



LATE ROMAN FINE POTTERY FROM GADARA (UMM QAIS), 2011 SEASON OF EXCAVATION

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Received: 29/05/2013

Accepted: 15/12/2013

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ABSTRACT

This paper presents the late Roman fine potteryⁱ assemblages that have been discovered in summer 2011 at Gadara (Umm Qais) in northern Jordan. Four groups of fine red-slipped pottery could be recognized according to their wares and main shapes: The Phocaeian Red Slip Wares (LRC), the Cypriot Red Slip Wares (LRD), the African Red Slip Wares (ARS), and the Egyptian Red Slip Wares (ERS). This paper is focused on studying these four groups according to their main characters, types, numbers, and the most frequently occurring types. It is also focused on clarifying the trade relations and export between the city of Gadara, during the Roman and Byzantine periods, and the remote production centers of the fine Roman pottery. This study exposed that some types of fine pottery at Gadara were more common than other types; it also demonstrated the existence of new forms of fine pottery.

KEYWORDS: Late Roman pottery, Fine red-slip pottery, Gadara (Umm Qais), Phocaeian Red Slip Wares (LRC), Cypriot Red Slip Wares (LRD), African Red Slip Wares (ARS)

1. INTRODUCTION

Studying the late Roman fine pottery is an important concern for the region of northwest Jordan. It helps illuminating the whole economic and social context of the region, especially those dealing with trade relations and flourishing economy during the late Roman period. There are three main issues on which this research based: *first*: describing, drawing and classifying the finds of the similar category of fine red-slipped pottery discovered in the 2011 season of excavation at the site of Gadara (Umm Qais) in northern Jordan (Fig. 1); *second*: comparing the groups of pottery to the common types that exist in the recent studies of late Roman fine wares; *third*: clarifying the connection between the city of Gadara and the production centers of those types of pottery according to the latest published studies on that issue.

Recent studies of fine Roman pottery demonstrated that many types have been produced and exported through the region of the Mediterranean basin; it is a true evidence of trade flourishing and easy sea link throughout the Roman period (Hayes 1997: 14). As Gadara is one of the urban centers in the Roman and Byzantine periods in the region of north Jordan, this research is considered important to display the most common imported types of pottery, and to shed more light on the trade relations between the city and the different remote production centers of the fine pottery.

530 diagnostic pottery sherds (body sherds are excluded) have been collected in the 2011 season of excavation at the site, they are dated from the late Hellenistic to the Ayyubid/Mamluk periods. 69 of them are late Roman/ Byzantine fine red-slipped sherds; they constitute ca. 13% of the whole diagnostic pieces. This paper is limited to the finds of the fine red-slip pottery that are dated from the end of the 4th century AD to the end of the 7th century AD. Assemblages were classified according to their types and forms, taking into consideration their clay, color, texture, inclusions, firing and decoration. They were divided

into four groups based on their ware and origin: The Phocaeen Red Slip Wares (LRC), the Cypriot Red Slip Wares (LRD), the African Red Slip Wares (ARS), and the Egyptian Red Slip Wares (ERS).

2. LATE ROMAN FINE POTTERY IN THE 2011 SEASON OF EXCAVATION (ARCHAEOLOGICAL CONTEXT)

The pottery groups were uncovered in different strata in the excavated plots of Areas Z and W in summer 2011 at Gadara (Fig. 1). They are related to three Strata (III, IV, and V), dated from the 4th to the mid 8th centuries AD, some sherds were found in later phases (Stratum I and II) or collected on the top soil; that is due to many ancient and recent factors related to the reuse of the ancient constructions, and the disturbance of the version loci throughout the sequential historical phases. The different Strata are as follows:

- Stratum V: the original public structure, dated roughly to the Roman period (prior to the 4th century AD.).
- Stratum IV: domestic structures, re-using the original building of Stratum V, dated to the Byzantine period (4th- mid 6th century AD.).
- Stratum III: domestic structures, located over Stratum IV, dated to the late Byzantine and Umayyad periods (mid 6th - mid 8th century AD.).
- Stratum II: domestic structures, dated to the Abbasid period (747-10th century AD),.
- Stratum I: domestic structures, dated to the Ayyubid/Mamluk period (10th century AD and after).

The architectural remains as well as the other archaeological artifacts in the excavated area showed a transformation in the settlement nature, from the Early Roman period or earlier (Stratum V) to the Ayyubid/Mamluk period (Stratum I). A public building that was uncovered in the lower most levels could be dated to the late-Hellenistic/ early Roman period, according

to the nature and types of architecture and mainly the column capitalsⁱⁱ. This building has been transformed throughout a period of almost seven centuries to a domestic structure; a residential area used by one or more familiesⁱⁱⁱ.

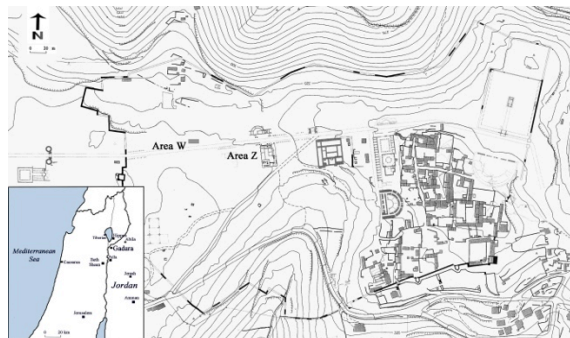


Figure 1 Location of Gadara and a topographical map of the excavated Areas Z and W (copy of the original topographical map of the Jordanian Department of Antiquities, amended by Lamia El-Khoury).

3. CLASSIFICATION OF THE FINE ROMAN POTTERY TYPES

In the 1st and 2nd centuries AD the most widespread types of fine pottery are the “Italian Sigillata” and the “Eastern Sigillata” wares. Important studies of the early Roman period pottery types in the east started in the mid twentieth century, and specific terms were given to the “Eastern Sigillata” types. An important study was made by Kenyon in 1957 to the pottery groups that were uncovered in Samaria-Sebastie; she introduced the terms “Eastern Sigillata A” (ESA), “Eastern Sigillata B” (ESB), and “Eastern Sigillata C” (ESC) (Kenyon 1957: 281-8). The term “Eastern Sigillata D” (ESD) was added later by Rosenthal in her analysis of the group of pottery from the excavations at Tel Mevorakh (Rosenthal 1978: 18-19). ESA produced, due to chemical analyses, in the northeastern corner of the Mediterranean, in the north Syrian coast (Schneider 1996: 193-4), it was known as “Pergamene Sigillata” previously. ESB was produced in the southwestern region of Asia Minor, and known previously as “Samian Sigillata”. ESC was manufactured in the region of Pergamon, specifically in the coastal site of

Pitane or Çandarlı, where a workshop of this type of pottery was excavated (Loeschke 1912). ESD produced most probably in Cyprus and known as “Cypriot Eastern Sigillata D”. Other common fine pottery types of the Early Roman period are the “Pontic Sigillata”^{iv} and the “Sagalassos Red Slip”^v wares (Hayes 1997: 17, 23; Poblome 1999).

In the late Roman period, some types of the early Roman fine pottery were still manufactured, such as the “Sagalassos Ware”. Besides, other new types were started to be produced. Mediterranean fine wares are seen in quantity in the whole region around the mid 4th century AD (Hayes 2001: 276). The most distributed and common were three types: “Late Roman A” (LRA), known later as “African Red Slip”; “Late Roman B” (LRB), known also later as “African Red Slip”; “Late Roman C” (LRC), known as “Phocaeen Red Slip”; “Late Roman D” (LRD), known as “Cypriot Red Slip”; and “Egyptian Red Slip A, B and C Wares” (ERS); in addition to other less distributed or undistinguished fine pottery (Hayes 2001: 275). All of these types were imported to the region from different product centers in North Africa (Tunisia and Egypt), western Asia Minor (Turkey), and Cyprus (Hayes 2001: 276).

Important studies of the late Roman fine pottery types were made recently by a number of scholars. The first study was made by Waagé in his publications of the pottery from the Athenian Agora (Waagé 1933: 279-328), and Antioch (Waagé 1948: 1-60). Waagé (1933: 279-328; 1948: 1-60) proposed four classes of late Roman fine ware, LRA and LRB for the north African types, LRC for the Phocaeen types, and LRD for the Cypriot types. Another important study was made by Lamboglia in his pottery study of Albintimilium, he distinguished four groups: LRA, LRB, LRC, and LRD, and termed them as “Terra Sigillata Chiara”, these groups were identified later as “African Red Slip”, similar to Waagé classes LRA and LRB (Lamboglia 1941: 2-22; 1958: 257-330; 1963: 145-212).

An important classification of the late Roman fine ware was given by J. Hayes (1972; 1980; 1997; 2001). His study is considered as a reference to almost all types and forms of the late Roman fine wares. On the other hand recent studies of those types of pottery were followed especially in the last years, and few more classes or types were added to the previous ones, as it will be mentioned in the following discussion.

4. PRODUCTION CENTERS OF THE LATE ROMAN FINE POTTERY

The production centers of late Roman fine wares are still not recorded in details; many centers are still unknown (Hayes 1997: 15). A list of products centers of tableware was mentioned by Pliny the Elder (*Historia Naturalis* XXXV, 12 (46), 160). The list was used to classify material found at Samos and Pergamon in the eastern Mediterranean (Poblome 1999: 25). However, new investigations detected new production centers particularly in Asia Minor and North Africa.

Wasters of LRC were found by J. Hayes in Phocaea in the west coast of Turkey between 350 and 650 AD^{vi}, the reason why the name "Phocaeian Red Slip" was proposed to this type of pottery (Hayes 1972: 62, 323-370). Production centers of this type of pottery are located in the western coast of Asia Minor, not only on Phocaea but also in Grynion (Empereur and Picon 1986: 143-146), Ephesus (Gassner 1997: 137-140), and elsewhere in the Pergamon region especially the district between Pergamon and Smyrna (Hayes 1980, lix)^{vii}.

The LRD was produced in a number of centers in Cyprus and in Asia Minor (Hayes 2001: 277). Main production centers are still unknown, even though Cyprus is not the only place of origin of this type (Meyza 2007: 13), since large collections of LRD products were found in Anatolian sites such as Sagalassos (Hayes 1997: 17, 23; Poblome 1999), Pednelissos, Perge^{viii} (Firat 2000), and Kibyra (Japp 2009). According to the new forms of the LRD products that were discovered in Perge and Anemurium,

there might be a number of production centers in the region of northern Cyprus and southern Turkey as well; the new types were influenced by the previous existing known forms (Firat 2000: 37). However, the scarcity of the Cypriot Sigillata at Perge made J. Hayes exclude Perge as a source of the LRD products (Hayes 2001: 277, fn.26).

