaze composition, consist of a rough and gritty fabric, or feature a combination of both. It can be hard to clearly distinguish them and their characteristics sometimes seem to get blurred between each other. Starting already in the late 10th century, Polychrome White Ware (222) can be considered the early forerunner of those "new" White Ware categories.

3.2.1.3 Glazed White Ware III (221.3)

[Pl. 1.3, 6.1]

With its white and hard fabric that occasionally bears small red and grey inclusions, GWW III is considered to be the plain equivalent of Polychrome Ware, which is confirmed by the restriction of its shape varieties to dishes and one-handled cups (HAYES 1992, 30 and 35; cf. BÖHLENDORF-ARSLAN 2013, 22). The glaze usually covers the entire vessel, is mostly bluish-green or deep brown to sepia and holds "a strong tendency to decay, forming a hard brownish crust difficult to detach" (IBID. 29f). The same process of glaze decay can be observed on the surfaces of GWW IV (221.4) and Polychrome Ware (222).

Based on the Saraçhane contexts, GWW III can be dated from the 2nd half of the 11th to the early 12th century. Find spots other than Constantinople are not known. The appearance of small quantities in Saraçhane (HAYES 1992, 30) is supported by the data from Küçükyalı where this ware type accounts for merely 6.85% (23 EVE) of the Glazed White Wares (Fig. 9). For the examples from Küçükyalı a light grey (2.5Y 8/, 10YR 8.5/1) fabric can be attested. It contains small grey and occasionally

also orange-red or reddish-brown grits, with a frequency of 5-7% within the matrix. The heavily decayed glaze on the interior and exterior of the vessel usually comes in a paler or darker bluish green (5G 5/2, 10Y 5/4), in a darker olive-grey (10Y 4/4, 10Y 5/4, 5GY 3/4) or occasionally in a greyish-yellow (5Y 8/3). Identifiable vessel shapes are mainly dishes or bowls and rarely cups (Pl. 6.1). One piece has a notched rim which is supposed to be far more common for GWW IV dishes (Pl. 3.3; cf. Type 1 in HAYES 1992, 31).

3.2.1.4 Glazed White Ware IV (221.4)

[Pl. 2.9-10, 3.4-9, 4.1-4, 5.3-6, 6.2, 7.2-4, 8.2-5, 9.2-3, 10.3, 15.11-18]

Still very close in its general appearance to the preceding White Ware Types, GWW IV emerges as a new Constantinopolitan product during the late $11^{th}/12^{th}$ and runs until the late 13^{th} century. Its fabric is distinctively characterized by a gritty and sandy texture often containing a substantial amount of micaceous particles. The fabric color varies between white-beige for higher quality and pinkish with a flaky consistency for lower quality products (HAYES 1992, 30f). Beate BÖHLENDORF-ARSLAN (2004, 104) adds pale brown and light grey to the possible fabric colors. The thin glaze is usually transparent with hues in pale green, yellow or beige. It is predisposed to deterioration in the same way as GWW III (see above) and tends to flake off. On the exterior surface some sort of a wet-smoothing (or wash) as a foundation for the glaze may occur (HAYES 1992, 31).

The observation from Saraçhane, which declares GWW IV as the most spread tableware from the mid-12^{th} to the early 13^{th} century (HAYES 1992, 30), goes well in accordance with the quantities in Küçükyalı where it stands for almost 66% (221 EVE) of the GWW (Fig. 16). As mentioned for the Saraçhane examples (IBID. 31), also in Küçükyalı the commonest decoration consists of close-set marbling in green

and sepia, while blurry painting in green and black or brown is encountered to a lesser extent. Among the painted motifs are geometric or floral patterns, twisted circles, stars or simply stripes and some pieces show black outlines with a green filling (IBID. 31; BÖHLENDORF-ARSLAN 2004, 104; for faunal motifs see e.g. MOROZOVA ET AL. 2013, 128f and fig. 4; cf. also BÖHLENDORF-ARSLAN 2013, 22-24, esp. for faunal and figural motives cat. 203, 204, 207-217, 229-230, 232). These attributes, particularly the painting in black/brown and green (and also blue), technically break with the tradition of the Plain Glazed White Wares and bring GWW IV, from a decorative perspective, somewhat close to the contemporary red-bodied "Green and Brown Painted Ware" from Central Greece (HAYES 1992, 31; VROOM 2005a, 83)[7]. GWW IV is distributed in Cyprus, Corinth, Northwestern Asia Minor and is very common around the Black Sea Coasts (MOROZOVA ET AL. 2013, 127f with further lit.), but as a traded commodity it definitely lost the importance of its predecessor GWW II. As already noticed for GWW II, the Kalenderhane publication offers here as well a further distinction into GWW IV proper, "Glazed White Ware of Latin Date" and "Purple and Green Painted White Ware" (HERRIN/TOYDEMIR 2007, 81-85). Judging by its catalog and published illustrations (IBID. 83f, 111, cat. 137-145), deeper bowls rather than shallower dishes seem to become the common vessel shape of GWW IV around the mid-13th century. Those shapes occur frequently among the GWW IV pieces from Küçükyalı as well (Pl. 5.4-6, 7.4, 8.2, 8.4). In conclusion, a high quantity of mid-13th century shapes can be attested in Küçükyalı and Kalenderhane. Based on this and the evidence for a use of GWW IV until the end of the 13th century from Chersonesos and the Novy Svet shipwreck (MOROZOVA ET AL., 127f with further lit.), it is proposed that it remained

[7] Not to be confused with the "Green and Brown Painted Wares - White Biscuit" which are the equivalent to GWW IV in Corinth (BÖHLENDORF-ARSLAN 2013, 22 with note 26).

the most popular tableware in Constantinople at least until the middle of the 13th century, and not only until the early 13th century as suggested by HAYES (1992, 30).

The fabric characteristics of the GWW IV fragments from Küçükyalı are generally in conformity with the Saraçhane finds. The colors are located between white (7.5YR 8.5/2), predominantly white grey (5YR 8/1, 8/2; 10YR 8/1, 8/2; 2.5Y 8/1, 8/2; 5Y 8/1) and pink to pale or yellowish-orange (2.5YR 7/6; 5YR 8/3, 8/4; 10YR 8/3, 8/4). Sometimes it can appear in a greyish-yellow (5Y 7/4) or even in a slightly darker grey (2.5Y 4/1, 5/1, 6/1) which indicates a more reduced firing atmosphere. Quite common are pieces with a pink (5YR 8/3) core and a light grey (10YR 8/1) mantle. In one case there are even three differently colored layers: an inner mantle in whitish grey (2.5Y/), a core in dark pink (10YR 7/4) and an outer mantle in light grey (10YR 8/1). The rough and sandy fabric usually includes small reddish-brown and grey specks, which are not specifically mentioned by Hayes. Sometimes lime and very often small to medium sized micaceous particles can be attested. The proportions of the inclusions within the clay matrix differ from 5-20%. Very frequently a light grey (2.5Y 8/2), pale brown (10YR 8/3, 8/4; 2.5Y 8/4) or dark pinkish-brown (5YR 7/4, 8/4) surface slip (wash) could be observed.

The color spectrum of the glaze has quite a large variety. From light grey (2.5Y 8/2, 5Y 8/2), pale-light yellow (2.5Y 7/4, 8/4; 5Y 7/4, 8/3, 8/4), light orange (10YR 8/4) and yellowish-brown (2.5Y 7/8; 7.5YR 6/8; 10YR 5/8, 6/4, 7/3, 7/6), it ranges to greenish-yellow (5Y 7/6), olive green (2.5Y 5/6, 5Y 5/6), greyish-green (10Y 4/4, 5/4, 6/4; 5GY 3/4, 4/4, 5/4) bluish-grey (5G 4/2, 5Y 2.5/1) or even brownish-black (7.5YR 3/3; 10YR 2/1, 2/2, 3/1; 2.5Y 2.5/1). It yet remains unclear if the appearance of a specific color is due to an intended choice or caused during the process of decay. Particularly the bluish grey parts seem to be a result of a deteriorated green glaze.

The greyish-green glaze occurs almost alone on fragments of jugs or pitchers and is ending above their bases, a fact already pointed out in Saraçhane by HAYES (1992, 33). The majority of the GWW IV vessels are dishes and small bowls, next to cups, chafing dishes and pitchers (Pl. 2.9-10, 3.4-9, 4.1-4, 5.3-6, 6.2, 7.2-4, 8.2-5, 9.2-3, 10.3, 15.11-18).

3.2.1.5 Glazed White Ware V (221.5)

[Pl. 9.4-5]

This White Ware Type of the late $11^{th}/12^{th}$ century was added by HAYES (1992, 33-34) to describe a small group of flat-based juglets that assemble the gritty fabric of GWW IV with glaze features of GWW II. The yellowish glaze is frequently speckled in reddish-brown and was applied by dipping as external coating. With only 3.57% (12 EVE) it represents the second smallest type of the GWW in Küçükyalı, following the Polychrome Ware (Fig. 9). The pieces from Küçükyalı (Pl. 9.4-5) generally show a light grey fabric color (10YR 8/1, 10YR 8/2), only one example is fired dull orange (7.5YR 7/4) which is due to a mixed firing atmosphere. As mentioned above the sandy and gritty texture is equal to the one of GWW IV, likewise is the wash on the interior and exterior surface colored in light greyish-brown (2.5Y 8/2, 10YR 8/2) or orange brown (10YR 7/4, 10YR 7/6). The glaze appears in pale yellowish to light olive green (5GY 5/4, 6/4) and one specimen in deep yellow (2.5Y 7/8) is mottled reddish-brown (2.5YR 4/8) as described by HAYES (1992, 33f). Next to the Constantinopolitan examples other ones are known form Corinth and Sarkel in South Russia (IBID. 34, note 123).

It definitely could be argued that GWW V bears no significant difference to GWW IV, especially with the green glazed GWW IV jugs described by HAYES

(1992, 33), which resemble almost the definition of GWW V. It seems to be more like a GWW IV variant, predominantly manifested as juglets.

3.2.1.6 Polychrome White Ware (222)[8]

[Pl. 2.4]

With merely three very small pieces identified, Polychrome White Ware forms only 0.89% of the White Ware repertoire from Küçükyalı (Fig. 16). This scarcity seems to be very common throughout most archaeological records in general (SANDERS 2001, 89; HAYES 1992, 35). As already mentioned it shows a very similar white fabric with some dark grits and red inclusions to GWW III. Its transparent glaze as well is inclined to decay in the same way (IBID.). Joanita VROOM (2005a, 79) points out that the white fabric can be greyish, that core and edges sometimes appear to be pinkish in color and that the glaze on the outside may be yellow or green. For Küçükyalı a light-grey (10YR 8/1) fabric with some darker grey grits (small, <5%) can be attested. The interior glaze is light-grey (2.5Y 8/2) and bears a black painting while the exterior surface has an olive green glaze. One example shows a thick slip-painting with a white geometric, perhaps Kufic pattern on black lustrous ground (Pl. 2.4). It therefore belongs to HAYES' (1992, 36f; cf. SANDERS 2001, 96f) Class 3 and can be dated to the late 11th or early 12th century.

HAYES (1992, 35-37) distinguishes three classes of painted decoration and dates the ware from the late 10th to the early 12th century. Reevaluating the stratigraphic evidence from Saraçhane, SANDERS (2001, 101) strongly suggests a chronological framework for the Polychrome White Ware pottery in the 11th and early 12th centuries. It seems to be unquestionable on the other hand, that tile revetments made

[8] Due to its small quantities Polychrome White Ware was included to the chapter on GWW, although it shows different fabric characteristics and might not to be a direct part of the GWW family (HAYES 1992, 35; SANDERS 2001, 91). Its proximity to GWW III questions this on the other hand. In the very beginning of his chapter on the GWW, HAYES (1992, 12) even calls "the Polychrome Wares […] a subgroup of them".

of ceramic ware type were manufactured already in the late 9th and 10th centuries in large amounts in the Bulgarian towns Patleina and Preslav (IBID. 98-101; 2003, 391). No such wall plaques have been discovered in Küçükyalı so far.

A Constantinopolitan origin seems here rather unlikely while it is considered to be certain for the other Glazed White Wares. Based on optical and chemical analyses, the fabrics of Polychrome Glazed White Ware and GWW proper are quite diverse which implies different production places (SANDERS 2001, 91, notes 15-16). There are, however, two wasters known from Istanbul's Kalenderhane Camii excavations (MEGAW/JONES 1983, 236), but Nicomedia and Nicaea in North Western Asia Minor are in discussion as production centers of a higher probability. The wide distribution of both, revetment plaques and vessels, in South Russia, Rumania, Bulgaria, the Balkans, the Aegean, Western Turkey and even as far as Palestine, pictures the importance of Polychrome White Ware as an exported good (HAYES 1992, 35; SANDERS 2001, 91; BÖHLENDORF-ARSLAN 2004, 107 and 2013, 24f with note 52 providing a wide range of further literature on Polychrome Glazed White Ware; cf. also VROOM 2005a, 79).

3.2.2 Unglazed White Ware (310)

[Pl. 5.10-11, 9.6]

The Unglazed White Wares (UWW) were introduced by HAYES (1992, 38) as the unglazed equivalents to the GWW. Hence, the individual counterparts are equal in fabric and surface treatment except for the presence or absence of glaze. As UWW II does not have a glazed version, UWW III corresponds to GWW II and so forth. UWW V matches naturally with GWW IV and V since both glazed variants bear the same fabric (IBID.). In Küçükyali only UWW III (313) and V (315) could be identified. With a rare appearance in 10th-century deposits from Saraçhane (IBID. 39),

UWW III counts only two fragments in Küçükyalı. More common is UWW V with 29 pieces. When vessel shapes were recognizable, dishes, bowls and jugs or pitchers were detected (Pl. 5.10-11, 9.6).

3.2.3 Glazed ware in a red fabric (230)

Due to the extreme shortage among the material of this work, the so-called "glazed wares in a red fabric" (of the Middle Byzantine period) are here compressed into a few paragraphs. A large diversity of ware types needs to be understood under this heading. One could begin with the so-called "Plain Glazed Ware in a red and grey fabric" (231.2), which was noticed in Küçükyalı with one piece only. This group is known from the Adriatic and Aegean areas and dated there from the late 8th to the early 12th centuries (VROOM 2003, 147; 2005a, 73). While the plastically decorated "Brown Glazed Ware" from Corinth is included in this group as well, another variant is known from Amorion in Western Asia Minor. It is locally manufactured, termed as "Amorion Glazed Ware" and dated into the late 8th to 11th centuries. In morphology and glaze it is very similar to GWW I and might be a local imitation of the Constantinopolitan product (BÖHLENDORF-ARSLAN 2004, 109; 2007, 292; 2010, 345-350). Recent studies, based on pottery kept at the "Museum für Byzantinische Kunst" in Berlin, revealed the existence of such an early "Glazed Red Ware" in Constantinople itself, hitherto not separated from GWW I (ibid. 2013, 26 with notes 77 and 79).

However, the bulk of the ware types to be discussed within the category of Middle Byzantine "glazed wares in a red fabric" would consist of the different Slip-Painted Wares (232.1; BÖHLENDORF-ARSLAN 2004, 113-116; 2013, 26f; VROOM 2005a, 80-81), the Green and Brown Painted Ware (232.2; BÖHLENDORF-ARSLAN 2004, 117-118; VROOM 2005a, 82-83), the various Fine Sgraffito Wares (233.1; BÖHLENDORF-

ARSLAN 2004, 121-124; 2013, 27; VROOM 2005a, 84-87) as well as the Incised Sgraffito (233.2; BÖHLENDORF-ARSLAN 2004, 131-133; VROOM 2005a, 90-91) and Champlevé Ware (233.3; BÖHLENDORF-ARSLAN 2004, 134; VROOM 2005a, 92-93). All these types of tableware are extremely scarce in Küçükyalı. They belong to the same continuously produced group of ceramics, most probably originated in the Aegean, with undoubted evidence for production at Chalcis in Central Greece. Although examples from the early 14th century exist, the major chronological framework of the so-called main 'Middle Byzantine Production' are the 12th and 13th centuries (WAKSMAN ET AL. 2014a, 379ff, with further lit.).

3.2.3.1 Aegean Ware (Incised Sgraffito and Champlevé Ware, 233.2-3)

[Pl. 2.2, 7.5-6]

Next to some representatives of a Slip-Painted type (232.1.3-4) which will be treated in the following section, only seven pieces of Incised Sgraffito and Champlevé Ware could so far be noticed among the Küçükyalı ceramics.[9] Due to their extreme scarcity and fragmentation, they are summarized under the synonym of Aegean Ware (233.2-3). This term is already in use for quite a long time and still fits as an overall category of certain ware types with the same fabric, even though an Aegean origin was not always clear (VROOM 2003, 165 and BÖHLENDORF-ARSLAN 2013, 27f with further lit.) until recently (cf. Waksman et al. 2014a).