An archaeometrical analysis was made recently to LRD samples. The study was prepared by using the WD-XRF "X-ray fluorescence analysis" method to define the clay formulas and detect the quantity of the major components and the trace elements in the clay. The study demonstrated the existence of at least two production centers, in which similar products in terms of fabric and typology were produced (Poblome and Firat 2011: 51), one of these centers, or at least the origin of the raw material, is western Cyprus^{ix}. This could be also assigned as well by a study of a group of roof tiles with very similar composition to LRD types (Rautman et al. 1993: 233-64).

A number of African pottery production centers have been located according to the clay components analysis that was made recently by M. Mackensen and G. Schneider (2002: 121-158). Accordingly, the ARS wares could be determined at least by region in northern or central Tunisia. They determined northern Tunisia provenance for Types A and D, and central Tunisian provenance for Type C (Mackensen and Schneider 2002: 121)^x. In addition, local production centers, that produced pottery objects for the local market, seem to be established in different places in Tunisia; Leptiminus is a good example of such centers (Carr 2009: 105-127).

5. PHOCAEAN RED SLIP WARE (LRC)

LRC was first identified and classified in 1933 by Waagé in the reports of the American excavation at the Athenian Agora (Waagé 1933). LRC arose in the East in the 4th century AD^{xi} (Hayes 1972: 423). By the middle of the 5th century AD and later LRC products increased in the eastern market, and became the dominant ware (Hayes

1972: 420; 2001: 275). By the end of the 5th century AD until the middle of the 6th century AD the LRC products still retained the larger part of the market in the East together with other types of imported pottery (Hayes 1972: 423).

In general, the LRC pottery is characterized by the uneven wall thickness of many pieces; the exterior rim surfaces are often irregular in profile, this may indicate that the rim was added on top of the mold-thrown body (Hayes 1972: 323-324). The rims are often discolored on the outside, the only part of vessel exposed during firing, since firing was done in stacks^{xii} (Hayes 1997: 64).



Figure 2 Selected fragments of "Phocaeen Red Slip" (LRC) Bowls, Rouletted Rims (photographed by Hussein Debajah)

Our groups of LRC bowls (Table 1, Figs. 2-3) are made of fine-grained clay with small lime particles, it is in most pieces fine red or fine light red in color, very few pieces are made of brown or reddish brown clay. Small ingredients are also seen in the wall section, they comprise white, yellow, black and occasionally grey grits. The objects are hard-fired and covered with tones of red or light-red slip, few pieces are covered with reddish to dark brown slip. The slip is a thin matt layer; it is a refined version of the body-clay. The interior surfaces seem to be carefully smoothed with a brush. Most rims are of different color than the whole body; they are of yellowish, black, dark-reddish brown, or grey color. A number of rims have rouletting decorations that are applied mostly with a small

toothed-tool called a roulette, to produce a whole band of decoration simultaneously.

The rims diameter ranges between 18.5 and 32 cm, but the average diameter of most rims ranges between 23-24 cm.

6. CYPRIOT RED SLIP WARE (LRD)

This type of pottery has first described by Waagé in Antioch, known as LRD^{xiii} (Waagé 1948: 52, shapes 930, 931, 932 and 970). It was dominant in the 5th century AD in the eastern market (Hayes 2001: 275). J. Hayes classified the LRD in 12 Forms, all were produced between the 4th and the end of the 7th centuries AD. On the other hand, new research revealed variants of the existed forms of Hayes. The collection from Perge showed at least two new shapes of LRD; considered as a new variant of Hayes Form 9 (Firat 2000: 35-38). The new variant of Form 9^{xiv} (Firat 2000: 36-7) has been uncovered also in Ayios Philon (north Cyprus) (Taylor and Magaw 1981, Fig 41, 347). Another new form, known as "Anemurium Well Form"^{xv} (south coast of Turkey), where it has been first discovered, was very common at Perge and unknown in the common LRD forms, these forms are dated to the 7th century AD and found also in Alexandria (Firat 2000: 37; Williams 1989: 29, Fig. 10.149; Rodziewicz 1976: 46, Pl. 11, D6 a-b). More forms of LRD were also found in Nea Paphos, and classified by H. Meyza (Forms K1, K2, K3, K4, K5, K6) (2007: 43-81). Meyza studied also the development of the ware and assigned it to four historical phases, which are dated from 350 to 670 AD (Meyza 2007: 81).

All LRD vessels (Table 2, Figs. 4-5) are made of fine-grained well-levigated and well-fired clay, very fine white, yellow and occasionally darker inclusions can be hardly seen in the wall section of few vessels. The clay of most bowls is fine light red except of single pieces that are made of fine reddish yellow, fine pinkish white, fine reddish brown and pink clay. All vessels are covered with thin matt layer of red to light red slip. The slip color differs on the outside edge of the large thickened rims,

especially those of Forms 9C and 10, that is due to firing the pots in stacks. The slip color on those rims is mostly reddish yellow or reddish brown.



Figure 4: Selected fragments of "Cypriot Red Slip" LRD Ware (photographed by Hussein Debajah)

Most bowls are deep, either of flared or slightly sloping, straight or slightly curved walls; only few bowls are shallow. Rims are carefully treated; they are mostly very thick with a single or a double groove on the outer-upper edge. Rims diameter ranges between 24 and 30 cm. Bowls were carefully rouletted with one or two fairly regular lines in the form of orderly small-elongated punches or long scratched along the outer body surface or on the outer-lower edge of the rim.

7. AFRICAN RED SLIP WARE (ARS)

ARS production started by the 1st century AD and lasted until the mid 7th century AD; the wares were distributed across a large part of the Mediterranean basin. African Red Slip was widespread during the 4th century AD, and declined in the eastern market by the middle of the 5th century AD, due to the increase of the LRC types, but they became very common again in the east and the west by the end of the 5th until the mid 6th centuries AD (Hayes 1972: 423; 2001: 275). ARS was first classified by N. Lamboglia (1958; 1963) as "Sigillata Chiara A, C, and D" (Mackensen and Schneider 2002: 121). Sub-types were added to these three types according to later discoveries of other new types^{xvi}. J. Hayes typology of the ARS comprises 197 major forms according to their shape and fabric (Hayes 1972: 13-

292). The ware itself comprises three major series, known by J. Hayes (1997: 59) as "Terra Sigillata Africana A, C, and D".

A revision of part of the typochronological framework of ARS wares that was previously made by J. Hayes in 1972 and 1980 was made recently by M. Bonifay (Bonifay 2004). His study increased the knowledge of this type of pottery based on the new uncovered materials from archaeological excavations around the Mediterranean.

Our assemblage of ARS comprises of different forms of deep and shallow bowls (Table 3, Figs. 6-7), rims diameter range between 23 and 33 cm. The group is a variety of Hayes Forms: 32/58, 61A, 91A, 91B, 103B, 104A, 104B and 104C. The ware of most pieces is of ARS D1 and D2 type, which were produced probably in one of the production centers of El-Mahrine, Henchir el Biar, Bordj el Djerbi, Oudhna and Sidi Khalifa of Northern Tunisia (Fig. 13) (Mackensen and Schneider 2002: 125-130). Most pieces, however, are of Forms 103 and 104, which are made usually of D2 ware type^{xvii}, produced in the 6th century AD.



Figure 6 Fragments of African Red Slip (ARS), bowl no. 13 Form 104A (left: inside surface, Right: outside surface of the same bowl) (photographed by Lamia El-Khourri)

Our objects of ARS are made particularly of fine red or fine light red ware, covered by a thin matt layer of slip, which is a refined version of the body-clay and has the same tone of the clay too^{xviii}. The clay is well levigated and well fired; very fine white, yellow, grey inclusions, and occasionally brown and dark red grits are included, although, white (lime) inclusions are the commonest impurity in all pieces.

Only two sherds display stamped decorations; one piece presents a lamb on the center of the vessel's floor, no. (11). This decoration motif classified by Hayes as Style E(ii) and appeared on bowls of Form 103 (Hayes 1972, Fig. 172 p, P: 255). The second piece is a body sherd, no (3), decorated with a shape of four circles, this motif was classified by Hayes as Style A(ii) or A(iii) (Hayes 1972: 235), it was stamped usually on Bowls of Forms 60 and 61, which are produced between the mid 4th and mid 5th centuries AD (Hayes 1972: 100-107).

8. AFRICAN RED SLIP WARE (ARS)

The Egyptian Red Slip ware was less distributed than the other red-slip types in the region. It has been classified into three subtypes: the "Egyptian Red Slip A", known also as "Coptic Red Slip Ware" or "Aswan Ware", occurred on sites throughout Egypt and Nubia. The second type is the "Egyptian Red Slip B" that is produced in Lower Egypt (Nile Delta) (Hayes 1972: 397, 399). And the third type is the "Egyptian Red Slip C" that is an imitation of type B, may be produced in Egypt or else where, but was common in the 7th century AD in Egypt and the East (Hayes 1972: 399).

ERS-A is the finest of all types of ERS, and distributed in various sites in Upper Egypt, Nubia and in few sites outside Egypt (Winlock and Crum 1924: 84-93; Hayes 2001: 276; Hayes 1972: 397). Aswan is the source of this type of pottery; it was produced between the 3rd and the end of the 7th centuries AD (Williams 2009: 7; Hayes 1972: 387; 1997: 16). The vessels are close imitation to some ARS products in particular the types that were produced in the 5th and 6th centuries AD, although using poorer quality of clay^{xix}. Vessels are covered with thin matt slip, covers the whole surface^{xx} (Hayes 1972: 387-397). Rouletting and stamp decorations present on the exteriors and floors of the dishes (Hayes 1972: 388).

ERS-B is the most varied type in form and fabric. Several vessels are copies of the

ARS wares (especially Forms 82, 83, 84, 91, 93) of the late 4th and early 5th centuries AD, some are stamped with motifs of ARS style A (Hayes 1972: 397-9). In general vessels are made of thick coarse reddish fabric^{xxi}, irregularly fired, and covered with thick burnished red slip.