The dishes from Küçükyalı consist of a fine and rather soft fabric in a yellowish-red color (5YR 5/6). Either no inclusions or some small lime and occasionally micaceous particles are visible (1-5% of the matrix). On the exterior surface a light brown (7.5YR 5/3, 6/4) slip can be noticed and a pale greenish-yellow (5Y 7/6) glaze is common on the interior. These characteristics are fairly close to the ones

[9] To be mentioned are two rim fragments of bowls presumably belonging to the so-called 'Unglazed Incised Ware' of the 11th/12th century (VROOM 2003, 145f; 2005a, 70-71).

summarized by Joanita VROOM (2003, 163; 2005a, 90-93). The decorative patterns of two fragments can be highlighted here. One rim fragment bears a broadly incised degenerated vegetal motif (palmette, ear branch) below the rim on the vessel's interior (Pl. 7.5). This type of decoration is extremely common in many variants throughout the entire repertoire of Aegean Ware (cf. PAPANIKOLA-BAKIRTZI ET AL. 1999, 95, cat. 185). The Champlevé pattern on a base sherd could belong to a central bird motif, but also an anthropomorphous figure seems possible (Pl. 7.6). Both pieces are from the same context (US 1056) and appear to be very alike in fabric and wall thickness, which can indicate that both pieces belong to the same dish.

3.3 Slip-Painted Ware (232.1.3-4; mid 12th-14th centuries CE)

[Pl. 18.1-8]

With twelve examples, mostly fragments of neck and shoulder, a small group of jugs or pitchers could be singled out from the Küçükyalı pottery. They bear very characteristic vertical stripes of a pale slip which emerge from the flat base and end in thicker tongues close to the rim - obviously applied in an upside-down position (Pl. 18). The sometimes thicker walled vessels are often fired under a mixed atmosphere in a reddish-yellow (5YR 6/8), pale brown (5YR 7/4, 10YR 7/3) or grey (5Y 6/1) to light grey (7.5YR 7/1) color. The off-slip glaze is brown (5YR 4/6, 7.5YR 5/8) and the on-slip glaze is appears in greenish-yellow (2.5Y 7/8) or dark green (5GY 3/4), while the slip itself, where it is not covered by glaze, has a very pale brown (10YR 8/4) color. The fabric often looks sandy with small to large grey inclusions (20% of the matrix), but can also just have some small limestone and micaceous particles (<5% of the matrix).

Many kinds of Slip-Painted Ware had been introduced in the previous literature. Common representatives are the Slip-Painted Wares I-V (232.1.1-5) presented by BÖHLENDORF-ARSLAN (2004, 113-117) or the Aegean and Cypriot types by VROOM (2003, 150f; 2005a, 80f and 124f). Disregarding the early modern derivatives (IBID. 2005 152f, 186f and 190f), all are dated from the 12th to 14th centuries. At least rudimentarily corresponding to the described sherds from Küçükyalı are BÖHLENDORF-ARSLAN'S (2004, 115f) Slip-Painted Wares III (232.1.3) and IV (232.1.4), where the latter one seems to match with VROOM'S (2005a, 124f) "Slip-Painted Ware" of the Late Byzantine/Frankish period. Therefore the fragments from Küçükyalı where labeled as 232.1.3-4 with a chronological range from the middle of the 12th to the 14th centuries.

Judging from their visual appearance, the slip-painted jugs from the 13th-century Novy Svet shipwreck discovered off the Crimean coast are very similar to the ones from Küçükyalı (WAKSMAN et al. 2009b, 852; WAKSMAN/TESLENKO 2010, 360, figs. 14-15; ZELENKO 2013, 131 fig. 2). They are well known from mid-13th to mid-14th-century contexts in the Azov and Black Sea regions, but their provenance still remains indefinite (WAKSMAN/ TESLENKO 2010, 362). Although there is no clear evidence to identify a match between the Küçükyalı pieces and the Novy Svet ones, they seem to belong to the same type of traded good of the same period.

3.4 Late Byzantine Sgraffito Wares (13th-14th centuries CE)

[Pl. 1.9, 2.5, 4.6-8, 5.7-9, 6.3-7, 7.7-11, 19.10-20, 20.1-15]

The Late Byzantine Sgraffito Wares (LBSgr) are a very broadly constituted group of glazed, red-clayed pottery, which includes many tableware types that are usually associated with the late medieval periods. In terms of a "Late Byzantine" labeling,

the main body of LBSgr can be related to the 13th and 14th centuries. However, a production of ceramics in the same tradition, now most with a polychrome decoration, continued well into the 16th/17th, in some cases, particularly in Greece, even into the 18th/19th centuries (PAPANIKOLA-BAKIRTZI 1999, 97-117, 249-265; VROOM 2003, 170-172; 2005a, 140-145; BÖHLENDORF-ARSLAN 2013, 30). Representing probably the last archaeological phase in Küçükyalı (RICCI 2012, 157-159), the 13th-14th-century Sgraffito Wares are of specific relevance here. They represent 54.63% (566 EVE) of the tablewares studied here (Fig. 15).

Due to the chronological framework of the site, there are only a few comparative examples of LBSgr from the Saraçhane excavations (HAYES 1992, 47f) and even less from the Myrelaion/Bodrum Camii (IBID. 1981, 36). Larger quantities yielded the old excavations around the Hippodrome in Istanbul (RICE 1930; STEVENSON 1947). The most famous type is the so-called "Zeuxippus Ware" (MEGAW 1968), which has to be understood more like a large 'family' consisting of numerous branches and derivatives (233.4). While its Middle Byzantine based origins lie in the late 12th century, a wide-spread and multi-centered production gets manifested throughout the Eastern Mediterranean, Italy and the Black Sea region during the 13th and 14th centuries. A large subject of scholarly debate has been the name, and next to many others, 'Sgraffito with Concentric Circles' is the latest term, referring to its commonest decorative pattern (for general and extensive discussions on origin, dating, diffusion, fabrics and the decorative repertoire see with further literature: MEGAW 1989; PAPANIKOLA-BAKIRTZI 1999, 71-96; PAPANIKOLA-BAKIRTZIS 2001; BÖHLENDORF-ARSLAN 2004, 125-131; 2013, 28f; WAKSMAN/FRANÇOIS 2004-2005; VROOM 2003, 164f; 2005a, 108-111; MERCANGÖZ 2013b, 32-37; İNANAN 2010; 2013; 2014; WAKSMAN 2013; WAKSMAN ET AL. 2014a, 415).

Furthermore, the typological repertoire of LBSgr in Küçükyalı includes "Elaborate Incised Ware" (233.5), "Western Sgraffito Ware" (233.6), "Fette Ware" (233.8), "Sgraffito Ware in Thessaloniki/Sirkeci Style" (233.7) and the so-called "Polychrome Sgraffito Ware from Serres" (233.9).[10] The Levantine Sgraffito Wares, like some sorts of Polychrome Sgraffito, Cypriot Sgraffito or Port St. Symeon Ware, which in part extend into the 15th century (cf. e.g. with further lit.: BÖHLENDORF-ARSLAN 2001; 2004, 140-147; VROOM 2003, 166f; 2005a, 120f; 2005b, 28ff), could not be recognized in Küçükyalı so far. While for quite some time many local production centers are identified on Cyprus and especially in Aegean cities like Pergamon, Ephesos, Anaia/Kadıkalesi, Miletus, Thebes, Chalcis, Thessaloniki, Serres or Mikro Pisto,[11] the evidence for a manufacturing of LBSgr in Constantinople used to be lacking. This situation changed drastically with excavations conducted in Istanbul's Sirkeci district, which yielded to the discovery of several workshop related finds, like wasters, unfinished vessels, tripods and perhaps even a furnace, of the 13th and 14th centuries (WAKSMAN/GIRGIN 2008; WAKSMAN ET AL. 2009a; WAKSMAN 2012). Next to ceramics of the "Zeuxippus Ware Family" and "Elaborated Incised Ware", one particular ware type has to be mentioned among the pottery produced at the Sirkeci workshops. It is characterized predominantly by bird, spirals in square, rosette or knot motives, mostly bears a deep

[10] For **233.5**: BÖHLENDORF-ARSLAN 2004, 135f (separated in "Monogrammware" and "Medallion-ware"); VROOM 2005a, 122f. For **233.6**: BÖHLENDORF-ARSLAN 2004, 136f. For **233.7**: VAVYLOPOU-LOU-CHARITONIDOU 1989; PAPANIKOLA-BAKIRTZI 1999, 188-221; BÖHLENDORF-ARSLAN 2004, 137f; VROOM 2003, 165f; 2005a, 114f. For **233.8**: SPIESER 1996, 49f; BÖHLENDORF-ARSLAN 2004, 148ff. For **233.9**: PAPANIKOLA-BAKIRTZIS ET AL. 1992; PAPANIKOLA-BAKIRTZI 1999, 222-242; VROOM 2005a, 116f. These Ware types (233.5-9) are still very close to the Zeuxippus Ware Family and can be considered as LBSgr proper, also called Palaeologan Sgraffito Wares (BÖHLENDORF-ARSLAN 2013, 29f).

[11] For **Cyprus**: BÖHLENDORF-ARSLAN 2004, 145 with note 886; IBID. 148 with note 908; VROOM 2005a, 120f; WAKSMAN 2014b, 265f with further literature. For **Pergamon**: SPIESER 1996, 45-48; WAKSMAN/SPIESER 1997; WAKSMAN 2014a. For **Ephesos**: VROOM 2005b, 26-30; SAUER/WAKSMAN 2005; WAKSMAN 2014a. For **Anaia/Kadıkalesi**: İNANAN 2010, 121f; 2013, 70f; WAKSMAN 2013. For **Miletus**: BÖHLENDORF-ARSLAN 2008. For **Thebes** and **Chalcis**: Waksman et al. 2014a. For: **Thessaloniki, Serres** and **Mikro Pisto**: PAPANIKOLA-BAKIRTZI 1999, 188-242; VROOM 2005a, 114-119; İNANAN 2013, 68.

yellow glaze and has hitherto been associated with Thessaloniki as its single center of production (PAPANIKOLA-BAKIRTZI 1999, 188f; BÖHLENDORF-ARSLAN 2004, 137 with note 817; 2013, 29 with note 136; VROOM 2005a, 115). Fragments with these features are not uncommon in Küçükyalı as well and, in addition to the one from Thessaloniki, the latest evidence from Sirkeci undoubtedly proves a Constantinopolitan production during the Palaeologan period. Another place that produced this kind of ceramics might have been in Nicaea as well (FRANÇOIS 1997). However, without analyses of the chemical composition of the clay, an allocation to Thessaloniki or Constantinople appears to be impossible. For lack of a better term it here is referred to as Sgraffito Ware in "Thessaloniki/Sirkeci Style".

Generally there are strong similarities in shape, fabric, glaze and decoration between representatives of the "Zeuxippus Ware Family" and the so-called "Palaeologan Sgraffito Wares" (for the term see PAPANIKOLA-BAKIRTZI ET AL. 1999, 125; BÖHLENDORF-ARSLAN 2013, 29f; Note 11), especially with the Sgraffito Ware in "Thessaloniki/Sirkeci Style". Particularly with an advancing degree of fragmentation, as it is typical in Küçükyalı, it seems extremely difficult and is often impossible to differentiate those types from one another. Since this frequently applies to "Elaborated Incised Ware" and "Western Sgraffito Ware" as well, it has been formed a 233.4-7 category (Pl. 20), which summarizes all indistinguishable sherds belonging to the just mentioned types. This also makes sense from a contextual point of view, given that these wares have regularly been produced all together in the same workshops around the Eastern Mediterranean during the 13th and 14th centuries. Based on some better preserved pieces, which could be attributed to a certain LBSgr type, more details about them shall be given in the following.

3.4.1 Zeuxippus Ware and Zeuxippus Ware Family (233.4)

[Pl. 4.5, 7.9-10, 20.4, 20.13]

Based on the pieces in the introducing article by MEGAW (1968), the examples with the finest fabric and the most elaborately executed decoration were addressed either as originals, prototypes (İNANAN 2010, 119) or latest as Zeuxippus Ware *stricto sensu* (WAKSMAN/ROMANCHUK 2007, 389-391, figs. 6 and 7; WAKSMAN ET AL. 2014a, 415; using the terminology by WAKSMAN/FRANÇOIS 2004-2005). Within the batch studied here only one fragment of a flat dish belongs to the latter (Pl. 4.5). It has a very fine brown fabric which turns dark grey towards the surface directly underneath the slip. The pale yellow glaze (2.5Y 8/2) feels rather dull due to strong decay. The heavy flat rim is partly rouletted (cf. WAKSMAN/ROMANCHUK 2007, fig. 6 BYZ22 and BYZ303) and two concentric circles are inscribed on the interior directly beneath the rim. Another piece (Pl. 7.9) is made in a fairly fine yellowish-brown fabric (5YR 6/6), bears a shiny olive green glaze (5Y 6/6), a very thick white slip and has two parallel, broadly incised lines below the rim on the interior. It probably can be called Zeuxippus Ware imitation being closer to the "original" than products of the Zeuxippus Ware Family (İNANAN 2010, 119).

Very common among the Küçükyalı material are representatives of the Zeuxippus Ware Family ("Sgraffito with Concentric Circles" in WAKSMAN/FRANÇOIS 2004-2005 and WAKSMAN ET AL. 2014a) with its large decorative spectrum (cf. e.g. DOĞER 2007, 103f, pl. XII-XV). The different sorts of fabric contain mostly small sized lime, quartz, reddish-brown or micaceous particles (<5% of the matrix). The fabric color can generally be referred to as reddish-brown (2.5YR 5/6, 6/6, 5/8, 6/8; 5YR 5/6, 6/6), except for some darker fired rim areas (5YR 4/6). While there often is a deep or olive yellow (2.5Y 6/8, 7/6; 5Y 7/6, 7/8, 6/8; 10YR 6/8) or sometimes a very

pale green (10Y 8/1) glaze, the incisions usually appear in a darker or reddish-brown (5YR 3/4, 4/6; 7.5YR 3/4; 10YR 3/4). Sometimes tongues of slip can be observed on the exterior below the rim (Pl. 6.4). As it is characteristic, concentric circles are engraved on the floor of bowls with hollowed out feet (Pl. 7.10, 20.4). Wavy lines below the rim lip on the interior (Pl. 4.7, 5.7, 7.8) or exterior of the vessel (Pl. 7.11, 6.3) are usually framed by straight lines. Also common is a single or a group of parallel straight lines below the interior rim from which other lines or spirals can emanate (Pl. 4.6, 1.9, 6.7). On the exterior, vertical lines can lead downwards form those straight lines below the rim (Pl. 4.7). Other occurring designs are for instance a central medallion with fishbone pattern (Pl. 5.8) or an "S"-shaped motif between thin, vertically combed lines (Pl. 20.13), which corresponds to the "Kamm-strichware" described by BÖHLENDORF-ARSLAN (2004, 130f; cf. for both patterns IBID. pl. 98 cat. 341). In some cases the incisions are enhanced by green (5GY 4/4 and 5/4) brushstrokes (Pl. 20.5).

3.4.2 Elaborated Incised Ware and Orange Brown Glazed Ware (233.5)

[Pl. 2.11]

While HAYES (1992, 48) addresses the "Orange Brown Glazed Ware" as a lower quality product of the LBSgr (unlike Zeuxippus or Elaborated Incised Ware), VROOM (2005a, 123), on the other hand, calls it a variant of the mid-13th to 14th-century "Elaborated Incised Ware". However, only one fragment of Elaborated Incised Ware proper could be recognized in Küçükyalı. It is characterized by a central medallion with a hashtag symbol in the middle (Pl. 4.8; cf. WAKSMAN/GIRGIN 2008, 454, fig. 20 SMK-et.264). It was found in the chamber west of the Tower (US 1026) and has therefore already been studied by DEMİRTİKEN (2013, 154f cat. ED 140).

Also just one single piece was identified as "Orange Brown Glazed Ware". It is rather fragmentary and decorated with irregular incisions on the interior (Pl. 2.11). The pale brown (5YR 6/6) fabric is fairly fine and tempered with small pieces of limestone and a few micaceous particles (<5% of the matrix). The brownish-yellow glaze (10YR 6/8) appears on the rim lip as dark as the incisions (7.5YR 3/4).

3.4.3 Western Sgraffito Ware (233.6)

[Pl. 5.9]

If this ware type of the 14th and 15th centuries is present here at all, only two pieces get somewhat close to its fabric and glaze characteristics (cf. BÖHLENDORF-ARSLAN 2004, 136f). Both have a light brown fabric (5YR 6/6) with small lime, quartz and some micaceous inclusions (5% of the matrix). The glaze on the interior appears in a pale yellow (2.5Y 8/6, 7/8; 5Y 7/8), while it is dark brown (7.5YR 4/6; 10YR 3/5) on the exterior body. In both cases the exterior glaze is directly applied without a slip underneath (Pl. 5.9). A one-colored or polychrome painting, as it is significant for example for some Constantinopolitan pieces (IBID. pl. 74-75, cat. 150-159), could not be recognized, which makes an attribution to Western Sgraffito Ware quite questionable after all.

3.4.4 Sgraffito Ware in "Thessaloniki/Sirkeci Style" (233.7)

[Pl. 6.4, 6.6, 19.10-14]

Among the "Sgraffito Ware in Thessaloniki Style" different decorative patterns are noticeable, but a bird as the most distinguishable motif is not known in Küçükyalı so far. The fabric is generally fired in pale or orange-brown (5YR 6/6, 6/8; 2.5YR 5/6), micaceous and includes small lime particles and orange-brown or grey specks (<5% of the matrix). The glaze on the interior usually is deep yellow (2.5Y 6/8, 7/8;

5Y 7/8), on the exterior it differs between pale green (5Y 7/8), pale yellow (2.5Y 8/4) and brown (5YR 5/4).

The decorative repertoire shows for example medallions with interlaced ribbons, possibly a figure-of-eight guilloche, on a hatched ground (Pl. 6.6; cf. VAVYLOPOULOU-CHARITONIDOU 1989, 217 fig. 16-18; PAPANIKOLA-BAKIRTZI ET AL. 1999, 135f, cat. 277-279; WAKSMAN 2012, 148, fig. 2 IST 118), or leaves below the rim, likewise filled with hatching (Pl. 6.5). Common as well are two horizontal lines below the exterior rim from which straight or slightly curved vertical incised lines emerge (Pl. 6.5; cf. VAVYLOPOULOU-CHARITONIDOU 1989, 213 fig. 3) and especially spirals or circles filled with hatching placed within chequered squares or rhombs (Pl. 19.10-14; cf. PAPANIKOLA-BAKIRTZI 1999, 215f, cat. 246-249; WAKSMAN ET AL. 2009a, 461, fig. 4 IST 58; WAKSMAN 2012, 148, fig. 2 IST 58).

3.4.5 "Fette Ware" (233.8)

[Pl. 9.7]

Distinguishable by its soapy texture, the "Fette Ware" dating to the 14th century (BÖHLENDORF-ARSLAN 2004, 148ff) occurs here only twice (Pl. 9.7). The orange-brown fabric (5YR 6/6) has either no visible inclusions, or some small lime, reddish-brown and dark specks, as well as micaceous particles can be observed (5% of the matrix). The greyish-yellow glaze (5Y 7/4) is applied on a brownish-pink slip (5YR 6.5/6; 7.5YR 8/4).

3.4.6 Polychrome Sgraffito Ware from Serres (233.9)

[Pl. 19.15-20]

Only two examples can be related to the "Polychrome Sgraffito Ware from Serres" (Pl. 19.19-20), dated to the late 13th and early 14th centuries. Their fabric is

mixed fired with an orange-brown mantle (5YR 5/6, 6/8) and a greyish-brown core (7.5YR 5/2). The rim fragments of a bowl show dense geometric and floral patterns executed as fairly thin black incisions in yellow glaze (2.5Y 7/8) with splashes of green (5Y 6/6) on the vessel's interior (cf. PAPANIKOLA-BAKIRTZI 1999, 230f, cat. 268-269). The glaze on the exterior is green (5GY 6/4).

Four pieces of a jug (Pl.19.15-18) cannot be attributed to the "Serres Ware" but might belong to Polychrome Sgraffito Ware in general (cf. PAPANIKOLA-BAKIRTZI 1999, 90, cat. 103). They are tempered with small to medium sized lime, micaceous and reddish-brown specks (10% of the matrix). Noticeable are small to medium sized grits that sparkle micaceously in a certain angle (5% of the matrix). On its interior the jug bears a plain deep brown glaze (5YR 3/4) and the geometric patterns on the exterior are enhanced with dark brown (5YR 3/4), yellow (2.5Y 7/6) and pale green (5Y 7/6) glaze painting.

3.4.7 General considerations on "Late Byzantine Productions"

With the Zeuxippus Ware production two major innovations emerged. One was the introduction of polychrome decoration; the other one the use of tripod stilts during the firing process, which technically enabled a mass production in a hitherto unknown dimension (PAPANIKOLA-BAKIRTZI ET AL. 1999, 113; BÖHLENDORF-ARSLAN 2013, 28 with note 120). Both these novelties directly influenced the subsequent manufacturing of Byzantine glazed tablewares to a fundamental extent. "Palaeologan Pottery" relies so heavily on those two inventions, and its decorative repertoire maintains the one of the Zeuxippus Ware Family in such a way that makes it often difficult to distinguish the two groups from one another. Undoubtedly the Zeuxippus Ware Family has to be understood as the immediate predecessor of the so-

called Palaeologan Sgraffito Wares, especially the ones of the mid-13th to late 14th century (PAPANIKOLA-BAKIRTZI ET AL. 1999, 125; BÖHLENDORF-ARSLAN 2013, 29).

What seems to be the case from the mid-13th century onwards is a picture of multi-centered tableware productions. Particularly important here are the different areas around the Aegean, including Constantinople (Sirkeci), where regional workshops seem to have had established serving mostly local and regional demands (WAKSMAN ET AL 2014b, 417). Remarkable is, however, that many of these productions share the same morphological and decorative patterns and are often indistinguishable on a macroscopic scale. This seems to have been different during the later Middle Byzantine period (12th - early 13th century), especially with the case of the so-called "Middle Byzantine Production (MBP)" (IBID.). As a single-centered production (Chalcis) it dominated the Aegean market and was largely exported into the southern coast of Asia Minor, the Levant and as well to the Western Mediterranean. Before the MBP, the Constantinopolitan Glazed White Ware was an important exported commodity throughout the Aegean. With the strengthening of the MBP it lost its importance as traded good but remained the major tableware in Constantinople and, as the evidence from Küçükyalı suggests, also in its extramural suburbs. In the form of GWW IV it seems to have been very popular even until the end of the 13th century, a time when the MBP proper already lost its importance.

Possibly due to political fragmentation during the 13th and 14th centuries (cf. WAKSMAN ET AL 2014b, 417) the tableware production of that time intensely regionalized. Many centers, having common cultural traditions and strong bonds, however, produced very similar pottery. It includes ware types such as parts of the Zeuxippus Ware Family, Elaborated Incised Ware or Sgraffito Ware in Thessaloniki/

Sirkeci Style and could be called Palaeologan Sgraffito Ware or, as proposed here, simply "Late Byzantine Sgraffito Ware" (LBSgr).

CHAPTER 4

Cargo Amphorae from Küçükyalı

The term cargo amphora, or simply amphora, usually describes two-handled (rarely one-handled) ceramic containers. Those vessels generally fulfilled the function of packaging and transportation of commodities such as wine or oil. They were predominantly carried by trading ships throughout antiquity and the Byzantine era (cf. RAUH ET AL. 2013, 145f on the main purpose of amphorae). Their secondary utilization as storage jars or construction material was common practice. An amphora could also have served for both, as transport and storage jar, possibly in an alternating way throughout its lifetime. After its first journey as a cargo vessel, it might for example have been kept in a storage facility until it was emptied and used again to transport something else.

For the Küçükyalı amphorae (400) a main distinction between Late Antique/Early Byzantine (411-416) and Middle/Late Byzantine (421-427) was made. A bit more than 30% of the studied assemblage fits to the first category of the 4^{th}-9^{th} centuries, while approximately 50% belong to the second one of the 10^{th}-14^{th} centuries. The rest (400) represents a group of further unidentified amphora sherds (Fig. 17).

4.1 Late Antique, Early Byzantine and "Dark Age" Amphorae (4^{th}-9^{th} centuries CE)

Archaeological amphora research is generally considered to be one of the best instruments to determine Roman economy, especially its overall patterns on a regio-

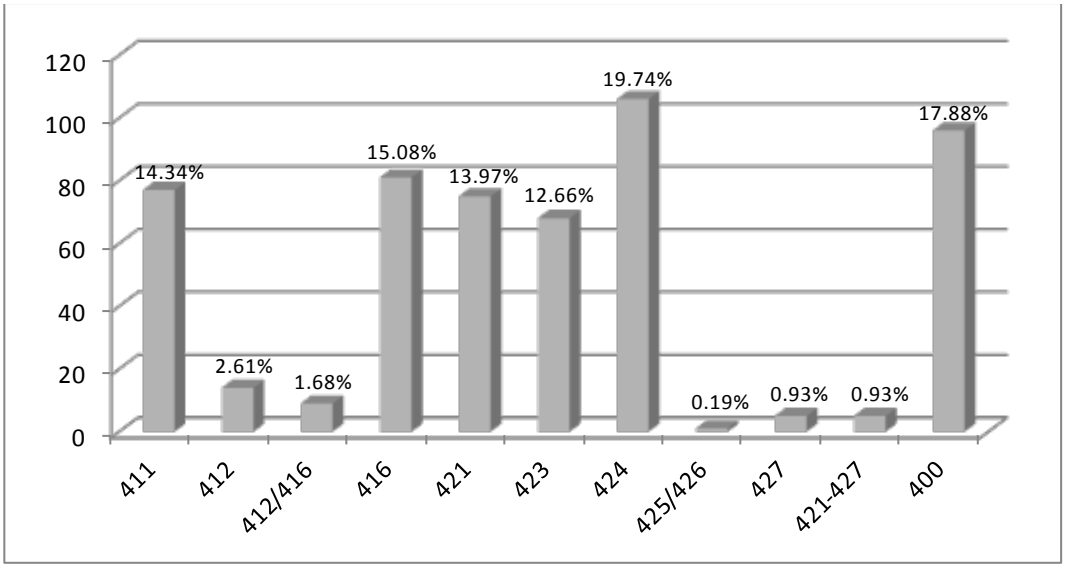

Fig. 17: Quantitative distribution of cargo amphorae (400) found at Küçükyalı. 411: LRA1; 412: LRA2; 416: Globular Amphora; 421: Günsenin Amphora 1; 423: Günsenin Amphora 3; 424: Günsenin Amphora 4; 425/426: Otranto Amphora 1/2; 427: Bjelajac Amphora 2 [author].

nal and inter-regional level. In the ideal case it is possible to reconstruct which and how much goods were how and when transported from one location or region to another (cf. e.g. KARAGIORGOU 2009, 37). The reality is of course more complex and aspects of provenance, distribution, reuse and many more are often hard to grasp or too entangled for clear interpretation. Still the best method to establish a foundation for further thinking is a typo-chronological categorization and mapping in its own archaeological sense. Late Roman Amphora (LRA) classification is broadly based on "Riley's package", which for the first time described LRA 1-7 as the main types of Mediterranean cargo vessels during the 4th-7th centuries (RILEY 1979; KARAGIORGOU 2009, 41, fig. 4.2; cf. also VROOM 2005a, 52-59, fig. 11.3-15.3). A useful typological overview, particularly for the Levant from the 1st to 7th century, is provided by Paul REYNOLDS (2005 with further lit.; cf. for Constantinople HAYES 1992, 61-71, with further lit.).

A major change in amphora morphology occurred around the 4th century CE. Hellenistic and Early Roman (ca. until the 3rd century) jars were highly uniform in volume and shape and executed as high quality ceramic vessels, being symmetrical

with a smooth surface (RAUH et al. 2013, 149-156). Late Antique amphorae in contrast, became generally smaller in height and very amorphous with irregular surfaces that feature extensive wheel-ridging, combing or grooves (IBID. 159). Further characteristics are bag-shape and varying sizes among the different subtypes and quantity generally gained a higher importance opposed to quality (IBID. 161f).

Looking for factors that could explain this decreased demand of aesthetic complexity, RAUH et al. (2013, 162) mention but eventually discard the theory of a shortage in work force from the 2nd century onwards, which fits to the traditional but outdated idea of a general crisis of the Middle and Late Roman state. They can actually prove that the production did not decline and that the volume capacities became more precise in their measurements during the Late Antique and Early Byzantine periods. Furthermore, the exchange value of goods was connected to weight and not volume, which means different products (with different weights), had to be packed into containers of different size. Individual products could have been linked to certain (sub-) types with varying dimensions which would for example explain the broad spectrum of the eleven LRA 1 subtypes (IBID. 164f; VAN ALFEN 1996).

It seems more plausible to seek explanation for the change in amphora morphology within the organization of the Late Roman military. The formerly thriving "free commerce" drastically decreased and the military more and more dominated the distribution and shipments of goods, particularly now also on local levels. In contrast to the Hellenistic "economy of abundance" the Late Antique and Byzantine one disposed itself of certain market economic patterns which lead to a disappearance of demand for "beautiful" transport jars. The supply of the army and its bureaucratic apparatus with surplus became highest priority and a top-down

directed business. Late Roman amphorae had to be robust and sustainable for logistic and not aesthetic requirements (RAUH et al. 2013, 165f).

4.1.1 Late Roman Amphora 1 (411)

[Pl. 1.10, 12.1-17]

The Late Roman Amphora 1 (LRA 1) can generally be considered as the commonest type of ceramic transport containers used in the Late Antique Mediterranean and, to a lesser extent, also the Black Sea area. With its initial production mainly in Cilicia (with prototypes already in the 3rd and 4th centuries; cf. OPAIŢ 2010) and Cyprus, it appears on nearly every site with an occupation in the 5th to 7th centuries, particularly in coastal settlements around the Eastern, but also Western Mediterranean. An extremely sandy, pinkish-yellow or cream colored to buff fabric, the cylindrical shape, the unevenly spaced horizontal ridging (or bands of ropes) all over the vessel and the roughly sliced handles are very characteristic for the LRA 1 type and make it quite easy to distinguish. The major goods transported with LRA 1 were most probably wine and oil (for discussions on fabric, shape, typo-chronology, function, production places and distribution see e.g. and with further lit.: BASS 1982, 155ff, 163ff; VAN ALFEN 1996; REYNOLDS 2005, 565-567; cf. also VROOM 2005a, 52f; FERRAZZOLI/RICCI 2009, 37f; FERRAZZOLI 2010, 47 fig. 41; ABADIE 1989, 53, fig. 10). The best published LRA 1 examples from Constantinople are known from the excavations in Saraçhane (HAYES 1992, 63f Type 5, 69 Type 21) and one complete specimen from the Theodosian Harbor in Yenikapı (BROUGHT TO DAYLIGHT 2007, 260, cat. Y19). Next to Cilicia and Cyprus also the Aegean can be noted as one region of LRA 1 production, particularly of its later variants and derivatives. LRA 1 workshops of the mid-6th to mid-7th century are especially known and well published from Halasarna on Kos (DIAMANTI 2010a, 203-206; 2010b).

Furthermore, abundant evidence for a 7th-8th-century manufacturing of LRA 1, including large kilns and several complete vessels, has recently been excavated on the Dodecnese Island of Lipsi, some 30 km offshore to the west of Didim (PAPAVASSILIOU ET AL. 2014; cf. IBID. 162 for further lit. on the Aegean production of LRA 1). A similar dated kiln-site is known again from the island of Kos, close to the village of Kardamaina (POULOU-PAPADIMITRIOU/DIDIOUMI 2010). The latest *survivals* of a LRA 1 tradition, usually in smaller vessel size than their predecessors of the 5th-7th centuries (cf. VROOM 2005a, 53), are known from 8th-9th-century manufacturing sites on the islands of Kos, Carpathos, Crete, Cyprus and possibly Rhodes (DIDIOUMI 2014, 171; POULOU-PAPADIMITRIOU/NODAROU 2014, 875, fig. 10). These relatively new research developments strongly support and finally confirm earlier scientific claims for an 8th-9th production and distribution of LRA 1-like containers (and other Late Antique and Early Byzantine pottery). Evidence for a continuation of certain Late Antique ware types into the 8th and 9th century (cf. Ch. 3.1.3) was already brought forward by ARMSTRONG (2009, 163f), who mentions also the Aegean Island of Chios, Limyra in SW Asia Minor and Cyprus as find spots for LRA 1 derivatives of such a late dating. The typological fragmentation and high diversity of LRA 1 "originals" from the 7th century onwards seems to be a general phenomenon where even a production at the southern Black Sea coast cannot be ruled out (WAKSMAN ET AL. 2014b, 920-922 with further lit.).

In Küçükyalı, fragments of LRA 1 occur quite frequently with 14.34% (77 EVE) of all the amphora pieces studied in here (Fig. 17). Among the Late Antique/Early Byzantine amphorae, however, it stays slightly behind the round bodied types LRA 2 (412) and "Globular Amphora" (416). The fabric colors vary between pale or light brown (7.5YR 6/4, 7/6; 10YR 7/3.5) and pinkish (5YR 7/6) to yellowish-brown

(5YR 5/6, 6/6). Some examples show a mixed firing with a brown core (7.5YR 5/3, 6/4) and a reddish-brown outer mantle (2.5YR 5/6, 5/8). The sandy texture usually includes a lot of small to medium sized lime, grey, reddish- and orange-brown as well as silvery and golden micaceous particles (15-30% of the matrix). Often a creamish-yellow (10YR 8/4) or yellowish-brown (7.5YR 7/6) slip can be attested on the exterior surface. Also in Küçükyalı the roughly sliced handles and the rope-like bands on the outer surface (produced while the unfired vessel is on the turning wheel) stick out in a characteristic way (Pl. 1.10, 12). The vast majority of LRA 1 (63 pieces) was found within the Tower fill (US 1006, US 1052, US 1075), which goes well in accordance with the Late Antique Fine Ware of the 5th to 7th centuries that was predominantly recovered from the same deposits (cf. Ch. 3.1).