ERS-C is mentioned by Waagé as imitation of the "Late Roman B" ware (Waagé 1948: 44-45). The product center of this type is still uncertain. This ware seems to be widespread throughout the East, it occurred in Antioch, Palestine and occasionally in Cyprus (Hayes 1972: 399). Some of its forms are similar to the ARS Form 104C, and LRD Form 9. The clay is orange or brown color characterized by gritty loose-texture^{xxii}, covered with a thick, smooth, lustrous deep red slip on the inside and rim, thinner and dull on the outside (Hayes 1972: 399).

Thereafter, a collection of ERS pottery was found in Kellia (in the Nitrian desert, north Egypt) and classified by Egloff according to their fabric into three main groups (Egloff 1977: 79). The first is characterized by its clear slip, firm ware, and the considerable diversity of slip color (rose, red, light red, reddish yellow, and beige). The second class could be characterized by the brown or reddish brown ware. It is more crumble or friable or powdery than the previous group. The slip is always red or reddish brown, the shade is perfectly homogeneous on the whole body surface. The third group of ware is similar to the LRD ware. It is extremely hard, while the classical LRD ware is smooth. Silvery shades often present overlapping slip of pink, orange or brown color, which is uneven and differs from one location to another on the body surface (Egloff 1977: 79).

Our group of ERS (Table 4, Fig. 8) is very diverse in ware color as well as slip color and texture. In comparison to the previous three types of fine Roman pottery, the ware of ERS is the coarsest; small white and dark inclusions are plenty, very obvious and easily distinguished.

Only six pottery fragments are considered to be ERS, all are fragments of bowls,

only one is a small hemispherical bowl with thick dark red slip and dark reddish grey slip around the rim. Most of the pieces are made of fine light red or fine pink ware, only one piece is of fine reddish brown ware. Slip is mostly applied carefully on the inner face of the vessels, and less careful on the outside surface. Slip color is various: red, light red, dark red, reddish brown and reddish yellow.

9. DISCUSSION

As it has been previously elucidated the LRC is the most common ware among our group of late Roman fine pottery (Table 1, Figs. 2, 3, 9, 10). Our objects comprise two common types: Hayes Forms 3 and 10 (Hayes 1972: 329-338); products of the mid 5th to the mid 7th centuries AD. Bowls of Form 3 comprise the greatest quantity of the fine pottery groups, and demonstrated a great interest in importing this form between the mid 5th and the mid 6th centuries AD^{xxiii}.

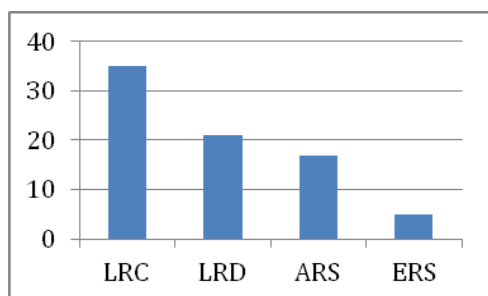


Figure 9: The Frequency of Late Roman Fine Pottery Types at Gadara, 2011 Season of Excavation

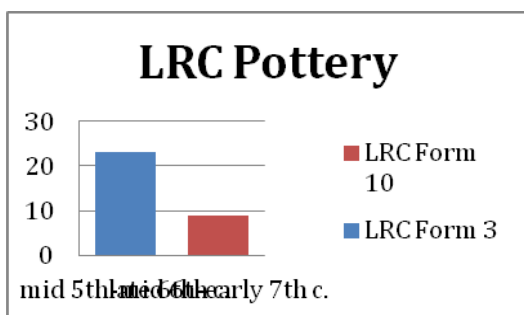


Figure 10: The Frequency of LRC Pottery Types

The LRD (Table 2, Figs. 4, 5, 9, 11) is the second common group. It comprises of different sizes and forms of bowls, most of which are products of the mid 6th to the

end of the 7th centuries AD, the time when the Cypriot red slip series were found in great quantities in the eastern market (Hayes 1972: 420, 424; 1997: 64)^{xxiv}. LRD contained a number of mainly heavy thick-walled bowls when compared to the other late Roman fine wares. All examples are variants of four main forms of Hayes LRD; Form 2, Form 9 and Form 10 (Hayes 1972: 373-82; Reynolds 2011: 57-66), that are dated from 450 to the mid 7th century AD^{xxv}. The greatest number of bowls was of "Form 9"; it demonstrated an interest of importing this form together with LRC "Form 10". Among this group are two bowls (7 and 15), which have no parallels in the published materials.

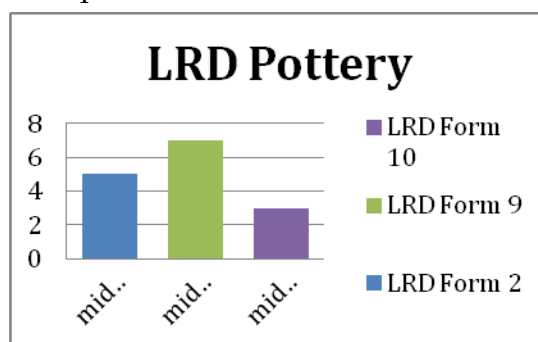


Figure 11: The Frequency of LRD Pottery Types

ARS was the third common group among the uncovered fine pottery objects (Table 3, Figs. 6, 7, 9, 12). The import of this kind of pottery seems to be most active between the first and the third quarters of the 6th century AD^{xxvi}, since most of the uncovered pieces belong to the Hayes Forms 103 and 104^{xxvii}. It is clear that the interest in importing the ARS bowls increased rapidly by the 6th century AD, when the import of LRC "Form 3" and LRD "Forms 2 and 9" was at its highest point as well.

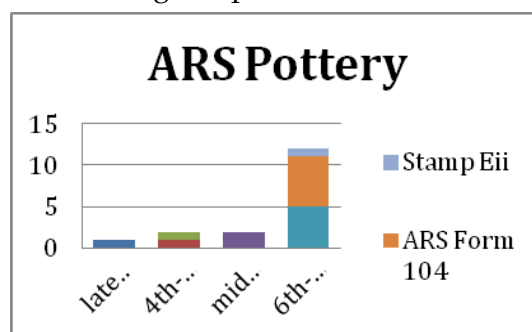


Figure 12: The Frequency of ARS Pottery Types

Only a small number of sherds belong to the ERS wares (Table 4, Figs. 8, 9). These types started to be produced in the 3rd century AD until the early Islamic period (Williams 2009: 7)^{xxviii}. It appeared in many sites in Egypt and the Levant, however, it didn't become widely imported in quantities to the Palestinian and Jordanian sites until the 6th and 7th centuries AD (Williams 2009: 27)^{xxix}. Despite that, ERS in the Jordanian and Palestinian sites is not as common as the other types of fine Roman pottery, perhaps due to its large diverse character and the uneasy recognition of the ware. Only single sherds were discovered in nearby sites, such as in Tiberias (Stacey 2004: 89-147), and Jerash (Watson 1991: 102-112)^{xxx}.



Figure 13: Gadara and the connection with the fine pottery production centers

The interest in the late Roman fine pottery started by importing few types of ARS bowls as early as the late 3rd – early 4th centuries AD. By the middle of the 5th century AD the interest in the LRC and LRD products started, the amount of LRC (Form 3) and LRD (Form 2) was the highest, the ARS products however were fewer. By the mid 6th century AD the products of LRD, especially Form 9, and ARS, especially Forms 103 and 104, increased until the early 7th century AD. On the other hand, towards the late 6th and early 7th centuries AD, the LRC (Form 3) and LRD (Form 10) were replaced by LRC (Form 10) and LRD (Form 9).

Accordingly, as shown by the results of this study, it is clear that the import of the late Roman fine pottery was in its peak in the mid 5th towards the early 7th centuries

AD. The number of bowls that was imported during that period shows a great concern towards importing bowls of LRC "Form 3", LRD "Form 2", followed by LRC "Form 10", LRD "Forms 9 and 10", and ARS "Forms 103 and 104". Despite that the ERS production centers were the nearest (Fig. 13), the few numbers of this types of pottery indicated that the pottery quality was considered first and more than any other factor, while the quality of most types of ERS was not reaching the standards of the quality of the other fine pottery types. Moreover, even that the ARS products were produced in remote centers and there were imitations of them among the ERS types, importing the ARS, LRC and LRD types was of privilege more than importing the ERS types.

The high percentage of the imported fine pottery is a good indication that the residents of Gadara could afford luxuries beside the basic necessities. Economically, the existence of the fine pottery shows that international trade flourished throughout the Byzantine period. It started in the 4th and 5th centuries AD, however, it increased by the mid 6th and early 7th centuries AD, an indication of a powerful economy. This fact can be supported by other evidences and signs of prosperity started during the reign of Emperor Justinian (527-565 AD) and lasted until the end of the Byzantine period, such as the growth of building activities and the flourishing of wine export to the west and to Arabia (Decker 2009: 239-252; Parker 1999: 136, 162, 169). The trade exchange with the west is not only a sign of luxury and wealth, but it also indicates that the city's orientation was directed towards the west until the region was passed out of Byzantine control in 636 AD.

10. CONCLUSION

As many other prominent sites in the region of Northern Jordan, Gadara were connected to a number of important production centers of fine pottery during the late Roman/Byzantine period. Four types of fine pottery could be assigned: LRC, LRD, ARS, and ERS. These types indicate strong

trade connections with the western coast of Asia Minor, Cyprus, Tunisia and Egypt (Fig. 13). The most common type (Figs. 9-12) among the whole assemblages is the LRC "Forms 3 and 10", this type was predominant between the mid 5th and the mid 7th centuries AD. The second common type is the LRD "Forms 2, 9 and 10", products of the mid 5th - end 7th century AD in Cyprus and perhaps southern Turkey. The third type is the ARS (D1 and D2 ware-type), this type is the most diverse in term of forms. The most popular forms are 103 and 104, products of northern Tunisia in the 6th century AD (Mackensen and Schneider 2002: 125-130). The fourth group was the ERS, it comprises of few bowls, each has different clay and shape, mostly products of Upper Egypt of the late 5th century AD or later.

It seems clear that the import of the LRC was at highest point especially between the mid 5th until the late 7th centuries AD. And trade relations were stronger with Asia Minor and Cyprus more than with Tunisia

and Egypt. Despite the closest distance with Egypt, it seemed clear that there was a special awareness towards importing the better qualities of fine pottery that comes from Turkey and Cyprus and Tunisia.

The pottery assemblage presented two new forms of LRD bowls (nos. 7 and 15), no. 7 is close to Hayes Form 7, and no. 15 seems to be a transition form between Hayes Form 2 and Form 9. There were no close parallels for the ERS bowls as well; although they were distinguished through their fabric.