4.1.2 Late Roman Amphora 2 (412)

[Pl. 13.1-14]

Almost as common as LRA 1 and with a similar wide distribution all over the Mediterranean and Black Sea area, is the Late Roman Amphora 2 (LRA 2). It is extremely well known from Aegean and Black Sea sites. An origin from within these areas is assumed but not verified (HAYES 1992, 66, Type 9 with further lit.; cf. VROOM 2005a, 55; KLONTZA-JAKLOVA 2014a, 801 with further lit.). Characteristic for this 4th to mid-7th-century type is the broad-bellied spherical body which bears a conical neck with a more or less wide opened, sometimes even funnel-shaped mouth. The small button on the center of the exterior base seems to be a specifically early attribute that vanishes before the mid-6th century (OPAIŢ 1984, 316). A late version of the 7th century with a more ovoid than round shape was designated in the course of the studies on the pottery of the Benghazi excavations as LRA 13 (RILEY 1979, 231). However, its strong resemblance with the LRA 2 led generally to its classification as

a subtype of LRA 2 and shall be treated here in the same way (cf. DIAMANTI 2010a, 207 for a different handling). Sometimes the LRA 13 is already counted to the Globular Amphora (416) of the following centuries (POULOU-PAPADIMITRIOU/NODAROU 2014, 874). One feature that sticks out for both, LRA 2 and LRA 13, is the horizontal, close-set, very sharp and straight or wavy combed grooving, going halfway down from the shoulder (for shape, surface treatment, fabric and dating see: HAYES 1992, 66, Type 9 with further lit.; VROOM 2005a, 55, figs. 12.1-2 on p. 52; DIAMANTI 2010a, 206-208, figs. on 488-543 and 569-676; for the sharp grooves cf. also KLONTZA-JAKLOVA 2014a, figs. 5-6; cf. also ABADIE 1989, 51, fig. 7).

As it is usually the case with other kinds of Late Antique or Early Byzantine amphorae (LRA 1, LRA 5/6), LRA 2 as a type does not simply cease to exist during the later 7th century. There clearly is a gradual development towards the so-called Globular Amphora of the 7th-9th centuries (416, see Ch. 4.1.3). The type 2 cargo amphorae of the 7th-century Yassi Ada shipwreck could be considered as one of the best archaeological example for this transitional phase (BASS 1982, 157-160; VAN DOORNINCK 1989, 247-253 esp. fig. 1). The majority of the round-bodied jars from there still show the "classical" LRA 2 characteristics as mentioned above (BASS 1982, 157f subtype 2a), some others, however, are decorated with separated horizontal bands of straight or wavy grooves (IBID. 159f subtype 2b), a feature more common for the Globular Amphora (416) of the Byzantine "Dark Ages". A combination of both is possible as well (IBID. 160 fig. 8-6). Also in Saraçhane HAYES (1992, 66, Type 10; 71, Type 29) recognized some transitional types between LRA 2 and Globular Amphora. In general it seems to be the case that LRA 2 and its late subtype LRA 13 appear to be the immediate predecessors for the broad family of the "Byzantine Globular Amphorae" (416) of the 7th-9th centuries (POULOU-

PAPADIMITRIOU/NODAROU 2014, 874; for transitional subtypes of the 7th-8th centuries see also POULOU-PAPADIMITRIOU/DIDIOUMI 2010, 749, fig. 11).

Only 2.61% (14 EVE) of the studied Küçükyalı amphorae could be identified as LRA 2. Their fabric color is reddish-brown (2.5YR 5/6, 5/8; 5YR 4/6, 5/6) or sometimes dark pink (5YR 7/4). Very often the outer layer of the body, approximately as thick as the frequently occurring sharply combed grooves (Pl. 13.1-14), is fired in a pale or buff brown (7.5YR 7/4, 6/6; 10YR 7/4). Small to medium sized limestone, quartz, reddish-brown specks and micaceous particles (gold and silvery) belong to the inclusions (10-25% of the matrix). A dark yellow (7.5YR 7/6) slip rarely appears on the exterior surface. Except for one example, all LRA 2 pieces discussed here have been retrieved from deposits inside the Tower (US 1052, US 1075).

4.1.3 Globular Amphora (416)

[Pl. 3.2, 14.1-9]

As mentioned above, the round-bodied character of the LRA 2 does not vanish with the outrunning of the 7th century. Many derivatives dated until the 8th and 9th centuries are known for example as LRA 2/13 variant, Saraçhane Amphora 32-42 or are simply designated as "(Byzantine) Globular Amphora". This term seems to describe a diversified group or family of interrelated cargo amphorae which are dominant during the late 7th-9th centuries in Southern and Northern Italy, Butrint (Albania), all over the Aegean, Constantinople and the Black Sea region (see especially VROOM 2012, 292-294, fig. 8, with further lit.; for Constantinople see HAYES 1992, 71-73, fig. 23.2-13; for a summarizing typo-chronology of Aegean Globular Amphorae with further lit. see POULOU-PAPADIMITRIOU/NODAROU 2014, 874f; cf. also ARTHUR 1989, 84-87). The ovoid or globular body of these jars is often

plain or has a very shallow wheel ridging. Also common are horizontal bands of straight or wavy combing on the shoulder which makes it typologically distinguishable if only fragmented body sherds are present (cf. also VROOM 2005a, 60f; IMPERIALE 2004, 330 fig 3.1; NEGRELLI 2007, 322 fig. 18.3-5; IBID. 2012, 160 fig. 3; PARSHINA ET AL. 2001, figs. 10, 15, 19, 23, 26-28, 30). Combining morphological characteristics of both, the subtype of the so-called "Byzantine Globular-Ovoid Amphora" is a hybrid of late LRA 2/LRA 13/Byzantine Globular Amphorae (412, 416) and late versions or survivals of LRA 1 (411) (POULOU-PAPADIMITRIOU/NODAROU 2014, 874f, figs. 5, 10; KLONTZA-JAKLOVA 2014a, 801f, figs. 10-12; 2014b, 171, fig. 8; cf. also WILLE 2007, 367-369, figs. 2 and 3). A 7th-8th-century production site with kiln remains and wasters of Globular Amphorae was unearthed on the Aegean Island of Kos (POULOU-PAPADIMITRIOU/DIDIOUMI 2010, especially fig. 6.a-b).

Together with a transitional variant (412/416), the Globular Amphora forms with 16.76% (90 EVE) a substantial part among all amphora types in Küçükyalı and marks the most common of the Early Byzantine ones. The majority of the Küçükyalı sherds are fired in brown to orange- or reddish-brown (2.5YR 6/8; 5YR 5/4, 5/5, 5/6, 5/8, 6/6, 6/8; 7.5YR 6/6). Sometimes a reduced firing in grey (2.5Y 6/3) or dark grey (2.5YR 4/1, 7.5YR 4/1) can be observed. Rarely two body layers occur, with the inner one in light red (2.5YR 7/6) and the outer in pale brown (10YR 7/4). The fabric temper includes small to medium-sized limestone, red, brown and grey grits (5-10% of the matrix). It can be non- or extremely micaceous (3-25% of the matrix). Quite frequently are a wide shallow ridging and a creamish slip (10YR 8/2, 8/3) on the exterior surface. Very characteristic are parallel bands of fine, horizontal and straight

grooves (7-8 lines each) on belly and especially shoulder (Pl. 3.2, 14). In some cases a light brown (10YR 6/4) or brown (7.5YR 5/3, 5/4) surface skin can be noticed.

4.2 Middle and Late Byzantine Amphorae (9th - 14th centuries CE)

Other than in the West, potted amphorae remained to be the common kind of transport vessel in the Eastern Mediterranean and the Black Sea throughout the Middle Ages until the 14th century. Their main purpose of being a container predominantly for wine and oil shipments stayed the same as well. Only their size and shape changed gradually in time, probably in close dependency on alternating ship types, as well as on the general economy, technology, logistics and trade patterns (cf. generally BAKIRTZIS 1989; GÜNSENIN 2009, 145-147). The first scholar who systematically studied and categorized medieval amphorae was Nergis Günsenin. In the course of her PhD thesis, she traveled to dozens of museums all over Turkey and classified the amphorae into twenty-eight different types (GÜNSENIN 1990). Four of them, Günsenin Amphora 1-4 (421-424), can be considered as the main types that were in use between the 9th/10th and 13th/14th centuries (GÜNSENIN 1989; a 14th century dating is only proven for 424, see Ch. 4.2.3).

4.2.1 Günsenin Amphora 1 (421)

[Pl. 16.1-9]

Being somewhat the successor of the 8th-9th-century Globular Amphora (416), but at the same time a new development that breaks to a large extent with the Late Antique and Early Byzantine traditions (cf. BAKIRTZIS 1989, 76), the Günsenin Amphora 1 of the 9th/10th to early 12th centuries definitely was "one of the most widely exported of all Byzantine amphorae" and "the commonest of all mid-Byzantine amphora types" (HAYES 1992, 75). The round-bellied, thick-walled jar

with heavy handles attached to a short neck bears a closer wheel ridging around the belly and heavy ridges in bigger distance towards shoulder and bottom. It consists of a course micaceous fabric colored in red, orange or light brown. With its origin in the Marmara region, the Günsenin Amphora 1 is widely distributed from South France throughout the Balkans, the Aegean and Western Asia Minor to Constantinople and the Black Sea area and South Russia. It got even as far as Cyprus, the Levant, Egypt or Sweden (for aspects of typo-chronology, provenance and distribution see GÜNSENIN 1989, 269-271, figs. 2-4; 1995, 176, figs. 13-14; 1998, 283f; 2009, 152; BJELAJAC 1989, 111f, fig. 2; VAN DOORNINCK 1989, 253f, fig. 4.1-2; HAYES 1992, 73f, Type 54; VROOM 2005a, 94f; TODOROVA 2011, 132-134, pl. 1.1-5; BASS/VAN DOORNINCK 2004, 268, fig. 15-3; MIMAROĞLU 2011, 71-73). Very numerous and impressive are the extremely well preserved vessels from the shipwrecks YK 1 and YK 12 discovered at the Yenikapı excavations inside Istanbul's historical peninsula (GÜNSENIN 2009, 149f; for *in situ* situations see: ÖZSAIT-KOCABAŞ 2013; ASAL 2007; KOCABAŞ/ÖZSAIT-KOCABAŞ 2007; PULAK 2007). The earliest variant of Günsenin Amphorae 1 with a less globular body shape, a wider wheel ridging and often without the characteristic cream colored surface slip, was unearthed with the YK 12 shipwreck which is dated to the 9th century (DENKER ET AL. 2013a, 205-209, cat. 239-244 and cat. 246-254: cf. also BJELAJAC 1989, 112-113, fig. 2.1-3). Those vessels still show a bit of a stronger resemblance to the latest LRA 1 survivals or globular-ovoid amphorae (Ch. 4.1.1 and 4.1.3) of which two examples were also contextualized together with the early Günsenin Amphorae 1 of YK 12 (DENKER ET AL. 2013a, 204, cat. 237 and 209, cat. 255). An enormous number of the classical 10th-11th-century version as introduced by GÜNSENIN (1989, 269-271), yielded the YK 1 shipwreck (DENKER ET AL. 2013b, 211-215, cat. 256-274). The amphora

mouths could have been sealed with stone ball stoppers as it was found *in situ* in the Bulgarian city of Silistra (TODOROVA 2011, 133, pl. 1.1).

As the only amphora type of this study which can safely be dated to the 10th and 11th centuries, the Günsenin Amphora 1 represents with almost 14% (75 EVE) a considerable amount of the cargo vessels from Küçükyalı (Fig. 17). The most common fabric color is brown (5YR 5/6, 6/6), rarer reddish-brown (2.5YR 5/6, 5/7) or, rather uncommon, light brown (7.5YR 6/4). Sometimes an orange-brown fired core appears (2.5YR 6/8), enclosed by a deep brown mantle (7.5YR 5/6) or just a thin external layer in a paler yellowish-brown (7.5YR 7/6). The matrix is relatively porous and usually rough but can be also quite fine. It includes small to medium-sized lime, quartz, reddish-brown mudstone and micaceous particles (10-15% of the matrix). A broad and relatively shallow ribbing characterizes the exterior surface which is at least partly covered by a creamish (10YR 8/3, 8/4) or pale brown (10YR 7/4) slip (Pl. 16). Occasionally splashes of it occur also on the vessel's interior. Among the very fragmentary pieces from Küçükyalı, it rarely can be observed that different body parts (neck/shoulder, belly, base) have been made separately and then luted together, as it is described for Constantinopolitan examples by HAYES (1992, 73; cf. also VROOM 2005a, 95).

Large production facilities for Günsenin 1 amphorae, with dozens of kilns and wasters, have been localized predominantly around Ganos (Gaziköy) and Chora (Hoşköy) at the west coast of the Marmara Sea. But there is evidence as well for the manufacturing of these amphorae on Marmara Island (Proconessos) and it can furthermore be assumed for other places within the northwestern, wine producing region of the Marmara Sea (GÜNSENIN 1993; 1998a 282f; 1998b, 309-310; 2009, 147). It seems unquestionable that Günsenin 1 amphorae were containers for a mass

product, namely Thracian wine from the Ganos area, and that they were transported towards all directions, originating in the northwestern Marmara region. The strong trade relations with the nearby Capital (see Saraçhane and Yenikapı evidence) are obvious in terms of consumption and redistribution, the latter especially towards the Black Sea area. The wine production in the Ganos region was not just influenced but most probably controlled by a large monastic network centered at Ganos. How the whole procedure of monastic production and trade was conducted exactly, remains in this case yet open, but it becomes more and more evident that Middle Byzantine monasteries also played a powerful economic role (cf. GÜNSENIN 2009, 150-153).

4.2.2 Günsenin Amphora 3 (423)[12]

[Pl. 17. 1-8]

This tall and slender fusiform jar with a long narrow neck is quite common during the 12th-13th centuries. Very characteristic are the massive vertical high-slung handles and the fine horizontal combing covering the upper vessel part between shoulders and lower belly. While its place of origin still remains unknown (Aegean or Black Sea area), its distributional zone is extremely wide and extends from Southern France and Italy to Cyprus and Palestine, and from the Northern Black Sea coast to the Sea of Marmara and the Aegean; some pieces were even discovered as far North as Sweden (for typo-chronological aspects, comparative examples and distributional zones see: GÜNSENIN 1989, 271ff, figs. 8-11; 1998b, 310, fig.4; HAYES 1992, 76, Type 61, fig. 26.10-11; VROOM 2005a, 97f; MIMAROĞLU 2011, 74-76; TODOROVA 2011, 136, pl. 2.3-4).

[12] The type Günsenin Amphora 2 (422) is due to its extremely similar fabric to 423 hard to identify if the sherds are relatively fragmented and it could not be recognized here. Preliminary observations of the pottery excavated in 2015, however, indicates a low presence of 422 in Küçükyalı.

In Küçükyalı the Günsenin Amphora 3 shows a strong appearance with 12.66% (68 EVE) of the entirety of amphorae studied here. Its flaky and often rough fabric is characterized by maroonish-brown hues (mostly 5YR 5/4, 5/6; also 5YR 5/3, 5/7; 2.5YR 5/4) and only in one case a reddish-brown core is noticed (2.5YR 5/6). To the containing particles belong small to medium-sized limestone and rarely red grits or quartz (10-15% of the matrix). Extremely common, particularly on the handles, is a large number of elongated organic inclusions of a creamish-yellow color (probably straw) and their voids respectively (cf. VROOM 2005a, 97). A cream (2.5Y 8/2, 8/3; 10YR 8/2) or not often pale brown (10YR 7/4) slip covers the exterior surface. The distinguishable close-set grooves on the shoulder and the immense handles appear also here very frequently (Pl. 17).

4.2.3 Günsenin Amphora 4 (424)

[Pl. 6.8, 10.1-2, 19.1-9]

The Günsenin Amphora 4 is distinguished by its large spherical shaped body that opens with a comparatively tiny and short-necked moth. The massive bow-shaped handles are fused with the rim, extend above it and are reattached at the widest part of the belly (Pl. 19.1-9). It is extremely common all over the coastal settlements on the Black Sea from the Crimea, Romania and Bulgaria to the Turkish North coast, but also in Constantinople, the Sea of Marmara and the Central Balkans. A provenance could not be determined yet, but the Black Sea area seems probable here. With a peak in the 12th-13th centuries, it definitely was in use until the 14th, probably even the early 15th century and can therefore be considered as the latest Byzantine amphora type (for typology, dating and distribution see: GÜNSENIN 1989, 274f, figs. 12-14; 1998b, 310, fig.4; BJELAJAC 1989, 115, fig. 3.3; HAYES 1992, 76, Type 62, fig. 24.12-13; VROOM 2005a, 99f; MIMAROĞLU 2011, 76f; especially for the late

dating of examples from the Black Sea area see TODOROVA 2011, 136f with further lit.).

With close to 20% (106 EVE) of all studied amphorae, the Günsenin Amphora 4 is the most common transport container in Küçükyalı. Together with 423, it clearly dominates the late amphora types of the 12th-14th centuries. The fabric color generally appears in different sorts of reddish-brown (2.5YR 6/6; 7.5YR 6/6; 5YR 5/6, 6/6, 6/7). Uncommon is a yellowish-brown hue (10YR 7/6). Due to a mixed firing atmosphere, the handle area can sometimes be dark greyish-brown (2.5Y 4/2). The hard and fine texture has a clean breaking and ranges from a smooth to a hard feel. Common inclusions are small (and occasionally large lumps of) lime and quartz particles (5-10% of the matrix). Small and sometimes medium-sized micaceous bits occur in significant quantities (3-10% of the matrix) especially in the surface ("mica-dusted"). A shallow ridging in the shoulder-zone and a creamish-dull slip (10YR 8/4) on the exterior surface are very typical. A light brown (7.5YR 6/4) interior wash can sometimes be observed.

Special attention has to be drawn once more to the closed contexts of the chamber which was sealed in the early 14th century and is directly attached to the western wall of the Tower (DEMİRTİKEN 2012, 92-96). Particularly in its deepest layers (US 1073, US 1074), two examples of Günsenin Amphorae 4 have to be highlightened. Both are characterized by an articulated horizontal band of broad grooves directly below the lower handle attachment and a shallower grooving on the shoulder above. The first vessel is preserved almost in its entirety (complete profile), with a height of 55 cm and a width of 45.5 cm (Pl. 10.2). Almost all of its sherds were retrieved from US 1073, just four of its base fragments are from US 1026 directly above it. The second specimen is preserved only in its upper part consisting of rim, neck, shoulder and the

two handles (Pl. 10.1). Its fragments were mainly discovered in US 1073 as well, but four of its shoulder pieces come from US 1074, directly beneath it. Thus, the second vessel mentioned here, was definitely situated directly below the first one. Moreover, the upper amphora seems to have had an upside-down position, since its base was partly covered by the upper most layer (US 1026) while its remaining sherds are from the one below it (US 1073). Considering the chamber's overall context, which included high quality architectural sculpture, marble slabs, *opus sectile* and mosaic fragments, as well as a GWW IV pitcher filled with baked grain seeds (DEMİRTİKEN 2012, cat. ED 56), an intentional deposition also for the Günsenin 4 amphorae seems to be extremely likely. In the course of the final abandonment of the church building in the early 14th century, it appears that some of its precious, and maybe holy, items were purposefully buried (IBID. 160-162, 207f; for the dating of the abandonment phase see RICCI 2012, 157f). If the contextualized Günsenin 4 amphorae carried wine, remains pure speculation since no residual analysis could be conducted.

Very recently, during the excavation in summer 2015, another almost complete example of a Günsenin Amphora 4 was found. This one is clearly bigger than the one mentioned above and was embedded into a floor level that most probably belonged to the latest Byzantine occupation phase in Küçükyalı, the 14th century (personal correspondence with A. Ricci). This context is clearly of domestic nature and undoubtedly proofs the reuse of these amphorae as storage jar. The top part of the amphora must have been chopped off to provide an opening large enough to retrieve goods from it.

4.2.4 Otranto Amphora 1 and 2 (425, 426)

[Pl. 2.1]

In the southern Italian region of Puglia (Salento) a group of transport amphorae was produced around the central place of Otranto between the 10th and early 13th centuries. These vessels bear a distinct creamish or pale yellow fabric color and with their piriform and ovoid ribbed bodies, they stand clearly in the tradition of Byzantine production. Two major types - Otranto Amphora 1 (425) and 2 (426) - have been distinguished (ARTHUR/AURIEMMA 1996; VROOM 2005a, 102f; ARTHUR/ IMPERIALE 2015, 45f, fig. 27; for a comprehensive study on the Otranto excavations, including ceramics see MICHAELIDES/WILKINSON 1992 and D'ANDRIA/WHITEHOUSE 1992). While they are well known in Southern France, Italy, the Balkans and Greece (VROOM 2005a, 103), Otranto Amphorae seem to be extremely rare or non-present further east. For examples from Constantinople, HAYES (1992, 76f) mentions his Type 67 from Saraçhane, also there a rather uncommon amphora type.

In Küçükyalı only one example of Otranto Amphorae has been identified so far (Pl. 2.1). The handle fragment could not explicitly be assigned to either one of the two types. However, the presence of a thick and ribbed strap handle, which does not protrude above the rim level, makes it more likely an Otranto Amphora 1 of the 10th and 11th centuries (cf. VROOM 2005a, 103). The piece was unearthed from the topsoil (US 1000) and is characterized by a coarse and sandy fabric of a creamish-beige color (10YR 8/3). Small brown, grey and dark grey grits form the spectrum of inclusions (15% of the matrix).

4.2.5 Bjelajac Amphora 2 (427)[13]

[Pl. 6.9]

The Bjelajac Amphora 2 got its name through excavations in Danubian Serbia, particularly in the Belgrade Fortress (BJELAJAC 1989). Its major distribution zones are located all over the Balkans, the Northern Black Sea coast and also Constantinople. This cargo vessel type is mainly dated to the 12th and 13th centuries and with its high slung handles and the slender, heavily ribbed body it fits well into the range of Byzantine Amphorae of this late period. The red, well refined clay is typically covered by a creamish-pale brown slip (IBID. 113-115; for examples from Ras see POPOVIĆ 1989, 128f, fig. 6.3-5).

The three known specimens from Küçükyalı (Pl. 6.9) show in general the same features. Their hard fired fabric is colored in reddish-brown (5YR 5/6, 6/6) and includes some small to large reddish-brown lumps of mudstone, as well as lime and quartz particles (5-10% of the matrix). A cream-yellowish slip (10YR 8/4; 2.5Y 8/3) can be observed all over the surface.

[13] The type Bjelajac Amphora 1 equals to Günsenin Amphora 1 (421) (cf. BJELAJAC 1989, 111f; VROOM 2005a, 95).

CHAPTER 5

Conclusions and further remarks

The work conducted in the course of this thesis first of all led to a broad typo-chronological presentation of stratified ceramics excavated at a site that once belonged to the Asian suburbs of Byzantine Constantinople. It is now situated in Istanbul's Küçükyalı district, embedded into the modern boomtown as it emerged during the latter part of the 20th century. This study can be considered as a first attempt to lay ground works for a full-fledged pottery research of this site in the near future. It contains and refers only to significant archaeological contexts excavated in 2010 and is restricted to the investigation of (mostly glazed) tableware and cargo amphorae. Thus, it was dealt here from the very beginning with a limited selection, looking through a window that represents the average but not the whole picture. Especially domestic pottery and cooking wares, but also the remaining deposits of the 2008-2010 and 2014-2015 seasons should become an object of study, in order to draw a more complete picture. This thesis, nevertheless, has produced significant results, albeit preliminary, for the general understanding of the stratigraphy and archaeology in Küçükyalı. It has furthermore enhanced the common knowledge on Byzantine ceramics from the area of Constantinople, especially from its Asian suburbs.

Assessing the tower contexts it unfortunately is undoubtedly true that they are disturbed at least by Late Byzantine pottery, according to the excavation report, as

well by modern finds of the 20th century. However, the tower fills (US 1006, 1052, 1075) contained a bit more than 85% of all the Late Antique and Early Byzantine ceramics (ware groups 100 and 410, excluding 416) that were part of this study. Over 70% of the pottery retrieved from the tower's major layer (US 1052) can be dated between the 4th and 7th centuries CE. Adding some architectural spolia and coins to this evidence, a Late Antique/Early Byzantine occupation that predates the architecture which is visible today is unquestionable for Küçükyalı or within the site's close proximity.

The consistent presence of pottery dated to the so-called "transitional period" or "Dark Ages" (7th-9th centuries), predominantly GWW I and the Globular Amphora (416), clearly shows that there is no gap in the site's chronology. It is without a doubt that a continuous settlement took place at Küçükyalı or its vicinities between the 4th/5th and 14th centuries CE.

Moving to the tower area (cf. Fig. 9), an extensively spoliated marble pavement somewhat anticipates abandonment and might represent the last medieval settlement phase in Küçükyalı. This floor was constructed on a layer recorded as US 1002, which according to numismatic evidence (Andronicus III, 1328-1341) cannot be dated earlier than the 2nd quarter of the 14th century. Since no 15th-century ceramics could securely be isolated so far, the site seems to have been abandoned totally, or at least to a large extent, within the 14th century, according to the numismatic evidence definitely after 1328 (cf. RICCI 2012, 157f). The hypothesis that one of the few 14th-century earthquakes or the nearby Battle of *Pelekanon* (Maltepe) in 1329 (NICOLLE ET AL. 2007, 174f) or both are responsible for the desertion sounds reasonable but escapes final verification.

Covered by the aforementioned 14th-century-layer (US 1002) was a sealed chamber (cf. Ch. 1.3, Figs. 12-13; DEMİRTİKEN 2012). This context is already known for its high quality architectural sculpture, *opus sectile*, mosaic and fresco fragments, most probably all originating from the church's interior decoration. Among these a GWW IV pitcher filled with grain seed was intentionally deposited. After intensive work also on the course ware found in the chamber, at least one complete Günsenin 4 amphora can now be added to the inventory of this extraordinary archaeological setting (Pl. 10). Study of the stratigraphic location of the various amphora parts reveals that it was deposited in an upside down position. Interpreted within the general assumption of an intentional burial of valuable and perhaps sacred objects in the course of the site's abandonment, this amphora may have contained (blessed?) wine accompanying the grain in the pitcher already mentioned.

Very important for a 14th-century dating of the chamber deposits (US 1026, 1073, 1074) is one base fragment of the so-called "Fette Ware" (Pl. 9.7). This ware type exclusively occurs in the 14th century and again confirms such a dating as well for Günsenin 4 amphorae. The creation of the chamber, together with its probably ritual deposition, must therefore have happened very short time before the construction of the spoliated marble pavement on top of it. Both are steps of the same undertaking during the 14th century, at a time of abandonment when the church was deprived by its lavish ornamentation of the Middle Byzantine period and maybe even had stopped functioning as a sacred space.

The abundance of Glazed White Ware IV (Fig. 16) and Late Byzantine Sgraffito Wares (Fig. 15) shows that the vast majority of the pottery studied here can be dated to the 12th-14th centuries (cf. ware type chronologies in Fig. 14). Not only the GWW but, as the Sirkeci evidence shows (see Ch. 3.4), also larger parts of the LBSgr found

at Küçükyalı were probably produced in Constantinople, which indicates and further emphasizes Küçükyalı's close relationship with the capital. Also among the amphorae, the 12th-13th/14th-century Günsenin 3 and 4 types (423, 424) are clearly peaking (cf. Fig. 17; for chronologies see Fig. 14). Given the aforementioned evidence for partial abandonment during the 14th century, this implies a lively occupation at Küçükyalı during the 13th century. This includes the entire duration of Latin rule in Constantinople (1204-1261) and it is possible that significant amounts of resources were directly circulated from Küçükyalı to the Pantokrator monastery at the capital. Its *typikon*, issued by Emperor John II Komnenos in 1136, mentions six older monasteries which became dependencies of the Pantokrator (JORDAN 2000, 730, 752f). One of them is the monastery of Satyros which is currently identified with the archaeological site at Küçükyalı (RICCI 1998, 148; 2012, 150; 2014, 374; see Ch. 1.1, 1.2). In their shape rather unusual for Constantinople are two flat-bottomed copper alloy oil lamps found at Küçükyalı in 2009. They share comparable features with 13th-century examples from Italy, the Balkans and Greece (RICCI 2012, 159) and might be an indicator for Latin or at least Western influence of some kind. Also the shapes of Late Byzantine ceramics could have been influenced by Frankish or general Western European habits. VROOM (2003, 233) claims that the various types of LBSgr tend towards a significant shrinking of vessel size with a narrower and deeper morphology. The repertoire of table wares became a lot more suitable for a personal consumption of food and especially beverages. Also in Küçükyalı the deep shapes are dominant in the 13th and 14th centuries (cf. e.g. Pl. 6.3-5,7).[14]

It seems impossible, on the other hand, to determine whether there also existed strong ties to the exiled Byzantine Empire of Nicaea, but due to its relatively close

[14] On Latin Constantinople and the Frankish Aegean in general see e.g. LOCK 1995.

proximity from Constantinople's Asian suburbs, it is a point that deserves to be kept in mind.

It furthermore seems important to mention that the claimed hypothesis of a prosperous 13th century at Küçükyalı based on ceramics analysis does not necessarily represent the real case. First of all, the high amounts of GWW IV pieces can as well be associated to the 12th century. More important, however, is the fact that the analyzed deposits represent only the upper layers on the platform (except for the tower fills). No deeper trenches on the elevated platform or excavations at the lower located cistern could be conducted so far. The earlier, Middle Byzantine layers might just not be discovered so far and the preliminary statistics of this research gave a somewhat distorted picture. Judging from the large amount of high quality architectural sculpture dated to the later 9th and 10th centuries, and with the construction of the church itself, a high prosperity is undeniable for this time. Evidence for architectural refurbishment or the construction of new buildings during the 13th century is, on the other hand, nonexistent.

In the same way as with the tablewares, the evidence of cargo amphorae is uninterrupted between the 4th and 14th centuries. A solid presence of LRA 1 and one possible piece of LRA 5/6 imply trade relations to the Eastern Mediterranean, such as Cilicia, Cyprus and Palestine. Together with the LRA 2, which confirms the Aegean and Black Sea trade, a situation as it is normal during Late Antiquity can be attested. Globular Amphorae indicate a stronger focus on the Aegean from the 7th century onwards. That is continued during the Middle Byzantine period with the Marmara Sea trade predominantly carried by Günsenin 1 Amphorae from the island of Ganos. Represented by considerable amounts, Günsenin 1 is also the only amphora type of 10th-11th centuries at Küçükyalı.

The notion of a high importance of the Aegean Sea trade finds support in very recent research results. Günsenin Amphorae 2 and 3, the latter one extremely common in Küçükyalı, seem to have been produced in Chalcis (near Corinth) alongside with the Middle Byzantine Productions (MBP).[15] The latest type of Byzantine transport amphorae, the large spherical Günsenin Amphora 4, dated from the 12th to the early 15th century, appears to be the most prevalent one in Küçükyalı. That indicates powerful trade relations with central places along the western and northern coasts of the Black Sea throughout the 13th and 14th centuries.

Future research at Küçükyalı, particularly in the field of pottery, should aim at the addition and processing of more data collected during previous excavations. The analysis of deposits from 2008, 2009, 2014 and 2015 could refine the stratigraphic understanding of the site, while the "Road Area" excavations from 2010 offer large amounts of partly well preserved ceramic material, whose study might complete the general typo-chronological spectrum. The excavation of a garbage pit discovered in 2015 should be finalized. Very well preserved cooking pots and GWW IV dishes found in there form a highlight that could trigger further research, not only on table ware and amphorae, but also on cooking and common ware of the site. At the end it must be emphasized that only chemical analysis of the clay can detect the provenance of specific ware types. Well-contextualized samples from Küçükyalı should be analyzed in order to better understand patterns within the multi-centered "Late Byzantine Productions".

[15] Personal communication by S. Y. Waksman and J. Vroom at the XIth Congress AIECM3 on Medieval and Modern Period Mediterranean Ceramics held at Antalya in October 2015. For MBP see WAKSMAN ET AL. 2014a.

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CATALOG OF THE STRATIGRAPHIC UNITS (US)

The catalog is organized by listing the archaeological deposits (US) that included pottery, separated in tower and tower area groups. The catalog entries provide brief information about the US's location relating to the grids (cf. Fig. 6) and their archaeological features, such as soil condition and included materials. The core of each entry presents a tabulation of ware type quantifications consisting of the number of "estimated vessel equivalents" (EVE) and the percentage (%) for each ware type respectively. The ware types are represented by their number codes explained and listed in Chapter 2.2. This quantification is followed by chronological results for each US. The chronological range is based on the entire spectrum of the pottery of the US. Added by numismatic evidence (if any), the entry ends with the final dating of the deposit, based on the latest ware type or other objects like coins or various materials relevant for the dating.

TOWER

US 1006

grid: A1-2, B1-2.

arch. feature: Fill of debris. Compact and irregularly shaped with yellowish soil including brick and ceramics.

ware type quantities:

ware type	EVE	%
100	1	7.14
120.3	1	7.14
400	3	21.42
120.10a	1	7.14
120.1.d	1	7.14
100 (or earlier)	2	14.28
411	3	21.42
416	2	14.28
total	14	100

chronological range: 5th - 9th century.

numismatic range: early - mid-7th century (Phocas, Constans II).

dating of the deposit: mid-13th - 14th century (above US 1052 which has very few 20th century intrusions).

US 1052

Plates: 1; 11; 12; 13.2-14,16; 14.1-4,6-7; 15.1-2

grid: A1-2, B1-2.

arch. feature: Fill of debris. Very similar to US 1006, but with high concentration of crushed stone and brick fragments.

ware type quantities:

ware type	EVE	%
100	18	9.18
110.105	1	0.51
120	1	0.51
120.3	21	10.71
120.10a	6	3.06
120.10c	1	0.51
130	1	0.51
130.1	2	1.02
130.11	1	0.51
100 (or earlier)	6	3.06
221.1	1	0.51
221.1/231.1	2	1.02
221.2.1	1	0.51
LBSgr	9	4.59
400	39	19.89
411	55	28.06
412	12	6.12
416	9	4.59

412/416	5	2.55
418 (spatheion)	1	0.51
421	1	0.51
423	3	1.53
total	196	100

chronological range: 4th - 14th century.
numismatic range: Roman - Middle Byzantine; one from 6th century (Justinian I).
dating of the deposit: mid-13th - 14th century (very few 20th century intrusions).