The study showed that the most common late Roman fine wares are: LRC Forms 3 and 10; LRD Forms 2, 9 and 10; and ARS Forms 103 and 104. The existence of these types and other types and forms of Roman pottery in Gadara was a good evidence of a prosperous trade connections with various centers of pottery production, and though a good local economy throughout the late Roman and Byzantine periods in the Mediterranean basin.

11. ACKNOWLEDGEMENT

This research could not be completed without the support of the Fulbright Academic Foundation, and the encouragement of Dr. Prof. Lisa Nevett. I am also grateful to the University of Michigan, Ann Arbor, Department of Classical Studies, for allowing me using its facilities.

Table 1 Phocaeen Red Slip (LRC) Ware

No.	Reg. No.	Description	Slip color and surface treatment	Parallels & date
1	UQ.11.Z.F6.0.2	Bowl. Rim, rim d. 18.5 cm, well-levigated with small white grits, well-fired fine brown 7.5 YR(5/6) ware, tall vertical rim, thickened on outside, rounded on top, outside surface is slightly concave.	intr.: reddish brown slip 5YR (5/4), extr.: yellowish red slip 5YR (5/6). Decorated with a triple row of fine rouletting on the exterior surface of the rim.	Form 3 (Hayes 1972), mid 5 th -mid 6 th c.
2	UQ.11.Z.F7.0.2	Bowl. Rim, rim d. 18.5 cm, well-levigated with small white grits, well-fired fine red 10R (5/8) ware, tall vertical rim, thickened on outside, rounded on top, outside surface is slightly concave.	intr. and extr.: red slip 10R (5/8). Decorated with a triple row of fine rouletting on the exterior surface of the rim.	Form 3 (Hayes 1972), mid 5 th -mid 6 th c.
3	UQ.11.Z.E8.4.14	Bowl. Rim, rim d. 18.5 cm, well-levigated with small white and black grits, well-fired fine light red 2.5 YR (6/8) ware, tall vertical rim, thickened on outside, rounded on top, outside surface is slightly concave.	intr.: red slip 10R (5/8), extr.: reddish yellow slip 5YR (6/6). Decorated with a triple row of fine rouletting on the exterior surface of the rim.	Form 3 (Hayes 1972), mid 5 th -mid 6 th c.
4	UQ.11.Z.F5.0.2	Bowl. Rim, rim d. 22 cm, well-Levigated with small black grits, well-fired fine brown 10 YR (4/3) ware, tall vertical rim, thickened on outside, flattened on top with the highest point at the outer edge, outside surface is slightly concave.	intr.: dark brown slip 7.5 YR (4/2), extr.: dark reddish brown slip 5 YR (4/2), upper rim-surface is dark grayish brown 10 YR (4/2). Decorated with one row of fine rouletting on the exterior surface of the rim.	Form 3b (Hayes 1972), mid 5 th -mid 6 th c.

5	UQ.11.Z.F5.0.2	Bowl. Rim, rim d. 23 cm, well-levigated with small white grits, well-fired fine red 10R (5/8) ware, tall vertical rim, thickened on outside, rounded on top, outside surface is slightly concave.	intr.: red slip 10YR (5/8), extr.: dark brown slip 10YR (4/3), the upper rim is very dark gray 10YR (3/1). Decorated with one row of fine rouletting on the exterior surface of the rim.	Form 3e (Hayes 1972), mid 5th-mid 6th c.
6	UQ.11.Z.E7.1.2	Bowl. Rim, rim d. 23 cm, well-levigated with small white grits, well-fired fine red 10R (5/8) ware, tall vertical rim, thickened on outside, flattened on top with the highest point at the outer edge, outside surface is slightly concave.	intr.: red slip 10YR (5/8), extr.: dark brown slip 10YR (4/3), the upper rim is very dark gray 10YR (3/1). Decorated with one row of fine rouletting on the exterior surface of the rim.	Form 3e (Hayes 1972), mid 5th-mid 6th c.
7	UQ.11.Z.C9.2.3	Bowl. Rim, rim d. 22 cm, well-levigated with small white and yellow grits, well-fired fine red 10R (5/6) ware, tall vertical rim, thickened on outside, flattened on top, outside surface is slightly concave.	intr.: red slip 10R (5/6), extr.: weak red slip 10R (5/4). Decorated with a triple row of fine rouletting on the exterior surface of the rim.	Form 3b (Hayes 1972), mid 5th-mid 6th c.
8	UQ.11.Z.E8.0.3	Bowl. Rim, rim d. 26 cm, well-levigated with small white and black grits, well-fired fine red 10R (5/6) ware, tall vertical rim, thickened on outside, flattened on top, outside surface is slightly concave.	intr. and extr.: red slip 10R (5/8), red slip 10YR (4/8) on the exterior surface of the rim. Decorated with one row of fine rouletting on the exterior surface of the rim.	Form 3d (Hayes 1972), mid 5th-mid 6th c.
9	UQ.11.Z.D10.0.1	Deep bowl. Rim, rim d. 23 cm, well-levigated with small white and black grits, well-fired fine light red 2.5YR (6/8) ware, tall vertical rim, thickened on outside, flattened on top, outside surface is slightly concave.	intr.: light red slip 2.5YR (6/8), extr.: red slip 2.5YR (4/8) on the rim. Decorated with one row of fine rouletting on the exterior surface of the rim.	Form 3e (Hayes 1972), mid 5th-mid 6th c.
10	UQ.11.Z.E7.1.2	Deep bowl. Rim, rim d. 23 cm, well-levigated with small white grits, well-fired fine red 10R (5/8) ware, tall vertical rim, thickened on outside, flattened on top, outside surface is slightly concave.	intr.: red slip 10YR (5/8), extr.: dark brown slip 10YR (4/3), dark grey on the upper rim 10YR (3/1). Decorated with one row of fine rouletting on the exterior surface of the rim.	Form 3e (Hayes 1972), mid 5th-mid 6th c.
11	UQ.11.Z.F5.0.2	Deep bowl. Rim, rim d. 23 cm, well-levigated with small black grits, well-fired fine brown 10YR (4/3) ware, tall vertical rim, thickened on outside, flattened on top, outside surface is slightly concave.	intr.: dark brown slip 7.5YR (4/2), extr.: dark reddish brown slip 5YR (4/2), dark greyish brown on the upper rim 10YR (4/2). Decorated with one row of fine rouletting on the exterior surface of the rim.	Form 3e (Hayes 1972), mid 5th-mid 6th c.
12	UQ.11.Z.E7.1.1	Deep bowl. Rim with part of the body, rim d. 24 cm, well-levigated with small white and yellow grits, well-fired fine red 7.5 (5/6) ware, tall vertical rim, thickened on outside, flattened on top, outside surface is slightly concave, thin, slightly curved walls.	intr. and extr.: red slip 7.5R (5/6), rim is dark brown 10YR (4/3). Decorated with a double row of fine rouletting on the exterior surface of the rim.	Form 3 (Hayes 1972), mid 5th-mid 6th c.
13	UQ.11.Z.F6.5.3	Deep bowl. Rim with part of the body, rim d. 24 cm, well-levigated with small white grits, well-fired fine red 10 R (5/8) ware, tall vertical rim, thickened on outside, flattened on top, outside surface is slightly concave, thin, slightly curved walls.	intr.: red slip 10R (5/8), extr.: light red slip 10R (6/8).	Form 3b (Hayes 1972), mid 5th-mid 6th c.
14	UQ.11.Z.F6.5.2	Deep bowl. Rim with part of the body, rim d. 24 cm, well-levigated with small white and yellow grits, well-fired fine light red 2.5YR (6/8) ware, tall vertical rim, thickened on outside, flattened on top, outside surface is slightly concave, thin, slightly curved walls.	intr.: red slip 10R (5/8), extr.: red slip 2.5YR (5/8). the upper part on the rim is black.	Form 3b (Hayes 1972), mid 5th-mid 6th c.
15	UQ.11.Z.E6.4.4	Deep bowl. Rim with part of the body, rim d. 32 cm, well-levigated with small white grits, well-fired fine light red 2.5YR (6/8) ware, tall vertical rim, thickened on outside, flattened on top, outside surface is slightly concave, thin, slightly curved walls.	intr. and extr.: light red slip 10R (6/8), red slip 10R (4/4) on the rim.	Form 3b (Hayes 1972), mid 5th-mid 6th c.