US 1075
Plates: 13.15
grid: A1-2, B1-2.
arch. feature: Fill of debris. Various sized crushed stone and few brick.
ware type quantities:

ware type	EVE	%
100	1	10
120.3	1	10
221.4	1	10
411	5	50
412	1	10
415 ?	1	10
total	10	100

chronological range: 4th - 13th century
dating of the deposit: 12th - 13th century.

TOWER AREA

US 1000
Plates: 2
grid: A1-4, B1-4, C1-3.
arch. feature: topsoil.
ware type quantities:

ware type	EVE	%
221.2.1	1	3.84
221.4	5	19.23
LBSgr	15	57.69
313	1	3.84
400	2	7.69
426	1	3.84
modern roof tile	1	3.84
total	26	100

chronological range: 9th - 20th century.
dating of the deposit: 19th - 20th century.

US 1001
Plates: 2; 15.5,7-8; 16.1; 17.2; 18.6; 20.2-3,6,14
grid: C3.
arch. feature: Layer beneath the topsoil with dry soil and small stones. Stretches out over the entire excavated area.
ware type quantities:

ware type	EVE	%
221.1/231.1	3	1.51
221.2.1	3	1.51
221.2.2	3	1.51
221.3	1	0.5
221.4	12	6.06
222	2	1.01
230	1	0.5
231.1	1	0.5
232.1.3-4	4	2.02
233.2	1	0.5
233.8	1	0.5
LBSgr	123	62.12
313	1	0.5
315	4	2.02
400	5	2.52
411	1	0.5
421	5	2.52
422/423	2	1.01
423	2	1.01
424	20	10.1
Seljuk (turquoise gl.)	2	1.01
Unglazed Incised Ware	1	0.5
total	198	100

chronological range: 7th - 14th century.
dating of the deposit: 14th century.

US 1002
Plates: 2; 15.6,9,16,18; 16.4-9; 18.1, 7-8; 19.8-9; 20.7-9,11-12,15
grid: A3, B1-4, C1-3.

arch. feature: Mixed brown-yellowish layer. Stretches out over the entire excavated area. Important concentration of tiles/roof tiles. Also opus sectile and metallic finds. Covered by US 1001, covering US 1026.

ware type quantities:

ware type	EVE	%
221.1	7	1.61
221.2.1	11	2.54
221.2.2	17	3.92
221.3	7	1.61
221.4	54	12.47
222	1	0.23
232.1.3-4	4	0.92
LBSgr	156	36.02
315	12	2.77
400	17	3.92
411	2	0.46
412/416	1	0.23
416	36	8.31
416/421	1	0.23
421	50	11.54
423	29	6.69
424	27	6.23
427 ?	1	0.23
total	433	100

chronological range: 7th - 14th century.

numismatic range: 4th - 14th century (Constantius II, Andronikos II and III), in grid B3; Middle - Late Byzantine, in grid B4.

dating of the deposit: 14th century.

US 1026 (sealed chamber)

Plates: 3; 4; 14.9; 15.10-13,17; 17.1; 20.1

grid: A3-4.

arch. feature: Fill. Sandy yellowish soil with high number of brick and tiles/ roof tiles. Some fragmented marble sculpture and crushed stone. Covering US 1073.

ware type quantities:

ware type	EVE	%
221.2.1	4	2.65
221.2.2	3	1.99
221.3	8	5.29
221.4	66	43.71
233.2	3	1.99
233.4.1	1	0.66
LBSgr	32	21.19
315	2	1.32
400	4	2.65
411	1	0.66
416	9	5.96
416/421	1	0.66
421	5	3.31
423	4	2.64
424	7	4.63
Seljuk (turquoise gl.)	1	0.66
total	151	100

chronological range: 9th - 14th century.

dating of the deposit: 14th century.

US 1053

Plates: 5; 15.3-4; 16.3; 17.4-8; 20.13

grid: C3.

arch. feature: Layer covered by and similar to US 1002. Large brick and tile fragments.

ware type quantities:

ware type	EVE	%
110	1	1.14
130.1	1	1.14
100 (or earlier)	1	1.14
221.1	1	1.14
221.2.1	1	1.14
221.3	1	1.14
221.4	17	19.32
231.1	1	1.14
231.2	1	1.14
233.6	1	1.14
LBSgr	10	11.36
310	1	1.14
315	7	7.95
400	2	2.27
416	10	11.36
421	4	4.54
423	13	14.77
424	13	14.77
427	1	1.14
Seljuk (turquoise gl.)	1	1.14
total	88	100

chronological range: 4th - 14th century.
dating of the deposit: mid-13th - 14th century.

US 1054
Plates: 6; 16.2; 18.2-5
grid: B3, C3.
arch. feature: Layer covered by and similar to US 1002. Large brick and tile fragments. Equals US 1053.
ware type quantities:

ware type	EVE	%
221	1	1.75
221.2.1	1	1.75
221.2.2	1	1.75
221.3	3	5.26
221.4	15	26.31
232.1.3-4	2	3.51
233.2	1	1.75
LBSgr	22	38.6
400	1	1.75
416	3	5.26
421	1	1.75
424	5	8.77
427	1	1.75
total	57	100

chronological range: 9th - 14th century.
dating of the deposit: mid-13th - 14th century.

US 1056
Plates: 7; 13.1; 14.5; 17.3; 19.1-2,10-20; 20.4
grid: C3.
arch. feature: Pit, filled with dark soil, covered by US 1053.
ware type quantities:

ware type	EVE	%
221.1	4	1.75
221.2.1	1	0.44
221.3	1	0.44
221.4	18	7.86
221.5	3	1.31
230	5	2.18
231.1-2	1	0.44
233.2-3	2	0.87
233.6	1	0.44
233.8	1	0.44
LBSgr	157	68.56
411	1	0.44
412	1	0.44
412/416	1	0.44
416/421	4	1.75
421	3	1.31
423	6	2.62
424	15	6.55
427	3	1.31
Unglazed Incised Ware	1	0.44
total	229	100

chronological range: 7th -14th century.
dating of the deposit: mid-13th - 14th century.

US 1058
grid: C3
arch. feature: Irregular pit, covered by US 1053.
ware type quantities:

ware type	EVE	%
233	1	33.33
LBSgr	2	66.66
total	3	100

chronological range: 12th - 14th century.
dating of the deposit: mid-13th - 14th century.

US 1059
Plates: 8; 19.3-7
grid: C3, extends further NW outside of excavated zone.
arch. feature: Pit, large and shallow. Reddish soil with high amounts of brick.
ware type quantities:

ware type	EVE	%
221.2.1	3	4.55
221.2.2	3	4.55
221.3	1	1.51
221.4	12	18.18
221.5	3	4.55
LBSgr	17	25.75
315	3	4.55
411	1	1.51
416	8	12.12

421	3	4.55
423	7	10.6
424	5	7.57
total	66	100

chronological range: 9th - 14th century.
dating of the deposit: mid-13th - 14th century.

US 1061
Plates: 15.14-15
grid: A3-A4.
arch. feature: Modern layer of greyish-brown soil with modern finds, covered by US 1000.
ware type quantities:

ware type	EVE	%
221.2.1	1	7.69
221.4	4	30.77
221.5	3	23.08
400	2	15.38
424	1	7.69
modern roof tile	2	15.38
total	13	100

chronological range: 9th - 20th century.
dating of the deposit: 19th - 20th century.

US 1073 (sealed chamber)
Plates: 9; 10; 20.10
grid: A3-4.
arch. feature: Fill. Including high amounts of elaborately decorated marble slabs, fragments of opus sectile, frescos, mosaic tessarae and ceramics. Covered by US 1026.
ware type quantities:

ware type	EVE	%
120.3	1	2.08
221.3	1	2.08
221.4	15	31.25
221.5	3	6.25
232.1.3-4	1	2.08
233.8	1	2.08
LBSgr	5	10.42
315	1	2.08
400	9	18.75
411	1	2.08
412/416	2	4.17
423	3	6.25
424	3	6.25
400 ?	1	2.08
modern wall tile (intruder)	1	2.08
total	48	100

chronological range: mid-5th - 14th century.
numismatic range: Late Byzantine ? (concave shape).
dating of the deposit: 14th century.

US 1074 (sealed chamber)
grid: A3-4.
arch. feature: Fill covered by US 1073. High amount of course ware pottery. Excavation unfinished.
ware type quantities:

ware type	EVE	%
424	2	50
421/424	1	25
422/425	1	25
total	4	100

chronological range: 9th -14th century.
dating of the deposit: 12th - 14th century.

US 1076
Plates: 14.8
grid: A4.
arch. feature: Yellowish-reddish sandy layer, underneath US 1061.
ware type quantities:

ware type	EVE	%
400	1	20
411	1	20
416	1	20
421	2	40
total	5	100

chronological range: 5th - early 12th century.
dating of the deposit: 9th - early 12th century.

US 1085

grid: B4

arch. feature: Layer of dark soil with a high concentration of fragmented brick. Covered by US 1002.

ware type quantities:

ware type	EVE	%
221.4	1	20
LBSgr	1	20
416	3	60
total	5	100

chronological range: 7th - 14th century.

dating of the deposit: mid-13th - 14th century.

Surface Cleaning

ware type quantities:

ware type	EVE	%
120.1	1	2.63
120.3	1	2.63
100 (or earlier)	1	2.63
221.2.1	1	2.63
221.2.2	1	2.63
221.4	1	2.63
232.1.3-4	1	2.63
LBSgr	12	31.58
400	3	7.89
411	6	15.79
421	1	2.63
423	1	2.63
424	8	21.05
total	38	100

PLATES

(All illustrations on the plates are drawn, compiled and implemented by the author. Photographs taken by Domenico Ventura, KYAP)

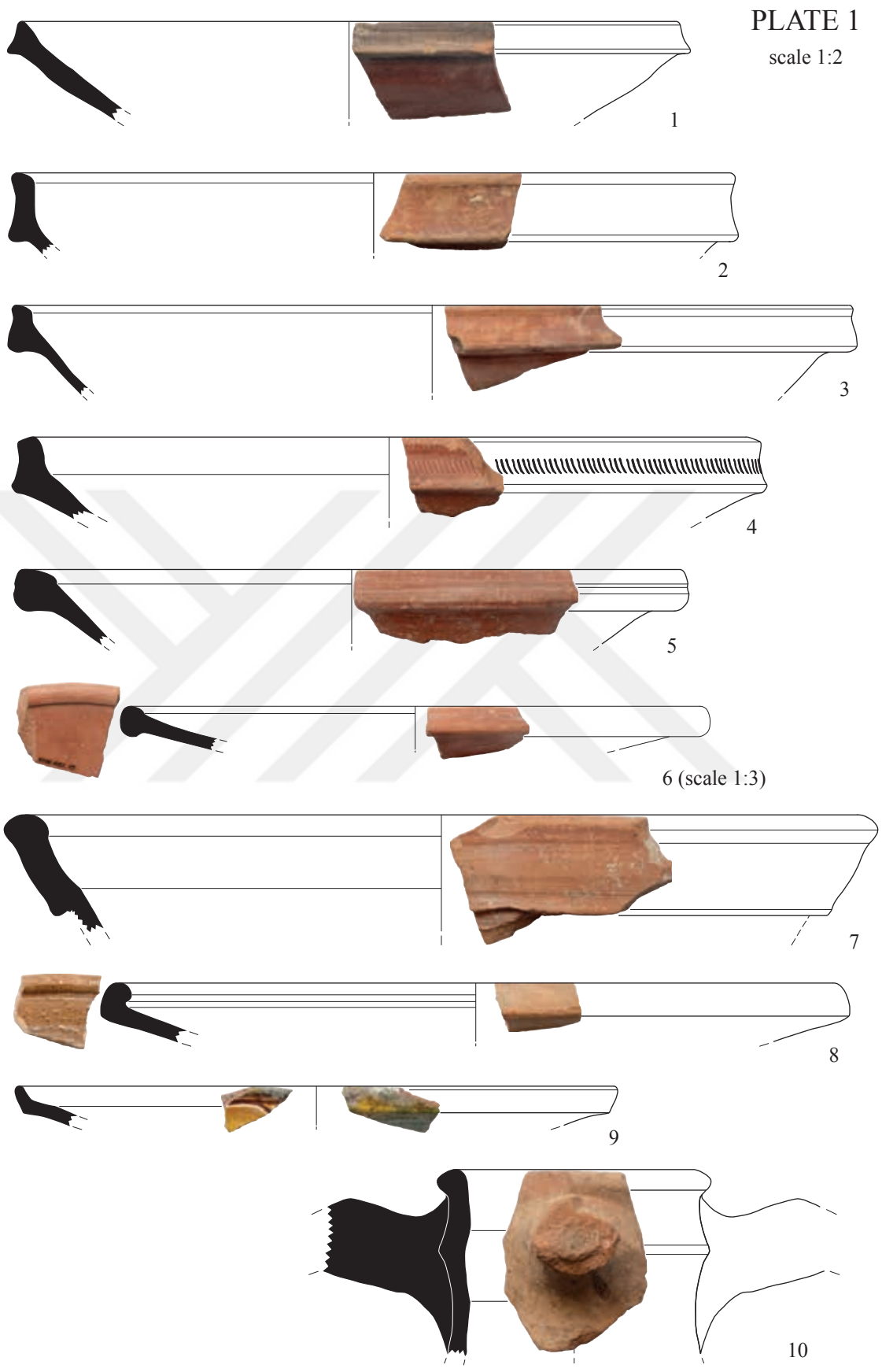

PLATE 1: ***US 1052 (tower fill).*** 1-4: LRC Hayes 3 (120.3); 5: LRC Hayes 10a (120.10a); 6: ARS Hayes 105 (110.105); 7: LRD Hayes 11 (130.11); 8: GWW I (221.1); 9: LBSgr (233.4-7); 10: LRA 1 (411).

PLATE 2

scale 1:2

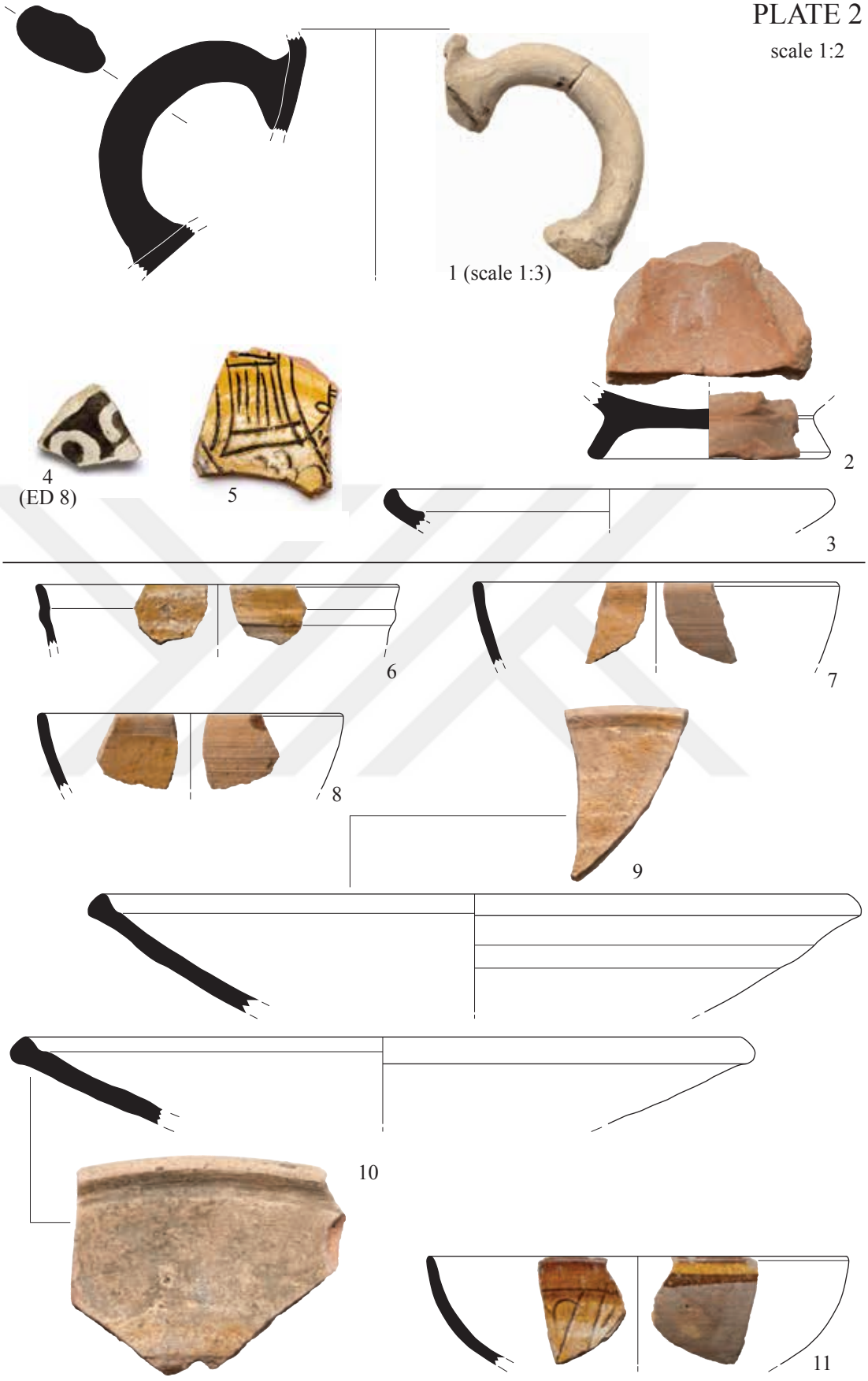

PLATE 2: ***US 1000/1001:*** 1: Otranto Amphora 1/2 (425/426). ***US 1001:*** 2: Aegean Ware (233.2-3); 3: GWW II (221.2.2); 4: Polychrome Ware (222); 5: LBSgr (233.4-7). ***US 1002:*** 6-8: GWW I (221.1); 9-10: GWW IV (221.4); 11: Orange Brown Glazed Ware (233.5).

PLATE 3

scale 1:2

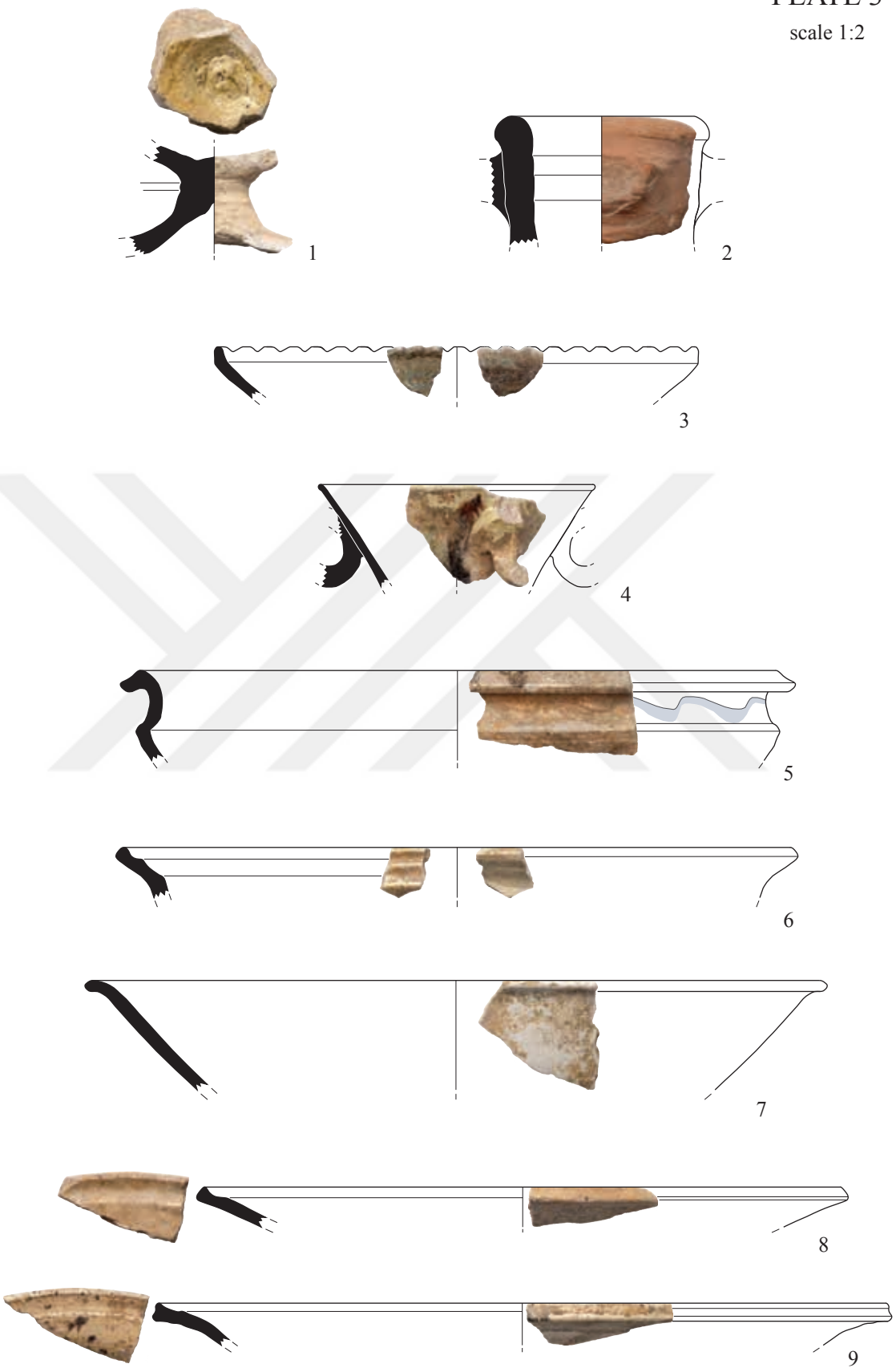

PLATE 3: ***US 1026:*** 1: GWW II (221.2.2); 2: Globular Amphora (416); 3: GWW III (221.3); 4-9: GWW IV (221.4).

PLATE 4

scale 1:2

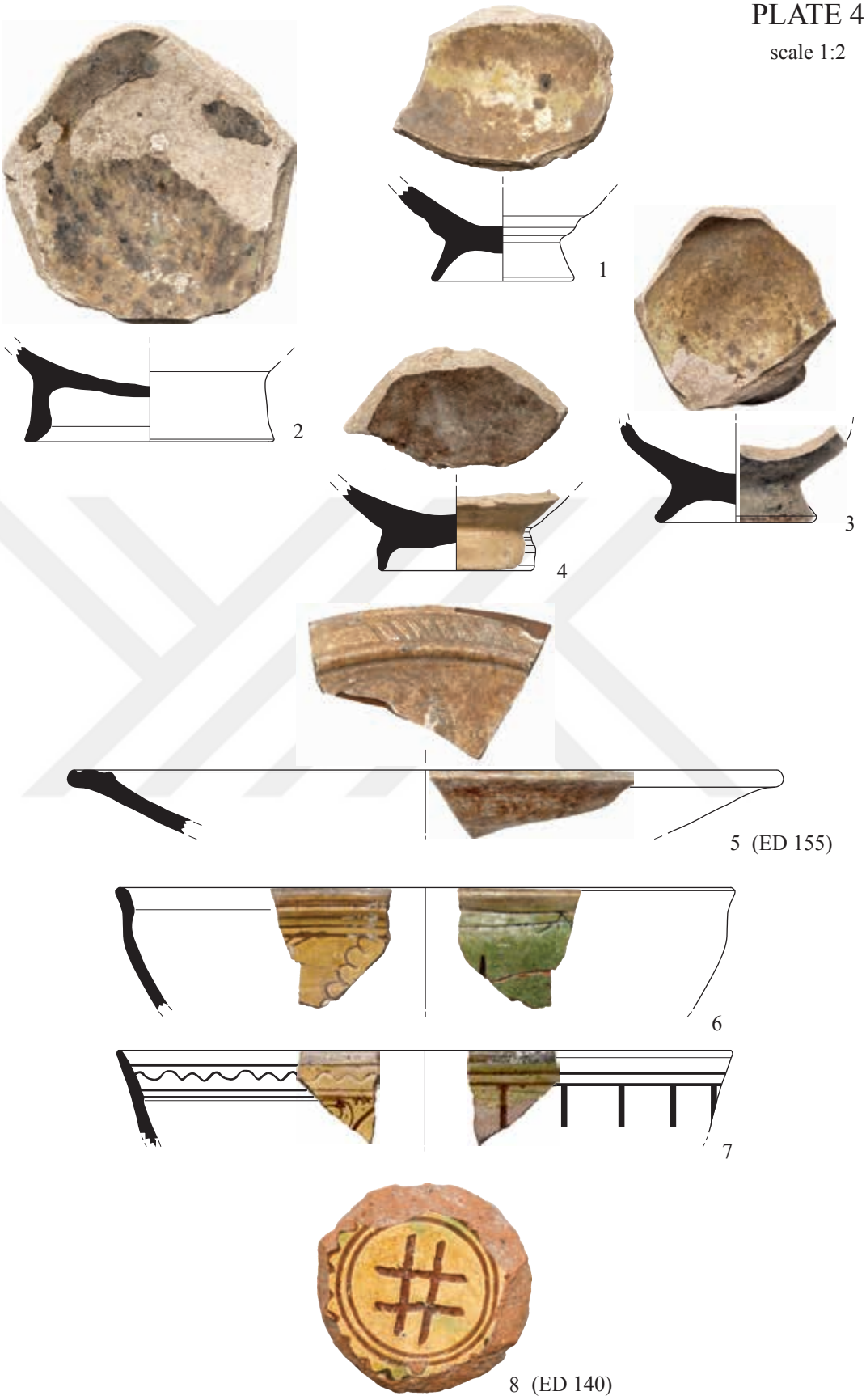

PLATE 4: ***US 1026.*** 1-4: GWW IV (221.4); 5: Zeuxippus Ware *stricto sensu* (233.4.1); 6-8: LBSgr (233.4-7).

PLATE 5

scale 1:2

PLATE 5: ***US 1053.*** 1: LRD Hayes 1(130.1); 2: GWW II (221.2.1); 3-6 GWW IV (221.4); 7-9: LBSgr (233.4-7); 10-11: UWW V (315).

PLATE 6

scale 1:2

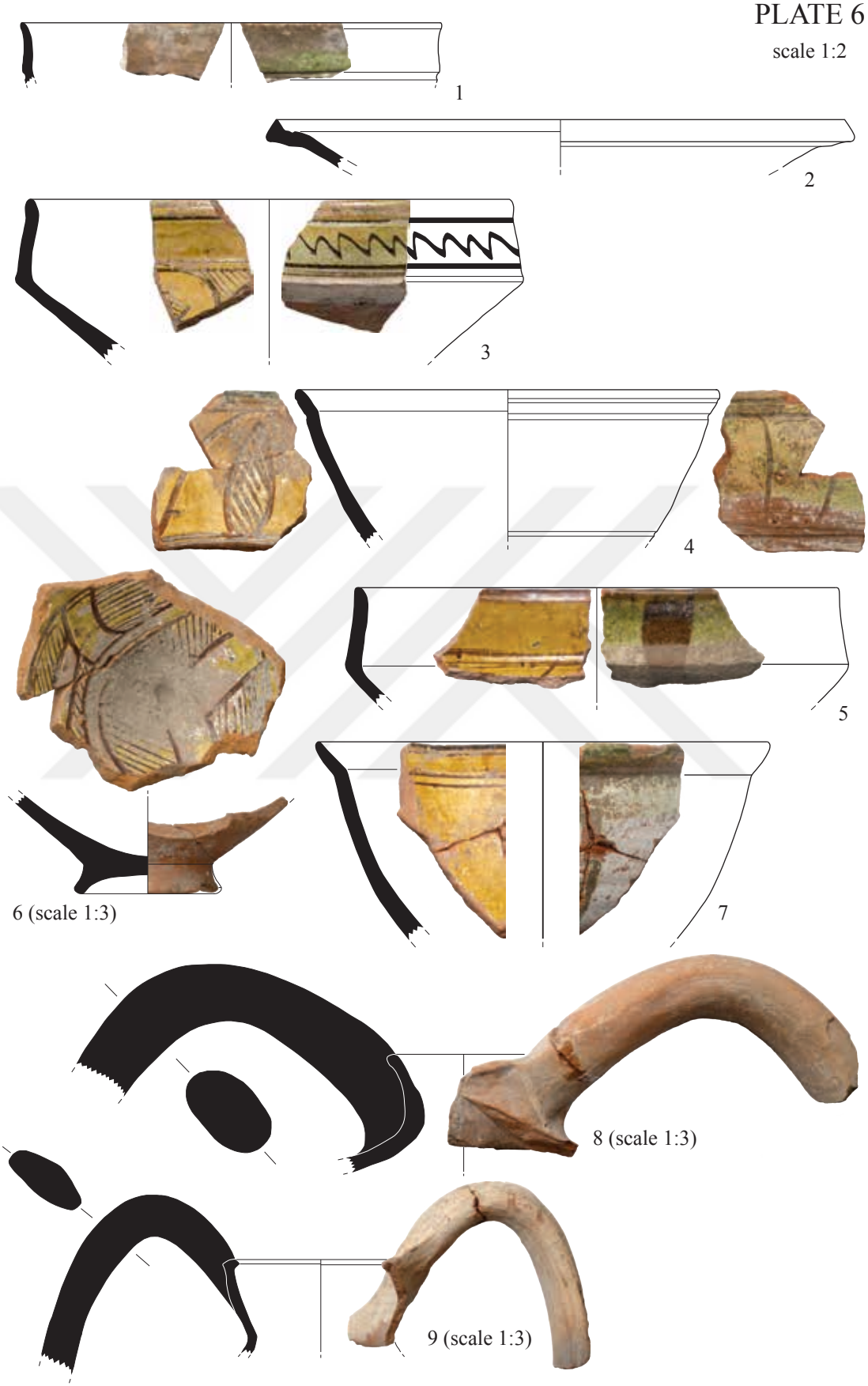

PLATE 6: ***US 1054.*** 1: GWW III (221.3); 2: GWWIV (221.4); 3-7: LBSgr (233.4-7); 8: Günsenin Amphora 4 (424); 9: Bjelajac Amphora 2 (427).

PLATE 7

scale 1:2

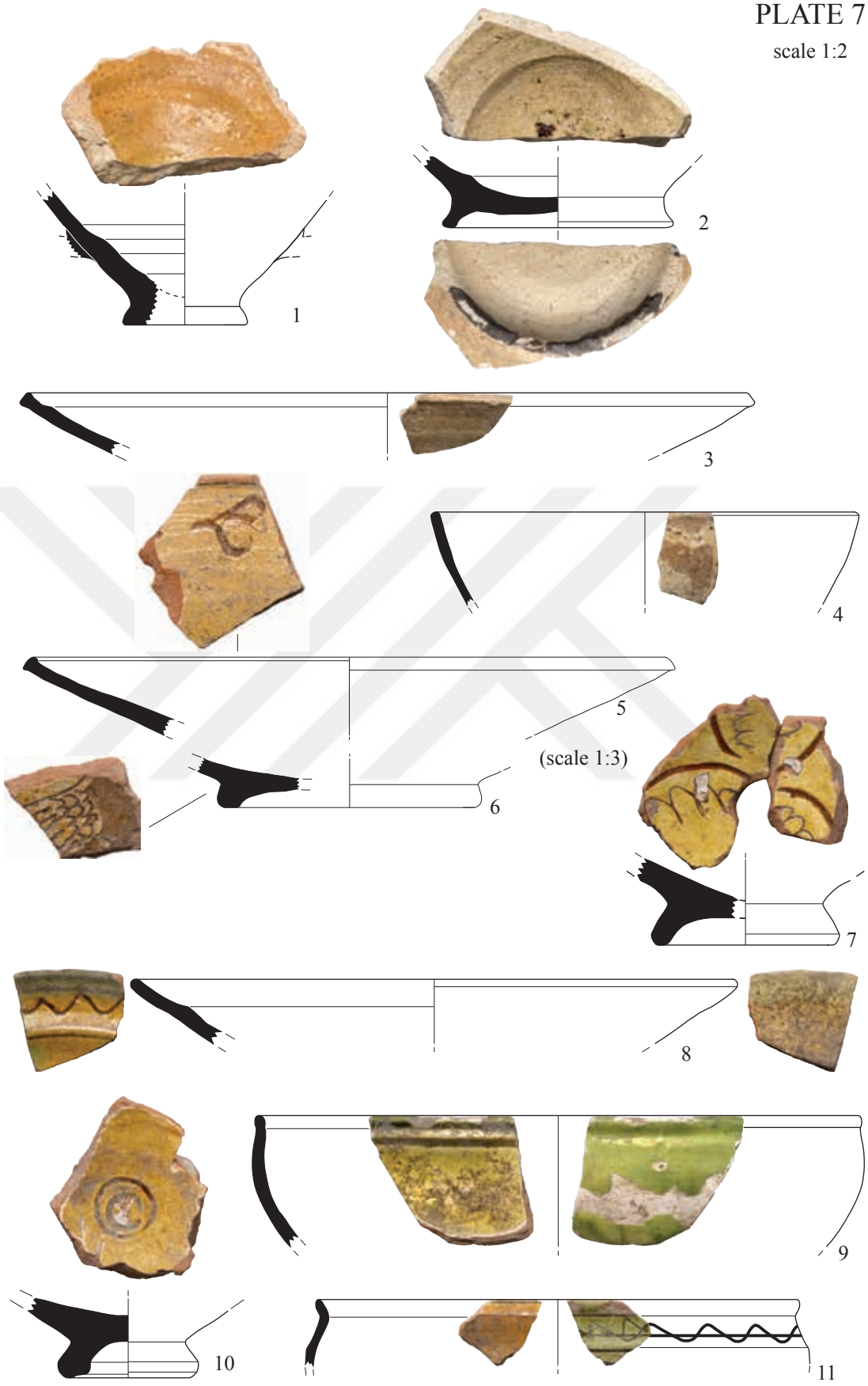

PLATE 7: ***US 1056.*** 1: GWW I (221.1); 2-4: GWW IV (221.4); 5-6: Aegean Ware (233.2-3); 7-11: LBSgr (233.4-7).

PLATE 8

scale 1:2

PLATE 8: ***US 1059.*** 1: GWW II (221.2.2); 2-5: GWW IV (221.4).