16	UQ.11.Z.D9.0.4	Deep bowl. Rim with part of the body, rim d. 24 cm, well-levigated with small white grits, well-fired fine reddish brown 5 YR (5/3) ware, tall vertical rim, thickened on outside, flattened on top, straight exterior surface, thin, straight walls.	intr and extr: reddish brown slip 5YR (4/3). The area between the body and the lower rim is very dark grey 5YR (3/1).	Form 3f (Hayes 1972), mid 5th-mid 6th c.
17	UQ.11.Z.E8.3.2	Deep bowl. Rim with part of the body, rim d. 27 cm, well-levigated with small white and yellow grits, well-fired fine light red 10R (6/8) ware, tall vertical rim, thickened on outside, flattened on top, straight exterior surface, thin, straight walls.	intr. and extr.: light red slip 10R (6/8), rim is yellowish red 5YR (4/6).	Form 3c (Hayes 1972), mid 5th-mid 6th c.
18	UQ.11.Z.E6.0.1	Deep bowl. Rim with part of the body, rim d. 27 cm, well-levigated with small white and yellow grits, well-fired fine light red 10R (6/8) ware, tall vertical rim, thickened on outside, flattened on top, straight exterior surface, thin, straight walls.	intr. and extr.: red slip 10R (5/8)	Form 3c (Hayes 1972), mid 5th-mid 6th c.
19	UQ.11.Z.E5.9.3	Deep bowl. Rim with part of the body, rim d. 24 cm		Form 3d (Hayes 1972), mid 5th-mid 6th c.
20	UQ.11.Z.F6.0.1a	Bowl. Rim with part of the body, rim d. 24 cm, well-levigated with small white grits, well-fired fine red 10 R (5/8) ware, tall vertical rim, thickened on outside, flattened on top, straight exterior surface, thin, slightly curved walls.	intr.: red slip 10R (5/8), ext.: red slip (5/6) on the rim.	Form 3d (Hayes 1972), mid 5th-mid 6th c.
21	UQ.11.Z.D9.1.2	Bowl. Rim with part of the body, rim d. 24 cm, well-levigated with small white and yellow grits, well-fired, Fine light red 10R (6/8) ware, tall vertical rim, thickened on outside, flattened on top, straight exterior surface, thin, slightly curved walls.	intr.: light red slip 10R (6/8), extr.: red slip 10R (5/8), red slip 10R (5/6) on the upper part on the rim, yellow slip 10YR (7/6) on the lower part on the rim.	Form 3d (Hayes 1972), mid 5th-mid 6th c.
22	UQ.11.Z.E6.12.2	Bowl. Rim with part of the body, rim d. 24 cm, well-levigated with small white grits, well-fired fine red 10 R (5/8) ware, tall vertical rim, thickened on outside, flattened on top, straight exterior surface, thin, slightly curved walls.	intr. and extr.: light red slip 10R (5/6), red slip 10 R (5/8) on the rim.	Form 3 (Hayes 1972), mid 5th-mid 6th c.
23	UQ.11.Z.F6.20.1	Deep bowl. Rim with part of the body, rim d. 23 cm, well-levigated with small white and grey grits, well-fired fine light red 10 R (6/8) ware, tall vertical rim, thickened on outside, flattened on top, straight exterior surface, thin, straight walls.	intr. and extr.: light red slip 10R (6/8), red slip 10R (5/8) on the rim.	Form 3c (Hayes 1972), dated to the mid 5th-mid 6th c.
24	UQ.11.Z.F7.14.26	Bowl. Base and part of the body, base d. 16 cm, well-levigated, well-fired, fine red 10R (5/8) ware, low foot, ring base, thin straight walls.	intr. and extr.: red slip 10R (5/8).	Form 3 (Hayes 1972), mid 5th-mid 6th c.
25	UQ.11.Z.C9.2.1	Bowl. Rim with part of the body, rim d. 21 cm, well-levigated with small white and yellow grits, well-fired fine red 10R (5/6) ware, heavy rim, knobbed with a concave exterior surface, rounded on top, straight walls.	intr. and extr.: red slip 10R (5/6).	Form 3h (Hayes 1972), mid 5th-mid 6th c.
26	UQ.11.Z.E7.0.7	Deep bowl. Rim with part of the body, rim d. 20 cm, well-levigated with small white grits, well-fired fine light red 2.5 YR (6/8) ware, heavy rim, with square profile, and straight exterior surface, thin straight walls.	intr. and extr.: light red slip 2.5YR (6/8).	Form 10 A (Hayes 1972), late 6th-early 7th c.
27	UQ.11.Z.F5.0.3	Deep bowl. Rim with part of the body, rim d. 24 cm, well-levigated with small white grits, well-fired fine Pink 5YR (7/4) ware, elongated rim, rounded on top, thin slightly curved walls.	intr.: light red slip 2.5YR (6/8), extr.: light red slip 2.5R (6/6), rim is coarse reddish brown 2.5YR (4/4).	Form 3? (Hayes 1972) early-mid 7th c.

28	UQ.11.Z.F5.Nb.1	Deep bowl. Rim with part of the body, rim d. 27 cm, well-levigated with small white and yellow grits, well-fired fine light red 10R (6/8) ware, heavy rim, with square profile, and straight exterior surface, thin straight walls.	intr. and extr.: light red slip 10R (6/8), rim is yellow 10YR (7/6).	Form 10 A (Hayes 1972), late 6th-early 7th c.
29	UQ.11.Z.F5.4.3	Deep bowl. Rim with part of the body, rim d. 25 cm, well-levigated with small white and yellow grits, well-fired fine light red 10R (6/8) ware, heavy rim, with square profile, and straight exterior surface, thin straight walls.	intr. and extr.: light red slip 10R (6/8).	Form 10 A (Hayes 1972), late 6th-early 7th c.
30	UQ.11.Z.E7.0.2	Deep bowl. Rim with part of the body, rim d. 29 cm, well-levigated with small white and yellow grits, well-fired fine light red 2.5YR (6/8) ware, heavy rim, with square profile, and straight exterior surface, thick walls.	intr. and extr.: red slip 10R (5/8), rim is yellow 10YR (8/6).	Form 10 A (Hayes 1972), late 6th-early 7th c.
31	UQ.11.Z.D9.2.1	Bowl. Rim with part of the body, rim d. 22 cm, well-levigated with small white and yellow grits, well-fired fine reddish brown 5 YR (5/4) ware, heavy rim, with square profile, and straight exterior surface, thin straight walls.	intr.: reddish brown slip 5YR (5/3), extr.: reddish brown slip 5YR (5/4), rim is grey coarse 5YR (6/1).	Form 10 A (Hayes 1972), late 6th-early 7th c.
32	UQ.11.Z.E8.0.4	Bowl. Rim with part of the body, rim d. 26 cm, knobbed heavy rim, straight walls.		Form 10 A (Hayes 1972), late 6th-early 7th c.
33	UQ.11.Z.D9.2.2	Deep bowl. Rim with part of the body, rim d. 24 cm, well-levigated with small white grits, well-fired fine light red 2.5 YR (6/8) ware, heavy rim, with square profile, and straight exterior surface, slightly curved walls.	intr. and extr.: light red slip 2.5 YR (6/8).	Form 10 A (Hayes 1972), late 6th-early 7th c.
34	UQ.11.Z.F7.13.7	Bowl. Rim with part of the body, rim d. 23 cm, well-levigated with small white and grey grits, well-fired fine light red 10R (6/8) ware, heavy rim, with square profile, and straight exterior surface, thick straight walls.	intr. and extr.: red slip 10R (6/8).	Form 10 A (Hayes 1972), late 6th-early 7th c.
35	UQ.11.Z.E9.0.2	Deep bowl. Rim with part of the body, approx. rim d. 28 cm, well-levigated with small white and grey grits, well-fired fine light red 10R (6/8) ware, heavy knobbed rim, with rounded profile, thick straight walls.	intr.: light red slip 10R (6/8), extr.: weak red slip 10R (5/3)	Form 10 A? (Hayes 1972), late 6th-early 7th c.

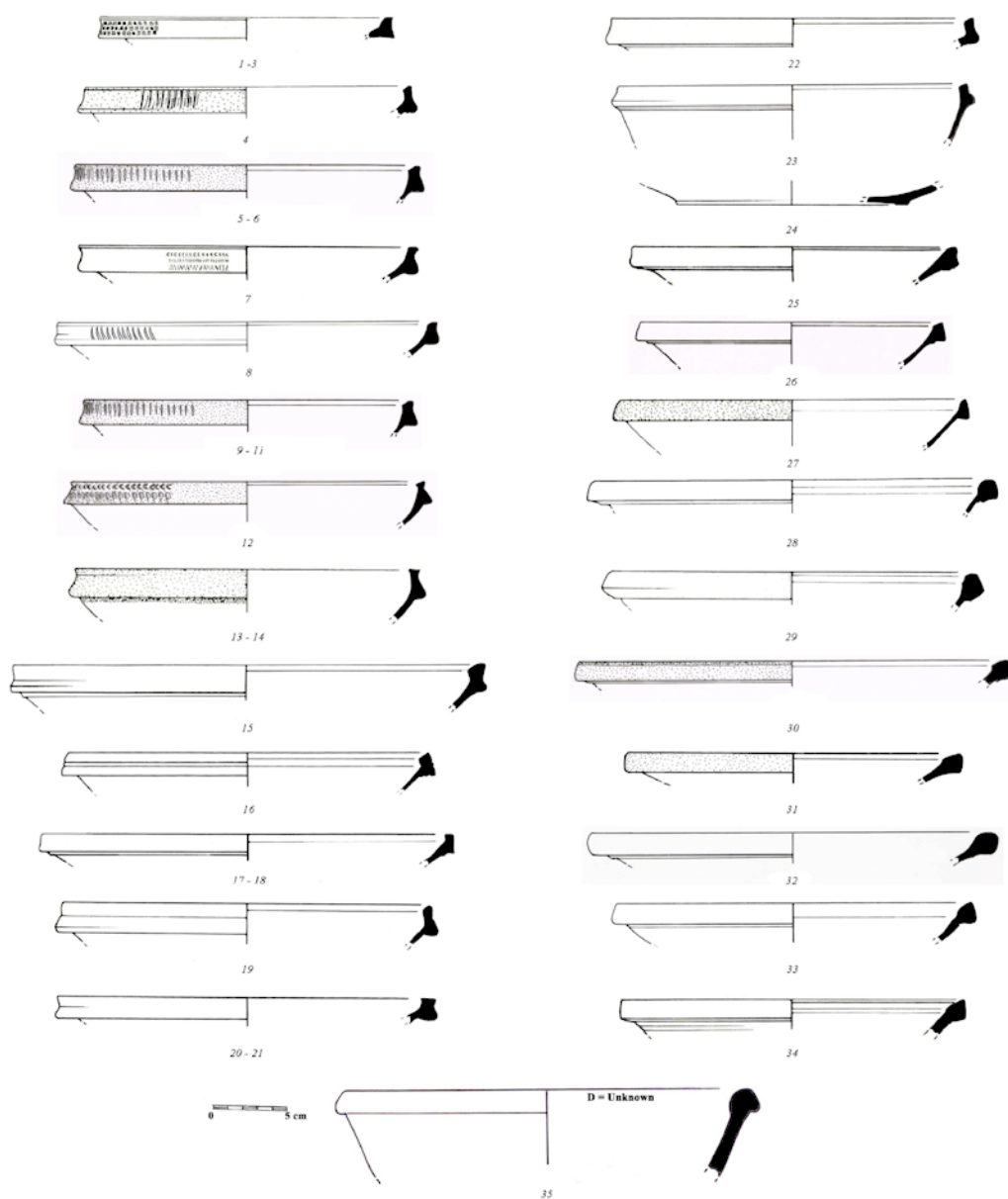


Figure 3 LRC bowls (drawn by Lamia El-Khoury)

Table 2 Cypriot Red Slip (LRD) Ware

No.	Reg. No.	Description	Slip color and surface treatment	Parallels & date
1	UQ.11.W.B12.3.1	Bowl. Rim with part of the body, rim d. 26 cm, well-levigated, well-fired fine light red ware 10R (6/8), thickened (knob) rim with a double groove on the upper edge, steep straight walls, with a single groove on the middle part.	intr. and extr.: light red slip 10R (6/8). Rouletting decoration on the upper part of the exterior surface.	Form 2 (Hayes 1972, Fig. 80), 450-500 AD. Beirut, 3rd quarter of 5th c. or 450-500 AD (Reynolds 2011, Figs. 1,2), Antioch (Waagé 1948, shape 932f), Beirut (Reynolds 2011a, Figs 1:6-10; 2:30-31; 3: 43; 4: 52-56; 5: 64-66; 6: 77-78, 88-90)

2	UQ.11.Z.E6.0.6	Bowl. Rim with part of the body, rim d. 28 cm, well-levigated with small white grits, well-fired fine light red ware 10R (6/8), thickened rim (knob) with a single groove on the upper edge, slightly curved shallow walls.	intr.: red slip 10R (4/8), extr.: red slip 10R (5/8). A single line of rouletting decoration on the upper part of the exterior surface. A single groove under the rim.	Form 2 (Hayes 1972, Fig. 80), 450-500 AD. Beirut, 450-500 AD (Reynolds 2011, Figs. 1,2), Beirut (Hayes 2000, Fig 31:1-2), Antioch (Waagé 1948, shape 930k). Beirut (Reynolds 2011a, Figs 1:6-10; 2:30-31; 3: 43; 4: 52-56; 5: 64-66; 6: 77-78, 88-90)
3	UQ.11.Z.F5.Nb.2	Bowl. Rim with part of the body, rim d. 28 cm, well-levigated with small white and black grits, well-fired fine light red ware 2.5YR (6/8), thickened rim (knob) with a double groove on the outer edge, flared thin walls.	intr. and extr.: light red slip 10R (6/8), two lines of Rouletting decoration on the upper and mid walls.	Form 2 (Hayes 1972, Fig. 80), Beirut (Reynolds 2011, Figs. 1, 2), Beirut (Hayes 2000, Fig 31:1-2), 450-500 AD. Antioch (Waagé 1948, shape 930k), Beirut (Reynolds 2011a, Figs 1:6-10; 2:30-31; 3:43; 4: 52-56; 5: 64-66; 6: 77-78, 88-90)
4	UQ.11.Z.E6.1.1	Bowl. Rim with part of the body, rim d. 25 cm, well levigated, well fired fine light red 10R (6/8) ware, triangular thickened rim, with a double groove on the outer edge, fairly sloping, slightly curved walls,	intr. and extr.: light red slip 10R (6/8). Good rouletting decoration on exterior surface.	Form 2 (Hayes 1972, Fig. 80), 450-500 AD. Beirut, 450-500 AD (Reynolds 2011, Figs. 1,2), (Hayes 2000, Fig 31.1), Antioch (Waagé 1948, shape 930u), Beirut (Reynolds 2011a, Figs 1:6-10; 2:30-31; 3: 43; 4: 52-56; 5: 64-66; 6: 77-78, 88-90)
5	UQ.11.Z.E8.3.1	Bowl. Body sherd, well levigated, well fired fine light red 10R (6/8) ware.	intr. and extr.: light red slip (6/8). Rouletting decoration on the exterior surface.	Form 2 (Hayes 1972), 450-500 AD
6	UQ.11.Z.C8.0.3	Bowl. Rim, d. unknown, well-levigated, well-fired fine light red 2.5 YR (6/8) ware, vertical slightly sloping rim profile, slightly curved walls.	intr. and extr.: red slip 10R (6/8). Rouletting motif on the exterior surface.	Form 2 (Hayes 1972), 450-500 AD
7	UQ.11.Z.E8.4.6	Bowl. Rim, d. 30 cm, well levigated, well-fired fine light red 10R (6/8) ware, thick triangular rim with a double groove on the outer upper edge, slightly curved walls.	intr. and extr.: red slip 10R (5/8). Good rouletting decoration on the outer-lower edge of the rim	The closest is Form 7 (Hayes 1972, Fig 81), with rim slightly inclined towards outside, suggested date: second half of 6th-early 7th c.
8	UQ.11.Z.E6.4.1	Bowl. Rim and part of the body, rim d. 24 cm, well-levigated, well-fired, fine reddish yellow 5YR (7/6) ware, thickened rim, with convex inner face, slightly curved, open and shallow walls.	intr.: red slip 10R (5/8).	Form 9 A (Hayes 1972, Fig. 81), 550-600 AD; (Reynolds 2011, Fig. 5). Beirut (Reynolds 2011a, Fig. 9: 140), late 6th c.
9	UQ.11.Z.F5.11.26	Bowl. Rim and part of the body, rim d. 26 cm, well-levigated, well-fired, fine light red 10R (6/8) ware, triangular thickened plain rim, the inner rim face is concave, steep straight walls.	intr. and extr.: light red slip 10R (6/8).	Form 9 B (Hayes 1972, Figs. 81-82), 580/600-end of 7th c., Beirut (Reynolds 2011, Fig. 5), Beirut (Reynolds 2011a, Fig. 11: 168-174).
10	UQ.11.Z.E7.5.2	Bowl. Rim with part of the body, rim d. 24 cm, well levigated, well-fired, fine light red 10R (6/8) ware, small white and yellow grits included, triangular thickened plain rim, the inner rim face is concave, and plain outer face, slightly curved shallow walls.	intr. and extr.: light red 10R (6/8) slip on the body, reddish yellow slip 5YR (7/6) on the rim. Sparsely rouletting decoration on the exterior surface.	Form 9 B (Hayes 1972, Fig. 82:11), 580/600-End of 7th c., Beirut (Reynolds 2011a, Fig. 11: 170-174).

11	UQ.11.Z.C8.0.4	Bowl. Rim with part of the body, rim d. 29 cm, well levigated, well-fired, fine light red 10R (6/6) ware, large convex rim with a double groove on the upper part of the outer edge, the inner rim face is concave, straight inclined thin walls.	intr. and extr.: red slip 10R (5/8)	Form 9 C (Hayes 1972, Fig. 82: 13), 580-600 - end 7th c. Antioch (Waagé 1948, shape 970f-k), Beirut (Reynolds 2011a, Fig. 9: 142; 11: 175-176),
12	UQ.11.W.B11.0.1	Deep bowl. Rim with part of the body, rim d. 28.5 cm, well levigated, well-fired, fine light red 10R (6/8) ware, large convex rim with a single groove on the outer upper edge, the inner rim face is almost vertical, straight inclined thin walls.	intr. and extr.: light red slip 10R (6/8). Good rouletting lines of decorations under the rim and on the mid exterior surface.	Form 10 (Hayes 1972, Fig. 82), suggested date: mid 7th c. Antioch (Waagé 1948, shape 970f-k), Beirut (Reynolds 2011a, Fig. 9: 142; 11: 175-176),
13	UQ.11.W.B11.0.3	Deep bowl. Rim with part of the body, rim d. 30 cm, well levigated, well-fired fine light red 2.5YR (6/6) ware, large convex heavy rim with a single groove on the outer upper edge, the inner rim face is vertical, slightly curved, flared, thin walls.	intr. and extr.: red slip 10R (5/8), on the rim light reddish brown 5YR (6/4), A single line of rouletting decoration on exterior surface. A groove (undercut) under the rim.	Form 10 (Hayes 1972, Fig. 82), suggested date: mid 7th c. Antioch (Waagé 1948, shape 970f-k). Beirut (Reynolds 2011a, Fig. 9: 142; 11: 175-176), late 6th c.
14	UQ.11.Z.E8.0.2	Deep bowl. Rim with part of the body, rim d. 30 cm, well levigated, well-fired fine light red 2.5YR (6/8) ware, large convex rim with a single groove on the outer upper edge, the inner rim face is almost vertical, slightly-curved, flared, thin walls.	Reddish yellow slip 5YR (7/6) on the rim. A groove (undercut) under the rim.	Form 10 (Hayes 1972, Fig. 82), suggested date: mid 7th c. Antioch (Waage 1948, shape 970f-k), Beirut (Reynolds 2011a, Fig. 9: 142; 11: 175-176),
15	UQ.11.Z.D9.0.7	Bowl. Rim with part of the body, rim d. 30 cm, well levigated with small white grits, well-fired fine light red 2.5YR (6/8) ware, almost triangular-thickened rim, with a single groove on the outer edge, the inner edge is slightly convex, flared thin walls.	intr: red slip 2.5YR (4/8), extr: light red slip 2.5YR (6/8).	Uncommon form, perhaps a transition between Form 2 and Form 9, but more close to Form 9 (Hayes 1972: 373-82), possible date: end 5 th -mid 6th c.
16	UQ.11.Z.F7.14.12	Bowl. Body sherd, well levigated with small white grits, well fired fine light red 2.5YR (6/6) ware.	intr and extr: red slip 10R (5/8). Rouletting decoration on exterior surface.	Form 9 C or 10 (Hayes 1972, Fig. 82), 580-600 AD.
17	UQ.11.Z.D10.0.2	Bowl. Base with part of the body, base d. 13 cm, well levigated, well-fired fine light red 2.5 YR (6/6) ware, simple cut band foot, straight flared walls.	intr and extr: red slip 2.5 YR (6/8)	Form 9 (Hayes 1972), 550-600 AD.
18	UQ.11.Z.C9.4.4	Bowl. Base with part of the body, base d. 13 cm, well-levigated, well-fired fine light red 2.5 YR (6/6) ware, simple cut band foot, straight flared walls.	intr and extr: red slip 2.5YR (5/8)	Form 9 (Hayes 1972), 550-600 AD.
19	UQ.11.Z.F7.14.24	Bowl. Base, d. 15 cm, well-levigated, well-fired fine reddish yellow 5YR (7/8) ware, slightly curved flared thin walls.	red slip, very thin layer merges with the clay.	Suggested date: 6th-7th c. AD.
20	UQ.11.Z.E10.4.1	Small bowl. Base with part of the body, base d. 8 cm, well levigated, well-fired fine Light reddish brown 5YR (6/4) ware, straight flared walls.	intr: red paint 10R (5/8), extr: light red slip 2.5YR (6/6),	Suggested date: 6th-7th c. AD