PLATE 9

scale 1:2

PLATE 9: ***US 1073.*** 1: LRC Hayes 3 (120.3); 2-3: GWW IV (221.4); 4-5: GWW V (221.5); 6: UWW V (315); 7: "Fette" Ware (233.8).

PLATE 10

1

3
(ED 56)

2

10 cm

PLATE 10: ***US 1073.*** 1-2: Günsenin Amphora 4 (424); 3: GWW IV (221.4).

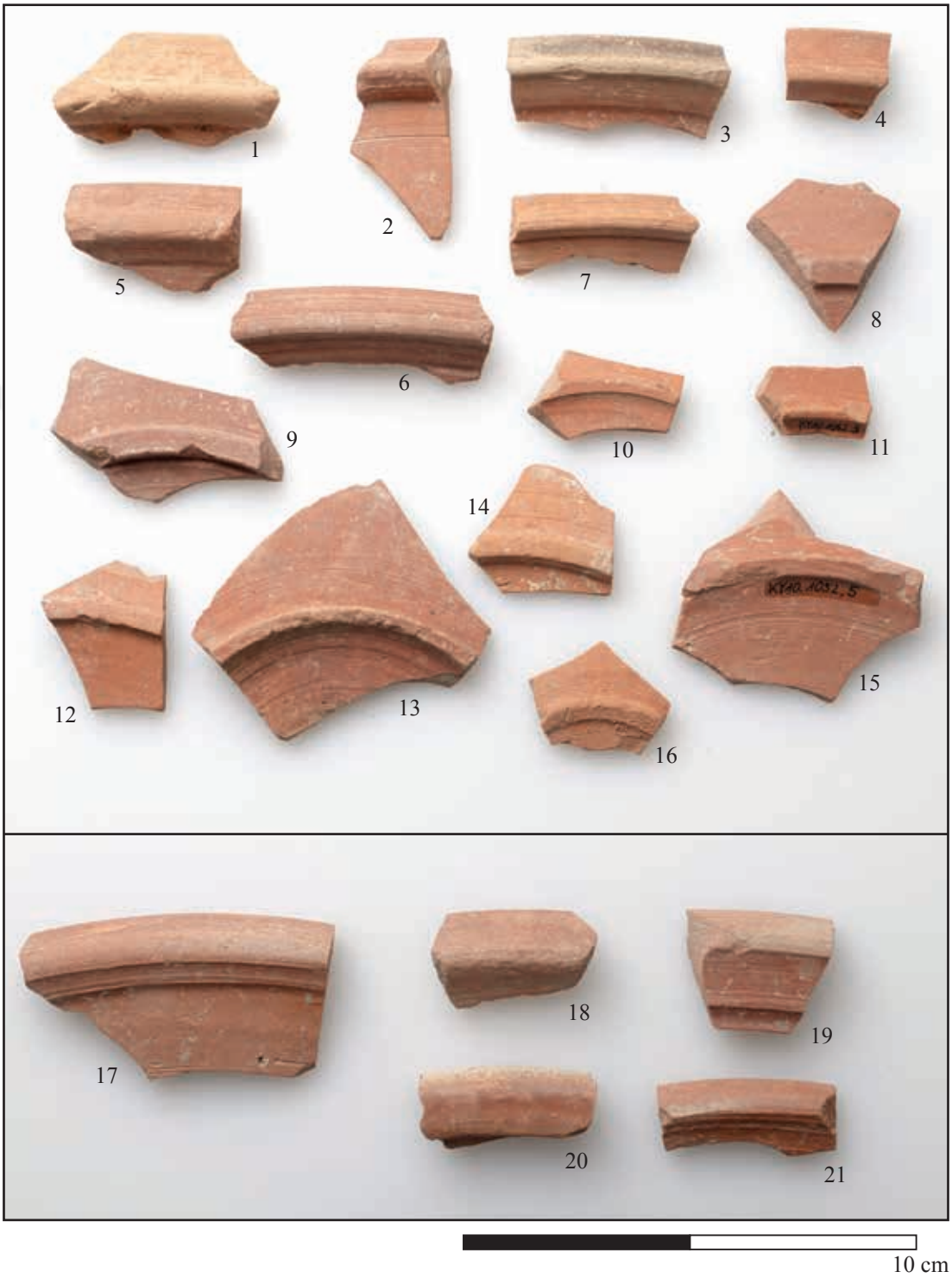

PLATE 11: ***US 1052 (tower fill).*** 1-16: LRC Hayes 3 (120.3); 17-21: LRC Hayes 10 (120.10).

PLATE 12: ***US 1052 (tower fill).*** 1-17: LRA 1 (411).

10 cm

PLATE 13: 1: ***US 1056***, LRA 2 (412)?; 2-14: ***US 1052***, LRA 2 (412); 15: ***US 1075***, LRA 5/6 (415)?; 16: ***US 1052***, Spatheion (418).

PLATE 14: (Byzantine) Globular Amphora (416, 412/416). 1-4, 6-7: ***US 1052 (tower fill)***; 5: ***US 1056***; 8: ***US 1076***; 9: ***US 1026***.

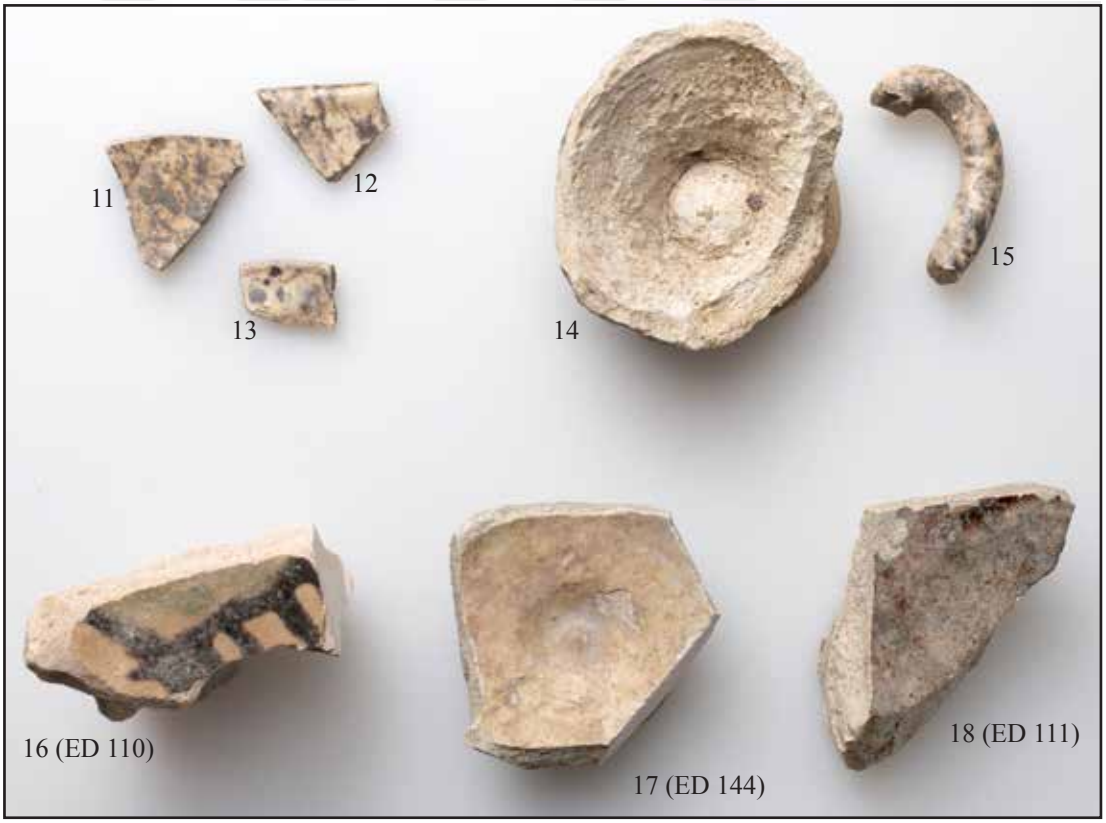

PLATE 15: GWW I/Early Plain Glazed Red Ware (221.1/231.1): 1-2: ***US 1052***; 3-4: ***US 1053***. GWW II (221.2): 5: ***US 1001***; 6: ***US 1002***; 7-8: ***US 1001***; 9: ***US 1002***; 10: ***US 1026***. GWW IV (221.4): 11-13: ***US 1026***; 14-15: ***US 1061***; 16: ***US 1002***; 17: ***US 1026***; 18: ***US 1002***.

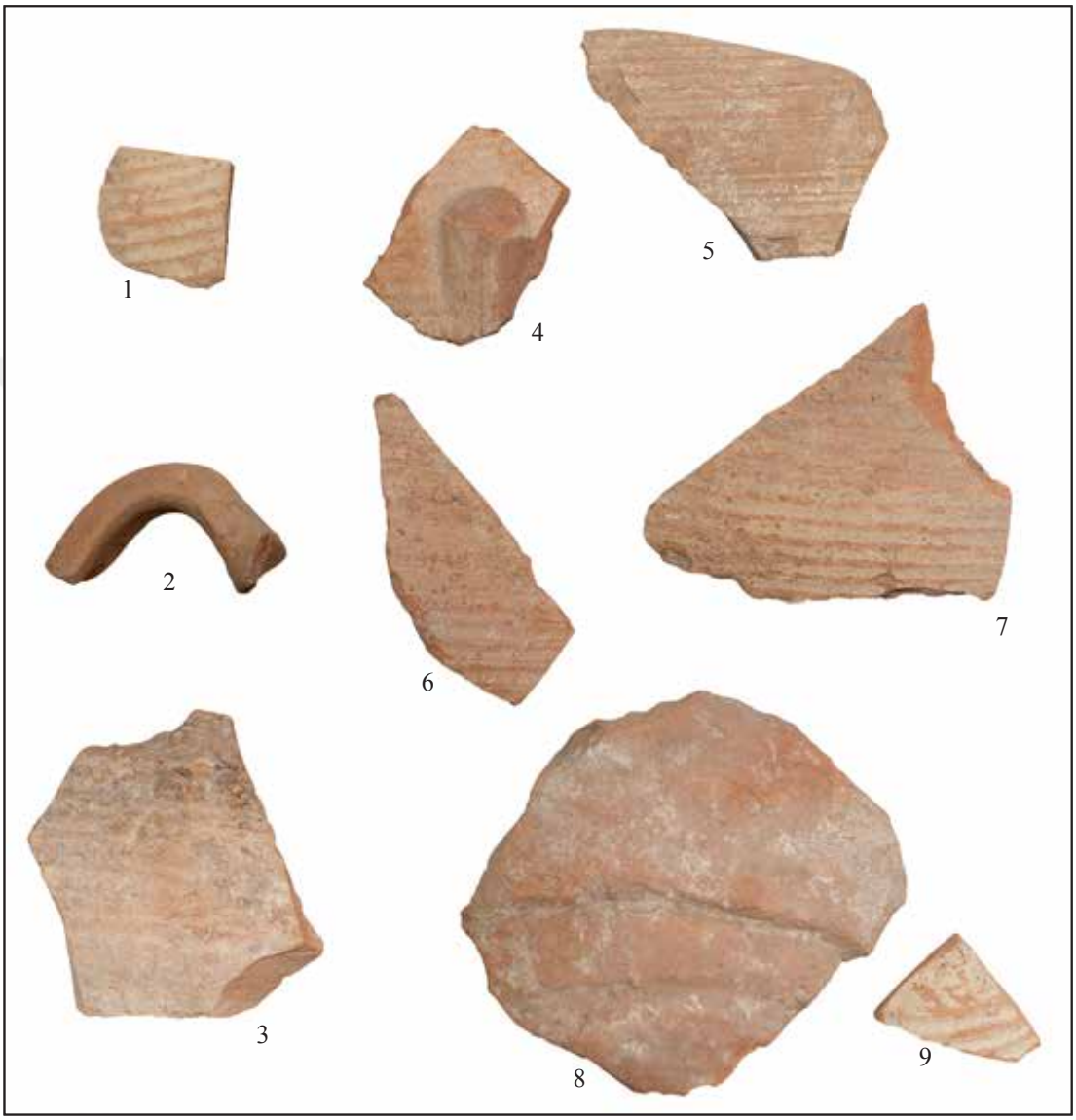

PLATE 16: Günsenin Amphora 1 (421). 1: ***US 1001***; 2: ***US 1054***; 3: ***US 1053***; 4-9: ***US 1002***.

PLATE 17: Günsenin Amphora 3 (423). 1: ***US 1026***; 2: ***US 1001***; 3: ***US 1056***; 4-8: ***US 1053***.

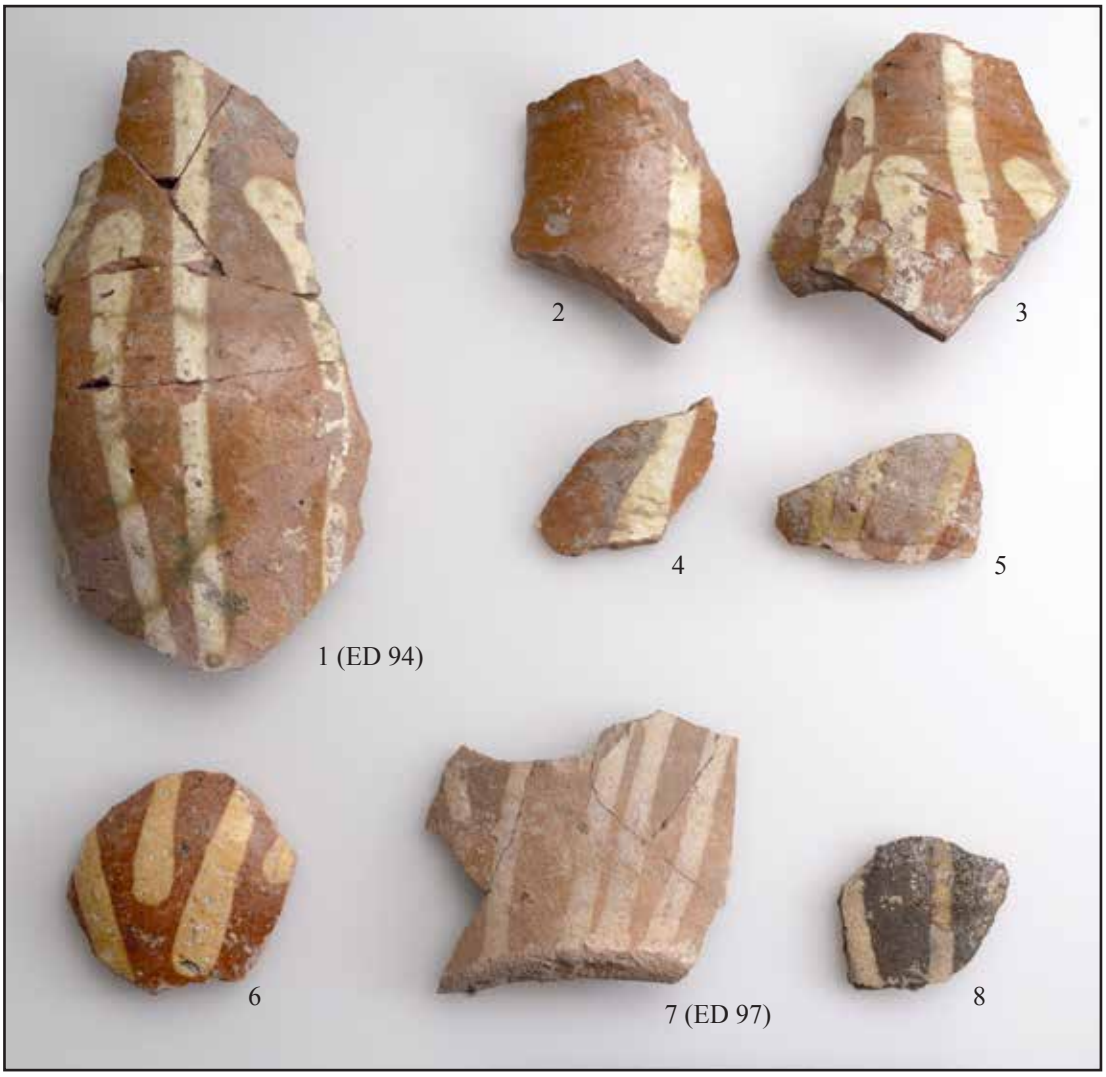

PLATE 18: Slip Painted Ware (232.1.3-4). 1: ***US 1002***; 2-5: ***US 1054***; 6: ***US 1001***; 7-8: ***US 1002***.

10 cm

PLATE 19: Günsenin Amphora 4 (424): 1-2, ***US 1056***; 3-7, ***US 1059***; 8-9, ***US 1002***. Sgraffito Ware in "Thessaloniki/Sirkeci style" (233.7): 10-14, ***US 1056***. LBSgr: 15-18, ***US 1056***. Sgraffito Ware from Serres (233.9): 19-20, ***US 1056***.

PLATE 20: LBSgr (233.4-7). 1: ***US 1026***; 2-3, 6, 14: ***US 1001***; 4: ***US 1056***; 5: Tower Area surface cleaning; 7-9, 11-12, 15: ***US 1002***; 10: ***US 1073***; 13: ***US 1053***.