21	UQ.11.Z.E5.2.4	Bowl. Base with part of the body, base d. 16 cm, fine Pink 5YR (7/4) ware, simple cut band foot, thin straight flared walls.	intr: red paint 10R (5/8), extr: light red slip 10R (6/8). Scratch decorations on exterior surface.	Form 9 (Hayes 1972), mid 6th-end 7th c. AD.
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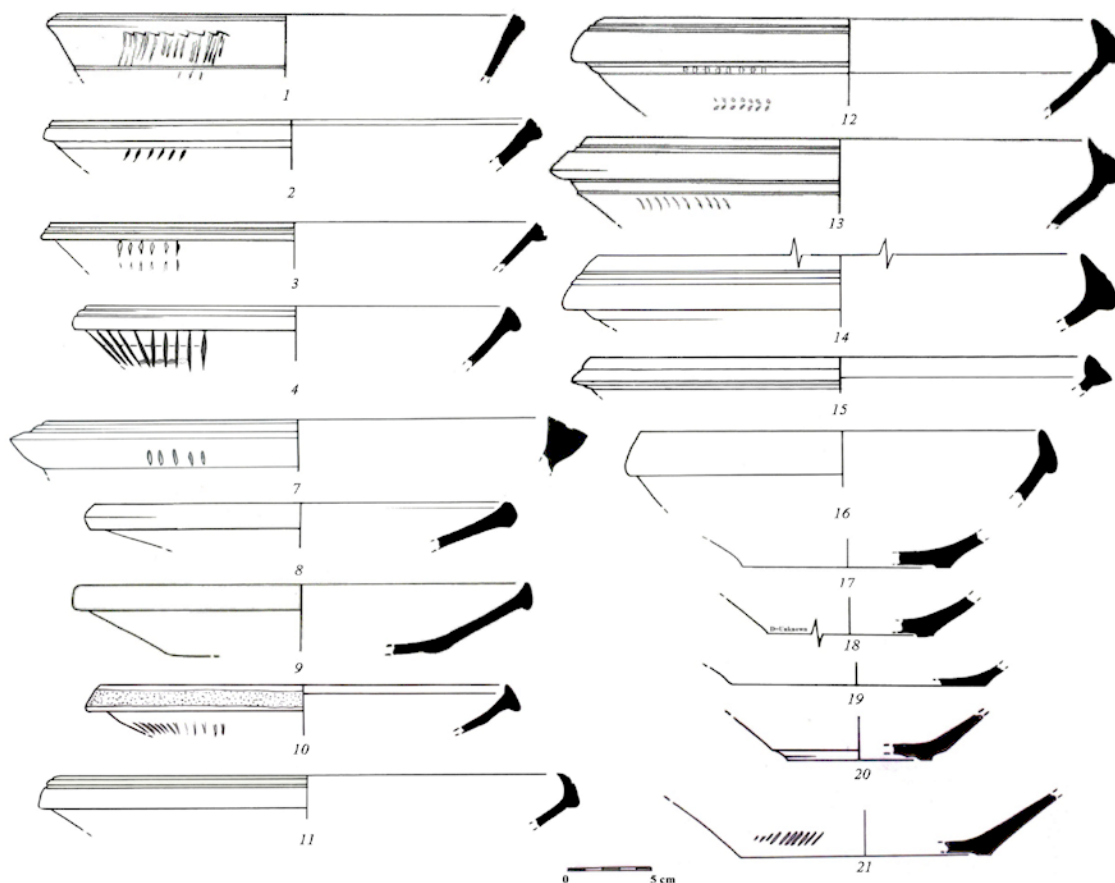


Figure 5 LRD bowls (drawn by Lamia El-Khoury)

Table 3 African Red Slip (ARS) Ware

No.	Reg. No.	Description	Slip color and surface treatment	Parallels & date
1	UQ.11.Z.F7.14.5	Deep bowl. Rim, rim d. 29 cm, well-levigated, well-fired fine light red 10R (6/6) ware, short flat rim.	not available	Form 32/58 (Hayes 1972), late 3rd-early 4th c
2	UQ.11.Z.F7.14.1	Deep bowl. Rim with part of the body, rim d. 29 cm, well-levigated with white grits, well-fired fine light red 10R (6/8) ware. Vertical incurved rim, meeting the wall at a sharp angle, slightly curved walls.	intr. and extr.: light red slip 10R (6/8).	Form 61 A (Hayes 1972), 325-420 AD.
3	UQ.11.Z.C7.0.1	Bowl. Body sherd, well-levigated with small white and yellow grits, well-fired fine light red 10R (6/8) ware.	intr. and extr.: glossy red slip 10R (5/8), stamp decoration in the shape of four circles on the floor.	Stamp Style A (ii) or A(iii), B, C (Hayes 1972), common on vessel Forms 60-61A, 61B, 62A, 67, mid 4th-end 5th c.

4	UQ.11.W.B12.3.2	Bowl. Rim of flanged bowl, rim d. 24 cm, well-levigated with small white, red and grey grits, well-fired fine light red 10R (6/8) ware, small rounded rim, broad flang with hanging lip.	intr. and extr.: light red slip 10R (6/8).	Form 91 A or B (Hayes 1972), mid5thc. -530 AD.
5	UQ.11.Z.D10.1.3	Deep bowl. Rim and part of the body of flanged bowl, rim d. 24 cm, well-levigated with small white grits, well fired fine light red 10R (6/8) ware, small rounded rim, broad flang with hanging lip, straight walls.	intr. and extr.: light red slip 10R (6/8).	Form 91 A or B (Hayes 1972), mid5thc. -530 AD.
6	UQ.11.Z.C7.0.4	Shallow bowl. Rim with part of the body, rim d. 23 cm, well-levigated with small white and grey grits, well-fired fine red 10R (5/8) ware, large hooked rim, flaring walls.	intr. and extr.: red slip 10R (5/8).	Form 103 B (Hayes 1972), 500-3rd quarter of 6th c.
7	UQ.11.Z.F5.11.25	Shallow bowl. Rim with part of the body, rim d. 32 cm, well-levigated with small white grits, well-fired fine light red 2.5 YR (6/8) ware, large hooked rim, flaring walls.	intr. and extr.: red slip 2.5YR (5/8), one groove on the outer wall underneath the rim.	Form 103 B (Hayes 1972), 500-3rd quarter of 6th c AD.
8	UQ.11.Z.E8.6.1	Bowl. Rim with part of the body, rim d. 30 cm, well-levigated with small white grits, well-fired fine light red 2.5 YR (5/8) ware, large hooked rim, flaring walls.	intr. and extr.: red slip 2.5YR (5/8), two grooves on the outer wall underneath the rim.	Form 103 B (Hayes 1972), 500-3rd quarter of 6th c.
9	UQ.11.Z.E7.0.9	Bowl. Rim with part of the body, rim d. 30 cm, well-levigated with small red and brown grits, well-fired fine light red 2.5 YR (6/8) ware, large hooked rim, flaring walls.	intr. and extr.: light red slip 10R (6/8).	Form 103 B (Hayes 1972), 500-3rd quarter of 6th c.
10	UQ.11.Z.E8.4.12; 4.11; 4.8; 4.2	Deep bowl. Rim with part of the body, rim d. 33 cm, well-levigated with small white grits, well-fired fine light red 2.5 YR (6/8) ware, large hooked rim, flaring walls.	intr. and extr.: red slip 2.5YR (5/8), one groove on the outer wall underneath the rim.	Form 103 B (Hayes 1972), 500-3rd quarter of 6th c.
11	UQ.11.W.B11.0.4	Bowl. Ring base of a bowl, foot of medium height, base d. 9 cm (rim d. max. 26 cm), well-levigated with small white and brown grits, well-fired fine light red 10R (6/8) ware. Stamp display a lamb with features in relief and dotted fleece.	intr. and extr.: light red slip 10R (6/8), stamped on the center of the floor.	Stamp Style E (ii) (Hayes 1972: 256), common on vessels Forms 103A, 104A, 500-580 AD, due to base diameter, it could be part of vessel Form 104C.
12	UQ.11.Z.F7.14.10	Bowl. Rim, rim d. 24 cm, well-levigated with small white grits, well-fired fine light red 2.5YR (6/8) ware, knobbed rim with upward projection.	Intr. and extr : light red slip 2.5 YR (6/8).	Hayes 1972 Form 104 A, 530-580 AD. Rim d. of 104 A and B is much larger 29-50 cm.
13	UQ.11.Z.F5.11.27	Shallow bowl. Rim with part of the body, well-levigated with small white, yellow and grey grits, well-fired fine light red 2.5 YR (6/8) ware, knobbed rim with upward projection, sloping walls.	intr. and extr.: red slip 2.5YR (5/8). Two grooves on the inside surface.	Form 104 A (Hayes 1972), 530-580 AD.
14	UQ.11.Z.D9.4.4	Deep bowl. Rim with part of the body, rim d. 33 cm, well-levigated with small white and grey grits, well-fired fine light red 2.5 YR (5/8) ware, knobbed rim, sloping walls.	intr. and extr.: red slip 10R (5/8), one groove on the outer surface underneath the rim.	Form 104 B (Hayes 1972), 570-600 AD.
15	UQ.11.Z.F7.14.34	Shallow bowl. Rim with part of the body, rim d. 23 cm, well-levigated with small white and grey grits, well-fired fine light red 2.5 YR (6/8) ware, knobbed rim, sloping walls.	intr. and extr.: Light red slip 2.5YR (6/8).	Form 104 C (Hayes 1972), 550-625 AD.
16	UQ.11.Z.C9.4.5	Shallow bowl. Rim with part of the body, rim d. 23 cm, well-levigated with small white grits, well-fired fine light red 2.5 YR (6/8) ware, knobbed rim, sloping walls.	intr. and extr.: light red slip 2.5 YR (6/8).	Form 104 C (Hayes 1972), 550-625 AD.

17	UQ.11.Z.D10.7.11	Bowl. Ring base of a bowl, foot of medium height, base d. 12.5 cm, well-levigated with small white, yellow and grey grits, well-fired fine red 2.5 YR (5/8) ware. Two grooves round floor.	intr.: reddish brown 2.5 YR (4/4), extr.: red slip 2.5 YR (5/6).	Form 104 (Hayes 1972), 530-600 AD.
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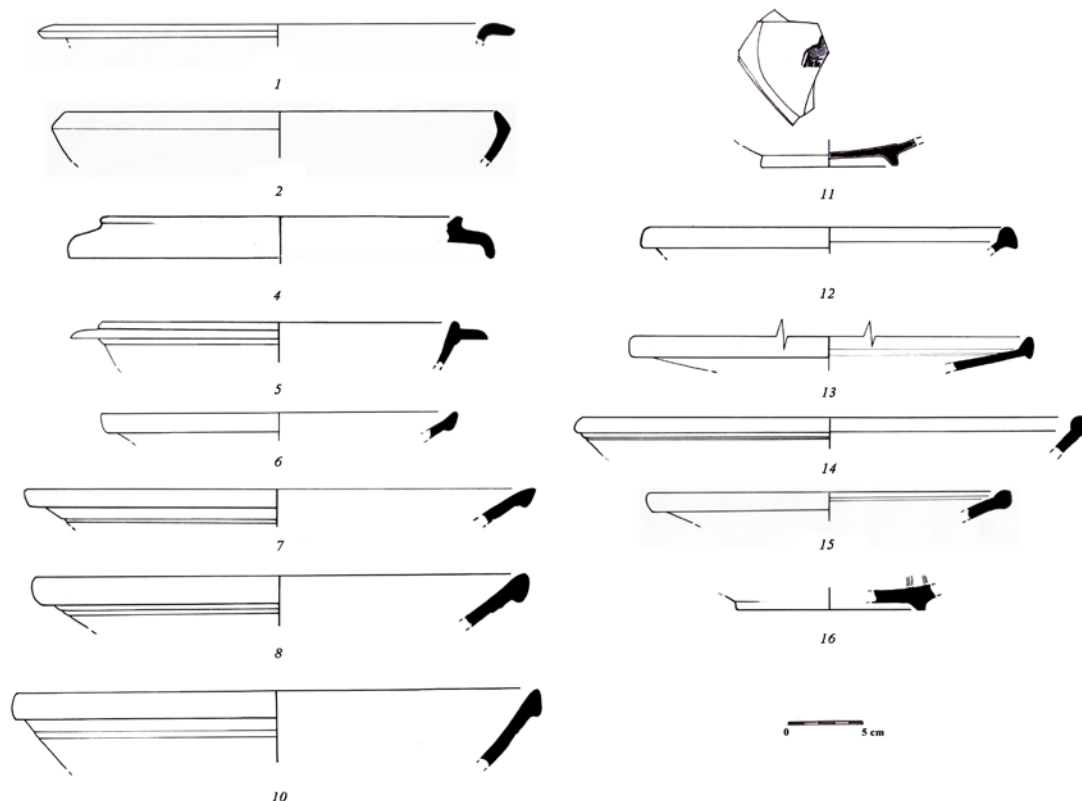


Figure 7 ARS Bowls (drawn by Lamia El-Khoury)

Table 4 Egyptian Red Slip (ERS) Ware

No.	Reg. No.	Description	Slip color and surface treatment	Parallels & date
1	UQ.11.Z.F7.14.11	Deep bowl. Rim with part of the body, rim d. 28 cm, well-levigated with small white and grey grits, well-fired fine light red 10R (6/6) ware, short flat rim, slightly curved walls.	intr. and extr.: light red slip 10R (6/8)	ERS-A, imitation to ARS Form 58B (Hayes 1972),
2	UQ.11.Z.F7.14.36	Small bowl. Rim with part of body, rim d. 12 cm, well Levigated with small white grits, well fired fine pink 5YR (8/4) ware, simple rim, hemispherical body	Intr.: dark red slip 10R(3/6), extr.: dark reddish gray slip on rim and the upper part of the body 10R (4/1), and dark red slip 2.5R (3/6) on the lower part of the body .	ERS-A
3	UQ.11.Z.E8.4.1; E8.4.5; F6.7.1	Deep bowl. Rim with parts of body and base, rim d. 31 cm, well Levigated with small white, brown and grey grits, well-fired fine pink 5YR (8/4) to fine light red 10R (6/6) ware, ring base, slightly curved walls, flat rim with one groove on top.	uneven slip color, intr.: ranges between pink slip 5YR (8/3), and reddish yellow slip 7.5YR (8/6), extr.: reddish yellow slip 5YR (7/6) and 7.5 YR (8/6), on the rim reddish yellow slip 5YR (7/8). Rouletting motif on exterior surface.	ERS-A (Hayes 1972, Form Q, but with higher foot base and rouletting decoration on outer body surface). Imitation of ARS (Hayes 1972, Form 91). Kellia (Egloff 1977, Pl. 41:8), but larger and with different slip color.

4	UQ.11.Z.C7.2.4	Shallow bowl. Part of base and body, rim d. 28 cm, well levigated with small white, yellow and grey grits, well fired fine light red 2.5 YR (6/8) ware, heavy upright rim.	Intr. and extr.: red slip 2.5YR (6/8)	Uncertain, ERS-A Hayes 1972, Form H, ware is close to ARS. Probable date: second half of 5th c or later.
5	UQ.11.Z.C9.8.2	Bowl. Ring base, base d. 10 cm, well levigated with small white, yellow and grey grits, well fired fine reddish brown 5YR (5/4) ware, slightly curved walls.	Intr. and extr.: red slip 10R (4/6).	ERS-A
6	UQ.11.Z.F5.4.2	Bowl. Body sherd of a bowl, well levigated, small white grits, well-fired fine light red 2.5 YR (6/6) ware.	Intr.: reddish brown slip 2.5YR (4/4). Extr.: red slip 10R (5/6).	ERS-C

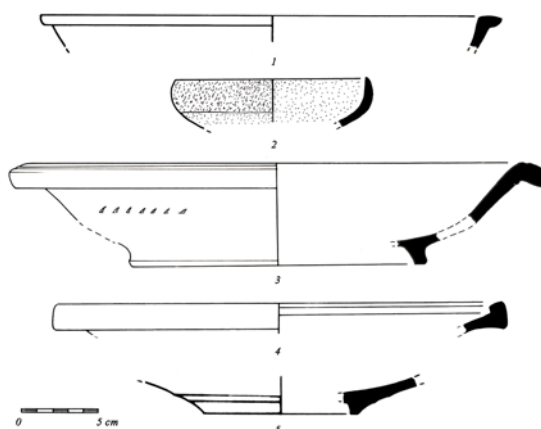


Figure 8 ERS Bowls (drawn by Lamia El-Khoury)

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ⁱ Roman pottery includes early and late Roman types, while Late Roman pottery as it is mentioned in the studies of J. Hayes and other scholars indicates the Byzantine pottery.

ⁱⁱ Personal communication from Prof. Thomas Weber

ⁱⁱⁱ The report of excavation is under preparation

^{iv} Produced in the northern coast of the black sea

^v Named after Sagalassos, located in the southwestern region of Turkey

^{vi} The fabric and technique of LRC are continuation of the Pergamon/Çandarli Terra Sigillata tradition (Hayes 1997: 62).

^{vii} Syria as a products center of LRC was suggested as well by Mackensen (1984: 42).

viii A group of Cypriot red-slip wares was found in Perge (Pamphylia) in southern coast of Turkey (Firat 2000: 35-38). Perge vessels could be differentiated from other "Cypriot Red Slip" wares, especially the collection, that was published by Hayes in 1972 (1972), by surface treatment, ware, firing, and forms of the ware (Firat 2000: 35-38).

ix Chemical analysis of "Cypriot Red Slip" wares from Kourion (south shores of Cyprus) and Nea Paphos (western Cyprus) (Daszkiewicz and Schneider 1996: 139-43) helped in separating the "Cypriot Sigillata" from the "Cypriot Red Slip" wares.

x According to this study a number of pottery workshops that produced different types of ARS wares could be allocated in northern and central Tunisia. For location of those centers, refer to (Mackensen 2009, Fig. 1)

xi The early examples were imitation of the African Red Slip wares, but developed in different shapes after 420 AD. The most common shapes are deep dishes or shallow bowls with upright projecting rim. Rims were often decorated with rouletting broad bands of three or more rows impressed with an implement of teeth (Hayes 1997: 64).

xii For more information about manufacturing and distribution of the LRC, refer to (Hayes 1972: 323-324)

xiii The ware was common in Antioch but not as much as LRC (Waagé 1948: 52). It is described by Waagé (1948: 52) as: "hard and pure body, without the grainy quality of LRC, mostly matt slip, not glossy, the clay is either brown covered with red-brown slip, or purplish brown clay covered with similar colored slip.

xiv This new form shows a thickened vertical rim, close in shape to the rims of Hayes Form 9, but neither sharply in-turned nor grooved".

xv This form showed a large variant of different sizes bowls, of which rim diameter ranges from 16 to 38 cm, characterized by in-turned rim, slightly curving body, high ring-foot, and coarse rouletting decoration covers the whole exterior body, and occasionally the inner side of the vessel (Firat 2000: 37).

xvi A description of the sub types were mentioned briefly in (Mackensen and Schneider 2002: 121)

xvii Refer to (Mackensen and Schneider 2002:128)

xviii For more information about clay description and manufacture of ARSW, refer to (Hayes 1972: 13, 14, 423).

xix The local Nile Valley clay, a poor quality clay of loose texture, unusually light-weight, and often very flaky, of pinkish or orange-red color, containing fine black and quartz particles, gold mica flakes and some large red particles (Hayes 1972: 397).

xx Sometimes the slip is more thickly applied on the interior surface, of a slightly deeper shade. The exteriors of rims are discolored as in LRC, turning either purplish or creamy white. Exterior surfaces are uneven, with rough spatula-marks visible (Hayes 1972: 387-397).

xxi Deep purplish-red core, and gold mica specks present in the clay,

xxii Contains lime, quartz and various dark grits, with very little mica. Air holes are common in section, with abraded appearance (Hayes 1972: 399).

xxiii Similar objects of LRC wares were uncovered in many sites in the region, such as Beth-Shean (Johnson 2006: 542, 543, 551), Ashkelon (Johnson 2008: 63-72), Beirut (Reynolds 2011: 207-230), and other sites in northern Palestine (Kuhnen 1989: 87-89).

xxiv The most common shapes were flat-based dishes (bowls), some bearing a simple stamped cross at the center (Hayes 1972: 424; 1997: 64). This type is best seen on the Palestinian and Nile Delta sites (Hayes 1997: 64).

xxv Similar objects were found in nearby sites like Beth-Shean (Johnson 2006: 543, 544, 551), Ashkelon (Johnson 2008: 53-61), Beirut (Reynolds 2011: 207-230), and a number of sites in northern Palestine (Kuhnen 1989: 90-92).

xxvi Similar examples of our group are seen in many nearby sites: Beth-Shean (Johnson 2006: 542), Ashkelon (Johnson 2008: 41-51), Beirut (Reynolds 2011: 207-230), sites in northern Palestine (Kuhnen 1989: 83-87), and other sites.

xxvii More information about the production centers is mentioned previously in this paper, and a full study is published recently by Mackensen and Schneider (2002: 125-130)

xxviii As attested in recent Aila (Aqaba, south Jordan) excavations and pottery assemblage analysis of ERS ware.

^{xxix} Aila is an exception, as the import of ERS started in the 3rd century AD, due to its close distance to Egypt and the intensive trade.

^{xxx} Other single sherds of ERS were also found in sites in Jordan and Palestine: Caesarea (Riley 1975: 25-39; Arnon 2008: 85-91), Jerusalem (Magness 1993: 127).